

A photograph of a small, vibrant green seedling with several leaves growing out of a cluster of dark, jagged, and textured rocks. The background is blurred, showing more of the rocky terrain. The overall tone is one of resilience and hope.

Delivering Justice for Environmental Sustainability

Kariuki Muigua

Delivering Justice
for
Environmental Sustainability

Hon. Prof. Kariuki Muigua, Ph.D; FCIArb; Ch.Arb; OGW

Delivering Justice for Environmental Sustainability

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Table of Contents

Dedication	xi
Acknowledgements	xvi
Author's Note.....	xvii
List of Statutes/Legislation/Official Government Documents	xix
List of Abbreviations	xx
Harnessing Africa's Natural Resources for Sustainable Development	1
1.0 Introduction.....	1
2.0 Natural Resources and Sustainable Development in Africa: Opportunities and Challenges	3
3.0 Way Forward	9
4.0 Conclusion.....	14
Bolstering Water Governance for Sustainability	15
1.0 Introduction.....	15
2.0 Water and Sustainable Development	17
3.0 Water Governance: Opportunities and Challenges.....	21
4.0 Way Forward	25
5.0 Conclusion.....	29
Resolving the Conflict Between Development Planning and Environmental Management in Kenya	31
1.0 Introduction	31
2.0 Sustainability, Development Planning and Environmental Management.....	34
3.0 Development Planning and Environmental Management in Kenya	37
4.0 Reconciling Development Planning with Environmental Management for Sustainability	41
4.1 Use of Technology in Planning and Environmental Protection	42
4.2 Participatory Approaches to Urban Development Planning and Environmental Planning and Management	47
5.0 Conclusion.....	52
(Re) Imagining Effective Disaster Prevention and Management for Development in Africa	54
1.0 Introduction.....	54
2.0 Impacts of Disasters on Development in Africa	56

3.0 Disaster Prevention and Management in Africa: Progress and Challenges	58
4.0 Towards Effective Disaster Prevention and Management in Africa	67
5.0 Conclusion.....	71
Promoting Sustained Economic Growth and Decent Work for All.....	73
1.0 Introduction.....	73
2.0 Human Rights Approach to Sustained Economic Growth and Decent Work for All	75
3.0 Linking Decent Work for All and Sustained Economic Growth.....	81
4.0 Factors hindering Sustained Economic Growth and Decent Work for All	84
5.0 Way Forward	86
6.0 Conclusion.....	89
Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems	91
1.0 Introduction	91
2.0 Typologies of Alternative Justice Systems Mechanisms in Environmental Conservation.....	94
3.0 Relevant Legal and Policy Framework on Alternative Justice Systems Mechanisms in Kenya.....	96
4.0 Challenges and Prospects in using AJS for Environmental Justice and Conservation in Kenya	98
5.0 Adopting A Rights-based Approach to Conservation and Environmental Justice.....	104
6.0 Need for Establishing Research and Funding Systems to Support Traditional Ecological and Conflict Management Knowledge.....	106
7.0 Synergetic Approach Between Disaster Risk Reduction and Climate Change Adaptation.....	110
8.0 Conclusion.....	114
Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation.....	116
1.0 Introduction.....	116
2.0 Natural Resource-Based Conflicts in Africa: Causes and Effects	118
3.0 Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation.....	121
4.0 Conclusion.....	127
Fostering Sustainable Lifestyles for Posterity.....	129
1.0 Introduction	129

2.0 Sustainable Lifestyles: Definition and Elements.....	130
3.0 Fostering Sustainable Lifestyles.....	135
4.0 Conclusion.....	141
Realizing the Human Right to Clean and Safe Water in Africa.....	142
1.0 Introduction.....	142
2.0 Access to Clean and Safe Water as a Human Right	144
3.0 Realizing the Human Right to Clean and Safe Water in Africa: Promises and Challenges	148
4.0 Conclusion.....	151
Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally.....	154
1.0 Introduction.....	154
2.0 Plastic Pollution: Causes and Effects.....	157
3.0 Enhancing Efforts to Curb Plastic Pollution Globally.....	161
4.0 Conclusion.....	166
Addressing Climate Change through Nature-Based Solutions in Africa. 167	
1.0 Introduction.....	167
2.0 Nature-Based Solutions: An Overview	170
3.0 Addressing Climate Change through Nature-Based Solutions in Africa	173
4.0 Way Forward	178
5.0 Conclusion.....	181
Enhancing Climate Resilience in Africa for Development.....	183
1.0 Introduction.....	183
2.0 Climate Change in Africa	185
3.0 Enhancing Climate Resilience in Africa: Progress and Setbacks	188
4.0 Conclusion.....	193
Accelerating Energy Transition in East Africa	197
1.0 Introduction.....	197
2.0 Conceptualizing Energy Transition	200
3.0 Legal Framework on Energy Transition.....	202
4.0 Energy Transition in East Africa: Progress and Challenges	207
5.0 Way Forward	209
6.0 Conclusion.....	212
Towards Africa’s Decarbonization: Harnessing the Green Hydrogen Potential.....	214

1.0 Introduction.....	214
2.0 Green Hydrogen and Decarbonization.....	218
3.0 Harnessing the Green Hydrogen Potential in Africa: Promises and Pitfalls	219
4.0 Way Forward	225
5.0 Conclusion.....	228
Strengthening Climate Action in Conflict Situations for Development ..	230
1.0 Introduction	230
2.0 The Climate Change and Conflict Nexus	233
3.0 Way Forward	239
4.0 Conclusion.....	244
Reducing Africa’s Carbon Footprint for Green Growth.....	246
1.0 Introduction.....	246
2.0 Examining Africa’s Carbon Footprint.....	250
3.0 Reducing Africa’s Carbon Footprint for Green Growth.....	256
4.0 Conclusion.....	261
Achieving Just Energy Transition: Examining the Efficacy of Kenya’s Policy and Regulatory Approaches	263
1.0 Introduction	263
2.0 Access to Energy and Sustainable Development.....	267
3.0 Energy Transition: Examining Kenya’s Policies and Energy Landscape	269
4.0 Kenya Energy Transition & Investment Plan 2023-2050.....	276
5.0 Fast-tracking Just Energy Transition in Kenya for Sustainability	277
6.0 Conclusion.....	287
Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization.....	289
1.0 Introduction	289
2.0 Conceptualizing Climate Change, Cyber Security, and Globalization...	291
2.1 Climate Change	292
2.2 Cyber Security.....	294
2.3 Globalization.....	296
3.0 ADR in the Context of Climate Change, Cyber Security, and Globalization	298
3.1 ADR and Climate Change	298
3.2 ADR and Cyber Security	303
3.3 ADR and Globalization.....	306
4.0 Conclusion.....	309

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law.....	311
1.0 Introduction.....	311
2.0 The Growth of Environmental Crimes.....	313
3.0 Towards Ecocide as an International Crime	318
4.0 Conclusion.....	322
Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises	325
1.0 Introduction.....	325
2.0 Forest Ecosystems and Sustainable Development.....	328
3.0 Restoring Forest Ecosystems for Sustainable Development in Africa ..	331
4.0 Conclusion.....	337
Harnessing Peace, Dialogue, Harmony, and Diplomacy for Effective Mediation	340
1.0 Introduction.....	340
2.0 Defining Peace, Dialogue, Harmony, and Diplomacy	342
3.0 The Role of Peace, Dialogue, Harmony, and Diplomacy in Mediation	345
4.0 Conclusion.....	350
Protecting Our Endangered Species for Sustainability	351
1.0 Introduction.....	351
2.0 Protecting Endangered Species: Promises and Challenges	353
3.0 Conclusion.....	360
Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance	363
1.0 Introduction	363
2.0 Environmental Governance: Challenges and Prospects	366
3.0 Human Rights and Environmental Governance	369
4.0 Role of Markets in Environmental Governance.....	371
5.0 Role of Media in promoting Environmental Governance	374
6.0 Ethics and Environmental Governance	380
7.0 Entrenching the Role of Human Rights, Markets, Media and Ethics in Environmental Governance	385
8.0 Conclusion.....	387
Reconceptualizing the Role of Women Lawyers in Climate Justice	389
1.0 Introduction.....	389
2.0 Conceptualizing Climate Justice.....	391

3.0 The Role of Women Lawyers in Climate Justice: Opportunities and Challenges	395
4.0 Conclusion.....	400
Examining the African Continental Free Trade Area Protocol on Digital Trade: Challenges and Promises.....	402
1.0 Introduction.....	402
2.0 The Place of Digital Trade in Africa	406
3.0 The AfCFTA Protocol on Digital Trade: Challenges and Promises.....	410
4.0 Conclusion.....	414
Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution	416
1.0 Introduction.....	416
2.0 Overview of Arbitration and ADR.....	419
3.0 The Place of ESG in Arbitration and ADR.....	421
4.0 Infusing ESG tenets into Arbitration and ADR	429
5.0 Conclusion.....	433
Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development.....	435
1.0 Introduction	435
2.0 Artificial Intelligence and Sustainable Development: Opportunities and Challenges	438
3.0 Way Forward	447
4.0 Conclusion.....	450
Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability	452
1.0 Introduction	452
2.0 The Paris Agreement and Sustainability	454
3.0 The 2030 Agenda for Sustainable Development and Sustainability	455
4.0 Strengthening the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability: Challenges and Prospects	459
4.1 Financing Mechanisms	461
4.2 Technology	464
4.3 Capacity-Building.....	467
4.4 Tracking Progress.....	467
5.0 Conclusion.....	469
Safeguarding Africa’s Cultural and Natural Heritage for Development .	472
1.0 Introduction.....	472

2.0 Safeguarding Africa’s Cultural and Natural Heritage: Promises and Pitfalls	474
3.0 Way Forward	481
4.0 Conclusion.....	484
Applying Environmental Ethics for Sustainability	486
1.0 Introduction.....	486
2.0 Environmental Ethics and Sustainability.....	488
3.0 Way Forward	494
4.0 Conclusion.....	496
Promoting Sustainable Waste Management for Posterity.....	498
1.0 Introduction.....	498
2.0 Sustainable Waste Management: Opportunities and Challenges.....	500
3.0 Way Forward	508
4.0 Conclusion.....	511
Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa	513
1.0 Introduction.....	513
2.0 The Role of Diplomacy, Peace-Making, and Peace-Keeping in Sustainable Development.....	516
3.0 Maximizing Diplomacy, Peace-Making, and Peace-Keeping for Sustainable Development in Africa.....	521
4.0 Conclusion.....	526
Integrating Natural Resources Management for Efficacy	529
1.0 Introduction.....	529
2.0 Approaches to Natural Resources Management	531
3.0 Integrating Natural Resources Management	536
4.0 Conclusion.....	543
Promoting Justice for People of African Descent through Reparations ...	544
1.0 Introduction.....	544
2.0 The Need for Reparations for People of African Descent.....	547
3.0 Towards Reparatory Justice for People of African Descent	554
4.0 Conclusion.....	556
Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya	558
1.0 Introduction	558
2.0 Food Security and Sustainable Development Goals	562

3.0 Agriculture and Food Production Systems in Kenya: Challenges and Prospects.....	566
4.0 Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya	580
5.0 Promoting Safe and Sustainable Urban-Based Agriculture for Food Security	581
6.0 Diversifying Production and Behavioral Changes Towards Sustainable Practices and Standards.....	583
7.0 Investing in Forest Ecosystem for Enhanced Productivity.....	583
8.0 Investing in the Bottom-up Economic Transformation Agenda.....	584
9.0 Conclusion.....	586
Ensuring Safe and Healthy Work Environments in Africa	588
1.0 Introduction.....	588
2.0 Conceptualizing Safe and Healthy Work Environments	590
3.0 Ensuring Safe and Healthy Work Environments in Africa: Prospects and Challenges	594
4.0 Conclusion.....	600
Promoting Peace and Environmental Security in Africa through Mediation603	
1.0 Introduction.....	603
2.0 Suitability of Mediation in Promoting Peace and Environmental Security in Africa	606
3.0 Promoting Peace and Environmental Security in Africa through Mediation	612
4.0 Conclusion.....	615
Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance	617
1.0 Introduction.....	617
2.0 The Need for Climate Information and Early Warning Systems.....	619
3.0 Way Forward	626
4.0 Conclusion.....	629
Utilizing Alternative Dispute Resolution in Climate Change Disputes ..	631
1.0 Introduction.....	631
2.0 Climate Change Disputes: Causes and Effects.....	633
3.0 Suitability of Alternative Dispute Resolution (ADR) Processes in Climate Change Disputes	639
4.0 Way Forward	644
5.0 Conclusion.....	646

Addressing Chemical Pollution in Kenya for Sustainability	648
1.0 Introduction	648
2.0 Definition and Forms of Chemical Pollution	650
3.0 International and Regional Legislative Framework on Chemical Pollution Control.....	652
3.1 International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996	652
3.2 International Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter, 1972	653
3.3 Convention Relating to Civil Liability in The Field of Maritime Carriage of Nuclear Material, 1971.....	654
3.4 International Convention On Civil Liability for Oil Pollution Damage, 1969	654
3.5 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 1998	654
3.6 Stockholm Convention on Persistent Organic Pollutants, 2001.....	655
3.7 Vienna Convention for The Protection of Ozone Layer, 1985.....	655
3.8 Basel Convention On the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989.....	655
3.9 Bamako Convention On the Ban of the Import into Africa and The Control of TransBoundary Movement and Management of Hazardous Wastes Within Africa, 1991	656
3.10 Treaty Establishing Common Market for Eastern and Southern Africa	657
3.11Treaty Establishing East African Community	658
4.0 Legislative Framework on Chemical Pollution Control in Kenya.....	659
4.1 The Constitution of Kenya 2010.....	659
4.2 Environmental Management and Co-ordination Act, 1999	660
4.3 The Food, Drugs and Chemical Substances Act, Cap 254	663
4.4 The Fertilizers and Animal Foodstuffs Act, Cap 345	664
4.5 The Occupational Safety and Health Act, Cap 236A	665
4.6 The Biosafety Act, Cap 320.....	666
4.7 The Public Health Act, Cap 242	666
4.8 The Nuclear Regulatory Act, Cap 243.....	667
5.0 Toxic Chemicals and Their Impact on Human Rights.....	668
6.0 Addressing Chemical Pollution in Kenya to Safeguard Human Rights.	672
7.0 Conclusion.....	676
 Loss and Damage Fund: A lifeline for Developing Countries?	 677

1.0 Introduction	677
2.0 Understanding the Loss and Damage Agreement: The Background	679
3.0 Loss and Damage Agreement: A lifeline for Developing Countries?	682
4.0 Tackling Climate Change: Making the Loss and Damage Fund Work for Third World Countries and Vulnerable Communities.....	685
5.0 Conclusion.....	693
Enhancing Information Security Management in Online Arbitration and Mediation	695
1.0 Introduction	695
2.0 Information Security Concerns in Online Arbitration and Mediation....	697
3.0 Enhancing Information Security Management in Online Arbitration and Mediation	701
4.0 Conclusion.....	705
Towards Healthy Ecosystems: Addressing Plastic Pollution for Sustainability	707
1.0 Introduction.....	707
2.0 Plastic Pollution Control: Challenges and Prospects	711
3.0 Marine litter and plastic pollution.....	713
4.0 Plastics and Public Health.....	715
5.0 International and Regional Approaches on Plastic Pollution Control....	718
6.0 Towards Healthy Ecosystems: Addressing Plastic for Sustainability	721
7.0 Development of Tailored Country Specific Strategies and National Action Plans.....	722
8.0 Role of Technology.....	723
9.0 Enhanced Public Awareness on Plastic Reuse, Waste Reduction and Recycling	725
10.0 Efficient Waste Management	726
11.0 Role of Economic Policies	726
12.0 Conclusion.....	727
Reference.....	730

Dedication

Dedicated to the idea
that delivering Justice
for Environment Sustainability
is possible

That it is possible
To ensure access to Justice
for
All

And to realize
Real
Sustainable Development
for the weak
And the strong
For Human beings
for the environment

Dedicated to the idea
that
Delivering Justice for the
People, for biodiversity
and for Planet
is an ideal
which is realisable

Dedicated to the ideal
of
Environmental Sustainability

That we must take care
of Mother Earth
for the sake of Today
and Tomorrow

And that we
must not
Pollute and degrade
the Environment
in which we live.

Dedicated to those
who work hard to ensure
that the health
of the Environment
is maintained

Let us give a thought
To those
who give their lives
to protect the
Environment
And to those who
continue to believe
That Delivering Justice
To all
For Environmental Sustainability
is possible

This work is for those
who fight for a
clean Healthy
and sustainable
Environment

And for the conservation
of Biodiversity

Let us give a thought
to the Pollinators
who work day and

night
without pay
and ensure food security
for all
Delivering Justice to them too
is an ideal
whose time has come

Dedicated to those
who know
that Environmental
Social and
Governance Tenets
must be infused
into the
Development
agenda
for sustainability

This book is for
the Peacemakers
who use
Appropriate Dispute Resolution
to
Deliver Justice for all
and to promote
Harmony
Among human beings
And with Nature

This book is for those
who keep hope alive
In the face of degradation
Pollution
Death
And Suffering

To the mother
Who must watch her
Child die
of hunger, disease or injury
In this age and
time
And in a conflict
That
she is not part of
Let us all feel her pain
And do something
about it.
Let us deliver Justice
for her

This book is for
those
who watch the sun rise
And warm the Earth
Knowing
that
Delivering Justice

for Environmental
Sustainability
is not just a dream
It is a
Reality

As real as the rising sun
As welcome as
the warmth of
the sun

This book is for
those who know

that thoughts
ultimately become
reality
And that if we strive
for a green
Tomorrow
it will become a reality

This book is for those
who know
That Climate change
Affects all of us
And that ensuring
Environmental Sustainability
is our
collective
Duty

This book is for those
who will never ever
give up
on the ideal
and idea
of
Delivering Justice
for
Environmental Sustainability

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With humility and gratitude, I thank my maker for allowing me to see this warm bright day. He has enabled me to make a difference in people's lives.

I appreciate those who have held my hand through my long academic journey. Those who tell me that I should never give up; Those who saw potential in me when I could hardly see it. Thank you to those who have made this work possible. I am indebted to the sages at whose feet I learnt.

I acknowledge my readers worldwide. It is a blessing to be able to reach so many in their various languages and discuss a green tomorrow.

I have gone through happy, sunny times in my life. I have also faced tragedy and painful times. I am grateful to those who stood by me in good and trying times. Those who remind me that I should never ever give up and that life is worth living.

I extend my sincere gratitude to James Njuguna Ndungu, Anne Kiramba, Jack Liaduma, Mwati Muriithi, Ngararu Maina and all the staff of Kariuki Muigua & Co. (KMCO) for making this work possible.

Finally, I acknowledge my entire family for supporting me at all times.

We have walked strange and challenging paths together. Thank you for your support. It has made it possible to reach this day and to produce this book for posterity.

Author's Note

This book brings together a collection of my papers under the theme: 'Delivering Justice for Sustainability'.

Justice is at the heart of the Rule of Law. It means many things but at the very least it connotes fairness to all. Justice must be accessible. In the realm of the environment, it connotes both Procedural Justice and Substantive Justice.

Justice also carries with it the concept of moral rightness based on ethics, law, rationality or equity.¹ Justice is the ethical, philosophical ideal that people are to be treated impartially, fairly, properly and reasonably by the law and by arbiters of the law, that laws are to ensure that no harm befalls another and that where harm is alleged, a remedial action is taken.²

This work widens the concept of Environmental Justice to include fair and just treatment of the environment itself. The discourse is both anthropocentric and ecocentric in approach.

Justice in this work is discussed in the context of Sustainability. Sustainability is a social goal for people to coexist on Earth over a long time. It can also be looked at as the notion of meeting our own needs without compromising the ability of future generations to meet their own needs. Sustainability is also looked at from an economic and social perspective.³

The papers covered in this volume mainly focus on delivery of Environmental Justice; Sustainability; Environmental Governance; Conflict Management; Climate Justice; Sustainable Development; Energy Transition and Energy Justice; Green growth and Environmental, Social and Governance (ESG).

¹ Crime Survivors Resource Centre official site
Accessed on 2/6/2024.

² Justice/wex/US Law
<https://www.law.cornell.edu/wex/justice> Accessed on 2/6/2024

³ See Sustainable Development Goals
<https://www.undp.org/sustainable-development-goals>
Accessed on 2/6/2024

This book is aimed at researchers, students and academics who have an interest in Delivering Justice for Sustainable Development.

Hon. Prof. Kariuki Muigua PhD; Ch.Arb; OGW
June 2024

List of Statutes/Legislation/Official Government Documents

Arbitration Act, No. 4 of 1995, Government Printer, Nairobi

Climate Change Act., No. 11 of 2016., Laws of Kenya., Government Printer, Nairobi

Constitution of Kenya, 2010, Government Printer, Nairobi

Energy Act., No. 1 of 2019., Laws of Kenya., Government Printer, Nairobi

Environmental Management and Co-ordination (Waste Management) Regulations, 2006, Legal Notice No. 121

Intergovernmental Relations Act., 2012., Government Printer, Nairobi

Legal Notice No. 86., 'Delineation of Disaster Management Function' Government Printer, Nairobi

Nairobi City County Disaster and Emergency Management Act, 2015; Government Printer, Nairobi

National Museums and Heritage Act, Cap 216, Government Printer, Nairobi

Protection of Traditional Knowledge and Cultural Expressions Act, No. 33 of 2016, Laws of Kenya

Public Health Act, Cap 242, Laws of Kenya

Sustainable Waste Management Act., Cap 387C, Government Printer, Nairobi

Water Act., Cap 372, Government Printer, Nairobi

List of Abbreviations

ADR	Alternative Dispute Resolution
AfCFTA	Agreement Establishing the African Continental Free Trade
AU/NEPAD	African Union's New Partnership for Africa's Development
CEN-SAD	Community of Sahel-Saharan States
COMESA (1993)	Common Market for Eastern and Southern Africa) Treaty
EAC	East African Community
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
ECOWAS	Economic Community of the Western African States
EMCA	Environmental Management and Co-ordination Act
ESG	Environmental, Social, and Governance
GDP	Gross Domestic Product
GHG	Greenhouse Gas
ICT	Information and Communications Technology
IGAD	Intergovernmental Authority on Development
IMO	International Maritime Organisation
IPCC	Intergovernmental Panel on Climate Change
MNCs	Multinational Corporations (
NCIA	Nairobi Centre for International Arbitration
NDCs	National Determined Contributions
OHCHR	United Nations High Commissioner for Human Rights
RECs	Regional Economic Communities -
SADC	Southern African Development Community
SAICM	Strategic Approach to International Chemicals Management
SDGs	Sustainable Development Goals
SDGs	Sustainable Development Goals
UDHR	Universal Declaration of Human Rights
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WHO	the World Health Organisation
WTO	the World Trade Organisation

Harnessing Africa's Natural Resources for Sustainable Development

Abstract

Natural resources play a key role in the Sustainable Development agenda. They lay the foundation of social and economic development. Responsible use of natural resources is therefore key for Sustainable Development. The United Nation's 2030 Agenda for Sustainable Development acknowledges that social and economic development depends on the sustainable use and management of the planet's natural resources. This paper discusses the need to harness Africa's natural resources for Sustainable Development. The paper posits that Africa is endowed with natural resources which can unlock Sustainable Development throughout the continent. It argues that Africa has not effectively harnessed its natural resources for sustainability. The paper examines some of the key challenges in the natural resources sector in Africa and how these challenges hinder the attainment of Sustainable Development. It also proposes reforms towards effectively harnessing Africa's natural resources for Sustainable Development.

1.0 Introduction

Natural resources play a pivotal role in Sustainable Development¹. The use of natural resources has long been considered a fundamental element of both human rights and economic development². Natural resources are often viewed as key assets driving development and wealth creation³. It has been noted that the use of natural resources relates to all three dimensions of sustainability: social justice, environmental conservation, and economic development⁴. The sustainable use of natural resources strives for balance between these dimensions: maintaining the long-term use of resources while maximizing social benefits and minimizing environmental impacts⁵.

¹ Muigua. K., 'Natural Resources and Environmental Justice in Kenya' Glenwood Publishers Limited, 2015

² International Institute for Sustainable Development., 'The Sustainable Use of Natural Resources: The Governance Challenge' Available at <https://www.iisd.org/articles/deep-dive/sustainable-use-natural-resources-governance-challenge> (Accessed on 04/04/2024)

³ Ibid

⁴ Ibid

⁵ Ibid

Harnessing Africa's Natural Resources for Sustainable Development

Natural resources play a vital role in the life of human beings which may be classified as economic, social and cultural⁶. Economically, natural resources are not only a source of food and raw materials but are also a source of income for individuals and the state⁷. Socially, natural resources like water bodies play recreational role amongst others and also contribute to the improvement of the quality of life of individuals⁸. Culturally, it has been noted that communities especially in Africa attach importance to some natural resources that may be revered as shrines, dwelling places for ancestors and sacred sites where rites of passage and other cultural celebrations take place⁹.

The United Nations Environment Programme posits that natural resources are the foundation of social and economic development¹⁰. As a result, abundant natural resources are often regarded as a great advantage for a country's economic and social development, while resource shortage is associated with underdevelopment¹¹. Responsible use of natural resources is therefore key for Sustainable Development. The United Nation's *2030 Agenda for Sustainable Development*¹² acknowledges that social and economic development depends on the sustainable use and management of the planet's natural resources¹³.

This paper discusses the need to harness Africa's natural resources for Sustainable Development. The paper posits that Africa is endowed with natural resources which can unlock Sustainable Development throughout the

⁶ Muigua. K., 'Natural Resources and Environmental Justice in Kenya' Op Cit

⁷ Costanza. R., 'The Ecological, Economic, and Social Importance of the Oceans.' *Ecological Economics*, Volume 31, No. 2 (1999)

⁸ Ibid

⁹ Muigua. K., 'Natural Resources and Environmental Justice in Kenya' Op Cit

¹⁰ United Nations Environment Programme., 'Sustainable Natural Capital' Available at <https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resourceefficiency/sustainable-natural> (Accessed on 04/04/2024)

¹¹ Bridge. G., 'Natural Resources' *International Encyclopedia of Human Geography*, 2009., pp 261-268

¹² United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 04/04/2024)

¹³ Ibid

Harnessing Africa's Natural Resources for Sustainable Development

continent. It argues that Africa has not effectively harnessed its natural resources for sustainability. The paper examines some of the key challenges in the natural resources sector in Africa and how these challenges hinder the attainment of Sustainable Development. It also proposes reforms towards effectively harnessing Africa's natural resources for Sustainable Development.

2.0 Natural Resources and Sustainable Development in Africa: Opportunities and Challenges

Africa is a continent that is rich in natural resources. These resources range from arable land, water, oil, natural gas, minerals, forests and wildlife¹⁴. The continent holds a huge proportion of the world's natural resources, both renewables and non-renewables¹⁵. It has been noted that Africa is home to approximately thirty percent of the world's mineral reserves, eight per cent of the world's natural Gas and twelve per cent of the world's oil reserves¹⁶. In addition, it is estimated that Africa has forty percent of the world's gold and up to ninety percent of its chromium and platinum deposits¹⁷. Further, it has been pointed out that the largest reserves of cobalt, diamonds, platinum and uranium in the world are all in Africa¹⁸. Further, Africa holds almost sixty per cent of the world's arable land and ten percent of the planet's internal renewable fresh water resources¹⁹.

Africa has been classified as a major producer of many key mineral commodities in the world, with bountiful reserves of vital metals and minerals including gold, diamond, cobalt, bauxite, iron ore, coal, and copper available across the continent²⁰. For example, the Democratic Republic of the Congo (DRC) produces over seventy per cent of the world's cobalt; DRC and Zambia

¹⁴ United Nations Environment Programme., 'Our work in Africa' Available at <https://www.unep.org/regions/africa/our-work-africa#:~:text=Collectively%2C%20the%20continent%20has%20a,oriented%2C%20climate%20resilient%20and%20sustainable> (Accessed on 05/04/2024)

¹⁵ Ibid

¹⁶ Ibid

¹⁷ Ibid

¹⁸ Ibid

¹⁹ Ibid

²⁰ Statista., 'Mining Industry in Africa - Statistics & Facts.' Available at <https://www.statista.com/topics/7205/mining-industry-in-africa/> (Accessed on 05/04/2024)

Harnessing Africa's Natural Resources for Sustainable Development

together supply nearly ten per cent of global copper; Botswana and South Africa produce a significant amount of diamond; while Ghana and South Africa are significantly endowed with gold deposits²¹. The continent is also emerging as a production hub for 'rare earths' with significant deposits being available in the continent especially in Eastern and Southern countries²². Rare earths have direct technical applications and can be used to facilitate the production and refinement of common high-technology products including smartphones and monitors to energy conversion systems such as wind turbines, photovoltaic panels and electrical machinery and even military equipment including lasers and radar²³. It has been noted that access to a steady supply of rare earth elements is key to the national security and economic viability of many countries across the world²⁴.

Africa's natural resources potential is therefore enormous. Natural resources comprise the continent's largest form of wealth²⁵. It has been noted that in most African countries, natural capital accounts for approximately fifty percent of total wealth²⁶. Harnessing these resources can play a key role in fostering Sustainable Development in Africa. Natural resources play a vital role in financing social amenities, infrastructure, energy, industry, and governance among other key sectors of African economies²⁷. The abundant natural resources in Africa are therefore able to trigger social and economic development²⁸. It has been argued that with the right approach, Africa's natural resources can be used to make the transformation from low-value economies that rely on exports of primary commodities to ones with a

²¹ Ibid

²² Italian Institute for International Political Studies., 'The Scramble for Africa's Rare Earths: China is not Alone.' Available at <https://www.ispionline.it/en/publication/scramble-africas-rare-earths-chinanotalone-30725> (Accessed on 05/04/2024)

²³ Ibid

²⁴ Ibid

²⁵ United Nations Environment Programme., 'Our work in Africa' Op Cit

²⁶ Ibid

²⁷ Ibid

²⁸ Muigua. K., Wamukoya. D., & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Glenwood Publishers Limited, 2015

Harnessing Africa's Natural Resources for Sustainable Development

substantial labor-intensive manufacturing base²⁹. The ongoing discoveries of natural resource in the continent such as oil, minerals, and gas offer a new source of revenue for advancing human development and supporting African countries on the path to self-sufficiency³⁰. Revenues from such natural resources can be directed towards improving social outcomes as well as creating more and better jobs and business opportunities³¹.

It has been argued that natural capital could be the key to unlocking Africa's development potential and for pulling millions out of the poverty trap³². According to the United Nations Environment Programme, developing appropriate strategies and partnerships that are truly responsive to country needs can enable Africa tap into its natural capital base and use it as a gateway to investments in reversing environmental losses and accelerating development³³. UNEP further notes that Africa's prudent harnessing of natural resources through value addition can ensure timely, prioritized and adequate financing for programmes aimed at achieving sustainable socio-economic development³⁴.

The need to sustainably harness natural resources for development is enshrined under the United Nation's *2030 Agenda for Sustainable Development*³⁵. It sets out the need to protect the planet from degradation through sustainably

²⁹ African Development Bank Group., 'Africa's Natural Resources: The Paradox of Plenty.' Available at <https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/%28E%29%20AfricanBank%202007%20Ch4.pdf> (Accessed on 05/04/2024)

³⁰ African Development Bank Group., 'Delivering on the Promise: Leveraging Natural Resources to Accelerate Human Development in Africa' Available at <https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/african-natural-resources-centre/delivering-on-the-promise-leveraging-natural-resources-to-accelerate-human-development-in-africa> (Accessed on 05/04/2024)

³¹ Ibid

³² United Nations Environment Programme., 'Is Africa's Natural Capital the Gateway to Finance Its Development?' Available at <https://www.unep.org/news-and-stories/story/africas-natural-capital-gateway-finance-its-development> (Accessed on 05/04/2024)

³³ Ibid

³⁴ Ibid

³⁵ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' Op Cit

Harnessing Africa's Natural Resources for Sustainable Development

managing its natural resources so that it can support the needs of the present and future generations³⁶. The 2030 Agenda for Sustainable Development acknowledges some of the major challenges in the natural resources sector including natural resource depletion and adverse impacts of environmental degradation including desertification, drought, land degradation, freshwater scarcity and loss of biodiversity³⁷. It also acknowledges that social and economic development depends on the sustainable use and management of the planet's natural resources³⁸. The 2030 Agenda urges all countries to embrace sustainable management and efficient use of natural resources for development³⁹.

Africa's union *Agenda 2063*⁴⁰ also sets out the importance of harnessing the continent's natural resources for Sustainable Development. Agenda 2063 acknowledges that Africa's natural resources play a critical role for vast segments of Africa's population who depend on the continent's biodiversity, forests and land for their livelihoods directly or indirectly⁴¹. In addition, it points out that Africa's natural resources also make a direct contribution to economic development through tourism, agriculture, logging among other activities⁴². One of the key aspirations of Agenda 2063 is fostering a prosperous Africa based on inclusive growth and Sustainable Development⁴³. This aspiration sets out the goal of transforming Africa's economies through beneficiation from the continent's natural resources⁴⁴. It also seeks to enhance environmentally sustainable and climate resilient economies and communities in Africa through sustainable natural resources management⁴⁵. It has been noted that using Africa's natural capital as a getaway to wealth creation and investments will allow for actions towards achievement of the United Nations

³⁶ Ibid

³⁷ Ibid

³⁸ Ibid

³⁹ Ibid

⁴⁰ Africa Union., 'Agenda 2063' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 05/04/2024)

⁴¹ Ibid

⁴² Ibid

⁴³ Ibid

⁴⁴ Ibid

⁴⁵ Ibid

Harnessing Africa's Natural Resources for Sustainable Development

2030 Agenda for Sustainable Development and Sustainable Development Goals (SDGs), and the Africa Union's Agenda 2063 through financial, economic, social and environmental contribution⁴⁶.

The *Cairo Declaration*⁴⁷ also sets out the need to harness Africa's natural resources for Sustainable Development and poverty eradication. The Declaration acknowledges that Africa's natural capital is crucial to supporting human, animal and plant life, in addition to its considerable capacity for wealth creation⁴⁸. It urges African countries to increase productivity in the use of natural resources in enhancing economic and social benefits for poverty reduction, job creation and Sustainable Development⁴⁹. In addition, it calls upon African countries to integrate natural resources into national planning in order to secure their sustainability and contribution to economic development and environmental stability⁵⁰. It identifies priority areas for sustainable use and management of natural resources in Africa including disaster risk reduction, combating desertification, addressing air pollution and hazardous wastes, and confronting climate change⁵¹.

The *Gaborone Declaration for Sustainability in Africa*⁵² also notes that the historical pattern of natural resources exploitation in Africa has failed to promote sustained growth, environmental integrity and improved social capital. It notes that economic growth and human well-being in Africa will be threatened if concerted actions are not undertaken to halt and reverse the degradation and loss of healthy ecosystems and biodiversity, and to enhance

⁴⁶ United Nations Environment Programme., 'Our work in Africa' Op Cit

⁴⁷ Cairo Declaration on Managing Africa's Natural Capital for Sustainable Development and Poverty Eradication., Available at <https://nairobi-convention.org/clearinghouse/sites/default/files/Cairo%20Declaration%20on%20Managing%20Africa%E2%80%99s%20Natural%20Capital%20for%20Sustainable%20Development%20and%20Poverty%20Eradication.pdf> (Accessed on 05/04/2024)

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ Ibid

⁵² Gaborone Declaration for Sustainability in Africa., Available at <https://www.cbd.int/doc/champions/gaborone-declaration-botswana-en.pdf> (Accessed on 05/04/2024)

Harnessing Africa's Natural Resources for Sustainable Development

society's ability to adapt to climate change and environmental risks and scarcities⁵³. In order to ensure the contribution of natural capital to sustainable economic growth, the Declaration encourages African countries to integrate the value of natural capital into national accounting and corporate planning and reporting processes, policies, and programmes⁵⁴. It also urges African countries to build social capital and reduce poverty by transitioning agriculture, extractive industries, fisheries and other natural capital uses to practices that promote sustainable employment, food security, sustainable energy and the protection of natural capital through protected areas and other mechanisms⁵⁵. The Declaration also requires African countries to embrace ecosystem restoration measures, as well as actions that mitigate stresses on natural capital⁵⁶.

Despite the importance of natural resources in the Sustainable Development agenda in Africa, it has been noted that a significant share of natural resources in Africa is used unsustainably while others are lost through illegal activities, meaning that the stream of benefits generated from these resources is being reduced over time⁵⁷. According to UNEP, Africa loses an estimated USD 200 billion annually of its natural capital through illicit financial flows, illegal mining, illegal logging, the illegal trade in wildlife, unregulated fishing and environmental degradation and loss among others⁵⁸. It has further been pointed out that natural resources industries in Africa, and especially extractives, have developed as 'enclave economies', generating wealth that is exported rather than shared, or ploughed into the areas where it is needed most, in meeting human development challenges and building infrastructure⁵⁹. Agenda 2063 also notes that the continent's natural resources such as biodiversity, land and forests are facing increasing challenges including biodiversity loss, land degradation, desertification, and

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷ United Nations Environment Programme., 'Our work in Africa' Op Cit

⁵⁸ Ibid

⁵⁹ African Development Bank Group., 'Africa's Mineral Wealth: A Blessing or a Curse?.' Available at <https://blogs.afdb.org/this-is-africas-hour/post/africas-mineral-wealth-a-blessing-or-a-curse-12336> (Accessed on 05/04/2024)

Harnessing Africa's Natural Resources for Sustainable Development

deforestation⁶⁰. It has also been pointed out that the environmental impacts of extracting natural resources in Africa have impeded the Sustainable Development of the sector⁶¹. In some African countries, resource extraction has been associated with economic stagnation, lack of adequate capacity, including capital, skills and technology, and weak democracy⁶². Extraction of natural resources in Africa is also associated with resource-based conflicts, environmental degradation and human rights violations⁶³. It is necessary to address these concerns in order to effectively harness Africa's natural resources for Sustainable Development.

3.0 Way Forward

In order to effectively harness Africa's natural resources for Sustainable Development, it is necessary to foster sustainable investments in the natural resources sector⁶⁴. Extraction of natural resources in Africa including oil, gas, and other minerals is mostly conducted by Multinational Corporations (MNCs) which have been accused of failing to comply with sustainable responsible exploitation of resources to support environmental conservation and sustainable growth and development⁶⁵. The activities of some of the MNCs operating in Africa have resulted in environmental degradation, conflicts, and human rights abuses⁶⁶. In addition, it has been noted that MNCs

⁶⁰ Africa Union., 'Agenda 2063' Op Cit

⁶¹ Abe. O., 'Leveraging Natural Resources for Sustainable Development in Africa' Available at <https://www.afronomicslaw.org/2019/07/30/leveraging-natural-resources-for-sustainable-development-in-africa> (Accessed on 05/04/2024)

⁶² Ibid

⁶³ Muigua. K., 'Exploited, Poor and Dehumanised: Overcoming the Resource Curse in Africa.' Available at <https://kmco.co.ke/wp-content/uploads/2020/05/Exploited-Poor-and-Dehumanised.pdf> (Accessed on 05/04/2024)

⁶⁴ Muigua. K., 'Multinational Corporations, Investment and Natural Resource Management in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2018/11/Multinational-Corporations-Investment-and-Natural-Resource-Management-in-Kenya-Kariuki-Muigua-November-2018.pdf> (Accessed on 05/04/2024)

⁶⁵ Ajibade, L.T & Awomuti, A.A. 'Petroleum Exploitation or Human Exploitation? An Overview of Niger Delta Oil Producing Communities in Nigeria' *African Research Review* Vol. 3 (1), 2009. Pp. 111-124

⁶⁶ Ibid

Harnessing Africa's Natural Resources for Sustainable Development

often implement various strategies such as legitimization, transfer pricing and tax avoidance to deprive African countries well-endowed in natural resources from benefiting fully from their legitimate, mandated and legal share of their natural resource endowments⁶⁷. It is therefore necessary for African countries to review and enter into favourable resource extraction agreements with foreign Multinational Corporations (MNCs) operating in the continent in order to safeguard the national interests as far as benefit sharing and economic growth is concerned⁶⁸. There is need for such agreements to ensure respect for human rights, compliance with national laws including environmental conservation, nationalization of property or revocation of contracts in case of breach of obligations by MNCs and adherence to Environmental, Social and Governance (ESG) requirements⁶⁹.

It is also necessary to embrace the idea of sustainable mining in Africa⁷⁰. Sustainable mining aims to optimize environmental performance with economic and social impact of mining activities⁷¹. Sustainable mining is of utmost importance in Africa in order to ensure that the abundant mineral resources in the continent are able to trigger social and economic development⁷². Embracing sustainable mining can help Africa harness its mineral resources to unlock economic and social development while fostering

⁶⁷ Henri. A., 'Natural Resources Curse: A Reality in Africa.' *Resources Policy*., Volume 63, October 2019

⁶⁸ Muigua. K., 'Exploited, Poor and Dehumanised: Overcoming the Resource Curse in Africa.' Op Cit

⁶⁹ Muigua. K., 'Embracing Environmental, Social and Governance (ESG) Principles for Sustainable Development in Kenya.' Available at <https://kmco.co.ke/wp-content/uploads/2022/07/EmbracingESG-Principles-for-Sustainable-Development-in-Kenya.pdf> (Accessed on 05/04/2024)

⁷⁰ Muigua. K., 'Embracing Sustainable Mining in Africa' Available at <https://kmco.co.ke/wp-content/uploads/2023/10/Embracing-Sustainable-Mining-in-Africa.pdf> (Accessed on 05/04/2024)

⁷¹ Pan African Resources., 'Sustainable Mining.' Available at <https://www.panafricanresources.com/sustainablemining/#:~:text=Sustainable%20mining%20refers%20to%20the,generations%20can%20also%20be%20me> t (Accessed on 05/04/2024)

⁷² Muigua. K., Wamukoya. D., & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

Harnessing Africa's Natural Resources for Sustainable Development

environmental conservation and confronting the threat of climate change⁷³. The ideal of sustainable mining in the continent is set out in the *Africa Mining Vision*⁷⁴ which seeks to achieve transparent, equitable and optimal exploitation of mineral resources in Africa in order to underpin broad-based sustainable growth and socio-economic development. The Africa Mining Vision recognizes the need for a sustainable and well-governed mining sector in Africa that effectively garners and deploys resource rents and that is safe, healthy, gender and ethnically inclusive, environmentally friendly, socially responsible and appreciated by surrounding communities⁷⁵. The African Mining Vision identifies opportunities for sustainable mining practices in Africa and the need to uphold the principle of Free, Prior and Informed Consent (FPIC) for mining-affected communities in order to effectively address the social and environmental impacts of mining⁷⁶. It is therefore necessary for African countries to actualize the Africa Mining Vision and embrace sustainable mining practices such as sound labour practices in the mining sector, community participation and engagement while undertaking mining activities, and environmental conservation⁷⁷. Realizing sustainable mining can enable Africa to effectively harness its mineral resources for Sustainable Development⁷⁸.

In addition, it is vital for Africa to harness its green minerals for sustainability⁷⁹. Africa holds significant deposits of green minerals that are key

⁷³ Africa Business., 'African Sustainable Mining Piques Interest of Global Players.' Available at <https://african.business/2023/09/apo-newsfeed/african-sustainable-mining-piques-interest-of-globalplayers#:~:text=While%20clean%2Denergy%20mines%20are,large%2Dscale%20projects%20in%20South> (Accessed on 05/04/2024)

⁷⁴ Africa Union., 'Africa Mining Vision.' Available at https://au.int/sites/default/files/documents/30995-doc-africa_mining_vision_english_1.pdf (Accessed on 05/04/2024)

⁷⁵ Ibid

⁷⁶ Ibid

⁷⁷ Muigua. K., 'Embracing Sustainable Mining in Africa' Op Cit

⁷⁸ Ibid

⁷⁹ SDG Action., 'From Resource Curse to Blessing: Harnessing Africa's Green Minerals' Available at <https://sdg-action.org/from-resource-curse-to-blessing-harnessing-africas-green-minerals/#:~:text=Africa's%20green%20minerals%20include%20cobalt,the%20tip%20of%20the%20iceberg.> (Accessed on 05/04/2024)

Harnessing Africa's Natural Resources for Sustainable Development

to the global transition to a net-zero future⁸⁰. These minerals include cobalt, lithium, copper, manganese, graphite, and vanadium among others⁸¹. They are useful in making electric vehicle batteries and solar panels which are key in replacing fossil fuels in the global energy mix⁸². It has been asserted that Africa can tap into opportunities presented by the African Continental Free Trade Area to develop regional value chains for its green minerals⁸³. Investing in training and capacity- building is also key in realizing the full benefits of such minerals⁸⁴. Harnessing Africa's green minerals can foster decarbonization of African economies and strengthen the continent's response towards climate change⁸⁵.

It is also imperative for Africa to harness its renewable sources of energy to fast- track energy transition in the continent towards Sustainable Development⁸⁶. The continent is endowed with renewable sources of energy such as wind, solar, hydro, bioenergy, ocean tidal waves, and geothermal energy sources⁸⁷. These sources of energy have become increasingly important as the world faces the challenge of mitigating the negative impacts of climate change and reducing the dependence on finite and polluting fossil fuels⁸⁸. Africa has the potential to build a cleaner and greener future by increasing access to clean energy through sustainable and environment friendly solutions such as green and renewable sources of energy in order to ensure that the

⁸⁰ Ibid

⁸¹ Ibid

⁸² Ibid

⁸³ United Nations., 'African Countries Urged to Prioritize Green Value Chains for Minerals' Available at <https://www.un.org/africarenewal/magazine/february-2023/african-countries-urged-prioritize-green-value-chains-minerals> (Accessed on 05/04/2024)

⁸⁴Ibid

⁸⁵ Ibid

⁸⁶ Muigua. K., 'Fostering Energy Justice in Africa' Available at <https://kmco.co.ke/wp-content/uploads/2023/11/Fostering-Energy-Justice-in-Africa.pdf> (Accessed on 05/04/2024)

⁸⁷ Ibid

⁸⁸ Verma. A., 'The Role of Renewable Energy Technologies in Sustainable Development.' Available at <https://timesofindia.indiatimes.com/blogs/voices/the-role-of-renewable-energy-technologies-insustainable-development/> (Accessed on 05/04/2024)

Harnessing Africa's Natural Resources for Sustainable Development

region is not left behind as the world moves towards zero-emission fuels⁸⁹. Exploiting the vast reserve of renewable energy sources on the Continent could help increase electricity generation capacity in Africa and accelerate the transition to low-carbon and zero-emission energy sources⁹⁰. It is therefore crucial to harness Africa's renewable sources of energy for Sustainable Development.

Finally, there is need to strengthen environmental governance in Africa⁹¹. Sound management of the environment and natural resources in a sustainable and transparent manner can be the engine for Sustainable Development as well as a platform for peace and justice⁹². Unsustainable exploitation of Africa's natural resources by its growing population, and the laxity by authorities to effect and implement sound regulations to tame abuse and over exploitation of these resources is creating environmental challenges in the continent including deforestation, land degradation, desertification, loss of biodiversity, pollution, and climate change⁹³. Embracing sound environmental governance is therefore key in ensuring sustainable use and management of Africa's natural resources for development⁹⁴. It is therefore necessary to strengthen environmental governance in Africa by promoting environmental rule of law at national and regional levels, strengthening national environmental legal and institutional frameworks, and embracing civic and community engagement in environmental management⁹⁵.

The foregoing among other approaches are vital in harnessing Africa's natural resources for Sustainable Development.

⁸⁹ United Nations Conference on Trade and Development., 'Improving Energy Access Key to Meeting Development Goals in Africa.' Available at <https://unctad.org/news/improving-energy-access-keymeeting-development-goals-africa> (Accessed on 05/04/2024)

⁹⁰ Ibid

⁹¹ Muigua. K., 'Embracing Sound Environmental Governance in Africa' Available at <https://kmco.co.ke/wp-content/uploads/2024/01/Embracing-Sound-Environmental-Governance-in-Africa-1.pdf> (Accessed on 05/04/2024)

⁹² Muigua. K., 'Securing Our Destiny through Effective Management of the Environment.' Glenwood Publishers Limited, 2020

⁹³ Muigua. K., 'Embracing Sound Environmental Governance in Africa' Op Cit

⁹⁴ Ibid

⁹⁵ Ibid

4.0 Conclusion

Natural resources play a key role in Sustainable Development. They are the foundation of social and economic development⁹⁶. Abundance of natural resources is associated with a country's economic and social development, while resource shortage is associated with underdevelopment⁹⁷. Africa is endowed with natural resources including arable land, water, oil, natural gas, minerals, forests and wildlife which can trigger Sustainable Development in the continent⁹⁸. Natural resources could be the key to unlocking Africa's development potential and for pulling millions out of the poverty trap⁹⁹. Prudent harnessing of natural resources through value addition can ensure timely, prioritized and adequate financing for programmes aimed at achieving sustainable socio-economic development in Africa¹⁰⁰. However, the continent's natural resources have not been effectively harnessed and are facing increasing challenges including biodiversity loss, land degradation, desertification, and deforestation¹⁰¹. It is imperative to efficiently harness Africa's natural resources for development. This can be realized through fostering sustainable investments in the natural resources sector¹⁰²; embracing sustainable mining¹⁰³; harnessing Africa's green minerals for sustainability¹⁰⁴; promoting renewable sources of energy to fast-track energy transition in Africa¹⁰⁵; and strengthening environmental governance¹⁰⁶. It is necessary and possible to effectively harness Africa's natural resources for Sustainable Development.

⁹⁶ United Nations Environment Programme., 'Sustainable Natural Capital' Op Cit

⁹⁷ Bridge. G., 'Natural Resources' Op Cit

⁹⁸ United Nations Environment Programme., 'Our work in Africa' Op Cit

⁹⁹ United Nations Environment Programme., 'Is Africa's Natural Capital the Gateway to Finance Its Development?' Op Cit

¹⁰⁰ Ibid

¹⁰¹ Africa Union., 'Agenda 2063' Op Cit

¹⁰² Muigua. K., 'Multinational Corporations, Investment and Natural Resource Management in Kenya' Op Cit

¹⁰³ Muigua. K., 'Embracing Sustainable Mining in Africa' Op Cit

¹⁰⁴ SDG Action., 'From Resource Curse to Blessing: Harnessing Africa's Green Minerals' Op Cit

¹⁰⁵ Muigua. K., 'Fostering Energy Justice in Africa' Op Cit

¹⁰⁶ Muigua. K., 'Embracing Sound Environmental Governance in Africa' Op Cit

Bolstering Water Governance for Sustainability

Abstract

Achieving sustainability has become a clarion call across the globe in light of environmental, economic, and social challenges facing the planet including the triple planetary crisis of climate change, biodiversity loss, and pollution. Fostering sustainability has therefore emerged as an ideal towards establishing harmony between humanity and nature. One of the key factors in realizing sustainability is water. Water can unlock Sustainable Development. Consequently, effective and efficient governance of water and water resources is necessary for sustainability. This paper critically discusses the need for good governance of water and water resources. It argues that water plays a key role in Sustainable Development. The paper critically examines the role of water and water resources in sustainability. It also interrogates the current governance practices in the water sector and points out some of the key concerns. In addition, the paper suggests best practices towards bolstering water governance for sustainability.

1.0 Introduction

With the planet facing mounting problems including environmental challenges such as climate change, pollution, and loss of biodiversity together with issues of poverty, increasing disparity between societies and the tensions brought by social inequalities, the need for sustainability has become urgent¹. According to the United Nations Environment Programme (UNEP), environmental problems facing the planet including the triple planetary crisis of climate change, biodiversity loss, and pollution have heightened the importance of forging a new relationship between people and the planet towards achieving sustainability². Fostering sustainability has therefore emerged as an ideal towards establishing harmony between humanity and nature³.

¹ Giovannoni, E., & Fabietti, G., 'What Is Sustainability? A Review of the Concept and Its Applications.' In: Busco, C., Frigo, M., Riccaboni, A., Quattrone, P. (eds) Integrated Reporting. Springer, Cham. Available at https://doi.org/10.1007/978-3-319-02168-3_2 (Accessed on 20/03/2024)

² United Nations Environment Programme., 'The Triple Planetary Crisis: Forging a New Relationship Between People and the Earth' Available at <https://www.unep.org/news-and-stories/speech/tripleplanetary-crisis-forging-new-relationship-between-people-and-earth> (Accessed on 20/03/2024)

³ Ibid

Bolstering Water Governance for Sustainability

The idea of sustainability entails creating and maintaining the conditions under which humanity and nature can exist in productive harmony to support present and future generations⁴. This is well captured under the concept of Sustainable Development which seeks to promote development that meets the needs of the present without compromising the ability of future generations to meet their own needs⁵. It aims to achieve sustainability by promoting environmental protection, economic development and social progress⁶. According to the United Nations, Sustainable Development requires an integrated approach that takes into consideration environmental concerns along with economic and social development⁷.

Sustainable Development has been embraced as the global blueprint for sustainability as enshrined under the United Nation's *2030 Agenda for Sustainable Development*⁸. The Agenda represents a shared blue print for peace and prosperity for people and the planet in the quest towards the ideal of Sustainable Development⁹. It envisions attainment of the ideal of Sustainable Development through 17 Sustainable Development Goals (SDGs) which seek to strike a balance between social, economic and environmental facets of sustainability¹⁰.

⁴ United States Environmental Protection Agency., 'What is Sustainability.' Available at <https://www.epa.gov/sustainability/learn-about-sustainability> (Accessed on 20/03/2024)

⁵ World Commission on Environment and Development., 'Our Common Future.' Oxford, (Oxford University Press, 1987)

⁶ Fitzmaurice. M., 'The Principle of Sustainable Development in International Development Law.' *International Sustainable Development Law.*, Vol 1

⁷ United Nations., 'Sustainability' Available at <https://www.un.org/en/academic-impact/sustainability> (Accessed on 20/03/2024)

⁸ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 20/03/2024)

⁹ Ibid

¹⁰ Ibid

Bolstering Water Governance for Sustainability

One of the key factors in realizing sustainability is water¹¹. It has been argued that water can unlock Sustainable Development¹². Consequently, effective and efficient governance of water and water resources is necessary for sustainability¹³. This paper critically discusses the need for good governance of water and water resources. It argues that water plays a key role in Sustainable Development. The paper critically examines the role of water and water resources in sustainability. It also interrogates the current governance practices in the water sector and points out some of the key concerns. In addition, the paper suggests best practices towards bolstering water governance for sustainability.

2.0 Water and Sustainable Development

Water and water resources play a key role in Sustainable Development. It has been noted that the Sustainable management of water resources and access to safe water and sanitation are essential for unlocking economic growth and productivity, and provide significant leverage for existing investments in health and education¹⁴. According to the United Nations, water is at the core of Sustainable Development and is critical for socio-economic development, healthy ecosystems and for survival of humanity¹⁵. It further opines that water is vital for reducing the global burden of disease and improving the health, welfare and productivity of populations¹⁶. Further, water is also at the heart of adaptation to climate change, serving as the crucial link between the climate system, human society and the environment¹⁷.

¹¹ United Nations Environment Programme, 'Goal 6: Clean Water and Sanitation' available at <https://www.unep.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-6>

¹² Ibid

¹³ Ibid

¹⁴ United Nations Environment Programme, 'Goal 6: Clean Water and Sanitation' Op Cit

¹⁵ United Nations., 'Water and Sustainable Development' Available at https://www.un.org/waterforlifedecade/water_and_sustainable_development.shtml (Accessed on 20/03/2024)

¹⁶ Ibid

¹⁷ Ibid

Bolstering Water Governance for Sustainability

It has been argued that water is central in realizing all the 17 SDGs¹⁸. For example access to water plays a role in reducing poverty by removing barriers to economic growth for individuals and societies¹⁹; enhances food security by supporting agriculture and other food production activities²⁰; fosters good health and well-being by improving public health; enhances energy production and access to clean and affordable energy²¹; promotes economic growth²²; and strengthens climate change mitigation and adaptation measures²³. As a result, it has been noted that water affects the entire Sustainable Development agenda²⁴. It is embedded in almost all the SDGs especially those dealing with food, health, the environment and energy²⁵. Attainment of the SDGs is therefore only plausible where the goal relating to water is achieved²⁶.

Lack of access to water on the other hand undermines Sustainable Development²⁷. It has been noted that water shortages undercut food security and the incomes of rural farmers while improving water management makes national economies, the agriculture and food sectors more resilient to rainfall variability and able to fulfil the needs of growing population²⁸. Water scarcity has affected the socio-economic development agenda including food security, access to health, education, and energy in most cases resulting in underdevelopment especially in arid and semi-arid areas²⁹.

¹⁸ SIWL, 'Water is Central in Achieving all 17 SDGs. But How?' Available at <https://siwi.org/latest/water-is-central-in-achieving-all-17-sdgs-but-how/> (Accessed on 20/03/2024)

¹⁹ Ibid

²⁰ Ibid

²¹ Ibid

²² Ibid

²³ Ibid

²⁴ Ait-Kadi.M., 'Water for Development and Development for Water: Realizing the Sustainable Development Goals (SDGs) Vision' *Aquatic Procedia* 6 (2016) 106 – 110

²⁵ Ibid

²⁶ Ibid

²⁷ United Nations Environment Programme, 'Goal 6: Clean Water and Sanitation' Op Cit

²⁸ Ibid

²⁹ Biswas. A., 'Water for Sustainable Development in the 21st Century: A Global Perspective' available at <https://thirdworldcentre.org/wp->

Bolstering Water Governance for Sustainability

The role of water in Sustainable Development is acknowledged under the United Nation's 2030 Agenda for Sustainable Development³⁰. SDG 6 seeks to ensure availability and sustainable management of water and sanitation for all towards Sustainable Development³¹. It sets out several targets towards realizing this goal including achieving universal and equitable access to safe and affordable drinking water for all³²; improving water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse of water globally³³; increasing water-use efficiency across all sectors and ensuring sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity³⁴; implementing integrated water resources management at all levels, including through transboundary cooperation as appropriate³⁵; protecting and restoring water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes³⁶; expanding international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies³⁷; and supporting and strengthening the participation of local communities in improving water and sanitation management³⁸.

It has been argued that the inclusion SDG 6 in the Sustainable Development agenda recognizes that water is at the heart of all aspects of Sustainable

<content/uploads/2015/05/Water-for-sustainable-development-in-the-21st-century.pdf> (Accessed on 20/03/2024)

³⁰ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

³¹ Ibid

³² Ibid

³³ Ibid

³⁴ Ibid

³⁵ Ibid

³⁶ Ibid

³⁷ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

³⁸ Ibid

Bolstering Water Governance for Sustainability

Development³⁹. According to UNEP, SDG 6 goes beyond drinking water, sanitation and hygiene to also address the quality and sustainability of water resources, which are critical to the survival of people and the planet⁴⁰. The 2030 Agenda for Sustainable Development therefore recognizes the centrality of water and water resources to Sustainable Development and the vital role that improved drinking water, sanitation and hygiene play in progress in other areas, including health, education and poverty reduction⁴¹.

At a regional level, Africa Union's *Agenda 2063*⁴² recognizes the role of water for the Sustainable Development of Africa. Agenda 2063 notes that despite the presence of huge fresh water resources, large rivers and lakes (including Rivers Congo, Nile, Zambezi and Niger and Lake Victoria), Africa still faces the problem of water scarcity⁴³. Agenda 2063 seeks to enhance equitable and sustainable use and management of water and water resources for socio-economic development, regional cooperation and conservation of the environment in Africa⁴⁴.

Water is therefore critical in the Sustainable Development agenda. It is therefore necessary to bolster water governance for sustainability. It has been noted that efficient water management can unlock Sustainable Development⁴⁵. It is therefore necessary to strengthen water governance at all levels in order to foster sustainability⁴⁶.

³⁹ Ait-Kadi.M., 'Water for Development and Development for Water: Realizing the Sustainable Development Goals (SDGs) Vision' Op Cit

⁴⁰ United Nations Environment Programme, 'Goal 6: Clean Water and Sanitation' Op Cit

⁴¹ Ibid

⁴² Africa Union., 'Agenda 2063: The Africa we Want' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 20/03/2024)

⁴³ Ibid

⁴⁴ Ibid

⁴⁵ Biswas. A., 'Water for Sustainable Development in the 21st Century: A Global Perspective' Op Cit

⁴⁶ Ibid

3.0 Water Governance: Opportunities and Challenges

Water governance refers to the political, social, economic, and administrative systems that influence the use and management of water⁴⁷. It has been asserted that water governance is essentially about who gets what water, when and how, and who has the right to water, its related services, and their benefits⁴⁸. Further, it has been posited that water governance is concerned with those political, social and economic organisations and institutions (and their relationships), which are important for water development and management⁴⁹. It also comprises mechanisms, processes, and institutions through which all involved stakeholders, including citizens and interest groups, articulate their priorities, exercise their legal rights, meet their obligations and solve their differences relating to water⁵⁰.

According to the United Nations Development Programme (UNDP), the representation of various interests in water-related decision-making and the role of power and politics are important components to consider when analysing water governance dynamics⁵¹. Further, it has been pointed out that given the complexities of water use within societies, developing, allocating and managing it equitably and efficiently and ensuring environmental sustainability requires that the disparate voices are heard and respected in decisions over common waters and use of scarce financial and human resources⁵². As a result, effective governance of water resources and water service delivery requires the combined commitment of the state and various

⁴⁷ SIWI., 'What is Water Governance?' Available at <https://siwi.org/undp-siwi-water-governance-facility/what-is-water-governance#:~:text=Water%20governance%20is%20one%20of,influence%20water's%20use%20and%20management> (Accessed on 21/03/2024)

⁴⁸ Ibid

⁴⁹ Rogers. P., & Hall. A., 'Effective Water Governance' Available at <http://vandensnamai.eu/wp-content/uploads/2015/01/TEC-7.pdf> (Accessed on 21/03/2024)

⁵⁰ Tortajada, C., 'Water Governance: Some Critical Issues,' *International Journal of Water Resources Development*, Vol. 26, No.2, 2010, pp.297-307, p. 298.

⁵¹ United Nations Development Programme., 'Assessing Water Governance' Available at <https://www.undp.org/sites/g/files/zskgke326/files/publications/Users%20Guide%20on%20Assessing%20Water%20Governance1.pdf> (Accessed on 21/03/2024)

⁵² Rogers. P., & Hall. A., 'Effective Water Governance' Op Cit

Bolstering Water Governance for Sustainability

groups in civil society, particularly at local or community levels, as well as the private sector⁵³. It has been noted that effective water governance has several dimensions which are: the *social dimension*, which focuses on equity of access to and use of water resources and includes issues such as the equitable distribution of water resources and services among various social and economic groups and its effects on society⁵⁴; *economic dimension*, which highlights efficiency in water allocation and use⁵⁵; *political dimension*, which focuses on providing stakeholders with equal rights and opportunities to take part in various decision-making processes⁵⁶; and *environmental dimension*, which emphasizes sustainable use of water and related ecosystem services(Emphasis added)⁵⁷.

It has been argued that how societies choose to govern their water resources and services has profound impacts on people's livelihood and the sustainability of such resources and services⁵⁸. For example, access to water is a matter of daily survival and can in many cases help to break the vicious circle of poverty⁵⁹. Improving water governance is therefore necessary in alleviating global poverty⁶⁰. Sound governance of water resources is also essential for the attainment of the SDGs⁶¹.

The need for sound water governance was reaffirmed during the *International Conference on Water and the Environment (Dublin Conference)*⁶². One of the key instruments that emerged from the conference is the *Dublin Statement*⁶³ which recognizes that concerted actions are needed to reverse the present trends in

⁵³ Ibid

⁵⁴ United Nations Development Programme., 'Assessing Water Governance' Op Cit

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷ Ibid

⁵⁸ SIWL., 'What is Water Governance?' Op Cit

⁵⁹ Ibid

⁶⁰ Ibid

⁶¹ Ibid

⁶² International Conference on Water and the Environment: 26-31 January 1992, Dublin, Ireland., Available at <https://wedocs.unep.org/bitstream/handle/20.500.11822/30961/ICWE.pdf?sequence=1&isAllowed=y> (Accessed on 21/03/2024)

⁶³ Ibid

Bolstering Water Governance for Sustainability

the water sector including overconsumption, pollution, and rising threats from drought and floods. The Dublin Statement identifies key principles of sound water governance which include participatory approaches involving users, planners and policy-makers at all levels⁶⁴; the role of women in the provision, management and safeguarding of water⁶⁵; the basic right of all human beings to have access to clean water and sanitation at an affordable price⁶⁶; and effective management of water resources that takes a holistic approach, linking social and economic development with protection of natural ecosystems⁶⁷. The Dublin Principles are key in bolstering water governance. It has been noted that the Dublin Principles bring water resources firmly under the State's function of clarifying and maintaining a system of property rights, and, through the principle of participatory management, asserts the relevance of meaningful decentralisation at the lowest appropriate level in effective governance of water⁶⁸.

Strengthening water governance for sustainability is also enshrined under United Nation's *General Comment No. 15 on the Right to Water*⁶⁹. This document recognizes that the human right to water is indispensable for leading a life in human dignity and that it is a prerequisite for the realization of other human rights⁷⁰. It further acknowledges that the human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses⁷¹. In addition, it states that an adequate amount of safe water is necessary to prevent death from dehydration, to reduce the risk of water-related disease and to provide for consumption, cooking, personal and domestic hygienic requirements⁷². In order to realize this right, The Document provides that national water strategies and plans of

⁶⁴ Ibid

⁶⁵ Ibid

⁶⁶ Ibid

⁶⁷ Ibid

⁶⁸ Rogers. P., & Hall. A., 'Effective Water Governance' Op Cit

⁶⁹ United Nations, General Comment No. 15: The Right to Water (Arts. 11 and 12 of the Covenant), Adopted at the Twenty-ninth Session of the Committee on Economic, Social and Cultural Rights, on 20 January 2003 (Contained in Document E/C.12/2002/11

⁷⁰ Ibid

⁷¹ Ibid

⁷² Ibid

Bolstering Water Governance for Sustainability

action should be based on the principles of accountability, transparency and independence of the judiciary, since *good governance* is essential to the effective implementation of all human rights, including the realization of the right to water (Emphasis added)⁷³.

At a national level, the *Constitution of Kenya*⁷⁴ enshrines the right of every person to clean and safe water in adequate quantities as a core socio-economic right⁷⁵. The Constitution further calls upon the national government to protect the environment and natural resources with a view of establishing a durable and sustainable system of development through inter alia protection of water and water resources⁷⁶. County governments are also tasked with the implementation of specific national government policies on natural resources and environmental conservation, including water conservation⁷⁷.

The *Water Act*⁷⁸ of Kenya provides for the regulation, management and development of water resources, water and sewerage services in Kenya among other connected purposes⁷⁹. The Act provides that every water resource is vested in and held by the national government in trust for the people of Kenya⁸⁰. It further establishes the Water Resources Authority whose functions include formulating and enforcing standards, procedures and Regulations for the management and use of water resources and flood mitigation; regulating the management and use of water resources; and coordinating with other regional, national and international bodies for the better regulation of the management and use of water resources⁸¹. Under the Act, Water Resource Users Associations may be established as associations of water resource users at the sub-basin level in accordance with Regulations prescribed by the Water Resources Authority⁸². It further provides that a Water Resource Users Association should be a community based association for collaborative

⁷³ Ibid

⁷⁴ Constitution of Kenya., 2010., Government Printer, Nairobi

⁷⁵ Ibid, article 43 (1) (d)

⁷⁶ Ibid, Fourth Schedule, Part 1 (22) (c)

⁷⁷ Ibid, Fourth Schedule, Part 2 10 (a)

⁷⁸ Water Act., Cap 372, Government Printer, Nairobi

⁷⁹ Ibid

⁸⁰ Ibid, S 5

⁸¹ Ibid

⁸² Ibid, 29 (1)

Bolstering Water Governance for Sustainability

management of water resources and resolution of conflicts concerning the use of water resources⁸³. The Act therefore embraces the idea of community participation in water governance. Further, in order to bolster water governance in Kenya, the Act requires the formulation of a National Water Services Strategy which specifies existing water services; the number and location of persons who are not provided with a basic water supply and basic sewerage services; standards for the progressive realisation of the right to water; and a resource mobilization strategy for the implementation of the plans⁸⁴.

Despite existence of the foregoing instruments, water governance at local, national, regional, and global levels faces several challenges. They include poor resource management, corruption, inappropriate institutional arrangements, bureaucratic inertia, insufficient human capacity, and shortages of finances for investments⁸⁵. The Dublin Statement also recognizes that concerted actions are needed to reverse the present trends in the water sector including overconsumption, pollution, and rising threats from drought and floods⁸⁶. It is therefore necessary to address these challenges and bolster water governance in order to foster sustainability.

4.0 Way Forward

It has been opined that there is need to embrace Integrated Water Resources Management (IWRM) in order to strengthen the governance of water resources⁸⁷. According to UNEP, IWRM is a process that promotes the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems⁸⁸. It has

⁸³ Ibid, S 29 (2)

⁸⁴ Ibid, s 64

⁸⁵ SIWI., 'What is Water Governance?' Op Cit

⁸⁶ International Conference on Water and the Environment: 26-31 January 1992, Dublin, Ireland, Op Cit

⁸⁷ Muigua. K., 'Streamlining Water Governance in Kenya for Sustainable Development' Available at <https://kmco.co.ke/wp-content/uploads/2018/08/Streamlining-Water-Governance-in-Kenya-17TH-FEBRUARY-2017.pdf> (Accessed on 21/03/2024)

⁸⁸ United Nations Environment Programme., 'What is Integrated Water Resources Management?' Available at <https://www.unep.org/explore-topics/disasters->

Bolstering Water Governance for Sustainability

been noted that IWRM is a cross-sectoral policy approach designed to replace the traditional, fragmented sectoral approach to water resources and management that has resulted in poor services and unsustainable resource use⁸⁹. It is premised on the understanding that water resources are an integral component of the ecosystem, a natural resource, and a social and economic good⁹⁰. IWRM can bolster water governance by promoting effective management practices and fostering productive relationships among stakeholders⁹¹. In addition, it has been noted that the design of the IWRM approach, including its pillars and principles, can enhance good water governance and effective resource management⁹². It is therefore necessary to embrace IWRM in order to improve the governance of water resources.

In addition, it is vital embrace public/community participation in order to bolster water governance⁹³. It has been correctly observed that public participation produces a sense of community between the administration and users of water, lowers administration costs, and ensures that the interests of users are taken into account⁹⁴. It is therefore necessary for water-user associations and water management institutions to include local communities in decision-making processes⁹⁵. Public participation, community-led water resource management and engagement of local stakeholders fosters

[conflicts/where-we-work/sudan/what-integrated-water-resources-management#:~:text=Integrated%20Water%20Resources%20Management%20\(IWRM,the%20sustainability%20of%20vital%20ecosystems.](#) (Accessed on 21/03/2024)

⁸⁹ Ibid

⁹⁰ Ibid

⁹¹ Grigg, N., 'IWRM and Water Governance' Integrated Water Resource Management. Palgrave Macmillan, London. Available at https://doi.org/10.1057/978-1-137-57615-6_5 (Accessed on 21/03/2024)

⁹² Katusiime, J., & Schutt... B., 'Integrated Water Resources Management Approaches to Improve Water Resources Governance' *Water* 2020, 12(12), 3424; Available at <https://doi.org/10.3390/w12123424> (Accessed on 21/03/2024)

⁹³ Solanes, M., Jouravlev, A., 'Water Governance for Development and Sustainability' Available at <https://fr.ircwash.org/sites/default/files/Solanes-2006-Water.pdf> (Accessed on 21/03/2024)

⁹⁴ Ibid

⁹⁵ Food and Agriculture Organization., 'Land and Water Governance to Achieve the SDGs in Fragile Systems' Available at <https://www.fao.org/3/ca5172en/CA5172EN.pdf> (Accessed on 21/03/2024)

Bolstering Water Governance for Sustainability

responsible management of water resources⁹⁶. These groups are closer to water resources and therefore it is desirable for them to ensure the sustainability of water resources for long term socio-economic benefits⁹⁷. The 2030 Agenda for Sustainable Development acknowledges the role of public participation in water governance and urges states to support and strengthen the participation of local communities in improving water and sanitation management⁹⁸. It is therefore necessary to enhance public/community participation in order to bolster water governance.

Further, it is imperative to strengthen international cooperation in the management of water resources in order to bolster water governance⁹⁹. Some water resources including oceans, lakes, and rivers are shared by different states¹⁰⁰. The governance of transboundary water resources presents opportunities for international cooperation¹⁰¹. Benefits of cooperation in such cases include the costs averted by reducing tensions and disputes between neighbours¹⁰². Strained interstate relations linked to water management can inhibit regional cooperation across a broad front, including trade, transport, telecommunications and labour markets¹⁰³. It has been noted that international and regional frameworks provide an important role in cooperation for sustainable and equitable use of resources between states¹⁰⁴. This cooperation is particularly significant in regions coping with fragile systems, as incompatible management of transboundary water resources can result in

⁹⁶ Ibid

⁹⁷ Ibid

⁹⁸ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

⁹⁹ Ibid

¹⁰⁰ Woodhouse. P., & Muller. M., 'Water Governance – An Historical Perspective on Current Debates' Available at <https://www.sciencedirect.com/science/article/abs/pii/S0305750X16305460?via%3Dihub> (Accessed on 21/03/2024)

¹⁰¹ Ibid

¹⁰² United Nations., 'Water Cooperation' Available at https://www.un.org/waterforlifedecade/water_cooperation.shtml (Accessed on 21/03/2024)

¹⁰³ Ibid

¹⁰⁴ Food and Agriculture Organization., 'Land and Water Governance to Achieve the SDGs in Fragile Systems' Op Cit

Bolstering Water Governance for Sustainability

conflict¹⁰⁵. The *Convention on the Law of the Non-navigational Uses of International Watercourses*¹⁰⁶ recognizes the importance of international cooperation in the governance of transboundary water resources. It urges watercourse states to cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilization and adequate protection of an international watercourse¹⁰⁷. It is thus vital to strengthen international cooperation in order to promote sound governance of transboundary water resources.

Finally, it is necessary to promote effective management of water related conflicts¹⁰⁸. It has been correctly pointed out that given the social and economic characteristics and benefits of water, its potential for generating conflicts is unlimited¹⁰⁹. Prolonged conflicts over water harm conservation and threaten Sustainable Development¹¹⁰. It has been noted that one of the key components of sound governance in the water sector is effective conflict management¹¹¹. It is therefore necessary to design and embrace efficient conflict-solving mechanisms that ensure social, environmental and economic factors relevant to water governance are adequately considered when adjudicating conflicts¹¹². Alternative Dispute Resolution (ADR) mechanisms such as negotiation and mediation have been hailed as appropriate in managing conflicts relating to water due to their potential to resolve underlying issues in conflicts, preserve relationships, and promote collaboration in the management of water resources¹¹³. Further, water diplomacy has also been advanced as key tool

¹⁰⁵ Ibid

¹⁰⁶ Convention on the Law of the Non-navigational Uses of International Watercourses., United Nations, 1997., Available at https://legal.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf (Accessed on 21/03/2024)

¹⁰⁷ Ibid, article 8

¹⁰⁸ Solanes. M., Jouravlev. A., 'Water Governance for Development and Sustainability' Op Cit

¹⁰⁹ Ibid

¹¹⁰ Ibid

¹¹¹ United Nations Development Programme., 'Assessing Water Governance' Op Cit

¹¹² Rogers. P., & Hall. A., 'Effective Water Governance' Op Cit

¹¹³ United Nations., 'Mediation and Dispute Resolution' Available at [https://www.un.org/waterforlifedecade/water_cooperation_2013/mediation_and_dispute_resolution.shtml#:~:text=Alternative%20Dispute%20Resolution%20\(ADR%](https://www.un.org/waterforlifedecade/water_cooperation_2013/mediation_and_dispute_resolution.shtml#:~:text=Alternative%20Dispute%20Resolution%20(ADR%20)

Bolstering Water Governance for Sustainability

conflict prevention, de-escalation and management in the water sector¹¹⁴. For example, international diplomacy in relation to water can foster the establishment of a global framework for water governance which may then be used in the further development of multilateral and bilateral water treaties and agreements¹¹⁵. It has been noted that such an approach can help define rights to use, water allocations, the appropriate bodies to deal with disputes among other key factors¹¹⁶. Effective management of conflicts over water through ADR mechanisms and water diplomacy is vital in bolstering water governance¹¹⁷.

5.0 Conclusion

Water plays a key role in Sustainable Development and is central in realizing all the 17 SDGs¹¹⁸. Effective and efficient governance of water and water resources is therefore necessary for sustainability¹¹⁹. However, water governance at local, national, regional, and global levels faces several challenges including poor resource management, corruption, inappropriate institutional arrangements, bureaucratic inertia, insufficient human capacity, and shortages of finances for investments¹²⁰. It is vital to address these challenges and strengthen water governance for sustainability. In order to achieve this goal, it is necessary to embrace IWRM¹²¹; promote public/community participation¹²²; strengthen international cooperation in the management of transboundary water resources¹²³; and promote effective

[2C%20sometimes,in%20a%20non%2Dconfrontational%20way.](#) (Accessed on 21/03/2024)

¹¹⁴ Ibid

¹¹⁵ Ibid

¹¹⁶ Ibid

¹¹⁷ Ibid

¹¹⁸ SIWI., 'Water is Central in Achieving all 17 SDGs. But How?' Op Cit

¹¹⁹ United Nations Environment Programme, 'Goal 6: Clean Water and Sanitation' Op Cit

¹²⁰ SIWI., 'What is Water Governance?' Op Cit

¹²¹ Muigua. K., 'Streamlining Water Governance in Kenya for Sustainable Development' Op Cit

¹²² Solanes. M., Jouravlev. A., 'Water Governance for Development and Sustainability' Op Cit

¹²³ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

Bolstering Water Governance for Sustainability

management of water related conflicts¹²⁴. Bolstering water governance for sustainability is a crucial goal that needs to be urgently realized.

¹²⁴ Solanes. M., Jouravlev. A., 'Water Governance for Development and Sustainability'
Op Cit

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

Abstract

This paper examines countries' difficult balance between socio-economic growth and environmental protection for sustainability. Rapid economic expansion has increased urban populations, creating congested, dirty, and resource-depleted cities. Urbanisation strains housing, sanitation, education, transportation, clean air, and water, yet sustainable development attempts to fulfil present and future demands.

Environmental management – preserving natural resources, encouraging sustainability, and recognising social equality – is essential for balance. Sustainable Urban Development (SUD) reduces human impact on the environment. However, worldwide SUD deployment is still lacking. A holistic planning and development strategy that considers ecological variables and is more resilient may assist accomplish sustainable urban objectives. In the 21st century, environmental planning, development, and urban policy prioritize urban sustainability.

Digital technology may improve urban planning public involvement, with universities and businesses producing and distributing location-based platforms. These platforms may encourage public participation in project design and decision-making, consultation, citizen-professional engagement, and engaging interfaces. E-participation will evolve with technology, complementing traditional techniques and encouraging design and decision-making autonomy. Urban planning may reshape cities at multiple institutional levels utilising bottom-up and top-down participation. Countries may reconcile these opposing ideas and create a more connected and inspirational urban environment by adopting technology and promoting participatory urban development planning and environmental management.

1.0 Introduction

This paper critically discusses how countries like Kenya, experiencing rapid economic development, can strike a balance between the competing interests of socio-economic development and environmental conservation for sustainability. In recent years, there has been a significant increase in rural-urban migration worldwide.¹ This has resulted in densely populated,

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

polluted, and resource-depleted urban areas in the 21st century.² The expansion of Kenya's urban population is a consequence of a change in the economic equilibrium between urban and rural regions, which is driven by shifting patterns of job demand and supply.³ Urbanisation is powered by the presence of improved prospects, such as improved access to education, healthcare services, greater remuneration, entertainment options, and living conditions in urban areas.⁴ It is projected that by 2050, more than 80% of the population would reside in urban areas.⁵ The living circumstances of urban residents are contingent upon the planning and management of urbanisation, as well as the sourcing and processing of resources by cities.⁶ Sustainable

¹ Addanki, S.C. and Venkataraman, H. (2017) 'Greening the economy: A review of urban sustainability measures for developing new cities', *Sustainable Cities and Society*, 32, pp. 1-8. Available at: <https://doi.org/10.1016/j.scs.2017.03.009>.

² Ibid.; *The Impact of Urbanization On City Infrastructure* (no date) *FasterCapital*. Available at: <https://fastercapital.com/keyword/the-impact-of-urbanization-on-city-infrastructure.html> (Accessed: 1 June 2024); Iamtrakul, P.A.W.I.N.E.E., Klaylee, J.I.R.A.W.A.N. and Ruengratanaumporn, I.S.O.O.N., 2021. Participatory planning approach towards smart sustainable city development. *Proc. Int. Struct. Eng. Constr*, 8(11); Peter, L.L. and Yang, Y. (2019) 'Urban planning historical review of master plans and the way towards a sustainable city: Dar es Salaam, Tanzania', *Frontiers of Architectural Research*, 8(3), pp. 359-377. Available at: <https://doi.org/10.1016/j.foar.2019.01.008>.

³ Hope Sr, K.R., 2012. Urbanisation in Kenya. *African journal of economic and sustainable development*, 1(1), pp.4-26.

⁴ Ibid.; Myers, G., 2021. Urbanisation in the global south. *Urban ecology in the global south*, pp.27-49; Ngware, M. (2012) 'Urbanization and Education in East Africa'. Available at:

https://www.academia.edu/33170784/Urbanization_and_Education_in_East_Africa (Accessed: 1 June 2024); Mendez, M. and Popkin, B. (2004) 'Globalization, Urbanization and Nutritional Change in the Developing World', *The Electronic Journal of Agricultural and Development Economics*, 1, pp. 220-241.

⁵ Ibid.; *African cities will double in population by 2050. Here are 4 ways to make sure they thrive* (2018) *World Economic Forum*. Available at: <https://www.weforum.org/agenda/2018/06/Africa-urbanization-cities-double-population-2050-4%20ways-thrive/> (Accessed: 1 June 2024); Nations, U. (no date) *Around 2.5 billion more people will be living in cities by 2050, projects new UN report*, United Nations. United Nations. Available at: <https://www.un.org/en/desa/around-25-billion-more-people-will-be-living-cities-2050-projects-new-un-report> (Accessed: 1 June 2024).

⁶ Ibid.; Mbaluka, G., 2023. *Assessing Drivers and Effects of Peri-urban Development in Secondary Towns: A Case Study of Kitui Town in Kitui County, Kenya* (Doctoral

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

development seeks to satisfy current requirements while safeguarding the needs of future generations.⁷ Nevertheless, urbanisation exerts pressure on the availability of vital services such as housing, sanitation, education, transportation, clean air, and water.⁸

The process of globalization and the intensification of production are driving urbanisation in several nations, possibly enhancing economic development and enhancing the well-being of citizens.⁹ Nevertheless, this may also result in the depletion of resources and the emergence of environmental problems.¹⁰ It is essential to assess the impact of urbanisation on sustainable economic development and find the necessary modifications and tools.¹¹ The preservation of natural resources, the promotion of environmental sustainability, and the consideration of social equality are all essential for maintaining a balanced state.¹² Since the 1970s, researchers have been aware of the discrepancy between our economy, which relies on non-renewable resources, and the growing worldwide poverty.¹³

dissertation, University of Nairobi); Khanani, R.S., Adugbila, E.J., Martinez, J.A. and Pfeffer, K., 2021. The impact of road infrastructure development projects on local communities in peri-urban areas: the case of Kisumu, Kenya and Accra, Ghana. *International journal of community well-being*, 4(1), pp.33-53.

⁷ Bolay, J.C., 2019. *Urban Planning Against Poverty: How to Think and Do Better Cities in the Global South* (Vol. 14). Springer Nature, p.25.

⁸ Ibid.; *The Impact of Urbanization On City Infrastructure* (no date) FasterCapital. Available at: <https://fastercapital.com/keyword/the-impact-of-urbanization-on-city-infrastructure.html> (Accessed: 1 June 2024); Zhang, Z. et al. (2023) 'How does urbanization affect public health? New evidence from 175 countries worldwide', *Frontiers in Public Health*, 10, p. 1096964. Available at: <https://doi.org/10.3389/fpubh.2022.1096964>; *Climate change will strain Africa's already congested cities* (no date) ISS Africa. Available at: <https://issafrica.org/iss-today/climate-change-will-strain-africas-already-congested-cities> (Accessed: 1 June 2024).

⁹ Kwilinski, A., Lyulyov, O. and Pimonenko, T., 2023. The effects of urbanisation on green growth within sustainable development goals. *Land*, 12(2), p.511.

¹⁰ Ibid.

¹¹ Ibid.

¹² Bolay, J.C., 2019. *Urban Planning Against Poverty: How to Think and Do Better Cities in the Global South* (Vol. 14). Springer Nature, p.26.

¹³ Ibid, p.2.6

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

Environmental management encompasses policies and practices aimed at preserving the environment, distributing and using natural resources in a sustainable and ethical manner, strengthening the connections between society and the environment, and enhancing human welfare for both the current and future generations.¹⁴ The idea of Sustainable Urban Development, or SUD, has become more well-known as the globe struggles to deal with the effects of urbanisation, climate change, and contemporary lifestyles.¹⁵ SUD is viewed as a way to reduce the negative effects that broad human activity has on the environment.¹⁶

It is believed that SUD enhances a city's ecological, cultural, political, institutional, social, and economic aspects of quality of life.¹⁷ It offers a chance to create new systems for creating a desirable urban future without burdening present and future generations with things like depleted natural capital and excessive local debt.¹⁸

2.0 Sustainability, Development Planning and Environmental Management

The notion of sustainable development is multifaceted, including economics, environment, and ethics. It encompasses the sustainability of social and economic systems in addition to the environment and resource systems.¹⁹ All living things require their surroundings to survive, therefore preservation of the environment is essential to life as we know it. Human values are specific to each individual, but environmental ethics outline man's moral and ethical

¹⁴ Sopiana, Y. and Harahap, M.A.K., 2023. Sustainable Urban Planning: A Holistic Approach to Balancing Environmental Conservation, Economic Development, and Social Well-being. *West Science Interdisciplinary Studies*, 1(02), pp.43-53.

¹⁵ Yigitcanlar, T. and Teriman, S., 2015. Rethinking sustainable urban development: towards an integrated planning and development process. *Int. J. Environ. Sci. Technol*, 12, pp.341-352; *Toward the sustainable development of urban areas: An overview of global trends in trials and policies | Request PDF* (no date). Available at: https://www.researchgate.net/publication/278743782_Toward_the_sustainable_development_of_urban_areas_An_overview_of_global_trends_in_trials_and_policies (Accessed: 2 June 2024).

¹⁶ Ibid.

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Trehan, A. and Trehan, R., 2019. Environmental Sustainability in Perspective of Human Values. *International Journal of Research in Social Sciences*, 9(2), p.1.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

responsibility towards the environment.²⁰ The environment and human existence are impacted by technological advancement, which has advantages and disadvantages. As ethical concerns surface, it is critical to comprehend how humans either mitigate or exacerbate environmental degradation in order to achieve sustainable development.²¹

Due to human actions that have an impact on the environment globally, the relationship between humans and the environment is confronting problems in the modern world. The notion of sustainable development is multifaceted, including economics, environment, and ethics.²² Modern methods of exploiting nature have led to an increase in demand for energy and the environment; thus, in order to achieve sustainable development, nature must be protected.²³

Our perspective on the world influences the way we interact with it, and the rising recognition of the mutually reinforcing nature of environmental impact

²⁰ Ibid.

²¹ Bisong, P. and Apologun, S. (2020) 'Technology Can Save the Environment', *International Journal of Humanities, Management and Social Science*, 3, pp. 11-19. Available at: <https://doi.org/10.36079/lamintang.ij-humass-0301.108>; luciaclemares (2024) *Technology and the environment: a battle between harm and benefit*, Telefónica. Available at: <https://www.telefonica.com/en/communication-room/blog/technology-environment-a-battle-between-harm-benefit/> (Accessed: 2 June 2024).

²² *Globalisation and sustainable development* (no date). Available at: <https://assembly.coe.int/nw/xml/XRef/X2H-Xref-ViewHTML.asp?FileID=9961> (Accessed: 2 June 2024); *The 3 pillars of sustainability: environmental, social and economic* (2023). Available at: <https://www.enel.com/company/stories/articles/2023/06/three-pillars-sustainability> (Accessed: 2 June 2024).

²³ *Rationality and the exploitation of natural resources: a psychobiological conceptual model for sustainability | Environment, Development and Sustainability* (no date). Available at: <https://link.springer.com/article/10.1007/s10668-024-04470-3> (Accessed: 2 June 2024); Mihajlović, S.R. and Đorđević, N.G., 2022. Sustainable Development and Natural Resources Exploitation. *Podzemni Radovi*, (40), Pp.45-52.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

and socio-economic growth underscores the necessity of fortifying current development initiatives.²⁴

The ecosystem is under a lot of strain due to the expanding population and excessive use of natural resources. By progressively altering their ways of development, individuals are encouraged to conserve and increase natural resources through sustainable development, which strives for development without having a harmful influence on the environment.²⁵ An integrated strategy that leverages both the desire to shift public perception and conventional knowledge is necessary for sustainable development. People that care about environmental concerns and sustainable development should be informed, devoted, and proactive.²⁶

A comprehensive strategy is necessary to address the complicated and varied issue of sustainable urban development.²⁷ Urban extension has led to patterns of urban growth that are not sustainable from an environmental, social, or economic standpoint.²⁸ Population growth-related urban expansion has an adverse effect on environmental services including carbon sequestration and biodiversity support. Understanding the needs and requirements of various

²⁴ *The Sustainable Use of Natural Resources: The Governance Challenge* (no date) International Institute for Sustainable Development. Available at: <https://www.iisd.org/articles/deep-dive/sustainable-use-natural-resources-governance-challenge> (Accessed: 2 June 2024).

²⁵ *The Sustainable Use of Natural Resources: The Governance Challenge | International Institute for Sustainable Development* (no date). Available at: <https://www.iisd.org/articles/deep-dive/sustainable-use-natural-resources-governance-challenge> (Accessed: 2 June 2024);

²⁶ Hariram, N.P., Mekha, K.B., Suganthan, V. and Sudhakar, K., 2023. Sustainalism: An integrated socio-economic-environmental model to address sustainable development and sustainability. *Sustainability*, 15(13), p.10682; Maja, M.M. and Ayano, S.F., 2021. The impact of population growth on natural resources and farmers' capacity to adapt to climate change in low-income countries. *Earth Systems and Environment*, 5(2), pp.271-283; Mondal, S. and Palit, D., 2022. Challenges in natural resource management for ecological sustainability. In *Natural Resources Conservation and Advances for Sustainability* (pp. 29-59). Elsevier.

²⁷ Sopiana, Y. and Harahap, M.A.K., 2023. Sustainable Urban Planning: A Holistic Approach to Balancing Environmental Conservation, Economic Development, and Social Well-being. *West Science Interdisciplinary Studies*, 1(02), pp.43-53.

²⁸ *Ibid.*

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

groups and people is crucial, particularly in situations when moral or political considerations are involved.²⁹

It is necessary to investigate the emerging and significant problem of sustainable urban development, which considers the natural environment and quality of life in addition to its economic and social advantages.³⁰ An essential aspect of urban planning reform is the thorough reassessment of environmental, economic, and social factors. By incorporating interests into a long-term vision and coordinating activities, we may guarantee that economic interests and social concerns align with the protection of the environment.³¹

3.0 Development Planning and Environmental Management in Kenya

The Kenya Vision 2030 is a comprehensive and ambitious development strategy that seeks to establish a highly competitive, wealthy, and high-quality society on a global scale by the year 2030.³² The objective is to convert Kenya into a newly industrialised nation with a middle-income status, ensuring a clean and safe environment for its population.³³ Kenya's Vision 2030 goal is to make the country sustainable, safe, and clean by the year 2030.³⁴ Kenya's long-term national development plan, which is built around the economic, social, and political pillars, is to transform the nation into a middle-income one where every citizen enjoys a good standard of living.³⁵ The Vision 2030's first phase, which ran from 2008 to 2012, saw the implementation of many "flagship" projects. The goal of Vision 2030's first phase is to sustain 10% annual

²⁹ Ibid.

³⁰ Ibid.

³¹ Bolay, J.C., 2019. *Urban Planning Against Poverty: How to Think and Do Better Cities in the Global South* (Vol. 14). Springer Nature, p.27.

³² 'Kenya Vision 2030 - State Department for Economic Planning' (no date). Available at: <https://www.planning.go.ke/kenya-vision-2030/> (Accessed: 1 June 2024).

³³ Ibid.

³⁴ Nyangena, W., 2012. The Kenya Vision 2030 and the Environment: issues and challenges. *Environment for Development (Efd-Kenya)*, pp.45-56; 'Kenya Vision 2030 - State Department for Economic Planning' (no date). Available at: <https://www.planning.go.ke/kenya-vision-2030/> (Accessed: 1 June 2024).

³⁵ United Nations Environmental Programme, "Chapter 1: Environment and Vision 2030", available at https://na.unep.net/atlas/kenya/downloads/chapters/Kenya_Screen_Chapter1.pdf [Accessed 25 May 2024].

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

economic growth for the following 25 years.³⁶ The vision also highlights how crucial it is to preserve the natural environment since human well-being is dependent on environmental sustainability, which includes biodiversity protection. Basic necessities, cleaner air and water, healthy soils, nutrient cycling, and temperature regulation are all provided by nature.³⁷ The vision also highlights how development goals can only be realised with preparation for climate-related calamities.

Promoting environmental conservation, enhancing waste and pollution control, and forming public-private partnerships to enhance the delivery of water and sanitation are some strategies for accomplishing these objectives.³⁸ Though they only make up 3% of Kenya's geographical area, fountains are vital to the country's citizens' daily needs and economy. They also function as important cultural centres and habitats for animals.³⁹

The interaction between humans and the environment is becoming more difficult in the modern world since human activity is changing the environment on a global scale.⁴⁰ Ecological, economic, and ethical considerations are all part of the multifaceted idea of sustainable development.⁴¹ For this to happen, the social and economic systems as well as the environment and resource systems must all be sustainable. In the process of exploiting environmental resources, human beings are jeopardising their own future by undermining its sacredness and purity for financial gain. Life on Earth would not be feasible without environmental protection.⁴²

³⁶ Ibid.

³⁷ Ibid.

³⁸ *Water and sanitation: Sustainable Development Knowledge Platform* (no date). Available at: <https://sustainabledevelopment.un.org/topics/water/decisions> (Accessed: 1 June 2024).

³⁹ Soja, E.W., 1968. *The geography of modernization in Kenya*. Syracuse University Press; Peltorinne, P., 2004. The forest types of Kenya. *Expedition reports of the Department of Geography, University of Helsinki*, 40, pp.8-13.

⁴⁰ El Chalfoun, F., 2018. Is environmental sustainability a case of failure of policy implementation? *Journal of advanced research in social sciences and humanities.*, 3(6), pp.229-235.

⁴¹ Ibid.

⁴² Ibid.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

Kenya is urbanising rapidly without a blueprint for the ideal urban structure and shape. Wild urbanisation is resulting from unregulated urban growth. Urban form directly effects habitat, ecosystems, and water quality, causing the extinction of numerous endangered species and greenhouse gas emissions that worsen climate change, water quality, and human health.⁴³ Massive developments on sensitive and vulnerable places including wetlands, riparian reserves, and hill tops show that Kenya still has environmental issues despite many laws and regulations.⁴⁴ Flooding and surface runoff may result from authorized constructions and paved surfaces blocking natural water drains.⁴⁵ Kenya's fast urbanisation requires strong urban development control tools and techniques to solve environmental challenges. There is a need for strong enforcement and adherence to Physical and Land Use Planning Act, 2019⁴⁶ which was enacted to make provision for the planning, use, regulation and development of land and for connected purposes⁴⁷; National Spatial Plan 2015-2045, which, by identifying the key sites of the flagship projects outlined in Kenya Vision 2030 and offering a framework for mitigating their spatial implications, the Spatial Plan facilitates the implementation of important national projects⁴⁸. Article 69 of the Constitution of Kenya 2010 outlines the obligations of the State in respect of the environment as including, to: ensure sustainable exploitation, utilisation, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits; work to achieve and maintain a tree cover of at least ten per cent of the land area of Kenya; protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the

⁴³ Ngetich, J.K., Opata, G.P. and Mulongo, L.S., 2014. Urban environmental planning and development control of medium sized towns in Kenya. A case of Eldoret Municipality. *Journal of Emerging Trends in Economics and Management Sciences*, 5(3), p.351.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Physical and Land Use Planning Act, No. 13 of 2019, Laws of Kenya.

⁴⁷ Ibid., preamble.

⁴⁸ 'Kenya National Spatial Plan (2015 - 2045) | Kenya Vision 2030' (no date), Government of Kenya,

First published in 2016. Available at: <https://vision2030.go.ke/publication/kenya-national-spatial-plan-2015-2045/> (Accessed: 4 May 2024).

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

communities; encourage public participation in the management, protection and conservation of the environment; protect genetic resources and biological diversity; establish systems of environmental impact assessment, environmental audit and monitoring of the environment; eliminate processes and activities that are likely to endanger the environment; and utilise the environment and natural resources for the benefit of the people of Kenya.⁴⁹

Also relevant is the Fourth Schedule to the Constitution of Kenya 2010 on Distribution of Functions Between the National Government and the County Governments which provides for the functions of the National Government as including: protection of the environment and natural resources with a view to establishing a durable and sustainable system of development, including, in particular – fishing, hunting and gathering; protection of animals and wildlife; water protection, securing sufficient residual water, hydraulic engineering and the safety of dams; and energy policy; and agricultural policy.⁵⁰

The functions and powers of the county governments are – Agriculture, including – crop and animal husbandry; livestock sale yards; county abattoirs; plant and animal disease control; and fisheries; County planning and development, including – statistics; land survey and mapping; and boundaries and fencing; Implementation of specific national government policies on natural resources and environmental conservation, including – soil and water conservation; and forestry; and ensuring and coordinating the participation of communities and locations in governance at the local level and assisting communities and locations to develop the administrative capacity for the effective exercise of the functions and powers and participation in governance at the local level.⁵¹

More effective enforcement of Environmental Management and Coordination Act (EMCA) 1999⁵² and related regulations is also important in streamlining

⁴⁹ Article 69 (1), Constitution of Kenya 2010.

⁵⁰ Constitution of Kenya, 2010, Fourth Schedule, Part One.

⁵¹ Constitution of Kenya, Fourth Schedule, Part Two.

⁵² Environmental Management and Co-ordination Act, No. 8 of 1999, Laws of Kenya, Revised Edition 2019 [1999].

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

issues of development planning and environmental management for sustainability. The *Environmental Management Coordination Act (EMCA)*⁵³ envisages environmental impact assessments (EIA). Indeed, various requirements relating to the implementation of environmental impact assessments (EIA), strategic environmental assessments (SEA), environmental audits (EA), and management activities for air, water, wastes, and noise are included in the EMCA.

4.0 Reconciling Development Planning with Environmental Management for Sustainability

The implementation of environmental legislation has become essential in tackling the planet's urgent sustainability issues, including pollution, biodiversity loss, and climate change.⁵⁴ Ensuring the welfare of present and future generations, these laws seek to achieve a balance between environmental preservation and economic growth as part of a common commitment to a sustainable future.⁵⁵

The goals of sustainable development include resource conservation and the wise use of natural resources. The increasing recognition of the reciprocal link between environmental impact and socio-economic development underscores the necessity of fortifying current development initiatives to tackle issues at both their root cause and their effect.⁵⁶

Sustainable development gradually modifies development strategies to encourage people to protect and improve natural resources.⁵⁷ To realise it, an integrated strategy that makes use of conventional wisdom and a willingness to shift perceptions is needed.⁵⁸ When it comes to environmental and

⁵³ Environmental Management Coordination Act, No. 8 of 1999, Laws of Kenya.

⁵⁴ Islam, M., Wattoo, O. M., & Saleem, S. (2023). Environmental Regulations and their Implications for Global Sustainability. *Pakistan Journal of Humanities and Social Sciences*, 11(3), 3801-3809. <https://doi.org/10.52131/pjhss.2023.1103.0665>.

⁵⁵ Ibid.

⁵⁶ El Chalfoun, F., 2018. Is environmental sustainability a case of failure of policy implementation? *Journal of advanced research in social sciences and humanities.*, 3(6), pp.229-235.

⁵⁷ Ibid.

⁵⁸ Ibid.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

sustainable development concerns, people ought to be informed, devoted, and proactive. All countries on our world are concerned about environmental sustainability.⁵⁹

Brundtland's definition of environmental sustainability requires planners to strike a balance between economic development and sustainability.⁶⁰ This calls for striking a balance between social and ecological sustainability and growth and development. These two imperatives clash, making it necessary to decide which alternatives for economic development to pursue and how those options could affect sustainability.⁶¹ The possible effects on future generations must be carefully considered.

4.1 Use of Technology in Planning and Environmental Protection

The planning and construction of cities is being revolutionized by technology, which is making the process simpler and more effective than ever. Technological advancements such as generative AI, augmented reality, blockchain, and computer-aided design (CAD) software are accelerating, streamlining, and improving the sustainability of the urban planning process.⁶² For many years, CAD software has been used to produce precise and in-depth designs for infrastructure and new development projects.⁶³ Planners may quickly and simply make design adjustments and construct 3D models of prospective projects to see them from various viewpoints. This has

⁵⁹ Ibid.

⁶⁰ Barnard, S. and Elliott, M., 2015. The 10-tenets of adaptive management and sustainability: An holistic framework for understanding and managing the socio-ecological system. *Environmental Science & Policy*, 51, pp.181-191.

⁶¹ Ibid.

⁶² *The Use of Technology in Modern Urban Planning: Revolutionizing the Way Cities are Built* | Maket (no date). Available at: <https://www.maket.ai/post/the-use-of-technology-in-modern-urban-planning-revolutionizing-the-way-cities-are-built> (Accessed: 26 May 2024).

⁶³ *The Use of Technology in Modern Urban Planning: Revolutionizing the Way Cities are Built* | Maket (no date). Available at: <https://www.maket.ai/post/the-use-of-technology-in-modern-urban-planning-revolutionizing-the-way-cities-are-built> (Accessed: 26 May 2024).

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

aided in expediting the planning phase and guaranteeing the greatest calibre of construction for projects.⁶⁴

The use of digital technology in urban administration and planning has gained popularity within the past ten years.⁶⁵ This is because of advances in technology as well as a worldwide political, social, and economic drive to create concepts and implementations for smart cities.⁶⁶ The paradigms of urban informatics, analytics, and city science are also growing, which has led to new programmes being offered by higher education institutions to teach the next generation of urban planners who possess these skills.⁶⁷ Digital technology advancements such as cloud computing, high-performance, optimised computer systems, and customised sensor manufacture have made it possible for agencies to gather, store, and analyse unprecedented volumes of high-resolution data.⁶⁸

The creation of cities that support biodiversity and promote human well-being are intimately connected. Urbanisation is directly related to the future of biodiversity and is a major cause of environmental change.⁶⁹ Urban development issues including excessive resource use, rising pollution, a rise in urban illnesses, extreme weather occurrences, and a persistent decline in the quality of the living environment have been brought on by rapid urbanisation.⁷⁰ Effective solutions for outstanding issues in the process of rapid urban development and sustainable development can be found by

⁶⁴ *The Use of Technology in Modern Urban Planning: Revolutionizing the Way Cities are Built | Maket* (no date). Available at: <https://www.maket.ai/post/the-use-of-technology-in-modern-urban-planning-revolutionizing-the-way-cities-are-built> (Accessed: 26 May 2024).

⁶⁵ Sabri, S. and Witte, P. (2023) 'Digital technologies in urban planning and urban management', *Journal of Urban Management*, 12(1), pp. 1-3. Available at: <https://doi.org/10.1016/j.jum.2023.02.003>.

⁶⁶ Ibid.

⁶⁷ Ibid.

⁶⁸ Ibid.

⁶⁹ Sopiana, Y. and Harahap, M.A.K., 2023. Sustainable Urban Planning: A Holistic Approach to Balancing Environmental Conservation, Economic Development, and Social Well-being. *West Science Interdisciplinary Studies*, 1(02), pp.43-53.

⁷⁰ Ibid.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

analysing the fundamental theory and transformation of urban design, talking about new urban design concepts, technologies, and methods, and scientifically identifying the opportunities and challenges of urban design development.⁷¹

Technology is essential for fostering sustainable urbanisation since it increases the effectiveness of urban services, uses less energy, and enhances the quality of life for inhabitants. Green artificial intelligence (AI), smart city technology, and innovative ideas, tools, and techniques in urban planning may all assist sustainable development while addressing the problems associated with fast urbanisation.⁷²

The preservation of biodiversity and sustainable urban development are directly related to each other as well as to human welfare. Urban biodiversity provides a range of regulatory, provisional, and cultural ecosystem services, and study findings can help guide the development of sustainable cities by promoting the adoption of urban conservation strategies.⁷³

Although technology is frequently hailed as the solution to every sustainability issue, the availability of technological solutions should not be the only factor considered when formulating solutions.⁷⁴ Technology applications are commonly used in SUD planning, however SUD has to be rethought. It is undeniable that the environment has to be protected from the severe ecological damage caused by unchecked economic expansion and conspicuous consumerism, and SUD is thought to be the primary means of doing this.⁷⁵ Nevertheless, the creation of sustainable cities and the application of SUD at large city sizes remain unrealized. This necessitates reevaluating the

⁷¹ Ibid.

⁷² Ibid.

⁷³ Ibid.

⁷⁴ Permana, C.T. and Harsanto, B., 2020. Sustainable city planning concepts and practices in emerging economies: A systematic review. *The Journal of Indonesia Sustainable Development Planning*, 1(1), pp.67-82.

⁷⁵ Ibid.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

mechanisms – such as urban planning and development processes – involved in the implementation of SUD.⁷⁶

According to recent research, digital technology could play a bigger part in urban planning and administration than only automating repetitive tasks that benefit infrastructure, buildings, and people.⁷⁷ Rather, these technologies ought to establish a cooperative and integrative ecosystem that supports a network and a constant flow of information for the purpose of planning for fairness, environmental sustainability, efficiency, and quality of place and living in urban areas.⁷⁸ Adopting new technologies, such as Digital Twins, AI, ML, and IoT, is seen by many governments, businesses, and academic institutions throughout the world as a way to enhance the quality of public services, as well as the well-being and standard of living of communities.⁷⁹ It is unknown, nonetheless, which planning procedures may be impacted and what the advantages, hazards, and consequences of implementing such technology are.⁸⁰

Contextualizing smart city technology across jurisdictions is crucial, according to some experts, as the use of digital technologies in urban planning and administration is expanding quickly.⁸¹ Advocates for smart cities and planners should take into account the importance of context while addressing urban problems with the use of digital technology.⁸² The comparison of three smart city initiatives in China, Singapore, and the Netherlands led to the conclusion that the scope and variety of digital technology application domains are contingent upon the differences in sociotechnical and political environments.⁸³

⁷⁶ Ibid.

⁷⁷ Sabri, S. and Witte, P. (2023) 'Digital technologies in urban planning and urban management', *Journal of Urban Management*, 12(1), pp. 1-3. Available at: <https://doi.org/10.1016/j.jum.2023.02.003>.

⁷⁸ Ibid.

⁷⁹ Ibid.

⁸⁰ Ibid.

⁸¹ Ibid.

⁸² Ibid.

⁸³ Ibid.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

The socio-spatial framework in which smart city plans are anchored and the technology itself must be closely connected for the strategies to be successful.⁸⁴ Technology can also be used in environmental protection which would make it easy to not only eliminate any conflict with physical planning but also track any subsequent changes that may arise. Among the areas of activities that require digitization is environmental protection. Environmental safety management tasks should be included in this process, in addition to gathering, evaluating, and communicating environmental data to the general public, the populace, and users of the environment.⁸⁵

In the early 1990s, environmental protection structures and related business processes in Russia started to be automated.⁸⁶ The most preferred programmes were those that automated specific tasks, like counting environmental impact fees, inventorying impact sources, and primary accounting for waste management, water resources, and air protection.⁸⁷ The market for environmental automation has shown several programme increases during the previous 20 years, and this growth is still expected, as the qualitative approach to automation shifts from single-process to complex.⁸⁸ Three categories now make up the environmental protection software market: self-written, highly specialized, and ERP systems.⁸⁹

Ecologists can use software that falls into multiple categories: information and legal systems; data processing and reporting of chemical-analytical

⁸⁴ Ibid.

⁸⁵ Kalymbek, B., Yerkinbayeva, L., Bekisheva, S. and Saipinov, D., 2021. The Effect of Digitalization on Environmental Safety. *Journal of Environmental Management & Tourism*, 12(5), pp.1299-1306.

⁸⁶ Nasyrova, L.A., Akchurina, L.R. and Valiakhmetova, J.A., 2024. Digital technologies in environmental protection and rational use of natural resources. In *E3S Web of Conferences* (Vol. 486, p. 04022). EDP Sciences.

⁸⁷ Ibid.

⁸⁸ Ibid.; Bekezhanov, D., Korbassarova, G., Rzabay, A., Kozhantayeva, Z., Nessipbayeva, I. and Aktymbayev, K., 2021. Environmental and legal regulation of digitalization of environmental protection. *Journal of Environmental Management and Tourism*, 12(7), pp.1941-1950.

⁸⁹ Ibid.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

environmental control laboratories; methods for calculating the impact on the environment; and software systems for territorial environmental services.⁹⁰ Effective management is always necessary to protect the environment, promote energy conservation, and ensure the sustainable development of territory.⁹¹ Through digital innovation, citizens may get more involved, learn how to volunteer for the environment, increase their environmental literacy, gather more environmental data, and enhance governance.⁹² For the purpose of protecting water resources, it is imperative to establish hybrid environmental supervision systems that can remotely monitor land use, deforestation, air and water quality, and the identification of instances of illegal construction and building code violations.⁹³

4.2 Participatory Approaches to Urban Development Planning and Environmental Planning and Management

Participation is often associated with the concept of democracy and has a multidisciplinary, inclusive nature.⁹⁴ The concept of participation has not been central to the nature of many countries' planning systems including Kenya; institutionally, they have been centralized and top-down and lacking local effective participation and communication between all actors.⁹⁵ The dynamic and adaptable nature of participatory research and development techniques is

⁹⁰ Ibid.; see also Kalymbek, B., Yerkinbayeva, L., Bekisheva, S. and Saipinov, D., 2021. The effect of digitalization on environmental safety. *Journal of Environmental Management & Tourism*, 12(5), pp.1299-1306.

⁹¹ Balabanova, A., Keschyan, N., Borisova, T. and Hachemizova, E., 2021. Using digital platforms for environmental management. In *E3S Web of Conferences* (Vol. 244, p. 07006). EDP Sciences.

⁹² Ibid.; See also Vaslavskaya, I. *et al.* (2023) 'Achieving the principles of sustainable development: Implementation of smart solutions in the infrastructure of modern megacities', *E3S Web of Conferences*, 449, p. 05001. Available at: <https://doi.org/10.1051/e3sconf/202344905001>.

⁹³ Balabanova, A., Keschyan, N., Borisova, T. and Hachemizova, E., 2021. Using digital platforms for environmental management. In *E3S Web of Conferences* (Vol. 244, p. 07006). EDP Sciences.

⁹⁴ Türken, A. and Eyuboglu, E. (2020) 'E-participatory Approaches in Urban Design', *Journal of Contemporary Urban Affairs*, 5. Available at: <https://doi.org/10.25034/ijcua.2021.v5n2-2>.

⁹⁵ Wang, X. *et al.* (2008) 'Enhancing participation: Experiences of participatory geographic information systems in Shanxi province, China', *Applied Geography*, 28(2), pp. 96-109. Available at: <https://doi.org/10.1016/j.apgeog.2007.07.007>.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

what distinguishes them from other methods. These approaches make it possible to gather information on the situation of local people as well as their means of subsistence.⁹⁶ Participatory techniques are becoming more often used in many social and ecological settings, influencing research and development programmes and policies worldwide.⁹⁷ Traditionally linked to the development of rural areas and primary healthcare initiatives, there is now an increasing amount of knowledge and expertise in using these methods in urban environments.⁹⁸

For the purpose of urban development planning, the Environmental Planning and Management (EPM) process need to be considered a participatory approach rather than a technocratic one.⁹⁹ Urban planning and design often use a top-down methodology, whereby planners, acting as authorities, give recommendations to decision-makers.¹⁰⁰ This results in conflicts on the allocation of urban space, preservation of the environment, concerns of residents, working conditions, economic growth, and the establishment of urban identities among those involved.¹⁰¹ This is despite the fact that urban regions exhibit a wide range of ecosystems and institutional hierarchies, which often leads to conflicts in the process of planning and designing.¹⁰² In order to tackle this issue, it is advisable to use a multi-scale strategy that integrates both bottom-up and top-down methods of engagement.¹⁰³ This method seeks to

⁹⁶ Mitlin, D. and Thompson, J., 1995. Participatory approaches in urban areas: strengthening civil society or reinforcing the status quo? *Environment and urbanization*, 7(1), pp.231-250.

⁹⁷ Ibid.

⁹⁸ Ibid.

⁹⁹ Halla, F. and Majani, B., 1999. The environmental planning and management process and the conflict over outputs in Dar-Es-Salaam. *Habitat international*, 23(3), pp.339-350.

¹⁰⁰ Semeraro, T., Zaccarelli, N., Lara, A., Sergi Cucinelli, F. and Aretano, R., 2020. A bottom-up and top-down participatory approach to planning and designing local urban development: Evidence from an urban university center. *Land*, 9(4), p.98.

¹⁰¹ Ibid.

¹⁰² Semeraro, T., Zaccarelli, N., Lara, A., Sergi Cucinelli, F. and Aretano, R., 2020. A bottom-up and top-down participatory approach to planning and designing local urban development: Evidence from an urban university center. *Land*, 9(4), p.98.

¹⁰³ Ibid.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

align diverse perspectives and meet the requirements of many stakeholders, therefore creating a well-coordinated and effective urban environment.¹⁰⁴

From the later part of the 20th century forward, participatory planning and design processes have become more popular and have begun to substitute top-down approaches.¹⁰⁵ Active involvement of citizens is essential in the administration of a city, but, its efficacy is impeded by several hurdles and bureaucratic impediments.¹⁰⁶ Some scholars have found that it is often used for its symbolic significance in democracy rather than for its substantial impact on decision-making.¹⁰⁷

Planning that incorporates public engagement in literature has undergone different techniques throughout the 20th century, although these strategies have often been characterized by time-consuming and laborious discussions.¹⁰⁸ By incorporating digital technology into participatory processes, it is possible to engage with a wide range of people and allow them to participate at their own convenience, regardless of location.¹⁰⁹ The growing popularity of e-participation may be attributed to many factors, including its ability to reach a wide audience, its flexibility in terms of time and location, its cost-effectiveness, and its support for the involvement of younger demographics in decision-making processes related to urban spaces.¹¹⁰ The participatory criteria include factors such as the flow of information, the extent of involvement, the techniques used for participation, the key individuals or

¹⁰⁴ Ibid.

¹⁰⁵ Türken, A. and Eyuboglu, E. (2020) 'E-participatory Approaches in Urban Design', *Journal of Contemporary Urban Affairs*, 5. Available at: <https://doi.org/10.25034/ijcua.2021.v5n2-2>.

¹⁰⁶ Calogero, A., Flores, P., Biscan, B. and Jarrot, S., 2017. A participatory approach to urban planning in slum neighbourhoods of the metropolitan area of Port-au-Prince. *Summary Report. Urban Crises Learning Partnership (UCLP)*.

¹⁰⁷ Ibid.

¹⁰⁸ Türken, A. and Eyuboglu, E. (2020) 'E-participatory Approaches in Urban Design', *Journal of Contemporary Urban Affairs*, 5. Available at: <https://doi.org/10.25034/ijcua.2021.v5n2-2>.

¹⁰⁹ Ibid.; Haleem, A., Javaid, M., Qadri, M.A. and Suman, R., 2022. Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, pp.275-285.

¹¹⁰ Ibid.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

groups involved, the driving forces behind participation, the provision of feedback and the direction of communication, the technological attributes, and the data generated.¹¹¹ Weaknesses associated with e-participation include the laborious and expensive construction of platforms and apps, along with the need for proficient assistance in adapting to new initiatives.¹¹² The opportunities include aspects like as accessibility and comprehensibility, deliberate interface design, extensive involvement, feedback mechanisms, and open-source functionalities that enhance the appeal of local authorities and planning agencies.¹¹³

Participation has played a vital role in sustainable city ideas since the 1970s, with the aim of achieving sustainable development objectives via the implementation of diverse urban concepts such as smart cities, digital cities, and responsive cities.¹¹⁴ Smart cities are comprised of six fundamental elements: smart economics, smart government, smart citizenry, smart transportation, smart environment, and smart lifestyle.¹¹⁵ The governance of smart cities encompasses several elements such as participatory decision-making, provision of public and social services, transparent government, political strategies, and different opinions.¹¹⁶

¹¹¹ Ibid.; *Participatory Development Communication* (no date). Available at: <https://idrc-crdi.ca/sites/default/files/openebooks/306-2/index.html> (Accessed: 2 June 2024).

¹¹² Türken, A. and Eyuboglu, E. (2020) 'E-participatory Approaches in Urban Design', *Journal of Contemporary Urban Affairs*, 5. Available at: <https://doi.org/10.25034/ijcua.2021.v5n2-2>.

¹¹³ Ibid.

¹¹⁴ Ibid.; Anthony Jnr, B. (2023) 'The Role of Community Engagement in Urban Innovation Towards the Co-Creation of Smart Sustainable Cities', *Journal of the Knowledge Economy* [Preprint]. Available at: <https://doi.org/10.1007/s13132-023-01176-1>.

¹¹⁵ Ibid.; Hassan, R., Smart Cities–The Road Towards Sustainable Growth. *Smart Cities in India: The Road Ahead*, p.24.

¹¹⁶ Ibid.; Anand, P. and Navio-Marco, J. (2018) 'Governance and economics of smart cities: opportunities and challenges', *Telecommunications Policy*, 42. Available at: <https://doi.org/10.1016/j.telpol.2018.10.001>; Viale Pereira, G. *et al.* (2017) 'Increasing collaboration and participation in smart city governance: a cross-case analysis of smart city initiatives', *Information Technology for Development*, 23(3), pp. 526–553. Available at: <https://doi.org/10.1080/02681102.2017.1353946>; Gohari, S. *et al.* (2020) 'The Governance Approach of Smart City Initiatives. Evidence from Trondheim, Bergen,

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

Participation may be done via several methods such as submitting applications, engaging in discussion forums, using online mapping tools, completing surveys, participating in e-voting, taking part in interviews, attending meetings, and contributing location-based information to projects in development.¹¹⁷ The generated data comprises maps, project photos, information, notifications, and 3D project models. Citizens may provide feedback about urban issues, including reporting problems, making comments, or participating in decision-making processes for project development.¹¹⁸

Urban planning should integrate both bottom-up and institutional methods, including active involvement of stakeholders and strategic spatial planning at various urban scales.¹¹⁹ Public engagement facilitates an understanding of stakeholders' needs and motivates them to provide ideas rooted on their expertise, perspectives, and behaviours.¹²⁰ Urban design is improved by this activity, which increases the capacity to make well-informed planning decisions and raises awareness of their significance in urban growth.¹²¹ The participatory approach requires equal knowledge across all stakeholders, empowering the local people to develop their role, establishing meaningful engagement, and fostering accountability to the community.¹²² Training is an essential component of citizen engagement mechanisms to facilitate the

and Bodø', *Infrastructures*, 5(4), p. 31. Available at: <https://doi.org/10.3390/infrastructures5040031>; Bednarska-Olejniczak, D., Olejniczak, J. and Svobodová, L. (2019) 'Towards a Smart and Sustainable City with the Involvement of Public Participation – The Case of Wrocław', *Sustainability*, 11(2), p. 332. Available at: <https://doi.org/10.3390/su11020332>.

¹¹⁷ Türken, A. and Eyuboglu, E. (2020) 'E-participatory Approaches in Urban Design', *Journal of Contemporary Urban Affairs*, 5. Available at: <https://doi.org/10.25034/ijcua.2021.v5n2-2>.

¹¹⁸ Ibid.

¹¹⁹ Semeraro, T., Zaccarelli, N., Lara, A., Sergi Cucinelli, F. and Aretano, R., 2020. A bottom-up and top-down participatory approach to planning and designing local urban development: Evidence from an urban university center. *Land*, 9(4), p.98.

¹²⁰ Ibid.

¹²¹ Ibid.

¹²² Mitlin, D. and Thompson, J., 1995. Participatory approaches in urban areas: strengthening civil society or reinforcing the status quo? *Environment and urbanization*, 7(1), pp.231-250.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

development of political and social capacities, together with technical abilities, in order to provide knowledge that is comprehensible and easily available to the whole populace.¹²³ This, thus requires the need of clearly defining the methods, techniques, and goals of involvement to appropriately establish expectations and the extent of impact on decision-making.¹²⁴

5.0 Conclusion

The implementation of a comprehensive planning and development methodology can provide substantial advancements in the realisation of sustainable urban agendas.¹²⁵ Cities may better meet the difficulties posed by climate change, rising urbanisation, and modern urban lifestyles by taking ecological factors into account and adopting a more effective and resilient planning and development perspective.¹²⁶ In the twenty-first century, choices on environmental planning, development, and urban policy now heavily consider urban sustainability.¹²⁷ Sustainable Urban Development (SUD) has to be reconsidered as society grows increasingly conscious of the effects of careless urban planning decisions.¹²⁸

Public engagement in urban planning can be progressively enhanced via the use of digital technology.¹²⁹ Government agencies, universities and the commercial sector can take on prominent roles in the creation and dissemination of location-based platforms.¹³⁰ Key features of digital participation platforms can encompass citizen engagement and community involvement, facilitating citizen input in project design and decision-making, offering consultation processes, fostering interaction between citizens and

¹²³ Ibid.

¹²⁴ Ibid.

¹²⁵ Permana, C.T. and Harsanto, B., 2020. Sustainable city planning concepts and practices in emerging economies: A systematic review. *The Journal of Indonesia Sustainable Development Planning*, 1(1), pp.67-82.

¹²⁶ Ibid.

¹²⁷ Ibid.

¹²⁸ Ibid.

¹²⁹ Türken, A. and Eyuboglu, E. (2020) 'E-participatory Approaches in Urban Design', *Journal of Contemporary Urban Affairs*, 5. Available at: <https://doi.org/10.25034/ijcua.2021.v5n2-2>.

¹³⁰ Ibid.

Resolving the Conflict Between Development Planning and Environmental Management in Kenya

professionals, and incorporating engaging interfaces to encourage participation.¹³¹ E-participation procedures will progress with advancing technology, while also complementing conventional participation methods. Promoting autonomy in design and decision-making processes and empowering individuals will enhance the democratic nature of e-participation.¹³²

Urban planning has the ability to change urban areas at many levels of institutions by using both bottom-up and top-down techniques of engagement.¹³³ This strategy enhances civic participation, promoting a vision for the creation of high-quality urban spaces.¹³⁴ Decision-makers may determine appropriate territorial development hypotheses by considering present and future economic, environmental, and social possibilities, therefore creating a more integrated and inspiring urban setting.¹³⁵

Embracing technology and enhancing a more participatory approach to urban development planning and environmental management can go a long in resolving the clash between these two conflicting but often important concepts.

¹³¹ Ibid.

¹³² Ibid.

¹³³ Semeraro, T., Zaccarelli, N., Lara, A., Sergi Cucinelli, F. and Aretano, R., 2020. A bottom-up and top-down participatory approach to planning and designing local urban development: Evidence from an urban university center. *Land*, 9(4), p.98.

¹³⁴ Ibid.

¹³⁵ Ibid.; Newell, R. and Picketts, I. (2020) 'Spaces, places and possibilities: A participatory approach for developing and using integrated models for community planning', *City and Environment Interactions*, 6, p. 100040. Available at: <https://doi.org/10.1016/j.cacint.2020.100040>.

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

Abstract

This paper critically discusses the need for effective disaster prevention and management in Africa. It argues that Africa is a continent that is highly vulnerable to natural and human-made disasters that disrupt livelihoods and draw gains achieved in socio-economic development. The paper posits that disasters are a key threat to Sustainable Development in Africa. It examines the progress made and challenges faced in disaster prevention and management in Africa. The paper further offers ideas towards effective disaster prevention and management for development in Africa.

1.0 Introduction

The term disaster refers to serious disruption of the functioning of a community or society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community to cope using its own resources¹. Disasters occur in various forms. For example, human-made disasters result from human errors and include industrial explosions or structure failures². In addition, natural disasters result from physical phenomena and include earthquakes, floods, droughts, landslides, and forest fires³. Some disasters can also be classified as complex and include epidemics or armed conflicts⁴. Disasters in whatever form disrupt communities and can take a serious toll on people, property, economies, and the environment⁵. Most disasters often stretch a community's capacity to cope⁶. Disasters are also worsened by climate change and human-induced

¹ Republic of Kenya., 'National Disaster Risk Management Policy' Available at <https://repository.kippra.or.ke/xmlui/bitstream/handle/123456789/559/NATION%20Disaster%20Risk%20Mannagement%20POLICY%20APPROVED.pdf?sequence=1&isAllowed=y> (Accessed on 29/04/2024)

² What Is Disaster Management? Understanding Emergencies from Prevention to Mitigation., Available at <https://publichealth.tulane.edu/blog/what-is-disaster-management/> (Accessed on 29/04/2024)

³ Ibid

⁴ Ibid

⁵ Ibid

⁶ Ibid

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

factors that results in more areas being affected⁷. Effective disaster prevention and management is therefore key for development.

Disaster prevention and management involves implementing strategies, policies and improved coping capacities to lessen the adverse impacts of hazards and the possibility of disasters⁸. It has also been defined as a process of effectively preparing for and responding to disasters⁹. Disaster prevention and management involves strategically organizing resources to lessen the harm that disasters cause¹⁰. In addition, this process also involves a systematic approach to managing the responsibilities of disaster prevention, preparedness, response, and recovery¹¹.

The United Nations notes that disasters are linked to inequalities¹². It points out that unequal access to services leaves the most vulnerable exposed to the danger of disasters; while the effects of disasters exacerbate inequalities and push the most at risk further into poverty¹³. It calls for a people-focused and action-oriented approach to disaster prevention and management that applies to the risk of small-scale and large-scale disasters caused by man-made, or natural hazards, as well as related environmental, technological and biological hazards and risks¹⁴.

The United Nation's *2030 Agenda for Sustainable Development*¹⁵ notes that more frequent and intense natural disasters threaten to reverse much of the

⁷ Republic of Kenya., 'National Disaster Risk Management Policy'

⁸ Ibid

⁹ What Is Disaster Management? Understanding Emergencies from Prevention to Mitigation., Op Cit

¹⁰ Ibid

¹¹ Ibid

¹² United Nations., 'Fighting Inequality for a Resilient Future' Available at <https://www.un.org/en/observances/disaster-reduction-day> (Accessed on 29/04/2024)

¹³ Ibid

¹⁴ Ibid

¹⁵ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

development progress made in recent decades. It urges all countries to promote resilience and disaster risk reduction¹⁶. The Agenda notes that disaster prevention and management is key in realizing the Sustainable Development Goals (SDGs) including combating poverty (SDG 1), achieving food security (SDG 2), making cities and human settlements inclusive, safe, resilient, and sustainable (SDG 11), and combating climate change (SDG 11)¹⁷. Disaster prevention and management is therefore key for Sustainable Development.

This paper critically discusses the need for effective disaster prevention and management in Africa. It argues that Africa is a continent that is highly vulnerable to natural and human-made disasters that disrupt livelihoods and draw gains achieved in socio-economic development. The paper posits that disasters are a key threat to Sustainable Development in Africa. It examines the progress made and challenges faced in disaster prevention and management in Africa. The paper further offers ideas towards effective disaster prevention and management for development in Africa.

2.0 Impacts of Disasters on Development in Africa

Africa is a continent that is highly vulnerable to disasters¹⁸. It has been reported that natural and human-made disasters have been on the rise in the continent over the past decades¹⁹. In Africa, more people are affected by natural hazards, and economic losses incurred are rising²⁰. The impacts of disasters have become an impediment to Sustainable Development in Africa²¹.

<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 29/04/2024)

¹⁶ Ibid

¹⁷ Ibid

¹⁸ Africa Union, 'Africa Regional Strategy for Disaster Risk Reduction' Available at https://www.preventionweb.net/files/7603_AFRICAREGIONALDRRSTRATEGYfullPDF.pdf (Accessed on 29/04/2024)

¹⁹ Ibid

²⁰ Ibid

²¹ Ibid

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

Africa Union's *Agenda 2063*²² acknowledges the vulnerability of Africa to disasters. It notes that due to its geographic location and low level of technological development, Africa remains highly vulnerable to disasters²³. According to *Agenda 2063*, most disasters in Africa appear climate related or hydrometeorological hazards including drought, flood and windstorms²⁴. In addition, *Agenda 2063* notes that less frequent hazards in Africa include pest infestation, earthquakes, landslides, wildfire and volcanic eruptions²⁵. Further, cyclones mainly affect Madagascar, Mozambique, and some of the Indian Ocean islands²⁶. Africa has also in the recent past experienced diseases outbreaks, such as Ebola, that have left a trail of heavy destruction of both life and livelihoods²⁷. The COVID-19 pandemic was also a major disease outbreak globally and in Africa which crippled African economies and upended people's lives thereby threatening Sustainable Development across all its dimensions²⁸. It has been argued that while African households have developed strong disaster capacity entrenched in their culture, these capacities, however, are challenged by outbreaks such as Ebola and COVID-19²⁹.

The capacity of African countries to effectively respond to disasters is affected by factors such poverty and slow and economic growth³⁰. Disasters result in environmental degradation, increase the number of internally displaced persons and refugees therefore affecting human lives and essential assets required for

²² African Union., 'Agenda 2063: The Africa we Want.' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 29/04/2024)

²³ Ibid

²⁴ Ibid

²⁵ Ibid

²⁶ Ibid

²⁷ Ibid

²⁸ United Nations- Habitat., 'COVID-19 in Africa Cities: Impacts, Responses and Policies' Available at <https://unhabitat.org/covid-19-in-africa-cities-impacts-responses-and-policies> (Accessed on 29/04/2024)

²⁹ Ibid

³⁰ East African Community., 'Disaster Risk Reduction and Management' Available at <https://www.eac.int/gender/114-sector/environment-natural-resources-management/disaster-risk-reduction> (Accessed on 29/04/2024)

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

further development³¹. In addition, natural and manmade disasters pose a huge threat to socio-economic development of the continent³². With increased frequency and intensity of extreme climate and severe weather events, the continent experiences the severe consequences of disasters as resources for development are diverted to finance disaster emergencies³³.

Disasters in Africa in general and Sub-Saharan Africa in particular often take a huge toll on vulnerable populations³⁴. Loss of life and livelihoods in the face of already existing challenges sets communities back many years leaving them at risk should another natural hazard occur³⁵. It has been noted that African countries and communities face many natural hazards but the major ones are drought and floods³⁶. These disasters invariably cause famine, food insecurity and poverty therefore affecting Sustainable Development in Africa³⁷. Disaster prevention and management is therefore necessary for development in Africa³⁸.

3.0 Disaster Prevention and Management in Africa: Progress and Challenges

Disaster prevention and management is a key priority for Africa. It has been noted that managing disaster risks and urban challenges is key to ensuring that Africa's development achievements are not lost when disasters hit³⁹.

³¹ Ibid

³² Ibid

³³ Ibid

³⁴ United Nations Office for Disaster Risk Reduction., 'Building Disaster Resilience in Sub-Saharan Africa' Available at <https://www.preventionweb.net/resilient-africa/home.html> (Accessed on 29/04/2024)

³⁵ Ibid

³⁶ United Nations Environment Programme., 'Indigenous Knowledge in Disaster Management in Africa' Available at <https://www.humanitarianlibrary.org/sites/default/files/2013/07/Appendix9IndigenousBookletUNEP.pdf> (Accessed on 29/04/2024)

³⁷ Ibid

³⁸ Ibid

³⁹ The World Bank Group., 'Building Resilience in Africa' Available at <https://www.worldbank.org/en/topic/disasterriskmanagement/brief/building-resilience-in-africa#:~:text=The%20World%20Bank%2C%20Global%20Facility,rural%20areas%20throughout%20the%20continent.> (Accessed on 30/04/2024)

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

According to the World Bank, nearly 90 per cent of all disasters in Africa are weather and climate driven⁴⁰. It notes that by 2030, up to 118 million extremely poor people in Africa will be severely exposed to disasters such as cyclones, drought, floods, earthquakes, extreme heat and extreme weather conditions⁴¹.

The continent continues to face evermore frequent disasters and increasing vulnerability with a devastating repercussion on the lives and livelihoods of its people⁴². It has been noted that Africa has the second highest disaster risk next to Oceania while it is the continent with the highest overall societal vulnerability with 12 of the 15 most vulnerable countries in the world being located in Africa⁴³. The risk of disasters in Africa has been evident from multiple disasters that have hit the continent in recent years including the volcanic eruption on Mount Nyiragongo in the city of Goma in the Democratic Republic of the Congo (DRC), locust swarms and flooding in the Horn of Africa, cyclones and storms that have led to heavy rains and flooding in Southern Africa countries such as the Comoros, Malawi, Mozambique and Zimbabwe⁴⁴.

According to the African Union, Africa has become increasingly exposed to frequent and intensified threats of hazards, such as floods, droughts, cyclones, earthquakes, landslides and conflicts which are causing increased economic losses and mortalities⁴⁵. It further notes that disaster risk in Africa is multi-dimensional in nature⁴⁶. This means that the incidence and interactions between different types of hazards such as floods, droughts, cyclones, earthquakes, landslides and conflicts contribute to the overall risk profile of

⁴⁰ Ibid

⁴¹ Ibid

⁴² Disaster Management in Africa: Challenges and Perspectives for Human Security., Available at <https://amaniafrica-et.org/disaster-management-in-africa-challenges-and-perspectives-for-human-security/> (Accessed on 30/04/2024)

⁴³ Ibid

⁴⁴ Ibid

⁴⁵ African Union., 'Catalysing Risk-Informed Early Action in Africa: Investing in Multi-Hazard Early Warning Systems to Strengthen Resilience to Disaster Risk' Available at https://au.int/sites/default/files/documents/42530-doc-AUC_DRR_Policy_Brief_2.pdf (Accessed on 30/04/2024)

⁴⁶ Ibid

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

any given locality, country, region and entire continent⁴⁷. Effective disaster prevention and management is therefore a key goal for Africa.

The need for effective disaster prevention and management is envisaged under the *Sendai Framework for Disaster Risk Reduction*⁴⁸. Under this Framework, states commit to address disaster risk reduction and the building of resilience to disasters with a renewed sense of urgency within the context of Sustainable Development and poverty eradication, and to integrate, as appropriate, both disaster risk reduction and the building of resilience into policies, plans, programmes and budgets at all levels and to consider both within relevant frameworks⁴⁹. The implementation of the Sendai Framework is guided by several principles geared towards effective disaster risk reduction. These principles include state responsibility to prevent and reduce disaster risk, including through international, regional, subregional, transboundary and bilateral cooperation; the obligation to share responsibilities between central governments and relevant national authorities, sectors and stakeholders, as appropriate according national circumstances and systems of governance⁵⁰; protection of persons and their property, health, livelihoods and productive assets, as well as cultural and environmental assets, while promoting and protecting all human rights, including the right to development; inclusive, accessible and non-discriminatory participation, that pays special attention to people disproportionately affected by disasters, especially the poorest⁵¹; effective coordination mechanisms within and across sectors and with relevant stakeholders at all levels⁵²; empowering of local authorities and local communities to reduce disaster risk, including through resources, incentives and decision-making responsibilities, as appropriate; effective and meaningful global partnership and the further strengthening of international cooperation; and sustainable and timely provision of support, including through finance,

⁴⁷ Ibid

⁴⁸ Sendai Framework for Disaster Risk Reduction 2015-2030., Available at <https://www.undrr.org/media/16176/download?startDownload=20240430> (Accessed on 30/04/2024)

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ Ibid

⁵² Ibid

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

technology transfer and capacity building from developed countries and partners tailored to the needs and priorities of developing countries, in particular the least developed countries, small island developing States, landlocked developing countries and African countries, as well as middle-income and other countries facing specific disaster risk challenges⁵³.

The Sendai Framework also identifies four priority actions for effective disaster prevention and management⁵⁴. These are understanding disaster risk; strengthening disaster risk governance to manage disaster risk; investing in disaster risk reduction for resilience; and enhancing disaster preparedness for effective response and to 'Build Back Better' in recovery, rehabilitation and reconstruction⁵⁵. The Sendai Framework is key in enhancing effective disaster prevention and management. It recognizes that the state has the primary role to reduce disaster risk but that responsibility should be shared with other stakeholders including local governments, the private sector and other stakeholders⁵⁶. The Framework sets out the overall objective to substantially reduce disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries⁵⁷. It is therefore necessary to implement the Sendai Framework in Africa for effective disaster prevention and management.

The African Union has also put in place policy and institutional frameworks to effectively respond to the increasing disasters confronting the continent. For example, the *Africa Regional Strategy for Disaster Risk Reduction*⁵⁸ aims to contribute to the attainment of Sustainable Development and poverty eradication by facilitating the integration of disaster risk reduction into development. The Strategy recognizes that disaster risks in Africa results from

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷ Ibid

⁵⁸ Africa Regional Strategy for Disaster Risk Reduction., Available at https://www.preventionweb.net/files/4038_africaregionalstrategy1.pdf (Accessed on 30/04/2024)

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

the interaction between natural, technological or conflict induced hazards and vulnerability conditions⁵⁹. It focuses on disasters arising from natural and related human induced hazards⁶⁰. The Strategy seeks to achieve several objectives for effective disaster prevention and management in Africa. These objectives include increasing political commitment to disaster risk reduction; improving identification and assessment of disaster risks; enhancing knowledge management for disaster risk reduction; increasing public awareness of disaster risk reduction; improving governance of disaster risk reduction institutions; and integrating disaster risk reduction into emergency response management⁶¹. Implementation of this Strategy is therefore vital for effective disaster prevention and management for development in Africa. It has been noted that effective implementation of the Strategy depends on institutional arrangements and capacities as well as resources⁶². It is therefore necessary to build capacities, strengthen institutions in Africa, and ensure availability of resources for effective implementation of the Africa Regional Strategy for Disaster Risk Reduction⁶³.

The African Union Commission has further developed a *Programme of Action*⁶⁴ for the implementation of the Sendai Framework for Disaster Risk Reduction in Africa in line with the Africa Regional Strategy for Disaster Risk Reduction. The Programme of Action aims to strengthen synergies between the Sendai Framework and the Africa Regional Strategy for effective disaster prevention and management in Africa. The Programme of Action seeks to achieve the global outcome in Africa as outlined in the Sendai Framework which is ‘the substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.’⁶⁵ It also aims to prevent new

⁵⁹ Ibid

⁶⁰ Ibid

⁶¹ Ibid

⁶² Ibid

⁶³ Ibid

⁶⁴ Programme of Action for the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in Africa In line with the Africa Regional Strategy for Disaster Risk Reduction., Available at https://www.unisdr.org/files/49455_poaforsendaiimplementationinafrica.pdf (Accessed on 30/04/2024)

⁶⁵ Ibid

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

and reduce existing disaster risk in Africa through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and therefore strengthen resilience of the continent to disasters⁶⁶. It is therefore necessary to pursue the objectives of this Programme of Action and strengthen synergies between the Sendai Framework and the Africa Regional Strategy for Disaster Risk Reduction for effective disaster prevention and management for development in Africa.

At a national level, the *National Disaster Risk Management Policy*⁶⁷ of Kenya acknowledges that the country faces a wide range of natural and human-induced hazards, such as, drought, floods, landslides, human and animal disease, pests, earthquakes, and urban and forest fires, that impacts on and reduces the full realization of the benefits of Vision 2030⁶⁸. It further acknowledges that disasters in Kenya are aggravated by climate change and human-induced factors that has resulted in more areas in the country being affected⁶⁹. The aim of the policy is to build a safe and disaster-resilient nation through establishment of a robust Disaster Risk Management system that contributes to and protects the achievements of Kenya's national development⁷⁰. It also seeks to substantially reduce natural and human-induced disaster risk and associated losses in social, economic and environmental assets at national and county levels through the establishment of an integrated multi-hazard Disaster Risk Management approach⁷¹. In order to achieve effective disaster prevention and management in Kenya, the Policy also seeks to mainstream Disaster Risk Management into Sustainable Development policies, strategies and plans at all levels and within and across all sectors⁷².

⁶⁶ Ibid

⁶⁷ Republic of Kenya., 'National Disaster Risk Management Policy', Op Cit

⁶⁸ Ibid

⁶⁹ Ibid

⁷⁰ Ibid

⁷¹ Ibid

⁷² Ibid

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

The Policy identifies best practices for effective disaster risk management in Kenya including comprehensive disaster risk management; all hazards approach; and Subsidiarity and Tiered Response System⁷³. The principle of subsidiarity requires that functions and actions should be undertaken at the lowest or least centralized competent level possible⁷⁴. The concept of Tiered Response on the other hand suggests that disaster response is by default always handled first by the directly impacted community and families, then the local governments and organizations⁷⁵. However, when response-needs exceed local capacity, then the next highest level assumes responsibility for response up to the level of international support⁷⁶.

The Policy identifies priority areas for effective disaster prevention and management in Kenya including establishing and strengthening institutional mechanisms and capacities for Disaster Risk Management; reducing disaster risk and vulnerabilities at local, county and national levels; mainstreaming Disaster Risk Management into Sustainable Development policies, strategies and plans at all levels and within and across all sectors; enhancing resilience at the local, county, and national level to the impacts of disaster risk and climate change; and enhancing effective and coordinated disaster preparedness, prevention, response, mitigation, and recovery⁷⁷. It is necessary to actualize this Policy in order to achieve effective disaster prevention and management in Kenya for development.

There are efforts towards enacting a legislation on disaster prevention and management in Kenya. The *National Disaster Risk Management Bill*⁷⁸ aims to establish the National Disaster Risk Management Authority and County Disaster Risk Management Committees; and to provide a legal framework for

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Republic of Kenya., 'National Disaster Risk Management Policy', Op Cit

⁷⁶ Ibid

⁷⁷ Ibid

⁷⁸ National Disaster Risk Management Bill., Available at https://kenyalaw.org/kl/fileadmin/pdfdownloads/bills/2023/TheNationalDisasterRiskManagementBill_2023.pdf (Accessed on 30/04/2024)

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

the co-ordination of disaster risk management activities among other connected purposes⁷⁹. The Bill aims to enhance effective disaster prevention and management in Kenya by providing for a legislative framework for disaster risk management; enhancing effective and coordinated disaster preparedness, prevention, response, mitigation and recovery; reducing disaster risks and vulnerabilities at the national and county levels of government; and enhancing resilience to the impacts of disaster risks and climate change at both the national and county levels⁸⁰. It also sets out the guiding principles to disaster risk management in Kenya. These principles include a comprehensive approach to Disaster Risk Management that balances between the reduction of risk and the enhancement of community resilience, while ensuring effective response and recovery capabilities; all hazards approach in managing disasters; enhancing local disaster risk management capability as the frontline to disaster risk management; respect, ethics and professional standards; transparency and accountability; commitment in service to the people; and supporting the national government and the county government including the local communities, in disaster risk management⁸¹. The Bill also seeks to establish an institutional framework for effective disaster prevention and management in Kenya which comprises of the Intergovernmental Council on Disaster Risk Management, and the National Disaster Risk Management Authority⁸². It is imperative to fast track the enactment of this legislation in order to strengthen the legal and institutional framework for effective disaster prevention and management in Kenya.

County governments also have an important role to play in disaster prevention and management in Kenya. Pursuant to the sixth schedule to the *Constitution of Kenya*⁸³ as read together with the *Intergovernmental Relations Act*⁸⁴ disaster management functions in Kenya have been divided between the

⁷⁹ Ibid, Preamble

⁸⁰ Ibid, S 3

⁸¹ Ibid

⁸² Ibid, Part II

⁸³ Constitution of Kenya., 2010., Sixth Schedule, S 15., Government Printer, Nairobi

⁸⁴ Intergovernmental Relations Act., 2012., Government Printer, Nairobi

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

National Government and County Governments⁸⁵. The functions of the national government in disaster prevention include development and implementation of a national disaster prevention policy; capacity building and technical assistance to county governments on disaster prevention; conducting national disaster risk assessments or analyses; establishing national disaster early warning sector based systems; and carrying out national civic education and awareness creation to stakeholders⁸⁶. The functions of county governments on the other hand include alignment of county disaster prevention policy with national policy; implementation of county disaster prevention policy; capacity building and technical assistance to communities on disaster prevention; conducting county disaster risk assessments or analysis; communicating early warning disaster information to communities; and carrying out civic education and awareness to local stakeholders and communities⁸⁷. County governments have made progress towards fulfilling their obligations by enacting legislations to strengthen their disaster prevention and management capacities⁸⁸. It is necessary for county governments in Kenya to enhance their efforts towards disaster prevention and management in Kenya. It has been argued that county governments have the potential to improve disaster prevention and management in Kenya as a result of devolution which has strengthened responsive governance in Kenya⁸⁹.

Despite the efforts made towards enhancing disaster prevention and management in Africa, the continent still faces several challenges in realizing this goal. For example, it has been opined that disaster response in most

⁸⁵ Legal Notice No. 86., 'Delineation of Disaster Management Function' Government Printer, Nairobi

⁸⁶ Ibid

⁸⁷ Ibid

⁸⁸ See for example Tana River County Disaster Risk Management Act, 2020; Vihiga County Disaster Management Act, 2020; Mombasa County Disaster Preparedness and Emergency Management Act, 2017; and the Nairobi City County Disaster and Emergency Management Act, 2015.

⁸⁹ Mutanda. N., Orindi. V., & Ochieng. K., 'Strengthening Disaster Management in Kenya' Available at

https://www.researchgate.net/publication/331063875_STRENGTHENING_DISASTER_MANAGEMENT_IN_KENYA (Accessed on 30/04/2024)

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

African countries is extremely slow and inefficient and, by the time governments and the private sector have raised enough resources to respond meaningfully, the problem is usually worse, and more funding is needed⁹⁰. Further, it has been pointed out that in most cases, not only is the response to disasters is slow and inefficient but also it is largely reactive focusing on relief and immediate rehabilitation while ignoring preventive disaster reduction measures⁹¹. Inadequate early warning systems and the gap in translating early warning to early action remain critical hurdles in ensuring effective disaster prevention and management in Africa⁹². Inadequate funding also heavily affects disaster management in Africa⁹³. Further, in Kenya, effective disaster prevention and management is hindered by challenges such as inadequate institutional mechanisms and capacities including human, technical, and financial capacities; increased disaster risk and vulnerabilities at local, county and national levels; low resilience at local, county and national level to the impacts of disaster risk and climate change; and ineffective and uncoordinated disaster preparedness, prevention, response, mitigation and recovery⁹⁴. It is necessary to address these challenges at the continental, regional, and national levels in order to foster effective disaster prevention and management for development in Africa.

4.0 Towards Effective Disaster Prevention and Management in Africa

In order to foster effective disaster management and prevention in Africa, it is necessary to strengthen disaster early warning and preparedness⁹⁵. The African Regional Strategy for Disaster Risk Reduction notes that prospective assessment of the risk of disasters to development and the effect of development interventions on disasters, effective early warning of impending risks, and systematic assessment of disaster losses are particularly important in helping communities and countries to determine and understand the actions which they may take in order to reduce the impact of potential and

⁹⁰ Disaster Management in Africa: Challenges and Perspectives for Human Security., Op Cit

⁹¹ Ibid

⁹² Ibid

⁹³ Ibid

⁹⁴ Republic of Kenya., 'National Disaster Risk Management Policy'., Op Cit

⁹⁵ Africa Regional Strategy for Disaster Risk Reduction., Op Cit

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

existing risks⁹⁶. Effectively strengthening early warning and preparedness towards disasters especially through human-centered and participatory approaches can help identify available strengths and capacities that can reduce disaster risks⁹⁷. It has been noted that African countries need to establish command centers which operate on a twenty four hour basis to closely monitor and timeously issue early warning alerts on impending natural disasters for effective responses⁹⁸. The United Nations notes that strengthening multi-hazard early warning systems that lead to early action is vital in disaster prevention and management by reducing risk and building resilience⁹⁹. It is therefore necessary to establish functional early warning systems in Africa for effective disaster prevention and management.

In addition, there is need for proactive Disaster Risk Reduction in Africa¹⁰⁰. The concept and practice Disaster Risk Reduction entails reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and environment and improved preparedness for adverse events¹⁰¹. This idea aims at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of Sustainable Development¹⁰². Some of the key approaches towards this end include enhanced financial support for the vulnerable, skills and technology transfer, as well as through investment in community-based

⁹⁶ Ibid

⁹⁷ Ibid

⁹⁸ Disaster Management in Africa: Challenges and Perspectives for Human Security., Op Cit

⁹⁹ United Nations., 'United Nations Office for Disaster Risk Reduction (UNDRR)' Available at <https://www.un.org/ldcportal/content/united-nations-office-disaster-risk-reduction-undrr> (Accessed on 30/04/2024)

¹⁰⁰ Republic of Kenya., 'National Disaster Risk Management Policy', Op Cit

¹⁰¹ Ibid

¹⁰² International Organization for Migration., 'Taking Sendai Forward: IOM Strategic Work Plan on Disaster Risk Reduction & Resilience' Available at https://www.iom.int/sites/g/files/tmzbd1486/files/our_work/DOE/humanitarian_emergencies/Disaster-Risk-Reduction-Strategic-Action-Plan.pdf (Accessed on 30/04/2024)

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

risk reduction initiatives¹⁰³. It is therefore necessary for African countries to facilitate the development, implementation and maintenance of disaster risk reduction strategies that will result in resilient areas, communities, households and individuals¹⁰⁴. It is also essential to integrate Disaster Risk Reduction initiatives with development plans¹⁰⁵.

Further, it is imperative to embrace the concept of decentralization and the participation of all stakeholders at all levels including local levels for effective disaster prevention and management¹⁰⁶. The Sendai Framework acknowledges that while the enabling, guiding and coordinating role of national and federal state governments remain essential, it is necessary to empower local authorities and local communities to reduce disaster risk, including through resources, incentives and decision-making responsibilities, as appropriate¹⁰⁷. It further notes that while the drivers of disaster risk may be local, national, regional or global in scope, disaster risks have local and specific characteristics that must be understood for the determination of measures to reduce disaster risk¹⁰⁸. Therefore, for effective disaster prevention and management in Africa, there is need to enhance collaboration among people at the local level through approaches such as disseminating disaster risk information through the involvement of community-based organizations and nongovernmental organizations¹⁰⁹. Embracing decentralized approaches towards disaster prevention and management can ensure participation of all stakeholders and the formulation of effective remedies tailored to the specific needs of localities¹¹⁰.

Harnessing indigenous knowledge is also fundamental for effective disaster prevention and management in Africa¹¹¹. It has been noted that African

¹⁰³ Ibid

¹⁰⁴ Republic of Kenya., 'National Disaster Risk Management Policy', Op Cit

¹⁰⁵ Ibid

¹⁰⁶ Sendai Framework for Disaster Risk Reduction 2015-2030., Op Cit

¹⁰⁷ Ibid

¹⁰⁸ Ibid

¹⁰⁹ Ibid

¹¹⁰ Ibid

¹¹¹ Africa Regional Strategy for Disaster Risk Reduction., Op Cit

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

communities tackle disasters at local levels often utilizing traditional coping mechanisms based on local knowledge and experience¹¹². Local community experience provides the basis for people to improve their knowledge and adopt more effective disaster risk reduction approaches¹¹³. The Sendai Framework acknowledges that traditional knowledge is key for disaster prevention and management¹¹⁴. It seeks to ensure the use of traditional, indigenous and local knowledge and practices, as appropriate, to complement scientific knowledge in disaster risk assessment and the development and implementation of policies, strategies, plans and programmes of specific sectors, with a cross-sectoral approach, which should be tailored to localities¹¹⁵. The National Disaster Risk Management Policy of Kenya also seeks to promote the use of traditional, indigenous and local knowledge and practices, as appropriate; to complement scientific knowledge in disaster risk management to apply relevant methodologies and models to assess disaster risks, vulnerabilities and exposure to all hazards¹¹⁶. Indigenous knowledge is therefore key for effective disaster prevention and management in Africa. Indigenous peoples, through their experience and traditional knowledge, provide an important contribution to the development and implementation of plans and mechanisms, including for early warning¹¹⁷. Indigenous communities in Africa have for many decades faced many natural hazards including drought and floods that invariably cause famine, food insecurity and poverty¹¹⁸. However, these communities have devised a variety of measures such as growing drought-resistant and early-maturing indigenous crop varieties, gathering wild fruits and vegetables, wetlands cultivation, livestock diversifying and splitting which have enabled them to survive such disasters with little or no support from the outside world¹¹⁹. It is therefore

¹¹² Ibid

¹¹³ Ibid

¹¹⁴ Sendai Framework for Disaster Risk Reduction 2015-2030., Op Cit

¹¹⁵ Ibid

¹¹⁶ Republic of Kenya., 'National Disaster Risk Management Policy', Op Cit

¹¹⁷ Sendai Framework for Disaster Risk Reduction 2015-2030., Op Cit

¹¹⁸ United Nations Environment Programme., 'Indigenous Knowledge in Disaster Management in Africa' Op Cit

¹¹⁹ Ibid

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

necessary to harness indigenous knowledge in Africa for effective disaster prevention and management.

Finally, it is vital to combat climate change in Africa¹²⁰. Climate change increases the frequency and intensity of extreme weather events such as severe drought, floods and tropical cyclones which trigger destabilizing situations and cause extensive loss of livelihoods and property in many African countries, reversing development gains, pushing more families into poverty¹²¹. Climate change therefore has severe implications for the continent's food security, livelihoods, and economic growth¹²². It has been noted that with increased frequency and intensity of extreme climate and severe weather events, Africa experiences the severe consequences of disasters as resources for development are diverted to finance disaster emergencies¹²³. Climate change increases the severity of disasters such as droughts and floods in Africa undermining development¹²⁴. African countries should therefore enhance climate action by implementing efficient mitigation and adaptation strategies for effective disaster prevention and management¹²⁵.

5.0 Conclusion

Africa is highly vulnerable to disasters¹²⁶. The continent continues to face disasters such as drought and floods which cause famine, food insecurity and poverty therefore affecting Sustainable Development¹²⁷. Effective disaster prevention and management is key to ensuring that Africa's development

¹²⁰ African Development Bank Group., 'International Day for Disaster Risk Reduction – Why Climate Insurance Matters' Available at <https://www.afdb.org/en/news-and-events/international-day-disaster-risk-reduction-why-climate-insurance-matters-65010> (Accessed on 30/04/2024)

¹²¹ Ibid

¹²² Ibid

¹²³ East African Community., 'Disaster Risk Reduction and Management' Op Cit

¹²⁴ African Development Bank Group., 'International Day for Disaster Risk Reduction – Why Climate Insurance Matters' Op Cit

¹²⁵ Ibid

¹²⁶ Africa Union., 'Africa Regional Strategy for Disaster Risk Reduction' Op Cit

¹²⁷ United Nations Environment Programme., 'Indigenous Knowledge in Disaster Management in Africa' Op Cit

(Re) Imagining Effective Disaster Prevention and Management for Development in Africa

achievements are not lost when disasters hit¹²⁸. The Sendai Framework for Disaster Risk Reduction¹²⁹; the Africa Regional Strategy for Disaster Risk Reduction¹³⁰; and the National Disaster Risk Management Policy of Kenya¹³¹ are some of the key instruments adopted at the global, continental, and national levels respectively for effective disaster prevention and management. However, effective disaster prevention and management in Africa is hindered by factors such as inadequate early warning systems, inadequate institutional mechanism and capacities including human, technical, and financial capacities, and ineffective and uncoordinated disaster preparedness, prevention, response, mitigation and recovery¹³². It is necessary to address these challenges in order to foster effective disaster prevention and management for development in Africa. This can be achieved by strengthening disaster early warning and preparedness¹³³; fostering proactive Disaster Risk Reduction in Africa¹³⁴; embracing the concept of decentralization and the participation of all stakeholders at all levels including local levels for effective disaster prevention and management¹³⁵; harnessing indigenous knowledge on disaster prevention and management¹³⁶; and combating climate change in Africa¹³⁷. Effective disaster prevention and management for development in Africa is an achievable reality that needs to be fast tracked.

¹²⁸ The World Bank Group., 'Building Resilience in Africa' Op Cit

¹²⁹ Sendai Framework for Disaster Risk Reduction 2015-2030., Op Cit

¹³⁰ Africa Regional Strategy for Disaster Risk Reduction., Op Cit

¹³¹ Republic of Kenya., 'National Disaster Risk Management Policy'., Op Cit

¹³² Ibid

¹³³ Africa Regional Strategy for Disaster Risk Reduction., Op Cit

¹³⁴ Republic of Kenya., 'National Disaster Risk Management Policy'., Op Cit

¹³⁵ Sendai Framework for Disaster Risk Reduction 2015-2030., Op Cit

¹³⁶ Africa Regional Strategy for Disaster Risk Reduction., Op Cit

¹³⁷ African Development Bank Group., 'International Day for Disaster Risk Reduction – Why Climate Insurance Matters' Available at

<https://www.afdb.org/en/news-and-events/international-day-disaster-risk-reduction-why-climate-insurance-matters-65010> (Accessed on 30/04/2024)

Promoting Sustained Economic Growth and Decent Work for All

Abstract

Fostering decent work and economic growth is vital in the realization of the Sustainable Development agenda. Sustainable Development Goal (SDG) 8 under the United Nation's 2030 Agenda for Sustainable Development seeks to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. This paper critically discusses the need to promote sustained economic growth and decent work for all. It argues that achieving economic growth and decent work for all is vital in fostering Sustainable Development. The paper examines the measures and progress made towards promoting economic growth and decent work for all at various levels. It also interrogates some of the challenges facing the achievement of this goal. In addition, the paper discusses some of the interventions necessary for promoting sustained economic growth and decent work for all.

1.0 Introduction

Productive employment and decent work have been recognized as key elements to achieving a fair globalization and poverty reduction¹. According to the International Labour Organization (ILO), decent work sums up the aspirations of people in their working lives². ILO notes that decent work involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for all, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men³.

Fostering decent work and economic growth is vital in the realization of the Sustainable Development agenda⁴. It has been noted that decent work and

¹ International Labour Organization, 'Decent Work' Available at <https://www.ilo.org/global/topics/decent-work/lang-en/index.htm> (Accessed on 15/04/2024)

² Ibid

³ Ibid

⁴ Close the Gap Foundation, 'Decent Work and Economic Growth' Available at <https://www.closesthegapfoundation.org/glossary/decent-work-and-economic-growth> (Accessed on 15/04/2024)

Promoting Sustained Economic Growth and Decent Work for All

economic growth focuses on creating opportunities for everyone to have access to quality employment that provides fair wages, social protection, and safe working conditions⁵. It seeks to eradicate forced labor, child labor, and all forms of discrimination in the workplace⁶. In addition, achieving this goal emphasizes the importance of economic growth that is sustainable, inclusive, and benefits all members of the society⁷.

The United Nations *2030 Agenda for Sustainable Development*⁸ captures the need to promote sustained economic growth and decent work for all. It sets out the global agenda to create conditions for sustainable, inclusive and sustained economic growth, shared prosperity and decent work for all, taking into account different levels of national development and capacities⁹. Sustainable Development Goal (SDG) 8 seeks to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all¹⁰.

SDG 8 sets out several targets that are vital in realizing promoting sustained economic growth and decent work for all¹¹. These include: sustaining per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent Gross Domestic Product (GDP) growth per annum in the least developed countries¹²; achieving higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors¹³; promoting development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized

⁵ Ibid

⁶ Ibid

⁷ Ibid

⁸ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 15/04/2024)

⁹ Ibid

¹⁰ Ibid

¹¹ Ibid

¹² Ibid, SDG 8.1

¹³ Ibid, SDG 8.2s

Promoting Sustained Economic Growth and Decent Work for All

enterprises, including through access to financial services¹⁴; progressively improving global resource efficiency in consumption and production and decoupling economic growth from environmental degradation¹⁵; achieving full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value¹⁶; substantially reducing the proportion of youth not in employment, education or training¹⁷; taking immediate and effective measures to eradicate forced labour, ending modern slavery and human trafficking and securing the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers¹⁸; and protecting labour rights and promoting safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment¹⁹. Realizing these targets is key in promoting economic growth and decent work for all.

This paper critically discusses the need to promote sustained economic growth and decent work for all. It argues that achieving economic growth and decent work for all is vital in fostering Sustainable Development. The paper examines the measures and progress made towards promoting economic growth and decent work for all at various levels. It also interrogates some of the challenges facing the achievement of this goal. In addition, the paper discusses some of the interventions necessary for promoting sustained economic growth and decent work for all.

2.0 Human Rights Approach to Sustained Economic Growth and Decent Work for All

Promoting decent work and sustainable economic growth within the framework of SDG 8 entails addressing gender inequalities, the consequences of market economies, and the role of the informal sector while also considering

¹⁴ Ibid, SDG 8.3

¹⁵ Ibid, SDG 8.4

¹⁶ Ibid, SDG 8.5

¹⁷ Ibid, SDG 8.6

¹⁸ Ibid, SDG 8.7

¹⁹ Ibid, SDG 8.8

Promoting Sustained Economic Growth and Decent Work for All

environmental sustainability²⁰. It has been noted that SDG 8 is unique among the SDGs in that it covers all three dimensions of sustainable development by integrating economic, social and environmental issues²¹. In terms of environmental sustainability, conserving the environment is key in promoting sustained economic growth since the natural environment plays an important role in supporting economic activities²². Environmental conservation contributes directly to economic progress by providing resources and raw materials such as water, timber and minerals that are required as inputs for the production of goods and services; and indirectly, through services provided by ecosystems including carbon sequestration, water purification, managing flood risks, and nutrient cycling²³. In addition, environmental and natural disasters directly affect economic activities resulting in huge economic losses throwing many households into poverty²⁴. Conserving the environment and maintaining ecosystems and mitigating climate change can therefore have a great positive impact on countries' economic and employment sectors²⁵. In the context of economic sustainability, sustained and inclusive economic growth is a prerequisite for Sustainable Development, and can contribute to improved livelihoods for people around the world²⁶. Sustained economic growth can lead to new and better employment opportunities and provide greater economic security for all²⁷. Promoting sustained economic growth and decent work is also key in fostering social progress by diminishing inequalities

²⁰ Chigbu. B., & Nekhwevha. F., 'Exploring the Concepts of Decent Work Through the Lens of SDG 8: Addressing Challenges and Inadequacies' Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10694193/> (Accessed on 15/04/2024)

²¹ International Labour Organization., 'World is "Well off Track" to Achieve SDG 8, New ILO Research Finds' Available at https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_894138/lang--en/index.htm (Accessed on 15/04/2024)

²² United Nations Environment Programme., 'Goal 8: Decent Work and Economic Growth' Available at <https://www.unep.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-8> (Accessed on 15/04/2024)

²³ Ibid

²⁴ Ibid

²⁵ United Nations Environment Programme., 'Goal 8: Decent Work and Economic Growth' Op Cit

²⁶ Ibid

²⁷ Ibid

Promoting Sustained Economic Growth and Decent Work for All

between the rich and poor²⁸. Realizing SDG 8 therefore envisages achieving all facets of Sustainable Development being environmental sustainability, social progress, and economic development²⁹.

Economic growth and decent work are key human rights that have been embraced in various human right instruments. According to the *Universal Declaration of Human Rights (UDHR)*³⁰, everyone person has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment³¹. It further provides that everyone who works has the right to just and favourable remuneration ensuring for themselves and their family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection³². In addition, UDHR stipulates that everyone has the right to rest and leisure, including reasonable limitation of working hours and periodic holidays with pay³³. The UDHR therefore sets out key labour rights are crucial in promoting sustained economic growth and decent work for all.

The *International Covenant on Economic, Social and Cultural Rights (ICESCR)*³⁴ requires all states to recognize the right to work, which includes the right of everyone to the opportunity to gain their living by work which they freely choose or accept, and will take appropriate steps to safeguard this right³⁵. ICESCR also requires states to recognize the right of everyone to the enjoyment of just and favourable conditions of work including fair wages and equal remuneration for work of equal value without distinction of any kind, in particular women being guaranteed conditions of work not inferior to those enjoyed by men, with equal pay for equal work; safe and healthy working

²⁸ Ibid

²⁹ Ibid

³⁰ Universal Declaration of Human Rights., Available at https://www.ohchr.org/sites/default/files/UDHR/Documents/UDHR_Translations/eng.pdf (Accessed on 15/04/2024)

³¹ Ibid, article 23 (1)

³² Ibid, article 23 (3)

³³ Ibid, article 24

³⁴ International Covenant on Economic, Social and Cultural Rights., Available at <https://www.ohchr.org/sites/default/files/cescr.pdf> (Accessed on 15/04/2024)

³⁵ Ibid, article 6 (1)

Promoting Sustained Economic Growth and Decent Work for All

conditions; equal opportunity for everyone to be promoted in his employment to an appropriate higher level, subject to no considerations other than those of seniority and competence; and rest, leisure and reasonable limitation of working hours and periodic holidays with pay, as well as remuneration for public holidays³⁶. The ICESCR also enshrines the right of every person to form and join trade unions³⁷. It further prohibits child labour and requires states to set age limits below which the paid employment of child labour should be prohibited and punishable by law³⁸. Due to these key provisions aimed at promoting decent work for sustained economic growth, the ICESCR has been described as the most comprehensive treaty with respect to the right to decent work³⁹.

The ILO Conventions have also been identified as fundamental in ensuring decent work for all and sustained economic growth and are at times referred to as the core labour standards⁴⁰. These Conventions have been described as fundamental to the rights of human beings at work, irrespective of the level of development of individual member states⁴¹. They provide a necessary framework from which to strive freely for the improvement of individual and collective conditions of work⁴². They include Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)⁴³; Right to Organise and Collective Bargaining Convention, 1949 (No. 98)⁴⁴; Forced Labour Convention, 1930 (No. 29)⁴⁵; Abolition of Forced Labour Convention,

³⁶ Ibid, article 7

³⁷ Ibid, article 8

³⁸ Ibid, article 10 (3)

³⁹ Frey, D., & MacNaughton, G., 'A Human Rights Lens on Full Employment and Decent Work in the 2030 Sustainable Development Agenda' Available at <https://journals.sagepub.com/doi/pdf/10.1177/2158244016649580> (Accessed on 15/04/2024)

⁴⁰ International Labour Organization., 'The International Labour Organization's Fundamental Conventions' Available at https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_095895.pdf (Accessed on 15/04/2024)

⁴¹ Ibid

⁴² Ibid

⁴³ Ibid

⁴⁴ International Labour Organization., 'The International Labour Organization's Fundamental Conventions' Op Cit

⁴⁵ Ibid

Promoting Sustained Economic Growth and Decent Work for All

1957 (No. 105)⁴⁶; Minimum Age Convention, 1973 (No. 138)⁴⁷; Worst Forms of Child Labour Convention, 1999 (No. 182)⁴⁸; Equal Remuneration Convention, 1951 (No. 100)⁴⁹; and Discrimination (Employment and Occupation) Convention, 1958 (No. 111)⁵⁰. In addition, the *ILO Declaration on Fundamental Principles and Rights at Work*⁵¹ establishes four core labor standards based on ILO conventions which are: freedom of association and the right to collective bargaining; the elimination of forced or compulsory labor; the abolition of child labor, and the elimination of discrimination in employment⁵². These instruments are vital in promoting decent work for all towards sustained economic growth.

At the continental level, the *African Charter on Human and Peoples' Rights*⁵³ embraces sustained economic growth and decent work for all as fundamental human rights in Africa. The Charter provides that all people shall have the right to their economic, social and cultural development with due regard to their freedom and identity and in the equal enjoyment of the common heritage of mankind⁵⁴. The Charter further stipulates that states shall have the duty, individually or collectively, to ensure the exercise of the right to development⁵⁵. In relation to decent work, the African Charter on Human and Peoples' Rights provides that every individual shall have the right to work under equitable and satisfactory conditions, and shall receive equal pay for

⁴⁶ Ibid

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ International Labour Organization Declaration on Fundamental Principles and Rights at Work., Available at https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_467653.pdf (Accessed on 15/04/2024)

⁵² Ibid

⁵³ African Charter on Human and Peoples' Rights., Available at https://au.int/sites/default/files/treaties/36390-treaty-0011_-_african_charter_on_human_and_peoples_rights_e.pdf (Accessed on 16/04/2024)

⁵⁴ Ibid, article 22 (1)

⁵⁵ Ibid, article 22 (2)

Promoting Sustained Economic Growth and Decent Work for All

equal work⁵⁶. Implementing this Charter can therefore enhance sustained economic growth and decent work for all in Africa.

Other key human rights instruments in this field include the *Convention on the Rights of Persons with Disabilities*⁵⁷ which seeks to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms (including the right to decent work) by all persons with disabilities, and to promote respect for their inherent dignity; the *Convention on the Elimination of All Forms of Discrimination against Women*⁵⁸ which urges states to eliminate all forms of discrimination against women in political, social, economic and cultural fields to enable them exercise and enjoy human rights and fundamental freedoms, including the right to work, on a basis of equality with men; and the *Convention on the Rights of the Child*⁵⁹ which prohibits all forms of child labour. At a national level, the *Constitution of Kenya*⁶⁰ enshrines fundamental rights and freedoms including economic and social rights that are key in promoting sustained economic growth⁶¹. Further, the Constitution of Kenya envisages access to employment for all persons including youths, minorities and marginalized groups⁶². It also enshrines core labour rights including the right to fair remuneration, to reasonable working conditions, to form, join or participate in the activities and programmes of a trade union; and to go on strike⁶³. It is imperative to actualize these provisions in order to promote sustained economic growth and decent work for all in Kenya.

⁵⁶ Ibid, article 15

⁵⁷ Convention on the Rights of Persons with Disabilities., United Nations., Available at <https://www.un.org/disabilities/documents/convention/convoptprot-e.pdf> (Accessed on 16/04/2024)

⁵⁸ Convention on the Elimination of All Forms of Discrimination against Women., Available at <https://www.ohchr.org/sites/default/files/Documents/ProfessionalInterest/cedaw.pdf> (Accessed on 16/04/2024)

⁵⁹ Convention on the Rights of the Child., Available at <https://www.ohchr.org/sites/default/files/Documents/ProfessionalInterest/crc.pdf> (Accessed on 16/04/2024)

⁶⁰ Constitution of Kenya., 2010., Government Printer, Nairobi

⁶¹ Ibid, article 43

⁶² Ibid, article 55 (c), & 56 (c)

⁶³ Ibid, article 41

Promoting Sustained Economic Growth and Decent Work for All

From the foregoing, it emerges that embracing a human rights approach to economic growth and decent work can enhance the attainment of these key goals under the Sustainable Development agenda⁶⁴. States should therefore ensure the realization of these core human rights.

3.0 Linking Decent Work for All and Sustained Economic Growth

It has been noted that for a society to reach inclusive and sustainable economic growth, conditions must be created to allow people to have quality jobs that stimulate the economy while not harming the environment⁶⁵. Sustained economic growth requires the creation of an equitable work environment that includes all members of society⁶⁶. In addition, the integration of disadvantaged populations presents countries with an opportunity to stimulate economic and social growth by undermining inequalities⁶⁷. Sustained and inclusive economic growth can drive progress, create decent jobs for all and improve living standards⁶⁸. According to ILO, putting employment creation at the heart of economic policy-making and development plans, will not only generate decent work opportunities but also more robust, inclusive and poverty-reducing sustained economic growth⁶⁹.

Decent work for all is also vital in sustained economic growth through poverty eradication and enhancing social progress⁷⁰. It has been asserted that poverty eradication is only possible through stable and well-paid employment opportunities⁷¹. According to the United Nations, society as a whole benefits

⁶⁴ Frey, D., & MacNaughton, G., 'A Human Rights Lens on Full Employment and Decent Work in the 2030 Sustainable Development Agenda' Op Cit

⁶⁵ Council of Europe., 'SDG 8: Promote Sustained, Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent Work for All' Available at <https://www.coe.int/en/web/congress/goal-8> (Accessed on 16/04/2024)

⁶⁶ Ibid

⁶⁷ Ibid

⁶⁸ Ibid

⁶⁹ International Labour Organization., 'Goal 8: Decent Work and Economic Growth' Available at <https://www.ilo.org/global/topics/sdg-2030/goal-8/lang-en/index.htm> (Accessed on 16/04/2024)

⁷⁰ United Nations., 'Decent Work and Economic Growth: Why it Matters' Available at <https://www.un.org/sustainabledevelopment/wp-content/uploads/2018/09/Goal-8.pdf> (Accessed on 16/04/2024)

⁷¹ Ibid

Promoting Sustained Economic Growth and Decent Work for All

when more people are being productive and contributing to their country's growth⁷². Productive employment and decent work are therefore key elements to achieving fair globalization, poverty reduction, and sustained economic growth⁷³. In addition, unemployment can lead to unrest and disrupt peace if it is left unaddressed therefore hindering economic growth⁷⁴. As a result, it has been posited that achieving SDG 8 is crucial for ending all forms of poverty and ensuring that no one is left behind, since obtaining decent employment is the most direct and sustainable pathway out of poverty⁷⁵.

Sustained economic growth and decent work are therefore inextricably linked. When there is sustained economic growth, more job opportunities are created, income levels increase, and the living standards for individuals and communities improve⁷⁶. In addition, access to decent work, which provides fair wages, social protection, and opportunities for personal development, helps lift people out of poverty and accelerates economic development⁷⁷. It enables individuals to meet their basic needs, access essential services, and break the cycle of poverty which is a crucial component of economic growth and social progress⁷⁸. Further, inclusive and sustained economic growth helps to reduce inequalities by providing equal access to resources and opportunities⁷⁹. Decent work also promotes social dialogue, workers' rights, and social protection, which can help address disparities in power dynamics and reduce inequalities between different social groups⁸⁰. Promoting sustained growth and decent work for all is therefore key in the Sustainable

⁷² Ibid

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ United Nations Economic Commission for Africa., 'Background Paper on Decent Work and Economic Growth: Progress Report on Sustainable Development Goal 8 in Africa' ECA/RFSD/2021/8., Available at <https://www.uneca.org/sites/default/files/TCND/ARFSD2021/Documents/Background%20paper%20on%20decent%20work%20and%20economic%20growth%20progress%20report%20on%20Sustainable%20Development%20Goal%208%20in%20Africa%20EN.pdf> (Accessed on 16/04/2024)

⁷⁶ Close the Gap Foundation., 'Decent Work and Economic Growth' Op Cit

⁷⁷ Ibid

⁷⁸ Ibid

⁷⁹ International Labour Organization., 'Goal 8: Decent Work and Economic Growth' Op Cit

⁸⁰ Close the Gap Foundation., 'Decent Work and Economic Growth' Op Cit

Promoting Sustained Economic Growth and Decent Work for All

Development agenda by ensuring the efficient use of resources, minimizing environmental damage, and supporting long-term social and economic well-being of all persons⁸¹.

However, it has also been noted that the linkage between sustained economic growth and decent work for all may be problematic⁸². For example, it has been noted that the human right to full employment and decent work is not conditioned on economic growth⁸³. There are many steps that governments may take toward realizing full employment and decent work even in the absence of economic growth⁸⁴. It has been observed that several countries have over the years implemented employment guarantee policies precisely because a lack of economic growth has resulted in the lack of employment opportunities⁸⁵. Further, it has also been noted that sustained economic growth does not necessarily result in the realization of decent work for all⁸⁶. For example, economic growth in some countries is wage-led, meaning that a boost in worker incomes has greater impact on sustained economic growth than creating more employment opportunities⁸⁷. Further, it has been argued that despite decent work being an important goal from an economic perspective, the work process is fundamentally important for sustainability⁸⁸. The goal therefore should become *sustainable* work in order to encompass social and environmental sustainability aspects of work, as well as decency, in line with the goals of the 2030 Agenda for Sustainable Development (Emphasis added)⁸⁹. It is therefore necessary to address these causal linkages in order to promote sustained economic growth and decent work for all. It is also vital to

⁸¹ Ibid

⁸² Frey. D., & MacNaughton. G., 'A Human Rights Lens on Full Employment and Decent Work in the 2030 Sustainable Development Agenda' Op Cit

⁸³ Frey. D., & MacNaughton. G., 'A Human Rights Lens on Full Employment and Decent Work in the 2030 Sustainable Development Agenda' Op Cit

⁸⁴ Ibid

⁸⁵ Ibid

⁸⁶ Ibid

⁸⁷ Ibid

⁸⁸ Kreinin. H., & Aigner. E., 'From "Decent Work and Economic Growth" to "Sustainable Work and Economic Degrowth": A New Framework for SDG 8' *Empirica* (2022) 49:281-311

⁸⁹ Ibid

Promoting Sustained Economic Growth and Decent Work for All

address some of the challenges facing the attainment of these key goals under the Sustainable Development agenda.

4.0 Factors hindering Sustained Economic Growth and Decent Work for All

According to the United Nations, several challenges are hindering the realization of SDG 8 including a persistent lack of decent work opportunities⁹⁰. It notes that the creation of quality employment opportunities remains a major challenge for almost all countries⁹¹. According to ILO, sustained economic growth is yet to be realized with approximately half the world's population still living on an income on the equivalent of about 2 United States Dollars a day⁹². It further notes that in many places, access to employment does not guarantee the ability to escape from poverty⁹³. According to ILO, a continued lack of decent work opportunities, insufficient investments and under-consumption lead to an erosion of the basic social contract underlying democratic societies: that all must share in progress⁹⁴. Inequalities are also evident in the job market with women and youths being underrepresented⁹⁵. It has also been noted that patterns of occupational segregation mean some occupations remain dominated by men or women, with the latter tending to be lower in status and pay⁹⁶. The progress towards SDG 8 is therefore

⁹⁰ United Nations., 'Decent Work and Economic Growth' Available at <https://www.un.org/sustainabledevelopment/economic-growth/> (Accessed on 16/04/2024)

⁹¹ Ibid

⁹² International Labour Organization., 'Goal 8: Decent Work and Economic Growth' Op Cit

⁹³ Ibid

⁹⁴ Ibid

⁹⁵ United Nations Women., 'SDG 8: Promote Sustained, Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent Work for All' Available at <https://www.unwomen.org/en/news/in-focus/women-and-the-sdgs/sdg-8-decent-work-economic-growth> (Accessed on 16/04/2024)

⁹⁶ Ibid

Promoting Sustained Economic Growth and Decent Work for All

characterized by slower growth, widening inequalities, and not enough jobs to keep up with a growing labour force⁹⁷.

Promoting inclusive and sustainable economic growth, employment and decent work for all remains one of the most daunting challenges facing the African continent⁹⁸. It has been noted that economic growth on the African continent had not been inclusive and fast enough to absorb the growing labour force in the formal economy. The majority of the labour force in Africa is in the informal sector⁹⁹. However, informal employment in Africa is often characterized by lower productivity, lower pay, limited social protection coverage, high levels of working poverty, and failure to adhere to human rights standards¹⁰⁰. The lack of sufficient full, productive and decent jobs is complicating efforts to eradicate poverty on the continent and ensure sustained economic growth prosperity for all¹⁰¹.

In light of the foregoing challenges, there is need to accelerate efforts towards sustained economic growth and decent work for all. ILO notes that despite isolated pockets of achievement, progress towards SDG 8 is slowing down in many areas of the world¹⁰². It points out that an urgent acceleration of efforts is required to bring about transformative change in support of SDG 8 in its three dimensions of sustained, inclusive and sustainable growth¹⁰³.

⁹⁷ United Nations Development Programme., 'Goal 8: Decent Work and Economic Growth' Available at <https://www.undp.org/sustainable-development-goals/decent-work-and-economic-growth> (Accessed on 16/04/2024)

⁹⁸ United Nations Economic Commission for Africa., 'Background Paper on Decent Work and Economic Growth: Progress Report on Sustainable Development Goal 8 in Africa' ECA/RFSD/2021/8, Op Cit

⁹⁹ Ibid

¹⁰⁰ Ibid

¹⁰¹ Ibid

¹⁰² International Labour Organization., 'Time to Act for SDG 8: Integrating Decent Work, Sustained Growth and Environmental Integrity' Available at https://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_725984.pdf (Accessed on 16/04/2024)

¹⁰³ Ibid

5.0 Way Forward

In order to promote sustained economic growth and decent work for all, it is necessary for states to adopt and implement development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation¹⁰⁴. It is also vital for states to encourage the formalization and growth of micro-, small- and medium-sized enterprises through measures such as access to financial services in order to ensure sustained economic growth¹⁰⁵. The 2030 Agenda for Sustainable Development further urges states to achieve higher levels of economic productivity through approaches such as diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors¹⁰⁶. It has also been suggested that local authorities and communities can renew and plan their cities and human settlements so as to foster community cohesion, personal security and to stimulate innovation, employment, and economic growth¹⁰⁷. It is also key for states to ensure that while pursuing economic growth, the growth is sustainable¹⁰⁸. The idea of sustainable economic growth emphasizes the need to use natural resources more efficiently while promoting economic growth as a means to overcome poverty and underdevelopment¹⁰⁹.

It is also vital to ensure access to employment opportunities for all persons including the youth, women and persons with disabilities in order to ensure decent work for all for sustained economic growth¹¹⁰. According to ILO, youth unemployment is one of the key challenges facing the realization of SDG 8¹¹¹.

¹⁰⁴ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

¹⁰⁵ Ibid

¹⁰⁶ Ibid

¹⁰⁷ United Nations., 'Decent Work and Economic Growth: Why it Matters' Op Cit

¹⁰⁸ United Nations Conference on Trade and Development., 'Goal 8: Decent Work and Economic Growth' Available at <https://stats.unctad.org/Dgff2016/prosperity/goal8/index.html> (Accessed on 16/04/2024)

¹⁰⁹ Ibid

¹¹⁰ United Nations., 'Decent Work and Economic Growth' Op Cit

¹¹¹ International Labour Organization., 'Global Unemployment Rate Set to Increase in 2024 While Growing Social Inequalities Raise Concerns, Says ILO Report' Available at https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_908068/lang-

Promoting Sustained Economic Growth and Decent Work for All

It also notes that a notable gender gap still persists in the employment market especially in emerging and developing nations¹¹². It is therefore important to make decent work a reality for all persons including youths, women, and persons with disabilities. Providing youth the best opportunity to transition to a decent job calls for investing in education and training of the highest possible quality in order to provide youth with skills that match labour market demands, giving them access to social protection and basic services regardless of their contract type, as well as leveling the playing field so that all aspiring youth can attain productive employment regardless of their gender, income level or socio-economic background¹¹³. It has been pointed out that governments need to build dynamic, sustainable, innovative and people-centred economies, promoting youth employment and women's economic empowerment, in particular, and decent work for all¹¹⁴.

There is also need for states and all persons to respect and uphold fundamental rights and freedoms of workers and ensure compliance with core labour standards in order to foster decent work for all¹¹⁵. It has been noted that respect for workers' rights and compliance with labour standards are the foundation of decent work and social justice¹¹⁶. Substandard working conditions are often related to poverty, inequality, discrimination, and low levels of economic development¹¹⁷. SDG 8 requires all states to protect labour rights and promote safe and secure working environments for all workers¹¹⁸. In addition, the *ILO Declaration on Fundamental Principles and Rights at Work*¹¹⁹ establishes four core

[en/index.htm#:~:text=The%20ILO's%20World%20Employment%20and%20Social%20Outlook%20Trends%3A%202024%20\(WESO,fallen%20below%20pre%2Dpandemic%20levels. \(Accessed on 16/04/2024\)](#)

¹¹² Ibid

¹¹³ United Nations., 'Decent Work and Economic Growth' Op Cit

¹¹⁴ Ibid

¹¹⁵ International Labour Organization., 'Time to Act for SDG 8: Integrating Decent Work, Sustained Growth and Environmental Integrity' Op Cit

¹¹⁶ Ibid

¹¹⁷ Ibid

¹¹⁸ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

¹¹⁹ International Labour Organization Declaration on Fundamental Principles and Rights at Work., Op Cit

Promoting Sustained Economic Growth and Decent Work for All

labor standards based on ILO conventions which are: freedom of association and the right to collective bargaining; the elimination of forced or compulsory labor; the abolition of child labor, and the elimination of discrimination in employment¹²⁰. It is therefore imperative for all states and employers to comply with fundamental human rights and labour standards including the elimination of child labor, the eradication of forced labor, the protection of labor rights (including fair remuneration, reasonable working conditions, and the freedom to form, join, or participate in the activities and programmes of a trade union), and the promotion of safe work environments in order to promote decent work for all¹²¹.

Finally, there is need to integrate sustained economic growth and decent work with environmental sustainability in order to achieve Sustainable Development¹²². Achieving sustained economic growth and decent work for all is the result of successful integration of economic, social and environmental targets in a balanced manner¹²³. SDG 8 takes into account the environmental dimension by emphasizing the importance of a transition towards responsible consumption behaviour¹²⁴. It urges countries to strive for economic growth but decouple it from environmental degradation by adopting technological innovations and changing consumption behaviours¹²⁵. In order to achieve this goal, countries have been encouraged to embrace the idea of green growth¹²⁶. The concept of green growth presents countries with an opportunity to strike a balance between human development, environmental conservation and economic development¹²⁷. Green growth results in improved human wellbeing and social equity, while significantly reducing environmental risks

¹²⁰ Ibid

¹²¹ Frey, D., & MacNaughton, G., 'A Human Rights Lens on Full Employment and Decent Work in the 2030 Sustainable Development Agenda' Op Cit

¹²² International Labour Organization., 'Time to Act for SDG 8: Integrating Decent Work, Sustained Growth and Environmental Integrity' Op Cit

¹²³ Ibid

¹²⁴ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

¹²⁵ Ibid

¹²⁶ Bergius, M., 'Towards a Green Modernization Development Discourse: The New Green Revolution in Africa.' *Journal of Political Ecology*, 2019

¹²⁷ Ibid

Promoting Sustained Economic Growth and Decent Work for All

and ecological scarcities¹²⁸. This idea emphasizes environmentally sustainable economic progress to foster low-carbon, socially inclusive development¹²⁹. Greening economies is therefore a key tool of eradicating poverty as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating opportunities for employment and decent work for all, while maintaining the healthy functioning of the Earth's ecosystems¹³⁰. It is therefore necessary for all countries to green their economies in order to promote sustained economic growth and decent work for all.

6.0 Conclusion

Fostering decent work and economic growth is vital in the realization of the Sustainable Development agenda¹³¹. SDG 8 seeks to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all¹³². Sustained economic growth and decent work for all are related concepts that need to be pursued together¹³³. When there is sustained economic growth, more job opportunities are created, income levels increase, and the living standards for individuals and communities improve¹³⁴. In addition, access to decent work, which provides fair wages, social protection, and opportunities for personal development, helps lift people out of poverty and accelerates economic growth¹³⁵. It enables

¹²⁸ United Nations Economic Commission for Europe., 'Greening the Economy: Mainstreaming the Environment into Economic Development.' Available at <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=796&menu=1515> (Accessed on 16/04/2024)

¹²⁹ United Nations Economic and Social Commission for Asia and the Pacific., 'Green Growth Uptake in Asia-Pacific Region.' Available at https://unece.org/fileadmin/DAM/env/cep/CEP20/ppp/Item10_b_ESCAP_GreenGrowthUptake_e_sm.pdf (Accessed on 16/04/2024)

¹³⁰ United Nations., 'The Future we Want: Outcome document of the United Nations Conference on Sustainable Development held in Rio de Janeiro, Brazil, from 20–22 June 2012.' Available at <https://sustainabledevelopment.un.org/content/documents/733FutureWeWant.pdf> (Accessed on 16/04/2024)

¹³¹ Close the Gap Foundation., 'Decent Work and Economic Growth' Op Cit

¹³² Ibid

¹³³ International Labour Organization., 'Goal 8: Decent Work and Economic Growth' Op Cit

¹³⁴ Close the Gap Foundation., 'Decent Work and Economic Growth' Op Cit

¹³⁵ Ibid

Promoting Sustained Economic Growth and Decent Work for All

individuals to meet their basic needs, access essential services, and break the cycle of poverty which is a crucial component of economic growth and social progress¹³⁶. However, there has been slow progress towards promoting sustained economic growth and decent work for all especially in Africa with economic underdevelopment and unemployment being prevalent all over the continent¹³⁷. In order to promote sustained economic growth and decent work for all, it is necessary for states to adopt and implement development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation¹³⁸; ensure access to employment opportunities for all persons including the youth, women and persons with disabilities¹³⁹; respect and uphold fundamental rights and freedoms of workers and ensure compliance with core labour standards¹⁴⁰; and integrate sustained economic growth and decent work with environmental sustainability in order to achieve Sustainable Development¹⁴¹. Promoting sustained economic growth and decent work for all is a key component that should be realized in our journey towards Sustainable Development.

¹³⁶ Ibid

¹³⁷ United Nations Economic Commission for Africa., 'Background Paper on Decent Work and Economic Growth: Progress Report on Sustainable Development Goal 8 in Africa' ECA/RFSD/2021/8, Op Cit

¹³⁸ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

¹³⁹ United Nations., 'Decent Work and Economic Growth' Op Cit

¹⁴⁰ International Labour Organization., 'Time to Act for SDG 8: Integrating Decent Work, Sustained Growth and Environmental Integrity' Op Cit

¹⁴¹ International Labour Organization., 'Time to Act for SDG 8: Integrating Decent Work, Sustained Growth and Environmental Integrity' Op Cit

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

Abstract

With the formal adoption of the Alternative Justice Systems Framework Policy by the Kenyan Judiciary in 2020, came the possibility of a wider application of the Alternative Justice Systems (AJS) in not only addressing environmental disputes but also enhancing the role of communities and other stakeholders in environmental conservation. Arguably, the current formal legal framework on environmental justice and conservation could benefit greatly from the use of AJS in enhancing access to environmental justice and conservation measures.

This paper argues that AJS offers communities a platform for not only participating in not only accessing environmental justice but also a chance to participate in environmental conservation and utilise their traditional knowledge in complementing scientific knowledge in promoting such conservation efforts.

1.0 Introduction

The Kenyan Judiciary's formal adoption of the Alternative Justice Systems Framework Policy in 2020 opened the door to the potential for a broader application of the Alternative Justice Systems (AJS), improving the rights of communities and other stakeholders in environmental conservation in addition to resolving environmental disputes.¹ One may argue that the use of AJS in improving access to environmental justice and conservation measures would have a significant positive impact on the present formal legal framework on environmental justice and conservation.²

It has been suggested that the Sustainable Development Goals (SDGs) have the potential to cause environmental injustices and justices because of their contradictions, trade-offs, and synergies.³ However, the language and spirit of the SDGs do not yet incorporate Environmental Justice (EJ) or social justice in general. "Many 'environmental' problems are, by their very nature, problems

¹ 'Alternative Justice Systems Baseline Policy and Policy Framework – The Judiciary' <<https://judiciary.go.ke/download/alternative-justice-systems-baseline-policy-and-policy-framework/>> accessed 20 February 2024.

² Greiber, T., 2009. *Conservation with justice: a rights-based approach* (No. 71). IUCN.

³ Menton, M., Larrea, C., Latorre, S., Martinez-Alier, J., Peck, M., Temper, L. and Walter, M., 2020. Environmental justice and the SDGs: from synergies to gaps and contradictions. *Sustainability Science*, 15, pp.1621-1636, at 1621.

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

of justice," the argument goes.⁴ Through "a balanced approach including an explicit focus on justice, equity, and environment together," this approach suggests the necessity of "just sustainability."⁵ Requiring sustainability to assume a redistributive role, transformative sustainability, or just sustainability, necessitates a paradigm change. In order for us to have any hope of a more sustainable future, justice and fairness must take centre stage in sustainability discourses.⁶

SDG 16 seeks to promote peaceful and inclusive societies for Sustainable Development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.⁷ It seeks to achieve this through the following Targets: Promote the rule of law at the national and international levels and ensure equal access to justice for all; Develop effective, accountable and transparent institutions at all levels; Ensure responsive, inclusive, participatory and representative decision-making at all levels; Broaden and strengthen the participation of developing countries in the institutions of global governance; Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements; and promote and enforce non-discriminatory laws and policies for sustainable development.⁸

In addition to being a goal in itself, SDG 16 is a prerequisite for achieving every other goal. Reaching goals like eradicating poverty, guaranteeing education, or fostering economic growth will be challenging, if not impossible, in the absence of peace, justice, and robust institutions. On the other hand, truly equitable and peaceful societies that uphold the rule of law and have inclusive,

⁴ Ibid, at 1621.

⁵ Ibid, at 1622.

⁶ Ibid, 1622.

⁷ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development*, A/RES/70/1, 21 October 2015.

⁸ 'SDG 16: Promote Peaceful and Inclusive Societies for Sustainable Development, Provide Access to Justice for All and Build Effective, Accountable and Inclusive Institutions at All Levels' (UN Women – Headquarters) <<https://www.unwomen.org/en/news/in-focus/women-and-the-sdgs/sdg-16-peace-justice-strong-institutions>> accessed 20 February 2024.

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

efficient, and responsible institutions are able to defend human rights and promote true sustainable development.⁹

The International Union for Conservation of Nature (IUCN) defines conservation as the management of human use of the biosphere to produce the maximum sustainable benefit to present generations while preserving its potential to satisfy the needs and aspirations of future generations.¹⁰ Therefore, conservation is a good thing that includes protecting, maintaining, using resources sustainably, restoring, and improving the natural environment.¹¹ Arguably, AJS can provide a platform that ensures communities not only engage in conservation using their indigenous and traditional ecological knowledge but also get to do so in a way that improves their livelihoods and insulates them from adverse environmental effects of development and climate change.¹² Indigenous knowledge that is concentrated on the interactions between living things and their surroundings is known as Traditional Ecological Knowledge, or TEK. By emphasizing the significance of maintaining these connections, it may guide conservation efforts and offer insights into the complex web of biological interactions.¹³ In order to improve the long-term sustainability of their livelihood choices and

⁹ 'SDG 16: Legal Guide to the SDGs - SDG Legal Initiative' (19 April 2023) <<https://sdglegalinitiative.a4id.org/resources/sdg-16-legal-guide-to-the-sdgs/>> accessed 20 February 2024.

¹⁰ Talbot, L.M., 1980. A World Conservation Strategy. *Journal of the Royal Society of Arts* 128, 493–510.

¹¹ Greiber, T., Janki, M., Orellana, M., Savaresi, A. and Shelton, D., 2009. Conservation with Justice. *A Rights-based Approach*. Gland: IUCN, 6.

¹² RECOFTC, 'Reaching to Our Roots: Traditional Ecological Knowledge to Ratchet up Climate Action' <<https://www.recoftc.org/stories/reaching-our-roots-traditional-ecological-knowledge-ratchet-climate-action>> accessed 22 February 2024; Dawson, N.M., Coolsaet, B., Sterling, E.J., Loveridge, R., Gross-Camp, N.D., Wongbusarakum, S., Sangha, K.K., Scherl, L.M., Phuong Phan, H., Zafra-Calvo, N. and Lavey, W.G., 2021. The role of Indigenous peoples and local communities in effective and equitable conservation; Sinthumule, N.I., 2023. Traditional ecological knowledge and its role in biodiversity conservation: a systematic review. *Frontiers in Environmental Science* 11.

¹³ The Role of Indigenous Knowledge in Environmental Conservation | LinkedIn [WWW Document], n.d. URL <https://www.linkedin.com/pulse/role-indigenous-knowledge-environmental-conservation-eurasia-carbon/> (accessed 2.22.24).

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

promote social-ecological resilience, tribal people can better adjust to socio-ecological changes with the use of traditional ecological knowledge (TEK).¹⁴ This paper makes the case that AJS provides communities with a forum to engage in environmental conservation and use their traditional knowledge to supplement scientific knowledge in support of such conservation efforts for sustainability, in addition to providing a means of accessing environmental justice.

2.0 Typologies of Alternative Justice Systems Mechanisms in Environmental Conservation

Kenya's Alternative Justice Systems Framework Policy 2020 identifies four main models (typologies): Autonomous AJS Institutions, Autonomous Third-Party AJS Institutions, Court-Annexed AJS Institutions and Regulated AJS Institutions and endorsed the first three.¹⁵ This paper explores AJS mainly in the context of Autonomous AJS Institutions and Autonomous Third-Party AJS Institutions only. It seeks to rely on the role that players from these two typologies can play in enhancing the use of traditional ecological knowledge in environmental conservation and access to Environmental Justice.

The Policy describes 'Autonomous AJS Institutions' as independent mechanisms which are run entirely by the community.¹⁶ The community determines the decision makers and the processes to be followed without any interventions or regulations from the State. The decision makers selected resolve these disputes by applying the laws, rules and practices that govern that particular community.¹⁷ It further describes 'Autonomous Third-Party AJS Institutions' as State-sanctioned institutions such as chiefs, the police,

¹⁴ Haq, S.M., Pieroni, A., Bussmann, R.W., Abd-ElGawad, A.M., El-Ansary, H.O., 2023. Integrating traditional ecological knowledge into habitat restoration: implications for meeting forest restoration challenges. *Journal of Ethnobiology and Ethnomedicine* 19, 33. <https://doi.org/10.1186/s13002-023-00606-3>.

¹⁵ 'Alternative Justice Systems Baseline Policy and Policy Framework – The Judiciary' <<https://judiciary.go.ke/download/alternative-justice-systems-baseline-policy-and-policy-framework/>> accessed 20 February 2024.

¹⁶ 'Alternative Justice Systems Baseline Policy and Policy Framework – The Judiciary', para. 3.2.1.

¹⁷ Alternative Justice Systems Baseline Policy and Policy Framework – The Judiciary', 8.

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

probation officers, child welfare officers, village elders under the County government, and the chair of *Nyumba Kumi* groupings, among others.¹⁸ They can also be non-State or related institutions such as church leaders, Imams and Sheikhs among Muslims, as well as other religious leaders and functionaries of social groups such as *Chamas*, NGOs and CSOs.¹⁹ The main characteristic of this model is that the State and non-State third parties are not part of any State judicial or quasi-judicial mechanisms.²⁰

This paper is premised on the assumption that while the Autonomous AJS Institutions will be the main source of the ecological knowledge to be utilised, the Autonomous Third-Party AJS Institutions will be useful in providing the linkage between these communities and the government players such as courts and the government agencies involved in environmental conservation measures and access to environmental justice.

Notably, the manifestation of climate and conflict elements is influenced by the interaction between susceptibility, exposure to climatic hazards, and state and community coping mechanisms at the local level.²¹ Indigenous knowledge includes a profound comprehension of the wildlife behaviour, weather patterns, medicinal uses of plants, local ecosystems, and intricate relationships between human civilization and the natural world.²² It is a way of life that is intricately entwined with cultural customs, rituals, and beliefs in addition to

¹⁸ Alternative Justice Systems Baseline Policy and Policy Framework - The Judiciary', para. 3.2.2.

¹⁹ Ibid.

²⁰ Ibid, 8.

²¹ Mapping of climate security adaptations at community level in the Horn of Africa - Kenya | ReliefWeb [WWW Document], 2023. URL <https://reliefweb.int/report/kenya/mapping-climate-security-adaptations-community-level-horn-africa> (accessed 3.13.24); see also Mobjörk, M. and van Baalen, S., 2016. Climate change and violent conflict in East Africa: implications for policy. *POLICY BRIEF*.

²² GLOBE-Net How Indigenous Science Benefits Our Planet - GLOBE-Net [WWW Document], n.d. URL <https://globe-net.com/how-indigenous-science-benefits-our-planet/> (accessed 3.13.24).

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

being a body of applied knowledge.²³ It has been noted that there is a higher chance of violent conflict over limited resources when institutions are nonexistent, corrupt, or dysfunctional.²⁴ Therefore, one strategy to stop violent conflict is to have adequate and efficient dispute resolution processes. Since most communities already have these kinds of systems in place, some researchers argue that rather than attempting to introduce completely new mechanisms for resolving conflicts, external actors like governmental and non-governmental organisations should concentrate on finding ways to modify existing local systems.²⁵

3.0 Relevant Legal and Policy Framework on Alternative Justice Systems Mechanisms in Kenya

The Constitution of Kenya 2010 recognises culture as the foundation of the nation and as the cumulative civilization of the Kenyan people and nation.²⁶ It goes on to provide that ‘the State shall promote all forms of national and cultural expression through literature, the arts, traditional celebrations, science, communication, information, mass media, publications, libraries and other cultural heritage; recognise the role of science and indigenous technologies in the development of the nation; and promote the intellectual property rights of the people of Kenya.’²⁷ In addition, Article 44(1) thereof guarantees that ‘every person has the right to use the language, and to participate in the cultural life, of the person’s choice’.

Article 60(1)(g) of the Constitution recognises the principles of land policy as including, *inter alia*, encouragement of communities to settle land disputes through recognised local community initiatives consistent with this Constitution.

²³ The Role of Indigenous Knowledge in Environmental Conservation | LinkedIn [WWW Document], n.d. URL <https://www.linkedin.com/pulse/role-indigenous-knowledge-environmental-conservation-eurasia-carbon/> (accessed 2.22.24).

²⁴ Mobjörk, M. and van Baalen, S., 2016. Climate change and violent conflict in East Africa: implications for policy. *POLICY BRIEF*.

²⁵ *Ibid*.

²⁶ Republic of Kenya, Constitution of Kenya, 2010, Art. 11(1), Government Printer, Nairobi

²⁷ *Ibid*, Art. 11 (2).

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

The functions of the National Land Commission also include, *inter alia*: to conduct research related to land and the use of natural resources, and make recommendations to appropriate authorities, and to encourage the application of traditional dispute resolution mechanisms in land conflicts.²⁸

Article 69(1) provides for the State obligations in respect of the environment as including, *inter alia*, to: (c) protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities; (d) encourage public participation in the management, protection and conservation of the environment; (e) protect genetic resources and biological diversity.

Article 159(2)(c) provides that ‘in exercising judicial authority, the courts and tribunals should be guided by the principles of, *inter alia*— (c) alternative forms of dispute resolution including reconciliation, mediation, arbitration and traditional dispute resolution mechanisms shall be promoted, subject to clause (3); and (d) justice shall be administered without undue regard to procedural technicalities.

In addition, Article 159 (3) provides that ‘traditional dispute resolution mechanisms shall not be used in a way that – (a) contravenes the Bill of Rights; (b) is repugnant to justice and morality or results in outcomes that are repugnant to justice or morality; or (c) is inconsistent with this Constitution or any written law.

The *Protection of Traditional Knowledge and Cultural Expressions Act 2016*²⁹ provides a framework for the protection and promotion of traditional knowledge and cultural expressions; to give effect to Articles 11, 40 and 69(1)(c) of the Constitution; and for connected purposes.³⁰

²⁸ Constitution of Kenya, 2010, Art. 67(2)(d)(f); see also Nyaga, B., 2023. NLC partners with Judiciary to resolve land conflicts - KBC. URL <https://www.kbc.co.ke/nlc-partners-with-judiciary-to-resolve-land-conflicts/> (accessed 3.13.24).

²⁹ Protection of Traditional Knowledge and Cultural Expressions Act, No. 33 of 2016, Laws of Kenya.

³⁰ *Ibid*, Preamble.

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

This framework provides a platform for the utilisation of AJS in involving communities in environmental conservation and promoting access to environmental justice using traditional approaches and knowledge possessed by these communities.

4.0 Challenges and Prospects in using AJS for Environmental Justice and Conservation in Kenya

Law has been said to be the most powerful instrument available to us for influencing conduct, directing activity, and achieving societal objectives like conservation. As such, it is essential to just and efficient management of natural resources.³¹ The law must play a crucial role in finding solutions to environmental issues, as has been correctly noted. Although it is a crucial part of the solution, which consists of a complex web of social, economic, and political linkages and processes, it is not the entire answer.³² The right legal structures and instruments must be in place in order to meet sustainable goals, not to mention, they have to work. Enacting laws and even seeing them through to completion are not sufficient; laws also need to function.³³ It may also be worth pointing out that effectiveness of laws in the context of communities means that these laws must not only be seen but also felt by the said communities to be working for them.³⁴ The need for incorporating indigenous knowledge into the legal framework forms the basis for this paper. It is arguable that for the communities to feel the impact of the law and to feel like they are part of it, their indigenous knowledge and expertise especially on conservation must be recognised and given a chance to be utilised in conservation measures towards building sustainability.

³¹ National legal systems | IUCN [WWW Document], n.d. URL <https://www.iucn.org/our-work/topic/national-legal-systems> (accessed 2.24.24).

³² Martin, P., Boer, B. and Slobodian, L., 2016. Framework for assessing and improving law for sustainability. *Gland (Suíça): IUCN*.

³³ Ibid, ix.

³⁴ Tobin, B., 2014. *Indigenous Peoples, Customary Law and Human Rights-Why Living Law Matters*. Routledge; see also Brewer, J. and Kronk Warner, E.A., 2015. Guarding Against Exploitation: Protecting Indigenous Knowledge in the Age of Climate Change. Available at SSRN 2567995.

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

Despite the existence of the formal legal and institutional frameworks in Kenya, environmental problems and related conflicts and disputes abound.³⁵ As of February 2023, it has been estimated that 4.4 million people in Kenya – of whom 1.2 million, or 27%, were in Emergency/IPC Phase 4 – were experiencing a serious food crisis and needed humanitarian relief, particularly in the drought- and conflict-ravaged East Africa.³⁶ Certain studies claim that reduced economic and agricultural output brought on by climate change contributes to conflict. Conflict and food insecurity are strongly related to one another and reinforce one another. Furthermore, policymakers need to use conflict-related climate change adaptation measures in order to reduce food insecurity.³⁷

³⁵ National Environment Management Authority, *Kenya State of Environment Report 2019-2021*, May 2021, https://www.nema.go.ke/images/Docs/EIA_1920-1929/NEMA%20SoE%202019-2021.pdf; Sixth session of the United Nations Environment Assembly (UNEA-6) [WWW Document], n.d. . Environment Assembly. URL <http://www.unep.org/environmentassembly/unea6> (accessed 3.13.24); see also Kenya: As Drought Deepens Land Conflicts, Peacebuilders Respond [WWW Document], n.d. . United States Institute of Peace. URL <https://www.usip.org/blog/2022/09/kenya-drought-deepens-land-conflicts-peacebuilders-respond> (accessed 3.13.24); “There’s absolutely no rain, I don’t know what to do next”: Perspectives on climate change and conflict in Uganda and Kenya - News and resources - Saferworld [WWW Document], n.d. URL <https://www.saferworld-global.org/resources/news-and-analysis/post/1002-athereas-absolutely-no-rain-i-donot-know-what-to-do-nexta-perspectives-on-climate-change-and-conflict-in-uganda-and-kenya> (accessed 3.13.24); Climate change destroys the livelihoods of Kenyan pastoralists [WWW Document], 2023. . Africa Renewal. URL <https://www.un.org/africarenewal/magazine/january-2023/climate-change-destroys-livelihoods-kenyan-pastoralists> (accessed 3.13.24).

³⁶ Bedasa, Y., Deksis, K., 2024. Food insecurity in East Africa: An integrated strategy to address climate change impact and violence conflict. *Journal of Agriculture and Food Research* 15, 100978. <https://doi.org/10.1016/j.jafr.2024.100978>.

³⁷ Ibid; see also Amid Record Drought and Food Insecurity, East Africa’s Protracted Humanitarian Crisis Worsens - Ethiopia | ReliefWeb [WWW Document], 2023. URL <https://reliefweb.int/report/ethiopia/amid-record-drought-and-food-insecurity-east-africas-protracted-humanitarian-crisis-worsens> (accessed 3.13.24); How Africa Can Escape Chronic Food Insecurity Amid Climate Change [WWW Document], 2022. . IMF. URL <https://www.imf.org/en/Blogs/Articles/2022/09/14/how-africa-can-escape-chronic-food-insecurity-amid-climate-change> (accessed 3.13.24); Gebre, G.G., Rahut, D.B., 2021. Prevalence of household food insecurity in East Africa: Linking food access with climate vulnerability. *Clim Risk Manag* 33, None. <https://doi.org/10.1016/j.crm.2021.100333>.

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

As has been correctly noted, one of the best ways to bring about change in protecting the nation's natural resources and ensuring the sustainability of our environment is via collaboration between donors, local communities, and authorities.³⁸

The United Nations Environment Programme (UNEP) headquarters in Nairobi, Kenya hosted the sixth session of the United Nations Environment Assembly (UNEA-6) from February 26 to March 1, 2024.³⁹ The overall theme of UNEA-6 was effective, inclusive and sustainable multilateral actions to tackle climate change, biodiversity loss and pollution.⁴⁰ UNEA-6 adopted a *resolution on promoting synergies, cooperation or collaboration for national implementation of multilateral environmental agreements and other relevant environmental instruments*⁴¹ which encourages Member States to, *inter alia*: Enhance synergies, cooperation or collaboration, as appropriate, when implementing their respective obligations and commitments under Multilateral Environmental Agreements and other relevant environmental instruments, while respecting their individual mandates, thereby contributing to the effective implementation of national environment policies and actions, delivering global environmental benefits, contributing to the achievement of 2030 Agenda for Sustainable Development and the Sustainable Development Goals, considering the best available science, Indigenous knowledge,

³⁸ Partnership crucial in addressing environment issues – Kenya News Agency, 2023. URL <https://www.kenyanews.go.ke/partnership-crucial-in-addressing-environment-issues/> (accessed 3.13.24).

³⁹ The United Nations Environment Programme (UNEP) headquarters in Nairobi, Kenya hosted the sixth session of the United Nations Environment Assembly (UNEA-6) from February 26 to March 1, 2024.

⁴⁰ Theme [WWW Document], n.d. URL <https://www.unep.org/environmentassembly/unea6/theme> (accessed 3.13.24).

⁴¹ UNEP, *Draft Resolution On Promoting Synergies, Cooperation or Collaboration for National Implementation of Multilateral Environmental Agreements and Other Relevant Environmental Instruments*, UNEP/EA.6/L.7, United Nations Environment Assembly of the United Nations Environment Programme Sixth session, Nairobi, 26 February–1 March 2024, <https://documents.un.org/doc/undoc/ltd/k24/006/18/pdf/k2400618.pdf?token=cpQ1mCVQ0HvpN5qeLH&fe=true>.

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

traditional knowledge, and local knowledge.⁴² Indigenous knowledge systems are being more recognised for their vital contributions to environmental protection as the globe struggles with ever-more-difficult environmental issues including habitat loss, deforestation, climate change, and biodiversity depletion.⁴³ Since they have spent generations coexisting peacefully with the environment, indigenous peoples have a wealth of knowledge about the local ecosystems, sustainable resource management techniques, and distinctive cultural viewpoints that can be extremely valuable in developing conservation strategies.⁴⁴ However, it has been observed that while traditional ecological knowledge (TEK) offers a comprehensive understanding of ecosystem dynamics and how they relate to cultural norms, practices, and resource use patterns, TEK's integrity is frequently in danger because of shifting ideologies, languages, traditional means of subsistence, and disruptions of traditional social-ecological systems.⁴⁵

It has been observed that while using Indigenous knowledge to save the environment has enormous potential, there are a number of obstacles that need to be overcome:⁴⁶ Acknowledgment and Deference: Conventional scientific and governmental establishments frequently marginalize or disregard indigenous knowledge.⁴⁷ Recognising and respecting Indigenous

⁴² UNEP, *Draft Resolution On Promoting Synergies, Cooperation or Collaboration for National Implementation of Multilateral Environmental Agreements and Other Relevant Environmental Instruments*, UNEP/EA.6/L.7, para. 1(a).

⁴³ The Role of Indigenous Knowledge in Environmental Conservation | LinkedIn [WWW Document], n.d. URL <https://www.linkedin.com/pulse/role-indigenous-knowledge-environmental-conservation-eurasia-carbon/> (accessed 2.22.24).

⁴⁴ Ibid.

⁴⁵ Haq, S.M., Pieroni, A., Bussmann, R.W., Abd-ElGawad, A.M., El-Ansary, H.O., 2023. Integrating traditional ecological knowledge into habitat restoration: implications for meeting forest restoration challenges. *Journal of Ethnobiology and Ethnomedicine* 19, 33. <https://doi.org/10.1186/s13002-023-00606-3>.

⁴⁶ The Role of Indigenous Knowledge in Environmental Conservation | LinkedIn [WWW Document], n.d. URL <https://www.linkedin.com/pulse/role-indigenous-knowledge-environmental-conservation-eurasia-carbon/> (accessed 2.22.24).

⁴⁷ Ibid, Indigenous People's Traditional Knowledge Must Be Preserved, Valued Globally, Speakers Stress as Permanent Forum Opens Annual Session | Meetings Coverage and Press Releases [WWW Document], n.d. URL <https://press.un.org/en/2019/hr5431.doc.htm> (accessed 3.13.24); Ezeanya-Esiobu,

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

viewpoints and rights is crucial to maximising its potential;⁴⁸ Protection of Indigenous Lands: Indigenous groups' capacity to manage resources sustainably is weakened by frequent threats to their ancestral lands and territories.⁴⁹ Justice demands that Indigenous lands be protected, and doing so also helps to preserve priceless biological knowledge;⁵⁰ and Ethical Considerations: It is important to follow ethical guidelines while working with Indigenous people.⁵¹ These guidelines should include respecting their intellectual property rights, obtaining informed consent, and paying equitable compensation.⁵² It has however been observed that the development of Access To Genetic Resources and Benefit-Sharing agreements to enhance horizontal

C., 2019. Research, Innovation, Indigenous Knowledge and Policy Action in Africa, in: Ezeanya-Esiobu, C. (Ed.), *Indigenous Knowledge and Education in Africa*. Springer, Singapore, pp. 97-106. https://doi.org/10.1007/978-981-13-6635-2_7; Agrawal, A., 1995. Dismantling the divide between indigenous and scientific knowledge. *Development and change*, 26(3), pp.413-439.

⁴⁸ The Role of Indigenous Knowledge in Environmental Conservation | LinkedIn [WWW Document], n.d. URL <https://www.linkedin.com/pulse/role-indigenous-knowledge-environmental-conservation-eurasia-carbon/> (accessed 2.22.24).

⁴⁹ Indigenous Peoples and the nature they protect [WWW Document], n.d. URL <https://www.unep.org/news-and-stories/story/indigenous-peoples-and-nature-they-protect> (accessed 3.13.24); Ford, J.D., King, N., Galappaththi, E.K., Pearce, T., McDowell, G., Harper, S.L., 2020. The Resilience of Indigenous Peoples to Environmental Change. *One Earth* 2, 532-543. <https://doi.org/10.1016/j.oneear.2020.05.014>; Indigenous Peoples [WWW Document], n.d. World Bank. URL <https://www.worldbank.org/en/topic/indigenouspeoples> (accessed 3.13.24); Feiring, B., 2013. Indigenous peoples' rights to lands, territories and resources. *International Land Coalition, Rome*, 94, pp.12-21; Tenure and Indigenous Peoples, n.d. LandLinks. URL <https://www.land-links.org/issue-brief/tenure-and-indigenous-peoples/> (accessed 3.13.24).

⁵⁰ The Role of Indigenous Knowledge in Environmental Conservation | LinkedIn [WWW Document], n.d. URL <https://www.linkedin.com/pulse/role-indigenous-knowledge-environmental-conservation-eurasia-carbon/> (accessed 2.22.24).

⁵¹ Ethical Issues and Consent in Research with Indigenous Peoples – Sage Research Methods Community [WWW Document], n.d. URL <https://researchmethodscommunity.sagepub.com/blog/ethical-issues-and-consent-in-research-with-indigenous-peoples> (accessed 3.13.24).

⁵² The Role of Indigenous Knowledge in Environmental Conservation | LinkedIn [WWW Document], n.d. URL <https://www.linkedin.com/pulse/role-indigenous-knowledge-environmental-conservation-eurasia-carbon/> (accessed 2.22.24).

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

advantages for community welfare and avoid disputes may be facilitated by customary rules and practices, which may include systems for the equitable transfer of wealth across groups. Nonetheless, when groups become more westernised and use traditional knowledge for profit (as in the case of the Mijikenda), cooperative principles are occasionally eroding and there is a movement towards private ownership. In this case, setting up Prior Informed Consent (PIC) representative bodies and collective safety measures could be more difficult.⁵³

It has also been argued that for indigenous knowledge to be an acceptable practice into disaster risk reduction strategies, it must be recognized and validated, understood in the present context, systematically documented, value tested, appropriate practices for replication must be identified, and indigenous knowledge must be demonstrated through national and regional pilot programs.⁵⁴ Additionally, there is a need for a standardized institutional framework to incorporate into mainstream disaster risk reduction. Although modern early warning systems have been recognized as the preferred technique over traditional early warning methods, Geographic Information System (GIS) has been incorporated into local knowledge systems.⁵⁵

Building capability within traditional or local institutions is necessary to reinforce out-of-court dispute resolution processes.⁵⁶ The ultimate objective and need of using indigenous knowledge is for humanitarian and development groups to form alliances with locals and include them in the risk-management procedure. It is believed that doing so will improve

⁵³ Swiderska, K., 2006. Protecting community rights over traditional knowledge: Implications of customary laws and practices. Interim report.

⁵⁴ Examining Linkages between Disaster Risk Reduction and Livelihoods - Tufts - Feinstein International Center [WWW Document], n.d. URL <https://fic.tufts.edu/publication-item/examining-linkages-between-disaster-risk-reduction-and-livelihoods/> (accessed 3.13.24), 34.

⁵⁵ Ibid.

⁵⁶ Mobjörk, M. and van Baalen, S., 2016. Climate change and violent conflict in East Africa: implications for policy. *POLICY BRIEF*.

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

comprehension of techniques and skills and inspire initiatives that enhance rather than replace indigenous knowledge.⁵⁷

5.0 Adopting A Rights-based Approach to Conservation and Environmental Justice

The Constitution of Kenya 2010 provides that 'the Bill of Rights is an integral part of Kenya's democratic state and is the framework for social, economic and cultural policies'.⁵⁸ It goes on to state that 'the purpose of recognising and protecting human rights and fundamental freedoms is to preserve the dignity of individuals and communities and to promote social justice and the realisation of the potential of all human beings'.⁵⁹

Some writers advocate for "conservation with justice," which requires all parties, both state and non-state, planning or involved in policies, projects, programmes, and activities that could have an impact on the conservation of nature to ensure that all potentially impacted parties have access to the substantive and procedural rights guaranteed by both domestic and international law.⁶⁰ Justice theories oriented towards Environmental Justice include fairness predicated on the ideas of sustainability and equitable burden sharing.⁶¹ Non-governmental organisations (NGOs), United Nations forums,

⁵⁷ Examining Linkages between Disaster Risk Reduction and Livelihoods - Tufts - Feinstein International Center [WWW Document], n.d. URL <https://fic.tufts.edu/publication-item/examining-linkages-between-disaster-risk-reduction-and-livelihoods/> (accessed 3.13.24), 34; see also Ali, T., Paton, D., Buergelt, P.T., Smith, J.A., Jehan, N. and Siddique, A., 2021. Integrating Indigenous perspectives and community-based disaster risk reduction: A pathway for sustainable Indigenous development in Northern Pakistan. *International Journal of Disaster Risk Reduction*, 59, p.102263.

⁵⁸ Republic of Kenya, Constitution of Kenya, 2010, Art. 19(1).

⁵⁹ Ibid, Art. 19(2).

⁶⁰ Greiber, T., Janki, M., Orellana, M., Savaresi, A. and Shelton, D., 2009. Conservation with Justice. *A Rights-based Approach*. Gland: IUCN, 6.

⁶¹ Figueroa, R.M., 2022. Environmental justice. In *The Routledge Companion to Environmental Ethics* (pp. 767-782). Routledge; Beretta, I., 2012. Some Highlights on the Concept of Environmental Justice and its Use. e-cadernos CES. <https://doi.org/10.4000/eces.1135>; A Conceptual Framework for Environmental Justice Based on Shared but Differentiated Responsibilities in: Global Citizenship and Environmental Justice [WWW Document], n.d. URL https://brill.com/display/book/edcoll/9789401201452/B9789401201452_s007.xml

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

the organisational endeavours and battles of groups who are directly affected, and State institutions that are particularly tasked with environmental concerns are the main participants.⁶²

Practical examples have been cited in the case of Northern Kenya area which is mostly occupied by pastoralists. The leader of Indigenous Movement for Peace Advancement and Conflict Transformation (IMPACT), a local group in Laikipia, rightly points out that:

“In northern Kenya, we come from many different communities that all practice pastoralism and that all face similar challenges,” Karmushu said in an interview, “but we will not be able to solve these issues – of climate change, the loss of our grazing lands and having a future for our people – unless we can solve our conflicts peacefully and be united.”⁶³

Although several attempts had been made by Kenyan government and other parties to end the violence, this peacebuilding organisation, IMPACT, had a stronger local presence; in fact, its headquarters were in Nanyuki, the county capital of Laikipia. Its leader stated that IMPACT had initiated discussions in both communities to develop a peace process that was in line with the customs of the Samburu and Il-Ngvesi, since they "knew the traditional methods that they use to manage land and also conflict."⁶⁴

(accessed 3.13.24); Menton, M., Larrea, C., Latorre, S., Martinez-Alier, J., Peck, M., Temper, L., Walter, M., 2020. Environmental justice and the SDGs: from synergies to gaps and contradictions. *Sustain Sci* 15, 1621–1636. <https://doi.org/10.1007/s11625-020-00789-8>.

⁶² Milovanovic, D., 2011. Justice-rendering schemas: A typology for forms of justice and a prolegomenon for transformative justice. *Journal of Theoretical and Philosophical Criminology*, 3(1), pp.1-56, 13.

⁶³ Kenya: As Drought Deepens Land Conflicts, Peacebuilders Respond [WWW Document], n.d. . United States Institute of Peace. URL <https://www.usip.org/blog/2022/09/kenya-drought-deepens-land-conflicts-peacebuilders-respond> (accessed 3.13.24).

⁶⁴ Ibid.

6.0 Need for Establishing Research and Funding Systems to Support Traditional Ecological and Conflict Management Knowledge

It is reported that the above mentioned grassroots organisation, IMPACT, has helped six communities win title to lands they now use. Another priority is to help communities adapt to the climatic degradation of lands and build more reliable livelihoods.⁶⁵ Notably, to strengthen grassroots peacebuilding, the United States Institute of Peace provided grant funding to IMPACT for a project that was focused on researching how local peacebuilders achieve their best results. That project was meant to train and develop young environmental peacebuilders to apply the improved methods uncovered by the research.⁶⁶

The training was shaped by “participatory action research,” an approach to achieving social change that promotes research and analysis *by local communities* rather than outsiders – and then action by those communities on the basis of the research findings. IMPACT engaged 11 “environmental fellows” from pastoral communities who conducted nearly 150 interviews with witnesses to conflict incidents and other informants. This research pinpointed specific drivers of conflicts in northern Kenya.⁶⁷ They pointed out these drivers as including:⁶⁸

- a) **Exclusionary wildlife management.** Wildlife refuges that fence off large areas without full consultation with local communities can exclude those populations from their traditional lands and resources, causing conflict.⁶⁹
- b) **“Industrialized” cattle rustling.** Cattle theft, which in the past was very local and small-scale, has become a more organized crime, as

⁶⁵ Kenya: As Drought Deepens Land Conflicts, Peacebuilders Respond [WWW Document], n.d. . United States Institute of Peace. URL <https://www.usip.org/blog/2022/09/kenya-drought-deepens-land-conflicts-peacebuilders-respond> (accessed 3.13.24).

⁶⁶ Ibid.

⁶⁷ Ibid; see also Participatory Action Research | Participatory Methods [WWW Document], n.d. URL <https://www.participatorymethods.org/glossary/participatory-action-research> (accessed 3.13.24).

⁶⁸ Ibid.

⁶⁹ Ibid.

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

thieves use sophisticated resources to move large numbers of stolen cattle for sale in distant markets.⁷⁰

- c) **Communal land registration.** As authorities update and expand land ownership registrations, the process is surfacing old land disputes and is prompting wealthy elites to try to quickly acquire new lands, causing new conflicts.⁷¹

United States Institute of Peace rightly points out that the growing field of environmental peacebuilding “increasingly recognizes the importance of working inclusively – that is, engaging all the diverse members of a society, including marginalized ones, in helping define their communities’ futures.” This is because as climate change continues to impact these communities, this approach will be increasingly important for maintaining peaceful relationships.”⁷²

Arguably, locally led, grassroots groups such as those now expanding in northern Kenya can more effectively adapt typical peacebuilding activities to local conditions, hence the need for investing in the power of dialogues and local partnerships.⁷³

The Constitution of Kenya 2010 recognises culture as the foundation of the nation and as the cumulative civilization of the Kenyan people and nation.⁷⁴ It goes on to provide that ‘the State shall-promote all forms of national and cultural expression through literature, the arts, traditional celebrations, science, communication, information, mass media, publications, libraries and other cultural heritage; recognise the role of science and indigenous

⁷⁰ Ibid.

⁷¹ Ibid.

⁷² Ibid.

⁷³ Ibid; see also The Urgency and Complexity of Environmental Peacebuilding [WWW Document], n.d. . United States Institute of Peace. URL <https://www.usip.org/blog/2020/02/urgency-and-complexity-environmental-peacebuilding> (accessed 3.13.24).

⁷⁴ Republic of Kenya, Constitution of Kenya, 2010, Art. 11(1).

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

technologies in the development of the nation; and promote the intellectual property rights of the people of Kenya.⁷⁵

In promoting protection of traditional knowledge and cultural expressions against unlawful acts, the *Protection of Traditional Knowledge and Cultural Expressions Act 2016*⁷⁶ provides for exceptions and limitations in that 'notwithstanding section 18, the protection of traditional knowledge or cultural expressions shall— be subject to such other exceptions as may be necessary to address the needs of non-commercial use, including teaching and research for educational purposes, personal or private use, criticism or review, reporting of current events, use in the course of legal proceedings, the making of recordings and reproductions of traditional knowledge or cultural expressions for inclusion in an archive or inventory exclusively for the purposes of safeguarding knowledge or cultural heritage, and incidental uses'.⁷⁷ Furthermore, section 4 thereof provides that a county government shall, through the county executive committee member responsible, for matters relating to culture, be responsible for, *inter alia*, (a) in relation to the repository and for the purpose of collecting and compiling information relating to traditional knowledge and cultural expressions— (i) the primary registration of traditional knowledge and cultural expressions within a county for the purposes of recognition under this Act; (ii) the receipt, documentation, storage and updating of information relating to traditional knowledge and cultural expressions from communities within a county; (b) the preservation and conservation of traditional knowledge and cultural expressions; (c) the protection and promotion of the traditional knowledge and cultural expressions of communities within a county; (d) the facilitation of collaboration, access to or the sharing of information and data relating to traditional knowledge and cultural expressions between county governments; (e) the allocation of financial resources for the promotion of cultural activities; and (f) subject to this Act or any other law, the establishment of mechanisms

⁷⁵ *Ibid*, Art. 11 (2).

⁷⁶ S.18, Protection of Traditional Knowledge and Cultural Expressions Act, No. 33 of 2016, Laws of Kenya.

⁷⁷ *Ibid*, s. 19(1)(c).

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

for using culture as a tool for conflict resolution and promotion of cohesion.⁷⁸ There is a need for ensuring that this mandate of county governments in decentralized governance is fully supported through research and funding. Research has indicated that indigenous populations worldwide possess a strong understanding of the natural resources they depend on.⁷⁹ The creation of scientific management plans has benefited from this knowledge, which is also gaining acceptance as a reliable source of information for sustainable use, conservation, and management of natural resources.⁸⁰ Integration of traditional ecological knowledge (TEK) might support adaptive management since it often provides extra information at a finer spatial scale than scientific data, hence supplementing previously obtained ecological data.⁸¹

As already pointed out, traditional knowledge is suffering from erosion by modernity thus creating the need for its protection for future generations and

⁷⁸ S.4, Protection of Traditional Knowledge and Cultural Expressions Act, 2016.

⁷⁹ Indigenous Peoples Overview [WWW Document], n.d. URL <https://www.worldbank.org/en/topic/indigenouspeoples> (accessed 3.13.24); 'Indigenous People and Nature: A Tradition of Conservation' (UNEP, 21 July 2017) <<http://www.unep.org/news-and-stories/story/indigenous-people-and-nature-tradition-conservation>> accessed 13 March 2024; 'Indigenous Peoples: Defending an Environment for All | International Institute for Sustainable Development' <<https://www.iisd.org/articles/deep-dive/indigenous-peoples-defending-environment-all>> accessed 13 March 2024; 'Indigenous Peoples and the Nature They Protect' (UNEP, 8 June 2020) <<http://www.unep.org/news-and-stories/story/indigenous-peoples-and-nature-they-protect>> accessed 13 March 2024; Garai J, Ku HB and Zhan Y, 'Climate Change and Cultural Responses of Indigenous People: A Case from Bangladesh' (2022) 4 Current Research in Environmental Sustainability 100130; Jones B, 'Indigenous People Are the World's Biggest Conservationists, but They Rarely Get Credit for It' (Vox, 11 June 2021) <<https://www.vox.com/22518592/indigenous-people-protect-nature-icca>> accessed 13 March 2024.

⁸⁰ Mazzocchi F, 'Western Science and Traditional Knowledge: Despite Their Variations, Different Forms of Knowledge Can Learn from Each Other' (2006) 7 EMBO Reports 463; Hoffmann S, 'Challenges and Opportunities of Area-Based Conservation in Reaching Biodiversity and Sustainability Goals' (2022) 31 Biodiversity and Conservation 325.

⁸¹ Haq, S.M., Pieroni, A., Bussmann, R.W., Abd-ElGawad, A.M., El-Ansary, H.O., 2023. Integrating traditional ecological knowledge into habitat restoration: implications for meeting forest restoration challenges. *Journal of Ethnobiology and Ethnomedicine* 19, 33. <https://doi.org/10.1186/s13002-023-00606-3>.

tapping into its positive aspects.⁸² Investing in research towards establishing these positive aspects from communities, who are the custodians, as well as funding efforts aimed at its utilisation can go a long way in not only safeguarding this body of knowledge but also assisting communities to overcome any challenges that they may potentially face in putting this knowledge into practical use.

7.0 Synergetic Approach Between Disaster Risk Reduction and Climate Change Adaptation

Policymakers, academics, and practitioners generally concur that, in order to decrease vulnerabilities to climate and environmental change, there is a need to enhance the synergies between disaster risk reduction and climate change adaptation.⁸³ Among the suggested integration strategies are the following: the disaster risk reduction community broadening the scope of its activity to address a wider range of vulnerabilities, such as poverty and inequality, as well as livelihoods in both rural and urban areas;⁸⁴ enhancing the shared knowledge between the two policy groups, which may be achieved by setting up multi-hazard risk reduction units that combine vulnerability and hazard

⁸² Mazzocchi F, 'Western Science and Traditional Knowledge: Despite Their Variations, Different Forms of Knowledge Can Learn from Each Other' (2006) 7 EMBO Reports 463; Kodirekka KR, 'Internal and External Factors Affecting Loss of Traditional Knowledge: Evidence from a Horticultural Society in South India' [2017] Journal of Anthropological Research <<https://www.journals.uchicago.edu/doi/10.1086/690524>> accessed 13 March 2024; 'Protecting Traditional Knowledge: A Grassroots Perspective' <https://www.wipo.int/wipo_magazine/en/2017/01/article_0004.html> accessed 13 March 2024; Eyong CT, 'Indigenous Knowledge and Sustainable Development in Africa: Case Study on Central Africa' (2007).

⁸³ Mobjörk, M., Gustafsson, M.T., Sonnsjö, H., Van Baalen, S., Dellmuth, L.M. and Bremberg, N., 2016. *Climate-related security risks: Towards an integrated approach*. SIPRI, 30.

⁸⁴ Ibid; see also Yodmani, S., 2001. *Disaster risk management and vulnerability reduction: Protecting the poor*. New York: The Center; Imperiale, A.J. and Vanclay, F., 2021. Conceptualizing community resilience and the social dimensions of risk to overcome barriers to disaster risk reduction and sustainable development. *Sustainable Development*, 29(5), pp.891-905; Ali, T., Paton, D., Buergelt, P.T., Smith, J.A., Jehan, N. and Siddique, A., 2021. Integrating Indigenous perspectives and community-based disaster risk reduction: A pathway for sustainable Indigenous development in Northern Pakistan. *International Journal of Disaster Risk Reduction*, 59, p.102263;

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

analysis;⁸⁵ creating policies on how to include climate risks into planning and programming for disaster response and recovery;⁸⁶ moreover, implementing a human rights-based approach, as many factors contributing to vulnerability are inextricably tied to violations of fundamental human rights.⁸⁷ The World Bank also argues that Social Protection (SP) systems play important roles in helping individuals and societies manage risk and volatility and protecting them from poverty and destitution—through instruments that improve resilience, equity, and opportunity.⁸⁸

On March 18, 2015, during the Third UN World Conference in Sendai, Japan, the Sendai Framework for Disaster Risk Reduction 2015–2030 was approved. It is the result of intergovernmental discussions from July 2014 to March 2015, which were backed by the UN Office for Disaster Risk Reduction at the UN General Assembly's request, and stakeholder engagements that were started in March 2012.⁸⁹ The Framework is specifically intended to address the risk of both large- and small-scale, frequent and rare, abrupt and gradual onset catastrophes resulting from natural or man-made hazards, together with associated risks and hazards connected to the environment, technology, and biology. Its objective is to direct the multihazard management of disaster risks in development at all levels and in all sectors.⁹⁰ Hazard is defined in the *Hyogo*

⁸⁵ Ibid; see also Djalante, R., 2014. Thesis title: Building resilience to disasters and climate change: pathways for adaptive and integrated disaster resilience in Indonesia. International Journal of Disaster Resilience in the Built Environment 5. <https://doi.org/10.1108/IJDRBE-04-2014-0029>; Yodmani, S., 2001. *Disaster risk management and vulnerability reduction: Protecting the poor*. New York: The Center.

⁸⁶ Ibid.

⁸⁷ Ibid.

⁸⁸ Cubas, Diana; Escobar Saenz, Mirtha Liliana; Trohanis, Zoe Elena; Osman, Balikisu. *Stocktaking of Adaptive Social Protection and Disaster Risk Management (English)*. Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/099210003012355978/P17651604fd02309d0b46f015e60ef3f847>.

⁸⁹ United Nations General Assembly, *Sendai Framework for Disaster Risk Reduction 2015–2030*, Third United Nations World Conference on Disaster Risk Reduction, Sendai, Japan, 14–18 March 2015, Agenda item 11, A/CONF.224/L.2.

⁹⁰ Ibid, Preamble, para. 15.

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

*Framework for Action*⁹¹ as: “A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or *environmental degradation* (emphasis added). Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydrometeorological and biological) or induced by human processes (environmental degradation and technological hazards).⁹²

Borrowing from the *Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters*, its predecessor, the Sendai Framework affirmed that a more comprehensive and human-centered preventative strategy for catastrophe risk is required. For disaster risk reduction strategies to be effective and efficient, they must be multi-hazard, multisectoral, inclusive, and accessible. Governments should collaborate with pertinent stakeholders, such as women, children and youth, people with disabilities, the impoverished, migrants, indigenous peoples, volunteers, the community of practitioners, and senior citizens, in the development and execution of policies, plans, and standards, while acknowledging their leading, regulating, and coordinating roles. Businesses must incorporate disaster risk into their management procedures, and the public and private sectors, civil society organisations, academia, and scientific and research institutions all need to collaborate more and work together more closely.⁹³

The Sendai framework emphasized that in order to handle current issues and get ready for new ones, attention should be paid to the following: tracking, evaluating, and comprehending catastrophe risk; disseminating this knowledge and the processes involved in its creation; enhancing the governance and coordination of disaster risk across pertinent institutions and sectors, as well as the full and meaningful participation of pertinent

⁹¹ Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters - full text | UNDRR [WWW Document], n.d. URL <https://www.undrr.org/publication/hyogo-framework-action-2005-2015-building-resilience-nations-and-communities-disasters> (accessed 3.13.24).

⁹² United Nations General Assembly, *Sendai Framework for Disaster Risk Reduction 2015-2030*, preamble, para. 3.

⁹³ United Nations General Assembly, *Sendai Framework for Disaster Risk Reduction 2015-2030*, Preamble, para. 7.

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

stakeholders at the appropriate levels; investing in the environment, as well as through technology and research, in order to increase the economic, social, health, cultural, and educational resilience of individuals, communities, and nations; Improving response, recovery, rehabilitation, and reconstruction as well as multi-hazard early warning systems.⁹⁴ In addition, one of its guiding principles is that as the federal and state governments continue to play a crucial role in enabling, directing, and coordinating activities, it is also vital to give local governments and communities the capacity to lower the risk of disasters by providing resources, incentives, and decision-making authority as needed.⁹⁵

The Sendai Framework further specifies that knowledge of disaster risk in all of its dimensions – vulnerability, capability, exposure of people and property, hazard characteristics, and environment – should serve as the foundation for policies and practices for disaster risk management. This kind of information may be used to analyse risks before to a disaster, prevent and mitigate harm, establish and implement suitable preparation plans, and respond to disasters with efficiency.⁹⁶ To achieve this, it points out that it is important to, *inter alia*: ensure the use of traditional, indigenous and local knowledge and practices, as appropriate, to complement scientific knowledge in disaster risk assessment and the development and implementation of policies, strategies, plans and programmes of specific sectors, with a cross-sectoral approach, which should be tailored to localities and to the context;⁹⁷ and enhance collaboration among people at the local level to disseminate disaster risk information through the involvement of community-based organizations and non-governmental organizations.⁹⁸

The Sendai Framework also states that disaster risk reduction is a shared duty between governments and pertinent stakeholders, even if States bear the

⁹⁴ Ibid, Preamble, para. 14.

⁹⁵ United Nations General Assembly, *Sendai Framework for Disaster Risk Reduction 2015-2030*, para. 19(f).

⁹⁶ Ibid, para. 23.

⁹⁷ United Nations General Assembly, *Sendai Framework for Disaster Risk Reduction 2015-2030*, para. 24(i).

⁹⁸ Ibid, para. 24(o).

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

primary responsibility for it. Non-State actors in particular are crucial because they act as facilitators, helping States execute this Framework locally, nationally, regionally, and internationally while adhering to national rules, laws, and policies. Their resources, expertise, knowledge base, and goodwill will be needed.⁹⁹ The Framework goes on to state that States should promote, *inter alia*, the following activities from all public and private stakeholders when defining the precise duties and responsibilities for each, while also expanding on the pertinent international mechanisms that are already in place: indigenous peoples, through their experience and traditional knowledge, provide an important contribution to the development and implementation of plans and mechanisms, including for early warning.¹⁰⁰

Arguably, if adopted by policymakers, this Framework can go a long way in entrenching the place of communities in not only averting environmental disasters and hazards that affect their lives and livelihoods but also in enhancing access to justice through their active participation in decision-making processes and conflict management.

8.0 Conclusion

It has been proposed that indigenous knowledge provides an effective tool for tackling the intricate environmental problems that our world is currently confronting.¹⁰¹ We may develop more efficient and comprehensive methods of environmental conservation by appreciating the insight of Indigenous people, honouring their rights and customs, and encouraging cooperation between contemporary conservationists and Indigenous knowledge keepers.¹⁰²

⁹⁹ United Nations General Assembly, *Sendai Framework for Disaster Risk Reduction 2015-2030*, para. 35.

¹⁰⁰ United Nations General Assembly, *Sendai Framework for Disaster Risk Reduction 2015-2030*, para. 36(a)(v).

¹⁰¹ The Role of Indigenous Knowledge in Environmental Conservation | LinkedIn [WWW Document], n.d. URL <https://www.linkedin.com/pulse/role-indigenous-knowledge-environmental-conservation-eurasia-carbon/> (accessed 2.22.24).

¹⁰² *Ibid.*

Enhancing Environmental Conservation in Kenya Through Alternative Justice Systems

There is a need for revisiting the place of traditional ecological knowledge in developing management plans in environmental conservation as well as promoting access to Environmental Justice for communities, especially in management of the resources that are of utmost importance to their livelihoods and survival.

Enhancing Environmental Conservation through AJS is indeed necessary and possible.

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

Abstract

This paper critically discusses the role of negotiation and mediation in resolving natural resource-based conflicts in Africa. It argues that Africa is highly susceptible to natural resource-based conflicts. The paper examines the nature, causes, and effects of such conflicts in Africa. It argues that negotiation and mediation are suitable techniques in resolving natural resource-based conflicts in Africa and discusses efficacy towards this end. The paper further highlights some of the concerns in utilizing negotiation and mediation in managing natural resource-based conflicts in Africa. It also offers ideas towards strengthening the role of negotiation and mediation in resolving natural resource-based conflicts in Africa.

1.0 Introduction

Conflict refers to some form of friction, disagreement, or discord arising within a group when the beliefs or actions of one or more members of the group are either resisted by or unacceptable to one or more members of another group¹. It has also been described as a situation in which two or more parties perceive that they possess mutually incompatible goals². Conflicts are a common occurrence in human relationships and interactions³. They are an inevitable part of living since they are related to situations of scarce resources, division of functions, power relations and role-differentiation⁴. Some forms of conflicts such as non-violent conflicts can be an essential component of social change

¹ What is Conflict?., Available at <https://mariancrc.org/wp-content/uploads/2014/08/CONFLICT-AND-PEACE.pdf> (Accessed on 27/05/2024)

² Demmers. J., 'Theories of Violent Conflict: An Introduction' (Routledge, New York, 2012)

³ Muigua. K., 'Reframing Conflict Management in the East African Community: Moving from Alternative to 'Appropriate' Dispute Resolution.' Available at <https://kmco.co.ke/wpcontent/uploads/2023/06/Reframing-Conflict-Management-in-the-EastAfrican-CommunityMoving-from-Alternative-to-Appropriate-Dispute-Resolution> (Accessed on 27/05/2024)

⁴ Bercovitch. J., 'Conflict and Conflict Management in Organizations: A Framework for Analysis.' Available at <https://ocd.lcwu.edu.pk/cfiles/International%20Relations/EC/IR403/Conflict.ConflictManagementinOrganizations.pdf> (Accessed on 27/05/2024)

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

and development, and are a necessary component of human interaction⁵. However, violent conflicts are an undesirable occurrence since they affect peace, sustainability and development⁶. Effective, efficient and expeditious conflict management is therefore a desirable ideal in order to spur peace, development and sustainability⁷.

Natural resource-based conflicts are disagreements and disputes over access to, control over and use of natural resources⁸. It has been noted that natural resource-based conflicts are prevalent all over the world as a result of the various competing interests over access to and use of natural resources such as land, water, minerals and forests⁹. The United Nations Environment Programme (UNEP) notes that while natural resources are key to achieving Sustainable Development, they are also increasingly acting as drivers of fragility, conflict and violence¹⁰. It further asserts that as the global population continues to rise, the global demand for natural resources continues to grow,

⁵ United Nations., 'Land and Conflict' Available at https://www.un.org/en/land-natural-resourcesconflict/pdfs/GN_ExeS_Land%20and%20Conflict.pdf (Accessed on 27/05/2024)

⁶ Muigua. K., 'Reframing Conflict Management in the East African Community: Moving from Alternative to 'Appropriate' Dispute Resolution.' Op Cit

⁷ Muigua. K & Kariuki. F., 'ADR, Access to Justice and Development in Kenya.' Available at <http://kmco.co.ke/wp-content/uploads/2018/08/ADR-access-to-justice-and-developmentinKenyaRevised-version-of-20.10.14.pdf> (Accessed on 27/05/2024)

⁸ Food and Agriculture Organization., 'An Introduction to Natural Resource Conflicts, Collaborative Management and Sustainable Livelihoods' Available at <https://www.fao.org/4/a0032e/a0032e04.htm#:~:text=Natural%20resource%20conflicts%20are%20disagreements,or%20inequities%20in%20resource%20distribution.> (Accessed on 27/05/2024)

⁹ Muigua. K., 'Environmental Conflict Management Institutions and Approaches.' Available at <https://kmco.co.ke/wp-content/uploads/2022/09/EnvironmentalConflict-Management-Institutionsand-Approaches.pdf> (Accessed on 27/05/2024)

¹⁰ United Nations Environment Programme., 'Environmental Cooperation and Peacebuilding.' Available at <https://www.unep.org/topics/fresh-water/disasters-and-climatechange/environmentsecurity/environmentalcooperationand#:~:text=International%20law%2C%20environment%20and%20conflict,and%20reliance%20on%20conflict%20resources> (Accessed on 27/05/2024)

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

and the impacts of climate change begin to materialize, competition over natural resources is set to intensify, a situation that could spiral into more natural resource-based conflicts¹¹. Natural resource-based conflicts can be useful in helping a community to clarify interests and needs and in reducing possible injustices or inequities in resource distribution¹². However, it has also been pointed out that some natural resource conflicts have to be addressed effectively and in good time or they will upset local livelihoods by undermining trust among stakeholders and increasing insecurity and resource degradation¹³. It is therefore imperative to embrace effective management of natural resource based- conflicts in order to promote Sustainable Development.

This paper critically discusses the role of negotiation and mediation in resolving natural resource-based conflicts in Africa. It argues that Africa is highly susceptible to natural-resource-based conflicts. The paper examines the nature, causes, and effects of such conflicts in Africa. It argues that negotiation and mediation are suitable techniques in resolving natural resource-based conflicts in Africa and discusses efficacy towards this end. The paper further highlights some of the concerns in utilizing negotiation and mediation in managing natural resource-based conflicts in Africa. It also offers ideas towards strengthening the role of negotiation and mediation in resolving natural resource-based conflicts in Africa.

2.0 Natural Resource-Based Conflicts in Africa: Causes and Effects

It has been correctly noted that natural resources such as land, water, forests, minerals, metals and oil are important sources of livelihoods, income and influence for countries and communities around the globe¹⁴. However, when natural resources are poorly managed or inequitably shared, or when business

¹¹ Ibid

¹² Food and Agriculture Organization., 'An Introduction to Natural Resource Conflicts, Collaborative Management and Sustainable Livelihoods' Op Cit

¹³ Ibid

¹⁴ United Nations Environment Programme., 'Natural Resources and Conflict: A Guide for Mediation Practitioners' Available at https://peacemaker.un.org/sites/peacemaker.un.org/files/NRCMediation_UNDP_AUNEP2015_0.pdf (Accessed on 28/05/2024)

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

operations are implemented without due consideration for context and communities, they can contribute to tensions that can escalate into violent conflict, or feed into and exacerbate pre-existing conflict dynamics¹⁵. In addition, population growth and environmental degradation are intensifying competition over already scarce resources, such as land and water, and climate change threatens to increase such competition even further a situation that could spiral into more natural resource-based conflicts¹⁶.

Natural resource- based conflicts have been a common occurrence in Africa for many decades¹⁷. Africa is rich in natural resources ranging from arable land, water, oil, natural gas, minerals, forests and wildlife¹⁸. The continent holds a huge proportion of the world's natural resources, both renewables and non-renewables¹⁹. UNEP notes that Africa holds approximately sixty five per cent of the world's arable land and ten percent of the planet's internal renewable fresh water sources²⁰. It also holds a significant proportion of the world's natural gas, oil, and gold reserves²¹. In addition, the largest reserves of cobalt, diamonds, platinum and uranium in the world are in Africa²². Africa is therefore a resource rich continent.

Despite being endowed with abundance of natural resources, Africa has over the years suffered from resource-based conflicts which usually form a threat to Sustainable Development and have the potential of undermining economic development and sustainability²³. Africa has for many decades experienced the 'resource curse phenomenon' which refers to the paradox that countries

¹⁵ Ibid

¹⁶ Ibid

¹⁷ Muigua. K., Wamukoya. D., & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Glenwood Publishers Limited, 2015

¹⁸ United Nations Environment Programme., 'Our Work in Africa' Available at <https://www.unep.org/regions/africa/our-work-africa#:~:text=Africa%20is%20rich%20in%20natural,both%20renewables%20and%20non%2Drenewables>. (Accessed on 28/05/2024)

¹⁹ Ibid

²⁰ Ibid

²¹ Ibid

²² Ibid

²³ Muigua. K., Wamukoya. D., & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

endowed with natural resources tend to be embroiled in conflicts and have incidences of poverty²⁴. Natural resources have played a major role in defining much of Africa's public arena, including power politics, and resource distribution strategies²⁵. They have also motivated and fueled armed conflicts in Africa threatening peace, security, and stability²⁶. It has been noted that natural resources have also provided a parallel political economy for fueling wars and conflicts in Africa²⁷. This is evidenced by the illegal exploitation of diamonds during the civil war in Sierra Leone and the use of the profits from illicit diamond sales to procure small arms and light weapons and thus sustain armed conflict during Liberia's civil war²⁸.

It has been pointed out that conflicts over natural resources – such as land, fresh water, minerals or fishing rights – are prevalent²⁹. When resolved peacefully, such conflicts are an essential part of progress and development³⁰. However, natural resource-based conflicts can also trigger violence, insecurity and destruction, particularly in states with weak governance, high levels of corruption, and existing ethnic and political divisions³¹. For example, in the Darfur region of Sudan, conflicts between pastoralist herders and farmers over livestock migration routes and watering holes have become a violent flashpoint for wider cultural, ethnic and religious differences³². Further, there have been numerous reported cases of armed conflict and insecurity in the Democratic Republic of the Congo (DRC) related to natural resources

²⁴ Henri. A., 'Natural Resources Curse: A Reality in Africa.' *Resources Policy*, Volume 63, 2019

²⁵ Mwanika. PAN., 'Natural Resource Conflict: Management Processes and Strategies in Africa' Available at <https://www.files.ethz.ch/isn/136685/PAPER216.pdf> (Accessed on 28/05/2024)

²⁶ Ibid

²⁷ Ibid

²⁸ Ibid

²⁹ Brown. O., & Keating. M., 'Addressing Natural Resource Conflicts: Working towards more Effective Resolution of National and Sub-National Resource Disputes' Available at <https://www.chathamhouse.org/2015/06/addressing-natural-resource-conflicts-working-towards-more-effective-resolution-national> (Accessed on 28/05/2024)

³⁰ Ibid

³¹ Ibid

³² Ibid

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

including its vast minerals³³. DRC is considered to be one of the most fragile states worldwide, a situation that is often exacerbated by the 'resource curse'. It has been noted that most of the internal conflicts in Africa can be linked to exploiting natural resources – from high-value resources such as timber, diamonds, gold and oil to scarce resources such as fertile land and water³⁴.

Natural resource- based conflicts are therefore widespread in Africa. These conflicts are a major threat to peace, stability, and development in the continent³⁵. It is therefore necessary to effectively manage natural-resource based conflicts in Africa for Sustainable Development.

3.0 Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

Negotiation and mediation are Alternative Dispute Resolution (ADR) processes³⁶. The term ADR entails a set of processes that are applied to manage disputes without resort to adversarial litigation³⁷. It encompasses various processes including negotiation, mediation, arbitration, conciliation, adjudication, expert determination, early neutral evaluation, and Traditional Dispute Resolution Mechanisms (TDRMs) among others³⁸. ADR techniques may be linked to but function outside formal court litigation processes³⁹. They

³³ Matthysen. K. & Gobbers. E., 'Armed Conflict, Insecurity, and Mining in Eastern DRC: Reflections on the Nexus between Natural Resources and Armed Conflict', Available at https://ipisresearch.be/wp-content/uploads/2022/12/20221208_ILRG_IPIS_Armed-conflict-insecurity-and-mining-in-eastern-DRC.pdf (Accessed on 28/05/2024)

³⁴ United Nations Environment Programme., 'In Sudan, Conflict and Environmental Decline go Hand in Hand' Available at [https://www.unep.org/news-and-stories/story/sudan-conflict-and-environmental-decline-go-hand-hand#:~:text=United%20Nations%20Environment%20Programme%20\(UNEP,as%20fertile%20land%20and%20water.](https://www.unep.org/news-and-stories/story/sudan-conflict-and-environmental-decline-go-hand-hand#:~:text=United%20Nations%20Environment%20Programme%20(UNEP,as%20fertile%20land%20and%20water.) (Accessed on 28/05/2024)

³⁵ Ibid

³⁶ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Glenwood Publishers Limited, 2015

³⁷ Ibid

³⁸ Ibid

³⁹ Uwazie. E., 'Alternative Dispute Resolution in Africa: Preventing Conflict and Enhancing Stability.' *Africa Security Brief*, No. 16 of 2011

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

are viewed as ideal in enhancing access to justice due to their attributes which include privacy, confidentiality, flexibility, informality, efficiency, party autonomy and the ability to foster expeditious and cost effective management of disputes⁴⁰.

Negotiation is an informal process that involves parties to a conflict meeting to identify and discuss the issues at hand so as to arrive at a mutually acceptable solution without the help of a third party⁴¹. It is one of the most fundamental methods of managing conflicts which offers parties maximum control over the process and outcome⁴². Mediation on the other hand is a method of conflict management where conflicting parties gather to seek solutions to the conflict, with the assistance of a third party who facilitates discussions and the flow of information, and thus aiding in the process of reaching an agreement⁴³. Mediation has also been defined as a non-adversarial and collaborative process through which an impartial third party helps parties in a dispute reach a resolution through interest-based negotiations⁴⁴. Mediation is usually a continuation of the negotiation process since it arises where parties to a conflict have attempted negotiations, but have reached a deadlock⁴⁵. Parties therefore involve a third party known as a mediator to assist them continue with the negotiations and ultimately break the deadlock⁴⁶. It has been pointed out that a mediator does not have the power to impose a solution upon the parties but rather facilitates communication,

⁴⁰ Muigua. K & Kariuki. F., 'ADR, Access to Justice and Development in Kenya.' Available at <http://kmco.co.ke/wp-content/uploads/2018/08/ADR-access-to-justice-anddevelopmentinKenyaSTRATHMORE-CONFERENCE-PRESENTATION.pdf> (Accessed on 28/05/2024)

⁴¹ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Op Cit

⁴² Ibid

⁴³ Muigua. K., 'Resolving Conflicts through Mediation in Kenya.' Glenwood Publishers Limited, 2nd Edition., 2017

⁴⁴ United Nations Environment Programme., 'Natural Resources and Conflict: A Guide for Mediation Practitioners' Op Cit

⁴⁵ Bercovitch. J., 'Mediation Success or Failure: A Search for the Elusive Criteria.' *Cardozo Journal of Conflict Resolution*, Vol. 7, p 289

⁴⁶ Ibid

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

promotes understanding, focuses the parties on their interests, and uses creative problem solving to enable the parties to reach their own agreement⁴⁷.

Negotiation and mediation are ideal processes in resolving natural-resource based conflicts. They have been described as key collaborative approaches towards managing conflicts⁴⁸. Utilizing collaborative approaches in managing conflicts allows competing or opposing stakeholder groups to work together to reach an agreement on a controversial issue⁴⁹. This approach also encourages teams to work through disagreements by empathy and listening, towards mutually beneficial solutions⁵⁰. It has been identified as a powerful approach to conflict resolution built on cooperation, open communication, and finding win-win outcomes⁵¹. Collaborative approaches towards conflict management aim to preserve relationships, build trust, and promote long term positive change⁵². They are based on certain principles key among them being ensuring open communication, finding common ground, and creating a culture of trust⁵³. These approaches are ideal when it is necessary to maintain all parties' relationships or when the solution itself will have a significant impact on a large group of people⁵⁴.

It has been noted that in conflicts involving natural resources, sustainable outcomes are even more desirable because the shared benefits of these

⁴⁷ Ibid

⁴⁸ Food and Agriculture Organization., 'Collaborative Conflict Management for Enhanced National Forest Programmes (NFPs)' Available at <https://www.fao.org/3/i2604e/i2604e00.pdf> (Accessed on 28/05/2024)

⁴⁹ Ibid

⁵⁰ Miroslavov. M., 'Mastering the Collaborating Conflict Style In 2024' Available at <https://www.officernd.com/blog/collaborating-conflictstyle/#:~:text=It's%20one%20of%20the%20strategies,their%20underlying%20needs%20and%20interests.> (Accessed on 28/05/2024)

⁵¹ Ibid

⁵² Ibid

⁵³ Ibid

⁵⁴ Isenhardt. M.W., & Spangle. M., 'Summary of "Collaborative Approaches to Resolving Conflict"' Available at <https://www.beyondintractability.org/bksum/isenhardt-collaborative> (Accessed on 28/05/2024)

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

resources often cross tribal, societal, communal, and national boundaries⁵⁵. Collaboration over the ownership, management, and use of natural resources is therefore critical to peace and stability⁵⁶. Negotiation and mediation processes – which are voluntary and consensus-based – tend to lead to resolutions and outcomes that are longer lasting and more sustainable than adversarial processes or otherwise imposed outcomes⁵⁷. These processes are therefore ideal in resolving natural resource-based conflicts due to their potential to foster collaboration in the ownership, management, and use of such resources⁵⁸. Mediation over natural resources is effective in helping parties identify ways to maximize and share benefits, and ultimately unlock entrenched or zero-sum positions, allowing parties to develop cooperative and constructive relationships that can be carried over to other areas⁵⁹.

The need to effectively resolve natural resource-based conflicts is acknowledged as an essential aspect of sustainable livelihoods and participatory development⁶⁰. In order to achieve this goal, it has been noted that conflict management should follow the principles of sustainable livelihoods and facilitate consensual negotiation as a means for stakeholders to deal with and hopefully resolve their perceived incompatibility of interests⁶¹. Effective management of natural resource-based conflicts provides a peaceful and balanced setting for people to reach mutually acceptable agreements⁶². Negotiation and mediation approaches are able to achieve this ideal. These approaches are able to strengthen relationships and build trust within and among groups, increase the capacity of communities, organizations and institutions to solve problems, contribute to strengthening the institutional arrangements that regulate access to and use of natural

⁵⁵ United Nations Environment Programme., 'Natural Resources and Conflict: A Guide for Mediation Practitioners' Op Cit

⁵⁶ Ibid

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Food and Agriculture Organization., 'Negotiation and Mediation Techniques for Natural Resource Management' Available at http://www.antonioacasella.eu/restorative/Castro_Engel_2007.pdf (Accessed on 28/05/2024)

⁶¹ Ibid

⁶² Ibid

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

resources, and foster increased flows of income and benefits through improved access to and management of natural resources⁶³.

Negotiation and mediation can also help stakeholders of natural resources to identify ways to maximize shared benefits and address common problems and challenges together⁶⁴. Through these collaborative approaches, natural resources can be treated as a platform for cooperation that transcends religious, ideological, political, or tribal differences, which can be leveraged to tackle more challenging problems down the line⁶⁵. They have the potential to build peace and bring people together, binding them towards the common goal of sharing resources⁶⁶.

It has been noted that mediation approaches can help maximize mutual benefits and reframe conflict to allow greater opportunities for collaboration and building constructive relations across community, ethnic, national, or regional divides⁶⁷. Flexible mediation processes can also be very useful when dealing with relationship issues and complex political dynamics⁶⁸. Mediation also offers many techniques and approaches to deal with complex technical and scientific information common to resource disputes⁶⁹. Similarly, consensual negotiations can help to achieve collaborative resource management and sustainable rural livelihoods⁷⁰. Negotiation can strengthen individuals', groups' and institutions' ability to deal with the many conflict

⁶³ Ibid

⁶⁴ United Nations Department of Political Affairs., 'Natural Resources and Conflict: A Guide for Mediation Practitioners.' Available at <https://gsdrc.org/document-library/natural-resources-and-conflict-a-guidefor-mediation-practitioners/> (Accessed on 28/05/2024)

⁶⁵ Ibid

⁶⁶ International Organization for Peace Building., 'Natural Resources and Conflict: A Path to Mediation.' Available at <https://www.interpeace.org/2015/11/natural-resources-and-conflict-a-path-to-mediation/> (Accessed on 28/05/2024)

⁶⁷ United Nations Environment Programme., 'Natural Resources and Conflict: A Guide for Mediation Practitioners' Op Cit

⁶⁸ Ibid

⁶⁹ Ibid

⁷⁰ Food and Agriculture Organization., 'Negotiation and Mediation Techniques for Natural Resource Management' Op Cit

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

situations that undermine effective coordination and cooperation⁷¹. It can also help manage conflicts over interests, which are often negotiable⁷². Therefore utilizing negotiation and mediation in managing natural resource-based conflicts at communal, national, and trans-boundary levels is vital in helping different parties move from a position of conflict to one of cooperation⁷³.

Negotiation and mediation are therefore key approaches in managing natural-resource based conflicts. These techniques can enhance participation and collaboration in ownership, management, and use of natural resources therefore promoting peace and stability⁷⁴. They can also facilitate effective management of conflicts by addressing the root causes of such conflicts therefore leading to long lasting and sustainable outcomes⁷⁵. This affords parties an opportunity to sustain or improve their relationships⁷⁶. It is therefore necessary to embrace negotiation and mediation for effective management of natural-resource based conflicts in Africa. Despite their key role in effectively resolving natural resource- based conflicts, negotiation and mediation are often underutilized towards this end. This can be attributed to the technical nature of natural resource- based conflicts, failure to identify or act on opportunities for proactive use of negotiation and mediation as tools for conflict prevention and peacebuilding, and the political dimension of natural resource-based conflicts⁷⁷.

⁷¹ Ibid

⁷² Ibid

⁷³ African Union., 'Report of the African Union Panel of the Wise on Improving the Mediation and Resolution of Natural Resource-Related Conflicts Across Africa' Available at <https://wedocs.unep.org/bitstream/handle/20.500.11822/31043/AUP.pdf?sequence=1&isAllowed=y> (Accessed on 28/05/2024)

⁷⁴ United Nations Environment Programme., 'Natural Resources and Conflict: A Guide for Mediation Practitioners' Op Cit

⁷⁵ Muigua. K., 'Natural Resource Conflicts: Addressing Inter-Ethnic Strife through Environmental Justice in Kenya.' Available at <http://kmco.co.ke/wp-content/uploads/2019/09/NaturalResourceConflictsAddressing-Inter-Ethnic-Strife-Through-Environmental-Justice-in-kenya-KariukiMuigua7th-September2019.pdf> (Accessed on 28/05/2024)

⁷⁶ Ibid

⁷⁷ United Nations Environment Programme., 'Natural Resources and Conflict: A Guide for Mediation Practitioners' Op Cit

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

The suitability of these processes may also be limited in certain instances. For example, win-win solutions are not always possible, especially in situations of absolute resource scarcity or incompatible land use⁷⁸. In addition, mediation is a more limited tool when major power imbalances exist between the parties⁷⁹. Negotiation and mediation are also of limited use when conflicts are characterized by protracted or deep-rooted structural issues that can only be addressed through legal, economic, political, or social reforms⁸⁰. These processes are therefore particularly effective in addressing resource conflicts that involve unsustainable resource use, conflicting demands over resource use, or the sharing of revenues and benefits⁸¹. They are less effective in addressing conflicts grounded in structural inequalities or different identities and cultural values but can prove to be an important entry-point to addressing such conflicts⁸². It is therefore necessary to consider these factors in order to effectively resolve natural resource-based conflicts in Africa through negotiation and mediation.

4.0 Conclusion

Negotiation and mediation are key techniques in resolving natural resource-based conflicts. These mechanisms can enhance participation and collaboration in ownership, management, and use of natural resources therefore promoting peace and stability⁸³. It is therefore necessary to embrace negotiation and mediation for effective management of natural resource-based conflicts in Africa. These approaches can be effectively harnessed by ensuring the participation of all stakeholders in the conflict management process and encouraging consensus building⁸⁴. It is also imperative to strengthen the legal,

⁷⁸ Ibid

⁷⁹ Ibid

⁸⁰ Ibid

⁸¹ Ibid

⁸² Ibid

⁸³ United Nations Environment Programme., 'Natural Resources and Conflict: A Guide for Mediation Practitioners' Op Cit

⁸⁴ Muigua. K., 'Managing Environmental Conflicts through Alternative Dispute Resolution.' Available at <https://kmco.co.ke/wp-content/uploads/2024/01/Managing-Environmental-Conflicts-throughAlternative-Dispute-Resolution-1.pdf> (Accessed on 28/05/2024)

Resolving Natural Resource-Based Conflicts in Africa through Negotiation and Mediation

policy, institutional and human capacity in order to effectively mediate natural resource-based conflicts in Africa⁸⁵. Building capacity within communities is vital in developing a level-playing field that will enable less powerful stakeholders to participate equitably in a process of consensual negotiation and mediation towards effective management of natural resource-based conflicts⁸⁶. It is also important for mediators to enhance their capacity to mediate natural resource-based conflicts through education and training and seeking expert evidence in technical aspects related to natural resources⁸⁷. It is also vital to consider the context and nature of the natural resource-based conflict⁸⁸. In complex resource disputes, negotiation and mediation can be utilized alongside and as complementary to other peacebuilding tools⁸⁹. Negotiation and mediation are effective mechanisms for managing natural resource-based conflicts due to their potential to build peace and bring people together, binding them towards the common goal of sharing resources⁹⁰. It is imperative to embrace negotiation and mediation in order to effectively resolve natural resource-based conflicts in Africa.

⁸⁵ Muigua, K., 'Managing Natural Resource Conflicts in Kenya through Negotiation and Mediation.' Available at <https://kmco.co.ke/wp-content/uploads/2018/08/Managing-Natural-Resource-Conflictsin-Kenya-through-Negotiation-and-Mediation.pdf> (Accessed on 28/05/2024)

⁸⁶ Ibid

⁸⁷ United Nations Environment Programme., 'Natural Resources and Conflict: A Guide for Mediation Practitioners' Op Cit

⁸⁸ Ibid

⁸⁹ Ibid

⁹⁰ International Organization for Peace Building., 'Natural Resources and Conflict: A Path to Mediation.' Op Cit

Fostering Sustainable Lifestyles for Posterity

Abstract

The 2030 Agenda for Sustainable Development envisages harmony between humanity and nature towards the ideal of Sustainable Development. Achieving this ideal requires creating and maintaining the conditions under which humanity and nature can exist in productive harmony to support present and future generations. One of the key ways through which this ideal can be realized is by humanity embracing sustainable lifestyles in harmony with nature. This paper critically examines the need to embrace sustainable lifestyles. The paper defines the idea of sustainable lifestyles and argues that it is an urgent priority in the wake of global challenges including the triple planetary crisis of climate change, loss of biodiversity, and pollution. The paper explores some of the techniques that can be adopted towards fostering sustainable lifestyles for posterity.

1.0 Introduction

The United Nation's 2030 Agenda for Sustainable Development sets out the global vision for sustainability¹. It entails a plan of action for humanity and nature towards prosperity and the ideal of Sustainable Development². The agenda seeks to foster prosperity for humanity by ending poverty and hunger in all their forms and dimensions and ensuring that all human beings can fulfill their potential in dignity and equality and in a healthy environment³. Further, the agenda seeks to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action to combat climate change, so that it can support the needs of the present and future generations⁴. The 2030 agenda therefore envisages harmony between humanity and nature towards the ideal of Sustainable Development.

The concept of Sustainable Development seeks to promote development that meets the needs of the present without compromising the ability of future

¹ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 16/05/2024)

² Ibid

³ Ibid

⁴ Ibid

Fostering Sustainable Lifestyles for Posterity

generations to meet their own needs⁵. It envisages creating and maintaining the conditions under which humanity and nature can exist in productive harmony to support present and future generations⁶. Sustainable Development aims to achieve this ideal by promoting environmental conservation, economic development and social progress⁷.

It has been noted that achieving Sustainable Development requires humanity to embrace sustainable lifestyles in harmony with nature⁸. According to the United Nations Environment Programme (UNEP), it is necessary to harness individual decision-making for sustainability and integrate sustainable lifestyle principles across society, so that sustainable living, in line with the Sustainable Development Goals, becomes the norm for people everywhere⁹.

This paper critically examines the need to embrace sustainable lifestyles. The paper defines the idea of sustainable lifestyles and argues that it is an urgent priority in the wake of global challenges including the triple planetary crisis of climate change, loss of biodiversity, and pollution. The paper explores some of the techniques that can be adopted towards fostering sustainable lifestyles for posterity.

2.0 Sustainable Lifestyles: Definition and Elements

A sustainable lifestyle has been defined as a cluster of habits and patterns of behaviour embedded in a society and facilitated by institutions, norms and infrastructures that frame individual choice, in order to minimize the use of natural resources and generation of wastes, while supporting fairness and

⁵ World Commission on Environment and Development., 'Our Common Future.' Oxford, (Oxford University Press, 1987)

⁶ United States Environmental Protection Agency., 'What is Sustainability?' Available at <https://www.epa.gov/sustainability/learn-about-sustainability> (Accessed on 16/05/2024)

⁷ Fitzmaurice. M., 'The Principle of Sustainable Development in International Development Law.' International Sustainable Development Law., Vol 1

⁸ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

⁹ United Nations Environment Programme., 'Why Sustainable Lifestyles Matter' Available at <https://www.unep.org/explore-topics/resource-efficiency/what-we-do/sustainable-lifestyles/why-sustainable-lifestyles> (Accessed on 16/05/2024)

Fostering Sustainable Lifestyles for Posterity

prosperity for all¹⁰. It has also been described as a way of living that comprises of social behaviors and choices that minimize environmental degradation while supporting equitable socio-economic development and better quality of life for all¹¹. In addition, a sustainable lifestyle also refers to a sum of all habits that together can be identified as a distinct way of living of a human being, which guarantees a basic quality of life that can be maintained indefinitely by a certain population and therefore remains within the carrying capacity of the ecoregion considered¹². Sustainable lifestyles can therefore be seen as patterns of action and consumption, used by people to affiliate and differentiate themselves from others, which: meet basic needs, provide a better quality of life, minimise the use of natural resources and emissions of waste and pollutants over the lifecycle, and do not jeopardise the needs of future generations¹³.

UNEP notes that a sustainable lifestyle minimizes ecological impacts while enabling a flourishing life for individuals, households, communities, and beyond¹⁴. A sustainable lifestyle is the product of individual and collective decisions about aspirations and about satisfying needs and adopting practices, which are in turn conditioned, facilitated, and constrained by societal norms, political institutions, public policies, infrastructures, markets, and culture¹⁵.

¹⁰ United Nations Environment Programme., 'Fostering and Communicating Sustainable Lifestyles: Principles and Emerging Practices' Available at https://wedocs.unep.org/bitstream/handle/20.500.11822/17016/fostering_Communicating_Sust_Lifestyles.pdf?sequence=1&isAllowed=y (Accessed on 17/05/2024)

¹¹ United Nations Environment Programme., 'Sustainable Lifestyles' Available at <https://www.unep.org/explore-topics/resource-efficiency/what-we-do/sustainable-lifestyles> (Accessed on 17/05/2024)

¹² Lubowiecki-Vikuk. A., Dabrowska. A., & Machnik. A., 'Responsible Consumer and Lifestyle: Sustainability Insights' Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7442902/> (Accessed on 17/05/2024)

¹³ United Nations., 'Sustainable Lifestyles and Education for Sustainable Consumption' Available at <https://www.un.org/esa/sustdev/marrakech/gpaper2chap7.pdf> (Accessed on 17/05/2024)

¹⁴ United Nations Environment Programme., 'Fostering and Communicating Sustainable Lifestyles: Principles and Emerging Practices' Op Cit

¹⁵ Ibid

Fostering Sustainable Lifestyles for Posterity

The concept of sustainable lifestyles envisages altruistic and frugal behaviours of an individual who maintains harmony with the society, economy and environment¹⁶. This idea encompasses a wide range of activities, including energy and water conservation, waste recycling, green consumption and travel and tourism behaviours¹⁷. In addition, it has been noted that sustainable lifestyles entails activities and patters aimed at promoting efficient use of natural resources, minimizing greenhouse gas emissions, and curbing waste and pollution¹⁸. The concept of sustainable lifestyles acknowledges that sustainability challenges cannot be solved only by improving efficiency, but should also require behavioural changes that entail empowerment of individuals and a concerted action of all societal actors, including governments, businesses, Non-Governmental Organizations (NGO), media and education, which play an important role in shaping lifestyles¹⁹. Achieving sustainable lifestyles requires changes at cultural, social, environmental and economic levels by using strategies that raise awareness and developing new values and visions for sustainable societies²⁰.

Fostering sustainable lifestyles is a pertinent global concern. It has been noted that achieving the Sustainable Development Goals (SDGs) requires a substantial changes in our lifestyles²¹. To advance the SDGs, complex and fundamental transformations of our societal systems are required²². It requires humanity to change their daily behavior, ultimately shifting human lifestyles towards sustainability²³.

¹⁶ Lubowiecki-Vikuk. A., Dabrowska. A., & Machnik. A., 'Responsible Consumer and Lifestyle: Sustainability Insights' Op Cit

¹⁷ Ibid

¹⁸ United Nations Environment Programme., 'Sustainable Lifestyles' Op Cit

¹⁹ United Nations., 'Sustainable Lifestyles and Education for Sustainable Consumption' Op Cit

²⁰ Ibid

²¹ Yamane. T., & Kaneko. S., 'Is the Younger Generation a Driving Force Toward Achieving the Sustainable Development Goals? Survey Experiments' Available at <https://www.sciencedirect.com/science/article/abs/pii/S0959652621001529?via=ihub> (Accessed on 17/05/2024)

²² Ibid

²³ Ibid

Fostering Sustainable Lifestyles for Posterity

It has been estimated that by 2050, the world's population may reach 10 billion increasing the demand for food, fashion, travel, housing and related aspirations²⁴. With the planet's resources already being stretched, this enormous rise in population means that an increasing number of people will be unable to meet basic needs putting pressure on the available resources²⁵. It has been asserted that in a world stretched thin for resources and under the threat of global biodiversity loss and climate change, our lifestyles decisions are putting the planet at risk²⁶. For example humanity consumes water faster than can be replenished from underground aquifers²⁷; burns hydrocarbons as global supplies dwindle and global temperatures rise²⁸; and consumes antiquated diets that inefficiently use plants and animals²⁹.

Some of the major global challenges facing humanity have been attributed to our lifestyles. For example, the triple planetary crisis of climate change, pollution and biodiversity loss has been attributed to human behaviour and activities³⁰. Human activities are the main drivers of climate change³¹. Energy use, industry, transport, buildings and agriculture attributed to human activities are the main causes for release of greenhouse gases to the atmosphere³². The impacts of climate change are already being manifested through increased intensity and severity of droughts, water scarcity, wildfires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity threatening the sustainable development agenda³³. Further, human activities including emissions from motor vehicles and industries and cooking with polluting fuels and technologies are the major causes of air

²⁴ United Nations Environment Programme., 'Sustainable Lifestyles' Op Cit

²⁵ Ibid

²⁶ Ibid

²⁷ Posterity Institute., 'Action Steps for a Sustainable Lifestyle - Conscious Consumerism' Available at <https://www.theposterityinstitute.org/action-steps-for-a-sustainable-lifestyle-conscious-consumerism/> (Accessed on 17/05/2024)

²⁸ Ibid

²⁹ Ibid

³⁰ United Nations Climate Change., 'What is the Triple Planetary Crisis?' Available at <https://unfccc.int/news/what-is-the-triple-planetary-crisis> (Accessed on 17/05/2024)

³¹ Ibid

³² Ibid

³³ Ibid

Fostering Sustainable Lifestyles for Posterity

pollution³⁴. Air Pollution has been identified as the largest cause of disease and premature death in the world³⁵. In addition, biodiversity loss which refers to the decline or disappearance of biological diversity, which includes animals, plants and ecosystems has also been attributed to human activities³⁶. This problem is caused by activities such as overfishing, habitat loss as a result of deforestation, and desertification due to climate change³⁷. According to UNEP, the biggest driver of biodiversity loss is how people use the land and sea³⁸. This includes the conversion of land covers such as forests, wetlands and other natural habitats for agricultural and urban uses³⁹. It has been noted that biodiversity is the baseline for everything on the planet⁴⁰. Biodiversity loss impacts food supplies and access to clean water among other vital resources threatening our future on the planet⁴¹. It is therefore necessary to foster sustainable lifestyles in order to address the triple planetary crisis of climate change, pollution, and biodiversity loss.

Fostering sustainable lifestyles is therefore key for sustainability. It has been noted that current consumption patterns and lifestyles have been formed over centuries by our civilisation and are driven by economic forces, technological progress, political settings, environmental issues, sociological and cultural contexts and psychological determinants⁴². For example, economic development leads to improved productivity that leads to reduced products prices and increased incomes resulting in higher purchasing power⁴³. In addition, technological advances lead to supply of more efficient products and technologies and also create new visions for lifestyles or conditions, which

³⁴ Ibid

³⁵ Ibid

³⁶ Ibid

³⁷ Ibid

³⁸ United Nations Environment Programme., 'Five Drivers of the Nature Crisis' Available at <https://www.unep.org/news-and-stories/story/five-drivers-nature-crisis#:~:text=The%20biggest%20driver%20of%20biodiversity,conversion%20to%20other%20land%20uses>. (Accessed on 17/05/2024)

³⁹ Ibid

⁴⁰ United Nations Climate Change., 'What is the Triple Planetary Crisis?' Op Cit

⁴¹ Ibid

⁴² United Nations., 'Sustainable Lifestyles and Education for Sustainable Consumption' Op Cit

⁴³ Ibid

Fostering Sustainable Lifestyles for Posterity

could stimulate people to adapt more resource intensive lifestyles⁴⁴. Further, it has been noted that socio-psychological drivers of current consumption patterns and lifestyles include personal motives and influences of the social environment⁴⁵. For example, people purchase goods and services for their qualities and functions, as much as for their symbolic value that serves as a marker of social status⁴⁶. Material possessions are often perceived as a measure of success, power and happiness in most societies⁴⁷. In addition, cultural and historical aspects also influence lifestyles and unspoken codes of conduct in each society⁴⁸. It is therefore important to understand these factors in order to foster sustainable lifestyles for posterity. Sustainable lifestyles entail understanding how our lifestyle choices impact the world around us and finding ways for everyone to live better⁴⁹.

3.0 Fostering Sustainable Lifestyles

The need to foster sustainable lifestyles is envisaged under Agenda 21 which advocates for new concepts of wealth and prosperity which allow higher standards of living through changed lifestyles and are less dependent on the Earth's finite resources⁵⁰. It has been noted that Agenda 21 paved the way for the emerging understanding that the sustainability challenge cannot be solved only by improving efficiency, but should also include behavioural changes⁵¹. In addition, the 2030 Agenda for Sustainable Development envisages the ideal of sustainable lifestyles for posterity⁵². SDG 12 urges humanity to embrace

⁴⁴ Ibid

⁴⁵ Ibid

⁴⁶ Ibid

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ United Nations Environment Programme., 'Sustainable Lifestyles' Op Cit

⁵⁰ United Nations Conference on Environment & Development Rio de Janeiro, Brazil, 3 to 14 June 1992., 'Agenda 21.' Available at https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf?_gl=1*_9uipp7*_ga*MjA2NDk2MDMxMS4xNjcxMjU5NTEw*_ga_TK9BQL5X7Z*_MTY5NDU5NjE3MS41NS4xLjE2OTQ1OTgzODUuM_C4wLjA (Accessed on 17/05/2024)

⁵¹ United Nations., 'Sustainable Lifestyles and Education for Sustainable Consumption' Op Cit

⁵² United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

Fostering Sustainable Lifestyles for Posterity

sustainable consumption and production patterns⁵³. It sets out several targets towards achieving this ideal including ensuring sustainable management and efficient use of natural resources⁵⁴; reducing food losses along production and supply chains; achieving environmentally sound management of chemicals and waste throughout their lifecycle⁵⁵; reducing waste generation through prevention, reduction, recycling, and reuse⁵⁶; promoting public procurement practices that are sustainable⁵⁷; ensuring that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature⁵⁸; and supporting developing countries to strengthen their scientific and technical capacity to move towards more sustainable patterns of consumption and production⁵⁹. It is imperative to achieve these targets in order to ensure sustainable lifestyles for posterity.

Africa Union's *Agenda 2063*⁶⁰ also seeks to ensure sustainable lifestyles in the continent. Among the key aspirations of Agenda 2063 is building a prosperous Africa, based on inclusive growth and Sustainable Development⁶¹. This aspiration seeks to ensure environmentally sustainable and climate resilient economies and communities in Africa⁶². Agenda 2063 sets out several priorities towards achieving this goal including promoting sustainable natural resource management, fostering biodiversity conservation, enhancing sustainable consumption and production patterns, achieving water security, enhancing climate resilience and natural disasters preparedness and prevention, and embracing renewable energy⁶³. Agenda 2063 acknowledges that in order to achieve sustainable consumption patterns in Africa, all households, communities, and government entities should be aware and lead

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Africa Union., 'Agenda 2063' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 17/05/2024)

⁶¹ Ibid

⁶² Ibid

⁶³ Ibid

Fostering Sustainable Lifestyles for Posterity

sustainable life styles with respect to the use of water, electricity, and design/construction of houses⁶⁴. It further acknowledges that sustainable livelihoods and responsible citizenship are vital for Sustainable Development in Africa⁶⁵. Realizing the aspirations, goals, and priority actions set out under Agenda 2063 is therefore vital in fostering sustainable lifestyles for posterity in Africa.

Ensuring sustainable lifestyles is therefore a key agenda towards Sustainable Development. In order to achieve this goal, it is necessary to embrace responsible consumption and production patterns⁶⁶. According to the United Nations, ensuring sustainable consumption and production patterns is key to sustain the livelihoods of current and future generations⁶⁷. In order to achieve this goal, it is necessary for individuals to adopt more sustainable lifestyles. This can involve consuming less, choosing products with lower environmental impacts, and reducing the carbon footprint of day-to-day activities⁶⁸.

It has been correctly observed that promoting responsible consumption and production is a fundamental pillar of sustainability that directly impacts the well-being of future generations⁶⁹. It involves a shift in our mindset and practices towards using resources efficiently and minimizing waste⁷⁰. It has been opined that responsible consumption is not about sacrificing the quality of life that human beings live but rather making informed choices that benefit both the present and future generations for posterity⁷¹. Individuals should therefore prioritize responsible consumption and patterns including choosing products with sustainable and eco-friendly attributes, reducing energy and water consumption in households, minimizing food waste, and supporting

⁶⁴ Ibid

⁶⁵ Ibid

⁶⁶ United Nations., 'Goal 12: Ensure Sustainable Consumption and Production Patterns' Available at <https://www.un.org/sustainabledevelopment/sustainable-consumption-production/> (Accessed on 17/05/2024)

⁶⁷ Ibid

⁶⁸ Ibid

⁶⁹ The Posterity Advocacy Hub: Principle 2 Championing Sustainability., Available at <https://medium.com/@posterityadvocacyhub/the-posterity-advocacy-hub-principle-2-championing-sustainability-73c303723d2a> (Accessed on 17/05/2024)

⁷⁰ Ibid

⁷¹ Ibid

Fostering Sustainable Lifestyles for Posterity

local and sustainable agriculture⁷². Further, communities can play a pivotal role in promoting sustainable lifestyles through responsible consumption by establishing local initiatives and sharing resources⁷³. It has been noted that community gardens, tool-sharing programs, and bulk purchasing cooperatives are examples of community collaborative efforts that reduce waste and encourage responsible resource use towards sustainability⁷⁴. Further, it is vital for governments to implement and enforce policies and regulations towards responsible consumption and production through measures such as setting targets for reducing waste generation, promoting circular economy practices, and supporting sustainable procurement policies⁷⁵.

It is also necessary to enhance education and awareness on sustainable lifestyles⁷⁶. Fostering sustainable lifestyles requires educating individuals about the environmental consequences of their choices⁷⁷. By raising awareness and providing information on sustainable practices, we can empower people to make more informed decisions and reduce their ecological footprint⁷⁸. The 2030 Agenda for Sustainable Development recognizes the role of education in fostering sustainable lifestyles⁷⁹. SDG 4 seeks to ensure inclusive and equitable quality education for all⁸⁰. Among the targets under this goal is to ensure that learners acquire the knowledge and skills needed to promote Sustainable Development including through education for Sustainable Development and sustainable lifestyles⁸¹. Strengthening education and awareness is therefore key in fostering sustainable lifestyles.

⁷² Ibid

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ United Nations., 'Goal 12: Ensure Sustainable Consumption and Production Patterns' Op Cit

⁷⁶ The Posterity Advocacy Hub: Principle 2 Championing Sustainability., Op Cit

⁷⁷ Ibid

⁷⁸ Ibid

⁷⁹ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

⁸⁰ Ibid

⁸¹ Ibid

Fostering Sustainable Lifestyles for Posterity

Another key approach towards fostering sustainable lifestyles is implementing circular economy⁸². Circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible⁸³. It is a system where materials never become waste and nature is regenerated⁸⁴. In a circular economy, products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling, and composting⁸⁵. According to the United Nations, transitioning to a circular economy involves designing products for longevity, reparability, and recyclability⁸⁶. It also involves promoting practices such as reusing, refurbishing, and recycling products to minimize waste and resource depletion⁸⁷. UNEP notes that circular economy is essential in achieving the SDGs and combating global challenges such as climate change, biodiversity loss, and pollution⁸⁸. It is therefore necessary to implement circular economy by embracing practices such as reducing, reusing, recycling, repairing, and refurbishment of materials and products⁸⁹. Promoting circular economy is a key pillar of sustainable lifestyles towards sustainability by minimizing waste and promoting sustainable use of natural resources⁹⁰. It is therefore necessary

⁸² United Nations., 'Goal 12: Ensure Sustainable Consumption and Production Patterns' Op Cit

⁸³ European Parliament., 'Circular Economy: Definition, Importance and Benefits.' Available at <https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economydefinition-importance-andbenefits#:~:text=The%20circular%20economy%20is%20a,cycle%20of%20products%20is%20extended> (Accessed on 17/05/2024)

⁸⁴ Ellen MacArthur Foundation., 'What is a Circular Economy?.' Available at <https://www.ellenmacarthurfoundation.org/topics/circular-economyintroduction/overview#:~:text=The%20circular%20economy%20is%20a,remanufacture%2C%20recycling%2C%20and%20composting> (Accessed on 17/05/2024)

⁸⁵ Ibid

⁸⁶ United Nations., 'Goal 12: Ensure Sustainable Consumption and Production Patterns' Op Cit

⁸⁷ Ibid

⁸⁸ United Nations Environment Programme., 'Circularity' Available at <https://www.unep.org/circularity> (Accessed on 17/05/2024)

⁸⁹ Ibid

⁹⁰ United Nations Development Programme., 'What is Circular Economy and Why Does it Matter?.' Available at <https://climatepromise.undp.org/news-and->

Fostering Sustainable Lifestyles for Posterity

to implement circular economy in order to realize the ideal of sustainable lifestyles.

Finally, it is imperative to promote energy efficiency⁹¹. The idea of energy efficiency means using less energy to perform the same task therefore eliminating energy waste⁹². Energy efficiency achieves several benefits including reducing greenhouse gas emissions, reducing demand for energy imports, and lowering energy costs on a household and economy-wide level⁹³. It has been noted that improving energy efficiency is one of the most cost-effective measures that countries can take to reduce greenhouse gas emissions⁹⁴. It is therefore necessary for individuals, communities, organizations, and countries to integrate energy efficiency into their sustainable production and consumption activities⁹⁵. Some of the key approaches that can be embraced towards energy efficiency include adopting renewable sources of energy including solar, and wind, utilizing clean sources of energy for cooking, conserving energy by turning off lights and appliances when not being used, investing in energy efficient appliances, and reducing energy consumption, designing and constructing energy efficient buildings, and embracing energy efficient modes of transport including cycling, walking, and public transport⁹⁶. Promoting energy efficiency is therefore vital in ensuring sustainable lifestyles and combating global environmental challenges including climate change and the energy crisis⁹⁷.

[stories/what-iscircular-economy-and-how-it-helps-fight-climate-change](#) (Accessed on 17/05/2024)

⁹¹ Environmental and Energy Study Institute., 'Energy Efficiency' Available at <https://www.eesi.org/topics/energy-efficiency/description#:~:text=Energy%20efficiency%20simply%20means%20using,household%20and%20economy%2Dwide%20level.> (Accessed on 17/05/2024)

⁹² Ibid

⁹³ Ibid

⁹⁴ United Nations Environment Programme., 'About Energy Efficiency' Available at <https://www.unep.org/topics/energy/energy-efficiency/about-energy-efficiency> (Accessed on 17/05/2024)

⁹⁵ Ibid

⁹⁶ Ibid

⁹⁷ Ibid

Fostering Sustainable Lifestyles for Posterity

The foregoing techniques are key in fostering sustainable lifestyles for posterity.

4.0 Conclusion

Sustainable lifestyles are vital in minimizing ecological impacts while enabling a flourishing life for individuals, households, communities, and nations⁹⁸. The ideal of sustainable lifestyles entails activities and patterns aimed at promoting efficient use of natural resources, minimizing greenhouse gas emissions, and curbing waste and pollution⁹⁹. Human activities have been at the heart of major global challenges including the triple planetary crisis of climate change, pollution and biodiversity loss¹⁰⁰. Fostering sustainable lifestyles is therefore key in solving these problems and achieving the Sustainable Development agenda¹⁰¹. The ideal of sustainable lifestyles can be achieved through embracing responsible consumption and production patterns¹⁰²; enhancing education and awareness on sustainable lifestyles¹⁰³; implementing circular economy¹⁰⁴; and promoting energy efficiency¹⁰⁵. Fostering sustainable lifestyles is a key agenda that needs to be harnessed for posterity.

⁹⁸ United Nations Environment Programme., 'Fostering and Communicating Sustainable Lifestyles: Principles and Emerging Practices' Op Cit

⁹⁹ United Nations Environment Programme., 'Sustainable Lifestyles' Op Cit

¹⁰⁰ United Nations Climate Change., 'What is the Triple Planetary Crisis?' Op Cit

¹⁰¹ Yamane. T., & Kaneko. S., 'Is the Younger Generation a Driving Force Toward Achieving the Sustainable Development Goals? Survey Experiments' Op Cit

¹⁰² United Nations., 'Goal 12: Ensure Sustainable Consumption and Production Patterns' Op Cit

¹⁰³ The Posterity Advocacy Hub: Principle 2 Championing Sustainability., Op Cit

¹⁰⁴ United Nations., 'Goal 12: Ensure Sustainable Consumption and Production Patterns' Op Cit

¹⁰⁵ Environmental and Energy Study Institute., 'Energy Efficiency' Op Cit

Realizing the Human Right to Clean and Safe Water in Africa

Abstract

Water plays a vital role in achieving the Sustainable Development agenda. Access to water and sanitation are recognized as core human rights fundamental to everyone's health, dignity and prosperity. However, several factors hinder the attainment of this right including water scarcity, poorly managed water and sanitation services, and discrimination in access to water and sanitation services. A human-rights based approach to clean and safe water is therefore necessary in addressing these challenges. This paper critically explores the ideal of access to clean and safe water as a human right. It argues that clean and safe water is a fundamental human right that needs to be enhanced for sustainability. It conceptualizes the human right to clean and safe water and highlights its core tenets. The paper further discusses the progress made and challenges facing the attainment of the human right to clean and safe water in Africa. It also proposes measures towards realizing the human right to clean and safe water in Africa.

1.0 Introduction

Water is at the heart of Sustainable Development¹. According to the United Nations, water is critical for socio-economic development, healthy ecosystems and for human survival². In addition, water is also vital for reducing the global burden of disease and improving the health, welfare and productivity of populations³. In addition, it is central to the production and preservation of a host of benefits and services for people⁴. Water is also crucial in enhancing adaptation to climate change, serving as the crucial link between the climate system, human society and the environment⁵. Sufficient supplies of clean fresh water are indispensable for drinking and washing, growing and preparing food, maintaining health, and sustaining vital environmental systems among

¹ United Nations., 'Water and Sustainable Development' Available at https://www.un.org/waterforlifedecade/water_and_sustainable_development.shtml (Accessed on 20/05/2024)

² Ibid

³ Ibid

⁴ Ibid

⁵ Ibid

Realizing the Human Right to Clean and Safe Water in Africa

other core services⁶. It has been noted that without water, humans simply cannot survive, much less flourish⁷.

The United Nation's 2030 Agenda for Sustainable Development recognizes the role of water in development⁸. Sustainable Development Goal (SDG) 6 seeks to ensure availability and sustainable management of water and sanitation for all⁹. SDG 6 sets out several targets towards realizing this ideal including achieving universal and equitable access to safe and affordable drinking water for all¹⁰; improving water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally¹¹; substantially increasing water-use efficiency across all sectors and ensuring sustainable withdrawals and supply of freshwater to address water scarcity and substantially reducing the number of people suffering from water scarcity¹²; implementing integrated water resources management at all levels, including through transboundary cooperation as appropriate¹³; protecting and restoring water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes¹⁴; and supporting and strengthening the participation of local communities in improving water and sanitation management¹⁵. Achieving these targets is key in ensuring access to clean and safe water.

⁶ Center for Strategic & International Studies., 'The Evolving and Incompletely Realized Human Right to Water' Available at <https://www.csis.org/analysis/evolving-and-incompletely-realized-human-right-water> (Accessed on 20/05/2024)

⁷ Ibid

⁸ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 20/05/2024)

⁹ Ibid

¹⁰ Ibid

¹¹ Ibid

¹² Ibid

¹³ Ibid

¹⁴ Ibid

¹⁵ Ibid

Realizing the Human Right to Clean and Safe Water in Africa

Access to water and sanitation are recognized as core human rights fundamental to everyone's health, dignity and prosperity¹⁶. However, it has been noted that billions of people all over the world are still living without safely managed water and sanitation¹⁷. Marginalized groups are often overlooked, and sometimes face discrimination, as they try to access the water and sanitation services they need¹⁸. As a result, it has been asserted that governments must take a human rights-based approach to water and sanitation so that no one gets left behind¹⁹.

This paper critically explores the ideal of access to clean and safe water as a human right. It argues that clean and safe water is a fundamental human right that needs to be enhanced for sustainability. It conceptualizes the human right to clean and safe water and highlights its core tenets. The paper further discusses the progress made and challenges facing the attainment of the human right to clean and safe water in Africa. It also proposes measures towards realizing the human right to clean and safe water in Africa.

2.0 Access to Clean and Safe Water as a Human Right

Access to water and sanitation are recognized as human rights reflecting the fundamental nature of these basic needs in every person's life²⁰. It has been noted that lack of access to safe, sufficient and affordable water, sanitation and hygiene facilities has a devastating effect on the health, dignity and prosperity of billions of people all over the world, and has significant consequences for the realization of other human rights²¹. The right to water entitles everyone to have access to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic use²². It has been noted that physical presence

¹⁶ United Nations., 'Human Rights to Water and Sanitation' Available at <https://www.unwater.org/water-facts/human-rights-water-and-sanitation> (Accessed on 20/05/2024)

¹⁷ Ibid

¹⁸ Ibid

¹⁹ Ibid

²⁰ United Nations., 'Human Rights to Water and Sanitation' Available at https://www.unwater.org/sites/default/files/app/uploads/2018/10/WaterFacts_water_and_human_rights_sep2018.pdf (Accessed on 21/05/2024)

²¹ Ibid

²² United Nations., 'Human Rights to Water and Sanitation' Op Cit

Realizing the Human Right to Clean and Safe Water in Africa

of water or water services is not the same as access²³. A water or sanitation service does not serve the whole community if it is too expensive, unreliable, unhygienic, unsafely located, unadapted for less able groups or children, or non gender-segregated, for example in the case of toilets and washing facilities²⁴. Access to safe, affordable and reliable drinking water and sanitation services are therefore basic human rights²⁵. It has been noted that these rights are indispensable to sustaining healthy livelihoods and maintaining people's dignity²⁶. In addition, human rights to water and sanitation are essential for eradicating poverty, building peaceful and prosperous societies, and ensuring that 'no one is left behind' on the journey towards Sustainable Development²⁷.

Access to safe drinking water and sanitation are internationally recognized human rights, derived from the right to an adequate standard of living enshrined under article 11 (1) of the *International Covenant on Economic, Social and Cultural Rights*²⁸. In addition, the key elements of the right to water and sanitation are elaborated by the Committee on Economic, Social and Cultural Rights in its *General Comment No. 15*²⁹. According to General Comment No. 15, the human right to water is indispensable for leading a life in human dignity and a prerequisite for the realization of other human rights³⁰. It recognizes that the human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses³¹.

²³ Ibid

²⁴ Ibid

²⁵ Office of the High Commissioner for Human Rights., 'OHCHR and the Rights to Water and Sanitation' Available at <https://www.ohchr.org/en/water-and-sanitation> (Accessed on 21/05/2024)

²⁶ Ibid

²⁷ Ibid

²⁸ International Covenant on Economic, Social and Cultural Rights., Available at <https://www.ohchr.org/sites/default/files/cescr.pdf> (Accessed on 21/05/2024)

²⁹ Committee on Economic, Social, and Cultural Rights., 'General Comment No. 15: The Right to Water (Arts. 11 and 12 of the International Covenant on Economic, Social and Cultural Rights)' Available at https://www2.ohchr.org/english/issues/water/docs/cescr_gc_15.pdf (Accessed on 21/05/2024)

³⁰ Ibid

³¹ Ibid

Realizing the Human Right to Clean and Safe Water in Africa

General Comment No. 15 further acknowledges that an adequate amount of safe water is necessary to prevent death from dehydration, to reduce the risk of water-related disease and to provide for consumption, cooking, personal and domestic hygienic requirements³². General Comment No. 15 sets out the key elements of the right to clean and safe water. These are *availability* which is the idea that water supply for each person must be sufficient and continuous to cover personal and domestic uses, which comprise water for drinking, washing clothes, food preparation and personal and household hygiene³³; *accessibility* which is the ideal that water and sanitation facilities must be physically accessible and within safe reach for all sections of the population, taking into account the needs of particular groups, including persons with disabilities, women, children and older persons³⁴; *affordability* which acknowledges that water services must be affordable to all and that no individual or group should be denied access to safe drinking water because they cannot afford to pay³⁵; *quality and safety* which envisages that water for personal and domestic use must be safe and free from micro-organisms, chemical substances and radiological hazards that constitute a threat to a person's health³⁶; and *acceptability* which is the ideal that all water and sanitation facilities must be culturally acceptable and appropriate, and sensitive to gender, life-cycle and privacy requirements(Emphasis added)³⁷. It is necessary to foster these elements in order to realize the human right to clean and safe water.

On 28th July 2010, the United Nations General Assembly adopted a historical *Resolution*³⁸ which recognizes the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights. The Resolution acknowledges that equitable access to safe and clean drinking water and sanitation is an integral component of the

³² Ibid

³³ Ibid

³⁴ Ibid

³⁵ Ibid

³⁶ Ibid

³⁷ Ibid

³⁸ United Nations General Assembly., 'The Human Right to Water and Sanitation: A/RES/64/292' Available at <https://documents.un.org/doc/undoc/gen/n09/479/35/pdf/n0947935.pdf?token=mWqjDbWKelfEfBSz6e&fe=true> (Accessed on 21/05/2024)

Realizing the Human Right to Clean and Safe Water in Africa

realization of all human rights³⁹. It also calls upon states and international organizations to provide financial resources, capacity-building and technology transfer, through international assistance and cooperation, in particular to developing countries, in order to scale up efforts to provide safe, clean, accessible and affordable drinking water and sanitation for all⁴⁰. The Resolution urges states to address challenges related to the realization of the human right to safe and clean drinking water and sanitation⁴¹.

The right to clean and safe water has also been recognized as a fundamental human right at national levels. For example, the Constitution of Kenya stipulates that every person has the right to clean and safe water in adequate quantities⁴². It also requires the state to put in place affirmative action programmes designed to ensure that minorities and marginalised groups have reasonable access to water⁴³. It is necessary to implement the right to clean and safe water for development.

Access to clean and safe water is therefore a fundamental human right. It has been noted that international human rights law obliges states to work towards achieving universal access to water and sanitation for all, without any discrimination, while prioritizing those in need⁴⁴. It has been argued that codifying water as a human right helps to guide policy development and implementation, provides global standards and objectives to frame government responsibilities and evaluate outcomes, and facilitates accountability by empowering rights holders to identify and claim their rights⁴⁵. It is therefore necessary to realize the human right to clean and safe water for development.

³⁹ Ibid

⁴⁰ Ibid

⁴¹ Ibid

⁴² Constitution of Kenya, 2010., Government Printer, Nairobi., Article 43 (1) (d)

⁴³ Ibid, Article 56 (e)

⁴⁴ Office of the High Commissioner for Human Rights., 'About Water and Sanitation' Available at <https://www.ohchr.org/en/water-and-sanitation/about-water-and-sanitation> (Accessed on 21/05/2024)

⁴⁵ Center for Strategic & International Studies., 'The Evolving and Incompletely Realized Human Right to Water' Op Cit

3.0 Realizing the Human Right to Clean and Safe Water in Africa: Promises and Challenges

Realizing the human right to clean and safe water is a key priority in Africa as envisaged under Africa Union's *Agenda 2063*⁴⁶. Among the key priority areas of Agenda 2063 is achieving water security in Africa⁴⁷. Agenda 2063 seeks to ensure that every citizen in Africa has affordable and sustainable access to quality basic services such as access to adequate and clean water and sanitation⁴⁸. According to Agenda 2063, Africa will be a fully water secure continent by 2030⁴⁹.

In addition, the *Africa Water Vision for 2025*⁵⁰, recognizes that water plays a crucial role in fostering socio-economic development in the continent. It acknowledges that Africa has large rivers, big lakes, vast water lands and limited, but widespread ground water resources to achieve the ideal of water security in the continent⁵¹. In addition, the Vision acknowledges that the sustainability of these water resources is threatened by certain natural phenomena and human factors⁵². The natural threats include the multiplicity of trans-boundary water basins, extreme spatial and temporal variability of climate and rainfall, coupled with climate change, and growing water scarcity, shrinking of some water bodies, and desertification⁵³. The human threats include inappropriate governance and institutional arrangements in managing national and transboundary water basins; depletion of water resources through pollution, environmental degradation, and deforestation; failure to invest adequately in resource assessment, protection and development; and unsustainable financing of investments in water supply and

⁴⁶ African Union., 'Agenda 2063: The Africa we Want' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 22/05/2024)

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ Africa Water Vision for 2025., Available at <https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/african%20water%20vision%202025%20to%20be%20sent%20to%20wfwf5.pdf> (Accessed on 22/05/2024)

⁵¹ Ibid

⁵² Ibid

⁵³ Ibid

Realizing the Human Right to Clean and Safe Water in Africa

sanitation⁵⁴. The Africa Water Vision for 2025 is therefore designed to avoid the disastrous consequences of these threats and lead to a future where the full potential of Africa's water resources can be readily unleashed to stimulate and sustain growth in the region's economic development and social well-being⁵⁵. The Vision seeks to ensure that there is sustainable access to safe and adequate water supply and sanitation to meet the basic needs of all in Africa. It calls for strengthening governance of water resources, improving water awareness, meeting urgent water needs, and strengthening the financial base for the desired water future in Africa⁵⁶. It is necessary to implement the Africa Water Vision for 2025 in order to realize the human right to clean and safe water in Africa.

The African Commission on Human and Peoples' Rights has also developed *Guidelines on the Right to Water in Africa*⁵⁷. The objective of the Guidelines is to inform and support the work of states, while meeting their obligation to respect, protect and fulfill the individual and collective right to water, and in developing their periodic reports to the African Commission⁵⁸. The Guidelines are guided by several key principles including state sovereignty and communities' responsibility over natural resources; principles of indivisibility and interdependence of human rights; states' obligations to respect, protect, promote and fulfil the right to water; states' obligation to mobilise resources for the realisation of the right to water; the principle of non-discrimination and equal access; and the principle of non-retrogression⁵⁹. The Guidelines require states to foster a rights-based approach to water management that encapsulates participation, community based water management, access to information, accountability, and sustainability⁶⁰. According to the Guidelines, the human right to water entitles everyone to sufficient, safe, acceptable,

⁵⁴ Ibid

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷ African Commission on Human and Peoples' Rights, 'Guidelines on the Right to Water in Africa' Available at <https://achpr.au.int/en/node/904> (Accessed on 22/05/2024)

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Ibid

Realizing the Human Right to Clean and Safe Water in Africa

physically accessible and affordable water for personal and domestic uses⁶¹. They provide that under no circumstances may an individual be deprived of the minimum essential amount of water for basic human needs and survival⁶². The Guidelines also require water to be treated as a social and cultural good and not as an economic good⁶³. The Guidelines are therefore vital in guiding the attainment of the human right to clean and safe water in Africa.

Despite the importance of the human right to clean and safe water in Africa, several challenges hinder the attainment of this ideal. It has been noted that Africa's freshwater resources are unevenly distributed⁶⁴. For example, the six most water-rich countries in Central and Western Africa hold fifty four per cent of the continent's total resources while twenty seven most water-poor countries hold only seven per cent⁶⁵. Rapid growth in the population, inappropriate water governance and institutional arrangements, depletion of water resources through pollution, environmental degradation, deforestation, and low and unsustainable financing of investments in water supply and sanitation are some of the main challenges to the realization of the right to clean and safe water in Africa⁶⁶.

Agenda 2063 notes that despite the availability of huge fresh water resources, large rivers and lakes (including Congo, Nile, Zambezi and Niger and Lake Victoria), Africa is the second driest continent in the world⁶⁷. In addition, Africa's annual water availability is unevenly distributed⁶⁸. Lack of access to clean water and sanitation in Africa is a key health hazard to the people of Africa resulting in deaths among other challenges especially for vulnerable populations such as children⁶⁹. Without access to safe drinking water,

⁶¹ Ibid

⁶² Ibid

⁶³ Ibid

⁶⁴ DownToEarth., 'Valuing Water a Challenge in Africa, Says UN Report' Available at <https://www.downtoearth.org.in/news/water/valuing-water-a-challenge-in-africa-says-un-report-76092> (Accessed on 22/05/2024)

⁶⁵ Ibid

⁶⁶ Ibid

⁶⁷ African Union., 'Agenda 2063: The Africa we Want' Op Cit

⁶⁸ Ibid

⁶⁹ Ibid

Realizing the Human Right to Clean and Safe Water in Africa

communities are at risk of waterborne diseases such as cholera, typhoid fever, and diarrheal illnesses, which disproportionately affect children and the most vulnerable members of society⁷⁰. It has been asserted that lack of access to clean and safe water in Africa not only poses significant health risks but also perpetuates a cycle of poverty and inequality⁷¹. Water scarcity in Africa is also a major source of conflicts and crises⁷². Water scarcity is a pressing challenge in many parts of Africa, exacerbated by factors such as climate change, population growth, and inadequate infrastructure⁷³. It has been noted that as water resources become increasingly strained, conflicts over access to water are likely to escalate, threatening stability and exacerbating existing social and political tensions⁷⁴. The lack of access to clean and safe water in Africa not only impacts health, but also education, peace and security, and economic growth, making it a pressing issue that requires attention and action⁷⁵. It is therefore necessary to realize the human right to clean and safe water in Africa for development.

4.0 Conclusion

The human right to clean and safe water is vital for development in Africa. It is necessary to realize this right. The Africa Water Vision for 2025 sets out key actions towards realizing the human right to clean and safe water in Africa including strengthening governance of water resources, improving knowledge and awareness on water, meeting urgent water needs, and strengthening the financial base for the desired water future⁷⁶. It is necessary to implement these actions through measures such as adopting and

⁷⁰ Kwakwa. V., 'Celebrating Water Day: Why Access to Clean Water is Vital for Africa' Available at <https://www.linkedin.com/pulse/celebrating-water-day-why-access-clean-vital-africa-victoria-kwakwa-3zxke/> (Accessed on 22/05/2024)

⁷¹ Ibid

⁷² African Union., 'Agenda 2063: The Africa we Want' Op Cit

⁷³ Kwakwa. V., 'Celebrating Water Day: Why Access to Clean Water is Vital for Africa' Op Cit

⁷⁴ Ibid

⁷⁵ Korn. M. S., 'Clean Water for Africa' Available at <https://microfinancingafrica.org/the-importance-of-access-to-clean-water-in-africa-how-it-impacts-health-education-and-economic-growth/#:~:text=Health%20Impact,typhoid%20fever%2C%20and%20hepatitis%20A> (Accessed on 22/05/2024)

⁷⁶ Africa Water Vision for 2025., Op Cit

Realizing the Human Right to Clean and Safe Water in Africa

implementing integrated water resources management principles and policies, developing and implementing institutional reform and capacity-building at local, national and trans-boundary water-basin levels, promoting transparency and participation in decision making, raising awareness on water-management issues, conducting research and development on water-resources issues, mainstreaming gender and youth concerns in all activities related to water management, expanding safe water-supply and sanitation services to meet basic human needs, conserving and restoring water ecosystems, and securing sustainable financing from national and international sources for tackling urgent water needs⁷⁷.

It is also vital for governments in Africa to take a human rights-based approach to water and sanitation⁷⁸. According to the United Nations, states are duty-bearers of providing water and sanitation services to people, who are rights-holders⁷⁹. Citizens as rights-holders can therefore claim their right to clean and safe water and states as duty-bearers must guarantee the rights to water and sanitation equally and without discrimination⁸⁰. Embracing a human rights approach to water requires governments to direct their interventions to those most in need, and develop their capacities to fulfill their obligations⁸¹. In addition, it also creates a framework for rights-holders to participate, and to hold duty-bearers accountable⁸².

Realizing the human right to clean and safe water in Africa also requires concerted efforts towards protecting Africa's freshwater resources⁸³. It has been pointed out that investing in nature offers a clear pathway to protecting

⁷⁷ Ibid

⁷⁸ United Nations., 'Human Rights to Water and Sanitation' Op Cit

⁷⁹ Ibid

⁸⁰ Ibid

⁸¹ Ibid

⁸² Ibid

⁸³ The Nature Conservancy., 'Protecting Africa's Freshwater Resources' Available at https://www.nature.org/en-us/about-us/where-we-work/africa/stories-in-africa/protect-freshwater/?en_txn1=p_g.gmco.ec.ec_wtr.TNC.CK.GMC.IAAOW.BF.GS.ENG.PROS.AFR.BO.ALL.RSA.Text.AD01&gad_source=1&gclid=Cj0KCQjwxqayBhDFARIsAA_NWRnSq9v8jm0p4RUxXFvCpqIvhPr8eMC9qQlk5udIRAVRfeN_a64aNKnwaArbOEALw_wcB&gclsrc=aw.ds (Accessed on 22/05/2024)

Realizing the Human Right to Clean and Safe Water in Africa

and restoring the freshwater systems in Africa on which nature and people depend⁸⁴. Safeguarding Africa's fresh water resources is a core contribution towards realizing the human right to clean and safe water by ensuring availability and security of water supply⁸⁵. It is therefore necessary to strengthen efforts towards conserving Africa's freshwater resources in order to realize the human right to clean and safe water in Africa.

Finally, it is vital to ensure that all barriers to water and sanitation are overcome⁸⁶. To achieve this, laws and governance structures must address all reasons for discrimination including sex, gender, ethnicity, religion, caste, disability, age, health status, and economic status⁸⁷. In addition, other factors impacting water and sanitation access for marginalized groups, including climate change, population growth, conflict, and migration must also be addressed⁸⁸.

Realizing the human right to clean and safe water in Africa therefore requires better water management policies, strengthening water governance and the capacity of institutions, and strengthening investments and participation by communities and groups (rights-holders) to take part in collective decision-making⁸⁹. It is imperative to realize the human right to clean and safe water in Africa for development.

⁸⁴ Ibid

⁸⁵ Ibid

⁸⁶ United Nations., 'Human Rights to Water and Sanitation' Op Cit

⁸⁷ Ibid

⁸⁸ Ibid

⁸⁹ Center for Strategic & International Studies., 'The Evolving and Incompletely Realized Human Right to Water' Op Cit

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

Abstract

This paper critically discusses the need to curb plastic pollution. It argues that curbing plastic pollution is a key measure towards realizing the right to a clean, healthy, and sustainable environment. The paper defines plastic pollution and examines its causes and effects. It also explores the progress made and challenges faced towards curbing plastic pollution. The paper further suggests reforms aimed at enhancing efforts to curb plastic pollution globally towards a clean and healthy environment.

1.0 Introduction

Every person has the right to a clean, healthy and sustainable environment¹. It has been noted that since human rights and the environment are interdependent, a clean, healthy and sustainable environment is necessary for the full enjoyment of a wide range of human rights, such as the rights to life, health, food, water and sanitation and development, among others². Further, the enjoyment of all human rights, including the rights to information, participation and access to justice, is of great importance to towards conserving the environment³.

The right to a clean, healthy and sustainable environment encompasses various elements including clean and balanced ecosystems, rich biodiversity and a stable climate⁴. This right recognises that nature is a keystone of a dignified human existence⁵. The right to a clean, healthy and sustainable environment is a fundamental human right that has been equated to the right

¹ United Nations Development Programme., 'What is the Right to a Healthy Environment?' Available at <https://www.undp.org/sites/g/files/zskgke326/files/2023-01/UNDP-UNEP-UNHCHR-What-is-the-Right-to-a-Healthy-Environment.pdf> (Accessed on 24/05/2024)

² Ibid

³ Ibid

⁴ Zimmer K, 'The Human Right That Benefits Nature' <https://www.bbc.com/future/article/20210316-how-the-human-right-to-a-healthy-environment-helps-nature> (Accessed on 24/05/2024)

⁵ Ibid

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

to life⁶. Since the environment contains virtually all ingredients required to sustain human beings, a threat to the right to a clean, healthy and sustainable environment could potentially hinder attainment of other rights such as the right to food, water, health and sanitation among others⁷.

The importance of this right has been recognized by the United Nations General Assembly which has adopted a *Resolution* declaring that everyone on the planet has a right to a clean, healthy, and sustainable environment⁸. The resolution by the United Nations General Assembly affirms the importance of the right a clean, healthy and sustainable environment for the enjoyment of all human rights⁹. The declaration by the United Nations General Assembly demonstrates global acceptance of the right to a clean, healthy and sustainable environment as a human right and could stimulate global efforts towards attaining this right. It has been argued that this Resolution will have a trickle-down effect, prompting countries to enshrine the right to a healthy environment in national constitutions and regional treaties, and encouraging states to implement those laws while also giving environmental campaigners more ammunition to challenge ecologically destructive policies and projects¹⁰.

The United Nations *2030 Agenda for Sustainable Development* also recognizes the fundamental importance of the right to a clean, healthy and sustainable environment in promoting Sustainable Development¹¹. It aims at fostering this

⁶ Peter K. Waweru v Republic, Misc. Civil Application No. 118 of 2004, (2006) eKLR

⁷ Muigua. K., 'Recognising a Human Right to Safe, Healthy and Sustainable Environment.' Available at <http://kmco.co.ke/wp-content/uploads/2021/04/Recognising-a-Human-Right-to-Safe-Healthy-andSustainable-Environment-Kariuki-Muigua-1st-April-2021.pdf> (Accessed on 24/05/2024)

⁸ United Nations General Assembly (UNGA)., 'The Human Right to a Clean, Healthy and Sustainable Environment.' UNGA Resolution 'A/76/L.75.'

⁹ Ibid

¹⁰ United Nations Environment Programme., 'In Historic Move, UN Declares Healthy Environment a Human Right' Available at <https://www.unep.org/news-and-stories/story/historic-move-un-declares-healthy-environment-human-right> (Accessed on 24/05/2024)

¹¹ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

right by protecting the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations¹². At its core are 17 Sustainable Development Goals which seek to strike a balance between environmental conservation, economic development, and social progress¹³.

At a national level, the right to a clean, healthy and sustainable environment has been enshrined under the *Constitution of Kenya*¹⁴ which stipulates that every person has the right to a clean and healthy environment, which includes the right to have the environment protected for the benefit of present and future generations through legislative and other measures¹⁵. The Constitution further sets out several obligations in respect of the environment aimed at fostering the right to a clean, healthy and sustainable environment¹⁶. These include ensuring sustainable exploitation, utilisation, management and conservation of the environment and natural resources, and the equitable sharing of the accruing benefits; encouraging public participation in the management, protection and conservation of the environment; protecting genetic resources and biological diversity and eliminating processes and activities that are likely to endanger the environment¹⁷. Attaining these obligations is integral in fostering the right to a clean, healthy and sustainable environment in Kenya.

One of the key problems hindering the attainment of the right to a clean, healthy, and sustainable environment is pollution¹⁸. It has been noted that pollution compromises the quality of air, water and soil and could result in

<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 24/05/2024)

¹² Ibid

¹³ Ibid

¹⁴ Constitution of Kenya., 2010., Government Printer, Nairobi

¹⁵ Ibid, article 42

¹⁶ Ibid, article 69

¹⁷ Ibid

¹⁸ Muigua. K., 'Recognising a Human Right to Safe, Healthy and Sustainable Environment.' Op Cit

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

concerns such as health hazards and diseases thus hindering the realization of the right to a clean, healthy and sustainable environment¹⁹. Therefore, it is necessary to curb pollution in order to achieve the right to a clean, healthy and sustainable environment.

This paper critically discusses the need to curb plastic pollution. It argues that curbing plastic pollution is a key measure towards realizing the right to a clean, healthy, and sustainable environment. The paper defines plastic pollution and examines its causes and effects. It also explores the progress made and challenges faced towards curbing plastic pollution. The paper further suggests reforms aimed at enhancing efforts to curb plastic pollution globally towards a clean and healthy environment.

2.0 Plastic Pollution: Causes and Effects

Pollution refers to the indirect or direct alteration of the biological, thermal, physical, or radioactive properties of any medium in such a way as to create a hazard or potential hazard to human health or to the health, safety or welfare of any living species²⁰. Environmental pollution has also been described as the contamination of the physical and biological components of the earth/atmosphere system to such an extent that normal environmental processes are adversely affected²¹. It can also refer to any discharge of material or energy into water, land, or air that causes or may cause acute (short-term) or chronic (long-term) detriment to the Earth's ecological balance or that

¹⁹ Ibid

²⁰ United Nations Environment Programme., 'Pollution' Available at <https://leap.unep.org/en/knowledge/glossary/pollution#:~:text=The%20indirect%20or%20direct%20alteration,welfare%20of%20any%20living%20species.%20> (Accessed on 24/05/2024)

²¹ Ullah, S., "A sociological study of environmental pollution and its effects on the public health Faisalabad city," *International Journal of Education and Research*, Vol. 1 No. 6 June 2013, p.2

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

lowers the quality of life²². Pollution occurs in various forms including water pollution, land pollution, noise pollution, and air pollution²³.

Pollution has been identified as one of the major global challenges facing humanity and a key cause of morbidity and mortality²⁴. It is among the triple planetary crisis alongside climate change and biodiversity loss²⁵. Pollution hinders development outcomes²⁶. For example, air pollution, exposure to lead and other chemicals, and hazardous waste including exposure to improper e-waste disposal, causes debilitating and fatal illnesses, create harmful living conditions, and destroys ecosystems²⁷. In addition, pollution stunts economic growth, exacerbates poverty and inequality in both urban and rural areas, and significantly contributes to climate change²⁸. The United Nations Environment Programme (UNEP) notes that environmental pollution significantly contributes to non-infectious diseases like cancer and respiratory illnesses, causing approximately nine million deaths annually²⁹.

Plastic pollution has been identified as growing worldwide environmental concern³⁰. The widespread use and improper disposal of plastic products are

²² Coker, A.O., "Environmental Pollution: Types, Causes, Impacts and Management for the Health and SocioEconomic Well-Being of Nigeria," p.1. Available at <https://pdfs.semanticscholar.org/8e7b/a9595bab30d7ea87715533353c53f7452811.pdf> (Accessed on 24/05/2024)

²³ Ibid

²⁴ Khasanova. S., & Alieva. E., 'Environmental Pollution: Types, Causes and Consequences' Available at <http://dx.doi.org/10.1051/bioconf/20236307014> (Accessed on 24/05/2024)

²⁵ United Nations Climate Change., 'What is the Triple Planetary Crisis?' Available at <https://unfccc.int/news/what-is-the-triple-planetarycrisis#:~:text=The%20triple%20planetary%20crisis%20refers,change%2C%20pollution%20and%20biodiversity%20loss> (Accessed on 24/05/2024)

²⁶ World Bank Group., 'Pollution' Available at <https://www.worldbank.org/en/topic/pollution> (Accessed on 24/05/2024)

²⁷ Ibid

²⁸ Ibid

²⁹ United Nations Environment Programme., 'Pollution and Health' Available at <https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health> (Accessed on 24/05/2024)

³⁰ DGB Group., 'The Rising Tide of Plastic Pollution' Available at <https://www.green.earth/plastic-pollution> (Accessed on 24/05/2024)

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

the primary causes of plastic pollution³¹. It is estimated that approximately 400 million tonnes of plastic waste are produced every year³². Plastic production has surged over the past decades and it is growing faster than any other material³³. It is estimated that each year, around 20 million tonnes of plastics ends up in rivers, lakes and seas being equivalent to the weight of 20,000 cargo ships³⁴. Plastic waste takes years to decompose and it is altering our ecosystems and wildlife and impacting human health³⁵. It has been noted that plastic pollution has become one of the most pressing environmental issues, since the rapidly increasing production of disposable plastic products overwhelms the world's ability to deal with them³⁶.

UNEP notes that much of the plastic originates on land and winds its way into the oceans through rivers and sewage systems³⁷. Plastic pollution has significant impacts on human and animal health³⁸. For example, up to 90 per cent of sea birds are being found with plastic in their guts, and microplastic has been found in the placentas of unborn babies³⁹. Plastics are polluting the planet and choking up oceans, harming human health, and damaging

³¹ Ibid

³² Ibid

³³ Ibid

³⁴ The Commonwealth, 'Commonwealth Meeting in Nairobi Seeks to Advance Global Treaty on Plastic Pollution' Available at <https://thecommonwealth.org/news/commonwealth-meeting-nairobi-seeks-advance-global-treaty-plastic-pollution#:~:text=Global%20efforts%20to%20combat%20plastic,equipped%20to%20deal%20with%20it> (Accessed on 24/05/2024)

³⁵ Ibid

³⁶ Parker. L., 'The World's Plastic Pollution Crisis, Explained' Available at <https://www.nationalgeographic.com/environment/article/plastic-pollution> (Accessed on 24/05/2024)

³⁷ United Nations Environment Programme., 'Clean Seas Campaign Promotes the Right to a Healthy Environment, Including Plastic-Free Oceans' Available at <https://www.unep.org/news-and-stories/story/clean-seas-campaign-promotes-right-healthy-environment-including-plastic> (Accessed on 24/05/2024)

³⁸ Ibid

³⁹ Ibid

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

ecosystems vital to our livelihoods⁴⁰. According to Ocean Conservancy, every year, 11 million metric tons of plastics enter into oceans on top of the estimated 200 million metric tons that currently circulate in marine environments⁴¹. It notes that so much plastic is ending up in oceans that in just a few years, we might end up with a pound of plastic for every three pounds of fish in seas⁴².

Plastic pollution is therefore posing an increasing threat to the environment, impacting habitats and natural ecosystems, with consequences for sustainable economic growth and human wellbeing⁴³. It arises as a result of improper waste disposal, and increased production and consumption of plastics including single-use plastics⁴⁴. The negative impacts of plastic pollution on the environment and human health include respiratory illnesses as a result of burning plastic, shortening of lifespans of animals consuming plastic, clogging of drains and floods as a result of littered plastic, and contamination of oceans and waterways⁴⁵. Plastic pollution therefore harms marine life, impacts human health, and results in economic costs arising from cost of cleaning up plastic waste, lost tourism revenue, and damage to fisheries and marine ecosystems⁴⁶. Plastic pollution also drives nature loss and destroys important

⁴⁰ United Nations Foundation., 'Protect Our Planet from Plastic Pollution: 5 Things to Know' Available at <https://unfoundation.org/blog/post/protect-our-planet-from-plastic-pollution-5-things-to-know/> (Accessed on 24/05/2024)

⁴¹ Ocean Conservancy., 'Fighting for Trash Free Seas' Available at <https://oceanconservancy.org/trash-free-seas/plastics-in-the-ocean/> (Accessed on 24/05/2024)

⁴² Ibid

⁴³ Organisation for Economic Cooperation and Development., 'Towards Eliminating Plastic Pollution by 2040: A Policy Scenario Analysis' Available at <https://www.oecd.org/environment/plastics/Interim-Findings-Towards-Eliminating-Plastic-Pollution-by-2040-Policy-Scenario-Analysis.pdf> (Accessed on 24/05/2024)

⁴⁴ DGB Group., 'The Rising Tide of Plastic Pollution' Op Cit

⁴⁵ Kaza. S., & Yao. L., 'Five ways Cities can Curb Plastic Waste' Available at <https://blogs.worldbank.org/en/sustainablecities/five-ways-cities-can-curb-plastic-waste> (Accessed on 24/05/2024)

⁴⁶ DGB Group., 'The Rising Tide of Plastic Pollution' Op Cit

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

ecosystems⁴⁷. It has been noted that every year, millions of tons of plastics leak into the environment damaging critical habitats, injuring and killing wildlife and impeding essential biological processes⁴⁸. Plastic pollution also fuels the climate crisis⁴⁹. Plastics are made from fossil fuels and the plastics industry has been identified as the fastest-growing source of industrial greenhouse gases⁵⁰. It has been noted that if not curbed, plastic pollution could prevent the world from achieving its climate goals⁵¹.

UNEP notes that plastic pollution aggravates the triple planetary crisis of climate change, nature and biodiversity loss, and pollution and waste⁵². It hinders the right to a healthy environment⁵³. Plastic pollution also slows the attainment of Sustainable Development⁵⁴. It is therefore necessary to enhance efforts to curb plastic pollution globally. According to the United Nations Development Programme (UNDP) every year, the world produces around 430 million metric tons of new plastic⁵⁵. It further notes that at the current trajectory, global plastics use is expected to nearly triple by the year 2060⁵⁶. Enhancing efforts to curb plastic pollution globally is therefore a key approach towards a clean and healthy environment.

3.0 Enhancing Efforts to Curb Plastic Pollution Globally

It has been suggested that adopting a global environmental agreement on plastic pollution will strengthen efforts towards curbing this problem⁵⁷.

⁴⁷ United Nations Development Programme., 'Plastic Pollution' Available at <https://www.undp.org/chemicals-waste/plastic-pollution> (Accessed on 24/05/2024)

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ Ibid

⁵² United Nations Environment Programme., 'Civil Society to Tackle Plastic Pollution' Available at <https://www.unep.org/news-and-stories/speech/civil-society-tackle-plastic-pollution> (Accessed on 24/05/2024)

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ United Nations Development Programme., 'Plastic Pollution' Op Cit

⁵⁶ Ibid

⁵⁷ United Nations Development Programme., 'The Beginning of the End for Plastics Pollution?' Available at <https://www.undp.org/blog/beginning-end-plastics-pollution> (Accessed on 25/05/2024)

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

However, achieving this ideal may raise several challenges key among them being achieving consensus among nations on curbing plastic pollution⁵⁸. It has been noted that consensus is a fundamental principle in global diplomacy⁵⁹. It ensures that everyone is involved, it encourages ownership, and leads to decisions that all consider legitimate and fair⁶⁰. However, on a complex issue like plastic pollution, where some nations benefit from increased plastic production while others bear a disproportionate burden, consensus can be difficult to achieve⁶¹. It is therefore necessary for the global community to strike a balance between inclusivity and the need for prompt and effective action in order to achieve a binding global treaty on curbing plastic pollution⁶². It has been noted that global commitments have delivered measurable progress towards tackling plastic⁶³. However, the world is still off track to curb plastic pollution. It has been pointed out that voluntary action and commitments towards curbing plastic pollution are important but are not sufficient by themselves⁶⁴. A global binding treaty geared towards curbing plastic pollution is crucial to creating a level-playing field and driving change, including stimulating investment and innovation⁶⁵. Such a legally-binding treaty based on global rules and comprehensive circular economy measures represents a unique opportunity to accelerate systems change and end plastic pollution⁶⁶. The global community must therefore fast-track efforts towards adopting a global treaty in order to enhance efforts to curb plastic pollution globally.

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Ibid

⁶¹ Ibid

⁶² Ibid

⁶³ Ellen Macarthur Foundation., 'A Circular Economy for Plastic' Available at [https://www.ellenmacarthurfoundation.org/topics/plastics/overview#:~:text=A%20circular%20economy%20for%20plastic&text=It%20is%20based%20on%20three,value\)%2C%20and%20regenerate%20nature](https://www.ellenmacarthurfoundation.org/topics/plastics/overview#:~:text=A%20circular%20economy%20for%20plastic&text=It%20is%20based%20on%20three,value)%2C%20and%20regenerate%20nature). (Accessed on 25/05/2024)

⁶⁴ Ibid

⁶⁵ Ibid

⁶⁶ Ibid

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

Governments also have a vital role to play in curbing plastic pollution⁶⁷. Governments can implement laws and policies to support shifting away from plastic production and overconsumption⁶⁸. For example, African countries such as Kenya and Rwanda have banned single use plastic bags⁶⁹. Implementing such policies is vital in curbing plastic pollution. Governments can also enhance efforts to curb plastic pollution by adopting policy frameworks that incentivise design for circularity⁷⁰. In addition, governments are key stakeholders in enhancing efforts to curb plastic pollution by implementing and investing in sustainable waste management practices⁷¹. It has been pointed out that in order to be effective, plastic policies need to be supported by an effective waste management system and the government's ability to enforce such policies⁷². It is therefore imperative for governments to enhance efforts to curb plastic pollution.

Further, it is vital to strengthen circular economy in order to enhance efforts to curb plastic pollution globally⁷³. Circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible⁷⁴. It is a system where materials never become waste and nature is regenerated⁷⁵. In a circular economy, products and materials are kept in

⁶⁷ United Nations Foundation., 'Protect Our Planet from Plastic Pollution: 5 Things to Know' Op Cit

⁶⁸ Ibid

⁶⁹ United Nations Development Programme., 'The Beginning of the End for Plastics Pollution?' Op Cit

⁷⁰ Organisation for Economic Cooperation and Development., 'Towards Eliminating Plastic Pollution by 2040: A Policy Scenario Analysis' Op Cit

⁷¹ Kaza. S., & Yao. L., 'Five ways Cities can Curb Plastic Waste' Op Cit

⁷² Ibid

⁷³ Ellen Macarthur Foundation., 'A Circular Economy for Plastic' Op Cit

⁷⁴ European Parliament., 'Circular Economy: Definition, Importance and Benefits.' Available at

<https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circulareconomydefinition-importanceandbenefits#:~:text=The%20circular%20economy%20is%20a,cycle%20of%20products%20is%20extended> (Accessed on 25/05/2024)

⁷⁵ Ellen MacArthur Foundation., 'What is a Circular Economy?.' Available at <https://www.ellenmacarthurfoundation.org/topics/circulareconomyintroduction/>

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling, and composting⁷⁶. The circular economy considers every stage of a product's journey before and after it reaches the customer⁷⁷. It has been noted that this approach is not only vital to stop plastic pollution, but it also offers strong economic, social, and climate benefits⁷⁸. In order to create a circular economy for plastic, it is necessary to eliminate problematic and unnecessary plastic items, innovate to ensure that the plastics we do need are reusable, recyclable, or compostable, and circulate all the plastic items used in order to keep them in the economy and out of the environment⁷⁹.

According to UNEP, the world can end plastic pollution by embracing principles of circular economy⁸⁰. This can be achieved by reducing problematic and unnecessary plastic use, redesigning the system, products and their packaging and combining these with a market transformation towards circularity in plastics⁸¹. Significant reduction in the use of plastic can be achieved by redesigning the way in which products deliver their function to society⁸². In addition reusing products and refilling them makes more economic sense than throwing them away⁸³. The principles of reorient and diversify entails shifting the market towards sustainable alternatives, which will require a shift in the way products and packaging are produced, consumer demand, regulatory frameworks and costs⁸⁴. It is also necessary to ensure that where plastics are produced, there are designed to be recyclable in

[overview#:~:text=The%20circular%20economy%20is%20a,rem manufacture%2C%20recycling%2C%20and%20composting](#) (Accessed on 25/05/2024)

⁷⁶ Ibid

⁷⁷ Ellen Macarthur Foundation., 'A Circular Economy for Plastic' Op Cit

⁷⁸ Ibid

⁷⁹ Ibid

⁸⁰ United Nations Environment Programme., 'Turning off the Tap: How the World can end Plastic Pollution and Create a Circular Economy' Available at <https://www.unep.org/resources/turning-off-tap-end-plastic-pollution-create-circular-economy> (Accessed on 25/05/2024)

⁸¹ Ibid

⁸² Ibid

⁸³ Ibid

⁸⁴ Ibid

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

the market where they are sold while also ensuring that waste management and the recycling market are efficient and viable⁸⁵.

The private sector also has a key role to play in curbing plastic pollution. It has been noted that the private sector is best positioned to address the shift to environmentally sustainable products⁸⁶. As a result, it has been noted that policy, economic and social incentives need to be developed to make producers more responsible for the environmental costs of their products⁸⁷. According to the World Bank, private businesses such as formal recyclers and collection centers are positioned to be part of the solution towards curbing plastic pollution⁸⁸. These are often powered through the support of informal waste collectors – also known as waste pickers– who account for many more self-created livelihoods in the waste sector. They can enhance efforts towards curbing plastic pollution by collecting, sorting, and aggregating waste found in streets and landfills or sourced directly from households⁸⁹. They then sell recyclable waste, including plastic items, to buyback centers or formal recyclers⁹⁰. Financing these businesses is therefore key in enhancing efforts to curb plastic pollution globally. In addition, it has been noted that businesses can leverage digital tools to connect informal waste pickers and buyback centers to major recycling companies⁹¹. Businesses can drive innovation and market development through technology and infrastructure upgrades,

⁸⁵ Ibid

⁸⁶ United Nations Development Programme., ‘The Beginning of the End for Plastics Pollution?’ Op Cit

⁸⁷ Ibid

⁸⁸ The World Bank Group., ‘Tackling the Plastics Pollution Crisis by Channeling Private Capital to Projects that Reduce Plastic Waste’ Available at <https://www.worldbank.org/en/news/feature/2024/01/25/tackling-the-plastics-pollution-crisis-by-channeling-private-capital-to-projects-that-reduce-plastic-waste#:~:text=Plastic%20pollution%20impacts%20the%20poorest,plastic%20collection%20and%20recycling%20projects>. (Accessed on 25/05/2024)

⁸⁹ Ibid

⁹⁰ Ibid

⁹¹ United Nations Environment Programme., ‘Africa’s Private Sector Supports Fight against Plastic Pollution’ Available at <https://www.unep.org/news-and-stories/story/africas-private-sector-supports-fight-against-plastic-pollution> (Accessed on 25/05/2024)

Towards a Clean and Healthy Environment: Enhancing Efforts to Curb Plastic Pollution Globally

supporting the public sector in managing plastic waste⁹². It is therefore necessary to strengthen the role of the private sector in order to enhance efforts to curb plastic pollution globally.

The foregoing measures are important in enhancing efforts to curb plastic pollution globally.

4.0 Conclusion

Plastic pollution is a growing worldwide environmental concern⁹³. It is an increasing threat to the environment, impacting habitats and natural ecosystems, with consequences for sustainable economic growth and human wellbeing⁹⁴. Plastic pollution aggravates the triple planetary crisis of climate change, nature and biodiversity loss, and pollution and waste and also hinders the right to a healthy environment⁹⁵. Enhancing efforts to curb plastic pollution globally is therefore a key approach towards a clean and healthy environment. In order to realize this goal, it is necessary to: adopt a global environmental treaty on curbing plastic pollution⁹⁶; enhance the role of governments and the private sector in curbing plastic pollution⁹⁷; and strengthen circular economy⁹⁸. Enhancing efforts to curb plastic pollution globally is a vital agenda that needs to be implemented towards a clean and healthy environment.

⁹² Ibid

⁹³ DGB Group., 'The Rising Tide of Plastic Pollution' Op Cit

⁹⁴ Organisation for Economic Cooperation and Development., 'Towards Eliminating Plastic Pollution by 2040: A Policy Scenario Analysis' Op Cit

⁹⁵ United Nations Environment Programme., 'Civil Society to Tackle Plastic Pollution' Op Cit

⁹⁶ United Nations Development Programme., 'The Beginning of the End for Plastics Pollution?' Op Cit

⁹⁷ Ibid

⁹⁸ Ellen Macarthur Foundation., 'A Circular Economy for Plastic' Op Cit

Addressing Climate Change through Nature-Based Solutions in Africa

Abstract

Climate change is a major threat to Sustainable Development in Africa. Climate change is having a devastating impact on the African continent creating food insecurity, stressing water resources, affecting human health, displacing populations and impeding socio-economic development. Confronting climate change in Africa is therefore a matter of urgent priority if the continent is to realize the Sustainable Development agenda. Nature-based solutions have the ability to strengthen Africa's response to climate change. Nature-based solutions are effective in improving community livelihoods and resilience to climate change. As a result, there is need to scale up the use of nature-based solutions to address climate impacts on critical ecosystems and biodiversity in Africa. This paper appraises the role of nature-based solutions in combating climate change in Africa. It argues that nature-based solutions provide a viable and eco-friendly approach towards addressing climate change in Africa. The paper defines and highlights examples of nature-based solutions. It also examines the progress made towards embracing nature-based solutions for climate change in Africa and challenges thereof. The paper further offers ideas towards addressing climate change through nature-based solutions in Africa.

1.0 Introduction

Africa is classified as a continent that is highly vulnerable to climate change¹. This vulnerability is due to several reasons including endemic poverty and high dependence on rain-fed agriculture, complex governance and institutional dimensions, limited access to capital including markets and technology, weak infrastructure, ecosystem degradation and poor management of natural resources, disasters both natural and man-made and conflicts². Despite having contributed the least to global warming and having the lowest emissions, Africa faces exponential collateral damage as a result of climate change, posing systemic risks to its economies, infrastructure investments, water and food systems, public health, agriculture, and

¹ Kimaro. Didas et al., 'Climate Change Mitigation and Adaptation in ECA/SADC/COMESA Region: Opportunities and Challenges.' Available at https://www.researchgate.net/publication/346628199_Climate_Change_Mitigation_and_Adaptation_in_ECASADCCOMESA_region_Opportunities_and_Challenges (Accessed on 12/04/2024)

² Ibid

Addressing Climate Change through Nature-Based Solutions in Africa

livelihoods, threatening to undo its modest development gains and slip into higher levels of extreme poverty³. The United Nations Environment Programme (UNEP) notes that while Africa's per capita emissions are significantly lower than the global average, the continent is disproportionately affected by rising global temperatures and escalating climate consequences⁴. UNEP further points out that the impacts of climate change including drought, desertification, and cyclones, among others, are causing food shortages, displacement, and migration in Africa⁵.

Climate change is a major threat to Sustainable Development in Africa⁶. Climate change is having a devastating impact on the African continent creating food insecurity, stressing water resources, affecting human health, displacing populations and impeding socio-economic development⁷. The United Nations observes that climate change is having a growing impact on the African continent, hitting the most vulnerable hardest, and contributing to food insecurity, population displacement and stress on water resources⁸. Confronting climate change in Africa is therefore a matter of urgent priority if the continent is to realize the Sustainable Development agenda.

The United Nations *2030 Agenda for Sustainable Development*⁹ acknowledges that climate change is one of the greatest challenge of our time and its adverse

³ African Development Bank Group., 'Climate Change in Africa' Available at <https://www.afdb.org/en/cop25/climate-change-africa> (Accessed on 12/04/2024)

⁴ United Nations Environment Programme., 'Africa Climate Week 2023: Charting a Fresh Course for Climate Action' Available at <https://www.unep.org/news-and-stories/press-release/africa-climate-week-2023-charting-fresh-course-climate-action#:~:text=While%20Africa's%20per%20capita%20emissions,shortages%2C%20displacement%2C%20and%20migration.> (Accessed on 12/04/2024)

⁵ Ibid

⁶ African Development Bank Group., 'Climate Change in Africa' Op Cit

⁷ Rao. V., & Yadav. P., 'Confronting Climate Change in Africa.' Available at <https://knowledge.insead.edu/responsibility/confronting-climate-change-africa> (Accessed on 12/04/2024)

⁸ United Nations Climate Change., 'Climate Change is an Increasing Threat to Africa' Available at <https://unfccc.int/news/climate-change-is-an-increasing-threat-to-africa> (Accessed on 12/04/2024)

⁹ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at

Addressing Climate Change through Nature-Based Solutions in Africa

impacts undermine the ability of all countries to achieve Sustainable Development. Sustainable Development Goal 13 urges all countries to take urgent action to combat climate change and its impacts¹⁰. Africa Union's *Agenda 2063*¹¹ also recognizes climate change as a major challenge for the continent's development. Agenda 2063 seeks to address climate change by fostering environmentally sustainable and climate resilient economies and communities in Africa¹². In addition, African countries are making progress towards addressing climate change as envisaged in their national laws and policies on climate change and global climate commitments set out in their Nationally Determined Contributions (NDCs)¹³. Addressing climate change in Africa is therefore a matter of global, continental, and national priority.

One of the key tools that can enhance Africa's response towards climate change is Nature-Based solutions¹⁴. Nature-based solutions have been identified as effective in improving community livelihoods and resilience to climate change¹⁵. As a result, it has been correctly observed that there is need to scale up the use of nature-based solutions to address climate impacts on critical ecosystems and biodiversity in Africa¹⁶.

This paper appraises the role of nature-based solutions in combating climate change in Africa. It argues that nature-based solutions provide a viable and eco-friendly approach towards addressing climate change in Africa. The paper defines and highlights examples of nature-based solutions. It also examines the progress made towards embracing nature-based solutions for climate

<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 12/04/2024)

¹⁰ Ibid

¹¹ Africa Union., 'Agenda 2063: The Africa we Want.' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 12/04/2024)

¹² Ibid

¹³ United Nations Climate Change., 'Climate Change is an Increasing Threat to Africa' Op Cit

¹⁴ African Development Bank Group., 'Are Nature Based Solutions the Key to Africa's Climate Response?' Available at <https://www.afdb.org/en/news-and-events/are-nature-based-solutions-key-africas-climate-response-33090> (Accessed on 12/04/2024)

¹⁵ Ibid

¹⁶ Ibid

change in Africa and challenges thereof. The paper further offers ideas towards addressing climate change through nature-based solutions in Africa.

2.0 Nature-Based Solutions: An Overview

Nature-based solutions have been defined as actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges including climate change, food and water security or natural disasters effectively and adaptively, while simultaneously providing human well-being and biodiversity benefits¹⁷. Nature-based solutions involve working with and enhancing nature to help address societal challenges¹⁸. These solutions encompass a wide range of actions, such as the protection and management of natural and semi-natural ecosystems, the incorporation of green and blue infrastructure in urban areas, and the application of ecosystem-based principles to agricultural systems¹⁹. The concept of nature-based solutions is grounded in the knowledge that healthy natural and managed ecosystems offer a diverse range of services on which human wellbeing depends, from storing carbon, controlling floods and stabilizing shorelines and slopes to providing clean air and water, food, fuel, medicines and genetic resources among other services²⁰.

The idea of nature-based solutions suggests a conceptual shift towards ecosystems not only providing services, but also serving as a significant contribution to addressing major societal challenges²¹. According to the European Commission, nature-based solutions aim to help societies address a variety of environmental, social and economic challenges in sustainable

¹⁷ International Union for Conservation of Nature, 'Nature-Based Solutions' available at <https://www.iucn.org/our-work/nature-based-solutions> (Accessed on 13/04/2024)

¹⁸ Seddon, N et al., 'Understanding the Value and Limits of Nature-Based Solutions to Climate Change and other Global Challenges' Available at <https://doi.org/10.1098/rstb.2019.0120> (Accessed on 13/04/2024)

¹⁹ Ibid

²⁰ Ibid

²¹ Osaka, S., Bellamy, R., & Castree, N. 'Framing "Nature-Based" Solutions to Climate Change.' *Wiley Interdisciplinary Reviews: Climate Change*, 12(5), 2021, Article e729. Available at <https://doi.org/10.1002/wcc.729> (Accessed on 13/04/2024)

Addressing Climate Change through Nature-Based Solutions in Africa

ways²². It notes that nature-based solutions are actions inspired by, supported by or copied from nature²³. Nature-based solutions are informed by benefits that arise from healthy ecosystems and are critical to Sustainable Development²⁴.

It has been pointed out that the concept of nature-based solutions has developed due to the need for solutions that worked for and nature²⁵. Prior to development of this concept, most mechanisms adopted towards mitigating global challenges relied on conventional science and technological approaches such as engineering interventions²⁶. Nature-based solutions seek to adopt eco-friendly approaches towards mitigating global social, environmental and economic challenges²⁷. Nature-based solutions entail actions ranging from reforestation, soil conservation, wetland management, green roofs, preventing the loss of ecosystems that serve as climate sinks, and restoring coastal ecosystems to protect from extreme weather events²⁸. Further, it has been noted that nature-based solutions envisage the use of practices such as afforestation; coastal management; agroforestry; restoration of floodplains; forest protection; reforestation; mangrove restoration; soil conservation; grassland management; green roofs; green walls; wind breaks; urban open spaces; rainwater capture; and wetland restoration in order to address global,

²² European Commission., 'Nature-Based Solutions in European and National Policy Frameworks' Available at file:///C:/Users/King%20Sultan/Downloads/Attachment_0.pdf (Accessed on 13/04/2024)

²³ Ibid

²⁴ UK Pact., 'Nature-Positive Actions: Lessons from Forests' available at https://apps.worldagroforestry.org/downloads/Publications/PDFS/nature_positive_actions.pdf (Accessed on 13/04/2024)

²⁵ Cohen-Shacham et al., 'Nature-Based Solutions to address Global Societal Challenges' available at <https://portals.iucn.org/library/node/46191> (Accessed on 13/04/2024)

²⁶ Ibid

²⁷ Muigua, K., 'Embracing Nature Based Solutions for Sustainable Development in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2022/09/Embracing-Nature-Based-Solutions-for-Sustainable-Development-in-Kenya.pdf> (Accessed on 13/04/2024)

²⁸ Osaka, S., Bellamy, R., & Castree, N. 'Framing "Nature-Based" Solutions to Climate Change.' Op Cit

Addressing Climate Change through Nature-Based Solutions in Africa

national , and local challenges while simultaneously offering benefits to the environment, the society and the economy²⁹.

It has been noted that nature-based solutions have significant yet underutilized potential to address global threats including climate change, loss of biodiversity, food and water security, human health and natural disasters³⁰. The International Union for Conservation of Nature notes that nature-based solutions use nature and the natural functions of healthy ecosystems to tackle some of the most pressing challenges of our time³¹. These types of solutions help to protect the environment but also provide numerous economic and social benefits³². According to UNEP, nature-based solutions are important for the global Sustainable Development agenda since they offer the potential to address, in an effective way, diverse challenges such as climate change, food and water insecurity, disaster impacts, and threats to human health and wellbeing, while reducing environmental degradation and biodiversity loss³³. It further notes that some of the major global environmental challenges such as climate change and biodiversity loss cannot be fully tackled without the use of nature-based solutions³⁴. It is therefore necessary to adopt nature-based solutions in order to address global challenges including climate change.

²⁹ Ibid

³⁰ International Union for Conservation of Nature., 'Ensuring Effective Nature Based Solutions' Available at <https://www.iucn.org/resources/issues-brief/ensuring-effective-nature-based-solutions> (Accessed on 13/04/2024)

³¹ International Union for Conservation of Nature., 'What are Nature-Based Solutions?' Available at <https://www.iucn.org/our-work/region/europe/our-work/european-nature-based-solutions> (Accessed on 13/04/2024)

³² Ibid

³³ United Nations Environment Programme., 'Nature-Based Solutions: Opportunities and Challenges for Scaling Up' Available at <https://www.unep.org/resources/report/nature-based-solutions-opportunities-and-challenges-scaling> (Accessed on 13/04/2024)

³⁴ Ibid

3.0 Addressing Climate Change through Nature-Based Solutions in Africa

Nature-based solutions have a key role to play in tackling climate change³⁵. The practice of using nature-based solutions to adapt to climate change has been termed 'ecosystem-based adaptation', and it has the power to save both lives and livelihoods³⁶. It has been noted that nature-based solutions provide Africa with an opportunity to grow green economies, safeguard people and their property while concurrently, enhancing resilience of natural ecosystems against environmental instabilities³⁷. Nature based solutions can be employed to restore and protect natural and modified ecosystems in Africa³⁸. In addition, nature-based solutions are key in alleviating water insecurities, enhancing drought and flood risk mitigation, preventing anthropogenic climate change and improving climate resilience in the continent³⁹.

African countries face significant challenges in responding to climate change. For example, there is limited climate financing in the continent required to adequately mitigate and adapt to the impacts of climate change⁴⁰. To effectively combat climate change, African countries need an estimated \$ 2.8 trillion to implement their Nationally Determined Contributions (NDCs) between 2020 and 2030 a figure that is much higher than the \$ 264 Billion currently set out in domestic public resources⁴¹. The debt crisis in Africa also hinders the Continent's ability to unlock climate finance since it affects the

³⁵ United Nations Environment Programme., 'How Nature Can Help Africa Adapt to the Climate Crisis' Available at <https://www.unep.org/news-and-stories/video/how-nature-can-help-africa-adapt-climate-crisis> (Accessed on 13/04/2024)

³⁶ Ibid

³⁷ Nyika. J., & Dinka. M. O., 'Integrated Approaches to Nature-Based Solutions in Africa: Insights From a Bibliometric Analysis' Available at <https://www.sciencedirect.com/science/article/pii/S2772411522000234> (Accessed on 13/04/2024)

³⁸ Ibid

³⁹ Ibid

⁴⁰ Magoma. C., 'A Huge Financing Gap for Climate Action with Public Debt Sustainability Risks Looms in East Africa beyond COP27.' Available at <https://www.acepis.org/a-huge-financing-gap-for-climateaction-with-public-debt-sustainability-risks-looms-in-east-africa-beyond-cop27/> (Accessed on 12/04/2024)

⁴¹ Ibid

Addressing Climate Change through Nature-Based Solutions in Africa

confidence of investors⁴². Further, ecosystem degradation exacerbates the climate crisis and challenges related to climate financing in Africa⁴³. It is estimated that Africa could face a 9.7 percent contraction of Gross Domestic Product (GDP) annually by 2030 due to a collapse of ecosystem services⁴⁴. Other concerns including high population growth, increasing urbanization and migration rates, and economic disruptions from global shocks further strain structural conditions and limit the ability of African countries to financially respond, recover, and grow their economies while tackling climate change⁴⁵. Nature-based solutions therefore offer an ideal opportunity for Africa to address these challenges by ensuring that the limited financing available for infrastructure and climate adaptation is deployed in ways that maximize economic, social, and environmental benefits⁴⁶.

Nature-based solutions are ideal in addressing climate change in Africa⁴⁷. These solutions are easy to use, and effective in improving community livelihoods and resilience to climate change⁴⁸. A number of nature-based solutions are being implemented across Africa to address climate change through the conservation of land, rivers, forests, wetlands, and marine ecosystems to benefit local economies⁴⁹. It has also been observed that more countries in Africa are turning to nature-based solutions to counter the impacts of climate change on key sectors including agriculture, forestry,

⁴² Agyir. K., 'African Countries Must Act Strategically to Unlock Climate Finance in the Face of a Debt Crisis.' Available at <https://blogs.lse.ac.uk/africaatlse/2023/06/15/african-countries-must-actstrategically-to-unlock-climate-finance-in-the-face-of-a-debt-crisis/> (Accessed on 13/04/2024)

⁴³ Oliver. E., & Marsters. L., 'Nature-Based Solutions in Sub-Saharan Africa for Climate and Water Resilience' Available at https://naturebasedsolutions.org/sites/default/files/2023-01/WRI%202022_NBS%20in%20Sub-Saharan%20Africa%20for%20Climate%20and%20Water%20Resilience%5B9070%5D.pdf (Accessed on 13/04/2024)

⁴⁴ Ibid

⁴⁵ Ibid

⁴⁶ Ibid

⁴⁷ African Development Bank Group., 'Are Nature Based Solutions the Key to Africa's Climate Response?' Op Cit

⁴⁸ Ibid

⁴⁹ Ibid

Addressing Climate Change through Nature-Based Solutions in Africa

water, fisheries, and coastal ecosystems⁵⁰. In the water sector, nature-based solutions such as restoration of lateral river connectivity and morphology, stormwater drainage management through green urban infrastructure, creation of polders in flood vulnerable areas and modification of torrent controls at headwaters to mitigate hydropeaking are key solutions in enhancing water security⁵¹. Conservation of wetlands is another key nature-based approach towards addressing climate change⁵². It has been noted that nature-based solutions are an integral solution to addressing Africa's growing infrastructure service needs, while maximizing the impact of limited resources to enhance resilience to water and climate risks⁵³. For example, restoring watersheds can enhance water security, increasing urban green space can reduce urban heat, and protecting mangroves can reduce coastal flood risk⁵⁴.

Africa also has an opportunity to harness nature-based solutions for food security through soil management to optimize its nutrient, carbon and water storage capacity, improved agro-diversity to promote better land and water uses and integrating traditional and scientific agricultural systems⁵⁵. Other nature-based solutions that are important in addressing climate change in Africa include combating forest degradation and deforestation through sustainable management practices, reforestation, and afforestation activities in order to promote climate resilience by enhancing carbon sequestration⁵⁶. It is therefore necessary to scale up the use of nature-based solutions to address climate impacts on critical ecosystems and biodiversity in Africa. Nature-based solutions can not only help Africa adapt to the current and expected

⁵⁰ United Nations Environment Programme., 'How Nature Can Help Africa Adapt to the Climate Crisis' Op Cit

⁵¹ Nyika. J., & Dinka. M. O., 'Integrated Approaches to Nature-Based Solutions in Africa: Insights From a Bibliometric Analysis' Op Cit

⁵² Ibid

⁵³ Global Facility for Disaster Reduction and Recovery., 'Nature-Based Solutions in Sub-Saharan Africa for Climate and Water Resilience' Available at <https://www.gfdr.org/en/publication/nature-based-solutions-sub-saharan-africa-climate-and-water-resilience> (Accessed on 13/04/2024)

⁵⁴ Ibid

⁵⁵ Nyika. J., & Dinka. M. O., 'Integrated Approaches to Nature-Based Solutions in Africa: Insights From a Bibliometric Analysis' Op Cit

⁵⁶ Ibid

Addressing Climate Change through Nature-Based Solutions in Africa

impacts of climate change but also offer numerous environmental, social, and economic benefits for transformative adaptation and long-term resilience⁵⁷.

The role of nature-based solutions in addressing climate change is recognized by the *United Nations Framework Convention on Climate Change*⁵⁸. The Convention seeks to achieve a climate change mitigation framework that allows *ecosystems to adapt naturally* to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner (Emphasis added)⁵⁹. The *Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)*⁶⁰ also envisages the use of nature-based solutions such as restoration towards sustainable conservation of wetlands⁶¹. It is widely acknowledged that wetlands are increasingly valuable under climate change in terms of their ecological functions, ecosystem services, and biodiversity⁶². Some of the vital ecosystem services provided by wetlands include carbon sequestration, maintenance and creation of clean water and soil fertility, and regulation of water and climate⁶³. Therefore, the use of nature-based solutions including restoration and revegetation of wetlands is increasingly vital for creating resilient wetlands better able to respond to a changing climate without dramatic loss of biodiversity or ecosystem function⁶⁴. The *Convention on*

⁵⁷ Rakotondrazafy. H., & Nchare. A., 'Accelerating Climate Change Adaptation in Africa with Nature-Based Solutions' Available at <https://www.standardmedia.co.ke/business/amp/opinion/article/2001480520/accelerating-climate-change-adaptation-in-africa-with-nature-based-solutions> (Accessed on 13/04/2024)

⁵⁸ United Nations Framework Convention on Climate Change., United Nations, 1992., Available at https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf (Accessed on 13/04/2024)

⁵⁹ Ibid

⁶⁰ Convention on Wetlands of International Importance especially as Waterfowl Habitat., Available at https://www.ramsar.org/sites/default/files/documents/library/current_convention_text_e.pdf (Accessed on 13/02/2024)

⁶¹ Ibid

⁶² Zivec. P., Sheldon. F., & Capon. S., 'Natural Regeneration of Wetlands under Climate Change.' *Frontiers in Environmental Science.*, Volume 11 (2023)

⁶³ Ibid

⁶⁴ Ibid

Addressing Climate Change through Nature-Based Solutions in Africa

*Biological Diversity*⁶⁵ also embraces the use of nature-based solutions for conserving biodiversity and addressing the impacts of climate change. It urges contracting states to adopt nature based solutions including rehabilitation, restoration, and the use of traditional ecological knowledge for effective conservation of ecosystems and natural habitats⁶⁶. It has been noted that the well-being of the world population in the coming decades will in large part depend on conservation and restoration of ecosystems to maintain and enhance biodiversity and ecosystem services thereby contributing to Sustainable Development while reducing environment-related risks such as climate change⁶⁷. Utilizing nature- based solutions is therefore key in conserving biological diversity and addressing climate change.

At the continental level, the *African Union Climate Change and Resilient Development Strategy and Action Plan*⁶⁸ urges states to adopt nature-based solutions towards addressing climate change in Africa. It recognizes that these solutions are necessary in ensuring the climate resilience of key sectors such as forestry, coastal and ocean ecosystems, urban green infrastructure, tourism, agriculture, and land management⁶⁹. *The African Leaders Nairobi Declaration on Climate Change and Call to Action*⁷⁰ also acknowledges that nature and biodiversity are key solutions to climate change. It urges African countries to strengthen their actions to halt and reverse biodiversity loss, deforestation, and desertification and restore degraded land⁷¹. According to the Declaration, the protection of nature and biodiversity offers numerous socio-economic co-

⁶⁵ United Nations., 'Convention on Biological Diversity.' Available at <https://www.cbd.int/doc/legal/cbd-en.pdf> (Accessed on 13/04/2024)

⁶⁶ Ibid

⁶⁷ Convention of Biological Diversity., 'Ecosystem Restoration.' Available at <https://www.cbd.int/restoration/> (Accessed on 13/04/2024)

⁶⁸ African Union Climate Change and Resilient Development Strategy and Action Plan., Available at https://au.int/sites/default/files/documents/42276-doc-CC Strategy and Action Plan 2022-2032 23_06_22 ENGLISH-compressed.pdf (Accessed on 13/04/2024)

⁶⁹ Ibid

⁷⁰ African Leaders Nairobi Declaration on Climate Change and Call to Action., Available at https://www.afdb.org/sites/default/files/2023/09/08/the_african_leaders_nairobi_declaration_on_climate_change_rev-eng.pdf (Accessed on 13/04/2024)

⁷¹ Ibid

Addressing Climate Change through Nature-Based Solutions in Africa

benefits and the provision of climate services⁷². Embracing nature-based solutions is key in protecting nature and biodiversity and addressing climate change in Africa.

In addition, the *Climate Change (Amendment) Act*⁷³ of Kenya recognizes the central role of nature-based solutions in strengthening the country's response towards climate change. The Act defines nature-based solutions as actions that protect, sustainably manage, or restore natural ecosystems that address societal challenges such as climate change, human health, food and water security, and disaster risk reduction effectively and adaptively, while simultaneously providing human well-being and biodiversity benefits⁷⁴. It urges the country to develop carbon markets in a manner that prescribes removal or sequestration credits that take carbon dioxide out of the atmosphere and either use or store it via afforestation, reforestation, nature-based solutions, or technology-based removal⁷⁵.

Nature-based solutions therefore have a pertinent role in addressing climate change in Africa. These solutions need to be widely adopted. It is also necessary to address challenges such as inadequate funding; absence of clear definitions, guidelines, metrics, and methodologies to track, quantify, and value nature-based solutions for adaptation; and inadequate technical capacity which hinder effective adoption of nature-based solutions for climate action in Africa⁷⁶. It has been noted that Africa stands at a critical moment in the fight against climate change⁷⁷. The urgent need to adapt and build resilience requires bold and innovative approaches and embracing nature-based solutions presents a promising way forward⁷⁸.

4.0 Way Forward

Nature-based solutions have a key role to play in addressing climate change in Africa. These types of solutions help to protect the environment but also

⁷² Ibid

⁷³ *Climate Change (Amendment) Act, 2023*, Government Printer, Nairobi

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Rakotondrazafy. H., & Nchare. A., 'Accelerating Climate Change Adaptation in Africa with Nature-Based Solutions' Op Cit

⁷⁷ Ibid

⁷⁸ Ibid

Addressing Climate Change through Nature-Based Solutions in Africa

provide numerous economic and social benefits⁷⁹. It is therefore necessary to embrace nature-based solutions in order to strengthen the continent's response to climate change. Africa can effectively enhance its response to climate change by adopting nature-based solutions to protect, manage, and restore ecosystems⁸⁰. Some of the key approaches towards this end include natural forest management including afforestation and reforestation, conservation agricultural practices including agroforestry, and wetlands and coastal ecosystems restoration⁸¹. Embracing nature-based solutions can offer multiple benefits for Africa. These benefits include retained and restored ecosystem services from forests, croplands, grazing lands, wetlands and other coastal ecosystems that support human health and well-being⁸². In addition, nature-based solutions can ensure biodiversity conservation and sustainable livelihood development⁸³. Of vital importance, embracing nature-based solutions can accelerate climate action in Africa by improving human resilience and increasing the continent's capacity to adapt to those impacts of climate change that will still be present in a net zero world, while also reducing exposure to climate-related risks such as flooding, and lowering the sensitivity of human communities to climate change and shocks, through diversifying sources of income⁸⁴. It is therefore necessary to adopt nature-based solutions in order to strengthen climate action in Africa.

There is need enhance funding for nature-based solutions in Africa in order to strengthen climate action in the continent⁸⁵. Unlocking climate finance for

⁷⁹ International Union for Conservation of Nature., 'What are Nature-Based Solutions?' Op Cit

⁸⁰ United Nations Environment Programme., 'Nature-Based Solutions for Climate Change Mitigation' Available at <https://wedocs.unep.org/xmlui/bitstream/handle/20.500.11822/37318/NBSCCM.pdf> (Accessed on 14/04/2024)

⁸¹ Ibid

⁸² Ibid

⁸³ Ibid

⁸⁴ Ibid

⁸⁵ United Nations Environment Programme., 'Incentivizing Nature Based Solutions' Available at <https://www.unep.org/regions/africa/regional-initiatives/responding-climate-change/incentivizing-nature-based-solutions> (Accessed on 14/04/2024)

Addressing Climate Change through Nature-Based Solutions in Africa

nature-based solutions has been identified as a key tool in climate action⁸⁶. According to UNEP, Africa needs huge levels of investment to drive climate change adaptation⁸⁷. It calls for investments in nature-based solutions to drive climate change adaptation in the continent⁸⁸. Unlocking climate finance for nature-based solutions can support projects such as restoring damaged ecosystems including land, forests and water bodies, conserving biodiversity, and integrating natural resources management⁸⁹. It is therefore necessary for African countries to prioritize funding for nature-based solutions and strengthen their national capacities to unlock climate finance in order to effectively adopt nature-based solutions for climate action⁹⁰.

In addition, it is vital for African countries to integrate nature-based solutions into their national climate change plans and policies including NDCs⁹¹. It has been noted that these policy processes provide opportunities to promote nature-based solutions and enable vulnerable communities to adapt to climate change and reduce disaster risk⁹². The United Nations Development Programme points out that nature-based solutions are critical to climate action and one of the most requested areas of support to enhance NDCs⁹³. Integrating nature-based solutions in NDCs can support climate mitigation and adaptation, as well as slow biodiversity loss, in a cost-effective manner⁹⁴. Kenya for example, in its NDC recognizes the role of nature-based solutions in climate action⁹⁵. The NDC seeks to scale up nature-based solutions for

⁸⁶ Ibid

⁸⁷ Ibid

⁸⁸ Ibid

⁸⁹ African Development Bank Group., 'Are Nature Based Solutions the Key to Africa's Climate Response?' Op Cit

⁹⁰ Ibid

⁹¹ Rakotondrazafy. H., & Nchare. A., 'Accelerating Climate Change Adaptation in Africa with Nature-Based Solutions' Op Cit

⁹² Ibid

⁹³ United Nations Development Programme., 'Nature-Based Solutions Finance for NDCs' Available at <https://www.undp.org/sites/g/files/zskgke326/files/2022-11/Nature-based%20Solutions%20Finance%20for%20NDCs-2022.pdf> (Accessed on 14/04/2024)

⁹⁴ Ibid

⁹⁵ Kenya's Updated Nationally Determined Contribution (NDC) 2020-2030., Available at <https://unfccc.int/sites/default/files/NDC/2022-06/Kenya%27s%20First%20NDC%20%28updated%20version%29.pdf> (Accessed on 14/04/2024)

Addressing Climate Change through Nature-Based Solutions in Africa

mitigation⁹⁶. It is therefore necessary for African countries to seize the opportunity to increase their climate ambition by incorporating nature-based solutions in their NDCs.

Finally, there is need for African countries to strengthen their national capacities for successful implementation of nature-based solutions for climate action⁹⁷. It has been noted that a major hindrance to the successful implementation of nature-based solutions for climate action in Africa is the lack of technical capacity in African countries⁹⁸. It is therefore crucial to prioritize capacity-building efforts at the local, national, and regional levels for effective utilization of nature-based solutions in addressing climate change in Africa⁹⁹. Strengthening institutional capacity will also play a pivotal role in delivering transformative nature-based solutions and ensuring its long-term success¹⁰⁰. African countries should thus invest in adaptive institutional capacity and enabling frameworks for successful and sustainable implementation and management of nature-based solutions towards addressing climate change¹⁰¹.

5.0 Conclusion

Nature-based solutions can play a vital role in addressing climate change in Africa. These types of solutions help to protect the environment but also provide numerous economic and social benefits¹⁰². Africa can effectively enhance its response to climate change by adopting nature-based solutions to protect, manage, and restore ecosystems¹⁰³. A number of nature-based solutions are being implemented across Africa to address climate change

⁹⁶ Ibid

⁹⁷ Rakotondrazafy. H., & Nchare. A., 'Accelerating Climate Change Adaptation in Africa with Nature-Based Solutions' Op Cit

⁹⁸ Ibid

⁹⁹ Ibid

¹⁰⁰ Ibid

¹⁰¹ World Wide Fund for Nature., 'Nature-Based Solutions are Critical to Adaptation in Africa' Available at https://wwf.panda.org/wwf_news/?4308241/Nature-based-Solutions-are-critical-to-adaptation-in-Africa (Accessed on 14/04/2024)

¹⁰² International Union for Conservation of Nature., 'What are Nature-Based Solutions?' Op Cit

¹⁰³ United Nations Environment Programme., 'Nature-Based Solutions for Climate Change Mitigation' Op Cit

Addressing Climate Change through Nature-Based Solutions in Africa

through the conservation of land, rivers, forests, wetlands, and marine ecosystems to benefit local economies¹⁰⁴. However, the effective adoption of nature-based solutions in Africa is hindered by several challenges including inadequate funding and inadequate technical capacity¹⁰⁵. In order to address climate change through nature-based solutions in Africa, it is necessary to: effectively embrace nature-based solutions¹⁰⁶; enhance funding for nature-based solutions¹⁰⁷; integrate nature-based solutions into national climate change plans and policies including NDCs¹⁰⁸; and strengthen national capacities for successful implementation of nature-based solutions for climate action¹⁰⁹. Addressing climate change through nature-based solutions in Africa is vital for sustainability.

¹⁰⁴ African Development Bank Group., 'Are Nature Based Solutions the Key to Africa's Climate Response?' Op Cit

¹⁰⁵ Rakotondrazafy. H., & Nchare. A., 'Accelerating Climate Change Adaptation in Africa with Nature-Based Solutions' Op Cit

¹⁰⁶¹⁰⁶ Ibid

¹⁰⁷ United Nations Environment Programme., 'Incentivizing Nature Based Solutions' Op Cit

¹⁰⁸ Rakotondrazafy. H., & Nchare. A., 'Accelerating Climate Change Adaptation in Africa with Nature-Based Solutions' Op Cit

¹⁰⁹ Rakotondrazafy. H., & Nchare. A., 'Accelerating Climate Change Adaptation in Africa with Nature-Based Solutions' Op Cit

Enhancing Climate Resilience in Africa for Development

Abstract

This paper critically examines the need to enhance climate resilience in Africa. It argues that climate change is a major threat to development in Africa. It explores the impacts of climate change in Africa and their effects on development in the continent. In light of the adverse impacts of climate change in Africa, the paper posits that enhancing climate resilience is a key approach towards confronting climate change and fostering development. The paper critically discusses the achievements made and challenges faced towards fostering climate resilience in Africa. It also offers ideas towards enhancing climate resilience in Africa for development.

1.0 Introduction

Climate change is increasingly impacting our ecosystems, with disruptive effects on the social well-being, economic development, and environmental sustainability of current and future generations¹. The impacts of climate change include intense droughts, water scarcity, severe fires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity among others². These impacts are being felt across regions and in many sectors important to society, such as human health, agriculture and food security, water supply, transportation, energy, and biodiversity and ecosystems³. These effects are expected to become increasingly disruptive in the coming decades threatening the future of both humanity and nature⁴.

Climate change therefore presents significant and complex challenges for global economies since it affects economic development, social progress, and

¹ United Nations Environment Programme., 'Climate Change' Available at <https://www.unepfi.org/climate-change/climate-change/> (Accessed on 03/06/2024)

² United Nations., 'What is Climate Change?' Available at <https://www.un.org/en/climatechange/what-is-climate-change> (Accessed on 03/06/2024)

³ World Bank Climate Change Knowledge Portal., 'What is Climate Change?' Available at <https://climateknowledgeportal.worldbank.org/overview> (Accessed on 03/06/2024)

⁴ Ibid

Enhancing Climate Resilience in Africa for Development

the sustainability of communities and ecosystems⁵. It has been described as one of the greatest challenges facing humanity today⁶. Climate change has significant implications on energy, food and water security as well as health and safety for countries and people around the world⁷. It is therefore a key threat to the attainment of the Sustainable Development agenda⁸.

As a result of its impacts, responding to climate change has become an urgent global, regional, and national priority⁹. The United Nations *2030 Agenda for Sustainable Development*¹⁰ acknowledges that climate change is one of the greatest challenges facing humanity and its adverse impacts undermine the ability of all countries to achieve Sustainable Development. It urges all countries to take urgent action to combat climate change and its impacts¹¹. In order to achieve this goal, Sustainable Development Goal (SDG) 13 urges all countries to strengthen their resilience and adaptive capacity to climate-related hazards and natural disasters¹²; integrate climate change measures into national policies, strategies and planning¹³; and improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning¹⁴.

In order to effectively tackle climate change, it has been noted that there is need for the global community, states, and communities to embrace climate

⁵ Navigating Climate Resilience: Kenya's Battle with Recent Flooding., Available at <https://www.acts-net.org/blogs/foresight-africa-blog/navigating-climate-resilience-kenya-s-battle-with-recent-flooding> (Accessed on 03/06/2024)

⁶ United Nations Environment Programme., 'Responding to Climate Change' Available at <https://www.unep.org/regions/europe/regional-initiatives/responding-climate-change> (Accessed on 03/06/2024)

⁷ Ibid

⁸ Ibid

⁹ Ibid

¹⁰ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 30/05/2024)

¹¹ Ibid

¹² Ibid

¹³ Ibid

¹⁴ Ibid

Enhancing Climate Resilience in Africa for Development

resilient strategies as a transformative approach towards climate change¹⁵. States have been urged to take urgent steps to build resilient societies and economies in order to effectively confront climate change and foster development¹⁶.

This paper critically examines the need to enhance climate resilience in Africa. It argues that climate change is a major threat to development in Africa. It explores the impacts of climate change in Africa and their effects on development in the continent. In light of the adverse impacts of climate change in Africa, the paper posits that enhancing climate resilience is a key approach towards confronting climate change and fostering development. The paper critically discusses the achievements made and challenges faced towards fostering climate resilience in Africa. It also offers ideas towards enhancing climate resilience in Africa for development.

2.0 Climate Change in Africa

Climate change represents a major threat to the realization of the Sustainable Development agenda in Africa¹⁷. It has been noted that Africa is the most vulnerable continent to the impacts of climate change¹⁸. Despite having the lowest greenhouse gas emissions compared to other continents, Africa faces exponential collateral damage as a result of climate change, posing systemic risks to its economies, infrastructure investments, water and food systems, public health, agriculture, and livelihoods, threatening to undo its modest development gains and slip into higher levels of extreme poverty¹⁹.

The United Nations Environment Programme (UNEP) notes that while Africa has contributed negligibly to climate change, with just about two to three percent of global greenhouse gas emissions, it stands out disproportionately

¹⁵ Navigating Climate Resilience: Kenya's Battle with Recent Flooding., Op Cit

¹⁶ United Nations Climate Change., 'Adaptation and Resilience' Available at <https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/introduction> (Accessed on 03/06/2024)

¹⁷ African Development Bank Group., 'Climate Change in Africa' Available at <https://www.afdb.org/en/cop25/climate-change-africa> (Accessed on 03/06/2024)

¹⁸ Ibid

¹⁹ Ibid

Enhancing Climate Resilience in Africa for Development

as the most vulnerable region in the world²⁰. According to UNEP, Africa's vulnerability to climate change is driven by the prevailing low levels of socioeconomic growth in the continent²¹. It has been noted that while climate change is global, the poor are disproportionately vulnerable to its effects since they lack the resources to afford goods and services they need to buffer themselves and recover from the impacts of climate change²². Africa's vulnerability to climate change is also worsened by the continent's reliance on climate-sensitive activities such as rain-fed agriculture, herding and fishing, leading to income losses and increased food insecurity²³.

It has been noted 17 out of the 20 countries most threatened by climate change in the world are located in Africa and climate change already impacts up to 2 to 9 percent of national budgets across the continent demonstrating the severe impacts of climate change in Africa²⁴. Africa is responsible for only a fraction of global greenhouse gas emissions but is suffering disproportionately from climate change²⁵. Climate change is harming food security, ecosystems and economies, fueling displacement and migration and worsening the threat of conflict over dwindling resources in Africa²⁶. Further, it has been noted that heatwaves, heavy rains, floods, tropical cyclones, and prolonged droughts among other impacts of climate change are having devastating impacts on communities and economies in Africa, with increasing numbers of people

²⁰ United Nations Environment Programme., 'Responding to Climate Change' Available at <https://www.unep.org/regions/africa/regional-initiatives/responding-climate-change> (Accessed on 03/06/2024)

²¹ Ibid

²² Ibid

²³ Ibid

²⁴ United Nations Economic Commission for Africa., '17 out of the 20 countries most threatened by climate change are in Africa, but there are still solutions to this crisis' Available at <https://www.uneca.org/stories/17-out-of-the-20-countries-most-threatened-by-climate-change-are-in-africa%2C-but-there-are#:~:text=According%20to%20the%20latest%20report,health%2C%20productivity%20and%20food%20security>. (Accessed on 03/06/2024)

²⁵ World Meteorological Organization., 'Africa Suffers Disproportionately from Climate Change' Available at <https://wmo.int/media/news/africa-suffers-disproportionately-from-climate-change> (Accessed on 03/06/2024)

²⁶ Ibid

Enhancing Climate Resilience in Africa for Development

being at risk²⁷. It has been argued that if climate change is left untamed, the coming decades and years would easily be characterized by severe climate-induced pressure on Africa's economies, livelihoods and nature²⁸.

According to the United Nations, climate change is having a growing impact on the African continent, hitting the most vulnerable hardest, and contributing to food insecurity, population displacement and stress on water resources²⁹. Climate change has severe economic, social, and environmental impacts in Africa including food and water insecurity, health hazards, and decrease in Gross Domestic Product (GDP)³⁰. It has been pointed out that given Africa's high exposure, fragility and low adaptive capacity, the effects of climate change are expected to be felt more severely in the coming years³¹. Due to climate change, people's health, peace, prosperity, infrastructure, and other economic activities across many sectors in Africa are exposed to significant risks threatening development in the continent³².

Responding to climate change is therefore vital for development in Africa. Despite its little contribution to the problem of climate change, Africa is already experiencing the negative effects of this phenomenon, resulting widespread losses and damages³³. The negative impacts of climate change are already directly affecting food security and livelihoods in Africa with extreme climate events such as drought, heavy rains, and floods fueling migration and

²⁷ Ibid

²⁸ Ibid

²⁹ United Nations Climate Change., 'Climate Change is an Increasing threat to Africa' Available at <https://unfccc.int/news/climate-change-is-an-increasing-threat-to-africa> (Accessed on 03/06/2024)

³⁰ Ibid

³¹ World Meteorological Organization., 'Africa Suffers Disproportionately from Climate Change' Op Cit

³² Ibid

³³ Jacob. D., Weber. T., & Celliers. L., 'Supporting Africa's Development to Increase its Resilience to the Impacts of Climate Change' Available at <https://www.openaccessgovernment.org/supporting-africas-development-to-increase-its-resilience-to-the-impacts-of-climate-change/161370/> (Accessed on 03/06/2024)

Enhancing Climate Resilience in Africa for Development

displacement in the continent³⁴. As a result of the severe and growing impacts of climate change in Africa, it has been noted that there is an urgent need to enhance the resilience of African people and economies to climate change in order to foster development in the continent³⁵.

3.0 Enhancing Climate Resilience in Africa: Progress and Setbacks

Climate resilience has been defined as the ability to anticipate, prepare for, and respond to hazardous events, trends, or disturbances related to climate change³⁶. It has also been described as the capacity or ability to anticipate and cope with climate shocks, and to recover from their impacts in a timely and efficient manner³⁷. It can also refer to the capacity to prepare for, respond to, and recover from the impacts of hazardous climatic events while incurring minimal damage to societal wellbeing, the economy and the environment³⁸. Improving climate resilience involves assessing how climate change will create new, or alter current, climate-related risks, and taking steps to better cope with these risks³⁹.

It has been noted that the ideal of climate resilience can be achieved through three independent outcomes⁴⁰. This can be realized through realizing the vision of resilient people and livelihoods where people most vulnerable to climate risks, especially those living in least developed countries and small

³⁴ Ibid

³⁵ United Nations., 'Realizing a Climate-Resilient and Prosperous Africa' Available at <https://www.un.org/en/un-chronicle/realizing-climate-resilient-and-prosperous-africa> (Accessed on 03/06/2024)

³⁶ Center for Climate and Energy Solutions., 'Climate Resilience Portal' Available at <https://www.c2es.org/content/climate-resilience-overview/#:~:text=For%20example%2C%20a%20combination%20of,impacts%20can%20exacerbate%20existing%20inequalities> (Accessed on 03/06/2024)

³⁷ The London School of Economics and Political Science., 'What is the Difference between Climate Change Adaptation and Resilience?' Available at <https://www.lse.ac.uk/granthaminstitute/explainers/what-is-the-difference-between-climate-change-adaptation-and-resilience/> (Accessed on 03/06/2024)

³⁸ Ibid

³⁹ Center for Climate and Energy Solutions., 'Climate Resilience Portal' Op Cit

⁴⁰ United Nations Climate Change., 'Climate Resilience' Available at https://unfccc.int/sites/default/files/resource/ExecSumm_Resilience_0.pdf (Accessed on 03/06/2024)

Enhancing Climate Resilience in Africa for Development

island developing States, are resilient, and able to prosper and thrive⁴¹. Achieving the ideal of resilient people and livelihoods entails fostering climate justice and a just transition for all with no one being left behind⁴². The ideal of climate resilience can also be achieved through resilient businesses and economies where all climate risks are fully understood by all businesses, investors and society⁴³. Further, it can be attained through resilient environmental systems where ecosystems and biodiversity are protected against climate risks including extreme events and disasters as well as long-term changes in climate⁴⁴. Strengthening climate resilience requires a holistic and multi-dimensional approach to enhance individuals', communities', and countries' social, human, natural, physical and financial capacities to cope with and recover from the impacts of climate change⁴⁵.

Enhancing climate resilience is a key priority for all countries. It has been noted that as greenhouse gas emissions continue to rise, climate change will continue to accelerate⁴⁶. Further, it has been observed that even if greenhouse gas emissions were to stop today, climate change will continue to manifest for some time as the Earth's system responds to the warming already underway⁴⁷. It is therefore necessary for all countries to anticipate the impacts of climate change and act now to minimize future economic, environmental, and social risks⁴⁸.

The need to enhance climate resilience for development is set out under the *United Nations Framework Convention on Climate Change* (UNFCCC)⁴⁹. The Convention urges all countries to protect the climate system for present and

⁴¹ Ibid

⁴² Ibid

⁴³ Ibid

⁴⁴ Ibid

⁴⁵ The London School of Economics and Political Science., 'What is the Difference between Climate Change Adaptation and Resilience?' Op Cit

⁴⁶ Center for Climate and Energy Solutions., 'Climate Resilience Portal' Op Cit

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ United Nations Framework Convention on Climate Change., United Nations., 1992., Available at <https://unfccc.int/resource/docs/convkp/conveng.pdf> (Accessed on 04/06/2024)

Enhancing Climate Resilience in Africa for Development

future generations⁵⁰. It seeks to achieve the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system⁵¹. According to UNFCCC, such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner⁵². It sets out commitments by states aimed at fostering climate-resilient development and limiting greenhouse gas emissions in order to combat climate change⁵³. UNFCCC also recognizes the adverse impacts of climate change in developing countries and urges developed countries to support these countries in enhancing climate resilience through approaches such as climate finance and technology development and transfer⁵⁴.

In addition, the *Paris Agreement*⁵⁵, seeks to strengthen the global response to the threat of climate change, in the context of Sustainable Development and efforts to eradicate poverty. It sets out the need to enhance climate resilience and urges all countries to increase their ability to adapt to the adverse impacts of climate change and *foster climate resilience* and low greenhouse gas emissions development, in a manner that does not threaten food production (Emphasis added)⁵⁶. Parties under the Paris Agreement establish the global goal on adaptation of enhancing adaptive capacity, *strengthening resilience* and reducing vulnerability to climate change, with a view to contributing to Sustainable Development (Emphasis added)⁵⁷. The Paris Agreement also urges states to build the resilience of socioeconomic and ecological systems, including through economic diversification and sustainable management of natural resources⁵⁸. It further acknowledges that enhancing the resilience of

⁵⁰ Ibid, Preamble

⁵¹ Ibid

⁵² Ibid

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ United Nations Framework Convention on Climate Change., 'Paris Agreement.' Available at https://unfccc.int/sites/default/files/english_paris_agreement.pdf (Accessed on 03/06/2024)

⁵⁶ Ibid, article 2 (1) (b)

⁵⁷ Ibid, article 7 (1)

⁵⁸ Ibid, article 7 (9) (e)

Enhancing Climate Resilience in Africa for Development

communities, livelihoods, and ecosystems is vital in combating climate change⁵⁹. The Paris Agreement also urges states to fully realize the ideal of technology development and transfer in order to *improve resilience* to climate change and to reduce greenhouse gas emissions (Emphasis added)⁶⁰. Realizing the objectives of the Paris Agreement is therefore vital in enhancing climate resilience for development.

Further, at a continental level, the *African Union Climate Change and Resilient Development Strategy and Action Plan*⁶¹ seeks to achieve the vision of climate-resilient communities and economies as set out in Africa Union's *Agenda 2063*⁶². The strategy sets out the principles, priorities and action areas for enhanced climate cooperation and long term, climate-resilient development in Africa⁶³. It seeks to realize a sustainable, prosperous, equitable and climate-resilient Africa by building the resilience of African communities, ecosystems and economies, and supporting regional adaptation⁶⁴. The Strategy identifies key cross-sectoral opportunities and interventions that are essential for achieving climate-resilient development pathways and accomplishing the SDGs in Africa including transforming food systems, protecting land-based ecosystems, transforming energy systems, transforming mobility and transport, enhancing inclusive, low-emission industrialization, transforming water systems, transforming the blue economy, digital transformation, and building resilient urban centres⁶⁵. It is imperative to implement this Strategy in order to enhance climate resilience in Africa for development.

⁵⁹ Ibid, article 8 (4) (h)

⁶⁰ Ibid, article 10 (1)

⁶¹ African Union Climate Change and Resilient Development Strategy and Action Plan., Available at <https://au.int/sites/default/files/documents/41959-doc-CC Strategy and Action Plan 2022-2032 08 02 23 Single Print Ready.pdf> (Accessed on 04/06/2024)

⁶² Africa Union., 'Agenda 2063: The Africa we Want' Available at <https://au.int/sites/default/files/documents/33126-doc-framework document book.pdf> (Accessed on 04/06/2024)

⁶³ African Union Climate Change and Resilient Development Strategy and Action Plan., Op Cit

⁶⁴ Ibid

⁶⁵ Ibid

Enhancing Climate Resilience in Africa for Development

In addition, the *East African Community Climate Change Policy*⁶⁶ acknowledges that the adverse impacts of climate change are a major challenge to socio-economic development globally⁶⁷. According to the Policy, the African continent including the East African region is particularly vulnerable to impacts of climate change affecting key economic drivers such as water resources, agriculture, energy, transport, health, forestry, wildlife, land and infrastructure, disaster risk management among others⁶⁸. The Policy notes that these impacts include; water stress and scarcity, food insecurity, diminished hydropower generation potential, loss of biodiversity and ecosystem degradation, increased incidence of disease burden, destruction of infrastructure, high costs of disaster management as result of increased frequency and intensity of droughts, floods and landslides⁶⁹. The Policy seeks to strengthen climate resilience within the East African region⁷⁰. It urges member states of the East African Community to institute and implement measures which will improve the adaptive capacity and resilience of the East African region to the negative impacts of climate change⁷¹. These approaches include promoting diversification of economies to reduce overdependence on climate-sensitive sectors⁷²; promoting alternative livelihoods systems amongst most vulnerable communities⁷³; enhancing the adaptive capacities of communities, fragile ecosystems and national economies⁷⁴; and promoting social protection as a tool for disaster risk reduction and climate change adaptation⁷⁵. Implementing these strategies is key in enhancing climate resilience within the East African Community.

⁶⁶ East African Community Climate Change Policy., Available at <https://www.eac.int/environment/climate-change/eac-climate-change-policy-framework> (Accessed on 04/06/2024)

⁶⁷ Ibid

⁶⁸ Ibid

⁶⁹ Ibid

⁷⁰ Ibid

⁷¹ Ibid

⁷² Ibid

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Ibid

Enhancing Climate Resilience in Africa for Development

At a national level, Kenya has an elaborate legal and policy framework aimed at enhancing climate resilience including the *Climate Change Act*⁷⁶, the *National Climate Change Policy*⁷⁷, and a *National Climate Change Action Plan*⁷⁸. However, despite these attempts, the ideal of climate resilience in Africa is yet to be realized.

The negative impacts of climate change continue to directly affect food security and livelihoods in Africa⁷⁹. In addition, adverse effects of climate change including drought, heavy rains, and floods continue to drive migration and displacement in the continent⁸⁰. It has also been noted that climate change is increasing inequalities and poverty rates in Africa⁸¹. According to the United Nations, extreme weather events including more frequent and intense droughts, floods, heatwaves and other climate-induced impacts, including accelerated desertification, coastal erosion, species extinction and habitat loss are wreaking havoc on African economies⁸². As a result, it is imperative for African countries to adopt climate response strategies that foster Sustainable Development⁸³.

4.0 Conclusion

Climate change is a major threat to Sustainable Development in Africa⁸⁴. The impacts of climate change including droughts, floods, heatwaves, desertification, coastal erosion, species extinction and habitat loss are

⁷⁶ Climate Change Act., No. 11 of 2016, Government Printer, Nairobi

⁷⁷ Sessional Paper No. 5 of 2016., 'National Climate Change Framework Policy.' Available at <http://aiap.or.ke/wp-content/uploads/2018/10/Climate-Change-Framework-PolicyMay2017.pdf> (Accessed on 04/06/2024)

⁷⁸ Ministry of Environment, Climate Change and Forestry., 'Draft Strategic Plan: 2023-2027' Available at <https://www.environment.go.ke/wp-content/uploads/2023/05/MoECCF-Strategic-PlanDraft07.05.2023-updated.pdf> (Accessed on 04/06/2024)

⁷⁹ Jacob. D., Weber. T., & Celliers. L., 'Supporting Africa's Development to Increase its Resilience to the Impacts of Climate Change' Op Cit

⁸⁰ Ibid

⁸¹ Ibid

⁸² United Nations., 'Realizing a Climate-Resilient and Prosperous Africa' Op Cit

⁸³ Ibid

⁸⁴ African Development Bank Group., 'Climate Change in Africa' Op Cit

Enhancing Climate Resilience in Africa for Development

wreaking havoc on African economies⁸⁵. Climate change poses systematic risks to African economies, infrastructure investments, water and food systems, public health, agriculture, and livelihoods, threatening to undo the continent's modest development gains and slip it into higher levels of extreme poverty⁸⁶. Further, in light of Africa's high exposure, fragility and low adaptive capacity, the effects of climate change are expected to be felt more severely in the coming years⁸⁷. It is therefore vital to enhance climate resilience in Africa for development.

Investments in Africa's infrastructure is a key strategy in making people and communities more resilient to the threats posed by climate change⁸⁸. It has been pointed out that infrastructure can drive climate-resilience and development through providing direct adaptation or resilience benefits that protect from climate hazards⁸⁹; through driving economic development that underpins people's capacity and resources to adapt⁹⁰; and through contributing to macro-economic resilience by facilitating trade or reducing dependence on imports⁹¹. Enhancing Africa's infrastructure is therefore vital for climate resilience and continued socio-economic development in the continent⁹².

⁸⁵ United Nations., 'Realizing a Climate-Resilient and Prosperous Africa' Op Cit

⁸⁶ African Development Bank Group., 'Climate Change in Africa' Op Cit

⁸⁷ World Meteorological Organization., 'Africa Suffers Disproportionately from Climate Change' Op Cit

⁸⁸ Private Infrastructure Development Group., 'Africa Climate Solutions: Investing in Infrastructure for Climate Resilience across Africa' Available at https://www.exeter.ac.uk/v8media/research/gsi/PIDG-Exeter_Report_2023.pdf (Accessed on 04/06/2024)

⁸⁹ Ibid

⁹⁰ Ibid

⁹¹ Ibid

⁹² World Bank Group., 'Enhancing the Climate Resilience of Africa's Infrastructure' Available at

<https://www.worldbank.org/content/dam/Worldbank/Feature%20Story/Africa/Conference%20Edition%20Enhancing%20Africas%20Infrastructure.pdf> (Accessed on 04/06/2024)

Enhancing Climate Resilience in Africa for Development

It is also necessary to invest in disaster risk reduction in Africa⁹³. Climate change is intensifying natural disasters in Africa such as floods, droughts, cyclones, earthquakes, landslides with increased economic losses and mortalities⁹⁴. Disaster Risk Reduction entails reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and environment and improved preparedness for adverse events⁹⁵. Disaster Risk Reduction is a key approach in enhancing climate resilience. It has been noted that climate-smart disaster risk reduction saves lives by limiting the amount of risk people face and the level of damage a crisis might cause⁹⁶. It can help communities effectively prepare for and cope with natural hazards⁹⁷. Strengthening Disaster Risk Reduction is therefore vital in enhancing climate resilience in Africa for development.

It is also necessary for African countries to foster climate-resilient development strategies by transforming key sectors including food systems, energy systems, transport, industrialization, water systems, and the blue economy by enhancing their resilience and adaptive capacity to climate change⁹⁸. Further, unlocking climate finance is vital in strengthening climate

⁹³ Muigua. K., '(Re) Imagining Effective Disaster Prevention and Management for Development in Africa' Available at <https://kmco.co.ke/wp-content/uploads/2024/04/Re-Imagining-Effective-Disaster-Prevention-and-Management-for-Development-in-Africa.pdf> (Accessed on 04/06/2024)

⁹⁴ African Union., 'Catalysing Risk-Informed Early Action in Africa: Investing in Multi-Hazard Early Warning Systems to Strengthen Resilience to Disaster Risk' Available at https://au.int/sites/default/files/documents/42530-doc-AUC_DRR_Policy_Brief_2.pdf (Accessed on 04/06/2024)

⁹⁵ Ibid

⁹⁶ IFRC., 'Climate-Smart Disaster Risk Reduction' Available at <https://www.ifrc.org/our-work/disasters-climate-and-crises/climate-smart-disaster-risk-reduction#:~:text=Climate%2Dsmart%20disaster%20risk%20reduction%20saves%20lives%20by%20limiting%20the,and%20cope%20with%20natural%20hazards.> (Accessed on 04/06/2024)

⁹⁷ Ibid

⁹⁸ African Union Climate Change and Resilient Development Strategy and Action Plan., Op Cit

Enhancing Climate Resilience in Africa for Development

resilience in Africa⁹⁹. Access to climate finance can enhance climate resilience in Africa through investments in human, technical, and institutional capacity of the continent towards confronting climate change¹⁰⁰.

Africa has the ability to manage the effects of climate change and build resilience. Enhancing climate resilience in Africa for development is therefore a goal that can be unlocked.

⁹⁹ Ibid

¹⁰⁰ Ibid

Accelerating Energy Transition in East Africa

Abstract

Energy is a fundamental human right and a prerequisite for the attainment of almost all socio-economic rights. Access to energy can spur economic development and poverty eradication. However, despite the importance of energy access, most people especially in Sub-Saharan Africa lack access to affordable, reliable, and modern energy services. The energy sector is also the main cause of climate change due to burning of fossil fuels such as coal, oil and gas. Accelerating energy transition is crucial in addressing these challenges. This paper discusses the need to accelerate energy transition in East Africa. It conceptualizes energy transition and highlights its key components. The paper further examines the progress made towards achieving energy transition in East Africa. It also interrogates the prospects and challenges facing energy transition in East Africa and suggests measures towards accelerating this agenda.

1.0 Introduction

Energy is a fundamental human need and the driving force of human development¹. It is a basic human need that has been equated to food, air and water². Energy has the potential to spur economic development and poverty eradication³. It has correctly been noted that energy can accelerate the attainment of socioeconomic rights such as the right to food, the right to education, the right to health, the right to water among other fundamental human rights⁴. According to the International Energy Agency (IEA), modern energy services are crucial to human well-being and to a country's economic

¹ Guruswamy. L, 'Energy Justice and Sustainable Development' *Colorado Journal of International Environmental Law & Policy*, Volume 21, No. 2.

² Goldthau. A & Sovacool. B., 'The Uniqueness of the Energy Security, Justice and Governance Problem' *Energy Policy*, 41 (2012) 232-240

³ Muigua. K., 'Access to Energy as a Constitutional Right in Kenya', available at <http://kmco.co.ke/wp-content/uploads/2018/08/Access-to-Energy-as-a-Constitutional-Right-inKenya-NOVEMBER-2013.pdf> (Accessed on 14/03/2024)

⁴ The World Bank, 'Sustainable Development Goal on Energy (SDG7) and the World Bank Group, available at <https://www.worldbank.org/en/topic/energy/brief/sustainable-development-goal-on-energy-sdg7-and-the-world-bank-group> (Accessed on 14/03/2024)

Accelerating Energy Transition in East Africa

development⁵. IEA notes that access to modern energy is essential for the provision of clean water, sanitation and healthcare and for the provision of reliable and efficient lighting, heating, cooking, mechanical power, transport and telecommunications services which are vital elements of economic development⁶. Further, the United Nations asserts that our everyday life depends on reliable and affordable energy⁷. It further points out that a well-established energy system supports all sectors: from businesses, medicine and education to agriculture, infrastructure, communications and high technology⁸.

Due to its importance, access to energy has been described as a fundamental human right⁹. According to IEA, energy access entails a household having reliable and affordable access to both clean cooking facilities and to electricity, which is enough to supply a basic bundle of energy services initially, and then an increasing level of electricity over time to reach the regional average¹⁰. Energy access therefore entails the availability of affordable, reliable and modern energy services¹¹. Access to energy drives industrialization, boosts productivity and economic growth, spurs human development, and is crucial to achieve almost all of the United Nations Sustainable Development Goals (SDGs)¹². Further, access to energy has been described as a pre-condition for socio-economic development due to its potential to spur economic development and poverty eradication¹³. On the other hand, lack of access to

⁵ International Energy Agency., 'Defining Energy Access: 2020 Methodology' Available at <https://www.iea.org/articles/defining-energy-access-2020-methodology> (Accessed on 14/03/2024)

⁶ Ibid

⁷ United Nations., 'Affordable and Clean Energy' Available at <https://www.un.org/sustainabledevelopment/energy/> (Accessed on 14/03/2024)

⁸ Ibid

⁹ Muigua. K., 'Access to Energy as a Constitutional Right in Kenya', Op Cit

¹⁰ International Energy Agency., 'Defining Energy Access: 2020 Methodology' Op Cit

¹¹ Ibid

¹² Muigua. K., 'Fostering Energy Justice in Africa' Available at <https://kmco.co.ke/wp-content/uploads/2023/11/Fostering-Energy-Justice-in-Africa.pdf> (Accessed on 14/03/2024)

¹³ United Nations Development Programme., 'Energy Access.' Available at <https://www.undp.org/energy/our-work-areas/energy-access> (Accessed on 14/03/2024)

Accelerating Energy Transition in East Africa

energy contributes to poverty and deprivation and can contribute to economic decline¹⁴. It has been argued that no country in the recent past has been able to spur economic development and substantially reduce poverty levels without ensuring access to energy¹⁵.

Several challenges hinder access to energy at the global, regional, and national levels¹⁶. It has been noted that many people across the world lack access to clean energy sources such as electricity and use polluting, inefficient fuels such as firewood for household chores such as cooking¹⁷. This challenge is especially prevalent in Sub-Saharan Africa where majority of the population lack access to clean and affordable energy and depend on traditional fuels¹⁸. According to the IEA, Sub-Saharan Africa which includes the East African Region accounts for approximately 80 per cent of people lacking electricity access¹⁹. Access to energy therefore represents one of Africa's greatest obstacles to social and economic development²⁰. In addition, the energy sector is by far the main contributor to the global threat of climate change and accounts for approximately 73 percent of human caused greenhouse gases²¹. It has been noted that for many decades, fossil fuels such as coal, oil and gas

¹⁴ Bradbrook. A., 'Access to Energy Services in a Human Rights Framework.' Available at

https://www.un.org/esa/sustdev/sdissues/energy/op/parliamentarian_forum/b_radbroom_hr.pdf (Accessed on 14/03/2024)

¹⁵ Yoshida. T., & Zusman. E., 'Achieving the Multiple Benefits of a Sustainable Development Goal for Energy' Available at https://iges.or.jp/en/publication_documents/pub/bookchapter/en/4934/08_Ch8_Achieving_the_SDG (Accessed on 14/03/2024)

¹⁶ Muigua. K., 'Muigua. K., 'Towards Energy Justice in Kenya.' Available at <http://kmco.co.ke/wpcontent/uploads/2020/02/Towards-Energy-Justice-in-Kenya-00000005.pdf> (Accessed on 14/03/2024)

¹⁷ Ibid

¹⁸ Bildirici. M & Ozaksoy.F., 'Woody Biomass Energy Consumption and Economic Growth in SubSaharan Africa' *Procedia Economics and Finance* 38 (2016) 287 – 293

¹⁹ International Energy Agency., 'Africa Energy Outlook 2022' Available at <https://iea.blob.core.windows.net/assets/220b2862-33a6-47bd-81e900e586f4d384/AfricaEnergyOutlook2022.pdf> (Accessed on 14/03/2024)

²⁰ Hafner. M., 'The Challenge of Energy Access in Africa.' Available at https://link.springer.com/chapter/10.1007/978-3-319-92219-5_1 (Accessed on 14/03/2024)

²¹ United Nations., 'Affordable and Clean Energy' Op Cit

Accelerating Energy Transition in East Africa

have been major sources of electricity production, but burning these fuels produces large amounts of greenhouse gases which cause climate change and have harmful impacts on people's well-being and the environment²². In light of these concerns, it has been correctly noted that there is need accelerate energy transition at all levels²³.

This paper discusses the need to accelerate energy transition in East Africa. It conceptualizes energy transition and highlights its key components. The paper further examines the progress made towards achieving energy transition in East Africa. It also interrogates the prospects and challenges facing energy transition in East Africa and suggests measures towards accelerating this agenda.

2.0 Conceptualizing Energy Transition

Energy transition has been defined as the shift in the global energy sector from fossil-based systems of energy production and consumption including oil, natural gas and coal to renewable energy sources like wind and solar²⁴. In addition, it has been noted that the energy transition concerns the shift from fossil fuels to renewable energy sources in an effort to reduce carbon dioxide emissions²⁵. Energy transition therefore involves the long-term structural change to energy systems from fossil-fuel based systems to cleaner and sustainable systems such as renewable sources of energy²⁶. It is a continuing process requiring long-term energy strategies and planning, with a country-

²² Ibid

²³ Muigua. K., 'Accelerating Energy Transition in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2023/09/Accelerating-Energy-Transition-in-Kenya.pdf> (Accessed on 14/03/2024)

²⁴ S & P Global., 'What is Energy Transition?' Available at <https://www.spglobal.com/en/researchinsights/articles/what-is-energy-transition> (Accessed on 14/03/2024)

²⁵ Deloitte., 'The Energy Transition Explained.' Available at <https://www2.deloitte.com/nl/nl/pages/energy-resources-industrials/articles/future-of-energyfaq.html> (Accessed on 14/03/2024)

²⁶ Nalule. V., & Leal-Arcas. R., 'Energy Decentralization and Energy Transition in Poland.' *Electricity Decentralization in the European Union* 2nd Edition., 2023 pp 209-240

Accelerating Energy Transition in East Africa

tailored focus on applying appropriated energy technologies to reach net-zero emissions²⁷.

It has been noted that the idea of energy transition addresses how humankind uses energy for its needs and reconciles it with environmental, social, environmental, and economic interests²⁸. Energy transition is not only concerned about the technology change from fossil fuels to renewables but also focuses on the social, economic, and environmental aspects of the development of clean energies²⁹. As a result, it has been posited that energy transition should entail an integrated, people-centred approach, in which all available energy technologies play their important role in transforming local and national energy systems³⁰. Further, there is need for a just energy transition which integrates increased action on governance, social protection and gender equality as nexus area to technological innovation and financial requirements³¹.

It has been noted that several factors may stimulate the transition from reliance on one major energy resource to another³². These factors include the depletion or shortage of local or regional energy supplies and resources³³; increase in costs of one energy source followed by a corresponding decrease in the cost of another energy sources³⁴; adverse environmental and health impacts of one energy source such as air and water pollution creating the desirability of alternative sources of energy³⁵; and technological change and innovation resulting in more efficient sources of energy³⁶. Energy transition is therefore

²⁷ United Nations Development Programme., 'Energy Transition' Available at <https://www.undp.org/energy/our-work-areas/energy-transition#:~:text=Annual%20energy%2Drelated%20CO2%20emissions,90%25%20of%20the%20necessary%20reduction.> (Accessed on 14/03/2024)

²⁸ Ibid

²⁹ Ibid

³⁰ Ibid

³¹ Ibid

³² Solomon. B., & Krishna. K., 'The Coming Sustainable Energy Transition: History, Strategies, and Outlook.' Energy Policy 39 (2011) 7422-7431

³³ ibid

³⁴ ibid

³⁵ ibid

³⁶ ibid

Accelerating Energy Transition in East Africa

usually determined by factors such as the availability of energy resources, the costs of obtaining energy resources as well as their usefulness, and in recent years, by efforts to protect the climate³⁷.

The need for energy transition has in the recent past been necessitated by threat of climate change and increasing scarcity and expense of petroleum³⁸. As a result, the world community is compelled to transition to sustainable energy systems as well as to better manage energy demand and supply³⁹. According to IEA, energy transition offers many benefits including new industrial opportunities and jobs, greater energy security, cleaner air, universal energy access and a safer climate for everyone⁴⁰. It is therefore necessary to accelerate energy transition for prosperity and a safer planet.

3.0 Legal Framework on Energy Transition

The need for energy transition at the global level is enshrined under the *United Nations Framework Convention on Climate Change (UNFCCC)*⁴¹. According to UNFCCC, countries whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels and associated energy intensive products are highly vulnerable to climate change⁴². It urges all countries and especially developing countries which are still highly dependent on fossil fuels to explore the possibilities for achieving greater energy efficiency and for controlling greenhouse gas emissions in general, including through the application of new technologies in the energy sector such as *renewable energy* on terms which make

³⁷ Nalule. V., & Leal-Arcas. R., 'Energy Decentralization and Energy Transition in Poland.' Op Cit

³⁸ Solomon. B., & Krishna. K., 'The Coming Sustainable Energy Transition: History, Strategies, and Outlook.' Op Cit

³⁹ *ibid*

⁴⁰ International Energy Agency., 'The Energy World is Set to Change Significantly by 2030, Based on Today's Policy Settings Alone' Available at <https://www.iea.org/news/the-energy-world-is-set-to-change-significantly-by-2030-based-on-today-s-policy-settings-alone> (Accessed on 14/03/2024)

⁴¹ United Nations Framework Convention on Climate Change., United Nations 1992, Available at https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/con_veng.pdf (Accessed on 14/03/2024)

⁴² *Ibid*, article 4

Accelerating Energy Transition in East Africa

such an application economically and socially beneficial⁴³. UNFCCC therefore sets the global agenda for energy transition as part of the efforts towards confronting climate change.

The *Paris Agreement*⁴⁴ also embraces the idea of energy transition. This Agreement seeks to strengthen the global response to the threat of climate change, in the context of Sustainable Development and efforts to eradicate poverty, including by holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change⁴⁵. In order to achieve its objectives, the Paris Agreement acknowledges the need to promote *universal access to sustainable energy* in developing countries, in particular in Africa, through the enhanced deployment of *renewable energy*⁴⁶. The Paris Agreement therefore envisages the transition from fossil fuels to clean energy sources including renewable energy in order to reduce global greenhouse gas emissions and strengthen the global response on climate change⁴⁷. Implementation of the Paris Agreement is necessary in accelerating global energy transition and shifting towards a net-zero emissions world⁴⁸.

Global energy transition is also envisioned under the United Nations *2030 agenda for Sustainable Development*⁴⁹. SDG 7 seeks to ensure access to *affordable, reliable, sustainable and modern energy for all*⁵⁰. Among the targets under SDG 7 include ensuring universal access to affordable, reliable and modern energy

⁴³ Ibid

⁴⁴ Paris Agreement, United Nations, 2015., Available at https://unfccc.int/sites/default/files/english_paris_agreement.pdf (Accessed on 14/03/2024)

⁴⁵ *ibid*, article 2 (1) (a)

⁴⁶ *ibid*, Preamble

⁴⁷ *ibid*

⁴⁸ United Nations., 'The Paris Agreement.' Available at <https://www.un.org/en/climatechange/parisagreement> (Accessed on 14/03/2024)

⁴⁹ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 14/03/2024)

⁵⁰ *ibid*

Accelerating Energy Transition in East Africa

services⁵¹; substantially increasing the share of renewable energy in the global energy mix⁵²; doubling the global rate of improvement in energy efficiency⁵³; and enhancing international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology⁵⁴. It has been noted that achieving the targets under SDG 7 means investing in clean energy sources such as solar, wind and thermal⁵⁵. It also calls for expanding infrastructure and upgrading technology to provide clean energy in all developing countries which is a crucial goal that can both encourage economic development and environmental sustainability⁵⁶. Realizing the targets under SDG 7 is therefore crucial in accelerating energy transition.

At the continental level, Africa Union's *Agenda 2063*⁵⁷ sets out the need for energy transition in Africa. According to *Agenda 2063*, the Continent faces enormous energy challenges which include low generation capacity and efficiency, high costs, unstable and unreliable energy supplies, low access to modern energy, insufficient energy infrastructure, and lack of institutional and technical capacity to harness huge resources partly due to dependence on fossil fuels for generation of electricity⁵⁸. Among the aspirations under *Agenda 2063* is to create environmentally sustainable and climate resilient economies and communities in Africa through measures such as the adoption of renewable sources of energy⁵⁹. *Agenda 2063* portrays the vision of a Continent where renewable energy including wind, solar, hydro, bioenergy, ocean tidal waves, geothermal and other renewables will claim more than half of the energy consumption for households, businesses and organizations⁶⁰. It is

⁵¹ *ibid*

⁵² *ibid*

⁵³ *ibid*

⁵⁴ *Ibid*

⁵⁵ United Nations., 'Affordable and Clean Energy' Op Cit

⁵⁶ *Ibid*

⁵⁷ Africa Union., 'Agenda 2063: The Africa we Want.' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 14/03/2024)

⁵⁸ *Ibid*

⁵⁹ *Ibid*

⁶⁰ *Ibid*

Accelerating Energy Transition in East Africa

necessary to implement the aspirations of Agenda 2063 in order to realize energy transition in Africa.

The *East African Community Climate Change Policy*⁶¹ also seeks to foster energy transition with the East African Community (EAC). The policy acknowledges that energy is the driver of social and economic development in the EAC region⁶². It also notes that most of the EAC partner states depend on imported fossil based fuel (oil)⁶³. The Policy further acknowledges that the use of fossil oil is unsustainable due to its high emission factor that is a major contributor to global warming and climate change⁶⁴. As a result, the Policy seeks to increase the *availability and accessibility of sustainable, reliable and affordable renewable energy resources* in the EAC and urges member states to embrace measures such as scaling up investment in renewable energy technologies to provide access to affordable cleaner energy; improving efficiency in use of biomass energy especially for rural communities; developing appropriate alternative energy sources, policies and measures to increase energy efficiency; devising a precautionary approach to the development of bio-fuels for mitigation and energy in view of food security issues; and improving energy efficiency and promoting clean energy technologies including hydropower, solar and wind⁶⁵. Implementing the vision of this policy can therefore accelerate energy transition in East Africa.

At a national level, the *Energy Act*⁶⁶ of Kenya embraces the transition from fossil fuels to clean energy sources including renewable energy. The Act defines renewable energy as non-fossil energy generated from natural non-depleting resources including but not limited to solar energy, wind energy, biomass energy, biological waste energy, hydro energy, geothermal energy and ocean and tidal energy⁶⁷. The Energy Act urges the state to develop,

⁶¹ East African Community., 'EAC Climate Change Policy Framework.' Available at <https://www.eac.int/environment/climate-change/eac-climate-change-policy-framework> (Accessed on 14/03/2024)

⁶² Ibid

⁶³ Ibid

⁶⁴ Ibid

⁶⁵ Ibid

⁶⁶ Energy Act., No. 1 of 2019., Laws of Kenya., Government Printer, Nairobi

⁶⁷ Ibid, S 2

Accelerating Energy Transition in East Africa

promote and manage the use of renewable sources of energy in Kenya and to this end it establishes the Rural Electrification and Renewable Energy Corporation which is tasked to fulfill that mandate⁶⁸. In addition, the *National Energy Policy*⁶⁹ identifies key challenges in the energy sector in Kenya including reliance on fossil fuels which results in high electricity costs and environmental degradation as exemplified by increased local air pollution and acid precipitation from ever growing fossil fuel combustion⁷⁰. The Policy also acknowledges that depletion of energy resources including fossil fuels is a major concern in the energy sector in Kenya⁷¹. It urges the country to transition towards renewable sources of energy⁷². The Policy correctly notes that renewable energy which derived from the naturally occurring resources including geothermal, hydro, solar, wind, ocean energy, biomass, biofuels, biogas and municipal waste can supply the country's energy needs and those of future generations in a sustainable way if effectively harnessed through careful planning and advanced technology⁷³. Further, the Policy asserts that renewable energy has potential to enhance energy security, mitigate climate change, generate income, create employment and generate foreign exchange savings⁷⁴. The *Climate Change Act*⁷⁵ of Kenya also requires the state to embrace climate change response measures and actions such as enhancing energy conservation, efficiency and use of renewable energy in industrial, commercial, transport, domestic and other uses in order to strengthen the country's response to climate change⁷⁶. There is need to accelerate energy transition in Kenya in order to reap from the immense opportunities offered by clean sources of energy including renewable energy.

⁶⁸ Ibid, S 43 & 44

⁶⁹ Ministry of Energy., 'National Energy Policy.' Available at https://kplc.co.ke/img/full/BL4PdOqKtxFT_National%20Energy%20Policy%20October%20%202018.pdf (Accessed on 14/03/2024)

⁷⁰ Ibid

⁷¹ Ibid

⁷² Ibid

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Climate Change Act., No. 11 of 2016., Laws of Kenya., Government Printer, Nairobi

⁷⁶ Ibid, S 13 (3) (j)

4.0 Energy Transition in East Africa: Progress and Challenges

There has been some progress towards energy transition in East Africa. It has been noted that the greater Horn of Africa's region's power sector has doubled its output over the past decade, and is one of the world's most renewable systems today, with over eight five per cent of generation coming from renewables⁷⁷. Further, large hydropower projects in countries including Ethiopia, Sudan, and Kenya dominate the power mix today⁷⁸. According to IEA, rates of access to electricity in the greater Horn of Africa have improved considerably since 2000⁷⁹. It points out that then, one in ten people had access to electricity, whereas today, it is one in two, which is comparable to the sub-Saharan Africa average (excluding South Africa)⁸⁰. It has also been observed that East African countries including Kenya and Rwanda are on track to achieve full universal access to affordable electricity by 2030, offering success stories other countries can follow⁸¹.

East African Countries are also undertaking to transition their energy sectors in their climate change commitments. For example, Kenya in its updated Nationally Determined Contribution (NDC) aims to foster a low carbon, climate resilient development pathway through measures such as enhancing access to clean, efficient and sustainable energy technologies to reduce over-reliance on fossil and non-sustainable biomass fuels⁸². The NDC acknowledges that Kenya has abundant renewable energy resources such as geothermal, solar, wind and hydro for electricity generation which need to be developed in order to strengthen the country's response to climate change⁸³. Further,

⁷⁷ International Energy Agency., 'Clean Energy Transitions in the Greater Horn of Africa' Available at <https://www.iea.org/reports/clean-energy-transitions-in-the-greater-horn-of-africa/executive-summary> (Accessed on 15/03/2024)

⁷⁸ Ibid

⁷⁹ Ibid

⁸⁰ Ibid

⁸¹ International Energy Agency., 'Africa Energy Outlook 2022' Available at <https://iea.blob.core.windows.net/assets/220b2862-33a6-47bd-81e900e586f4d384/AfricaEnergyOutlook2022.pdf> (Accessed on 15/03/2024)

⁸² Republic of Kenya., 'Updated Nationally Determined Contribution' Available at <https://unfccc.int/sites/default/files/NDC/2022-06/Kenya%27s%20First%20NDC%2028updated%20version%29.pdf> (Accessed on 15/03/2024)

⁸³ Ibid

Accelerating Energy Transition in East Africa

Uganda in its updated NDC seeks to develop and promote a clean and resilient energy system⁸⁴. Under the updated NDC, Uganda commits to achieve a climate-resilient energy sector through measures such as improving access and utilization of electricity from sustainable sources; promoting use of renewable energy sources and energy efficient technologies; and increasing access to clean energy cooking technologies⁸⁵. It is necessary to achieve such targets in order to accelerate energy transition in East Africa.

Despite the foregoing efforts, it has been noted that there is still a long way to go to achieve universal electricity access in the greater Horn of Africa, with half its population still lacking access⁸⁶. Further, disparities among countries in electricity access are wide⁸⁷. For example, Kenya has an access rate of nearly eighty per cent, Eritrea and Ethiopia have access rates of fifty per cent, while South Sudan has an access rate of only ten per cent⁸⁸. Further, most people in East Africa and the greater Horn of Africa region rely on traditional cooking fuels, with few countries having national clean cooking rates exceeding ten per cent⁸⁹. In addition, it has been noted that frequent price spikes in liquefied petroleum gas (LPG) are pushing many households to return to cooking with polluting fuels like charcoal or other gathered traditional biomass⁹⁰.

Despite these challenges, there are immense opportunities for energy transition in East Africa. The region has massive yet under-utilised potential for solar, wind, and geothermal energy⁹¹. Further, it has been pointed out that in East Africa, solar irradiation levels are high due to proximity to the equator, wind speeds are some of the strongest on the continent, hydropower resources are plentiful and the Great Rift Valley is a promising source for geothermal

⁸⁴ Republic of Uganda., 'Updated Nationally Determined Contribution' Available at https://unfccc.int/sites/default/files/NDC/2022-09/Updated%20NDC%20_Uganda_2022%20Final.pdf (Accessed on 15/03/2024)

⁸⁵ Ibid

⁸⁶ International Energy Agency., 'Clean Energy Transitions in the Greater Horn of Africa' Op Cit

⁸⁷ Ibid

⁸⁸ Ibid

⁸⁹ International Energy Agency., 'Africa Energy Outlook 2022' Op Cit

⁹⁰ Ibid

⁹¹ International Energy Agency., 'Clean Energy Transitions in the Greater Horn of Africa' Op Cit

Accelerating Energy Transition in East Africa

power⁹². It is therefore necessary to effectively harness these sources of energy in order to accelerate energy transition in East Africa.

5.0 Way Forward

In order to accelerate energy transition in East Africa, there is need for continuous adoption and investments in renewable sources of energy such as wind, solar, hydropower, geothermal and tidal energy⁹³. The region has an abundance of renewable sources of energy including solar, wind, hydropower, and geothermal energy⁹⁴. The economic, societal and environmental benefits of renewable sources of energy are numerous⁹⁵. These sources of energy are available in abundance, cheaper and are a healthier option for people and the planet⁹⁶. In addition, generating renewable energy creates far lower emissions than burning fossil fuels which is very vital in confronting climate change⁹⁷. Transitioning from fossil fuels, which currently account for the lion's share of global greenhouse gas emissions, to renewable energy is key to addressing the climate crisis in East Africa and across the globe⁹⁸. It is therefore necessary to embrace renewable energy in East Africa. Despite the vast potential of renewable energy in East Africa, it has been noted that current investments are insufficient to meet the region's energy access needs⁹⁹. It is therefore necessary to enhance public and private investments in

⁹² Gordon. E., 'The Politics of Renewable Energy in East Africa' Available at <https://www.oxfordenergy.org/publications/politics-renewable-energy-east-africa/> (Accessed on 15/03/2024)

⁹³ Muigua. K., 'Accelerating Energy Transition in Kenya' Op Cit

⁹⁴ Ibid

⁹⁵ Ibid

⁹⁶ United Nations., 'Climate Action.' Available at <https://www.un.org/en/climatechange/howcommunities-are-embracing-renewable-energy> (Accessed on 15/03/2024)

⁹⁷ United Nations., 'What is Renewable Energy?.' Available at <https://www.un.org/en/climatechange/what-is-renewable-energy> (Accessed on 15/03/2024)

⁹⁸ Ibid

⁹⁹ Organisation for Economic Co-operation and Development., 'Investing in Renewable Energies for East Africa's Sustainable Development' Available at <https://www.oecd-ilibrary.org/sites/4479950d-en/index.html?itemId=/content/component/4479950d-en#:~:text=In%202021%2C%20renewable%20energy%20thus,bioenergy%2C%20wind%20and%20solar%20power.> (Accessed on 15/03/2024)

Accelerating Energy Transition in East Africa

renewable energy in order to accelerate energy transition in East Africa¹⁰⁰. Further, it is important to strengthen local financial institutions and instruments in order to catalyse resources for renewable energy projects¹⁰¹.

In addition, it is vital to enhance access to electricity in East Africa¹⁰². It has been noted that nearly half of the population in the region lacks access to electricity¹⁰³. Lack of electricity can have serious consequences for people's health and livelihoods in East Africa¹⁰⁴. For example, food cannot be kept fresh in refrigerators while hospitals that lack electricity cannot power medical devices and to refrigerate vaccines¹⁰⁵. It also impacts learning¹⁰⁶. Lack of access to electricity often results in households and institutions relying on generators which pollute the environment and can be costly to run¹⁰⁷. It is therefore necessary to enhance access to electricity in the region through measures such as rural electrification programmes since a large majority of the population in East Africa lives in rural areas¹⁰⁸.

Further, in order to realize energy transition in East Africa, there is need to enhance energy efficiency and reliability¹⁰⁹. The energy sector in the region is crippled with unreliable electricity supply that often results in frequent power

¹⁰⁰ Ibid

¹⁰¹ Ibid

¹⁰² International Energy Agency., 'Clean Energy Transitions in the Greater Horn of Africa' Op Cit

¹⁰³ Ibid

¹⁰⁴ AFD., 'Boosting Access to Renewable Energy Across East Africa' Available at <https://www.afd.fr/en/actualites/boosting-access-renewable-energy-across-east-africa> (Accessed on 15/03/2024)

¹⁰⁵ Ibid

¹⁰⁶ Ibid

¹⁰⁷ Ibid

¹⁰⁸ Hansen. J.M., & Xydis. G., 'Rural Electrification in Kenya: A Useful Case for Remote Areas in Sub-Saharan Africa' *Energy Efficiency*, Volume 13, pp 257-272, (2020)

¹⁰⁹ Muigua. K., 'Delivering Clean and Affordable Energy for All' Available at <https://kmco.co.ke/wp-content/uploads/2021/05/Delivering-Clean-and-Affordable-Energy-for-All-Kariuki-Muigua-Ph.D-24th-April-2021-1.pdf> (Accessed on 15/03/2024)

Accelerating Energy Transition in East Africa

cuts which last for days in some areas¹¹⁰. Such a situation forces most people to resort to alternative sources of energy including bioenergy and generators that are powered by oil products therefore polluting the environment and contributing to the threat of climate change¹¹¹. According to IEA, providing access to electricity is essential, but access has to bring with it a reliable supply of electricity if households, businesses and public services are to reap the full benefits¹¹². Therefore, in order to fully realize energy transition in East Africa, it is vital to ensure efficiency and reliability.

It has also been noted that energy transition in East Africa can only be realized with enhanced access to clean cooking facilities¹¹³. Access to clean cooking remains a major problem in the region with a majority of the population especially that in rural areas relying on traditional fuels¹¹⁴. It has been noted that while some East African countries such as Kenya and Rwanda have made notable progress towards enhancing access to electricity, progress remains slow in promoting clean cooking facilities with bio-energy sources such as charcoal and wood fuel still being the most common source of energy for cooking especially among the rural population¹¹⁵. The environmental concerns raised by these sources of energy calls for the adoption of clean sources of energy for cooking¹¹⁶. Access to clean cooking in East Africa is also hindered by high costs of Liquefied Petroleum Gas which makes this source of energy out for reach for majority of citizens especially the poor rural population¹¹⁷. It has been noted that LPG is able to meet East Africa's clean cooking needs

¹¹⁰ Mutiso. R., & Taneja. J., 'The Seven Major Threats to Kenya's Power Sector.' Available at <https://energyforgrowth.org/article/the-seven-major-threats-to-kenyas-power-sector/> (Accessed on 15/03/2024)

¹¹¹ Ibid

¹¹² Ibid

¹¹³ International Energy Agency., 'Clean Energy Transitions in the Greater Horn of Africa' Op Cit

¹¹⁴ Ibid

¹¹⁵ Ibid

¹¹⁶ Muigua. K., 'Muigua. K., 'Towards Energy Justice in Kenya.'

¹¹⁷ The Exchange., 'East Africa Sets Sights on Becoming a Liquefied Petroleum Gas Hub from 2025' Available at <https://theexchange.africa/investing/liquefied-petroleum-gas-hub/#:~:text=The%20role%20of%20LPG%20in,LPG%20uptake%20across%20East%20Africa.> (Accessed on 15/03/2024)

Accelerating Energy Transition in East Africa

reliably and to scale¹¹⁸. It is therefore necessary for the region to unlock opportunities in driving the uptake of LPG through measures such as expanding the current distribution network, particularly in rural areas; and developing new financing schemes to offset high upfront costs for LPG equipment¹¹⁹.

Finally, there is need to strengthen regional integration in the energy sector in order to accelerate energy transition in East Africa¹²⁰. It has been posited that regional market and infrastructure reforms, coupled with industrial policies and innovative advancements, are preparatory to an increase in the deployment of renewable energy sources in East Africa, and for a subsequent stronger resilience and adaptation to climate change¹²¹. Regional energy systems integration has been identified as a key factor in accelerated development¹²². Energy integration across the borders can be a channel for accelerating progress towards meeting the targets of SDG 7¹²³. It can also be a major step towards relieving a number of the trans-border constraints on the energy sector development and further expand energy trade¹²⁴. It is therefore necessary to deepen regional integration including through regional energy infrastructure projects in order to accelerate energy transition in East Africa¹²⁵.

6.0 Conclusion

Energy transition entails the shift in the global energy sector from fossil-based systems of energy production and consumption including oil, natural gas and coal to renewable energy sources like wind and solar¹²⁶. Energy transition

¹¹⁸ Ibid

¹¹⁹ Ibid

¹²⁰ Organisation for Economic Co-operation and Development., 'Investing in Renewable Energies for East Africa's Sustainable Development' Op Cit

¹²¹ Ibid

¹²² Opeyemi. A et al., 'Regional Integration and Energy Sustainability in Africa: Exploring the Challenges and Prospects for ECOWAS' Available at <https://www.econstor.eu/bitstream/10419/227959/1/1682193527.pdf> (Accessed on 15/03/2024)

¹²³ Ibid

¹²⁴ Ibid

¹²⁵ Organisation for Economic Co-operation and Development., 'Investing in Renewable Energies for East Africa's Sustainable Development' Op Cit

¹²⁶ S & P Global., 'What is Energy Transition?' Op Cit

Accelerating Energy Transition in East Africa

presents many benefits including new industrial opportunities and jobs, greater energy security, cleaner air, universal energy access and a safer climate for everyone¹²⁷. There has been progress towards energy transition in East Africa with majority of the region's power generation coming from renewables¹²⁸. However, the region is yet to fully realize the ideal of energy transition with half its population still lacking access to electricity and clean cooking facilities¹²⁹. It is therefore necessary to accelerate energy transition in East Africa. This can be achieved through continuous adoption and investments in renewable sources of energy such as wind, solar, hydropower, geothermal and tidal energy¹³⁰; enhancing access to electricity in East Africa¹³¹; fostering energy efficiency and reliability¹³²; promoting access to clean cooking facilities¹³³; and strengthening regional integration in the energy sector¹³⁴. Accelerating energy transition in East Africa is an ideal we must achieve for Sustainable Development.

¹²⁷ International Energy Agency., 'The Energy World is Set to Change Significantly by 2030, Based on Today's Policy Settings Alone' Op Cit

¹²⁸ International Energy Agency., 'Clean Energy Transitions in the Greater Horn of Africa' Op Cit

¹²⁹ Ibid

¹³⁰ Muigua. K., 'Accelerating Energy Transition in Kenya' Op Cit

¹³¹ International Energy Agency., 'Clean Energy Transitions in the Greater Horn of Africa' Op Cit

¹³² Muigua. K., 'Delivering Clean and Affordable Energy for All' Op Cit

¹³³ International Energy Agency., 'Clean Energy Transitions in the Greater Horn of Africa' Op Cit

¹³⁴ Organisation for Economic Co-operation and Development., 'Investing in Renewable Energies for East Africa's Sustainable Development' Op Cit

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

Abstract

Renewable sources of energy including wind, solar, hydropower, geothermal and tidal energy are vital in energy transition. They offer numerous economic, societal and environmental benefits. These sources of energy can accelerate progress towards Sustainable Development Goal 7 under the United Nation's 2030 Agenda for Sustainable Development which seeks to ensure access to affordable, reliable, sustainable and modern energy for all. Green hydrogen production is emerging as a key technology in the renewable energy sector. There is huge interest in the development of green hydrogen projects in Africa, building on the continent's vast potential for renewable energy. As the world continues along the path to energy transition, there is an opportunity for Africa, with its rich and largely untapped renewable energy potential, to become a key player in the growing field of green hydrogen. Green hydrogen is therefore a viable option for transforming Africa's energy sector and accelerating energy transition in the continent. This paper critically explores the role of green hydrogen in energy transition in Africa. It argues that the continent has enormous potential for green hydrogen as a clean, modern and sustainable source of energy. The paper examines the progress made towards adopting green hydrogen in Africa. It also discusses some of the challenges hindering the progress towards adopting green hydrogen in Africa. The paper further offers recommendations towards effectively harnessing the potential of green hydrogen in Africa for Sustainable Development.

1.0 Introduction

The energy sector has been identified as the cause of the global threat of climate change and accounts for approximately 73 percent greenhouse gas emissions¹. For many decades, fossil fuels such as coal, oil and gas have been major sources of global energy supply but burning these fuels produces large amounts of greenhouse gases which cause climate change and have harmful impacts on people's well-being and the environment². The United Nations notes that energy is at the heart of the climate challenge and key to confronting

¹ United Nations., 'Affordable and Clean Energy' Available at <https://www.un.org/sustainabledevelopment/energy/> (Accessed on 11/04/2024)

² Ibid

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

this challenge³. It further points out that to avoid the worst impacts of climate change, greenhouse gas emissions need to be reduced by almost half by 2030 and reach net-zero by 2050. In order to achieve this goal, it is necessary to end global reliance on fossil fuels and invest in alternative sources of energy that are clean, accessible, affordable, sustainable, and reliable⁴. As a result, energy transition has become an urgent global concern⁵.

Energy transition has also been described as the global energy sector's shift from fossil-based systems of energy production and consumption including oil, natural gas and coal to renewable energy sources like wind, solar, hydropower, geothermal and tidal energy⁶. It entails shifting from fossil fuels to renewable energy sources in an effort to reduce greenhouse gas emissions towards confronting climate change⁷. Facing global climate change and increasing scarcity and expense of petroleum, the world community is compelled to transition to sustainable energy systems as well as to better manage energy demand and supply⁸. Energy transition is a continuing process requiring long-term energy strategies and planning, with a country-tailored focus on applying appropriated energy technologies to reach net-zero emissions⁹.

³ United Nations., 'Renewable Energy - Powering a Safer Future' Available at <https://www.un.org/en/climatechange/raising-ambition/renewable-energy> (Accessed on 11/04/2024)

⁴ Ibid

⁵ Ibid

⁶ S & P Global., 'What is Energy Transition?' Available at <https://www.spglobal.com/en/researchinsights/articles/what-is-energy-transition> (Accessed on 11/04/2024)

⁷ Deloitte., 'The Energy Transition Explained.' Available at <https://www2.deloitte.com/nl/nl/pages/energy-resources-industrials/articles/future-of-energyfaq.html> (Accessed on 11/04/2024)

⁸ Solomon. B., & Krishna. K., 'The Coming Sustainable Energy Transition: History, Strategies, and Outlook.' *Energy Policy* 39 (2011) 7422-7431

⁹ United Nations Development Programme., 'Energy Transition.' Available at <https://www.undp.org/energy/our-work-areas/energy-transition> (Accessed on 11/04/2024)

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

The United Nations 2030 agenda for Sustainable Development sets out the need for global energy transition¹⁰. Sustainable Development Goal (SDG) 7 under the Agenda seeks to ensure access to affordable, reliable, sustainable and modern energy for all¹¹. Among the targets under SDG 7 include ensuring universal access to affordable, reliable and modern energy services¹²; substantially increasing the share of renewable energy in the global energy mix¹³; doubling the global rate of improvement in energy efficiency¹⁴; and enhancing international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology¹⁵. Achieving the targets under SDG 7 means investing in clean energy sources such as solar, wind, hydropower and thermal energy¹⁶. It also calls for expanding infrastructure and upgrading technology to provide clean energy in all developing countries which is a crucial goal that can both encourage economic development and environmental sustainability¹⁷.

Renewable sources of energy offer numerous economic, societal and environmental benefits¹⁸. These sources of energy are available in abundance, cheaper and are a healthier option for people and the planet¹⁹. In addition, generating renewable energy creates far lower greenhouse gas emissions than

¹⁰ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 11/04/2024)

¹¹ Ibid

¹² Ibid

¹³ Ibid

¹⁴ Ibid

¹⁵ Ibid

¹⁶ United Nations., 'Affordable and Clean Energy' Op Cit

¹⁷ Ibid

¹⁸ Muigua. K., 'Accelerating Energy Transition in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2023/09/Accelerating-Energy-Transition-in-Kenya.pdf> (Accessed on 11/04/2024)

¹⁹ United Nations., 'Climate Action.' Available at <https://www.un.org/en/climatechange/howcommunities-are-embracing-renewable-energy> (Accessed on 11/04/2024)

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

burning fossil fuels²⁰. Therefore, transitioning from fossil fuels, which currently account for the lion's share of global greenhouse gas emissions, to renewable energy is key to addressing the climate crisis²¹.

Green hydrogen production is emerging as a key technology in the renewable energy sector²². It has been observed that there is huge interest in the development of green hydrogen projects in Africa, building on the continent's vast potential for renewable energy²³. As the world continues along the path to energy transition, there is an opportunity for Africa, with its rich and largely untapped renewable energy potential, to become a key player in the growing field of green hydrogen²⁴. Green hydrogen is therefore a viable option for transforming Africa's energy sector and accelerating energy transition in the continent²⁵.

This paper critically explores the role of green hydrogen in energy transition in Africa. It argues that the continent has enormous potential for green hydrogen as a clean, modern and sustainable source of energy. The paper examines the progress made towards adopting green hydrogen in Africa. It also discusses some of the challenges hindering the progress towards adopting green hydrogen in Africa. The paper further offers recommendations towards effectively harnessing the potential of green hydrogen in Africa for Sustainable Development.

²⁰ United Nations., 'What is Renewable Energy?.' Available at <https://www.un.org/en/climatechange/what-is-renewable-energy> (Accessed on 11/04/2024)

²¹ Ibid

²² Radford. C., & Field. A., 'Green Hydrogen in Africa: A Continent of Possibilities?' Available at <https://www.whitecase.com/insight-our-thinking/africa-focus-winter-2023-green-hydrogen> (Accessed on 11/04/2024)

²³ Ibid

²⁴ Ibid

²⁵ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Available at <https://www.un.org/africarenewal/magazine/july-2022/green-hydrogen-viable-option-transforming-africas-energy-sector> (Accessed on 11/04/2024)

2.0 Green Hydrogen and Decarbonization

There is a consensus on the potential of green hydrogen in fostering decarbonization and addressing the adverse impacts of climate change²⁶. Green hydrogen is generated from renewable energy and water²⁷. Green hydrogen has been defined as hydrogen produced by splitting water into hydrogen and oxygen using renewable energy²⁸. Green hydrogen is obtained through a process of electrolysis powered by renewable energies such as wind and solar²⁹. The process of electrolysis involves using an electrical current to break down water molecules into oxygen and hydrogen by electrodes³⁰. The only by-product of the process of obtaining green hydrogen is water therefore resulting in a clean, sustainable system in which zero carbon dioxide emissions are emitted in energy production³¹. It has been noted that green hydrogen, being an energy carrier, would act like a battery that allows the storage of excess energy created by renewables such as solar and wind during their peak cycles³². Green hydrogen therefore reduces the intermittency of renewables that cannot generate power at all hours of the day, ensuring a sufficient and continuous supply of energy³³. This is therefore makes green hydrogen attractive on the frontiers of decarbonization an idea that envisages energy production and usage without contributing to climate change³⁴.

Green hydrogen can therefore be a critical enabler of the global transition to sustainable energy and net zero emissions economies³⁵. According to the

²⁶ United Nations Environment Programme., 'Green Hydrogen Financing' Available at <https://www.unepfi.org/training/training/green-hydrogen-financing/> (Accessed on 12/04/2024)

²⁷ Ibid

²⁸ World Economic Forum., 'What is Green Hydrogen and Why Do We Need It? An Expert Explains' Available at <https://www.weforum.org/agenda/2021/12/what-is-green-hydrogen-expert-explains-benefits/> (Accessed on 12/04/2024)

²⁹ Acciona., 'Green Hydrogen: The Energy of the Future Essential for Decarbonization' Available at https://www.acciona.com/green-hydrogen/?_adin=02021864894 (Accessed on 12/04/2024)

³⁰ Ibid

³¹ Ibid

³² Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

³³ Ibid

³⁴ Ibid

³⁵ World Economic Forum., 'What is Green Hydrogen and Why Do We Need It? An Expert Explains' Op Cit

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

United Nations Environment Programme (UNEP), in order to achieve targets of net zero emissions, increasing the uptake of green hydrogen is vital³⁶. UNEP further notes that green hydrogen which is produced with renewable energy can play a key role in energy transition, as a sustainable, carbon neutral fuel³⁷. In addition, it has been noted that green hydrogen can become a key tool to replace fossil fuels in those sectors that are more difficult to decarbonize therefore contributing to climate action³⁸. It has also been asserted that green hydrogen (hydrogen produced using renewable energy) is expected to play a vital role in the global push to reach net zero, particularly in decarbonizing hard-to-abate sectors³⁹. It is a clean energy carrier that can be used in sectors where reducing carbon emissions is particularly challenging, such as heavy industry and transport⁴⁰. It is estimated that green hydrogen could account for up to 12 per cent of global energy use by 2050, contributing significantly to global decarbonization goals⁴¹. It is therefore necessary to tap into green hydrogen's potential in order to tackle critical energy and environmental challenges⁴².

3.0 Harnessing the Green Hydrogen Potential in Africa: Promises and Pitfalls

Africa has enormous potential for green hydrogen⁴³. This source of energy can be an especially viable proposition for many African countries due to the continent's vast renewable energy potential⁴⁴. The continent is endowed with

³⁶ United Nations Environment Programme., 'Ministers, Mayors, CEOs Announce Huge Push on Clean and Efficient Energy' Available at <https://www.unep.org/news-and-stories/press-release/ministers-mayors-ceos-announce-huge-push-clean-and-efficient-energy> (Accessed on 12/04/2024)

³⁷ Ibid

³⁸ Acciona., 'Green Hydrogen: The Energy of the Future Essential for Decarbonization'

³⁹ Climate Champions., 'Africa's Green Hydrogen Potential' Available at https://climatechampions.unfccc.int/wp-content/uploads/2022/11/AGHA-Green-Hydrogen-Potential-v2_Final.pdf (Accessed on 12/04/2024)

⁴⁰ Benkhlaifa. S-E., 'Africa on Track to Leap into Global Green Hydrogen Landscape' Available at <https://www.business-sweden.com/insights/articles/africa-on-track-to-leap-into-global-green-hydrogen-landscape/> (Accessed on 12/04/2024)

⁴¹ Ibid

⁴² World Economic Forum., 'What is Green Hydrogen and Why Do We Need It? An Expert Explains' Op Cit

⁴³ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

⁴⁴ Climate Champions., 'Africa's Green Hydrogen Potential' Op Cit

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

renewable sources of energy including wind, solar, hydro, bioenergy, ocean and tidal waves, and geothermal among other renewables⁴⁵. The abundance of renewable sources of energy in Africa particularly wind and solar means that the continent could be highly competitive in the production and supply of green hydrogen⁴⁶. It has been noted that many African countries, especially those in the north and south of the continent, are well suited to tap into the green hydrogen potential, as they have complementary load profiles for wind and solar⁴⁷.

Africa is therefore uniquely positioned to become a major producer of green hydrogen⁴⁸. The continent is blessed with some of the world's greatest solar and wind potential, much of which is currently undeveloped⁴⁹. Developing these sources of energy can be vital in harnessing the green hydrogen potential in Africa⁵⁰. It is estimated that Africa could have a green hydrogen production capacity exceeding 50 million tonnes per annum by 2035⁵¹. According to the International Energy Agency, Africa has huge potential to produce green hydrogen using its rich renewable resources⁵².

Green hydrogen is key in addressing Africa's energy challenges⁵³. It has been asserted that approximately 600 million Africans currently lack access to electricity⁵⁴. By adopting green hydrogen, Africa can enhance access to electricity and fuel its rapid population and economic growth sustainably, leveraging its vast natural resources and critical minerals essential for green

⁴⁵ Africa Union., 'Agenda 2063: The Africa we Want.' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 12/04/2024)

⁴⁶ Climate Champions., 'Africa's Green Hydrogen Potential' Op Cit

⁴⁷ Ibid

⁴⁸ Radford. C., & Field. A., 'Green Hydrogen in Africa: A Continent of Possibilities?' Op Cit

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ Ibid

⁵² International Energy Agency., 'Africa Energy Outlook 2022' Available at <https://www.iea.org/reports/africa-energy-outlook-2022/key-findings> (Accessed on 12/04/2024)

⁵³ Ibid

⁵⁴ Ibid

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

hydrogen production, such as platinum⁵⁵. It has been correctly pointed out that for many African countries, the question is not how to reduce their carbon footprint since the continent's overall contribution to global greenhouse gas emissions is already low at less than 4 per cent⁵⁶. Instead, Africa's priority is how to sustainably harness its existing resources to meet the growing demand for energy needed for economic development and to lift citizens out of poverty, while following a sustainable path to a net-zero future⁵⁷. Green hydrogen therefore offers an opportunity for African countries to reduce their reliance on fossil fuels, accelerate access to electricity for millions of citizens and meet their global climate commitments⁵⁸.

There has been progress towards harnessing green hydrogen in Africa. For example, it has been noted that Morocco is advancing its position in the green hydrogen market⁵⁹. Morocco is among the countries recognised for having significant potential to become exporters of green hydrogen, with the ability to supply up to four per cent of the global demand⁶⁰. The country is attracting investors in this field and is home to ambitious projects aimed at making the country a green hydrogen powerhouse⁶¹. It has been observed that Morocco's strategic location in the north of the Continent and commitment to renewable energy, with ambitions to increase the share of total installed capacity to more than 52 per cent by 2030 further bolsters its potential as a major green hydrogen producer and exporter⁶². Namibia is also harnessing its green hydrogen potential⁶³. The country is implementing an estimated 9.4 billion US Dollars green hydrogen project, scheduled to enter production in 2026⁶⁴. The project is expected to generate 2 gigawatts of renewable electricity for regional

⁵⁵ Ibid

⁵⁶ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ Benkhlaifa. S-E., 'Africa on Track to Leap into Global Green Hydrogen Landscape' Op Cit

⁶⁰ Ibid

⁶¹ Ibid

⁶² Ibid

⁶³ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

⁶⁴ Ibid

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

and global markets⁶⁵. South Africa is also adopting green hydrogen. The governments of South Africa, France, Germany, the United Kingdom and the United States of America, along with the European Union have adopted a long-term Just Energy Transition Partnership to support South Africa's decarbonization efforts⁶⁶. The Partnership aims to accelerate the decarbonisation of South Africa's economy, with a focus on the electricity system, to help it achieve the ambitious goals set out in its updated Nationally Determined Contribution emissions goals⁶⁷. It aims to mobilise an initial commitment of 8.5 billion US Dollars for the first phase of financing, through various mechanisms including grants, concessional loans and investments and risk sharing instruments⁶⁸. South Africa's Just Energy Transition Partnership aims to accelerate the country's transition from fossil fuels to a low emission, climate resilient economy by developing new economic opportunities such as green hydrogen⁶⁹.

Kenya is also strengthening its position in the green hydrogen mix⁷⁰. It has been noted that the energy sector plays a crucial role in facilitating the achievement of both domestic objectives outlined in Kenya Vision 2030 and global commitments, such as the United Nation's 2030 Agenda for Sustainable Development and its SDGs, climate accords like the Paris Agreement, and the broader Africa Union's Agenda 2063⁷¹. The development of green hydrogen in Kenya is in line with national objectives, representing innovation and commitment to a greener future amid the changing landscape of sustainable energy solutions⁷². Kenya possesses ample renewable energy resources to support large-scale green hydrogen production without negatively impacting

⁶⁵ Ibid

⁶⁶ European Commission., 'France, Germany, UK, US and EU Launch Ground-Breaking International Just Energy Transition Partnership with South Africa' Available at https://ec.europa.eu/commission/presscorner/detail/en/IP_21_5768 (Accessed on 12/04/2024)

⁶⁷ Ibid

⁶⁸ Ibid

⁶⁹ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

⁷⁰ GH2 Country Portal-Kenya., 'Green Hydrogen Vision' Available at <https://gh2.org/countries/kenya> (Accessed on 12/04/2024)

⁷¹ Ibid

⁷² Ibid

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

access and supply of electricity to its citizens⁷³. The country produces more than 90% of its electricity from hydropower, geothermal energy, solar and wind energy as well as biomass⁷⁴. Therefore as a leading African country in renewable energy with an abundance of the elements required to develop green hydrogen, Kenya is well positioned to harness the immense opportunities presented by green hydrogen⁷⁵. The *Green Hydrogen Strategy and Roadmap for Kenya*⁷⁶ aims to harness the transformative potential of green hydrogen in Kenya as a cross-cutting enabler for the country's development agenda and as a catalyst for sustainable socio-economic development⁷⁷. The Green Hydrogen Strategy and Roadmap for Kenya notes that green hydrogen has potential applications across several important sectors in Kenya, including industry, transport, agriculture, and energy⁷⁸. It further points out that Kenya stands to gain substantial benefits from the successful establishment of a green hydrogen industry including improved balance of payments, food security and resilience, green industrialization and decarbonization, and investment in the country⁷⁹. It is therefore necessary to actualize the Green Hydrogen Strategy and Roadmap for Kenya in order to establish a robust and efficient green hydrogen industry in Kenya.

Africa therefore has huge potential for green hydrogen. Several African countries including Kenya, Morocco, South Africa, Namibia, Egypt and Nigeria are at various stages of integrating green hydrogen into their energy mixes⁸⁰. In addition, the Africa Green Hydrogen Alliance was established in 2022 comprising of Egypt, Kenya, Mauritania, Morocco, Namibia and South Africa which are among key countries leading green hydrogen efforts on the

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Green Hydrogen Strategy and Roadmap for Kenya., Available at https://www.eeas.europa.eu/sites/default/files/documents/2023/GREEN%20HYDROGEN%20EXEC_0209_0.pdf (Accessed on 12/04/2024)

⁷⁷ Ibid

⁷⁸ Ibid

⁷⁹ Ibid

⁸⁰ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

continent⁸¹. The Alliance focuses on public and regulatory policy, capacity building, financing and certification needs to mobilise green hydrogen production for domestic use and export⁸². It has been pointed out that the Alliance will generate new industry awareness, opportunities and action and bring African governments together to mobilise a unified African voice in global climate and energy dialogues⁸³. In addition, it provides a platform for collaboration with the private sector, development finance institutions and civil society towards harnessing the green energy potential in Africa⁸⁴. It is therefore necessary for African countries to continue fostering collaboration in order to unlock the potential of green hydrogen in the continent.

Green hydrogen holds immense promise for Africa. It can enable the continent meet the growing demand for energy needed for economic development and to lift citizens out of poverty, while following a sustainable path to a net-zero future⁸⁵. Green hydrogen is necessary for Africa's decarbonization⁸⁶. Despite its importance, several challenges are likely to hinder the development of green hydrogen in Africa. Among these challenges is the volume of infrastructure development required to support green hydrogen production and export at scale⁸⁷. It has been noted that many parts of Africa that would be ideal for renewable energy generation remain underdeveloped⁸⁸. Substantial investments are therefore needed in transmission infrastructure to connect renewable energy sources to production facilities and export hubs⁸⁹. In addition, it has been observed that African governments will also need to balance their own broader energy strategy against heavy growth of non-dispatchable renewables, which could strain underdeveloped national

⁸¹ Africa Green Hydrogen Alliance., Available at <https://climatechampions.unfccc.int/africa-green-hydrogen-alliance/> (Accessed on 12/04/2024)

⁸² Ibid

⁸³ Ibid

⁸⁴ Ibid

⁸⁵ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

⁸⁶ Ibid

⁸⁷ Radford. C., & Field. A., 'Green Hydrogen in Africa: A Continent of Possibilities?' Op Cit

⁸⁸ Ibid

⁸⁹ Ibid

transmission grids⁹⁰. Governments therefore have to consider whether to dedicate part of Africa's limited resources to developing green hydrogen as a viable solution for Africa's energy deficit⁹¹. The requirement for clean water for hydrogen production also creates additional challenges especially in regions where water resources are already scarce⁹². Despite these concerns, the potential of green hydrogen in Africa to contribute significantly to the global energy supply and create a more sustainable future is undeniable⁹³. Green hydrogen offers a pathway to decarbonize Africa and accelerate the achievement of SDG 7⁹⁴. It is therefore necessary to effectively harness the green hydrogen potential for Africa's decarbonization.

4.0 Way Forward

There is need to effectively harness green hydrogen in Africa. This source of energy can play a crucial role in decarbonizing Africa⁹⁵. The continent is a suitable place for the production of green hydrogen since it is rich with abundant renewable energy sources such as wind and solar energy⁹⁶. Green hydrogen can help African countries in achieving their national energy and decarbonization goals⁹⁷. It can enable African countries to meet the growing demand for energy needed for economic development and to lift citizens out of poverty, while following a sustainable path to a net-zero future⁹⁸. It is therefore necessary to harness green hydrogen towards Africa's decarbonization and Sustainable Development.

⁹⁰ Ibid

⁹¹ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

⁹² Radford. C., & Field. A., 'Green Hydrogen in Africa: A Continent of Possibilities?' Op Cit

⁹³ Green Hydrogen., Available at <https://centurionlg.com/2024/01/08/unleashing-africas-green-hydrogen-potential-for-a-sustainable-future/> (Accessed on 12/04/2024)

⁹⁴ Ibid

⁹⁵ AbouSeada. N., & Hatem. T., 'Climate Action: Prospects of Green Hydrogen in Africa' *Energy Reports.*, Volume 8, 2022., pp 3873-3890

⁹⁶ Ibid

⁹⁷ Ibid

⁹⁸ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

In order to effectively harness green hydrogen, there is need to enhance investments in this crucial technology⁹⁹. Green hydrogen has been identified as a capital intensive industry that requires significant financial investments¹⁰⁰. Green hydrogen financing is therefore key in unlocking the potential of this technology in Africa¹⁰¹. It is therefore necessary to increase government investments in the green hydrogen industry in Africa¹⁰². Public-private partnerships are also key in bringing on board the private sector including financial institutions in the green energy transition¹⁰³. Developed countries also have a role to play in supporting the adoption of green hydrogen in Africa through climate finance in accordance with global climate commitments¹⁰⁴. South Africa's Just Energy Transition Partnership is a major steps towards this goal¹⁰⁵. There is need to embrace such initiatives in order to unlock climate finance in Africa which is vital in harnessing green hydrogen in addition to other climate change mitigation and adaptation strategies¹⁰⁶. Green hydrogen financing is necessary in building the necessary infrastructure to support the production of green hydrogen and efficient storage, transport and refueling facilities¹⁰⁷. It is therefore necessary to unlock green hydrogen financing and investments in order to effectively harness this technology in Africa.

In addition, there is need to establish or improve the legal and policy frameworks for green hydrogen in order support the whole value chain of this vital industry¹⁰⁸. It has been noted that the regulatory landscape required for green hydrogen development is complex since it is an emerging industry, and the multi-faceted development required to support projects in Africa will inevitably touch on a range of other sectors (including power generation and

⁹⁹ Ibid

¹⁰⁰ Ibid

¹⁰¹ United Nations Environment Programme., 'Green Hydrogen Financing' Op Cit

¹⁰² Ibid

¹⁰³ Ibid

¹⁰⁴ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

¹⁰⁵ European Commission., 'France, Germany, UK, US and EU Launch Ground-Breaking International Just Energy Transition Partnership with South Africa' Op Cit

¹⁰⁶ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

¹⁰⁷ Ibid

¹⁰⁸ Ibid

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

transmission, water, industrial processes, transportation and export) with their own regulatory requirements and practices¹⁰⁹. It is therefore necessary for African countries to have in place efficient legal and policy frameworks in order to address the complex and cross-sectoral challenges that may arise in the development of green hydrogen industries¹¹⁰. It has been noted that by creating efficient legal and policy frameworks on green hydrogen that help mitigate risk and enable investment, it is possible for Africa to realize the economic, social, and environmental benefits of green hydrogen while accelerating the energy transition¹¹¹. African countries should thus ensure that they have in place effective and efficient legal and policy frameworks to support the development of green hydrogen.

It is also imperative for African countries to enhance research and development in the green hydrogen industry¹¹². It has been correctly noted that for Africa to effectively harness the green hydrogen potential, governments, academic institutions, and industry players need to prioritize research and development efforts focused on hydrogen production, storage, and utilization¹¹³. This includes exploring innovative technologies, improving efficiency, and addressing specific regional challenges in green hydrogen development¹¹⁴. Encouraging collaboration between academia, industry, and research institutions can accelerate advancements in green hydrogen development in Africa and drive cost reductions¹¹⁵. Embracing such collaborative innovation platforms can strengthen research and the development of sustainable green hydrogen technologies that can be easily be used and maintained in Africa to continuously improve the competitiveness

¹⁰⁹ Radford. C., & Field. A., 'Green Hydrogen in Africa: A Continent of Possibilities?' Op Cit

¹¹⁰ Ibid

¹¹¹ Hydrogen Council., 'The Africa Hydrogen Opportunity for a Just Transition' Available at <https://hydrogencouncil.com/en/the-africa-hydrogen-opportunity-for-a-just-transition/> (Accessed on 12/04/2024)

¹¹² Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

¹¹³ Ashurst., 'Exploring the Opportunity for Green Hydrogen Production in Africa' Available at <https://www.lexology.com/library/detail.aspx?g=a0379c68-21bd-460f-9f1c-917d2458a1e2> (Accessed on 12/04/2024)

¹¹⁴ Ibid

¹¹⁵ Ibid

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

of the sector¹¹⁶. Research and development is therefore a vital tool in harnessing the green hydrogen potential in Africa.

Finally, regional integration and bilateral and multilateral relations are of utmost importance in harnessing the green hydrogen potential in Africa¹¹⁷. It has been noted that leading countries in the green hydrogen sector are leveraging bilateral and multilateral relationships to establish hydrogen partnerships to integrate value chains that can help signal their credibility as a supplier to the market¹¹⁸. Bilateral hydrogen partnership agreements are key in promoting access to markets, technologies, and finance necessary for the growth of this industry¹¹⁹. It is therefore necessary for African countries to strengthen regional integration in the energy sector and embrace bilateral and multilateral energy relations in order to harness the green hydrogen potential in the continent. The Africa Green Hydrogen Alliance comprising of Egypt, Kenya, Mauritania, Morocco, Namibia and South Africa is a good example that can enable African countries to leverage on regional integration and bilateral and multilateral relationships to develop their green hydrogen sectors¹²⁰. There is need for other Africa countries to follow this example in order to harness their green hydrogen potential.

The foregoing approaches are vital in harnessing the green hydrogen potential towards Africa's decarbonization.

5.0 Conclusion

Green hydrogen has a key role to play in fostering decarbonization and addressing the adverse impacts of climate change¹²¹. Green hydrogen has been identified as a critical enabler of the global transition to sustainable energy and net zero emissions economies¹²². Africa has enormous potential for green

¹¹⁶ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

¹¹⁷ Climate Champions., 'Africa's Green Hydrogen Potential' Op Cit

¹¹⁸ Ibid

¹¹⁹ Ibid

¹²⁰ Africa Green Hydrogen Alliance., Op Cit

¹²¹ United Nations Environment Programme., 'Green Hydrogen Financing' Op Cit

¹²² World Economic Forum., 'What is Green Hydrogen and Why Do We Need It? An Expert Explains' Op Cit

Towards Africa's Decarbonization: Harnessing the Green Hydrogen Potential

hydrogen¹²³. The abundance of renewable sources of energy in Africa particularly wind and solar means that the continent could be highly competitive in the production and supply of green hydrogen¹²⁴. Green hydrogen therefore offers an opportunity for African countries to reduce their reliance on fossil fuels, accelerate access to electricity for millions of citizens and meet their global climate commitments¹²⁵. There has been progress towards adopting green hydrogen in Africa with several African countries including Kenya, Morocco, South Africa, Namibia, Egypt and Nigeria integrating green hydrogen into their energy mixes¹²⁶. However, it has been noted that the capital intensive nature of green hydrogen development is a key hindrance in its adoption¹²⁷. There is need for creative solutions in order to harness the green hydrogen potential in Africa. This can be achieved through unlocking green hydrogen financing¹²⁸; establishing and improving the legal and policy frameworks for green hydrogen development¹²⁹; enhancing research and development in the green hydrogen industry¹³⁰; and strengthening regional integration and bilateral and multilateral relations in green hydrogen development¹³¹. It is necessary for all African countries to engage in harnessing the green hydrogen potential towards Africa's decarbonization and development.

¹²³ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

¹²⁴ Climate Champions., 'Africa's Green Hydrogen Potential' Op Cit

¹²⁵ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

¹²⁶ Ibid

¹²⁷ Radford. C., & Field. A., 'Green Hydrogen in Africa: A Continent of Possibilities?' Op Cit

¹²⁸ United Nations Environment Programme., 'Green Hydrogen Financing' Op Cit

¹²⁹ Yohannes. B., & Diedou. A., 'Green hydrogen: A Viable Option for Transforming Africa's Energy Sector' Op Cit

¹³⁰ Ibid

¹³¹ Climate Champions., 'Africa's Green Hydrogen Potential' Op Cit

Strengthening Climate Action in Conflict Situations for Development

Abstract

The negative effects of climate change are being felt – and will continue to be felt – in some of the most extreme ways by people living in places affected by armed conflict and other forms of violence. People, communities, and countries in conflict situations are often ill-equipped to cope with and adapt to climate change. They should therefore be ideally prioritized in climate action and finance. However, they are mostly neglected in climate action and finance therefore undermining development. This paper critically discusses the need to strengthen climate action in conflict situations for development. It argues that climate change is a major threat to development in conflict situations. The paper posits that people, communities, and countries in conflict situations often lack the capacity to effectively confront climate change. As a result, the paper notes that conflict may worsen the impacts of climate change and affect development. The paper suggests measures towards strengthening climate action in conflict situations for development.

1.0 Introduction

Climate change has been defined as an existential threat to humanity¹. It affects every aspect of people's lives, both creating and exacerbating humanitarian crises around the world². Warming of the atmosphere, ocean and land – driven by human activity – is causing climate variations and extremes all over the world, with over three billion people living in places that are highly vulnerable to climate change³. Climate change is an undesirable phenomenon that affects realization of the Sustainable Development agenda across the world by affecting the sustainability of the planet's ecosystems, the stability of the global economy and the future of humankind⁴. Its impacts including intense

¹ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Available at https://www.icrc.org/sites/default/files/topic/file_plus_list/the_icrcs_call_to_strengthen_climate_action_in_conflict_settings_ahead_of_cop28_1.pdf (Accessed on 17/04/2024)

² Ibid

³ Ibid

⁴ Climate Change., 'Meaning, Definition, Causes, Examples and Consequences.' Available at <https://youmatter.world/en/definition/climate-change-meaning-definition-causes-and-consequences/> (Accessed on 17/04/2024)

Strengthening Climate Action in Conflict Situations for Development

droughts, water scarcity, severe fires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity are being witnessed across the world⁵.

Due to its adverse impacts, climate change has been described as the most defining problem facing humanity⁶. It is the main global challenge that is affecting both developed and developing countries in their quest towards achieving Sustainable Development⁷. Climate change has therefore risen to the top of the policy agenda, at local, national, and global levels⁸. Governments have been urged to strengthen climate action in their countries in order to respond to the threat of climate change and ensure that economies are climate resilient⁹. However, it has been noted that climate action taken to date by the international community has been insufficient to prevent or reverse the negative trends of climate change¹⁰. Urgent and transformative action is therefore required to combat climate change and promote Sustainable Development¹¹.

The United Nations *2030 Agenda for Sustainable Development*¹² seeks to strengthen climate action for development. It acknowledges that climate

⁵ United Nations., 'What is Climate Change?' Available at <https://www.un.org/en/climatechange/what-is-climate-change> (Accessed on 17/04/2024)

⁶ Muigua. K., 'Achieving Sustainable Development, Peace and Environmental Security.' Glenwood Publishers Limited, 2021

⁷ Ibid

⁸ United Nations Department of Economic and Social Affairs., 'Forum on Climate Change and Science and Technology Innovation.' Available at <https://www.un.org/en/desa/forum-climate-changeandscience-and-technology-innovation> (Accessed on 17/04/2024)

⁹ Muigua. K., 'Achieving Sustainable Development, Peace and Environmental Security.' Glenwood Publishers Limited, 2021

¹⁰ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

¹¹ United Nations., 'Goal 13: Take Urgent Action to Combat Climate Change and its Impacts.' Available at <https://www.un.org/sustainabledevelopment/climate-change/> (Accessed on 17/04/2024)

¹² United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at

Strengthening Climate Action in Conflict Situations for Development

change is one of the greatest challenge of our time and its adverse impacts undermine the ability of all countries to achieve Sustainable Development¹³. Sustainable Development Goal 13 urges states to take urgent action to combat climate change and its impacts¹⁴.

According to the International Committee of the Red Cross (ICRC), the negative effects of climate change are being felt – and will continue to be felt – in some of the most extreme ways by people living in places affected by armed conflict and other forms of violence¹⁵. People, communities, and countries in conflict situations are ill-equipped to cope with and adapt to climate change¹⁶. This vulnerability and severe capacity constraints of people, communities, and countries in conflict means that they should ideally be prioritized in climate action¹⁷. However, it has been noted that in practice, they are among the most neglected when it comes to climate action and finance¹⁸. It is therefore vital to strengthen climate action in conflict situations for development.

This paper critically discusses the need to strengthen to strengthen climate action in conflict situations for development. It argues that climate change is a major threat to development in conflict situations. The paper posits that people, communities, and countries in conflict situations often lack the capacity to effectively confront climate change. As a result, the paper notes that conflict may worsen the impacts of climate change and affect development. The paper suggests measures towards strengthening climate action in conflict situations for development.

<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 17/04/2024)

¹³ Ibid

¹⁴ Ibid

¹⁵ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

¹⁶ Ibid

¹⁷ Ibid

¹⁸ Ibid

2.0 The Climate Change and Conflict Nexus

People, communities and countries enduring conflict are among those most vulnerable to growing climate risks because of the devastating effects of conflicts on societies¹⁹. Conflicts threaten people's lives, damage essential services, disrupt institutions, the economy, and community cohesion, and shrink the capacity of people, communities, and countries to cope with all types of risks²⁰. It has been observed that more than half of the countries considered most vulnerable and least ready to respond to climate change are countries enduring conflict, most of which are also among the world's least developed countries²¹. This vulnerability is not because climate change directly causes conflict²². Rather, the vulnerability arises since conflict increases the fragility of institutions, essential services, infrastructure, governance and other capacities that are critical to help people cope with and adapt to climate change²³.

Climate change also impacts development and social progress in conflict situations by hindering access to human needs including food, health, water, and energy²⁴. The nexus of hunger, conflict, and climate change has resulted in over 330 million people facing acute food insecurity²⁵. Climate and conflict have been identified as the main causes of acute food insecurity²⁶. The United

¹⁹ Grayson. C-L., & Khouzam. A., 'Responding to Climate Risks in Conflict Settings: In Search of Solutions' Available at <https://blogs.icrc.org/law-and-policy/2023/11/23/responding-to-climate-risks-in-conflict-settings-in-search-of-solutions/> (Accessed on 17/04/2024)

²⁰ Ibid

²¹ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

²² Ibid

²³ Ibid

²⁴ Reliefweb., 'Climate Action Can Help Fight Hunger, Avoid Conflicts, Official Tells Security Council, Urging Greater Investment in Adaptation, Resilience, Clean Energy' Available at <https://reliefweb.int/report/world/climate-action-can-help-fight-hunger-avoid-conflicts-official-tells-security-council-urging-greater-investment-adaptation-resilience-clean-energy> (Accessed on 17/04/2024)

²⁵ Ibid

²⁶ United Nations., 'Climate Change and Conflict' Available at <https://press.un.org/en/2024/sc15589.doc.htm#:~:text=Climate%20and%20conflict%20were%20the,the%2014%20countries%20most%20at> (Accessed on 17/04/2024)

Strengthening Climate Action in Conflict Situations for Development

Nations notes that where wars rage, hunger reigns as a result of displacement of people, destruction of agriculture and food systems, damage to infrastructure, disruption of supply chains, or deliberate policies of denial²⁷. It has further been noted that climate change, environmental degradation and biodiversity loss are exacerbating conflict, contributing to global food insecurity, and threatening international peace and security²⁸. In addition, it has been noted that climate change, insufficient access to water, and conflict interact to harm local communities²⁹. Higher temperatures and evapotranspiration decrease availability of water resources for people's livelihoods and economic activities, leading to increased tension sometimes resulting in or worsening existing conflicts³⁰. Regions such as the Lake Chad Basin have been identified as being caught in a conflict-climate risk trap³¹. Political, social, and security stressors are overwhelming governments on one hand; while on the other hand, climate change impacting weather variability, including changes in rainfall patterns and greater uncertainty, increases the risk of conflict around natural resources³². Conflicts in such situations hinder water security and the ability of people to respond to climate risks including drought and unpredictable rainy seasons that often result in flooding³³.

Conflicts therefore hinder effective climate action. Violent clashes disrupt food production and security, administrative capacity, and access to markets and services that are vital in responding to climate change³⁴. In addition, conflict prone states are often plagued by poor governance, lethargic development,

²⁷ Ibid

²⁸ Ibid

²⁹ Trevino. J., & Davy. T., 'Water Security is the Way out of the Conflict-Climate Risk Trap in Lake Chad Basin' Available at <https://blogs.worldbank.org/en/water/water-security-way-out-conflict-climate-risk-trap-lake-chad-basin#:~:text=Banseka%20explained%20how%20climate%20change,tension%20some%20times%20resulting%20in%20conflict>. (Accessed on 17/04/2024)

³⁰ Ibid

³¹ Ibid

³² Ibid

³³ Ibid

³⁴ Toulmin. C., & Barrett. S., 'Climate Action and Conflict' Available at <https://www.iied.org/sites/default/files/pdfs/2023-11/22131g.pdf> (Accessed on 17/04/2024)

Strengthening Climate Action in Conflict Situations for Development

and a lack of social investment in key elements such as education, health and the rule of law, are also unlikely to be able to put in the necessary investment to protect the environment and respond to climate change³⁵. It has also been noted that conflict prone states are unlikely to be able to support preparedness and adaptation programmes, particularly for those on the margins of society³⁶. Strengthening climate action by adapting to, and mitigating the impacts of climate change can therefore play an important role in addressing many drivers of conflict and building peace³⁷.

Further, according to the United Nations High Commissioner for Refugees (UNHCR), forcibly displaced people are often on the frontlines of the climate crisis³⁸. It notes that refugees and other forcibly displaced people, regardless of the reason for flight, often reside in places prone to hazardous weather events and in harsh environmental conditions³⁹. UNHCR further points out that climate-related shocks and stresses including floods, cyclones, wildfires and droughts pose significant risks to refugees and Internally Displaced People (IDPs)⁴⁰. Climate change also limits their access to livelihoods and work opportunities⁴¹. Climate change is therefore a major threat to development for refugees and IDPs. In addition, the strain on limited local natural resources, such as water or arable farming land as a result of climate change can contribute to tensions between displaced populations and host communities worsening conflicts and undermining development⁴². It is therefore necessary to ensure that refugees and IDPs and their host communities living in highly climate-vulnerable conditions can withstand,

³⁵ United Nations Climate Change., 'Conflict and Climate' Available at <https://unfccc.int/news/conflict-and-climate> (Accessed on 17/04/2024)

³⁶ Ibid

³⁷ Ibid

³⁸ United Nations High Commissioner for Refugees., 'Strengthening Climate Adaptation and Resilience' Available at <https://www.unhcr.org/what-we-do/build-better-futures/climate-change-and-displacement/strengthening-climate-adaptation> (Accessed on 17/04/2024)

³⁹ Ibid

⁴⁰ Ibid

⁴¹ Ibid

⁴² Ibid

Strengthening Climate Action in Conflict Situations for Development

recover and be protected from new or worsening threats to their lives and livelihoods that climate change is fueling⁴³.

According to the Organisation for Economic Co-operation and Development (OECD), the impacts of climate change, biodiversity loss and environmental degradation place additional demands on fragile and conflict -affected contexts which are already struggling to cope with multiple pressures, crises and shocks⁴⁴. OECD notes that fragile and conflict-affected contexts harbour some of the world's biodiversity hotspots, which are critical to regulate the world's climate⁴⁵. Therefore, climate and human-induced disruptions affect the root causes, drivers and risks factors of multidimensional fragility and conflict⁴⁶. Similarly, conflicts can cause extensive damage to the environment, cause biodiversity loss and amplify the effects and impacts of climate change with a consequent increase in fragility⁴⁷.

Climate change is therefore a key concern in conflict settings⁴⁸. It has been noted that the impacts of climate change have already increased the physical insecurity of vulnerable communities, particularly in fragile and conflict-affected settings where governance is limited or ineffective⁴⁹. In such contexts, the effects of climate change can adversely affect political stability, food security, economic growth, and human mobility⁵⁰. It has been noted that in conflict situations, climate change interacts with other political, social, and economic stresses to compound existing tensions, which could escalate into

⁴³ Ibid

⁴⁴ Organisation for Economic Co-operation and Development., 'INCAF Common Position on Climate Change, Biodiversity and Environmental Fragility' Available at <https://www.oecd.org/dac/conflict-fragility-resilience/conflict-fragility/INCAF-Common-position-climate-change-biodiversity-environmental-fragility.pdf> (Accessed on 17/04/2024)

⁴⁵ Ibid

⁴⁶ Ibid

⁴⁷ Ibid

⁴⁸ United Nations Environment Programme., 'Addressing Climate-Related Security Risks' Available at https://wedocs.unep.org/bitstream/handle/20.500.11822/40330/security_risks_guidance.pdf?sequence=1&isAllowed=y (Accessed on 17/04/2024)

⁴⁹ Ibid

⁵⁰ Ibid

Strengthening Climate Action in Conflict Situations for Development

violence or disrupt fragile peace building processes⁵¹. In turn, violent conflict and political instability leaves people and communities poorer, less resilient, and ill-equipped to cope with the consequences of climate change⁵². Strengthening climate action in conflict situations is therefore necessary for development. ICRC notes that strong climate action in places affected by conflict, and the finance to support it, is critical to reduce humanitarian needs, preserve development gains, avoid systemic breakdowns and lasting fragility⁵³.

The need to strengthen climate action in conflict situations for development was recognized at COP 28 via the *Declaration on Climate, Relief, Recovery and Peace*⁵⁴. According to the Declaration, many of the people, communities, and countries threatened or affected by fragility or conflict, or facing severe humanitarian needs, are on the frontlines of the climate crisis, and are among the least resourced to cope with and adapt to associated shocks and stressors⁵⁵. It acknowledges that fragility and conflict increase people's vulnerability and exposure to climate hazards and impede coping capacity and adaptation options, and that, at the same time, climate change adversely affects lives, livelihoods, infrastructure, water, human capital, food, health, cultural identity, education, and human settlements, among other spheres, exacerbating humanitarian needs and constituting a significant and growing challenge to stability⁵⁶. The Declaration calls for bolder collective action to build climate resilience at the scale and speed required in highly vulnerable countries and communities, particularly those threatened or affected by fragility or conflict, or facing severe humanitarian needs, many of which are Least Developed Countries and Small Island Developing States⁵⁷. It recognizes

⁵¹ Ibid

⁵² Ibid

⁵³ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

⁵⁴ COP 28 Declaration on Climate, Relief, Recovery, and Peace., Available at <https://www.cop28.com/en/cop28-declaration-on-climate-relief-recovery-and-peace> (Accessed on 17/04/2024)

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷ Ibid

Strengthening Climate Action in Conflict Situations for Development

that an ambitious, immediate scale up of enhanced support is urgently needed in such situations, including financial resources; technical and institutional capacities; local, national, regional partnerships; and data and information on the basis of complementarity and predictability⁵⁸. According to the COP 28 Declaration, strengthening climate action conflict settings is possible and if managed properly, can offer avenues for Sustainable Development, conflict prevention and inclusive peace building⁵⁹.

Actualizing the COP 28 Declaration on Climate, Relief, Recovery and Peace is vital in strengthening climate action in conflict situations for development. The COP 28 Declaration is a non-binding call to action outside the formal United Nations Framework Convention on Climate Change (UNFCCC) negotiations that reflects the concerns, common positions and solutions of countries and institutions from humanitarian, development, climate, and peace communities to urgently foster climate action and resilience in the most vulnerable and conflict situations⁶⁰. It recognizes that climate action is urgently needed, possible and effective in these settings, and that inaction comes with high cost to human development and stability⁶¹. Implementing the COP 28 Declaration can galvanize support for accelerated climate action and resourcing in countries experiencing multifaceted crises including conflicts which makes them highly vulnerable to climate change⁶².

Despite the importance of climate action in conflict situations, it has been noted that national, regional, and global support to help people adapt to a changing climate is particularly weak in places enduring conflict because of the challenges associated with long-term programming in these settings⁶³. Similarly, the most fragile countries tend to receive the least funding for

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Yousuf. H., 'COP 28 Declaration on Climate, Relief, Recovery and Peace' Available at <https://www.linkedin.com/pulse/climate-warrior-pakistani-youths-clamor-transpires-200-yousuf-mmvtf/> (Accessed on 17/04/2024)

⁶¹ Ibid

⁶² Ibid

⁶³ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

Strengthening Climate Action in Conflict Situations for Development

climate action⁶⁴. ICRC further notes that conflict-affected areas within a country – particularly when such areas are not under state control – are often excluded from climate finance to mitigate risks, thus excluding millions of people from receiving support⁶⁵. The COP 28 Declaration on Climate, Relief, Recovery and Peace also notes that global efforts to build climate resilience remain insufficiently tailored or targeted to the specific needs and challenges of people, communities and countries threatened or affected by fragility or conflict, or facing severe humanitarian needs, including due to real and perceived risks and barriers associated with working in such settings⁶⁶. It is therefore necessary to address these challenges in order to strengthen climate action in conflict situations for development.

3.0 Way Forward

In order to strengthen climate action in conflict situations, there is need to achieve climate security⁶⁷. It has been acknowledged that in settings where conflict already exists, the impacts of climate change can aggravate or prolong it, making it more difficult to reach and sustain peace⁶⁸. Further, conflict can in turn disrupt or impede climate action, either through the active destruction of energy, water, and agricultural assets, or by delaying or blocking mitigation and adaptation interventions⁶⁹. Therefore, in order to achieve climate security in conflict situations, responses to climate change should align with conflict prevention and peacebuilding initiatives⁷⁰. It has been noted that investing in climate action is critical in fragile and conflict-affected settings and, if seized upon can be a valuable opportunity to strengthen cooperation, rebuild trust, and mend the social fabric therefore fostering peace, security, and development while confronting climate change⁷¹. Climate security enables the development of tailored analyses, response strategies, and programmes to the compounded challenges presented by the climate crisis on conflict-affected

⁶⁴ Ibid

⁶⁵ Ibid

⁶⁶ COP 28 Declaration on Climate, Relief, Recovery, and Peace., Op Cit

⁶⁷ United Nations Development Programme., ‘What is Climate Security and Why is it Important?’ Available at <https://climatepromise.undp.org/news-and-stories/what-climate-security-and-why-it-important> (Accessed on 17/04/2024)

⁶⁸ Ibid

⁶⁹ Ibid

⁷⁰ Ibid

⁷¹ Ibid

Strengthening Climate Action in Conflict Situations for Development

populations, communities, and countries⁷². It is therefore a key tool of conflict prevention, community stabilization and environmental peacebuilding⁷³. According to the United Nations Environment Programme (UNEP), climate security offers opportunities for promoting inclusive climate action, conflict prevention and peacebuilding⁷⁴. It is therefore vital to enhance climate security in order to strengthen climate action in conflict situations for development.

In addition, it is imperative to widely acknowledge the nexus between climate change and conflicts in order to develop adequate responses to these two related challenges⁷⁵. Climate change has been described as a conflict multiplier, rather than as a major direct cause of conflict in itself. It may aggravate and extend the scope of existing conflicts, or trigger underlying and latent conflicts to break out into the open⁷⁶. Climate change may contribute or worsen conflicts in areas such as access to natural resources including land and water⁷⁷; food security as a result of reduced rainfall and rising sea levels which may lead to a decline in agricultural production and a substantial loss of arable land reducing yields and increasing domestic food prices a situation that may result in civil unrest, and competition over access to land⁷⁸; and migration and displacement as a result of scarcity of natural resources and climate disasters such as droughts and floods resulting in conflicts between host communities and displaced populations⁷⁹. Conflicts on the other hand cause extensive damage to the environment, cause biodiversity loss and amplify the effects

⁷² International Organization for Migration., 'Climate, Peace and Security' Available at <https://environmentalmigration.iom.int/climate-and-security> (Accessed on 17/04/2024)

⁷³ Ibid

⁷⁴ United Nations Environment Programme., 'Climate Security Mechanism (CSM)' Available at <https://www.unep.org/topics/fresh-water/disasters-and-climate-change/climate-security-mechanism-csm> (Accessed on 17/04/2024)

⁷⁵ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

⁷⁶ Ibid

⁷⁷ Danish Institute for International Studies., 'Addressing Climate Change and Conflict in Development Cooperation' Available at https://www.diis.dk/files/media/publications/import/extra/rp2012-04-addressing-climate-change_web.jpg_1.pdf (Accessed on 17/04/2024)

⁷⁸ Ibid

⁷⁹ Ibid

Strengthening Climate Action in Conflict Situations for Development

and impacts of climate change with a consequent increase in fragility⁸⁰. Conflict hinders climate action as a result of breakdown of institutions and lack of access to critical climate services⁸¹. Therefore, the converging crises of conflict and climate change can be mutually reinforcing, with climate impacts potentially exacerbating the conflict cycle while conflict weakening the governance structures and institutions needed to build climate resilience⁸². As a result of these linkages, communities and countries in conflict situations are highly vulnerable to climate risks due to their limited adaptive capacity therefore being exposed to the worst impacts of climate change which could exacerbate underlying conflicts⁸³.

It has been noted that acknowledging and drawing attention to the high vulnerability to climate risks of countries and communities enduring conflict is essential to ensure adequate climate action in these settings⁸⁴. It can lead to better responses to both climate change and conflict by aligning peacebuilding, development, and climate change adaptation strategies in National Adaptation Plans⁸⁵. For fragile states and communities in conflict situations, National Adaptation Plans provide governments struggling with conflict, instability, and climate change the opportunity to align their peacebuilding, development, and adaptation agendas and lay the foundation for lasting peace⁸⁶. It is therefore necessary to acknowledge the interlinkages between climate change and conflict in order integrate conflict dynamics into climate action for peacebuilding and development⁸⁷.

⁸⁰ Organisation for Economic Co-operation and Development., 'INCAF Common Position on Climate Change, Biodiversity and Environmental Fragility' Op Cit

⁸¹ Ibid

⁸² International Institute for Sustainable Development., 'Building Peace and Climate Resilience: Aligning Peacebuilding and Climate Adaptation in Fragile States' Available at <https://www.iisd.org/articles/deep-dive/building-peace-and-climate-resilience-aligning-peacebuilding-and-climate> (Accessed on 17/04/2024)

⁸³ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

⁸⁴ Ibid

⁸⁵ International Institute for Sustainable Development., 'Building Peace and Climate Resilience: Aligning Peacebuilding and Climate Adaptation in Fragile States' Op Cit

⁸⁶ Ibid

⁸⁷ Ibid

Strengthening Climate Action in Conflict Situations for Development

Further, it is imperative to foster effective conflict management by addressing the root causes of conflicts⁸⁸. It has been noted that in order to strengthen climate action in conflict situations, conflicts need to be addressed when planning climate actions⁸⁹. Effective conflict management strengthens climate action by reducing vulnerability, ensuring the availability of strong institutions and governance mechanisms, and allowing access to climate-sensitive areas for appropriate responses⁹⁰. Climate action cannot be effective in conflict situations as a result of breakdown of institutions and lack of access to critical climate services⁹¹. Effective conflict management is therefore necessary in order to strengthen climate action in conflict situations for development. It has been noted that for effective conflict management in such settings, interventions need to recognise past patterns of conflict and reconciliation by monitoring warning signs, defusing tensions and addressing grievances at the earliest⁹². This can be achieved by applying collaborative approaches towards conflict management⁹³. Collaborative conflict management refers to the use of a wide range of informal approaches where competing or opposing stakeholder groups work together to reach an agreement on a controversial issue⁹⁴. This style of conflict management encourages parties to conflicts to work through disagreements through empathy, listening, and mutually beneficial solutions⁹⁵. It has the potential to identify the root causes of conflicts, pinpoint the underlying needs of the parties involved, and come to a win-win outcome for everyone⁹⁶.

⁸⁸ Toulmin. C., & Barrett. S., 'Climate Action and Conflict' Op Cit

⁸⁹ Ibid

⁹⁰ Ibid

⁹¹ Organisation for Economic Co-operation and Development., 'INCAF Common Position on Climate Change, Biodiversity and Environmental Fragility' Op Cit

⁹² Toulmin. C., & Barrett. S., 'Climate Action and Conflict' Op Cit

⁹³ Muigua. K., 'Applying Collaborative Approaches towards Conflict Management' Available at <https://kmco.co.ke/wp-content/uploads/2024/03/Applying-Collaborative-Approaches-towards-Conflict-Management-.pdf> (Accessed on 17/04/2024)

⁹⁴ Food and Agriculture Organization., 'Collaborative Conflict Management for Enhanced National Forest Programmes (NFPs)' Available at <https://www.fao.org/3/i2604e/i2604e00.pdf> (Accessed on 17/04/2024)

⁹⁵ Ibid

⁹⁶ Ibid

Strengthening Climate Action in Conflict Situations for Development

Collaborative conflict management envisages the use of Alternative Dispute Resolution (ADR) processes such as mediation, negotiation and facilitation which are non-coercive, non-power based and focus on the needs and interest of parties⁹⁷. ADR processes are therefore ideal in strengthening climate action in conflict situations for development by promoting collaboration in the management of vital natural resources such as land and water while simultaneously ensuring conflict resolution and prevention⁹⁸. These mechanisms should therefore be embraced.

Finally, it is vital to unlock climate finance in conflict situations⁹⁹. It has been noted that international support in form of climate finance to help people adapt to a changing climate is particularly weak in places enduring conflict because of the challenges associated with long-term programming in such contexts¹⁰⁰. In addition, it has been observed that the most fragile countries tend to receive the least funding for climate action¹⁰¹. According to ICRC, conflict-affected regions are often excluded from climate finance to mitigate the impacts of climate change therefore excluding millions of people from receiving support¹⁰². In order to address this gap, it has been recommended that the criteria for accessing funding particularly for adaptation and loss and damage needs to be tailored to the specific challenges of places that are extremely fragile in order to enable affected populations to access climate finance that is key in strengthening climate action for development¹⁰³.

The COP 28 *Declaration on Climate, Relief, Recovery and Peace*¹⁰⁴ seeks to enhance financial support for climate adaptation and resilience in conflict situations through measures such as continuing to substantially scale-up financial

⁹⁷ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Glenwood Publishers Limited, 2015

⁹⁸ Toulmin. C., & Barrett. S., 'Climate Action and Conflict' Op Cit

⁹⁹ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

¹⁰⁰ Ibid

¹⁰¹ Ibid

¹⁰² Ibid

¹⁰³ Ibid

¹⁰⁴ COP 28 Declaration on Climate, Relief, Recovery, and Peace., Op Cit

Strengthening Climate Action in Conflict Situations for Development

resources for climate adaptation and resilience building in such situations, emphasizing the need for public and grant-based resources, as well as mobilizing a variety of financing sources, while recognizing the importance of environmental and social safeguards¹⁰⁵; improving access to all relevant financial resources, including by enhancing predictability, flexibility, disbursement, speed, and simplicity, and working to reducing transaction costs, including by streamlining application, accreditation, procurement, and monitoring and evaluation procedures¹⁰⁶; strengthening the technical and institutional capacity of national governments and local actors, to absorb, account for, report on, allocate, and leverage climate finance effectively; prioritizing local ownership, impact, and results where possible, including through channeling finance at the local level to respond to local needs and priorities and working with affected communities and both local government and non-government partners¹⁰⁷; and leveraging financial and technical support from the private sector and adopting tailored financial instruments to mobilize new sources of finance in support of national and local responses¹⁰⁸. It is therefore necessary to implement this Declaration in order to unlock climate finance necessary for strengthening climate action in conflict situations for development. Climate finance plays a crucial role in strengthening climate action in conflict situations for development¹⁰⁹.

4.0 Conclusion

People, communities and countries enduring conflict are extremely vulnerable to the impacts of climate change as result of the devastating effects of conflicts on societies¹¹⁰. Conflicts increase the fragility of institutions, essential services, infrastructure, governance and other capacities that are critical to help people

¹⁰⁵ Ibid

¹⁰⁶ Ibid

¹⁰⁷ Ibid

¹⁰⁸ Ibid

¹⁰⁹ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

¹¹⁰ Grayson. C-L., & Khouzam. A., 'Responding to Climate Risks in Conflict Settings: In Search of Solutions' Op Cit

Strengthening Climate Action in Conflict Situations for Development

cope with and adapt to climate change¹¹¹. Conflicts therefore increases climate vulnerability and undermine development¹¹². As a result of the vulnerability and severe capacity constraints of people, communities, and countries in conflict situations, it is necessary to strengthen climate action in such contexts for development¹¹³. However, climate action in conflict situations is often undermined by limited climate funding, challenges associated with long-term programming in these settings, and real and perceived risks and barriers associated with working in such environments¹¹⁴. Strong climate action in places affected by conflict, and the finance to support it, is critical to reduce humanitarian needs, preserve development gains and avoid systemic breakdowns and lasting fragility¹¹⁵. This can be achieved through fostering climate security¹¹⁶; acknowledging the nexus between climate change and conflicts¹¹⁷; fostering effective conflict management by addressing the root causes of conflicts¹¹⁸; and unlocking climate finance in conflict situations¹¹⁹. Strengthening climate action in conflict situations for development is necessary and should be realized for peace and prosperity.

¹¹¹ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

¹¹² Ibid

¹¹³ Ibid

¹¹⁴ COP 28 Declaration on Climate, Relief, Recovery, and Peace., Op Cit

¹¹⁵ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

¹¹⁶ United Nations Development Programme., 'What is Climate Security and Why is it Important?' Op Cit

¹¹⁷ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

¹¹⁸ Toulmin. C., & Barrett. S., 'Climate Action and Conflict' Op Cit

¹¹⁹ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Op Cit

Reducing Africa's Carbon Footprint for Green Growth

Abstract

Green growth is vital in achieving Sustainable Development by reconciling developing countries' urgent need for rapid growth and poverty alleviation with the need to avoid irreversible and costly environmental damage. Green growth therefore offers Africa an opportunity to achieve inclusive growth and Sustainable Development. For Africa to achieve green growth, there is need to reduce the continent's carbon footprint. Failure to achieve this goal could worsen the impacts of climate change in the continent pushing millions of people into extreme poverty while wiping out Africa's hard earned economic growth. This paper critically discusses the need to reduce Africa's carbon footprint. It argues that achieving this goal is vital in confronting climate change and accelerating green growth in the continent. The paper examines the progress and challenges towards reducing Africa's carbon footprint. In addition, it offers proposals towards reducing Africa's carbon footprint for green growth.

1.0 Introduction

Green growth refers to economic growth that is efficient in its use of natural resources, clean in that it minimizes pollution and environmental impacts, and resilient in that it accounts for natural hazards and the role of environmental management and natural capital in preventing physical disasters¹. According to the Organisation for Economic Co-operation and Development, green growth involves fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies². Green growth has also been defined as a socially inclusive economic growth and development path that is low-carbon, climate-resilient, and resource efficient; and maintains and enhances biodiversity and ecosystems³.

¹ The World Bank Group., 'Inclusive Green Growth: The Pathway to Sustainable Development' Available at <https://documents1.worldbank.org/curated/en/368361468313515918/pdf/691250PUB0Publ067902B09780821395516.pdf> (Accessed on 18/04/2024)

² Organisation for Economic Co-operation and Development., 'What is Green Growth and How Can it Help Deliver Sustainable Development?' Available at <https://www.oecd.org/greengrowth/whatisgreengrowthandhowcanithelpdeliversustainabledevelopment.htm> (Accessed on 18/04/2024)

³ African Development Bank Group., 'Climate and Green Growth Strategic Framework: Projecting Africa's Voice' Available at

Reducing Africa's Carbon Footprint for Green Growth

According to the United Nations Environment Programme (UNEP), green growth or green economy is one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities⁴. It further notes that a green economy can be considered as one that is low in carbon, resource efficient and socially inclusive⁵. The idea of green growth therefore involves the pursuit of economic development in an environmentally sustainable manner⁶.

The concept of green growth is therefore synonymous with green economy⁷. The idea of green economy is one that results in improved human wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities⁸. This concept emphasizes environmentally sustainable economic progress to foster low-carbon, socially inclusive development⁹. It aims to ensure that economic prosperity can go hand-in-hand with ecological sustainability while simultaneously fostering social progress¹⁰.

https://www.afdb.org/sites/default/files/documents/publications/african_development_bank_-_climate_change_and_green_growth_policy.pdf (Accessed on 18/04/2024)

⁴ United Nations Environment Programme., 'Green Economy' Available at <https://www.unep.org/regions/latin-america-and-caribbean/regional-initiatives/promoting-resource-efficiency/green#:~:text=The%20UN%20Environment%20Programme%20has,in%20carbon%2C%20resource%20efficient%20and> (Accessed on 18/04/2024)

⁵ Ibid

⁶ African Development Bank Group., 'Climate and Green Growth Strategic Framework: Projecting Africa's Voice' Op Cit

⁷ Ibid

⁸ United Nations Economic Commission for Europe., 'Greening the Economy: Mainstreaming the Environment into Economic Development.' Available at <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=796&menu=1515> (Accessed on 18/04/2024)

⁹ United Nations Economic and Social Commission for Asia and the Pacific., 'Green Growth Uptake in Asia-Pacific Region.' Available at https://unece.org/fileadmin/DAM/env/cep/CEP20/ppp/Item10_b_ESCAP_GreenGrowthUptake_e_sm.pdf (Accessed on 18/04/2024)

¹⁰ Ibid

Reducing Africa's Carbon Footprint for Green Growth

The notion of green growth has emerged as a dominant policy response to climate change and other ecological breakdowns¹¹. It envisages that continued economic growth is plausible and compatible with our planet's ecology¹². Green growth is therefore one of the key strategies of realizing Sustainable Development. The idea of Sustainable Development seeks to achieve development that meets the needs of the present without compromising the ability of future generations to meet their own needs¹³. It aims to foster an integrated approach towards development that takes into consideration environmental conservation along with economic and social development¹⁴. Sustainable Development therefore envisions striking a balance between environmental conservation, economic development and social progress¹⁵.

Green growth aims to operationalize Sustainable Development by reconciling developing countries' urgent need for rapid growth and poverty alleviation with the need to avoid irreversible and costly environmental damage¹⁶. It has been noted that green growth is consistent with Sustainable Development as an ultimate objective by providing the means to reconcile its economic and environmental pillars, without ignoring social aspects¹⁷. OECD notes that green growth provides a practical and flexible approach for achieving concrete, measurable progress across the economic and environmental pillars of Sustainable Development while taking full account of the social consequences of greening the growth dynamic of economies¹⁸. Green growth

¹¹ Hickel. J., & Kallis. G., 'Is Green Growth Possible?' Available at https://www.researchgate.net/profile/Jason-Hickel/publication/332500379_Is_Green_Growth_Possible/links/5dee151b299bf10bc34c7c04/Is-Green-Growth-Possible.pdf (Accessed on 18/04/2024)

¹² Ibid

¹³ World Commission on Environment and Development., 'Our Common Future.' Oxford, (Oxford University Press, 1987)

¹⁴ United Nations., 'Sustainability' Available at <https://www.un.org/en/academic-impact/sustainability> (Accessed on 18/04/2024)

¹⁵ Fitzmaurice. M., 'The Principle of Sustainable Development in International Development Law.' *International Sustainable Development Law.*, Vol 1

¹⁶ The World Bank Group., 'Inclusive Green Growth: The Pathway to Sustainable Development' Op Cit

¹⁷ Ibid

¹⁸ Organisation for Economic Co-operation and Development., 'What is Green Growth and How Can it Help Deliver Sustainable Development?' Op Cit

Reducing Africa's Carbon Footprint for Green Growth

strategies help in achieving Sustainable Development by ensuring that natural assets can deliver their full economic potential on a sustainable basis¹⁹. That potential includes the provision of critical life support services – clean air and water, and the resilient biodiversity needed to support food production and human health²⁰. Fostering green growth is therefore vital in realizing Sustainable Development.

Green growth is a vital agenda in Africa as espoused under Africa Union's *Agenda 2063*²¹. The Agenda sets out the aspirations of prosperous Africa based on inclusive growth and Sustainable Development²². It seeks to realize green growth in Africa through measures such as promoting sustainable and inclusive economic growth; ensuring sustainable management of natural resources in Africa; fostering sustainable consumption and production patterns; fostering climate resilience and natural disasters preparedness and prevention and embracing renewable energy in Africa²³. Green growth therefore offers Africa an opportunity to achieve inclusive growth and Sustainable Development.

It has been noted that in order for Africa to achieve green growth, there is need to reduce the continent's carbon footprint²⁴. Failure to achieve this goal could worsen the impacts of climate change in the continent pushing millions of people into extreme poverty while wiping out Africa's hard earned economic growth²⁵. This paper critically discusses the need to reduce Africa's carbon footprint. It argues that achieving this goal is vital in confronting climate change and accelerating green growth in the continent. The writer examines the progress and challenges towards reducing Africa's carbon footprint. In

¹⁹ Ibid

²⁰ Ibid

²¹ Africa Union., 'Agenda 2063: The Africa we Want.' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 18/04/2024)

²² Ibid

²³ Ibid

²⁴ Inamdar. A., 'Powering Africa's Green Growth – Beyond Adaptation and Resilience' Available at <https://climatechampions.unfccc.int/powering-africas-green-growth-beyond-adaptation-and-resilience/> (Accessed on 18/04/2024)

²⁵ Ibid

addition, the paper offers proposals towards reducing Africa's carbon footprint for green growth.

2.0 Examining Africa's Carbon Footprint

A carbon footprint refers to the number and amount of greenhouse gases released into the atmosphere due to the activities of individuals, organisations, communities and countries²⁶. These gases include carbon dioxide, water vapour, ozone, methane and nitrous oxide²⁷. Carbon footprint has also been defined as a measure of the total amount of carbon dioxide and methane emissions caused by a system, event, or activity²⁸. It can also refer to emissions of carbon dioxide or greenhouse gases expressed in carbon dioxide equivalent²⁹. Carbon footprint therefore refers to the total amount of greenhouse gases (including carbon dioxide and methane) that are generated by human actions³⁰.

Reducing carbon footprint is vital in confronting climate change and fostering green growth³¹. It has been noted that green growth can only be realized through the transition to low-carbon, more resilient future where we reduce emissions and ensure all sectors can also adapt to the climate impacts that are expected³². UNEP notes that in a green economy, growth in employment and income are driven by public and private investment into such economic activities, infrastructure and assets that allow *reduced carbon emissions* and

²⁶ DBSA., 'DBSA's Plan to Reduce Africa's Carbon Footprint through Green Transport' Available at <https://www.dbsa.org/article/dbsas-plan-reduce-africas-carbon-footprint-through-green-transport> (Accessed on 18/04/2024)

²⁷ Ibid

²⁸ Wiedmann. T., & Minx. J., 'A Definition of 'Carbon Footprint' In: C. C. Pertsova, Ecological Economics Research Trends: Chapter 1, pp. 1-11, Nova Science Publishers, Hauppauge NY, USA. https://www.novapublishers.com/catalog/product_info.php?products_id=5999 (Accessed on 18/04/2024)

²⁹ Ibid

³⁰ The Nature Conservancy., 'What is a Carbon Footprint?' Available at <https://www.nature.org/en-us/get-involved/how-to-help/carbon-footprint-calculator/> (Accessed on 18/04/2024)

³¹ United Nations Environment Programme., 'The Sectoral Solution to Climate Change' Available at <https://www.unep.org/interactive/six-sector-solution-climate-change/> (Accessed on 18/04/2024)

³² Ibid

Reducing Africa's Carbon Footprint for Green Growth

pollution, enhanced energy and resource efficiency, and prevention of the loss of biodiversity and ecosystem services(Emphasis added)³³. In order to achieve this goal, countries are increasingly adopting policies to reduce greenhouse gas emissions, promote renewable energy, and encourage the adoption of sustainable practices by businesses and individuals³⁴.

It has been noted that Africa has low carbon dioxide emissions per capita compared to other parts of the world³⁵. Africa contributes just about 4 percent of global carbon emissions despite being the continent that will suffer the most from climate change³⁶. Africa therefore has the lowest per capita emissions of any region, while it is also home to crucial carbon sinks, with the Congo Basin Rainforest absorbing more carbon per year than the continent produces³⁷. It has been pointed out that the Congo Basin Rainforest absorbs 4 per cent of global carbon emissions every year, offsetting more than the whole African continent's annual emissions.

Despite Africa having contributed negligibly to the changing climate, with just about two to three percent of global emissions, it stands out disproportionately as the most vulnerable region in the world³⁸. This vulnerability is driven by

³³ United Nations Environment Programme., 'Green Economy' Available at <https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy> (Accessed on 18/04/2024)

³⁴ Hassan. A et al., 'Green Growth as a Determinant of Ecological Footprint: Do ICT Diffusion, Environmental, Innovation, and Natural Resources Matter?' Available at https://www.google.com/search?q=carbon+footprint+and+green+growth&oq=c&gs_lcrp=EgZjaHJvbWUqBggAEEUYOzIGCAAQRRg7MgYIARBFGEAyBggCEEUYPDIGCAMQRRg8MgYIBBBFGDwyBggFEEUYPDIGCAYQBRhAMgYIBxAFGEDSAQc4NzZqMGo3qAIAA&sourceid=chrome&ie=UTF-8 (Accessed on 18/04/2024)

³⁵ DBSA., 'DBSA's Plan to Reduce Africa's Carbon Footprint through Green Transport' Op Cit

³⁶ Ibid

³⁷ Mo Ibrahim Foundation., 'Growth Without Emissions? Is carbon Needed for Africa's Development Goals and Economic Growth?' Available at <https://mo.ibrahim.foundation/sites/default/files/2022-11/growth-without-emissions.pdf> (Accessed on 18/04/2024)

³⁸ United Nations Environment Programme., 'Responding to Climate Change' Available at <https://www.unep.org/regions/africa/regional-initiatives/responding-climate-change> (Accessed on 18/04/2024)

Reducing Africa's Carbon Footprint for Green Growth

the prevailing low levels of socioeconomic growth in the continent³⁹. Africa has been classified as the most vulnerable continent to the impacts of climate change⁴⁰. Despite having the lowest emissions, the continent faces exponential collateral damage, posing systemic risks to its economies, infrastructure investments, water and food systems, public health, agriculture, and livelihoods, threatening to undo its modest development gains and slip into higher levels of extreme poverty⁴¹. It has been asserted that historically, the continent has contributed the least of any global region to greenhouse gas emissions, yet it is already experiencing some of the world's most dramatic changes in terms of drought, flooding, heat waves, and loss of arable land⁴².

Climate change is already having a devastating impact on the African continent creating food insecurity, stressing water resources, depleting human health, displacing populations and impeding socio-economic development⁴³. It has been observed that in Africa, approximately 50 million people are on the brink of falling below the poverty line for reasons connected to climate change, 100 million people are at risk of being displaced by climate change, and about 600 million people lack energy access⁴⁴. Due to climate change, increasing temperatures and sea levels, changing precipitation patterns and more extreme weather are threatening human health and safety, food and water security and socio-economic development in Africa⁴⁵. Climate change is having a growing impact on the African continent, hitting the most vulnerable

³⁹ Ibid

⁴⁰ Africa Development Bank Group., 'Climate Change in Africa' Available at <https://www.afdb.org/en/cop25/climate-change-africa> (Accessed on 18/04/2024)

⁴¹ Ibid

⁴² Goldstone. J., 'The Battle for Earth's Climate Will be Fought in Africa' Available at <https://www.wilsoncenter.org/article/battle-earths-climate-will-be-fought-africa> (Accessed on 19/04/2024)

⁴³ Rao. V., & Yadav. P., 'Confronting Climate Change in Africa.' Available at <https://knowledge.insead.edu/responsibility/confronting-climate-change-africa> (Accessed on 18/04/2024)

⁴⁴ Ibid

⁴⁵ United Nations Framework Convention on Climate Change., 'Climate Change is an Increasing Threat to Africa.' Available at <https://unfccc.int/news/climate-change-is-an-increasing-threat-to-africa> (Accessed on 18/04/2024)

Reducing Africa's Carbon Footprint for Green Growth

hardest, and contributing to food insecurity, population displacement and stress on water resources⁴⁶.

In light of the impacts of climate change in Africa coupled with the continent's low greenhouse gas emissions, it has been argued that Africa needs to pursue a different path towards development, driven exclusively by green growth, absolutely decoupled from carbon emissions⁴⁷. Africa has immense potential in making an important contribution to tackling climate change globally by leading the world in limiting emissions, driving climate restoration and orienting the continent towards its strengths which translate into major new segments of economic opportunity⁴⁸. It has been noted that Africa holds the key to accelerating global climate action⁴⁹. For example, the continent does not have old economies that needs to be decarbonized⁵⁰. Africa can therefore invest right away in green growth for prosperity of its people and the planet⁵¹. Green growth provides an opportunity for the African continent to decouple its growth from high emissions intensity and build resilience into its development priorities, through low-carbon and climate-resilient development strategies and investments⁵².

Africa has immense opportunities for growth. For example, the continent is blessed with a young and growing work force⁵³. It has been noted that the continent has a uniquely dynamic economic landscape, youthful demographic, and opportunities for decarbonization, digital transformation and for leveraging an Environmental, Social and Governance (ESG)

⁴⁶ Ibid

⁴⁷ Mo Ibrahim Foundation., 'Growth Without Emissions? Is carbon Needed for Africa's Development Goals and Economic Growth?' Op Cit

⁴⁸ Kimani. J., 'Africa's Role in Decarbonizing the Planet' Available at <https://climatechampions.unfccc.int/africas-role-in-decarbonizing-the-planet/> (Accessed on 18/04/2024)

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ Ibid

⁵² African Development Bank Group., 'Climate and Green Growth Strategic Framework: Projecting Africa's Voice' Op Cit

⁵³ Ibid

Reducing Africa's Carbon Footprint for Green Growth

framework for sustainability⁵⁴. Africa is also a continent that is rich in natural resources. The continent holds a huge proportion of the world's natural resources, both renewables and non-renewables⁵⁵. Africa is endowed with renewable sources of energy such as wind, solar, hydro, bioenergy, ocean tidal waves, and geothermal energy sources⁵⁶. These sources of energy have become increasingly important as the world faces the challenge of mitigating the negative impacts of climate change and reducing the dependence on finite and polluting fossil fuels⁵⁷. There is need to effectively harness Africa's natural resources including its renewable sources of energy in order to reduce the continent's carbon footprint for green growth. If properly deployed, these assets could be crucial in driving global mitigation efforts, while creating new economic opportunities for the continent towards green growth⁵⁸.

It is therefore necessary to reduce Africa's carbon footprint for green growth. It has been posited that while Africa's carbon footprint remains relatively small compared to the rest of the world and is derived largely from deforestation and poor land use practices, it will rapidly intensify if nothing is done to transition towards greener growth⁵⁹. For example, the lack of access to electricity leads to the reliance on fossil fuels and the overexploitation of Africa's natural resources already constitute a major cause of deforestation and land degradation which are factors that can increase greenhouse gas

⁵⁴ United Nations Environment Programme., 'Africa's Green Business Opportunities are Abundant, UNEP Study Shows' Available at <https://www.unep.org/news-and-stories/press-release/africas-green-business-opportunities-are-abundant-unep-study-shows> (Accessed on 18/04/2024)

⁵⁵ United Nations Environment Programme., 'Our work in Africa' Available at <https://www.unep.org/regions/africa/ourworkafrica#:~:text=Collectively%2C%20the%20continent%20has%20a,oriented%2C%20climate%20resilient%20and%20sustainable> (Accessed on 18/04/2024)

⁵⁶ Muigua. K., 'Fostering Energy Justice in Africa' Available at <https://kmco.co.ke/wpcontent/uploads/2023/11/Fostering-Energy-Justice-in-Africa.pdf> (Accessed on 18/04/2024)

⁵⁷ Verma. A., 'The Role of Renewable Energy Technologies in Sustainable Development.' Available at <https://timesofindia.indiatimes.com/blogs/voices/the-role-of-renewable-energy-technologiesinsustainable-development/> (Accessed on 18/04/2024)

⁵⁸ Kimani. J., 'Africa's Role in Decarbonizing the Planet' Op Cit

⁵⁹ African Development Bank Group., 'Climate and Green Growth Strategic Framework: Projecting Africa's Voice' Op Cit

Reducing Africa's Carbon Footprint for Green Growth

emissions in the continent⁶⁰. It has been noted that the growing use of fossil fuels such as coal, oil, lignite and natural gas in Africa continues to reinforce greenhouse gas emissions⁶¹.

Africa's continued transformation will involve both rapid increase in population and major increases in energy use per capita⁶². The trajectory of how that energy is produced, whether Africa follows the fossil-fuel path taken by other developing regions, or embarks on a novel trajectory in which renewable energy dominates, will therefore have a large impact on the global response to climate change⁶³. In light of these concerns, it has been argued that the solution to climate change and development in Africa and globally relies heavily on the socio-economic transition from resource-dependent fossil fuel economies, to equitable low carbon and green economies⁶⁴. Climate decision-making and investment that is not inclusive of Africa's green economic growth priorities and does not support a clean energy transition on the continent will undercut the world's efforts to achieve desired global emissions reductions⁶⁵. It has been noted that increases in African countries emissions per person to very moderate levels over the coming decades would produce total emissions growth so large as to overwhelm efforts made elsewhere by high-emitting countries to reduce global carbon dioxide emissions⁶⁶. Reducing Africa's carbon footprint is therefore not only beneficial for the continent but also to the entire world's response to climate change⁶⁷. It is therefore necessary to reduce Africa's carbon footprint for green growth.

⁶⁰ Ibid

⁶¹ DBSA., 'DBSA's Plan to Reduce Africa's Carbon Footprint through Green Transport' Op Cit

⁶² Goldstone. J., 'The Battle for Earth's Climate Will be Fought in Africa' Op Cit

⁶³ Ibid

⁶⁴ DBSA., 'DBSA's Plan to Reduce Africa's Carbon Footprint through Green Transport' Op Cit

⁶⁵ Goldstone. J., 'The Battle for Earth's Climate Will be Fought in Africa' Op Cit

⁶⁶ Ibid

⁶⁷ Ibid

3.0 Reducing Africa's Carbon Footprint for Green Growth

In order to reduce Africa's carbon footprint for green growth, there is need to harness renewable sources of energy that are abundant in the continent⁶⁸. Renewable energy has been identified as a climate-smart opportunity for Africa to achieve net-zero transition and reduce its carbon footprint for green growth⁶⁹. Africa can become a trailblazer in renewable energy solutions due to its abundance in solar, wind, hydro, biomass, and geothermal resources among other renewables⁷⁰. It is therefore necessary for Africa to accelerate the development and deployment of its renewable sources of energy particularly for electricity generation in order to reduce the continent's carbon footprint for green growth⁷¹. Adopting renewable energy is key in reducing Africa's carbon footprint. Generating renewable energy creates far lower greenhouse gas emissions than burning fossil fuels such as oil and natural gas⁷². The economic, societal and environmental benefits of renewable sources of energy are numerous. These sources of energy are available in abundance, cheaper and are a healthier option for people and the planet⁷³. Embracing renewable sources of energy is therefore key in combating climate change and accelerating energy transition for development⁷⁴. Renewable energy can therefore enable Africa to transition towards a cleaner and decarbonized future⁷⁵. It is therefore necessary to accelerate the adoption and investments in renewable energy in Africa.

⁶⁸ United Nations Environment Programme., 'Africa's Green Business Opportunities are Abundant, UNEP Study Shows' Op Cit

⁶⁹ Ibid

⁷⁰ Ibid

⁷¹ Mo Ibrahim Foundation., 'Growth Without Emissions? Is carbon Needed for Africa's Development Goals and Economic Growth?' Op Cit

⁷² United Nations., 'What is Renewable Energy?.' Available at <https://www.un.org/en/climatechange/what-is-renewable-energy> (Accessed on 19/04/2024)

⁷³ United Nations., 'Climate Action.' Available at <https://www.un.org/en/climatechange/howcommunities-are-embracing-renewable-energy> (Accessed on 19/04/2024)

⁷⁴ Ibid

⁷⁵ African Development Bank Group., 'Climate and Green Growth Strategic Framework: Projecting Africa's Voice' Op Cit

Reducing Africa's Carbon Footprint for Green Growth

It is also crucial to regulate fossil fuel subsidies in the continent in order to incentivize the uptake of renewable sources of energy⁷⁶. According to UNEP, the production and use of fossil fuels in many countries is encouraged through large subsidies⁷⁷. It has been noted that the transition to clean energy alternatives such as renewable energy remains a challenge in countries where fossil fuel subsidies have still not been phased out⁷⁸. Subsidizing the production and consumption of fossil fuels distorts energy pricing, incentivizes overconsumption, deters investment in renewable energy, creates unsustainable fiscal costs, and locks households and energy systems into inefficient fuel-use patterns that perpetuate the underlying energy crisis⁷⁹. Phasing out inefficient fossil fuel subsidies that do not address energy poverty or just transition is vital in strengthening climate action⁸⁰. It is therefore necessary for African countries to phase out inefficient fossil fuels in order to enhance the uptake of renewable energy towards reducing the continent's carbon footprint for green growth.

Another key approach in reducing Africa's carbon footprint for green growth involves greening all sectors of the economy in the continent⁸¹. It has been noted that the continent has huge potential to achieve green growth and the

⁷⁶ World Resources Institute., '4 Ways to Shift from Fossil Fuels to Clean Energy.' Available at <https://www.wri.org/insights/4-ways-shift-fossil-fuels-clean-energy> (Accessed on 19/04/2024)

⁷⁷ United Nations Environment Programme., 'Fossil Fuel Subsidy Reform.' Available at <https://www.unep.org/explore-topics/green-economy/what-we-do/economic-and-fiscalpolicy/fiscalpolicy/policy-analysis-3> (Accessed on 19/04/2024)

⁷⁸ International Energy Agency., 'World Energy Outlook: 2023.' Available at <https://iea.blob.core.windows.net/assets/42b23c45-78bc-4482-b0f9-eb826ae2da3d/WorldEnergyOutlook2023.pdf> (Accessed on 19/04/2024)

⁷⁹ Kende-Robb. C., 'How Africa can Show the World the Way to a Low-Carbon Future: 10 Facts, 10 Actions' Available at <https://www.brookings.edu/articles/how-africa-can-show-the-world-the-way-to-a-low-carbon-future-10-facts-10-actions/> (Accessed on 19/04/2024)

⁸⁰ United Nations Climate Change., 'Decision -/CMA.5: Outcome of the First Global stocktake' Available at <https://unfccc.int/documents/636584> (Accessed on 19/04/2024)

⁸¹ Muigua. K., 'Actualizing Africa's Green Dream' Available at <https://kmco.co.ke/wp-content/uploads/2023/07/Actualizing-Africas-Green-Dream.pdf> (Accessed on 19/04/2024)

Reducing Africa's Carbon Footprint for Green Growth

transition into green economies⁸². In addition to renewable energy which is being embraced in the continent, there is need for Africa enhance investments and interventions that embody green growth⁸³. These interventions include embracing low-carbon and climate-resilient infrastructure, the circular economy (reducing waste and re-using and recycling to extend materials' lifetimes), the blue economy (sustainable use of marine resources), climate-smart agriculture, sustainable forestry, sustainable water management, and ecotourism, among others⁸⁴. Greening economies is an effective way of achieving net-zero and reducing carbon footprint therefore achieving green growth⁸⁵. It is therefore necessary for Africa countries to green their economies in order to reduce their carbon footprint for green growth.

It is also vital for the continent to accelerate the implantation of a green African Continental Free Trade Area (AfCFTA)⁸⁶. It has been argued that the AfCFTA could be a double-edged sword in reducing Africa's carbon footprint for green growth depending on how it is designed and implemented⁸⁷. On one hand, AfCFTA could exacerbate environmental degradation and climate change as the expected expansion in trade and economic growth can contribute to greenhouse gas emissions through increased transportation and deforestation⁸⁸. On the positive side, AfCFTA could help advance Africa's green transition agenda by fostering the development of sustainable technologies, industries, and infrastructure⁸⁹. African countries should therefore harness the opportunities presented by AfCFTA to accelerate green growth in areas such as trade in environmentally sound technologies; investments in sustainable infrastructure; and embracing sustainable trade practices such as sustainable material sourcing, recycling, ethical

⁸² Ibid

⁸³ African Development Bank Group., 'Climate and Green Growth Strategic Framework: Projecting Africa's Voice' Op Cit

⁸⁴ Ibid

⁸⁵ Ibid

⁸⁶ Songwe. V., & Adam. J-P., 'Delivering Africa's Great Green Transformation' Available at <https://uneca.org/sites/default/files/ACPC/2023/Chapter-9-Delivering-Africas-great-green-transformation.pdf> (Accessed on 19/04/2024)

⁸⁷ Ibid

⁸⁸ Ibid

⁸⁹ Ibid

Reducing Africa's Carbon Footprint for Green Growth

manufacturing, rental and sharing models, and consumer education⁹⁰. African countries can also leverage upon AfCFTA protocols to incorporate environmental protection and sustainable development provisions in bilateral and multilateral trade agreements in order to address the trade and environment/climate nexus⁹¹.

Further, reducing Africa's carbon footprint and transition to an inclusive green economy will also necessitate a shift from low productivity, inefficient, wasteful production and consumption technologies to green technologies⁹². It has been pointed out that green technologies encompass green systems and the environment, emphasizing sustainability, efficiency in resource use, and reduction in waste and emissions to facilitate or accelerate improvements in economic and social well-being while minimizing negative impacts to the environment⁹³. Such technologies include those necessary to support the adoption of renewable energy, crop management, biotechnology, green chemistry or green nanotechnology for industrial production, energy-efficient appliances, waste management, and efficient vehicles⁹⁴. They also include technologies related to sustainable buildings, efficient water use, improved irrigation systems, and the group of technologies that provide protection against rise of sea levels⁹⁵. Adopting green technologies in Africa can promote the transition towards environmentally oriented lifestyles and reduce carbon emissions⁹⁶. Green technologies are therefore a key approach to achieving

⁹⁰ United Nations Environment Programme., 'Africa's Green Business Opportunities are Abundant, UNEP Study Shows' Op Cit

⁹¹ Songwe. V., & Adam. J-P., 'Delivering Africa's Great Green Transformation' Op Cit

⁹² United Nations Economic Commission for Africa., 'Enabling Measures for an Inclusive Green Economy in Africa' Available at https://www.greenpolicyplatform.org/sites/default/files/downloads/resource/UNECA_Enabling%20measures%20for%20an%20inclusive%20green%20economy%20in%20Africa.pdf (Accessed on 19/04/2024)

⁹³ Ibid

⁹⁴ Ibid

⁹⁵ Ibid

⁹⁶ Cai. A et al., 'How Does Green Technology Innovation Affect Carbon Emissions? A Spatial Econometric Analysis of China's Provincial Panel Data' Environmental Economics and Management Volume 9 – 2021 available at <https://doi.org/10.3389/fenvs.2021.813811> (Accessed on 19/04/2024)

Reducing Africa's Carbon Footprint for Green Growth

green growth. These technologies can effectively reduce carbon emissions by improving energy utilization efficiency. Accessing green technologies can foster a low emissions and sustainable path to Africa's economic transformation by facilitating efficient resource extraction and use, production of newer environmental friendly outputs, as well as enabling sustainable industrialization⁹⁷. It is therefore necessary for Africa to adopt green technologies in order to reduce its carbon footprint for green growth.

Finally, it is imperative to unlock climate finance in Africa for development⁹⁸. Finance plays a vital role in the climate agenda by enhancing the mitigation and adaptation capabilities of countries especially in the developing world⁹⁹. Climate finance is crucial in combating climate change and reducing the carbon footprint of all countries since the adaptation and mitigation techniques vital in enhancing national, regional and global response to climate change require funding¹⁰⁰. Finance can play a key role in reducing Africa's carbon footprint for green growth by facilitating the implementation of inclusive green economy projects¹⁰¹. Financial resources are needed to support Africa's green transition in all major economic sectors including agriculture, fisheries, forestry, energy, industry, tourism, transport, water and infrastructure¹⁰². Unlocking climate finance can also enable Africa achieve effective management of natural resources, and provision of infrastructure for low-carbon development¹⁰³. It is therefore necessary for African countries to unlock climate finance through avenues such as strengthening domestic resource mobilization, unlocking private investments in green growth, and

⁹⁷ United Nations Economic Commission for Africa., 'Enabling Measures for an Inclusive Green Economy in Africa' Op Cit

⁹⁸ Muigua. K., 'Unlocking Climate Finance for Development' Available at <https://kmco.co.ke/wp-content/uploads/2023/08/Unlocking-Climate-Finance-for-Development.pdf> (Accessed on 19/04/2024)

⁹⁹ Steckel. J. C., 'From Climate Finance toward Sustainable Development Finance.' *WIREs Climate Change*, 2017

¹⁰⁰ Climate Finance., 'Climate Finance Essential for Mitigating and Adapting to Climate Change.' Available at <https://www.iberdrola.com/sustainability/what-is-climate-finance> (Accessed on 19/04/2024)

¹⁰¹ United Nations Economic Commission for Africa., 'Enabling Measures for an Inclusive Green Economy in Africa' Op Cit

¹⁰² Ibid

¹⁰³ Ibid

Reducing Africa's Carbon Footprint for Green Growth

building capacity to unlock international funding¹⁰⁴. African countries should also embrace innovative options for climate and nature finance such as green bonds in order to increase the landscape of climate finance in the continent¹⁰⁵. Unlocking climate finance is key in reducing Africa's carbon footprint for green growth.

It is necessary to embrace the foregoing interventions in order to reduce Africa's carbon footprint for green growth.

4.0 Conclusion

Reducing carbon footprint is vital in confronting climate change and fostering green growth¹⁰⁶. Africa has low carbon dioxide emissions per capita compared to other parts of the world¹⁰⁷. However, despite its low greenhouse gas emissions, Africa stands out as the most vulnerable region in the world¹⁰⁸. Africa can therefore accelerate global climate action by reducing its carbon footprint and fostering green growth¹⁰⁹. The solution to climate change and development in Africa and globally relies heavily on the socio-economic transition from resource-dependent fossil fuel economies, to equitable low carbon and green economies¹¹⁰. Key interventions towards reducing Africa's carbon footprint for green growth include harnessing renewable sources of energy that are abundant in the continent¹¹¹; phasing out fossil fuel subsidies in the continent in order to incentivize the uptake of renewable sources of energy¹¹²; greening all sectors of the economy in the continent¹¹³; accelerating

¹⁰⁴ Ibid

¹⁰⁵ Muigua. K., 'Unlocking Climate Finance for Development' Op Cit

¹⁰⁶ United Nations Environment Programme., 'The Sectoral Solution to Climate Change' Op Cit

¹⁰⁷ DBSA., 'DBSA's Plan to Reduce Africa's Carbon Footprint through Green Transport' Op Cit

¹⁰⁸ United Nations Environment Programme., 'Responding to Climate Change' Op Cit

¹⁰⁹ Kimani. J., 'Africa's Role in Decarbonizing the Planet' Op Cit

¹¹⁰ DBSA., 'DBSA's Plan to Reduce Africa's Carbon Footprint through Green Transport' Op Cit

¹¹¹ United Nations Environment Programme., 'Africa's Green Business Opportunities are Abundant, UNEP Study Shows' Op Cit

¹¹² World Resources Institute., '4 Ways to Shift from Fossil Fuels to Clean Energy.' Op Cit

¹¹³ Muigua. K., 'Actualizing Africa's Green Dream' Op Cit

Reducing Africa's Carbon Footprint for Green Growth

the implantation of a green AfCFTA¹¹⁴; adopting green technologies¹¹⁵; and unlocking climate finance in Africa for development¹¹⁶. Reducing Africa's carbon footprint for green growth is a viable and key option for the continent's Sustainable Development.

¹¹⁴ Songwe. V., & Adam. J-P., 'Delivering Africa's Great Green Transformation' Op Cit

¹¹⁵ United Nations Economic Commission for Africa., 'Enabling Measures for an Inclusive Green Economy in Africa' Op Cit

¹¹⁶ Muigua. K., 'Unlocking Climate Finance for Development' Op Cit

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

Abstract

This paper discusses the progress made in achieving just energy transition by examining the policy and regulatory steps that Kenya has employed towards this. The author argues that while there is an urgent need to move towards cleaner energy sources in the country, the policy makers must also embrace the poor by putting in place measures that will ensure that they will not be left struggling with energy insecurity. The paper also makes a case for modernization of the use of biomass instead of getting rid of it completely as this may not be tenable due to other economic and social factors.

1.0 Introduction

One of the most important human endeavours that faces significant obstacles is producing the energy required for the world's expanding population, industrialization, and urbanization.¹ In underdeveloped nations, where there is currently insufficient and inadequate power supply, the issue is worse.² Unquestionably dependable economic boosters, fossil fuels (coal, natural gas, and oil) have detrimental effects on the environment and human health, including CO₂ emissions and the degradation of natural resources.³ A worldwide cry has been raised as a result for a sustainable energy system that is safe, sufficient, reasonably priced, and ecologically sound.⁴ Although one of the Sustainable Development Goals (SDG 7) is to achieve cheap and sustainable energy, the majority of developing economies continue to struggle with insufficient power supplies and a significant reliance on fossil

¹ Ebhota, W.S., 2021. Leveraging on sustainable energy transition to change the energy narrative of the dark continent. *International Journal of Energy Economics and Policy*, 11(3), pp.409-416.

² Ibid.; Ibrahim, H.A. *et al.* (2023) 'Sustainability of power generation for developing economies: A systematic review of power sources mix', *Energy Strategy Reviews*, 47, p. 101085. Available at: <https://doi.org/10.1016/j.esr.2023.101085>.

³ Ibid.

⁴ Ibid.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

fuels.⁵ The foundations of this societal threat include fast population expansion, industrialization, modernization, among others.⁶ These power sources are known to contribute significantly to environmental pollution, global warming, and health hazards, even if they seem far from being adequate.⁷

While the global population without access to electricity decreased from 1.14 billion in 2010 to 675 million in 2021, primarily due to Asia, where the deficit decreased from 516 million in 2010 to 69 million in 2021, Africa only saw a

⁵ Ibrahim, H.A. *et al.* (2023) 'Sustainability of power generation for developing economies: A systematic review of power sources mix', *Energy Strategy Reviews*, 47, p. 101085. Available at: <https://doi.org/10.1016/j.esr.2023.101085>.

⁶ Ibrahim, H.A. *et al.* (2023) 'Sustainability of power generation for developing economies: A systematic review of power sources mix', *Energy Strategy Reviews*, 47, p. 101085. Available at: <https://doi.org/10.1016/j.esr.2023.101085>; Hafner, M., Tagliapietra, S. and de Strasser, L. (2018) 'The Challenge of Energy Access in Africa', in M. Hafner, S. Tagliapietra, and L. de Strasser (eds) *Energy in Africa: Challenges and Opportunities*. Cham: Springer International Publishing, pp. 1–21. Available at: https://doi.org/10.1007/978-3-319-92219-5_1; Ahuja, D. and Tatsutani, M. (2009) 'Sustainable energy for developing countries', *S.A.P.I.EN.S. Surveys and Perspectives Integrating Environment and Society* [Preprint], (2.1). Available at: <https://journals.openedition.org/sapiens/823> (Accessed: 21 April 2024); *Improving energy access key to meeting development goals in Africa* | UNCTAD (2023). Available at: <https://unctad.org/news/improving-energy-access-key-meeting-development-goals-africa> (Accessed: 21 April 2024); Avtar, R. *et al.* (2019) 'Population–Urbanization–Energy Nexus: A Review', *Resources*, 8(3), p. 136. Available at: <https://doi.org/10.3390/resources8030136>; *Scaling Up Energy Access for Green, Resilient, and Inclusive Development in Western and Central Africa* (no date) World Bank. Available at: <https://projects.worldbank.org/en/results/2023/11/17/scaling-up-energy-access-for-green-resilient-and-inclusive-development-in-western-and-central-africa> (Accessed: 21 April 2024).

⁷ Ibrahim, H.A. *et al.* (2023) 'Sustainability of power generation for developing economies: A systematic review of power sources mix', *Energy Strategy Reviews*, 47, p. 101085. Available at: <https://doi.org/10.1016/j.esr.2023.101085>; Dida, G.O. *et al.* (2022) 'Factors predisposing women and children to indoor air pollution in rural villages, Western Kenya', *Archives of Public Health*, 80, p. 46. Available at: <https://doi.org/10.1186/s13690-022-00791-9>; Shilenje, Z.W., Maloba, S. and Ongoma, V. (2022) 'A review on household air pollution and biomass use over Kenya', *Frontiers in Environmental Science*, 10. Available at: <https://doi.org/10.3389/fenvs.2022.996038>.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

slight decrease in its unelectrified population, from 591 million to 586 million during the same period, likely due to its rapidly growing population.⁸

The transition in energy sources from fossil fuels to renewables is only one aspect of the change. It must also cover the social, economic, and environmental aspects of producing energy sustainably.⁹ The global energy industry's shift from fossil fuel-based to zero-carbon energy is hence referred to as the "energy transition."¹⁰ As the energy sector increasingly concentrates on the energy transition and the route to net zero, diversification into new markets and segments is also essential.¹¹ Many businesses understand the range of sectors in which their technology may be used.¹² Broadening the scope of oil and gas companies' primary fossil fuel business into new low-carbon energy markets and products is known as diversification in the context of the energy transition.¹³

⁸ Sustainable Development Goal 7 (SDG7) (no date) *Sustainable Energy for All | SEforALL*. Available at: <https://www.seforall.org/our-work/sustainable-development-goal-7-sdg7> (Accessed: 20 April 2024).

⁹ Ali, K. *et al.* (2023) 'Testing the role of digital financial inclusion in energy transition and diversification towards COP26 targets and sustainable development goals', *Gondwana Research*, 121, pp. 293–306. Available at: <https://doi.org/10.1016/j.gr.2023.05.006>.

¹⁰ Ali, K. *et al.* (2023) 'Testing the role of digital financial inclusion in energy transition and diversification towards COP26 targets and sustainable development goals', *Gondwana Research*, 121, pp. 293–306. Available at: <https://doi.org/10.1016/j.gr.2023.05.006>.

¹¹ *World Energy Transitions Outlook 2023* (no date). Available at: <https://www.irena.org/Digital-Report/World-Energy-Transitions-Outlook-2023> (Accessed: 21 April 2024).

¹² Ali, K. *et al.* (2023) 'Testing the role of digital financial inclusion in energy transition and diversification towards COP26 targets and sustainable development goals', *Gondwana Research*, 121, pp. 293–306. Available at: <https://doi.org/10.1016/j.gr.2023.05.006>.

¹³ Ali, K. *et al.* (2023) 'Testing the role of digital financial inclusion in energy transition and diversification towards COP26 targets and sustainable development goals', *Gondwana Research*, 121, pp. 293–306. Available at: <https://doi.org/10.1016/j.gr.2023.05.006>.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

Kenya and China signed a nuclear power cooperation agreement in 2015, allowing Kenya to receive technical assistance and expertise.¹⁴ Kenya also signed cooperation agreements with Slovakia and Russia, as well as a collaboration arrangement with three South Korean nuclear power companies. Kenya and the US are both seeking a such cooperative pact.¹⁵ All of this is in preparation for Kenya's goal of producing nuclear electricity by 2035. Kenya is collaborating with the International Atomic Energy Agency (IAEA) to increase its capabilities in order to achieve this.¹⁶

The majority of Kenya's energy needs, particularly those of rural households, are met by an excessive reliance on the ever-diminishing biomass energy resource, despite the country's resources also including petroleum, geothermal power, small hydropower, solar, wind, and biomass residue from the country's agricultural sector.¹⁷ This high level of reliance is explained by the abundance of biomass found in forests, woods, and industrial and agricultural wastes. Sub-Saharan Africa's high reliance on biomass energy, however, is unlikely to change anytime soon due to the region's growing population, the scarcity of reasonably priced modern energy sources like electricity, kerosene, and LPG, and the growing trend towards bioeconomies as a means of addressing climate change in line with the objectives of the Paris Agreement.¹⁸ In addition to being the primary fuel for cooking in most sub-Saharan homes, biomass is a vital source of energy for small- and medium-

¹⁴ 75 (2022) *Kenya - Energy-Electrical Power Systems*. Available at: <https://www.trade.gov/country-commercial-guides/kenya-energy-electrical-power-systems> (Accessed: 21 April 2024).

¹⁵ 75 (2022) *Kenya - Energy-Electrical Power Systems*. Available at: <https://www.trade.gov/country-commercial-guides/kenya-energy-electrical-power-systems> (Accessed: 21 April 2024).

¹⁶ 75 (2022) *Kenya - Energy-Electrical Power Systems*. Available at: <https://www.trade.gov/country-commercial-guides/kenya-energy-electrical-power-systems> (Accessed: 21 April 2024).

¹⁷ Kennedy S Muzee, "Low-carbon Africa: Kenya". *This report is one of six African country case studies commissioned by Christian Aid to support the report Low-Carbon Africa: Leapfrogging to a Green Future*. Available at: <https://www.christianaid.org.uk/sites/default/files/2022-07/low-carbon-africa-kenya-november-2011.pdf> (Accessed: 20 April 2024).

¹⁸ *Kenya's charcoal bans have fuelled a smuggling problem* | ISS Africa (no date). Available at: <https://issafrica.org/> (Accessed: 21 April 2024).

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

sized rural businesses and establishments, including bakeries, restaurants, hospitals, prisons, tea shops, tobacco curing, brick-making, and fish smoking.¹⁹

This paper critically appraises Kenya's journey towards achieving energy transition for sustainability. It discusses the current global status, challenges and prospects of Kenya in realising this dream into a reality for its people.

2.0 Access to Energy and Sustainable Development

Increased energy consumption and CO₂ emission restrictions are two of the world's main energy transitioning problems.²⁰ The energy sector plays a crucial role in accomplishing the Sustainable Development Goals and yet, among the infrastructure sectors, energy generation and distribution is also the largest emitter of greenhouse gas emissions, accounting for 37% of global emissions overall.²¹ The Sustainable Development Goal 7 (SDG 7) aims to provide "affordable, reliable, sustainable, and modern energy for all" by 2030.²² Its three main objectives are to guarantee that everyone has access to affordable, dependable, and modern energy services; significantly increase the proportion of renewable energy in the world's energy mix; and double the rate at which energy efficiency is improving globally.²³

Similarly, SDG 12 requires countries to ensure sustainable consumption and production patterns. Target 12.c thereof requires countries to rationalize

¹⁹ Ibid.

²⁰ Ali, K. *et al.* (2023) 'Testing the role of digital financial inclusion in energy transition and diversification towards COP26 targets and sustainable development goals', *Gondwana Research*, 121, pp. 293–306. Available at: <https://doi.org/10.1016/j.gr.2023.05.006>.

²¹ Wernersson, L. *et al.* (2024) 'Mainstreaming systematic climate action in energy infrastructure to support the sustainable development goals', *npj Climate Action*, 3(1), pp. 1–12. Available at: <https://doi.org/10.1038/s44168-024-00108-2>.

²² *Sustainable Development Goal 7 (SDG7)* (no date) *Sustainable Energy for All | SEforALL*. Available at: <https://www.seforall.org/our-work/sustainable-development-goal-7-sdg7> (Accessed: 20 April 2024).

²³ *Sustainable Development Goal 7 (SDG7)* (no date) *Sustainable Energy for All | SEforALL*. Available at: <https://www.seforall.org/our-work/sustainable-development-goal-7-sdg7> (Accessed: 20 April 2024).

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities.²⁴ Reconciling environmental deterioration with economic progress, and accomplishing more with less, is one of the world's biggest difficulties in integrating environmental sustainability with welfare and growth.²⁵ The shift to a greener and more socially inclusive global economy requires resource and impact decoupling in order to support sustainable patterns of production and consumption.²⁶

The Sustainable Development Goal (SDG) number seven (SDG 7), which calls for universal access to affordable, modern, sustainable, and clean energy, is linked to a number of other objectives, including: ending world hunger, promoting economic growth and decent work; eliminating poverty; promoting health and well-being; providing clean water and sanitation; taking action against climate change; and encouraging responsible consumption and production.²⁷ Therefore, it may be argued that many of the SDGs' goals would be challenging to achieve for poor nations who are having trouble with access

²⁴ Ibid.; Martin (no date) 'Sustainable consumption and production', *United Nations Sustainable Development*. Available at: <https://www.un.org/sustainabledevelopment/sustainable-consumption-production/> (Accessed: 21 April 2024).

²⁵ Environment, U.N. (2021) *GOAL 12: Sustainable consumption and production, UNEP - UN Environment Programme*. Available at: <http://www.unep.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-12> (Accessed: 21 April 2024).

²⁶ Environment, U.N. (2021) *GOAL 12: Sustainable consumption and production, UNEP - UN Environment Programme*. Available at: <http://www.unep.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-12> (Accessed: 21 April 2024).

²⁷ Ebhota, W.S., 2021. Leveraging on sustainable energy transition to change the energy narrative of the dark continent. *International Journal of Energy Economics and Policy*, 11(3), pp.409-416.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

to energy.²⁸ A major component of the social, environmental, and developmental difficulties facing the globe today is the search for adequate energy to meet the growing demand.²⁹

In order to achieve the goal of the SDGs and COP26 aims (direction towards energy transition and diversification) to obtain net zero emissions by 2050 and the (SDGs 7, 12, 11 and 13) by 2030, energy transition and diversification with policy frameworks are thus essential components.³⁰ Thus, in compliance with UN guidelines, contemporary energy systems should generate low to zero carbon dioxide emissions; balance capital-intensive investments for network expansions; influence local energy security and self-sufficiency; and promote social investment and inclusivity.³¹

3.0 Energy Transition: Examining Kenya's Policies and Energy Landscape

To build a more inclusive and clean energy economy, significant economic, political, and social connectivity across economies as well as an efficient domestic governance structure is essential.³² In poor nations, an over dependence on biomass and other polluting fuels for cooking has added to the problem of global climate change.³³ One of the main issues with the energy access situation in underdeveloped nations has been the availability of clean

²⁸ Ibid., p.409.

²⁹ Ibid., p.409.

³⁰ Ali, K. *et al.* (2023) 'Testing the role of digital financial inclusion in energy transition and diversification towards COP26 targets and sustainable development goals', *Gondwana Research*, 121, pp. 293-306. Available at: <https://doi.org/10.1016/j.gr.2023.05.006>.

³¹ Ibid., p.409.

³² Acheampong, A.O., Opoku, E.E.O. and Dogah, K.E., 2023. The political economy of energy transition: the role of globalization and governance in the adoption of clean cooking fuels and technologies. *Technological Forecasting and Social Change*, 186, p.122156.

³³ Acheampong, A.O., Opoku, E.E.O. and Dogah, K.E., 2023. The political economy of energy transition: the role of globalization and governance in the adoption of clean cooking fuels and technologies. *Technological Forecasting and Social Change*, 186, p.122156; see also Namaswa, T. *et al.* (2022) 'Sustainable biomass energy production and utilization in sub-Saharan Africa: A case study of Kenya', *Journal of Horticulture and Forestry*, 14(4), pp. 56-67. Available at: <https://doi.org/10.5897/JHF2022.0689>.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

cooking energy. Modern energy accessibility promotes clean energy development.³⁴

According to the broad definition, a home is considered energy poor if it relies on traditional energy sources like biomass or cannot access contemporary energy sources like electricity and clean cooking fuels or technology for basic energy needs.³⁵ Indeed, research has shown that energy poverty is a precursor to other environmental and social issues, such as socioeconomic development and human health.³⁶ Kenya is one of the countries that have been suffering from this inadequate access to clean energy sources and over-reliance on biomass.³⁷ Biomass fuel sources include agricultural and industrial wastes, such as wood fuel (firewood and charcoal) and crop residues, as well as habitat systems such as enclosed forests, woods, bushlands, grasslands, farmlands, and plantations.³⁸ Charcoal is still a valuable resource, especially for people living in cities, nevertheless. On the other hand, increased rates of deforestation are associated with its expansion.³⁹ A little over 47% of Kenyan

³⁴ Ibid.

³⁵ Ang'u, C. *et al.* (2023) 'Analysis of energy poverty in Kenya and its implications for human health', *Energy Policy*, 176, p. 113506. Available at: <https://doi.org/10.1016/j.enpol.2023.113506>.

³⁶ Ang'u, C. *et al.* (2023) 'Analysis of energy poverty in Kenya and its implications for human health', *Energy Policy*, 176, p. 113506. Available at: <https://doi.org/10.1016/j.enpol.2023.113506>.

³⁷ Ang'u, C. *et al.* (2023) 'Analysis of energy poverty in Kenya and its implications for human health', *Energy Policy*, 176, p. 113506. Available at: <https://doi.org/10.1016/j.enpol.2023.113506>.

³⁸ Takase, M., Kipkoeh, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

³⁹ *Charcoal value chains in Africa and their role for sustainable development* (2021) *SweDev*. Available at: <https://www.swedev.dev/charcoal-value-chains-in-africa-and-their-role-for-sustainable-development/> (Accessed: 21 April 2024); Zorrilla-Miras, P. *et al.* (2018) 'Environmental Conservation and Social Benefits of Charcoal Production in Mozambique', *Ecological Economics*, 144, pp. 100–111. Available at: <https://doi.org/10.1016/j.ecolecon.2017.07.028>; Tassie, K. *et al.* (2021) 'Socioeconomic and Environmental Impacts of Charcoal Production Activities of Rural Households in Mecha District, Ethiopia', *Advances in Agriculture*, 2021, p. e6612720. Available at: <https://doi.org/10.1155/2021/6612720>; Igini, M. (2022) *Deforestation in Africa: Causes, Effects, and Solutions*, *Earth.Org*. Available at: <https://earth.org/deforestation-in->

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

homes utilise charcoal as a fuel source; 82% of urban dwellings and 34% of rural homes do the same.⁴⁰ Currently Kenya is among the countries in the Sub-Saharan Africa (SSA) that are still in energy crisis and socio-economic deficit that cannot be disputed. Accessibility to modern and renewable energy for a long time has been considered to be a privileged in Kenya.⁴¹ Despite Kenya's 75% power penetration rate, many individuals still find the cost of connection to be prohibitive.⁴² Kerosene is now used by 92% of all homes, of which 94% are in rural regions and 89% are in urban areas.⁴³ It is mostly used for lighting, and the majority of urban families use it to prepare food, which explains why urban use of kerosene is larger than that of rural households.⁴⁴

Although 75% of Kenyans have access to electricity and the country is Africa's largest generator of geothermal energy, many still find the expense of access to be prohibitive.⁴⁵ Although the government has a plan to use subsidies and other measures to make liquefied petroleum gas the main fuel for cooking, the

africa/ (Accessed: 21 April 2024); Chidumayo, E. and Gumbo, D. (2013) 'The environmental impacts of charcoal production in tropical ecosystems of the world: A synthesis', *Energy for Sustainable Development*, 17, pp. 86–94. Available at: <https://doi.org/10.1016/j.esd.2012.07.004>; Wekesa, C. *et al.* (2023) 'Effects of charcoal ban on value chains and livelihoods in Kenyan coast – Stakeholders' perceptions', *Environmental Development*, 45, p. 100809. Available at: <https://doi.org/10.1016/j.envdev.2023.100809>.

⁴⁰ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁴¹ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁴² *Kenya's charcoal bans have fuelled a smuggling problem* | ISS Africa (no date). Available at: <https://issafrica.org/> (Accessed: 21 April 2024).

⁴³ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁴⁴ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁴⁵ *Kenya's charcoal bans have fuelled a smuggling problem* | ISS Africa (no date). Available at: <https://issafrica.org/> (Accessed: 21 April 2024).

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

plan is not being implemented quickly enough.⁴⁶ Giving access to these substitutes priority would lessen reliance on charcoal.⁴⁷

The primary obstacle to mitigating the uncontrolled utilisation of biomass has been the absence of efficacious policies and tactics to tackle the escalating difficulties in its cultivation and use. For example, Kenya passed Acts and policies such as the Energy Act 2019⁴⁸ that face a number of obstacles, such as stakeholders such as charcoal producer association organisations not cooperating with one another and a lack of persistent political will.⁴⁹ For instance, the government's 2018 ban on the production of charcoal is a poor policy strategy for ensuring sustainability because it encourages overexploitation in private companies, increases illegal tree harvesting and charcoal production, demoralizes the community from engaging in sustainable forest and tree management, and increases corruption as producers bribe law enforcement and the police.⁵⁰ The biomass energy industry has not received much investment due to inadequate legislation in Sub-Saharan Africa, as the majority of investments are in commercial energy sources, namely electricity and petroleum-based fuels.⁵¹ Some authors have however observed that wood fuels have received little attention in global policy discussions on energy supply; instead, the emphasis has been on the need for the impoverished to have access to "modern" energy sources like kerosene, liquefied petroleum gas (LPG), and electricity.⁵²

⁴⁶ *Kenya's charcoal bans have fuelled a smuggling problem* | ISS Africa (no date). Available at: <https://issafrica.org/> (Accessed: 21 April 2024).

⁴⁷ Ibid.

⁴⁸ Energy Act, No. 1 of 2019, Laws of Kenya.

⁴⁹ Namaswa, T. *et al.* (2022) 'Sustainable biomass energy production and utilization in sub-Saharan Africa: A case study of Kenya', *Journal of Horticulture and Forestry*, 14(4), pp. 56-67. Available at: <https://doi.org/10.5897/JHF2022.0689>.

⁵⁰ Ibid; see also *Kenya's charcoal bans have fuelled a smuggling problem* | ISS Africa (no date). Available at: <https://issafrica.org/> (Accessed: 21 April 2024).

⁵¹ Ibid.

⁵² Namaswa, T. *et al.* (2022) 'Sustainable biomass energy production and utilization in sub-Saharan Africa: A case study of Kenya', *Journal of Horticulture and Forestry*, 14(4), pp. 56-67. Available at: <https://doi.org/10.5897/JHF2022.0689>.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

Kenya's commitment to reducing over-reliance on fossil fuels and non-sustainable biomass fuels may be met by implementing and promoting clean, efficient, and sustainable energy technology.⁵³ The country has selected major priority mitigation actions to achieve this goal. In order to achieve this, there has been a consistent shift towards clean cooking using liquefied petroleum gas (LPG), with a current penetration rate of around 19% (2.4 million) and a projected 100% changeover by 2028.⁵⁴ LPG costs have increased quickly in spite of government attempts to promote LPG use through tax incentives. With LPG at zero rating, costs were steady from 2016 to 2021 before sharply rising in July 2021 as a result of the reinstatement of VAT.⁵⁵ There was however a reversal of this in 2023 where there was removal of VAT on liquefied petroleum gas (LPG) – zero rated for VAT.⁵⁶ Thus, in reality, and with such uncertainties, most of the impoverished communities in Sub-Saharan Africa are unlikely to obtain their primary household energy needs from modern energy sources for several years to come.⁵⁷ This is because the number of rural poor populations that are unable to buy modern energy sources is growing, which causes the usage of biomass energy to rise.⁵⁸ Research and development of more advanced and effective technologies for producing and using biomass energy are required.⁵⁹ To ensure that the developed technologies are effective, inexpensive, straightforward, and easy to use, as well as to take into account user needs like cooking comfort, health concerns, and safety, this can be accomplished by strengthening research and development institutions and

⁵³ 'Promoting Clean Cooking in Kenya - KIPPRA' (no date). Available at: <https://kippra.or.ke/promoting-clean-cooking-in-kenya/> (Accessed: 21 April 2024).

⁵⁴ Ibid.

⁵⁵ 'Promoting Clean Cooking in Kenya - KIPPRA' (no date). Available at: <https://kippra.or.ke/promoting-clean-cooking-in-kenya/> (Accessed: 21 April 2024).

⁵⁶ *Key Highlights of the Finance Act 2023 - KRA* (no date). Available at: <https://www.kra.go.ke/popular-links/key-highlights-of-the-finance-act-2023> (Accessed: 21 April 2024).

⁵⁷ Namaswa, T. *et al.* (2022) 'Sustainable biomass energy production and utilization in sub-Saharan Africa: A case study of Kenya', *Journal of Horticulture and Forestry*, 14(4), pp. 56-67. Available at: <https://doi.org/10.5897/JHF2022.0689>.

⁵⁸ Ibid; see also *Why Kenya cannot do away with charcoal* (no date). Available at: <https://www.the-star.co.ke/sasa/lifestyle/2023-11-03-why-kenya-cannot-do-away-with-charcoal/> (Accessed: 21 April 2024).

⁵⁹ Ibid.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

promoting multidisciplinary and multi-institutional research through bio-energy innovation platforms.⁶⁰ The Kenya Bioenergy Strategy 2020–2027 states that policies pertaining to biomass energy should be focused on guaranteeing the sustainable, adequate, competitive, secure, and consistent supply of biomass energy to fulfil current demand while preserving and safeguarding the environment.⁶¹

Kenya's population is expanding, the economy is expanding, and energy demand is outpacing supply.⁶² In an attempt to make Kenya's economy middle-income by 2030, the Kenyan Government's Vision 2030 programme has proposed aggressive goals for future economic growth.⁶³ The main issue the nation faces is its dependency on hydroelectric electricity and the lack of

⁶⁰ Namaswa, T. *et al.* (2022) 'Sustainable biomass energy production and utilization in sub-Saharan Africa: A case study of Kenya', *Journal of Horticulture and Forestry*, 14(4), pp. 56–67. Available at: <https://doi.org/10.5897/JHF2022.0689>.

⁶¹ *Ibid*; see also now, business (2023) *Kenya fast tracking shift to clean energy*, *Business Now*. Available at: <https://businessnow.co.ke/kenya-fast-tracking-shift-to-clean-energy/> (Accessed: 21 April 2024); *Fast and fair renewable energy for Africa: Lessons from Kenya* (no date) *Business & Human Rights Resource Centre*. Available at: <https://www.business-humanrights.org/en/from-us/briefings/fast-and-fair-renewable-energy-for-africa-lessons-from-kenya/> (Accessed: 21 April 2024); User, S. (no date) *A Just Energy Transition for Africa*. Available at: <https://www.acts-net.org/2018/index.php/blogs/foresight-africa-blog/a-just-energy-transition-for-africa> (Accessed: 21 April 2024); *What does justice mean for the energy transition and how do we achieve it?* (2023). Available at: <https://www.ied.org/what-does-justice-mean-for-energy-transition-how-do-we-achieve-it> (Accessed: 21 April 2024).

⁶² *Kenya Energy Outlook – Analysis* (no date) IEA. Available at: <https://www.iea.org/articles/kenya-energy-outlook> (Accessed: 21 April 2024); week, S. up to date on the editors' picks of the (2024) *Power demand could overtake generation by 2027*, *Business Daily*. Available at: <https://www.businessdailyafrica.com/bd/economy/power-demand-could-overtake-generation-by-2027--4515164> (Accessed: 21 April 2024); Maket, I. (2021) 'Population dynamics and economic growth in Kenya', *Hungarian Statistical Review*, 4, pp. 18–33. Available at: <https://doi.org/10.35618/hsr2021.02.en018>; Baskaran, G. and Coste, S. (2024) 'Achieving Universal Energy Access in Africa amid Global Decarbonization'. Available at: <https://www.csis.org/analysis/achieving-universal-energy-access-africa-amid-global-decarbonization> (Accessed: 21 April 2024).

⁶³ Takase, M., Kipkoeh, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.fueco.2021.100015>.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

investment in power generation.⁶⁴ Companies in Kenya experience power interruptions, costing them an average of 6.3 million Kenyan shillings every month.⁶⁵

In order to close the energy supply and demand imbalance, the Kenyan government launched an ambitious plan in 2013 to increase productive power output from 1664 MW to more than 5000 MW by the end of 2017.⁶⁶ The aim has not yet been fully attained. When completely implemented, the percentage of power generated by renewable energy sources was predicted to drop from 66% in 2017 to less than 50%.⁶⁷ The remaining energy will be generated mostly by thermal, nuclear, and natural gas power plants.⁶⁸ Kenya's National Climate Action Strategy and its Plan of National Agreed Commitments (INDCs) were

⁶⁴ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>; *The Seven Major Threats to Kenya's Power Sector* (no date) *Energy for Growth Hub*. Available at: <https://energyforgrowth.org/article/the-seven-major-threats-to-kenyas-power-sector/> (Accessed: 21 April 2024); Sai, R. and Lin, B. (2022) 'Productivity assessment of power generation in Kenya: What are the impacts?', *Energy*, 254, p. 124200. Available at: <https://doi.org/10.1016/j.energy.2022.124200>.

⁶⁵ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁶⁶ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁶⁷ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁶⁸ *Ibid.*; see also 75 (2022) *Kenya - Energy-Electrical Power Systems*. Available at: <https://www.trade.gov/country-commercial-guides/kenya-energy-electrical-power-systems> (Accessed: 21 April 2024); admin (2023) 'Kenya's Renewable Power Generation Hits 86pct Of Total Output', *Kenya Investment Authority (KenInvest)*, 11 January. Available at: <https://www.invest.go.ke/2023/01/11/kenyas-renewable-power-generation-hits-86pct-total-output/> (Accessed: 21 April 2024); *Kenya - Electrical Power Systems | Privacy Shield* (no date). Available at: <https://www.privacyshield.gov/ps/article?id=Kenya-electrical-power-systems> (Accessed: 21 April 2024); Kihara, M. *et al.* (2024) 'Mid- to long-term capacity planning for a reliable power system in Kenya', *Energy Strategy Reviews*, 52, p. 101312. Available at: <https://doi.org/10.1016/j.esr.2024.101312>.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

both in conflict with the programme. The program's objective was to enhance Kenya's power generation from wind, solar, and geothermal sources.⁶⁹

4.0 Kenya Energy Transition & Investment Plan 2023-2050

Kenya's Ministry of Energy is in charge of developing and executing energy policies that regulate industry participants and guarantee efficiency and safety while conserving and using energy.⁷⁰ Kenya's Ministry of Energy and Petroleum launched the Kenya Energy Transition & Investment Plan 2023-2050 in 2023 whose main objectives are: to build an Energy Transition and Investment Plan (ETIP); help Kenya frame an energy transition agenda that will attract investment, while at the same time ensuring a just transition and fully supporting Kenya's rapid economic growth trajectory; and to help Kenya engage the global investment and climate finance community.⁷¹

The Kenya Energy Transition and Investment Plan outlines Kenya's commitment to combat climate change and achieve net-zero emissions by 2050.⁷² With assistance from Sustainable Energy For All (SEforALL) and the UN, the Kenya Ministry of Energy and Petroleum developed the strategy, which intends to put Kenya in a position to attract investment, spur new business ventures, and seize chances for green growth in the rapidly changing global environment.⁷³ The plan highlights the potential for investment opportunities and economic growth through the transition to clean energy.⁷⁴

⁶⁹ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁷⁰ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁷¹ Republic of Kenya, *Kenya Energy Transition & Investment Plan 2023 - 2050*, P. 1. Available at <https://energy.go.ke/sites/default/files/KAWI/Kenya-ETIP-2050%202.pdf> [Accessed on 19 April 2024]; See also *Sustainable Energy for All (2024) Sustainable Energy for All | SEforALL*. Available at: <https://www.seforall.org/taxonomy/term/46> (Accessed: 21 April 2024).

⁷² 'Kenya energy transition faces infrastructure, funding challenges' (no date) *Gas Outlook*. Available at: <https://gasoutlook.com/analysis/kenya-energy-transition-faces-infrastructure-funding-challenges/> (Accessed: 20 April 2024).

⁷³ Ibid.

⁷⁴ Ibid.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

It identifies key technologies for decarbonization, such as renewable energy, green hydrogen, e-mobility, energy storage, and clean cooking.⁷⁵ The plan also emphasizes the importance of strong governance, supportive policies, and stakeholder collaboration.⁷⁶ It estimates that around \$600 billion in capital investment is needed, with a focus on the power and transport sectors.⁷⁷ The plan envisions job creation, reduced fossil fuel consumption, and a transition to cleaner and more sustainable energy sources.⁷⁸

Kenya intends to electrify its country in order to replace fossil fuels. According to the Plan, this will reduce overall CO₂ emissions (a net zero scenario) and be powered by solar, wind, geothermal, and maybe nuclear energy in addition to energy storage and energy efficiency.⁷⁹

5.0 Fast-tracking Just Energy Transition in Kenya for Sustainability

Reducing energy poverty and providing access to modern energy sources are top priorities for several governments throughout the globe.⁸⁰ The Sustainable Development Goals (SDGs) of the United Nations, among which Goal 7 is to "ensure access to affordable, reliable, sustainable and modern energy for all," are another important source of inspiration for them. In order to promote

⁷⁵ Republic of Kenya, *Kenya Energy Transition & Investment Plan 2023 – 2050*, P. 1. Available at <https://energy.go.ke/sites/default/files/KAWI/Kenya-ETIP-2050%202.pdf> [Accessed on 19 April 2024].

⁷⁶ Republic of Kenya, *Kenya Energy Transition & Investment Plan 2023 – 2050*, P. 1. Available at <https://energy.go.ke/sites/default/files/KAWI/Kenya-ETIP-2050%202.pdf> [Accessed on 19 April 2024].

⁷⁷ Republic of Kenya, *Kenya Energy Transition & Investment Plan 2023 – 2050*, P. 1. Available at <https://energy.go.ke/sites/default/files/KAWI/Kenya-ETIP-2050%202.pdf> [Accessed on 19 April 2024].

⁷⁸ Republic of Kenya, *Kenya Energy Transition & Investment Plan 2023 – 2050*, P. 1. Available at <https://energy.go.ke/sites/default/files/KAWI/Kenya-ETIP-2050%202.pdf> [Accessed on 19 April 2024].

⁷⁹ 'Kenya energy transition faces infrastructure, funding challenges' (no date) *Gas Outlook*. Available at: <https://gasoutlook.com/analysis/kenya-energy-transition-faces-infrastructure-funding-challenges/> (Accessed: 21 April 2024).

⁸⁰ Acheampong, A.O., Opoku, E.E.O. and Dogah, K.E., 2023. The political economy of energy transition: the role of globalization and governance in the adoption of clean cooking fuels and technologies. *Technological Forecasting and Social Change*, 186, p.122156

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

economic growth, enhance health, ensure food security, and strive towards the accomplishment of nearly all of the SDGs, access to modern energy is crucial.⁸¹ Even though access to modern energy is crucial, many people in poor nations still view it as a privilege rather than a right.⁸²

According to the national energy review, there is a significant reliance on biomass and wood as fuel, with wood accounting for 68% of total energy use (oil accounting for 22%, electricity for 9%, and others for 1%).⁸³ Considering the government's ambitious target of raising the number of power connections from 15% to at least 65% by 2022, Kenya's penetration of electricity remains low.⁸⁴

Kenya is equipped with a 2.3 GW capacity. About 32% is thermal power, about 57% is hydropower, and the remainder is made up of geothermal and emergency thermal power.⁸⁵ The combined effect of wind and solar

⁸¹ Acheampong, A.O., Opoku, E.E.O. and Dogah, K.E., 2023. The political economy of energy transition: the role of globalization and governance in the adoption of clean cooking fuels and technologies. *Technological Forecasting and Social Change*, 186, p.122156.

⁸² Acheampong, A.O., Opoku, E.E.O. and Dogah, K.E., 2023. The political economy of energy transition: the role of globalization and governance in the adoption of clean cooking fuels and technologies. *Technological Forecasting and Social Change*, 186, p.122156.

⁸³ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁸⁴ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁸⁵ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>; Kenya steps up as global geothermal powerhouse | Reuters (no date). Available at: <https://www.reuters.com/markets/commodities/kenya-steps-up-global-geothermal-powerhouse-2023-10-05/> (Accessed: 21 April 2024); Gavin, J. (2022) *Kenya bets on renewables in hydro and geothermal push*, *African Business*. Available at: <https://african.business/2022/07/energy-resources/kenya-seeks-to-maximise-benefits-from-baseload-renewables> (Accessed: 21 April 2024).

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

photovoltaic (PV) electricity is minimal, at most 1%.⁸⁶ Nevertheless, due to insufficient precipitation, the percentage of hydropower generated in the generating mix fluctuated from 38% to 76%.⁸⁷ To make up the difference, which varies from 16 to 33% of the mix, thermal energy sources are used. At the moment, Kenya is using 1429 MW of grid-connected energy. Fossil fuel and hydropower are the principal energy sources.⁸⁸

By tackling climate change and environmental issues, renewable energy makes a beneficial contribution to society.⁸⁹ As an illustration, biodiesel has the ability to lower the quantity of greenhouse gases released into the environment.⁹⁰ This is as a result of greenhouse gas emissions being far lower than those of fossil fuels.⁹¹ Additionally, the commercialization of some energy sources, like biodiesel, can help women become financially independent by

⁸⁶ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>

⁸⁷ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁸⁸ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁸⁹ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁹⁰ Hanaki, K. and Portugal-Pereira, J. (2018) 'The Effect of Biofuel Production on Greenhouse Gas Emission Reductions', in K. Takeuchi et al. (eds) *Biofuels and Sustainability: Holistic Perspectives for Policy-making*. Tokyo: Springer Japan, pp. 53–71. Available at: https://doi.org/10.1007/978-4-431-54895-9_6; *Emissions from Biofuels - an overview* | ScienceDirect Topics (no date). Available at: <https://www.sciencedirect.com/topics/engineering/emissions-from-biofuels>

(Accessed: 21 April 2024); Khanna, M., Crago, C.L. and Black, M. (2011) 'Can biofuels be a solution to climate change? The implications of land use change-related emissions for policy', *Interface Focus*, 1(2), pp. 233–247. Available at: <https://doi.org/10.1098/rsfs.2010.0016>.

⁹¹ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

releasing them from burdensome labour and economic obligations.⁹² With technology for irrigation and water pumping, as well as for agricultural processing like milling and canning, energy can also significantly improve food security for the underprivileged.⁹³ There is a good chance that some of the low-income households' appropriate water pumping and irrigation technology will not only guarantee a year-round supply of food but will also generate additional income.⁹⁴

Several factors have hindered the growth of renewable energy in the nation and the sub-Saharan region as a whole. These factors include high initial capital costs, a shortage of skilled labour, inadequate policy and legal frameworks, poor planning, a lack of coordination and linkages in renewable energy programmes, pricing distortions that disadvantage renewable energy, weak dissemination strategies, poor baseline information, and low maintenance capacity.⁹⁵ Policy and regulatory frameworks must seek to adequately address these challenges if renewable energy sector is to contribute more towards the transition to cleaner sources of energy for the Kenyan people. Research indicates that the adoption of clean fuels and cooking technologies is influenced by globalization (economic, social, and political) and governance (efficiency of government, prevention of corruption, political stability, and rule of law).⁹⁶

⁹² Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁹³ Kennedy S Muzee, "Low-carbon Africa: Kenya". *This report is one of six African country case studies commissioned by Christian Aid to support the report Low-Carbon Africa: Leapfrogging to a Green Future*. Available at: <https://www.christianaid.org.uk/sites/default/files/2022-07/low-carbon-africa-kenya-november-2011.pdf> (Accessed: 20 April 2024).

⁹⁴ Ibid.

⁹⁵ Kennedy S Muzee, "Low-carbon Africa: Kenya". *This report is one of six African country case studies commissioned by Christian Aid to support the report Low-Carbon Africa: Leapfrogging to a Green Future*. Available at: <https://www.christianaid.org.uk/sites/default/files/2022-07/low-carbon-africa-kenya-november-2011.pdf> (Accessed: 20 April 2024).

⁹⁶ Acheampong, A.O., Opoku, E.E.O. and Dogah, K.E., 2023. The political economy of energy transition: the role of globalization and governance in the adoption of clean

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

The inability to obtain advanced energy, the pressure on biomass supplies to increase, rising energy prices, the fact that the demand for electricity is greater than the capacity of new generation, and the dispersion of Kenya Power and Lighting Company (KPLC) make it difficult to connect all customers who would like to purchase a significant amount of rural electrification through grid development are some of the current challenges and weaknesses affecting Kenya's energy supply.⁹⁷ As the state and its allies recognise the need to protect and sustain the environment, they must work together to find solutions to these issues in order to ensure an adequate and affordable energy supply for economic development, which includes improving people's quality of life.⁹⁸

Other factors that need to be taken into account include the costs of producing energy, capacity/availability issues, environmental effects, and choices made about the purchase of power.⁹⁹ The ability to create jobs for the expanding population and sustainability are two more important factors.¹⁰⁰ Given Kenya's abundance of geothermal resources, geothermal energy is anticipated to be the preferred source of contribution to the main load capacity. It is advantageous in terms of cost, high capacity/accessibility characteristics, and nearly zero emissions – primarily if traditional closed cycles are employed to re-inject water into the crust of the earth.¹⁰¹

cooking fuels and technologies. *Technological Forecasting and Social Change*, 186, p.122156.

⁹⁷ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>; Berg, L. (no date) *Powering Kenya's Progress: Support to GoK on the Energy Sector White Paper*, Dalberg. Available at: <https://dalberg.com/our-ideas/powering-kenyas-progress-support-to-gok-on-the-energy-sector-white-paper/> (Accessed: 21 April 2024).

⁹⁸ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

⁹⁹ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

¹⁰⁰ Ibid.

¹⁰¹ Ibid.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

In terms of hydroelectric resources, the competition for water supply from horticulture and other irrigation-dependent agricultural operations is growing exponentially, while population growth drives up the demand for water for residential and commercial applications.¹⁰² Utilising river flows as the main source of energy generation is risky since it essentially depends on unpredictable and often unexpected variations in the environment and weather.¹⁰³ For instance, it has been observed that the unchecked expansion of commercial and agricultural endeavours into the water catchment areas, such as the Cherangani Hills, Mount Kenya, Mount Elgon, and Mau Forest, seems to be increasing the susceptibility of hydropower development to the effects of drought and the unpredictable weather patterns common in Kenya and the Horn of Africa.¹⁰⁴ Therefore, it is necessary to protect the river water supplies, which includes keeping enough forests to safeguard runoff and installing soil erosion control technologies in catchment regions to lower the chance of dam siltation.¹⁰⁵

¹⁰² Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

¹⁰³ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

¹⁰⁴ Kennedy S Muzee, "Low-carbon Africa: Kenya". *This report is one of six African country case studies commissioned by Christian Aid to support the report Low-Carbon Africa: Leapfrogging to a Green Future*. Available at: <https://www.christianaid.org.uk/sites/default/files/2022-07/low-carbon-africa-kenya-november-2011.pdf> (Accessed: 20 April 2024); Dept, I.M.F.A. (2024) 'Kenya: Staff Report for the 2023 Article IV Consultation, Sixth Reviews Under the Extended Fund Facility and Extended Credit Facility Arrangements, Requests for Augmentations of Access, Modification of Performance Criteria, Waiver of Nonobservance of Performance Criteria, Waiver of Applicability of Performance Criteria, and First Review Under the Resilience and Sustainability Facility Arrangement', *IMF Staff Country Reports*, 2024(013). Available at: <https://doi.org/10.5089/9798400264177.002.A004>.

¹⁰⁵ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

In order to improve performance and lower indoor air pollution, additional funding must be allocated to the research and development of advanced biomass stoves.¹⁰⁶ Alternatively, by enacting strong anti-poor policies, it is crucial to increase accessibility to LPG as a substitute for biomass notwithstanding Kenya's significant lack of biomass.¹⁰⁷ Rather than imposing prohibitions, county governments should think about providing alternate means of subsistence to rural populations that produce charcoal.¹⁰⁸ Their reliance on charcoal as a source of revenue would decrease if agriculture-related activities were given more of a priority.¹⁰⁹

Environmental deterioration and climate change are significant worldwide issues that demand immediate attention from decision-makers, scholars, and other stakeholders.¹¹⁰ Petroleum fuel remains the primary non-renewable source of energy use in Kenya. The usage of petroleum fuel raises greenhouse gas emissions, which contribute to climate change and global warming.¹¹¹ With the rate at which fossil fuels are being used up worldwide and the detrimental effects of greenhouse gas emissions, using sustainable and renewable energy sources is becoming more and more necessary.¹¹²

¹⁰⁶ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

¹⁰⁷ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

¹⁰⁸ *Kenya's charcoal bans have fuelled a smuggling problem* | ISS Africa (no date). Available at: <https://issafrica.org/> (Accessed: 21 April 2024).

¹⁰⁹ Ibid; Owino, B., D.Asher and Mulwa, M. (2018) *Barriers to Uptake of Clean and Renewable Energy: Case of Bomet and Homa-Bay County*. Cuts Nairobi.

¹¹⁰ Ali, K. *et al.* (2023) 'Testing the role of digital financial inclusion in energy transition and diversification towards COP26 targets and sustainable development goals', *Gondwana Research*, 121, pp. 293–306. Available at: <https://doi.org/10.1016/j.gr.2023.05.006>.

¹¹¹ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

¹¹² Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

Kenya has used and continues to employ renewable energy, although very little of it is now used to generate electricity.¹¹³ Kenya is endowed with the potential for renewable energy sources, such as geothermal, solar, biomass, wind, and hydropower, given its natural environment and geographical peculiarities.¹¹⁴ To achieve sustainable development, all public sector players, non-governmental organisations, and citizens should make a concerted effort to support and encourage the use of renewable energy sources.¹¹⁵ The encouragement of investments in renewable energy at the lowest level is not supported by a decentralised coordinating structure, which causes isolated initiatives in rural regions to lag behind.¹¹⁶ The creation of this framework may serve as a significant platform for encouraging local communities to get involved in renewable energy technology initiatives including cogeneration, small hydro, and wind power for water pumping.¹¹⁷ There is need for more efforts coupled with real financial investment in initiatives as the Ministry of Energy and Petroleum's Strategy Paper dubbed "*Behaviour Change and Communication Strategy for Promoting Clean Cooking in Kenya 2022: Towards Ensuring Access to Affordable, Reliable, Sustainable and Modern Energy for All Kenyans*" which seeks to promote the following seven strategies: (1) Ideation,

¹¹³ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

¹¹⁴ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>; See also Kennedy S Muzee, "Low-carbon Africa: Kenya". *This report is one of six African country case studies commissioned by Christian Aid to support the report Low-Carbon Africa: Leapfrogging to a Green Future.* Available at: <https://www.christianaid.org.uk/sites/default/files/2022-07/low-carbon-africa-kenya-november-2011.pdf> (Accessed: 20 April 2024).

¹¹⁵ Takase, M., Kipkoech, R. and Essandoh, P.K. (2021) 'A comprehensive review of energy scenario and sustainable energy in Kenya', *Fuel Communications*, 7, p. 100015. Available at: <https://doi.org/10.1016/j.jfueco.2021.100015>.

¹¹⁶ Kennedy S Muzee, "Low-carbon Africa: Kenya". *This report is one of six African country case studies commissioned by Christian Aid to support the report Low-Carbon Africa: Leapfrogging to a Green Future.* Available at: <https://www.christianaid.org.uk/sites/default/files/2022-07/low-carbon-africa-kenya-november-2011.pdf> (Accessed: 20 April 2024).

¹¹⁷ Ibid.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

branding and rallying call¹¹⁸, (2) Execution of an awareness and behaviour change strategy, (3) Focus on elements of behaviour change, (4) Media advocacy to enhance public awareness and understanding of clean cooking, (5) Partnerships and coalitions, (6) Special events to promote clean cooking, and (7) Engaging the private sector/ industry players in promoting clean cooking.¹¹⁹ The Strategy Paper seeks to achieve this by focusing on the benefits of using improved cooking solutions, such as saving money and time, improving health, and positive environmental impacts especially targeting women living in rural, peri-urban, and informal settlements of Kenya as well as men, community networks, and private sector players, among others.¹²⁰ There is a need to actively employ these strategies especially in rural areas and urban areas as a way of changing the attitudes of people while also empowering them economically in order to promote a sustainable transition to cleaner energy sources in Kenya.

Kenya's green transformation programme can also be accelerated by innovative climate financing solutions that mobilise green investment, foster locally-led and domestically financed climate and economic resilience, and

¹¹⁸ This is meant to coalesce all the relevant stakeholders around a common rallying call, "Upishi Bora, Afya Bora." (Republic of Kenya, 'Behaviour Change and Communication Strategy for Promoting Clean Cooking in Kenya 2022: Towards Ensuring Access to Affordable, Reliable, Sustainable and Modern Energy for All Kenyans' (Ministry of Energy, 2022). Available at: [https://energy.go.ke/sites/default/files/KAWI/Other%20Downloads/BCC%20Strategy%20for%20Promoting%20Clean%20Cooking%20%20Kenya\(1\).pdf](https://energy.go.ke/sites/default/files/KAWI/Other%20Downloads/BCC%20Strategy%20for%20Promoting%20Clean%20Cooking%20%20Kenya(1).pdf) (Accessed: 21 April 2024), p. 21).

¹¹⁹ Republic of Kenya, 'Behaviour Change and Communication Strategy for Promoting Clean Cooking in Kenya 2022: Towards Ensuring Access to Affordable, Reliable, Sustainable and Modern Energy for All Kenyans' (Ministry of Energy, 2022). Available at: [https://energy.go.ke/sites/default/files/KAWI/Other%20Downloads/BCC%20Strategy%20for%20Promoting%20Clean%20Cooking%20%20Kenya\(1\).pdf](https://energy.go.ke/sites/default/files/KAWI/Other%20Downloads/BCC%20Strategy%20for%20Promoting%20Clean%20Cooking%20%20Kenya(1).pdf) (Accessed: 21 April 2024).

¹²⁰ Republic of Kenya, 'Behaviour Change and Communication Strategy for Promoting Clean Cooking in Kenya 2022: Towards Ensuring Access to Affordable, Reliable, Sustainable and Modern Energy for All Kenyans' (Ministry of Energy, 2022). Available at: <https://repository.kippra.or.ke/handle/123456789/4722> (Accessed: 21 April 2024).

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

place the nation in a position to gain from sustainable economic growth.¹²¹ The expansion of clean power capacity necessitates constant investment in order to scale up renewable energy in line with demand growth. The grid must be strengthened in tandem with the growth of renewable energy sources to prevent transmission and distribution lines from filling up to capacity.¹²²

It has been correctly asserted that the majority of barriers to the spread and uptake of sustainable energy technology originate at the government level.¹²³ These are matters of government intervention and policy. This means that when it comes to energy investment, development, and distribution, a nation's institutional structure and governance are crucial.¹²⁴ Some people argue that government participation is necessary due to the significant financial investment needed for energy infrastructure.¹²⁵ Governments in many

¹²¹ 5iveafrica (2023) 'Kenya should stay the low carbon course for green economy growth', *FSD Africa*, 6 September. Available at: <https://fsdafrica.org/news/kenya-should-stay-the-low-carbon-course-for-green-economy-growth/> (Accessed: 21 April 2024); *Climate Investment Funds Endorses Kenya's \$70 million Plan for 100 percent Clean Energy* | *Climate Investment Funds* (no date). Available at: <https://www.cif.org/news/climate-investment-funds-endorses-kenyas-70-million-plan-100-percent-clean-energy> (Accessed: 21 April 2024).

¹²² *Kenya Power's Decarbonising the Energy Mix Initiative* | *NewClimate Institute* (no date). Available at: <https://newclimate.org/resources/publications/kenya-powers-decarbonising-the-energy-mix-initiative> (Accessed: 21 April 2024).

¹²³ Acheampong, A.O., Opoku, E.E.O. and Dogah, K.E. (2023) 'The political economy of energy transition: The role of globalization and governance in the adoption of clean cooking fuels and technologies', *Technological Forecasting and Social Change*, 186, p. 122156. Available at: <https://doi.org/10.1016/j.techfore.2022.122156>.

¹²⁴ Ibid.

¹²⁵ Ibid; *Chapter 4. Government's Role in the Electricity Sector* (no date). Available at: <https://www.oas.org/dsd/publications/unit/oea79e/ch08.htm> (Accessed: 21 April 2024); Hall, S., Foxon, T.J. and Bolton, R. (2016) 'Financing the civic energy sector: How financial institutions affect ownership models in Germany and the United Kingdom', *Energy Research & Social Science*, 12, pp. 5–15. Available at: <https://doi.org/10.1016/j.erss.2015.11.004>; SITNFlash (2012) 'Beyond the Debate: The role of government in renewable energy finance', *Science in the News*, 15 December. Available at: <https://sitn.hms.harvard.edu/flash/2012/energy-finance/> (Accessed: 21 April 2024); *Public Sector Must Play Major Role in Catalyzing Private Climate Finance* (2022) IMF. Available at: <https://www.imf.org/en/Blogs/Articles/2022/08/18/public-sector-must-play-major-role-in-catalyzing-private-climate-finance> (Accessed: 21 April 2024); Bridge, G.,

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

developing (African) nations subsidize the cost of electricity so that it is affordable for everyone.¹²⁶ Since state-owned businesses make up a large portion of the energy industry in many of these nations, the efficiency of governance in general and government in particular are crucial to the smooth operation of these businesses.¹²⁷

6.0 Conclusion

It has been noted correctly that the cost, dependability, and efficiency of renewable energy solutions are increasing daily. We must alter how we create and use energy because our present reliance on fossil fuels is unsustainable and hazardous for the environment. To combat climate change, one of the greatest risks to human existence, it is imperative that these new energy alternatives be put into practice as soon as possible.¹²⁸

The development of alternate energy sources to fossil fuels is now imperative, as energy is the driving force behind economic progress.¹²⁹ For the purpose of

Özkaynak, B. and Turhan, E. (2018) 'Energy infrastructure and the fate of the nation: Introduction to special issue', *Energy Research & Social Science*, 41, pp. 1–11. Available at: <https://doi.org/10.1016/j.erss.2018.04.029>; Song, Y., Shahzad, U. and Paramati, S.R. (2023) 'Impact of energy infrastructure investments on renewable electricity generation in major Asian developing economies', *Australian Economic Papers*, 62(1), pp. 1–23. Available at: <https://doi.org/10.1111/1467-8454.12282>; *Why Public Financing Needs to Be Centre Stage for Universal Energy Access* (2023). Available at: <https://www.irena.org/News/expertinsights/2023/Sep/Why-Public-Financing-Needs-to-Be-Centre-Stage-for-Universal-Energy-Access> (Accessed: 21 April 2024).

¹²⁶ Acheampong, A.O., Opoku, E.E.O. and Dogah, K.E. (2023) 'The political economy of energy transition: The role of globalization and governance in the adoption of clean cooking fuels and technologies', *Technological Forecasting and Social Change*, 186, p. 122156. Available at: <https://doi.org/10.1016/j.techfore.2022.122156>.

¹²⁷ Ibid.

¹²⁸ *Goal 7: Affordable and clean energy* (no date) *The Global Goals*. Available at: <https://globalgoals.org/goals/7-affordable-and-clean-energy/> (Accessed: 20 April 2024); African Development Bank (2021), *Energy, Climate and Green Growth, African Development Bank Group*. African Development Bank Group. Available at: <https://www.afdb.org/en/private-sector/what-we-invest/energy-climate-and-green-growth> (Accessed: 21 April 2024).

¹²⁹ Ebhota, W.S., 2021. Leveraging on sustainable energy transition to change the energy narrative of the dark continent. *International Journal of Energy Economics and Policy*, 11(3), pp.409-416.

Achieving Just Energy Transition: Examining the Efficacy of Kenya's Policy and Regulatory Approaches

providing a sufficient, clean, and reasonably priced power supply, a change from the fossil fuel economy paradigm to a sustainable alternative energy idea has long been underway.¹³⁰ The success of this transition depends on a number of factors as discussed in this paper. There is a need to strike a balance between the competing factors of ensuring that both the poor communities' needs and interests as well as climate change mitigation are taken care of.¹³¹ In order to expedite the advancement of sustainable energy solutions, it will be necessary to forge deeper political commitments, implement long-term energy planning strategies, and provide sufficient regulatory and scale incentives.¹³² Controlling these intricate global energy dynamics is important and difficult for reducing energy poverty, ensuring energy security, and slowing down climate change.¹³³ Thus, managing this change together with contemporary power sector trends like decentralisation, digitalization, and decarbonisation is part of Sustainable Energy Transition (SET).¹³⁴

Achieving just energy transition is possible. There must however be in place an efficacious policy and regulatory framework.

¹³⁰ Ebhota, W.S., 2021. Leveraging on sustainable energy transition to change the energy narrative of the dark continent. *International Journal of Energy Economics and Policy*, 11(3), pp.409-416.

¹³¹ week, S. up to date on the editors' picks of the (2023) *People, planet and profit: Striking the right balance in energy transition*, *Business Daily*. Available at: <https://www.businessdailyafrica.com/bd/opinion-analysis/columnists/people-planet-and-profit-striking-the-right-balance-in-energy-transition-4452854> (Accessed: 21 April 2024).

¹³² *Report: Universal Access to Sustainable Energy Will Remain Elusive Without Addressing Inequalities* (no date) *World Bank*. Available at: <https://www.worldbank.org/en/news/press-release/2021/06/07/report-universal-access-to-sustainable-energy-will-remain-elusive-without-addressing-inequalities> (Accessed: 21 April 2024).

¹³³ Ebhota, W.S., 2021. Leveraging on sustainable energy transition to change the energy narrative of the dark continent. *International Journal of Energy Economics and Policy*, 11(3), pp.409-416.

¹³⁴ Ebhota, W.S., 2021. Leveraging on sustainable energy transition to change the energy narrative of the dark continent. *International Journal of Energy Economics and Policy*, 11(3), pp.409-416.

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

Abstract

Alternative Dispute Resolution (ADR) mechanisms possess key attributes including informality, privacy, confidentiality, flexibility and the ability to promote expeditious and cost-effective management of disputes which makes them a viable tool of enhancing access to justice. Due to their key attributes and advantages, ADR processes are suitable in multiple contexts. This paper critically examines ADR in the context of emerging challenges of climate change, cyber security, and globalization. It argues that ADR is a viable mechanism in managing risks and disputes related to climate change, cyber security, and globalization. The paper conceptualizes the emerging challenges of climate change, cyber security, and globalization. It also critically discusses the suitability of ADR in these areas. In addition, the paper highlights some of the concerns with utilizing ADR in climate change, cyber security, and globalization contexts and suggests measures towards embracing ADR processes in light of these emerging challenges.

1.0 Introduction

The concept of Alternative Dispute Resolution (ADR) encompasses a set of processes that are applied to manage disputes without resort to adversarial litigation¹. ADR is also a term that refers to a wide range of mechanisms that are applied in managing disputes that may be linked to but function outside formal court litigation processes². In addition, ADR has been defined as an all-encompassing term which refers to multiple non-judicial methods of handling conflicts and disputes between parties³. According to the United Nations, ADR (sometimes also referred to as “Appropriate Dispute Resolution”) is a general term, used to define a set of approaches and techniques aimed at

¹ Muigua. K., ‘Alternative Dispute Resolution and Access to Justice in Kenya.’ Glenwood Publishers Limited, 2015

² Uwazie. E., ‘Alternative Dispute Resolution in Africa: Preventing Conflict and Enhancing Stability.’ *Africa Security Brief*, No. 16 of 2011

³ Block. M. J., ‘The Benefits of Alternate Dispute Resolution for International Commercial and Intellectual Property Disputes.’ *Rutgers Law Record.*, Volume 44, 2016-2017

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

resolving disputes in a nonconfrontational way⁴. It further notes that ADR covers a broad spectrum of approaches, from party-to-party engagement in negotiations as the most direct way to reach a mutually accepted resolution, to arbitration and adjudication at the other end, where an external party imposes a solution⁵. In addition, the United Nations points out that somewhere along the axis of ADR approaches, between these two extremes, lies “mediation,” a process by which a third party aids the disputants to reach a mutually agreed solution⁶. ADR mechanisms include negotiation, mediation, arbitration, conciliation, adjudication, expert determination, early neutral evaluation, and Traditional Dispute Resolution Mechanisms (TDRMs) among others⁷.

ADR has been embraced at global and national levels. At the global level, ADR mechanisms are recognized under the *Charter of the United Nations*⁸. The Charter provides that parties to a dispute shall first of all seek a solution by *negotiation, enquiry, mediation, conciliation, arbitration*, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice⁹(Emphasis added). At a national level, the *Constitution of Kenya*¹⁰ embraces ADR mechanisms. It mandates courts and tribunals to promote ADR mechanisms including reconciliation, mediation, arbitration and TDRMs¹¹.

ADR processes have been hailed as being ideal in enhancing access to justice which is a fundamental human right¹². Access to justice is a key human right

⁴ United Nations., ‘Alternative Dispute Resolution Approaches and their Application in Water Management: A Focus on Negotiation, Mediation and Consensus Building’ Available at https://www.un.org/waterforlifedecade/water_cooperation_2013/pdf/adr_backgroud_paper.pdf (Accessed on 24/02/2024)

⁵ Ibid

⁶ Ibid

⁷ Muigua. K., ‘Alternative Dispute Resolution and Access to Justice in Kenya.’ Op Cit

⁸ United Nations, Charter of the United Nations, 24 October 1945, 1 UNTS XVI

⁹ Ibid, article 33 (1)

¹⁰ Constitution of Kenya., 2010., Government Printer, Nairobi

¹¹ Ibid, article 159 (2) (c)

¹² Muigua. K & Kariuki. F., ‘ADR, Access to Justice and Development in Kenya.’ Available at <http://kmco.co.ke/wp-content/uploads/2018/08/ADR-access-to->

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

that has been recognized under the Constitution of Kenya¹³. The Constitution requires the state to ensure access to justice for all persons and that, if any fee is required, it shall be reasonable and shall not impede access to justice¹⁴. However, it has been noted that the right of access to justice especially in Kenya and Africa at large has for many years been hampered by several unfavourable factors such high court filing fees, bureaucracy, complex legal procedures, illiteracy, distance from formal courts, backlog of cases in courts and lack of legal knowhow¹⁵. ADR techniques have the potential to address these challenges and promote the right of access to justice in Africa¹⁶. Most ADR mechanisms possess key attributes including informality, privacy, confidentiality, flexibility and the ability to promote expeditious and cost-effective management of disputes which makes them a viable tool of enhancing access to justice¹⁷.

Due to their key attributes and advantages, ADR processes are suitable in multiple contexts. This paper critically examines ADR in the context of emerging challenges of climate change, cyber security, and globalization. It argues that ADR is a viable mechanism in managing risks and disputes related to climate change, cyber security, and globalization. The paper conceptualizes the emerging challenges of climate change, cyber security, and globalization. It also critically discusses the suitability of ADR in these areas. In addition, the paper highlights some of the concerns with utilizing ADR in climate change, cyber security, and globalization contexts and suggests measures towards embracing ADR processes in light of these emerging challenges.

2.0 Conceptualizing Climate Change, Cyber Security, and Globalization

[justice-and-development-inKenyaRevised-version-of-20.10.14.pdf](#) (Accessed on 24/04/2024)

¹³ Constitution of Kenya., 2010., article 48

¹⁴ Ibid

¹⁵ Ojwang. J.B , "The Role of the Judiciary in Promoting Environmental Compliance and Sustainable Development," 1 *Kenya Law Review Journal* 19 (2007), pp. 19-29: 29

¹⁶ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Op Cit

¹⁷ Ibid

2.1 Climate Change

Climate change is a phenomenon that refers to the long- term shift in global or regional climate patterns and is often associated with the rise in global temperatures from the mid-20th century to present¹⁸. It has also been described as the global phenomenon of climate transformation characterized by the changes in the usual climate of the planet (regarding temperature, precipitation, and wind) that are especially caused by human activities¹⁹. The *United Nations Framework Convention on Climate Change* (UNFCCC) defines climate change as a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods²⁰. Climate change therefore entails long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to factors such as changes in the sun’s activity or large volcanic eruptions²¹. However, human activities have been the main drivers of climate change due to the burning of fossil fuels like coal, oil and gas²². Human activities have increased the concentration of atmospheric carbon dioxide among other greenhouse gases resulting to the greenhouse effect which contributes to global warming and climate change²³.

Climate change is an undesirable phenomenon that affects realization of the Sustainable Development agenda across the world by affecting the sustainability of the planet’s ecosystems, the stability of the global economy

¹⁸ National Geographic., ‘Climate Change.’ Available at <https://education.nationalgeographic.org/resource/climate-change/> (Accessed on 24/04/2024)

¹⁹ Climate Change., ‘Meaning, Definition, Causes, Examples and Consequences.’ Available at <https://youmatter.world/en/definition/climate-change-meaning-definition-causes-and-consequences/> (Accessed on 24/04/2024)

²⁰ United Nations Framework Convention on Climate Change., United Nations, 1992., Available at <https://unfccc.int/resource/docs/convkp/conveng.pdf> (Accessed on 24/04/2024)

²¹ United Nations., ‘What is Climate Change?’ Available at <https://www.un.org/en/climatechange/what-is-climate-change> (Accessed on 24/04/2024)

²² Ibid

²³ Ibid

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

and the future of humankind²⁴. Its impacts including intense droughts, water scarcity, severe fires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity are being witnessed all over the world²⁵. Climate change has been described as the main global challenge that is affecting both developed and developing countries in their quest towards achieving Sustainable Development²⁶. As a result, climate change has risen to the top of the policy agenda, at local, national, and global levels²⁷. The United Nations 2030 Agenda for Sustainable Development²⁸ acknowledges that climate change is one of the greatest challenge of our time and its adverse impacts undermine the ability of all countries to achieve Sustainable Development. Under the Agenda, Sustainable Development Goal 13 urges states to take urgent action to combat climate change and its impacts²⁹. Governments have therefore been urged to strengthen climate action in their countries in order to respond to the threat of climate change and ensure that economies are climate resilient³⁰. However, it has been noted that climate action taken to date by the international community has been insufficient to prevent or reverse the negative trends of climate change³¹. Urgent and transformative action is

²⁴ Climate Change., 'Meaning, Definition, Causes, Examples and Consequences.' Available at <https://youmatter.world/en/definition/climate-change-meaning-definition-causes-and-consequences/> (Accessed on 24/04/2024)

²⁵ United Nations., 'What is Climate Change?' Available at <https://www.un.org/en/climatechange/whatis-climate-change> (Accessed on 24/04/2024)

²⁶ Muigua. K., 'Achieving Sustainable Development, Peace and Environmental Security.' Glenwood Publishers Limited, 2021

²⁷ United Nations Department of Economic and Social Affairs., 'Forum on Climate Change and Science and Technology Innovation.' Available at <https://www.un.org/en/desa/forum-climate-changeandscienceand-technology-innovation> (Accessed on 24/04/2024)

²⁸ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 24/04/2024)

²⁹ Ibid

³⁰ Muigua. K., 'Achieving Sustainable Development, Peace and Environmental Security.' Op Cit

³¹ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Available at

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

therefore required to combat climate change and promote Sustainable Development³².

2.2 Cyber Security

Cyber security has been defined as the activity or process, ability or capability, or state whereby information and communications systems and the information contained therein are protected from and/or defended against damage, unauthorized use or modification, or exploitation³³. It is a term used to cover the measures government institutions take to protect the public and the institutions themselves from threats in the 'cyber'- domain, also known as 'cyberspace'³⁴. Cybersecurity has also been defined³⁵ as the art of protecting networks, devices, and data from unauthorized access or criminal use and the practice of ensuring confidentiality, integrity, and availability of information³⁵. It entails any technology, measure or practice for preventing cyberattacks or mitigating their impact³⁶. Cybersecurity aims to protect individuals' and organizations' systems, applications, computing devices, sensitive data and financial assets against computer viruses, sophisticated and costly ransomware attacks, among other cyberattacks³⁷. Cyber security is therefore a

https://www.icrc.org/sites/default/files/topic/file_plus_list/the_icrcs_call_to_strengthen_climate_action_in_conflict_settings_ahead_of_cop28_1.pdf (Accessed on 24/04/2024)

³² United Nations., 'Goal 13: Take Urgent Action to Combat Climate Change and its Impacts.' Available at <https://www.un.org/sustainabledevelopment/climate-change/> (Accessed on 24/01/2024)

³³ Bay. M., 'What is Cybersecurity? In Search of an Encompassing Definition for the Post-Snowden Era' Available at https://www.researchgate.net/profile/Morten-Bay/publication/308609163_WHAT_IS_CYBERSECURITY_In_search_of_an_encompassing_definition_for_the_post-Snowden_era/links/57e8575608ae9e5e4558c7d9/WHAT-IS-CYBERSECURITY-In-search-of-an-encompassing-definition-for-the-post-Snowden-era.pdf (Accessed on 24/04/2024)

³⁴ Ibid

³⁵ Cyber Security and Infrastructure Security Agency., 'What is Cybersecurity?' Available at <https://www.cisa.gov/news-events/news/what-cybersecurity> (Accessed on 24/04/2024)

³⁶ IBM., 'What is Cybersecurity?' Available at <https://www.ibm.com/topics/cybersecurity> (Accessed on 24/04/2024)

³⁷ Ibid

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

concept that seeks to protect the cyberspace from unwarranted attacks. The cyberspace is a time-dependent set of interconnected information systems and the humans that interact with these systems³⁸.

Cyber security plays a fundamental role in the global economy. It has been noted that as technology continues to advance and businesses become increasingly reliant on digital platforms, the risk of cyber threats becomes more prevalent³⁹. Cyber-attacks can have devastating consequences for both individuals and organizations, leading to financial losses, reputational damage, and even national security breaches⁴⁰. As a result, it is imperative that governments, businesses, and individuals prioritize cyber security measures to safeguard their interests⁴¹. Cybersecurity is important because it safeguards all types of data against theft and loss especially Sensitive data such as Protected Health Information (PHI), Personally Identifiable Information (PII), intellectual Property (IP), personal information, and government and business information systems⁴².

It has been noted that climate change can trigger more cyber-attacks⁴³. Climate change increases cyber threats, instability and disruptions that can be exploited by cybercriminals⁴⁴. For example, extreme weather events such as tropical cyclones and floods can damage physical infrastructure, including data centers, servers and critical Information Technology (IT) systems, leaving them vulnerable to cyber-attacks⁴⁵. In addition, it has been noted that as a result of climate change, more frequent extreme weather events, like hurricanes and tsunamis, will put critical digital systems in greater physical

³⁸ Bay. M., 'What is Cybersecurity? In Search of an Encompassing Definition for the Post-Snowden Era' Op Cit

³⁹ Kala, E., 'Critical Role of Cyber Security in Global Economy. *Open Journal of Safety Science and Technology*, (2023) 13, 231-248. doi: [10.4236/ojsst.2023.134012](https://doi.org/10.4236/ojsst.2023.134012) (Accessed 24/04/2024)

⁴⁰ Ibid

⁴¹ Ibid

⁴² Ibid

⁴³ Shea. S., 'Where Climate Change and Cyber-Attacks Intersect' Available at <https://www.techtargget.com/searchsecurity/feature/Where-climate-change-and-cyber-attacks-intersect> (Accessed on 24/04/2024)

⁴⁴ Ibid

⁴⁵ Ibid

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

danger, such as damaging underwater communication cables and off-site servers⁴⁶. The resulting disruption to internet connectivity puts systems at greater risk of attacks⁴⁷. Climate change and cyber security are therefore interconnected. It has correctly been observed that the effects of climate change not only impact the physical world but also the digital one⁴⁸. Therefore, linking the two threats and finding the connections may help governments and organizations create strategies and implement plans and recovery programmes that could help mitigate the disruptions caused by both threats⁴⁹.

2.3 Globalization

Globalization is a concept that describes the growing interdependence of the world's economies, cultures, and populations, brought about by factors such as cross-border trade in goods and services, technology, and flows of investment, people, and information⁵⁰. Globalization describes how trade and technology have made the world into a more connected and interdependent place⁵¹. Globalization also captures in its scope the economic and social changes that have come about as a result of this interconnectedness⁵². The International Monetary Fund (IMF) notes that globalization refers to the increasing integration of economies around the world, particularly through the movement of goods, services, and capital across borders⁵³. In addition, IMF points out that globalization also refers to the movement of people (labor) and

⁴⁶ Coker. J., 'Climate Change is Increasing Cyber-Risks' Available at <https://www.preventionweb.net/news/climate-change-increasing-cyber-risks> (Accessed on 24/04/2024)

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ Peterson Institute for International Economics., 'What Is Globalization?' Available at <https://www.piie.com/microsites/globalization/what-is-globalization> (Accessed on 24/04/2024)

⁵¹ National Geographic., 'Globalization' Available at <https://education.nationalgeographic.org/resource/globalization/> (Accessed on 24/04/2024)

⁵² Ibid

⁵³ International Monetary Fund., 'Globalization: A Brief Overview' Available at <https://www.imf.org/external/np/exr/ib/2008/053008.htm> (Accessed on 24/04/2024)

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

knowledge (technology) across international borders⁵⁴. Further, it opines that there are also broader cultural, political, and environmental dimensions of globalization⁵⁵. According to IMF, a core element of globalization is the expansion of world trade through the elimination or reduction of trade barriers, such as import tariffs⁵⁶.

Globalization has brought benefits and opportunities for many people in many parts of the world⁵⁷. However, many others have been excluded from the positive impact of globalization⁵⁸. It has been noted that as a result of globalization inequality between and within countries has also increased and global environmental risks have increasingly become a matter of global concern⁵⁹. Globalization increases consumption, resource depletion, and carbon emissions therefore contributing to climate change⁶⁰. Further, it has been noted that increased transportation of goods as a result of globalization has contributed to increased greenhouse gas emissions, habitat destruction, and the spread of invasive species therefore contributing to environmental degradation⁶¹. Many aspects of globalization combine to increase the dangers of a variety of transnational threats from weapons proliferation, cyber-attacks, ethnic violence, environmental degradation, and the spread of infectious diseases⁶². It is therefore necessary to ensure that the benefits of globalization are expanded and spread more broadly and that its potentially negative effects are diminished⁶³.

⁵⁴ Ibid

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷United Nations., 'Globalization and Interdependence' Available at <https://www.un.org/esa/coordination/globalization.htm#:~:text=Globalization%20and%20interdependence%20has%20been,interdependence%20and%20the%20policy%20implications>. (Accessed on 24/04/2024)

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Latif. N et al., 'Unraveling the Nexus: The Impact of Economic Globalization on the Environment in Asian Economies' *Research in Globalization.*, Volume 7, (2023)

⁶¹ Ibid

⁶² Davis. L., 'Globalization's Security Implications' Available at https://www.rand.org/pubs/issue_papers/IP245.html (Accessed on 24/04/2024)

⁶³ United Nations., 'Globalization and Interdependence' Op Cit

3.0 ADR in the Context of Climate Change, Cyber Security, and Globalization

3.1 ADR and Climate Change

ADR is applicable in climate action by providing viable options for effective management of climate change disputes⁶⁴. It has been noted that climate change disputes are consistently rising throughout the world⁶⁵. Climate change related disputes include any dispute arising out of or in relation to the effect of climate change and climate change policy as envisaged under global climate agreements including the UNFCCC and the Paris Agreement, and also regional and national climate change laws and policies⁶⁶. It has been noted that the required rapid and far-reaching transition in energy, land and natural resources use, transport, urban and infrastructure and industrial systems arising out of the global response to climate change is giving rise to new investments and contracts, and accordingly contractual and other legal disputes related to climate change⁶⁷. Climate change disputes may arise out of or in relation to: contracts relating to the implementation of energy or other systems transition, mitigation or adaptation in line with the Paris Agreement commitments⁶⁸; contracts without any specific climate-related purpose or subject-matter but where a dispute involves or gives rise to a climate or related

⁶⁴ Muigua. K., 'Utilizing Alternative Dispute Resolution in Climate Change Disputes' Available at <https://kmco.co.ke/wp-content/uploads/2024/03/Utilizing-Alternative-Dispute-Resolution-in-Climate-Change-Disputes.pdf> (Accessed on 25/04/2024)

⁶⁵ Burianski. M., & Kuhnle. F. P., 'A New Wave of African Climate Change Disputes on the Horizon' Available at <https://www.whitecase.com/insight-our-thinking/africa-focus-winter-2023-climatechange#:~:text=Disputes%20could%20involve%20liability%20and,and%20enforced%2C%20and%20investment%20disputes.> (Accessed on 25/04/2024)

⁶⁶ International Chamber of Commerce., 'Resolving Climate Change Related Disputes through Arbitration and ADR' Available at <https://iccwbo.org/wp-content/uploads/sites/3/2019/11/icc-arbitration-adr-commission-report-on-resolving-climate-change-related-disputes-english-version.pdf> (Accessed on 25/04/2024)

⁶⁷ Ibid

⁶⁸ Ibid

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

environmental issue⁶⁹; and submission or other specific agreements entered into to resolve existing climate change or related environmental disputes, potentially involving impacted groups or populations⁷⁰. Climate change disputes fall into various categories including claims seeking to enforce human rights enshrined in international law and national constitutions⁷¹; challenges to domestic non-enforcement of climate-related laws and policies⁷²; litigants seeking to keep fossil fuels in the ground⁷³; advocates for greater climate disclosures and an end to greenwashing⁷⁴; claims addressing corporate liability and responsibility for climate harms⁷⁵; and claims addressing failures to adapt to the impacts of climate change⁷⁶. These disputes include commercial contract disputes and disputes arising pursuant to investor-state treaties, including but not limited to claims arising out of new climate change related regulatory measures implemented by a state⁷⁷.

Climate change disputes are growing in Africa⁷⁸. The continent's heavy reliance on fossil fuels for economic growth, set against the backdrop of strict environmental regulations and emissions-reduction targets, creates a perfect storm of factors that could increase climate change-related disputes in Africa⁷⁹. Africa is highly vulnerable to climate change with its impacts such as increasing temperatures and sea levels, changing precipitation patterns and more extreme weather events such as droughts and floods threatening human health and safety, food and water security and socio-economic development

⁶⁹ Ibid

⁷⁰ Ibid

⁷¹ United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Available at <https://www.unep.org/news-and-stories/pressrelease/climate-litigation-more-doubles-five-years-now-key-tool-delivering> (Accessed on 25/04/2024)

⁷² Ibid

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Ibid

⁷⁷ International Chamber of Commerce., 'Resolving Climate Change Related Disputes through Arbitration and ADR' Op Cit

⁷⁸ Burianski. M., & Kuhnle. F. P., 'A New Wave of African Climate Change Disputes on the Horizon' Op Cit

⁷⁹ Ibid

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

in the continent⁸⁰. In light of these challenges, African countries are strengthening domestic climate action through measures such as increasing renewable energy generation, embracing environmentally sound technologies, decarbonizing key sectors including transport, industry, and infrastructure, and enhancing investments in carbon markets⁸¹. These measures may trigger climate change disputes in Africa. For example, if states fail to adopt and implement these measures effectively, individuals or interest groups may sue these states to force them to act⁸². Further, if adopted, these measures may contrast with states' attempts to grow their economies also contributing to disputes⁸³.

Climate change disputes are undesirable and can affect peace and security⁸⁴. These disputes can also hinder the achievement of climate goals at all levels⁸⁵. Effective management of climate change disputes is therefore crucial in strengthening the response towards climate change and delivering climate justice⁸⁶.

There is room for utilizing ADR for effective and efficient management of climate change disputes⁸⁷. For example, arbitration can be effectively utilized to settle disputes that potentially engage climate change and related environmental issues. Arbitration is frequently adopted in commercial

⁸⁰ United Nations Climate Change., 'Climate Change is an Increasing Threat to Africa.' Available at <https://unfccc.int/news/climate-change-is-an-increasing-threat-to-africa> (Accessed on 25/04/2024)

⁸¹ Burianski. M., & Kuhnle. F. P., 'A New Wave of African Climate Change Disputes on the Horizon' Op Cit

⁸² Ibid

⁸³ Ibid

⁸⁴ United Nations Department of Political and Peacebuilding Affairs., 'The Implications of Climate Change for Mediation and Peace Processes' Available at <https://peacemaker.un.org/sites/peacemaker.un.org/files/DPPAPracticeNoteTheImplicationsOfClimateChangeForMediationandPeaceProcesses.pdf> (Accessed on 25/04/2024)

⁸⁵ United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Op Cit

⁸⁶ Ibid

⁸⁷ Muigua. K., 'Utilizing Alternative Dispute Resolution in Climate Change Disputes' Op Cit

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

contracts concerning energy, land use, urban and infrastructure and industry among other key sectors in the climate change debate⁸⁸. Further, with climate investments on the rise, arbitration offers a viable option for managing disputes through Investor-State Dispute Settlement (ISDS)⁸⁹. Arbitration also allows parties to select arbitrators with expertise in climate change matters therefore ensuring effective management of disputes⁹⁰. Further, due to its transnational applicability, arbitration can ensure effective management of cross border climate change disputes since it applies across multiple jurisdictions and also guarantees enforcement of decisions⁹¹.

It has been noted that arbitration is already being utilized to determine climate change related disputes arising under the UNFCCC's Green Climate Fund and the Kyoto Protocol⁹². Arbitration offers the advantage of a neutral forum and benefitting from worldwide coverage by the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (the "New York Convention") therefore enabling cross border recognition and enforcement of arbitral awards. Other key advantages that arbitration could offer in managing climate change disputes is accessibility of the tribunal, expertise and flexibility as to where an arbitration is hosted⁹³. Further, it has been noted that arbitral

⁸⁸ International Chamber of Commerce., 'Resolving Climate Change Related Disputes through Arbitration and ADR' Op Cit

⁸⁹ Alarcon. M. J., 'Climate Change and ISDS - Reshaping Investment Arbitration to Achieve Climate Goals' Available at <https://arbitrationblog.kluwerarbitration.com/2024/01/31/2023-in-review-climate-change-and-isds-reshaping-investment-arbitration-to-achieve-climate-goals/> (Accessed on 25/04/2024)

⁹⁰ Muigua. K., 'The Viability of Arbitration in management of Climate Change Related Disputes in Kenya' Available at <http://kmco.co.ke/wp-content/uploads/2022/04/The-Viability-of-Arbitration-in-management-of-Climate-Change-Related-Disputes-in-Kenya-11th-April-2022.pdf> (Accessed on 25/04/2024)

⁹¹ Elborough. L., 'International Climate Change Litigation: Limitations and Possibilities for International Adjudication and Arbitration in Addressing the Challenge of Climate Change.' Available at <http://www.nzlii.org/nz/journals/NZJLEnvLaw/2017/5.pdf> (Accessed on 25/04/2024)

⁹² International Chamber of Commerce., 'Resolving Climate Change Related Disputes through Arbitration and ADR' Op Cit

⁹³ Ibid

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

tribunals can adopt realistic time-frames, engage expert knowledge, in certain limited circumstances admit amicus evidence and adapt the process with flexibility depending on the nature and scope of disputes therefore providing an avenue for effective management of climate change disputes⁹⁴.

Other ADR processes such as mediation and negotiation can also promote effective management of climate change disputes by promoting collaborative approaches in managing disputes⁹⁵. Utilizing mediation in managing climate change disputes can encourage collaboration by encouraging parties and other stakeholders to focus on localized, tangible effects of climate change⁹⁶. It also fosters the participation of women and marginalized groups, who face particular climate risks, as well as environmental defenders and, where applicable, indigenous people, whose expertise can help identify key issues and priorities towards formulating acceptable outcomes⁹⁷. These processes can also help parties devise ‘win-win’ solutions outside of the usual judicial remedies, in a way that promotes ownership over the dispute and its outcome, and preserves the parties’ relationships⁹⁸. Mediation is therefore perfectly suited for climate change disputes such as those concerning energy transition and renewable energy projects where it is desirable to preserve relationships and complete projects in order to realize access to clean and affordable energy for all⁹⁹.

⁹⁴ Ibid

⁹⁵ Muigua. K., ‘Applying Collaborative Approaches towards Conflict Management’ Available at <https://kmco.co.ke/wp-content/uploads/2024/03/Applying-Collaborative-Approaches-towardsConflict-Management-.pdf> (Accessed on 25/04/2024)

⁹⁶ United Nations Department of Political and Peacebuilding Affairs., ‘The Implications of Climate Change for Mediation and Peace Processes’ Available at <https://peacemaker.un.org/sites/peacemaker.un.org/files/DPPAPracticeNoteTheImplicationsofClimateChangeforMediationandPeaceProcesses.pdf> (Accessed on 25/04/2024)

⁹⁷ Ibid

⁹⁸ Hong Kong International Arbitration Centre., ‘Beyond the Litigation Narrative: The Place and Roles of ADR in Climate change Disputes’ Available at <https://www.hkiac.org/content/beyond-litigationnarrative-place-and-roles-adr-climate-change-disputes> (Accessed on 25/04/2024)

⁹⁹ Muigua. K., ‘Attaining Environmental Justice through Alternative Dispute Resolution’ Available at <https://kmco.co.ke/wp->

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

ADR processes are therefore ideal in managing climate change disputes. It is therefore necessary to embrace ADR mechanisms for effective and efficient management of climate change disputes. It is also imperative to address challenges such as enforceability concerns in some ADR processes, lack of urgent protection measures such as injunctions, delays and costs, and inadequate legal, institutional, and human capacity in ADR in order to strengthen the role of these processes in managing climate change disputes¹⁰⁰.

3.2 ADR and Cyber Security

Technology has been described as a disruptive phenomenon that has the capacity to end traditional business models, to cast whole industries into oblivion, and to destroy traditional crafts, arts, and professions¹⁰¹. Rapid digitalization is affecting all aspects of life including the way we interact, work, shop and receive services as well as how value is created and exchanged¹⁰². Digital disruption and the growth of technology has crept into virtually all areas including the realm of ADR¹⁰³. Forms of ADR such as online mediation, online arbitration, and even block chain arbitration, which employs the same block chain technology as cryptocurrencies are growing¹⁰⁴. As a result a form of ADR known as Alternative Online Dispute Resolution is becoming more popular¹⁰⁵.

[content/uploads/2023/07/Attaining-Environmental-Justice-throughAlternative-Dispute-Resolution.pdf](#) (Accessed on 25/04/2024)

¹⁰⁰ Muigua. K., 'Utilizing Alternative Dispute Resolution in Climate Change Disputes' Op Cit

¹⁰¹ Eidemuller. H., & Wagner. G., 'Digital Dispute Resolution.' Available at <https://blogs.law.ox.ac.uk/business-law-blog/blog/2021/09/digital-dispute-resolution> (Accessed on 25/04/2024)

¹⁰² United Nations Conference on Trade and Development., 'Digital Economy Report: 2021.' Available at https://unctad.org/system/files/official-document/der2021_overview_en_0.pdf (Accessed on 25/04/2024)

¹⁰³ Muigua. K., 'The Evolving Alternative Dispute Resolution Practice: Investing in Digital Dispute Resolution in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2022/04/The-Evolving-Alternative-Dispute-Resolution-Practice-Investing-in-Digital-Dispute-Resolution-in-Kenya-Kariuki-Muigua.pdf> (Accessed on 25/04/2024)

¹⁰⁴ Ibid

¹⁰⁵ Ibid

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

Digital dispute resolution has been described as the process of managing disputes on the internet through the use of suitable technology or platforms¹⁰⁶. It involves the use of technology to facilitate the rapid, cost effective and specialised resolution of disputes involving digital technology including crypto assets, cryptocurrency, smart contracts, distributed ledger technology, and fintech applications¹⁰⁷. Digital Dispute Resolution is often compared to Online Dispute Resolution (ODR) which refers to a set of processes that allow for the resolution of disputes via online mechanisms such as the internet or some form of technology that allows for virtual communication¹⁰⁸.

Technology has the ability to make dispute resolution more efficient¹⁰⁹. It holds the promise for an improved dispute resolution landscape that is based on fewer physical, conceptual, psychological and professional boundaries, while enjoying a higher degree of transparency, expeditiousness, efficiency, accessibility, participation and change¹¹⁰. Technology can ensure that every case has a single data set that can be used at every stage of the dispute resolution process in order to avoid the repetition of the same facts and issues in pleadings, witness statements, expert reports, skeleton arguments and opening and closing written submissions¹¹¹.

¹⁰⁶ Sadushi. M., 'The Theory And Practice Of Dispute Resolution In The Digital Age.' Available at <https://ejournals.org/gjplr/vol-5-issue-7-december-2017/theory-practice-dispute-resolution-digitalage/> (Accessed on 25/04/2024)

¹⁰⁷ AShurst., 'Digital Dispute Resolution Rules Published.' Available at <https://service.betterregulation.com/sites/default/files/digital-dispute-resolution-rules-published.pdf> (Accessed on 25/04/2024)

¹⁰⁸ Mania. K., 'Online Dispute Resolution: The Future of Justice.' *International Comparative Jurisprudence*, No. 1 of 2015, (pg 76-86)

¹⁰⁹ Ibid

¹¹⁰ Rabinovich-Einy..O., & Katsh. E., 'Reshaping Boundaries in an Online Dispute Resolution Environment.' *International Journal of Online Dispute Resolution*, Volume 1, No. 1 (2014)

¹¹¹ Ashurst., 'Dispute Resolution in need of a "Digital Makeover?'. Available at <https://www.ashurst.com/en/insights/dispute-resolution-in-need-of-a-digitalmakeover/#:~:text=Technology%20could%20be%20used%20to,opening%20and%20closing%20written%20submissions> (Accessed on 25/04/2024)

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

The growth of digital dispute resolution provides an opportunity for utilizing ADR in the cyber space¹¹². Utilizing ADR in the cyber space is a more feasible option in comparison to traditional ADR for disputants who are unable to afford travelling long distance or for those involved in e-commerce disputes for low monetary value¹¹³. Online disputes often arise between individuals from great distances, where at least one party will be required to travel the distance if the traditional mode of ADR is relied upon¹¹⁴. Therefore, with the existence of ODR, parties can now participate in an ADR process from their respective preferred location and this simultaneously reduces cost and travelling time¹¹⁵.

ADR processes are therefore ideal in managing disputes in the cyber space by balancing legal considerations with complex technological dimensions¹¹⁶. It has been pointed out that the cyberspace, characterized by its global connectivity and rapid evolution, spans a wide range of activities from e-commerce transactions to the protection of IP rights¹¹⁷. These digital interactions often transcend geographical boundaries, rendering traditional litigation processes cumbersome, time-consuming, and expensive¹¹⁸. It is therefore possible to confront disputes that intertwine legal issues with intricate technical aspects in the cyber space therefore necessitating expertise that is applicable across the domains of law and technology¹¹⁹. ADR, with its diverse range of methods such as mediation, arbitration, and negotiation,

¹¹² Online ADR- An Avenue for Resolving Disputes in Cyberspace., Available at <https://www.umlawreview.com/lex-in-breve/online-adr-an-avenue-for-resolving-disputes-in-cyberspace> (Accessed on 25/04/2024)

¹¹³ Ibid

¹¹⁴ Ibid

¹¹⁵ Ibid

¹¹⁶ Singh. B., 'Unleashing Alternative Dispute Resolution (ADR) in Resolving Complex Legal-Technical Issues arising in Cyberspace Lensing E-Commerce and Intellectual Property' Available at <https://rbadr.emnuvens.com.br/rbadr/article/view/183> (Accessed on 25/04/2024)

¹¹⁷ Ibid

¹¹⁸ Ibid

¹¹⁹ Ibid

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

presents a viable option that aligns with the dynamic nature of cyberspace while addressing the specific demands of these complex disputes¹²⁰.

Despite the viability of ADR in managing disputes in the cyber space, its use raises several cyber security concerns. The technology systems supporting digital dispute resolution may be subject to cyberattacks¹²¹. Unauthorized persons may access the system and engage in unwarranted practices such as stealing of information, deleting information or sending unwanted information to the detriment of some parties¹²². Therefore, while utilizing ADR in the cyber space, the privacy and security of parties to a dispute is susceptible to being compromised since technology can be hacked or exploited to steal information and spy on people among other malpractices¹²³. It is therefore necessary to strengthen cyber security in order to enhance the viability of ADR in managing disputes in the cyber space.

3.3 ADR and Globalization

Globalization has influenced the function of international law and with it the mechanisms used to manage international conflicts and disputes¹²⁴. As a result of globalization, the practice of International Dispute Resolution has emerged¹²⁵. International dispute resolution envisages managing disputes between and among parties from different nationalities¹²⁶. Globalization has resulted in increase in trade and commerce between parties from different

¹²⁰ Ibid

¹²¹ Muigua. K., 'Legal Practice and New Frontiers: Embracing Technology for Enhanced Efficiency and Access to Justice' available at <http://kmco.co.ke/wp-content/uploads/2020/06/Legal-Practice-andNew-Frontiers-EmbracingTechnology-for-Enhanced-Efficiency-and-Access-to-Justice-Kariuki-MuiguaPh.D-June-2020.pdf> (Accessed on 25/04/2024)

¹²² Ibid

¹²³ Ibid

¹²⁴ Spain. A., 'International Dispute Resolution in an Era of Globalization' Available at <https://lawweb.colorado.edu/profiles/pubpdfs/spain/IntlDispRes-EraGlobalization.pdf> (Accessed on 25/04/2024)

¹²⁵ Ibid

¹²⁶ Ibid

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

nationalities which activities have also lead to disputes between parties from different nations¹²⁷.

ADR is suitable in the era of globalization. Modes of ADR such as international arbitration and international mediation have developed to manage disputes involving parties from different nationalities as a result of globalization¹²⁸. International arbitration arises where parties having business locations in different countries¹²⁹; the venue where a significant part of the obligations is to be undertaken is situated outside the country where the parties ordinarily conduct their business activities;¹³⁰ and in instances where parties are in agreement that the substance of the arbitration case concerns more than one state.¹³¹ In international arbitration, arbitration guarantees neutrality in the determination of disputes and addresses differences that may arise as a result of multiple legal systems¹³². The role of ADR in the era of globalization has been enhanced by the New York Convention which offers an avenue for the recognition and enforcement of foreign awards in arbitration despite differences in jurisdictions between states.¹³³ The Convention provides common legislative standards towards this end¹³⁴. It is applicable to foreign awards in the state where a party seeks to enforce such an award.¹³⁵ In order to streamline implementation of foreign awards, the Convention precludes the imposition of onerous condition or fees in recognizing and giving effect to

¹²⁷ Ibid

¹²⁸ Muigua, 'Promoting International Commercial Arbitration in Africa' <<http://kmco.co.ke/wp-content/uploads/2018/08/PROMOTING-INTERNATIONAL-COMMERCIAL-ARBITRATION-IN-AFRICA.pdf>> (Accessed on 25/04/2024)

¹²⁹ Arbitration Act, No. 4 of 1995, Government Printer, Nairobi, S 3

¹³⁰ Ibid

¹³¹ Ibid

¹³² Moses, *'The Principles and Practice of International Commercial Arbitration'* 2nd Edition, 2017, Cambridge University Press

¹³³ Muigua, 'Promoting International Commercial Arbitration in Africa' Op Cit

¹³⁴ Ibid

¹³⁵ UNCICA, *'Convention on the Recognition and Enforcement of Foreign Arbitral Awards'* (1958) Article 1 (1)

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

foreign awards in arbitration.¹³⁶ In Kenya, the Convention has been incorporated under the Arbitration Act.¹³⁷

The role of mediation in the era of globalization has also been enhanced by the adoption of the United Nations Convention on International Settlement Agreements Resulting from Mediation ‘*Singapore Convention*¹³⁸’. The Convention provides a legal framework for enforcement of settlement agreements resulting from international mediation¹³⁹. The Convention aims to enhance the practice of international commercial mediation by building a bridge that would enable acceptability of international settlement agreements across states with different legal, social and economic systems¹⁴⁰. The Convention can cure challenges in international commercial mediation by providing an elaborate procedural framework for the conduct of international commercial mediation and enforcement of mediation settlement agreements¹⁴¹.

ADR mechanisms such as international arbitration and international mediation are therefore developing in light of globalization. In addition, technology has facilitated the globalization of ADR through the rapid transfer of information and know-how between national and transnational actors therefore accelerating the dispute resolution export explosion¹⁴². Globalization has also influenced the growth of ODR and its continuing development and integration into larger transactional and conflict management systems¹⁴³.

¹³⁶ Ibid, Article III

¹³⁷ Arbitration Act, S 36 (2)

¹³⁸ United Nations Convention on International Settlement Agreements Resulting from Mediation, United Nations, New York, 2019, ‘Singapore Convention’ (adopted on December 20, 2018, came into force on September 12, 2020)

¹³⁹ Ibid

¹⁴⁰ Ibid

¹⁴¹ Muigua. K., ‘Adopting the Singapore Convention in Kenya: Insight and Analysis’ Available at <https://kmco.co.ke/wp-content/uploads/2020/09/Adopting-the-Singapore-Convention-in-Kenya-Insight-and-Analysis-15th-Sept.pdf> (Accessed on 25/04/2024)

¹⁴² Alexander. N., ‘Mobile Mediation: How Technology is Driving the Globalization of ADR’ *Hamline Journal of Law and Public Policy*, 2006 , Vol. 27. pp. 243-262

¹⁴³ Ibid

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

Globalization has therefore shaped the growth of ADR. It has been argued that in today's era of globalization ADR mechanisms can help build bridges between people, cultures, and entire nations¹⁴⁴.

4.0 Conclusion

ADR is relevant in the context of emerging challenges of climate change, cyber security, and globalization. ADR is applicable in climate action by providing viable options for effective management of climate change disputes¹⁴⁵. The growth of digital dispute resolution also provides an opportunity for utilizing ADR in the cyber space¹⁴⁶. Globalization has also shaped the growth of ADR. Modes of ADR such as international arbitration and international mediation have also developed to manage disputes involving parties from different nationalities as a result of globalization¹⁴⁷. In light of globalization, ADR mechanisms can help build bridges between people, cultures, and entire nations¹⁴⁸. It is therefore necessary to strengthen the legal, institutional, policy, and human capacity on ADR in order to make these processes more suitable to emerging challenges¹⁴⁹. It is also imperative to enhance data privacy and security in digital dispute resolution in order to align ADR with cyber security requirements¹⁵⁰. The role of ADR in the face of globalization can be strengthened by promoting processes such as international arbitration and

¹⁴⁴ Lukasz. B., 'Mediation in the Era of Globalization: Building Bridges of Understanding in a World Full of Diversity.' Available at https://www.linkedin.com/pulse/mediation-era-globalization-building-bridges-world-full-bodzinskihlikf?utm_source=share&utm_medium=member_android&utm_campaign=share_via (Accessed on 25/04/2024)

¹⁴⁵ Muigua. K., 'Utilizing Alternative Dispute Resolution in Climate Change Disputes' Op Cit

¹⁴⁶ Online ADR- An Avenue for Resolving Disputes in Cyberspace., Op Cit

¹⁴⁷ Muigua, 'Promoting International Commercial Arbitration in Africa' Op Cit

¹⁴⁸ Lukasz. B., 'Mediation in the Era of Globalization: Building Bridges of Understanding in a World Full of Diversity.' Op Cit

¹⁴⁹ Muigua. K., 'Utilizing Alternative Dispute Resolution in Climate Change Disputes' Op Cit

¹⁵⁰ Muigua. K., 'Navigating the Digital Dispute Resolution Landscape: Challenges and Opportunities' Available at <https://kmco.co.ke/wp-content/uploads/2023/08/Navigating-the-Digital-Dispute-Resolution-Landscape-Challenges-and-Opportunities-.pdf> (Accessed on 25/04/2024)

Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

international mediation by creating suitable domestic environments for the uptake of these mechanisms¹⁵¹. ADR is applicable in the context of emerging challenges of climate change, cyber security, and globalization and therefore needs to be widely embraced.

¹⁵¹ Muigua, 'Promoting International Commercial Arbitration in Africa' Op Cit

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law

Abstract

Environmental crimes have been identified as a major threat to environmental sustainability. Recognizing ecocide as an international crime is therefore an essential protective and preventive deterrent to severe and either widespread or long-term harm to ecosystems as a result of environmental crimes. Creating and prosecuting the international crime of ecocide can therefore enhance efforts towards protecting our environment through criminal law. This paper critically discusses the need to create and prosecute the international crime of ecocide. The paper argues that the environment is facing increasing threats that amount to environmental crimes. The paper further argues that strengthening criminal law is necessary in enhancing environmental protection. It conceptualizes the crime of ecocide and posits that it is necessary to adopt and prosecute this crime in order to protect our environment through criminal law.

1.0 Introduction

The natural environment has been described as the foundation of our health and well-being¹. The environment gives us clean air, water, food, materials and space for recreation². Further, it has been noted that spending time in nature is good for our mental health³. It has been argued that if we do not take care of the planet, its climate and ecosystems, we undermine how our societies function, worsen our lives and, perhaps most directly, harm our own well-being⁴. Protecting the environment is therefore humanity's fundamental obligation.

It has been pointed out that the environment is facing increasing threats including the triple planetary crisis of climate change, biodiversity loss, and

¹ European Environment Agency., 'Editorial – Caring for the Environment is Caring for Ourselves' Available at <https://www.eea.europa.eu/en/newsroom/editorial/editorial-caring-for-the-environment#:~:text=It%20gives%20us%20clean%20air,harm%20our%20own%20well%2Dbeing.> (Accessed on 30/05/2024)

² Ibid

³ Ibid

⁴ Ibid

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law

pollution⁵. Sustainability has therefore been advanced as an ideal towards protecting the environment⁶. It seeks to create and maintain the conditions under which humanity and nature can exist in productive harmony to support present and future generations⁷. This ideal is captured under the concept of Sustainable Development which seeks to foster development that meets the needs of the present without compromising the ability of future generations to meet their own needs⁸. Sustainable Development aims to promote sustainability by embracing an integrated approach towards development that takes into consideration environmental conservation along with economic and social development⁹.

The United Nations *2030 Agenda for Sustainable Development*¹⁰ sets out the global vision for protecting the environment. It seeks to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action to combat climate change, so that it can support the needs of the present and future generations¹¹. The agenda envisions attainment of the ideal of Sustainable Development through 17 Sustainable Development Goals (SDGs) which seek to strike a balance between social, economic and environmental facets of

⁵ United Nations Environment Programme., 'The Triple Planetary Crisis: Forging a New Relationship Between People and the Earth' Available at <https://www.unep.org/news-andstories/speech/tripleplanetary-crisis-forging-new-relationship-between-people-and-earth> (Accessed on 30/05/2024)

⁶ Ibid

⁷ United States Environmental Protection Agency., 'What is Sustainability?' Available at <https://www.epa.gov/sustainability/learn-about-sustainability> (Accessed on 30/05/2024)

⁸ World Commission on Environment and Development., 'Our Common Future.' Oxford, (Oxford University Press, 1987)

⁹ United Nations., 'Sustainability' Available at <https://www.un.org/en/academic-impact/sustainability> (Accessed on 03/04/2024)

¹⁰ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 30/05/2024)

¹¹ Ibid

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law

sustainability¹². Achieving the 2030 Agenda for Sustainable Development is vital in protecting the environment.

It has been argued that in order to bolster environmental protection, it is imperative to recognize and prosecute environmental crimes by strengthening environmental criminal law¹³. Environmental crimes have been identified as a major threat to environmental sustainability¹⁴. Recognizing ecocide as an international crime is therefore an essential protective and preventive deterrent to severe and either widespread or long-term harm to ecosystems as a result of environmental crimes¹⁵. Creating and prosecuting the international crime of ecocide can therefore enhance efforts towards protecting our environment through criminal law.

This paper critically discusses the need to create and prosecute the international crime of ecocide. The paper argues that the environmental is facing increasing threats that amount to environmental crimes. The paper further argues that strengthening criminal law is necessary in enhancing environmental protection. It conceptualizes the crime of ecocide and posits that it is necessary to adopt and prosecute this crime in order to protect our environment through criminal law.

2.0 The Growth of Environmental Crimes

According to the United Nations Environment Programme (UNEP), there has been a rise in environmental crimes all over the world posing a threat to peace and security, Sustainable Development and environmental rule of law¹⁶.

¹² Ibid

¹³ United Nations Environment Programme., 'Environmental Crime' Available at <https://www.unep.org/news-and-stories/story/environmental-crime> (Accessed on 30/04/2024)

¹⁴ Ibid

¹⁵ United Nations., 'To accelerate, via Diplomatic Convening and Building of Cross-Sector Networks and Collaborations, the Introduction of Enhanced and Enforceable Legal Protections for Water ("Ecocide Law") into International, National and Regional Legislative Frameworks' Available at <https://sdgs.un.org/partnerships/accelerate-diplomatic-convening-and-building-cross-sector-networksand-collaborations> (Accessed on 30/05/2024)

¹⁶ United Nations Environment Programme., 'Environmental Crime' Op Cit

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law

UNEP further notes that abuse of the environment is the fourth largest criminal activity in the world costing up to \$258 billion¹⁷. It is estimated that environmental crimes are increasing by five to seven per cent every year and converging with other forms of international crime¹⁸. Environmental crimes are therefore a growing threat to peace, security and stability¹⁹.

The environment is often jeopardised and harmed during armed hostilities and conflict situations and reduced to a silent casualty of war²⁰. Armed hostilities and conflict situations often lead to environmental degradation or destruction, with long-lasting effects that contribute to the increased vulnerability of the affected populations²¹. They cause environmental damage, leading to food and water insecurity, loss of livelihoods, and biodiversity loss²². Parties to armed hostilities and conflict situations often adopt tactics that damage the environment such as polluting water resources, torching down crops and forests, poisoning soils, and killing animals in order to gain military advantage²³.

The environment therefore continues to be a silent victim of armed hostilities and conflict situations worldwide²⁴. For example, Russia's invasion of Ukraine has led to many far-reaching environmental abuses: for instance, the seizure of the Chernobyl nuclear disaster site has mobilized radioactive dust and

¹⁷ Ibid

¹⁸ Ibid

¹⁹ Ibid

²⁰ Palarczyk. D., 'Ecocide Before the International Criminal Court: Simplicity is Better Than an Elaborate Embellishment' *Criminal Law Forum.*, Volume 34, pp 147-207 (2023)

²¹ Geneva Environment Network., 'Protecting the Environment in Armed Conflict' Available at

<https://www.genevaenvironmentnetwork.org/resources/updates/protecting-the-environment-inarmed-conflict/> (Accessed on 31/05/2024)

²² Ibid

²³ Ibid

²⁴ United Nations Environment Programme., 'Protecting the Environment During Armed Conflict: An Inventory and Analysis of International Law' Available at https://wedocs.unep.org/bitstream/handle/20.500.11822/7813/-Protecting%20the%20Environment%20During%20Armed%20Conflict_An%20Inventory%20and%20Analysis%20of%20International%20Law-2009891.pdf?sequence=3&%3BisAllowed=

(Accessed on 31/05/2024)

increased detectable radiation which may spread radioactive material into new areas²⁵. The war continues to pose ongoing environmental risks associated with the unprecedented militarisation of nuclear sites, threats associated with air quality and solid waste management from the devastation of towns and cities²⁶. In addition, the ongoing Israel-Hamas armed conflict is resulting in environmental damage and fueling the climate crisis²⁷. It has been noted that carbon dioxide emissions from aircraft missions, tanks and fuel from other vehicles, as well as emissions generated by making and exploding the bombs, artillery and rockets to sustain the conflict are resulting in pollution and could worsen the problem of climate change²⁸. The impacts of climate change such as sea level rise, drought and extreme heat were already threatening water supplies and food security in the region and the ongoing armed conflict could make the situation more severe²⁹.

In addition, it has been pointed out that maritime environmental crimes are perpetrated in every part of the ocean and include a vast array of activities, mostly related to ship-source pollution, particularly accidental and willful oil discharges, which are a major threat to the marine environment and human health, accounting for most of the oil pollution in the ocean³⁰. Maritime environmental crimes are one of the main causes of destruction of marine ecosystems and devastation of marine life³¹. It has been noted that these crimes

²⁵ Palarczyk. D., 'Ecocide Before the International Criminal Court: Simplicity is Better Than an Elaborate Embellishment' Op Cit

²⁶ Weir. D., & Denisov. N., 'Assessing Environmental Damage in Ukraine' Available at https://zoinet.org/wp-content/uploads/2018/01/Ukraine-assessing-environmental-damage_EN.pdf (Accessed on 31/05/2024)

²⁷ The Guardian., 'Emissions from Israel's war in Gaza Have 'Immense' effect on Climate Catastrophe' Available at <https://www.theguardian.com/world/2024/jan/09/emissions-gaza-israel-hamas-warclimate-change> (Accessed on 31/05/2024)

²⁸ Ibid

²⁹ Ibid

³⁰ Becker-Weinberg. V., 'Recognition of Maritime Environmental Crimes within International Law' Available at <https://www.cambridge.org/core/books/environmental-rule-of-law-for-oceans/recognition-of-maritime-environmental-crimes-within-international-law/E6C169B342301A3112330D0E14957964> (Accessed on 31/05/2024)

³¹ Ibid

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law

take place across the whole shipping sector, from unseaworthy vessels engaged in illegal, unreported and unregulated fishing, to oil tankers and luxury cruise liners³².

Environmental crime has been ranked as the world's third most lucrative criminal business after drugs and counterfeit goods, and ahead of human trafficking³³. The rising global scarcity of natural resources attracts transnational criminal organisations which are rapidly shifting from traditional criminal activities to the illegal trade in natural resources³⁴. It has been noted that these organisations have diversified into the lucrative business of natural resources such as tropical timber, endangered species, waste and natural minerals and metals among others³⁵. These activities are associated with money laundering, human trafficking and the murder of indigenous peoples³⁶.

Environmental crimes are therefore on the rise all over the world. Environmental crimes can be defined as a grave act against the environment that results in the infringement of the right of citizens to a clean and healthy environment³⁷. These crimes include wildlife crimes, pollution crimes, illegal fishing, illegal logging, and illegal mining³⁸. Environmental crimes are a serious and growing global concern, leading to the near extinction of valuable wildlife species, and significantly impacting on the ecological integrity of the planet³⁹. These crimes contribute to environmental degradation, which in turn

³² Ibid

³³ European Law Institute., 'ELI Report on Ecocide' Available at https://www.europeanlawinstitute.eu/fileadmin/user_upload/p_eli/Publications/ELI_Report_on_Ecocide.pdf (Accessed on 31/05/2024)

³⁴ Ibid

³⁵ Ibid

³⁶ Ibid

³⁷ Kamweti. D et al., 'Nature and Extent of Environmental Crime in Kenya' Available at <https://www.eldis.org/document/A67815> (Accessed on 31/05/2024)

³⁸ List of Environmental Crimes: Examples and Types., Available at <https://airly.org/en/list-of-environmental-crimes-examples-types/#:~:text=The%20list%20of%20environmental%20crimes,illegal%20fishing%2C%20and%20illegal%20logging> (Accessed on 31/05/2024)

³⁹ Kamweti. D et al., 'Nature and Extent of Environmental Crime in Kenya' Op Cit

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law

affects the quality and quantity of environmental resources⁴⁰. They also worsen the triple planetary crisis of climate change, pollution, and biodiversity loss. For example, the trade in endangered species not only puts their survival at risk but it also deprives humanity of natural resources for their own survival and damages biodiversity⁴¹. Further, greenhouse gas emissions due to activities such as armed hostilities and conflicts, deforestation, and pollution contributes to climate change threatening sustainability⁴².

In light of these challenges, it has been argued that there is need for positive developments and new solutions to crimes and harms affecting the environment⁴³. It has been suggested that there is need to introduce ecocide as the fifth international crime in order to strengthen environmental protection through criminal law⁴⁴. It has been noted that currently, environmental regulation is only dealt with through civil courts⁴⁵. However, civil law can be inadequate in protecting the environment due to its limited remedies that include injunctions, damages, compensation, and environmental restoration orders⁴⁶. Large corporations can get away with such remedies and continue with acts that harm the environment⁴⁷. However, under criminal law, individuals of superior responsibility can be prosecuted, creating a genuine deterrent to environmental damage and enhancing environmental protection⁴⁸.

⁴⁰ Ibid

⁴¹ Vervaele, J., & van. Uhm, D., 'Criminal Justice and Environmental Crime: How to Tackle Organized Crime and Ecocide?' Available at <https://www.penal.org/en/criminal-justice-and-environmental-crime-how-tackle-organized-crime-and-ecocide> (Accessed on 31/05/2024)

⁴² Ibid

⁴³ Higgins, P., Short, D., & South, N., 'Protecting the Planet after Rio - The Need for a Crime of Ecocide' Available at <https://www.crimeandjustice.org.uk/sites/crimeandjustice.org.uk/files/09627251.2012.751212.pdf> (Accessed on 31/05/2024)

⁴⁴ Ibid

⁴⁵ Khimba, J., & Dyson, C., 'Stop Ecocide: Change the Law' Available at <https://www.themarinediaries.com/tmd-blog/stop-ecocide-change-the-law> (Accessed on 31/05/2024)

⁴⁶ Ibid

⁴⁷ Ibid

⁴⁸ Ibid

Despite the transnational and intergenerational character of the harmful activities against the environment including depletion of the ozone layer, pollution of oceans and seas, deforestation, and environmental degradation as a result of armed hostilities and conflict situations, many of these activities have not been criminalized⁴⁹. It has been pointed out that in most national, regional, and international legal frameworks, the environment and natural resources are viewed as state property to be exploited for the economic growth of nations rather than being viewed as an essential life condition⁵⁰. This approach towards the environment is generally strongly rooted in anthropocentric and materialistic worldviews and ignores harmful activities that may jeopardize the environment and the future of the planet⁵¹. It is therefore necessary to introduce ecocide in order to protect our environment through criminal law.

3.0 Towards Ecocide as an International Crime

Ecocide has been defined as the extensive destruction, damage to or loss of ecosystem(s) of a given territory, whether by human agency or by other causes, to such an extent that peaceful enjoyment by the inhabitants of that territory has been severely diminished⁵². It has also been defined as mass damage and destruction of ecosystems and severe harm to nature which is widespread or long-term⁵³. Further, ecocide can also be understood as adverse alterations, often irreparable, to the environment – for example through nuclear explosions, chemical weapons, serious pollution and acid rain, or destruction of the rain forest – which threaten the existence of entire populations, whether deliberately or with criminal negligence⁵⁴. It has also

⁴⁹ Vervaele, J., & van. Uhm. D., 'Criminal Justice and Environmental Crime: How to Tackle Organized Crime and Ecocide?' *Op Cit*

⁵⁰ *Ibid*

⁵¹ *Ibid*

⁵² Mwanza. R., 'Enhancing Accountability for Environmental Damage under International Law: Ecocide as a Legal Fulfilment of Ecological Integrity' *Melbourne Journal of International Law.*, Volume 19 (2), (2018)

⁵³ Stop Ecocide International., 'What is Ecocide?' Available at <https://www.stopecocide.earth/what-isecocide> (Accessed on 31/05/2024)

⁵⁴ The Promise Institute for Human Rights., 'International Criminal Law & the Protection of the Environment' Available at

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law

been suggested that ecocide consists of acts which threaten the security of the planet by causing widespread, long-term and severe damage to the air, atmosphere, earth, water, aquatic environment, fauna or flora or their ecological function; or death, permanent disability or serious incurable disease to a population or if they dispossess a population the long-term of their land, territory or resources⁵⁵.

It has been noted that the concept of ecocide relates to descriptions of ecological harm; how such harm is or might be criminalised within a given legal system; and in a way that includes principles of eco-justice⁵⁶. It refers to actions whereby specific ecosystems experience harm to the extent that their ecological integrity is damaged⁵⁷. Ecocide therefore refers to serious destruction of or damage to the environment at substantial scale⁵⁸. Ecocide covers acts of environmental damage and degradation including greenhouse gas emissions, deforestation, biodiversity loss, water pollution, soil depletion, overfishing, industrial farming, and oil spills⁵⁹. It criminalises any activity leading to widespread, long-term or severe loss, damage or destruction of ecosystems, including ways of life dependent on those ecosystems⁶⁰. Ecocide covers all unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts⁶¹.

<https://promiseinstitute.law.ucla.edu/wp-content/uploads/2022/02/Report-of-the-Expert-Workshop-ICL-and-environment-v2.pdf> (Accessed on 31/05/2024)

⁵⁵ Ibid

⁵⁶ Medlock. F., & White. R., 'Ecocide, Ecocentrism and Social Obligation' Available at [https://www.elevenjournals.com/tijdschrift/ELR/2022/3%20\(incomplete\)/ELR-D-22-00018/fullscreen](https://www.elevenjournals.com/tijdschrift/ELR/2022/3%20(incomplete)/ELR-D-22-00018/fullscreen) (Accessed on 31/05/2024)

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ Khimba. J., & Dyson. C., 'Stop Ecocide: Change the Law' Op Cit

⁶⁰ Ibid

⁶¹ Killian. R., 'The Benefits, Challenges, and Limitations of Criminalizing Ecocide' Available at <https://theglobalobservatory.org/2022/03/the-benefits-challenges-and-limitations-of-criminalizing-ecocide/> (Accessed on 31/05/2024)

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law

It has been argued that there is need to introduce and prosecute ecocide as the fifth international crime⁶². Until recently, acts of ecocide have been considered as individual problem and individual states were responsible to deal with them within their boundaries⁶³. However, it has been noted that these acts result in massive destruction and damage to the environment including mass extinction and loss of biodiversity, ecological collapse and climate change⁶⁴. Acts of ecocide not only result in the loss of human lives but also leave irreparable damage to ecosystems⁶⁵. These acts therefore pose a major threat to humanity, human rights and social justice and have long lasting environmental consequences⁶⁶. It is therefore necessary to introduce ecocide as an international crime. It has been argued that introducing ecocide as an international crime will strengthen environmental protection through criminal law by imposing an international and trans-boundary duty of care on any person or persons exercising a position of superior responsibility, without exemption, in either private or public capacity to prevent the risk of and/or actual extensive damage to or destruction of or loss of ecosystem(s)⁶⁷; and creating a law with criminal sanctions when the actions of individuals or corporations create a risk of and/or actual extensive damage to or destruction of or loss of ecosystem(s)⁶⁸.

Recognizing ecocide as a core international crime may prevent humanity from the effects armed hostilities and conflict situations as well as protect the environment from being damaged⁶⁹. Ecocide has been described as an

⁶² Sarkar. U., 'Ecocide- Protection of Environment: An International Crime' Available at <https://thelawbrigade.com/wp-content/uploads/2021/12/Utsa-Sarkar-IJLDAI.pdf> (Accessed on 31/05/2024)

⁶³ Ibid

⁶⁴ Ibid

⁶⁵ Ibid

⁶⁶ Ibid

⁶⁷ Higgins. P., Short. D., & South. N., 'Protecting the Planet after Rio – The Need for a Crime of Ecocide' Op Cit

⁶⁸ Ibid

⁶⁹ Van Uhm. D., '22 Atrocity Crimes and Ecocide: Interrelations between Armed Conflict, Violence, and Harm to the Environment' Available at <https://academic.oup.com/edited->

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law

essential protective and preventive deterrent to severe and either widespread or long-term harm to ecosystems⁷⁰. It has been argued that by adopting and prosecuting the crime of ecocide, the environment will gain its lost importance which has been sidelined due to overexploitation by human beings for economic advantages⁷¹. In addition, this will strengthen national efforts towards protecting the environment through criminal law⁷². Recognizing ecocide as an international crime will also foster prosecution of environmental crimes that fall outside national laws therefore strengthening transboundary environmental protection⁷³. Adopting ecocide will result in the expansion of international accountability for environmental harms⁷⁴. It has been noted that the crime of ecocide extends the possibility of prosecutions for environmental damage beyond the context of war, therefore enabling individuals to be prosecuted for harms such as ocean damage through oil spills, deforestation, land and oil contamination, and air pollution⁷⁵. This will strengthen environmental protection by contributing to a growing consciousness of the need to prevent and meaningfully address the harms perpetrated against the natural world⁷⁶. Further, introducing ecocide as an international crime, will foster impartiality and independence in prosecution of environmental crimes by international institutions such as the International Criminal Court (ICC)⁷⁷. It has been noted that prosecuting such crimes at a national level may

[volume/42558/chapterabstract/357099488?redirectedFrom=fulltext](https://www.scoonline.com/volume/42558/chapterabstract/357099488?redirectedFrom=fulltext) (Accessed on 31/05/2024)

⁷⁰ United Nations., 'To accelerate, via Diplomatic Convening and Building of Cross-Sector Networks and Collaborations, the Introduction of Enhanced and Enforceable Legal Protections for Water ("Ecocide Law") into International, National and Regional Legislative Frameworks' Op Cit

⁷¹ Sharma. K., 'Ecocide: Will it be the Fifth International Crime' Available at <https://www.scoonline.com/blog/post/2021/11/26/ecocide/> (Accessed on 31/05/2024)

⁷² Ibid

⁷³ Ibid

⁷⁴ Killian. R., 'The Benefits, Challenges, and Limitations of Criminalizing Ecocide' Op Cit

⁷⁵ Ibid

⁷⁶ Ibid

⁷⁷ Why is an International Crime of Ecocide Necessary?., Available at <https://internationallaw.blog/2023/06/01/why-is-an-international-crime-of-ecocide->

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law

not be effective since large corporations causing and benefiting from environmental damage could exert political influence and gain favourable outcomes from national courts and therefore continue to perpetrate acts of environmental damage⁷⁸. Ecocide cases are likely to involve powerful government officials, or corporate leaders, who have considerable influence to intimidate, sway or suppress prosecutions at a national level⁷⁹. Prosecuting such crimes through a neutral international forum is therefore necessary to strengthen environmental protection through criminal law⁸⁰.

Despite the ideal of criminalizing ecocide towards strengthening environmental protection through criminal law, it also been noted that introducing the crime of ecocide as an international crime is likely to face challenges related to amending the Rome Statute⁸¹. Further, it has been pointed out that states who are not party to the Rome Statute would be exempted from the new crime therefore limiting the scope of ecocide⁸². Further, since environmental harms can be slow to materialize, ecocide is likely to throw up a range of challenges surrounding proving causality and responsibility, and gathering evidence therefore raising implementation challenges⁸³. It is imperative to address these concerns in order to effectively introduce and embrace ecocide towards protecting our environment through criminal law.

4.0 Conclusion

Environmental crimes are growing all over the world posing a threat to peace and security, Sustainable Development and environmental rule of law⁸⁴. The environment is facing increasing threats from armed hostilities and conflict

[necessary/#:~:text=International%20criminalisation%20of%20the%20most,not%20captured%20by%20this%20crime](#) (Accessed on 31/05/2024)

⁷⁸ Ibid

⁷⁹ Ibid

⁸⁰ Ibid

⁸¹ Killean. R., 'The Benefits, Challenges, and Limitations of Criminalizing Ecocide' Op Cit

⁸² Ibid

⁸³ Ibid

⁸⁴ United Nations Environment Programme., 'Environmental Crime' Op Cit

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law

situations, wildlife crimes, pollution crimes, illegal fishing, illegal logging, illegal mining, and maritime crimes among other environmental crimes⁸⁵. These crimes contribute to environmental degradation, which in turn affects the quality and quantity of environmental resources and further worsen the triple planetary crisis of climate change, pollution, and biodiversity loss⁸⁶. As a result, it has been argued that there is need to introduce the crime of ecocide in order to strengthen environmental protection through criminal law⁸⁷.

Introducing ecocide will strengthen environmental protection by safeguarding the environment during armed hostilities and conflict situations⁸⁸; strengthening environmental rule of law at national, regional and global levels⁸⁹; ensuring prosecution of environmental crimes that fall outside national jurisdiction⁹⁰; expanding international accountability for environmental harms⁹¹; and fostering impartiality and independence in prosecution of environmental crimes by international institutions such as the International Criminal Court⁹². There have been proposals towards amending the Rome Statute of the International Criminal Court (ICC) in order to create an international crime of ecocide⁹³. If these proposals are implemented, ecocide would become the fifth category of offences to be prosecuted under the court, alongside war crimes, crimes against humanity, genocide, and the crime of aggression⁹⁴. The inclusion of ecocide as a fifth international crime

⁸⁵ Ibid

⁸⁶ Kamweti. D et al., 'Nature and Extent of Environmental Crime in Kenya' Op Cit

⁸⁷ Higgins. P., Short. D., & South. N., 'Protecting the Planet after Rio - The Need for a Crime of Ecocide' Op Cit

⁸⁸ Van Uhm. D., '22 Atrocity Crimes and Ecocide: Interrelations between Armed Conflict, Violence, and Harm to the Environment' Op Cit

⁸⁹ Sharma. K., 'Ecocide: Will it be the Fifth International Crime' Op Cit

⁹⁰ Ibid

⁹¹ Killian. R., 'The Benefits, Challenges, and Limitations of Criminalizing Ecocide' Op Cit

⁹² Why is an International Crime of Ecocide Necessary?., Op Cit

⁹³ United Nations Environment Programme., 'Observations on the Scope and Application of Universal Jurisdiction to Environmental Protection' Available at https://www.un.org/en/ga/sixth/75/universal_jurisdiction/unep_e.pdf (Accessed on 31/05/2024)

⁹⁴ Ibid

Ecocide and New Paradigms: Protecting Our Environment through Criminal Law

will strengthen environmental protection through criminal law⁹⁵. It is therefore necessary to fast track efforts towards amending the Rome Statue of the ICC in order to introduce and prosecute the crime of ecocide. It is also necessary for the amendment to improve the legal definition, nature, and scope of ecocide to cover all acts identified as unlawful and dangerous for the environment, or which results or are likely to result in severe, long-term, irreparable, or irreversible damage to the environment⁹⁶. It is necessary to adopt and prosecute the crime of ecocide in order to enhance efforts towards protecting our environment through criminal law.

⁹⁵ Sharma. K., 'Ecocide: Will it be the Fifth International Crime' Op Cit

⁹⁶ Otunge. D., 'ELI Report should Inspire Africa into Speedy Action Against Ecocide' Available at <https://scienceafrica.co.ke/2023/03/08/eli-report-should-inspire-africa-into-speedy-action-against-ecocide/> (Accessed on 31/05/2024)

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

Abstract

Ecosystem restoration is at the heart of the Sustainable Development agenda. It is a process designed to revitalize and recuperate degraded, damaged, or destroyed ecosystems and habitats, returning them to a state where they can sustainably support both nature and humanity. Ecosystem restoration is needed on a large scale in order to achieve the Sustainable Development agenda. The United Nations 2030 Agenda for Sustainable Development sets out the ideal of ecosystems restoration. Sustainable Development Goal (SDG) 15 seeks to protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and biodiversity loss. This paper critically examines the need to restore forest ecosystems. It argues that restoring forest ecosystems is vital for the attainment of the Sustainable Development agenda. The paper explores the role of forest ecosystem in fostering Sustainable Development. It also examines some of the key threats facing forest ecosystem and their impacts on sustainability. The paper further offers ideas towards restoring forest ecosystem for Sustainable Development in Africa.

1.0 Introduction

The concept of ecosystems restoration entails improvement of degraded land and ecosystems on a large scale that rebuilds ecological integrity and enhances people's lives¹. Ecosystem restoration aims to recover the ecological functionality and enhance human well-being in deforested and degraded landscapes and ecosystems². It is an important process that not only returns landscapes and ecosystems to a healthy state, but also increases the amount of carbon sequestered, improves biodiversity and the quality of soil and water in the ecosystem, and provides economic benefits for communities that depend on such landscapes and ecosystems³.

¹ Food and Agriculture Organization., 'The Key Role of Forest and Landscape Restoration in Climate Action.' Available at <https://www.fao.org/documents/card/en/c/cc2510en> (Accessed on 23/05/2024)

² Ibid

³ World Economic Forum., 'What are Natural Climate Solutions?' Available at <https://www.weforum.org/agenda/2021/09/what-are-natural-climate-solutions>

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

Ecosystem restoration is at the heart of the Sustainable Development agenda⁴. It is an imperative action designed to revitalize and recuperate degraded, damaged, or destroyed ecosystems and habitats, returning them to a state where they can sustainably support both nature and humanity⁵. Ecosystem restoration entails the active management of an environment to re-establish its ecological integrity, resilience, and functionality, thus leading to a balanced coexistence of both nature and humans⁶. It has been noted that by enhancing the capacity of nature to cater to human needs and by fostering a symbiotic relationship between man and environment, ecosystem restoration directly and indirectly influences the attainment of several Sustainable Development Goals (SDGs)⁷.

According to the United Nations Environment Programme (UNEP), ecosystem restoration is needed on a large scale in order to achieve the Sustainable Development agenda⁸. UNEP notes that over-exploitation of natural resources is embedded in economies and governance systems, and the resulting degradation is undermining hard-won development gains and threatening the well-being of future generations. It further posits that ecosystem restoration is one of the most important ways of delivering nature-based solutions for food insecurity, climate change mitigation and adaptation, and biodiversity loss⁹.

Ecosystem restoration therefore means assisting in the recovery of ecosystems that have been degraded or destroyed, as well as conserving the ecosystems

[ncsalliance/#:~:text=NCS%20are%20actions%20that%20avoid,forest%20conservation%2C%20restoration%20and%20management](#) (Accessed on 23/05/2024)

⁴ SDG Resource Centre., 'Ecosystem Restoration' Available at <https://sdgresources.relx.com/ecosystem-restoration-0> (Accessed on 23/05/2024)

⁵ Ibid

⁶ Ibid

⁷ Ibid

⁸ United Nations Environment Programme., 'Ecosystem Restoration for People, Nature and Climate' Available at <https://www.unep.org/resources/ecosystem-restoration-people-nature-climate> (Accessed on 23/05/2024)

⁹ Ibid

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

that are still intact¹⁰. This process is very vital for Sustainable Development. Healthier ecosystems, with richer biodiversity, yield greater benefits such as more fertile soils, bigger yields of timber and fish, and larger stores of greenhouse gases therefore enhancing the global response towards climate change¹¹. Restoring ecosystems protects and improves the livelihoods of people who depend on them. It also helps to regulate disease and reduce the risk of natural disasters¹².

The ideal of ecosystem restoration is set out under the United Nation's *2030 Agenda for Sustainable Development*¹³. The Agenda identifies natural resource depletion and environmental degradation as a key threat to sustainability as evidenced by problems such as desertification, drought, land degradation, freshwater scarcity, and loss of biodiversity¹⁴. It seeks to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change so that the planet can support the needs of the present and future generations¹⁵. SDG 15 seeks to protect, *restore*, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and biodiversity loss¹⁶. The targets under SDG 15 include ensuring the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands; promoting the implementation of sustainable management of all types of forests, halt deforestation, *restore degraded forests* and substantially increase afforestation and reforestation globally; combating desertification, *restoring degraded land*

¹⁰ United Nations Environment Programme., 'What is Ecosystem Restoration?' Available at <https://www.decadeonrestoration.org/what-ecosystem-restoration> (Accessed on 23/05/2024)

¹¹ Ibid

¹² Ibid

¹³ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 23/05/2024)

¹⁴ Ibid

¹⁵ Ibid

¹⁶ Ibid

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world (Emphasis added); ensuring the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development; and taking urgent and significant action to reduce the degradation of natural habitats, and halting the loss of biodiversity¹⁷.

This paper critically examines the need to restore forest ecosystems. It argues that restoring forest ecosystems is vital for the attainment of the Sustainable Development agenda. The paper explores the role of forest ecosystem in fostering Sustainable Development. It also examines some of the key threats facing the forest ecosystem and their impacts on sustainability. The paper further offers ideas towards restoring the forest ecosystem for Sustainable Development in Africa.

2.0 Forest Ecosystems and Sustainable Development

Forests provide vital ecosystem services to both people and the planet, bolstering livelihoods, providing clean air and water, conserving biodiversity and responding to climate change¹⁸. It has been noted that forests hold more than three-quarters of the world's terrestrial biodiversity, provide many products and services that contribute to socio-economic development, and are a critical lifeline for hundreds of millions of people in rural areas, including many of the world's poorest¹⁹.

It has been argued that forests and trees make the planet habitable²⁰. They provide us with clean air and water²¹. Further, by storing vast amounts of carbon and moderating the climate, they are a critical defence against global

¹⁷ Ibid

¹⁸ Greenpop., 'Forest Restoration' Available at <https://greenpop.org/forest-restoration/> (Accessed on 23/05/2024)

¹⁹ Ibid

²⁰ United Nations Environment Programme., 'Forests' Available at <https://www.decadeonrestoration.org/types-ecosystem-restoration/forests> (Accessed on 23/05/2024)

²¹ Ibid

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

warming²². It has been noted that forests are home to most of the planet's biodiversity²³. They provide shade, recreation and a sense of well-being and also support the livelihoods of billions of people around the world²⁴. Forests provide a natural habitat for a vast range of animals, plants and other living organisms, allowing them to thrive²⁵. In addition, it has been asserted that forests embed the principle of circularity. They provide commercially valuable renewable wooden materials and goods, regulate critical global cycles (in particular the oxygen, nitrogen, carbon and water cycles) and play a vital role in soil conservation²⁶. It has been pointed out that forests provide important ecosystem services, such as clean air, water flow regulation and flood control, carbon sequestration and storage, soil protection from water and wind erosion, and natural resilience to the effects of climate change²⁷. They also sustain livelihoods, communities, and infrastructure²⁸. It has been noted that forests provide subsistence, employment opportunities and income to about 25 per cent of the world's population²⁹.

Despite the importance of forest ecosystems, they are increasingly threatened by a wide range of pressures, including deforestation, land-use change and invasive alien species, as well as severe droughts and wildfires that are worsened by climate change³⁰. Forest ecosystems are under intense pressure from humanity's rising population and its hunger for more land and resources³¹. It is estimated that globally, the world is losing about 4.7 million

²² Ibid

²³ Ibid

²⁴ Ibid

²⁵ European Investment Bank., 'Forests at the Heart of Sustainable Development: Investing in Forests to Meet Biodiversity and Climate Goals' Available at https://www.eib.org/attachments/lucalli/20220173_forests_at_the_heart_of_sustainable_development_en.pdf (Accessed on 23/05/2024)

²⁶ Ibid

²⁷ Ibid

²⁸ Ibid

²⁹ Ibid

³⁰ International Union for Conservation of Nature., 'Restoring Forest Ecosystems Provides Multiple Benefits to Society' Available at <https://www.iucn.org/news/europe/201905/restoring-forest-ecosystems-provides-multiple-benefits-society> (Accessed on 23/05/2024)

³¹ United Nations Environment Programme., 'Forests' Op Cit

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

hectares of tropical forest every year³². Further, it has been noted that as a continent, Africa had the highest global net loss of forests³³. It has further been observed that many remaining forests are degraded because of logging, firewood cutting, pollution and invasive pests³⁴. In addition, trees outside forest ecosystems are also disappearing to make way for houses, roads and dams and for intensive agriculture³⁵. Wildfires, which are made worse by climate change, are also devastating forest ecosystems³⁶.

According to the International Union for Conservation of Nature (IUCN), nearly 30 per cent of global forest cover has been cleared and a further 20 per cent degraded³⁷. IUCN notes that deforestation is the second leading cause and currently accounts for approximately 24 per cent of total greenhouse gas emissions, more than the entire global transportation sector³⁸. In addition, it points out that forest and land degradation also increases competition for scarce resources and contributes to human migration, both of which can lead to increased instances of conflict³⁹.

As a result of the foregoing challenges, restoring forest ecosystem is a vital agenda. It has been noted that large-scale forest restoration, in addition to restoration of other critical ecosystems, is needed to meet the SDGs and to prevent, halt and reverse the loss of biodiversity⁴⁰. Forest restoration, when implemented appropriately, helps restore habitats and ecosystems, create jobs and income and is an effective nature-based solution to climate change⁴¹. IUCN opines that forests and other nature-based solutions for climate change, such as wetlands, can provide over one third of the climate change mitigation

³² Ibid

³³ Greenpop., 'Forest Restoration' Op Cit

³⁴ United Nations Environment Programme., 'Forests' Op Cit

³⁵ Ibid

³⁶ Ibid

³⁷ International Union for Conservation of Nature., 'Forest Landscape Restoration Pathways to Achieving the SDGs' Available at https://unece.org/fileadmin/DAM/timber/meetings/2019/20191216/Forest_landscapes_restoration_pathways_to_achieving_the_SDGs.pdf (Accessed on 23/05/2024)

³⁸ Ibid

³⁹ Ibid

⁴⁰ Greenpop., 'Forest Restoration' Op Cit

⁴¹ Ibid

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

goals needed by 2030⁴². IUCN further notes that conserving and restoring forest landscapes is not only a cost-effective way to mitigate climate change, but it also means that many other benefits are provided to local communities and the wider society⁴³. Healthy forests filter sediments and pollutants from rainwater runoff, protecting the quality of rivers and lakes, including drinking water sources⁴⁴. In addition, restored forests and landscapes increase food and water security, sequester carbon, enhance adaptability and resilience to climate change, and minimise the risks associated with conflicts over natural resources and large-scale migration⁴⁵. It is therefore necessary to restore forest ecosystems for Sustainable Development.

3.0 Restoring Forest Ecosystems for Sustainable Development in Africa

It has been noted that in many countries, deforestation and the degradation of natural forest ecosystems are causing a substantial decline in the effectiveness of these ecosystems to store water, sequester carbon and protect against erosion⁴⁶. Measures for the restoration and ecosystem-based adaptation of forests not only make a decisive contribution to climate change mitigation but also work to conserve biodiversity and support Sustainable Development⁴⁷. Forest restoration is a process that aims to regain ecological functionality and enhance human well-being in deforested or degraded landscapes⁴⁸. It entails actions to re-instate ecological processes, which accelerate recovery of forest structure, ecological functioning and biodiversity levels⁴⁹.

⁴² International Union for Conservation of Nature., 'Restoring Forest Ecosystems Provides Multiple Benefits to Society' Op Cit

⁴³ Ibid

⁴⁴ Ibid

⁴⁵ International Union for Conservation of Nature., 'Forest Landscape Restoration Pathways to Achieving the SDGs' Op Cit

⁴⁶ International Climate Initiative., 'Restoring Forest Landscapes' Available at <https://www.international-climate-initiative.com/en/topics/restoring-forest-landscapes/> (Accessed on 23/05/2024)

⁴⁷ Ibid

⁴⁸ Forest Restoration., Available at <https://www.cfwf.sua.ac.tz/ecosystems/forest-restoration> (Accessed on 23/05/2024)

⁴⁹ Ibid

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

According to IUCN, restoring forest ecosystems is a process of regaining ecological functionality and enhancing human well-being across large-scale degraded and deforested areas comprised of overlapping ecological, social and economic activities and values⁵⁰. It further notes that restoring forest ecosystems is a forward-looking and dynamic process, focusing on strengthening the resilience of forest ecosystems and creating future options to enhance and further optimise ecosystem goods and services as societal needs change or new challenges arise⁵¹. It has been noted that restoring forests and landscapes is more than just planting trees⁵². For example, a restored landscape could include naturally regenerated areas, agroforestry, on-farm trees, mangroves, protected areas, plantings of trees and other woody plants like bamboos among others⁵³. Restoring forest ecosystems takes place through an active process that allows the integration of various sectors, plans, and programmes, bringing local communities and other stakeholders together to identify and implement appropriate restoration activities⁵⁴.

UNEP notes that restoring forest ecosystems involves returning trees to former forest land and improving the condition of degraded forests⁵⁵. In addition, restoring forest ecosystems means replanting and reducing the pressure on forests so that trees re-grow naturally⁵⁶. It involves actions such as planting native tree species as well as conserving wild plants and animals and protecting the soils and water sources that are part of the forest ecosystem⁵⁷. Further, it has been observed that in existing forests, native tree species can be planted to regenerate the tree cover⁵⁸. Forest trees can also re-

⁵⁰ International Union for Conservation of Nature., 'Forest Landscape Restoration Pathways to Achieving the SDGs' Op Cit

⁵¹ Ibid

⁵² Ibid

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ United Nations Environment Programme., 'Forests' Op Cit

⁵⁶ United Nations Environment Programme., 'A Beginner's Guide to Ecosystem Restoration' Available at <https://www.unep.org/news-and-stories/story/beginners-guide-ecosystem-restoration> (Accessed on 23/05/2024)

⁵⁷ United Nations Environment Programme., 'Forests' Op Cit

⁵⁸ Ibid

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

grow naturally in some cases⁵⁹. UNEP further notes that forest restoration can also entail nurturing patches of forest and woodland in landscapes that also include busy farms and villages⁶⁰. According to the United Nations, restoring forest ecosystems entails more than just planting trees⁶¹. It notes that restoring forest ecosystems is about reinstating the balance of the ecological, social and economic benefits of forests and trees within a broader pattern of land use⁶². In some cases, restoring forest ecosystems is best achieved by assisting the natural regeneration of local plant species, while in others, the planting of trees and other vegetation helps speed up the process of restoring the health and productivity of degraded forests and landscapes⁶³.

Restoring forest ecosystems is vital for Sustainable Development. It has been noted that the degradation of ecosystems reduces habitats for many species and is a key driver of biodiversity loss⁶⁴. As a result of forest degradation, loss of trees and vegetation contributes to climate change through reduced carbon sequestration, reduces resilience and increases the risk of desertification in terrestrial ecosystems⁶⁵. Restoring forest ecosystems can generate employment, benefit livelihoods, provide a habitat for threatened species, sequester carbon and contribute to the adaptation to and mitigation of the effects of climate change⁶⁶.

The United Nations Decade on Ecosystem Restoration aims to prevent, halt and reverse the degradation of ecosystems on every continent and in every

⁵⁹ Ibid

⁶⁰ Ibid

⁶¹ United Nations., 'Forest Restoration: A Path to Recovery and Well-Being' Available at <https://www.un.org/en/un-chronicle/forest-restoration-path-recovery-and-well-being-0> (Accessed on 23/05/2024)

⁶² Ibid

⁶³ Ibid

⁶⁴ Secretariat of the Convention on Biological Diversity., 'The Forest Ecosystem Restoration Initiative on the Ground: Case Studies from Twelve Small-Scale, Innovative Ecosystem Restoration Projects around the World' Available at <https://www.cbd.int/doc/publications/CBD-FERI-Case-Studies-en.pdf> (Accessed on 23/05/2024)

⁶⁵ Ibid

⁶⁶ Ibid

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

ocean⁶⁷. It is a rallying call for the protection and revival of ecosystems all around the world, for the benefit of people and nature⁶⁸. It aims to halt the degradation of ecosystems, and restore them to achieve the SDGs⁶⁹. It has been noted that it is only through healthy ecosystems can we enhance people's livelihoods, counteract climate change, and stop the collapse of biodiversity⁷⁰. Achieving the United Nations Decade of Ecosystem Restoration can help to end poverty, combat climate change and prevent a mass extinction⁷¹. Restoring forest ecosystems can therefore help to advance the United Nations Decade on Ecosystem Restoration.

Restoring forest ecosystems is also part of the implementation mechanisms of the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement⁷². Countries established the 'REDD+' framework to protect forests as part of the implementation mechanisms under the Paris Agreement⁷³. 'REDD' stands for 'Reducing Emissions from Deforestation and Forest Degradation in Developing Countries'⁷⁴. The '+' under this framework stands for additional forest-related activities that protect the climate, namely sustainable management of forests and the conservation and enhancement of forest carbon stocks⁷⁵. It has been noted that REDD+ activities have played a prominent role in restoring forest ecosystems and promoting sustainable forest management practices that reduce the depletion of carbon stock and enhance resilience of forest ecosystems⁷⁶. It is therefore imperative to

⁶⁷ United Nations Environment Programme., 'Preventing, Halting, and Reversing Loss of Nature' Available at <https://www.decadeonrestoration.org/> (Accessed on 23/05/2024)

⁶⁸ Ibid

⁶⁹ Ibid

⁷⁰ Ibid

⁷¹ Ibid

⁷² United Nations Climate Change., 'What is REDD+?' Available at <https://unfccc.int/topics/landuse/workstreams/redd/what-is-redd> (Accessed on 23/05/2024)

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Muigua. K., 'Boosting Biodiversity Conservation Through Sustainable Forest Resources Management' Available at <https://kmco.co.ke/wp-content/uploads/2021/11/Boosting-Biodiversity-Conservationthrough-improved->

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

strengthen REDD+ activities such as restoration, reforestation and afforestation for Sustainable Development⁷⁷.

The *Convention on Biological Diversity*⁷⁸ also emphasizes the need to restore landscapes and ecosystems for Sustainable Development. It urges contracting parties to rehabilitate and restore degraded ecosystems and promote the recovery of threatened species⁷⁹. It has been noted that the well-being of the world population in the coming decades will in large part depend on conservation and restoration of ecosystems to maintain and enhance biodiversity and ecosystem services thereby contributing to Sustainable Development while reducing environment-related risks such as climate change⁸⁰. Restoring forest ecosystems is a key measure towards achieving the objectives of the Convention on Biological Diversity by halting the loss of biodiversity and ensuring healthier ecosystems, with richer biodiversity⁸¹.

The *United Nations Convention to Combat Desertification*⁸² also sets out the need to restore forest ecosystems. The Convention envisages restoring degraded and desertified land⁸³. It requires contracting parties to implement effective strategies aimed at rehabilitation, conservation and sustainable management of land and water resources, leading to improved living conditions, in particular at the community level⁸⁴.

[Forest-Resources-Management-Kariuki-Muigua-November-2021.pdf](#) (Accessed on 23/05/2024)

⁷⁷ United Nations Environment Programme., 'REDD+' Available at <https://www.unep.org/exploretopics/climate-action/what-we-do/redd> (Accessed on 23/05/2024)

⁷⁸ United Nations., 'Convention on Biological Diversity.' Available at <https://www.cbd.int/doc/legal/cbd-en.pdf> (Accessed on 23/05/2024)

⁷⁹ Ibid

⁸⁰ Convention of Biological Diversity., 'Ecosystem Restoration.' Available at <https://www.cbd.int/restoration/> (Accessed on 23/05/2024)

⁸¹ International Institute for Sustainable Development., 'Forest Ecosystem Restoration – A Crucial Piece of the New Global Biodiversity Framework' Op Cit

⁸² United Nations Convention to Combat Desertification., Available at https://catalogue.unccd.int/936_UNCCD_Convention_ENG.pdf (Accessed on 23/05/2024)

⁸³ Ibid

⁸⁴ Ibid

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

Further, the *Bonn Challenge*⁸⁵ is a global goal that seeks to restore 350 million hectares of the world's degraded and deforested lands by 2030. More than 61 countries or jurisdictions have made pledges to the Bonn Challenge demonstrating global commitments towards restoring forest ecosystems⁸⁶. In addition, the *New York Declaration on Forests*⁸⁷ is a political declaration calling for global action to protect and restore forests. The Declaration offers a common, multi-stakeholder framework for forest action, consolidating various initiatives and objectives that drive forest protection, restoration, and sustainable use⁸⁸. The goals of the Declaration include halting natural forest loss by 2030, restoring 350 million hectares of degraded landscapes and forestlands, improving governance, increasing forest finance, and reducing emissions from deforestation and forest degradation⁸⁹. Fulfilling these global commitments is vital in restoring forest ecosystems for Sustainable Development.

Restoring forest ecosystems is a key priority for Africa. It has been noted that Africa's rainforest cover is the second-largest in the world, after the Amazon⁹⁰. However, Africa's rich and diverse forest ecosystems are in danger of collapsing, risking ecological stability globally⁹¹. Forest ecosystems in Africa are being affected by factors such as climate change and deforestation

⁸⁵ The Bonn Challenge., Available at <https://www.bonnchallenge.org/> (Accessed on 24/05/2024)

⁸⁶ Ibid

⁸⁷ New York Declaration on Forests., Available at [https://forestdeclaration.org/about/new-york-declaration-on-forests/#:~:text=The%20New%20York%20Declaration%20on%20Forests%20\(NYDF\)%20is%20a%20political,%2C%20restoration%2C%20and%20sustainable%20use.](https://forestdeclaration.org/about/new-york-declaration-on-forests/#:~:text=The%20New%20York%20Declaration%20on%20Forests%20(NYDF)%20is%20a%20political,%2C%20restoration%2C%20and%20sustainable%20use.) (Accessed on 24/05/2024)

⁸⁸ Ibid

⁸⁹ Ibid

⁹⁰ United Nations Environment Programme., 'In Africa, Restoring Ecosystems is Central to Green Recovery' Available at <https://www.unep.org/news-and-stories/story/africa-restoring-ecosystems-central-green-recovery> (Accessed on 23/05/2024)

⁹¹ Anwanaodung. E., 'Deforestation and the Loss of Africa's Vital Forest Ecosystems' Available at <https://blog.mustardinsights.com/in-africa/deforestation-and-the-loss-of-africas-vital-forest-ecosystems> (Accessed on 24/05/2024)

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

resulting in the loss of millions of hectares of forests in the continent every year⁹². According to UNEP, nearly 3 million hectares of rainforests in Africa are lost each year, resulting in soil degradation and unstable weather patterns that reduce the region's gross domestic product by 3 per cent annually⁹³. In addition, it is estimated that deforestation in Africa happens at almost double the speed of the world's average, with 4 million hectares of forests cut down each year⁹⁴. This has been attributed to factors such as agricultural expansion, commercial logging, charcoal burning, and encroachment of forest ecosystems for settlement⁹⁵.

Africa Union's *Agenda 2063*⁹⁶ notes that the continent has lost over 4 million hectares of forests annually over the past two decades due to extensive agricultural practices, unregulated and unsustainable wood harvesting and illegal commercial logging. Agenda 2063 further points out that deforestation results in significantly environmental degradation, diminished earnings with negative social and environmental consequences, including: deterioration of ecological systems with resulting negative impacts on soil fertility, water availability and biological resources and acute shortages of fuel wood and construction material in many parts of the continent⁹⁷. It is therefore necessary to restore forest ecosystems for Sustainable Development in Africa.

4.0 Conclusion

Restoring forest ecosystems is key for Sustainable Development in Africa. Forests have special place in Africa's economic, social, and cultural wellbeing⁹⁸. They are vital sources of food, energy, construction material,

⁹² Ibid

⁹³ United Nations Environment Programme., 'In Africa, Restoring Ecosystems is Central to Green Recovery' Op Cit

⁹⁴ Igini. M., 'Deforestation in Africa: Causes, Effects, and Solutions' Available at <https://earth.org/deforestation-in-africa/> (Accessed on 24/05/2024)

⁹⁵ Ibid

⁹⁶ Africa Union., 'Agenda 2063: The Africa we Want' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 24/05/2024)

⁹⁷ Ibid

⁹⁸ Ibid

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

employment, local and foreign trade as well as cultural identity⁹⁹. Forests also provide essential environmental services including controlling soil and water erosion, regulating climatic variability, conserving lakes and wetlands, and freshwater systems in Africa¹⁰⁰.

The *African Forest Landscape Restoration Initiative*¹⁰¹ aims to contribute to the Bonn Challenge and African Union's Agenda 2063 through its target of restoring 100 million hectares of land across the continent by 2030. In addition, the *Kigali Declaration on Forest Landscape Restoration in Africa*¹⁰² urges African countries to take bolder steps across sectors towards sustainable use of forests, protection of their forest reserves, promoting agroforestry among other climate-responsible practices, and restoration of degraded and deforested lands¹⁰³. The Declaration urges African countries to mainstream restoration into their national development policies¹⁰⁴. It further urges African countries to develop and strengthen continental capacity for restoration by developing technical expertise and developing environmental and social standards for the implementation of forest landscape restoration to help tackle climate change effects, improve human well-being, ecosystem health and biodiversity conservation across Africa¹⁰⁵. Implementing these continental commitments is necessary in enhancing efforts towards restoring forest ecosystems for Sustainable Development in Africa.

It is important for African countries to adopt practices geared towards restoring forest ecosystems. Such measures include reforestation, assisted

⁹⁹ Ibid

¹⁰⁰ Ibid

¹⁰¹ African Forest Landscape Restoration Initiative., Available at <https://afr100.org/> (Accessed on 24/05/2024)

¹⁰² Kigali Declaration on Forest Landscape Restoration in Africa., Available at <https://www.bonnchallenge.org/sites/default/files/resources/files/%5Bnode%3Anid%5D/Kigali%20Declaration%20on%20Forest%20Landscape%20Restoration%20in%20Africa.pdf> (Accessed on 24/05/2024)

¹⁰³ Ibid

¹⁰⁴ Ibid

¹⁰⁵ Ibid

Restoring Forest Ecosystems for Sustainable Development in Africa: Challenges and Promises

natural regeneration agroforestry, and afforestation¹⁰⁶. It has been pointed out that each of these approaches involves different techniques, such as planting new trees, removing invasive species, or reintroducing native plants and animals in a forest ecosystem¹⁰⁷. Effective restoration requires identifying the causes of forest degradation, developing a restoration plan, implementing restoration strategies, and monitoring and evaluating progress¹⁰⁸. The benefits of restoring forest ecosystems are significant, both for the ecosystem itself and for the people and communities that depend on it¹⁰⁹. Restoring forest ecosystems helps to conserve biodiversity, mitigate climate change, and support sustainable livelihoods for local communities¹¹⁰. It is therefore necessary to restore forest ecosystems for Sustainable Development in Africa.

¹⁰⁶ Muigua. K., 'Restoring Landscapes and Ecosystems for Climate Mitigation' Available at <https://kmco.co.ke/wp-content/uploads/2024/02/Restoring-Landscapes-and-Ecosystems-for-Climate-Mitigation.pdf> (Accessed on 24/05/2024)

¹⁰⁷ Forest Restoration., Op Cit

¹⁰⁸ Ibid

¹⁰⁹ Ibid

¹¹⁰ Ibid

Harnessing Peace, Dialogue, Harmony, and Diplomacy for Effective Mediation

Abstract

Mediation has been identified as one of the most effective methods of preventing, managing and resolving conflicts. However, in order to be effective, a mediation process requires more than the appointment of a high-profile individual to act as a third party. Effective mediation takes into account the causes and dynamics of the conflict, the positions, interests and coherence of the parties, the needs of the broader society, as well as the regional and international environments. Effective mediation often exists alongside peace processes, dialogue efforts, harmony, and diplomacy. This paper critically examines the role of peace, dialogue, harmony, and diplomacy in mediation. It argues that these concepts are vital for effective mediation. The paper defines peace, dialogue, harmony, and diplomacy and discusses their role in fostering effective mediation. The paper further explores ways through which peace, dialogue, harmony, and diplomacy can be harnessed for effective mediation.

1.0 Introduction

Mediation involves the intervention of a neutral third person, a mediator, who assists parties in negotiating a jointly acceptable resolution of issues in a dispute or conflict¹. Mediation has also been defined as a process of conflict management where conflicting parties gather to seek solutions to the conflict, with the assistance of a third party who facilitates discussions and the flow of information therefore aiding parties in the process of reaching an agreement². The United Nations defines mediation as a process whereby a third party assists two or more parties, with their consent, to prevent, manage or resolve a conflict by helping them to develop mutually acceptable agreements³.

The premise of mediation is that in the right environment, conflict parties can improve their relationships and move towards cooperation⁴. It is usually a

¹ What is Mediation?., Available at <https://www.commerce.gov/cr/reports-and-resources/eo-mediation-guide/what-mediation> (Accessed on 14/05/2024)

² Muigua. K., 'Resolving Conflicts through Mediation in Kenya.' Glenwood Publishers Limited, 2nd Edition., 2017

³ United Nations., 'Guidance for Effective Mediation' Available at https://peacemaker.un.org/sites/peacemaker.un.org/files/GuidanceEffectiveMediation_UNDPA2012%28english%29_0.pdf (Accessed on 14/05/2024)

⁴ Ibid

Harnessing Peace, Dialogue, Harmony, and Diplomacy for Effective Mediation

continuation of the negotiation process since it arises where parties to a conflict have attempted negotiations, but have reached a deadlock⁵. As a result of this deadlock, parties involve a third party known as a mediator to assist them continue with the negotiations and ultimately break the stalemate towards amicable resolution of their dispute⁶. A mediator does not have the power to impose an outcome but rather facilitates communication, promotes understanding, focuses the parties on their interests, and uses creative problem solving to enable the parties to reach their own mutually satisfactory agreement⁷.

The United Nations notes that mediation is one of the most effective methods of preventing, managing and resolving conflicts⁸. The *Charter of the United Nations*⁹ identifies mediation as an important means for the peaceful settlement of disputes and conflicts. The Charter envisages the use of Alternative Dispute Resolution (ADR) processes including negotiation, enquiry, *mediation*, conciliation, arbitration, resort to regional agencies or arrangements, or other peaceful mechanisms in managing disputes between member states of the United Nations¹⁰. At a national level, the *Constitution of Kenya*¹¹ mandates courts and tribunals to promote ADR mechanisms including reconciliation, *mediation*, arbitration and Traditional Dispute Resolution Mechanisms (TDRMs)¹².

It has been asserted that in order to be effective, a mediation process requires more than the appointment of a high-profile individual to act as a third party¹³. An effective mediation process responds to the specificity of the conflict¹⁴. It also takes into account the causes and dynamics of the conflict, the positions,

⁵ Bercovitch. J., 'Mediation Success or Failure: A Search for the Elusive Criteria.' *Cardozo Journal of Conflict Resolution*, Vol. 7, p 289

⁶ Ibid

⁷ Ibid

⁸ United Nations., 'Guidance for Effective Mediation' Op Cit

⁹ United Nations, Charter of the United Nations, 24 October 1945, 1 UNTS XVI, Article 33 (1)

¹⁰ Ibid, article 33 (1)

¹¹ Constitution of Kenya., 2010., Government Printer, Nairobi

¹² Ibid, article 159 (2) (c)

¹³ United Nations., 'Guidance for Effective Mediation' Op Cit

¹⁴ Ibid

interests and coherence of the parties, the needs of the broader society, as well as the regional and international environments¹⁵. Effective mediation often exists alongside peace processes, dialogue efforts, harmony, and diplomacy¹⁶.

This paper critically examines the role of peace, dialogue, harmony, and diplomacy in mediation. It argues that these concepts are vital for effective mediation. The paper defines peace, dialogue, harmony, and diplomacy and discusses their role in fostering effective mediation. The paper further explores ways through which peace, dialogue, harmony, and diplomacy can be harnessed for effective mediation.

2.0 Defining Peace, Dialogue, Harmony, and Diplomacy

The concept of peace entails several ideals including the normal, non-warring condition of a nation, group of nations, or the world¹⁷; an agreement or treaty between warring or antagonistic nations, communities and groups to end hostilities and abstain from further fighting or antagonism¹⁸; and a state of mutual harmony between people or groups, especially in personal relations¹⁹. The term peace is also associated with the concepts of harmony, tranquility, cooperation, alliance, well-being, and agreement²⁰. It has been noted that its core, peace encompasses far more than just the absence of violence or conflict²¹. It is a state of harmony in which individuals and communities coexist in respect and understanding²². The concept of peace therefore not only envisages the absence of war but also the presence of positive elements, such as justice, equality, and compassion²³. Consequently, the concept of peace has

¹⁵ Ibid

¹⁶ Ibid

¹⁷ Herath. O., 'A critical analysis of Positive and Negative Peace.' Available at <http://repository.kln.ac.lk/bitstream/handle/123456789/12056/journal1%20%281%29.104-107.pdf?sequence=1&isAllowed=y> (Accessed on 14/05/2024)

¹⁸ Ibid

¹⁹ Ibid

²⁰ Muigua. K., 'Achieving Sustainable Development, Peace and Environmental Security.' Glenwood Publishers Limited, 2021

²¹ Gray Group International., 'Understanding Peace: A Comprehensive Guide to Achieving Global Harmony' Available at <https://www.graygroupintl.com/blog/peace> (Accessed on 14/05/2024)

²² Ibid

²³ Ibid

Harnessing Peace, Dialogue, Harmony, and Diplomacy for Effective Mediation

been classified into positive peace that entails attitudes, institutions and structures, that when strengthened, lead to peaceful societies and negative peace which entails the absence of violence²⁴. Peace goes beyond temporary ceasefire agreements; it involves addressing the root causes of conflict and working towards long-term solutions that promote human well-being and sustainable development²⁵.

According to the United Nations, peace means dignity and wellbeing for all, and not just absence of war²⁶. Peace is an ideal that has been sought after for centuries²⁷. It envisages the absence of conflict, the presence of tranquility, and the foundation for prosperity²⁸. It has been noted that achieving peace on a global scale is a complex endeavor that requires understanding, cooperation, and concerted efforts from individuals, communities, governments, and organizations all over the world²⁹.

Dialogue refers to the logical and useful sharing of thoughts and ideas between two or more groups of people³⁰. Dialogue has also been defined as a culturally and historically specific way of social discourse accomplished through the use of language and verbal transactions³¹. It has been noted that dialogue is not something we do or use; it is a relation that we create and

²⁴ Herath. O., 'A critical analysis of Positive and Negative Peace.' Op Cit

²⁵ Gray Group International., 'Understanding Peace: A Comprehensive Guide to Achieving Global Harmony' Op Cit

²⁶ United Nations., 'Peace Means Dignity, Well-Being for All, Not Just Absence of War – UN Officials' Available at <https://news.un.org/en/story/2014/09/476992> (Accessed on 14/05/2024)

²⁷ Gray Group International., 'Understanding Peace: A Comprehensive Guide to Achieving Global Harmony' Op Cit

²⁸ Ibid

²⁹ Ibid

³⁰ Madni. A.H., 'Dialogue: Advantages and Effects' Available at https://www.researchgate.net/publication/366393773_DIALOGUE_Advantages_Effects#:~:text=Dialogue%20is%20the%20logical%20and,among%20the%20people%20at%20natural. (Accessed on 14/05/2024)

³¹ Benathy, B., & Jenlink. P., 'Dialogue as a Means of Collective Communication' Available at https://www.researchgate.net/publication/200025879_Dialogue_as_a_Means_of_Collective_Communication (Accessed on 14/05/2024)

Harnessing Peace, Dialogue, Harmony, and Diplomacy for Effective Mediation

sustain by conjoint agreement and through shared discourse³². As a relation, dialogue is characterized by inclusion and a reciprocal sharing, such that the individual's become one in and with each other³³. In addition, it has been pointed out that dialogue cannot exist without the assessment of mutual interests and points³⁴. The idea of dialogue therefore envisages the mutual exchange of experience, ideas and opinions between two or more parties through conversation³⁵. Dialogue therefore envisages two-way or multi-way communication³⁶.

Harmony is a human value that entails compatibility and accord in feelings, actions, relationships, opinions, and interests³⁷. Harmony denotes a state of balance among forces influencing and even opposing one another³⁸. It has also been described as a state of balance, peace, and coherence within individuals³⁹. The concept of harmony involves the integration of various aspects of a person's being, including their thoughts, emotions, values, and actions⁴⁰. It has been noted that when there is harmony within individuals, they experience a sense of inner peace, wellbeing, and alignment with themselves and the world around them⁴¹. Harmony is vital for successful cooperation, survival, longevity, and prosperity of humanity⁴²

³² Ibid

³³ Ibid

³⁴ Madni. A.H., 'Dialogue: Advantages and Effects' Op Cit

³⁵ Dialogue Methods- An Idea Manual., Available at <https://www.diva-portal.org/smash/get/diva2:1364081/FULLTEXT01.pdf> (Accessed on 14/05/2024)

³⁶ Ibid

³⁷ Chen. S. X., 'Harmony' Available at https://www.researchgate.net/publication/256649929_Harmony#:~:text=Harmony%20is%20usually%20identified%20as,and%20even%20opposing%20one%20another. (Accessed on 14/05/2024)

³⁸ Ibid

³⁹ Hegde. S. B., 'Universal Human Values: Understanding Harmony and Ethical Human Conduct' Available at <https://www.jcethbl.edu.in/UNIVERSAL%20HUMAN%20VALUES%20II.pdf> (Accessed on 14/05/2024)

⁴⁰ Ibid

⁴¹ Ibid

⁴² United Nations., 'The Philosophy of True Harmony in Global Citizenship' Available at <https://www.un.org/en/chronicle/article/philosophy-true-harmony-global-citizenship> (Accessed on 14/05/2024)

Diplomacy is the process through which nations, groups, or individuals conduct their affairs, in ways to safeguard their interests and promote their political, economic, cultural or scientific relations, while maintaining peaceful relationships⁴³. Diplomacy is also a process used by governments to influence the actions of foreign governments through peaceful tactics such as negotiation and dialogue⁴⁴. It has often been used as a soft skill to shape mindsets and influence international and national agendas as well as the workings of governments⁴⁵. Diplomacy therefore entails the conduct of international relations by negotiation and dialogue or by any other means to promote peaceful relations among states⁴⁶. It has been noted that with the application of political support and concerted diplomacy, international cooperation can be forged to handle both longstanding and emerging global challenges⁴⁷.

3.0 The Role of Peace, Dialogue, Harmony, and Diplomacy in Mediation

Mediation can foster peace by addressing the root causes of conflicts⁴⁸. It usually results in mutually satisfying and long lasting outcomes therefore creating a suitable environment for peace by eliminating the likelihood of conflicts reemerging in future⁴⁹. It also has the potential to preserve and at times even enhance relationships making it an ideal process in promoting

⁴³ What is Diplomacy? Available at <https://www.cyber-diplomacytoolbox.com/Diplomacy.html#:~:text=Diplomacy%20is%20the%20art%20C%20the,relations%2C%20while%20maintaining%20peaceful%20relationships> (Accessed on 14/05/2024)

⁴⁴ Ibid

⁴⁵ Mabey. N., Gallagher. L., & Born. C., 'The Evolution of Climate Diplomacy and the International Climate Regime.' Available at <https://www.jstor.org/stable/resrep17706.6?seq=1> (Accessed on 14/05/2024)

⁴⁶ Cornago. N., 'Diplomacy' Available at https://www.researchgate.net/publication/286221540_Diplomacy#:~:text=comprehensively%2C%20diplomacy%20is%20a%20set,normative%20needs. (Accessed on 14/05/2024)

⁴⁷ Mabey. N., Gallagher. L., & Born. C., 'The Evolution of Climate Diplomacy and the International Climate Regime.' Op Cit

⁴⁸ Muigua. K., 'Resolving Conflicts through Mediation in Kenya.' Op Cit

⁴⁹ Ibid

Harnessing Peace, Dialogue, Harmony, and Diplomacy for Effective Mediation

peace⁵⁰. As a result, it has been noted that mediation is an effective process in managing conflicts while simultaneously fostering peace and harmony⁵¹. Peace and harmony have been described as essential prerequisites for tranquil and stable societies⁵². Harnessing peace and harmony can empower individuals to fully unlock their creative potential, facilitate Sustainable Development of economies and cultures, and ensure enduring prosperity and security for all of humanity⁵³. It has been noted that in order to enhance peace through mediation, major issues and grievances that led to the conflict must be resolved either by addressing the root causes directly or by establishing new mechanisms and/or institutions to address them over time through democratic processes⁵⁴. In addition, it is also imperative for the mediator to establish with the parties to a conflict, and through broader consultations, the minimum that needs to be achieved in order to commence a peaceful approach to dealing with the remaining aspects of the conflict⁵⁵. A mediator can also help parties to a conflict and other stakeholders to build options or mechanisms for addressing the issues in conflict at a later stage⁵⁶.

Dialogue is also a key process for effective mediation⁵⁷. Dialogue is effective in building and strengthening relationships⁵⁸. It can therefore be harnessed for effective mediation by building consensus among parties to the mediation process⁵⁹. Dialogue can also be harnessed to extend the reach and impact of

⁵⁰ World Intellectual Property Organization., 'What is Mediation?' Available at <https://www.wipo.int/amc/en/mediation/what-meditation.html> (Accessed on 15/05/2024)

⁵¹ Masumy. N., 'Charting a Pathway to Resolving Conflicts through Harmony and Mediation: Chinese Approach to International Conflict Management' Available at <https://opiniojuris.org/2024/02/29/charting-a-pathway-to-resolving-conflicts-through-harmony-and-mediation-chinas-influence-in-managing-international-conflicts/> (Accessed on 15/04/2024)

⁵² Ibid

⁵³ Ibid

⁵⁴ United Nations., 'Guidance for Effective Mediation' Op Cit

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷ Peace Insight., 'Dialogue and Mediation' Available at <https://www.peaceinsight.org/en/themes/mediation-dialogue/?location&theme=mediation-dialogue> (Accessed on 15/05/2024)

⁵⁸ Ibid

⁵⁹ Ibid

Harnessing Peace, Dialogue, Harmony, and Diplomacy for Effective Mediation

the mediation process through wider participation⁶⁰. Dialogue can help parties to a conflict develop a joint understanding in relation to a problem, hear different perspectives on a particular issue, and build mutual trust⁶¹. In addition, it has been noted that dialogue has proven to be an efficient tool in relieving tensions, removing prejudices, building trust, and mediating grievances⁶². According to the United Nations Development Programme, mediation and dialogue skills are important in building sustainable peace by offering solutions and discussing the root causes of conflicts⁶³. Dialogue can foster effective mediation by shedding light on the root causes of conflicts and therefore enabling parties to find permanent solutions instead of relying on temporary ones⁶⁴. In addition, it has been asserted that problem-solving dialogue could follow or run concurrently with power mediation or be instituted on its own to help groups analyze and confront issues of concern⁶⁵. Dialogue helps in maintaining open communication between and among parties to a conflict therefore facilitating a peaceful resolution or a negotiated compromise⁶⁶. Promoting direct dialogue between parties is therefore vital for successful mediation.

Harmony is also essential for effective mediation. It has been pointed out that at its most basic level, mediation is about maintaining some semblance of

⁶⁰ Ibid

⁶¹ Global Partnership for the Prevention of Armed Conflict., 'Dialogue and Mediation' Available at <https://www.gppac.net/what-we-do/dialogue-and-mediation#:~:text=This%20is%20where%20people%20can,building%20trust%2C%20and%20mediating%20grievances>. (Accessed on 15/05/2024)

⁶² Ibid

⁶³ United Nations Development Programme., 'Mediation and Dialogue as a Cornerstone of Peacebuilding' Available at <https://www.undp.org/iraq/stories/mediation-and-dialogue-cornerstone-peacebuilding> (Accessed on 15/05/2024)

⁶⁴ Ibid

⁶⁵ Fisher. R., Tadevosyan. M., & Cuhadar. E., 'The USIP Learning Agenda: An Evidence Review' Available at <https://www.usip.org/sites/default/files/Track-2-Dialogues-Evidence-Review-Paper.pdf> (Accessed on 16/05/2024)

⁶⁶ Dialogue – A Cheap and Effective Tool for Preventing Armed Conflicts., Available at <https://nansen.peace.no/dialogue-a-cheap-and-effective-tool-for-preventing-armed-conflicts/> (Accessed on 16/05/2024)

Harnessing Peace, Dialogue, Harmony, and Diplomacy for Effective Mediation

harmony among parties at the various stages of a conflict⁶⁷. This is achieved by focusing on common ground rather than who is right or wrong in a conflict⁶⁸. Effective mediation therefore focuses on harmony and cooperation⁶⁹. It is therefore necessary to build harmony for effective mediation processes and outcomes.

Harnessing diplomacy is also necessary for effective mediation. Successful diplomacy relies on effective communication, compromise, negotiation, and finding common ground between parties⁷⁰. Diplomacy plays a crucial role in managing international relations, fostering peaceful coexistence, and addressing global challenges⁷¹. It has been noted that by enabling nations and organizations to engage in dialogue, diplomacy contributes to a more stable and cooperative international order⁷². Diplomacy can therefore enhance mediation and peace processes at the regional, continental, and global levels⁷³. For example, preventive diplomacy aims to avoid the creation of disputes, to limit the escalation of existing disputes and to minimize the spread of a conflict⁷⁴. Further, it has been noted that like mediation, preventive diplomacy uses different forms of dialogue, the most frequent being a combination of diplomatic shuttles, proximity interviews and direct talks⁷⁵. Preventive diplomacy focuses more on lobbying, encouragement, political support or pressure in order to enhance peace outcomes⁷⁶.

⁶⁷ Mediation Can Maintain Harmony at Various Stages of a Case., Available at <https://www.brickergraydon.com/insights/publications/Mediation-can-maintain-harmony-at-various-stages-of-a-case> (Accessed on 15/05/2024)

⁶⁸ Ibid

⁶⁹ Masumy. N., 'Charting a Pathway to Resolving Conflicts through Harmony and Mediation: Chinese Approach to International Conflict Management' Op Cit

⁷⁰ Jamil. S., Atta. M., & Kalbi. H., 'Religious Diplomacy Promoting Peace, Collaboration, & Economic Stability' Available at https://www.researchgate.net/publication/377891297_Religious_Diplomacy_Promoting_Peace_Collaboration_Economic_Stability (Accessed on 15/05/2024)

⁷¹ Ibid

⁷² Ibid

⁷³ African Union., 'Peace Mediator' Issue 1, Volume 1., Available at <https://www.peaceau.org/uploads/peace-mediator-newsletter-volume-1-issue-1-20162017-final-3-.pdf> (Accessed on 15/05/2024)

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Ibid

Diplomacy is often utilized to strengthen mediation efforts through the work of envoys dispatched to crisis areas to encourage dialogue, compromise and the peaceful resolution of tensions⁷⁷. Diplomacy can play a crucial role in helping to mediate inter- and intra-State conflicts at all stages before they escalate into armed conflict, after the outbreak of violence, and during implementation of peace agreements⁷⁸. The United Nations notes that successful conflict mediation requires strengthening of diplomacy by providing adequate support system for envoys through proper staff assistance and advice, and ensuring that talks have the needed logistical and financial resources⁷⁹. It has been noted that diplomats have the tools, access to funding, international networks, and the political backing to set up successful mediation arenas⁸⁰. As a result, they can ensure safe places for the negotiations to take place and also help a mediation team prevent parallel processes⁸¹. In addition, diplomats may have the power to influence parties to come to the negotiation table or to encourage them to move towards a certain line of action or a negotiated deal, through backchannel talks, (economic) incentives, the use of 'good offices' or by offering to host the mediation process in their country thereby providing neutral and often safer surroundings that are vital for effective mediation⁸². Diplomacy can therefore influence the conflict management process in various ways therefore ripening the context for mediation⁸³. Harnessing diplomacy can enhance mediation and peacemaking processes aimed at bringing ongoing conflicts to an end, and preventing new crises from emerging or escalating⁸⁴.

⁷⁷ United Nations., 'Prevention and Mediation' Available at <https://dppa.un.org/en/prevention-and-mediation> (Accessed on 15/05/2024)

⁷⁸ Ibid

⁷⁹ Ibid

⁸⁰ Mediation Support Network., 'Peace Mediation and Diplomacy: Joining Forces for More Effective Cooperation' Available at <https://www.clingendael.org/sites/default/files/MSN%20Discussion%20Points%20Nr%2011.pdf> (Accessed on 16/05/2024)

⁸¹ Ibid

⁸² Ibid

⁸³ Ibid

⁸⁴ United Nations., 'Prevention and Mediation' Op Cit

Harnessing Peace, Dialogue, Harmony, and Diplomacy for Effective Mediation

Peace, dialogue, harmony, and diplomacy are thus vital for effective mediation and need to be harnessed.

4.0 Conclusion

Peace, dialogue, harmony, and diplomacy are key concepts in ensuring effective mediation. It has been noted that mediation has the potential to preserve and at times even enhance relationships making it an ideal process in promoting peace⁸⁵. Peace and harmony are essential prerequisites for tranquil and stable societies⁸⁶. Dialogue also helps in maintaining open communication between and among parties to a conflict therefore enhancing the mediation process and facilitating a peaceful resolution or a negotiated compromise⁸⁷. Harmony is also vital for effective mediation by ensuring that parties focus on common ground rather than who is right or wrong in a conflict⁸⁸. Effective mediation focuses on harmony and cooperation⁸⁹. Diplomacy is also a vital for effective mediation. It is helps to mediate inter- and intra-State conflicts at all stages before they escalate into armed conflict, after the outbreak of violence, and during implementation of peace agreements⁹⁰. Diplomacy can also influence the conflict management process in various ways therefore ensuring effective mediation⁹¹. It is therefore necessary to embrace and harness peace, dialogue, harmony, and diplomacy for effective mediation.

⁸⁵ World Intellectual Property Organization., 'What is Mediation?' Op Cit

⁸⁶ Ibid

⁸⁷ Dialogue – A Cheap and Effective Tool for Preventing Armed Conflicts., Op Cit

⁸⁸ Mediation Can Maintain Harmony at Various Stages of a Case., Op Cit

⁸⁹ Masumy. N., 'Charting a Pathway to Resolving Conflicts through Harmony and Mediation: Chinese Approach to International Conflict Management' Op Cit

⁹⁰ United Nations., 'Prevention and Mediation' Op Cit

⁹¹ Ibid

Protecting Our Endangered Species for Sustainability

Abstract

This paper critically examines the idea of protecting our endangered species. It defines endangered species and highlights some of the factors threatening their existence. The paper further discusses the efficacy of the steps taken at the global, regional, and national levels towards protecting endangered species. The paper suggests measures towards protecting our endangered species for sustainability.

1.0 Introduction

The concept of sustainability entails creating and maintaining the conditions under which humanity and nature can exist in productive harmony to support present and future generations¹. This is envisaged in the ideal of Sustainable Development which seeks to promote development that meets the needs of the present without compromising the ability of future generations to meet their own needs². The ideal of Sustainable Development aims to achieve sustainability by promoting environmental protection, economic development and social progress³.

The United Nation's *2030 Agenda for Sustainable Development* represents the global vision for sustainability⁴. It sets out a shared blue print for peace and prosperity for people and the planet in the quest towards the ideal of Sustainable Development⁵. The agenda envisions attainment of the ideal of Sustainable Development through 17 Sustainable Development Goals (SDGs)

¹ United States Environmental Protection Agency., 'What is Sustainability?' Available at <https://www.epa.gov/sustainability/learn-about-sustainability> (Accessed on 11/05/2024)

² World Commission on Environment and Development., 'Our Common Future.' Oxford, (Oxford University Press, 1987)

³ Fitzmaurice. M., 'The Principle of Sustainable Development in International Development Law.' International Sustainable Development Law., Vol 1

⁴ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 11/05/2024)

⁵ Ibid

Protecting Our Endangered Species for Sustainability

which seek to strike a balance between social, economic and environmental facets of sustainability⁶.

The need for sustainability has become pertinent in light of problems facing the planet including climate change, pollution, and loss of biodiversity together with issues of poverty, increasing disparity between societies and the tensions brought by social inequalities⁷. The United Nations Environment Programme notes that environmental problems facing the planet including the triple planetary crisis of climate change, biodiversity loss, and pollution have heightened the importance of forging a new relationship between people and the planet towards achieving sustainability⁸. Establishing harmony between humanity and nature is therefore a key agenda in achieving sustainability⁹. One way through which this goal can be realized is protecting our endangered species¹⁰. It has been noted that protecting endangered species is crucial for the preservation of biodiversity and the maintenance of healthy ecosystems¹¹.

This paper critically examines the idea of protecting our endangered species. It defines endangered species and highlights some of the factors threatening their existence. The paper further discusses the efficacy of the steps taken at the global, regional, and national levels towards protecting endangered species. The paper suggests measures towards protecting our endangered species for sustainability.

⁶ Ibid

⁷ Giovannoni, E., & Fabietti, G., 'What Is Sustainability? A Review of the Concept and Its Applications.' In: Busco, C., Frigo, M., Riccaboni, A., Quattrone, P. (eds) Integrated Reporting. Springer, Cham. Available at https://doi.org/10.1007/978-3-319-02168-3_2 (Accessed on 11/05/2024)

⁸ United Nations Environment Programme., 'The Triple Planetary Crisis: Forging a New Relationship Between People and the Earth' Available at <https://www.unep.org/news-andstories/speech/tripleplanetary-crisis-forging-new-relationship-between-people-and-earth> (Accessed on 11/05/2024)

⁹ Ibid

¹⁰ DGB Group., 'Why Should Endangered Species be Protected?' Available at <https://www.green.earth/blog/why-should-endangered-species-be-protected#:~:text=Protecting%20endangered%20species%20is%20crucial,valuable%20resources%20for%20human%20populations> (Accessed on 11/05/2024)

¹¹ Ibid

2.0 Protecting Endangered Species: Promises and Challenges

An endangered species is an animal or plant that is considered to be at risk of extinction¹². Endangered species also refers to those plants and animals that have become so rare they are in danger of becoming extinct¹³. According to the International Union for Conservation of Nature (IUCN), more than 44,000 species are threatened with extinction¹⁴. It has been noted that human activities such as habitat destruction, over-exploitation of natural resources, and pollution have led to the decline of many species¹⁵. As the human population continues to grow and urbanise, natural habitats are being destroyed and fragmented¹⁶. This results in the loss of food, shelter, and breeding sites for many species resulting in their decline¹⁷. Endangered species are therefore plant or animal species at risk of becoming extinct due to various factors such as habitat loss, changing environmental conditions, poaching, and pollution¹⁸.

According to the United Nations Environment Programme, the planet is dealing with unprecedented threats to wildlife and biodiversity¹⁹. It points out that the loss of habitat from farming, mining and new urban developments

¹² National Wildlife Federation., 'Endangered Species' Available at <https://www.nwf.org/Educational-Resources/Wildlife-Guide/Understanding-Conservation/Endangered-Species> (Accessed on 13/05/2024)

¹³ United States Environmental Protection Agency., 'What are Endangered and Threatened Species?' Available at <https://www.epa.gov/endangered-species/learn-more-about-threatened-and-endangered-species> (Accessed on 13/05/2024)

¹⁴ International Union for Conservation of Nature., 'The IUCN Red List of threatened Species' Available at <https://www.iucnredlist.org/> (Accessed on 13/05/2024)

¹⁵ DGB Group., 'Why Should Endangered Species be Protected?' Op Cit

¹⁶ Ibid

¹⁷ Ibid

¹⁸ DGB Group., 'The Importance of Saving Endangered Species for a Sustainable Future' Available at <https://www.green.earth/endangered-species> (Accessed on 13/05/2024)

¹⁹ United Nations Environment Programme., 'Three ways the United Nations Environment Programme works to address illegal trade in wildlife' Available at [https://www.unep.org/news-and-stories/story/three-ways-united-nations-environment-programme-works-address-illegal-trade#:~:text=The%20United%20Nations%20Environment%20Programme%20\(UNEP\)%20hosts%20the%20Convention%20on,of%20plants%20to%20prevent%20overexploitation.](https://www.unep.org/news-and-stories/story/three-ways-united-nations-environment-programme-works-address-illegal-trade#:~:text=The%20United%20Nations%20Environment%20Programme%20(UNEP)%20hosts%20the%20Convention%20on,of%20plants%20to%20prevent%20overexploitation.) (Accessed on 13/05/2024)

Protecting Our Endangered Species for Sustainability

has dramatically decreased the natural space for wildlife²⁰. In addition, UNEP notes that human demand for wildlife products which generates as much as US\$23 billion annually has resulted in many wildlife species being at risk of extinction²¹. According to UNEP, an estimated one million plant and animal species are threatened with extinction²².

Protecting our endangered species is vital in fostering sustainability. UNEP correctly notes that biological diversity is the core of healthy and productive ecosystems and the benefits that humans gain from a thriving natural environment are vast²³. Protecting endangered species is vital in maintaining biodiversity²⁴. The loss of biodiversity can have far-reaching consequences for both the environment and human populations²⁵. It has been noted that some endangered species are the source of vital resources including food and medicine²⁶. The extinction of such species can therefore result of loss of vital resources²⁷.

Further, protecting endangered species is vital since they play a significant role in maintaining ecosystem balance and diversity²⁸. For instance, some endangered species help with pollination and seed dispersal, while others regulate the population of other organisms in the food chain²⁹. Endangered species therefore provide essential ecosystem services such as pollination, seed dispersal, and regulating the population of other organisms in the food chain³⁰. In addition, endangered species also have important medicinal, cultural, and aesthetic values³¹.

²⁰ Ibid

²¹ Ibid

²² Ibid

²³ Ibid

²⁴ DGB Group., 'Why Should Endangered Species be Protected?' Op Cit

²⁵ Ibid

²⁶ Ibid

²⁷ Ibid

²⁸ DGB Group., 'The Importance of Saving Endangered Species for a Sustainable Future' Op Cit

²⁹ Ibid

³⁰ Ibid

³¹ Ibid

Protecting Our Endangered Species for Sustainability

It has been argued that the conservation of endangered species is not just a matter of ethical responsibility, but it is also a fundamental necessity for the health of our planet³². Preserving endangered species safeguards the intricate balance of life on the planet therefore ensuring a healthier and more secure future for ecosystems and people³³. It has been noted that when populations decline, this signifies underlying issues such as habitat destruction, pollution, or climate change, which, if unaddressed, can threaten the stability of the entire ecosystem and many other species³⁴. Protecting endangered species is therefore necessary for sustainability.

The need to protect endangered species is recognized at the global, regional, and national levels. At the global level, SDG 15 under the 2030 Agenda for Sustainable Development urges states to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss³⁵. In order to protect endangered species, SDG 15 sets out several targets which include the need for states to take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity, and protect and prevent the extinction of threatened species³⁶. It also requires states to take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products³⁷. Achieving these targets is key in protecting our endangered species for sustainability.

In addition, the IUCN maintains a *Red List of Threatened Species*³⁸. IUCN notes that the Red List has evolved to become the world's most comprehensive

³² International Fund for Animal Welfare., 'Why Should we Protect Endangered Animals?' Available at <https://www.ifaw.org/international/journal/why-should-we-protect-endangered-animals> (Accessed on 13/04/2024)

³³ Ibid

³⁴ Ibid

³⁵ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

³⁶ Ibid, SDG 15.5

³⁷ Ibid, SDG 15.7

³⁸ International Union for Conservation of Nature., 'The IUCN Red List of Threatened Species' Available at <https://www.iucnredlist.org/> (Accessed on 13/04/2024)

Protecting Our Endangered Species for Sustainability

information source on the global conservation status of animal, fungi and plant species³⁹. The IUCN Red List has been identified as a critical indicator of the health of the world's biodiversity⁴⁰. It is a powerful tool to inform and catalyze action for biodiversity conservation and policy change, critical to protecting the natural resources necessary for survival of life on the planet⁴¹. The IUCN Red List provides information about range, population size, habitat and ecology, use and/or trade, threats, and actions that are necessary to inform effective conservation decisions⁴². It has been noted that the assessments published in the IUCN Red List are used by governments, nongovernmental organizations (NGOs), and multilateral environmental agreements⁴³. The assessments under the IUCN Red List drive conservation action and funding⁴⁴. In addition, it has been noted that the way a species is assessed under the IUCN Red List can also determine whether such species deserve protection under two international treaties aimed at species conservation: the *Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)* and the *Convention on the Conservation of Migratory Species of Wild Animals*⁴⁵.

CITES regulates international trade in roughly 5,800 species of animals and 35,000 species of plants to prevent overexploitation⁴⁶. It recognizes that wild fauna and flora are of fundamental value from aesthetic, scientific, cultural, recreational and economic points of view hence the need for their effective conservation⁴⁷. Appendix I of CITES includes all species threatened with extinction which are or may be affected by trade⁴⁸. According to CITES, trade in specimens of these species must be subject to particularly strict regulation

³⁹ Ibid

⁴⁰ Ibid

⁴¹ Ibid

⁴² Ibid

⁴³ International Institute for Sustainable Development., 'Protecting Endangered Species' Available at https://www.iisd.org/system/files/2022-02/still-one-earth-endangered-species_0.pdf (Accessed on 13/05/2024)

⁴⁴ Ibid

⁴⁵ Ibid

⁴⁶ United Nations Environment Programme., 'Three ways the United Nations Environment Programme works to address illegal trade in wildlife' Op Cit

⁴⁷ Ibid

⁴⁸ Ibid

Protecting Our Endangered Species for Sustainability

in order not to endanger further their survival and must only be authorized in exceptional circumstances⁴⁹. Appendix II of CITES includes all species which although not necessarily threatened with extinction at the moment may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival⁵⁰. CITES requires states to take appropriate measures to regulate trade in endangered species of wild fauna and flora including penalizing trade or possession of such species, and providing for the confiscation or return to the state of export of such species⁵¹. CITES is therefore an important legal instrument aimed at protecting endangered species from the threats of international trade. CITES guides nations across the world on how to protect threatened species by regulating and monitoring their trade⁵². The Convention establishes a framework for countries to cooperate with each other to ensure that plant and animal species are not depleted by international demand⁵³. It has been noted that without CITES, wildlife being imported and exported across borders would be subjected to inconsistent protections⁵⁴. It is therefore necessary to effectively implement CITES in order to ensure effective protection of endangered species.

The *Convention on the Conservation of Migratory Species of Wild Animals*⁵⁵ acknowledges the need for states to take action to avoid any migratory species becoming endangered. The Convention requires states to: conserve and, where feasible and appropriate, restore those habitats of the species which are of importance in removing the species from danger of extinction⁵⁶; prevent, remove, compensate for or minimize, as appropriate, the adverse effects of activities or obstacles that seriously impede or prevent the migration of the species⁵⁷; to the extent feasible and appropriate, to prevent, reduce or control

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ Ibid

⁵² International Fund for Animal Welfare., 'What is CITES?' Available at <https://www.ifaw.org/international/journal/what-cites> (Accessed on 13/05/2024)

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ Convention on the Conservation of Migratory Species of Wild Animals., Available at https://www.cms.int/sites/default/files/instrument/CMS-text.en_.PDF (Accessed on 13/05/2024)

⁵⁶ Ibid, article III (4)

⁵⁷ Ibid

Protecting Our Endangered Species for Sustainability

factors that are endangering or are likely to further endanger the species, including strictly controlling the introduction of, or controlling or eliminating, already introduced exotic species⁵⁸. This Convention is vital since it recognizes that states must be the protectors of migratory species that live within or pass through their national jurisdictions and aims to conserve terrestrial, marine, and avian migratory species throughout their ranges⁵⁹. Implementing this Convention is key in protecting migratory species of wild animals from danger of extinction.

At a regional level, the *African Convention on the Conservation of Nature and Natural Resources*⁶⁰ sets out the need to protect threatened species on the continent. The Convention defines threatened species to include critically endangered, endangered, and vulnerable species⁶¹. According to the Convention, a species is critically endangered when the best available evidence indicates that it is considered to be facing an extremely high risk of extinction in the wild⁶². It further states that a species is endangered when the available evidence indicates that it is considered to be facing a very high risk of extinction in the wild⁶³. In addition, the Convention notes that a species is vulnerable when the best available evidence indicates that it is considered to be facing a high risk of extinction in the wild⁶⁴. The Convention requires states to establish and implement policies for the conservation and sustainable use of such resources with particular attention being paid to socially, economically and ecologically valuable species, which are threatened⁶⁵. In addition, it requires African states to identify species that are threatened or may become

⁵⁸ Ibid

⁵⁹ United Nations Environment Programme., 'Fourteenth Meeting of the Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals (CMS COP 14)' Available at <https://www.unep.org/events/conference/fourteenth-meeting-conference-parties-convention-conservation-migratory-species> (Accessed on 13/05/2024)

⁶⁰ African Convention on the Conservation of Nature and Natural Resources., Available at https://au.int/sites/default/files/treaties/41550-treaty-Charter_ConservationNature_NaturalResources.pdf (Accessed on 13/05/2024)

⁶¹ Ibid, Annex1

⁶² Ibid

⁶³ Ibid

⁶⁴ Ibid

⁶⁵ Ibid

Protecting Our Endangered Species for Sustainability

so, and provide them accordingly with appropriate protection⁶⁶. In order to achieve this goal, the Convention requires states to identify the factors that are causing the depletion of animal and plant species which are threatened or which may become so, with a view to their elimination, and to accord a special protection to such species, whether terrestrial, freshwater or marine, and to the habitat necessary for their survival⁶⁷. It has been noted that several species in Africa are facing the threat of extinction including the African elephant, the African black rhino, and the Eastern and Western gorilla⁶⁸. It is therefore necessary to implement the *African Convention on the Conservation of Nature and Natural Resources* in order to protect endangered species in Africa.

At a national level, the *Wildlife Conservation and Management Act of Kenya*⁶⁹ requires the state to ensure effective protection and management of endangered and threatened species, ecosystems, and habitats⁷⁰. The Sixth Schedule of the Act identifies critically endangered, vulnerable, nearly threatened and protected species in Kenya⁷¹. According to the Act, the critically endangered species in Kenya include the black rhinoceros, the eastern red colobus, the roan antelope, and the sable antelope⁷². Further, it identifies endangered species to include the white rhino, the African wild dog, the African elephant, the African lion, and the leopard⁷³. The Act makes it an offence to kill, injure, torture or molest a critically endangered, or endangered species in Kenya⁷⁴. A person who commits such an offence shall be liable upon conviction to a term of imprisonment of not less than five years⁷⁵. Protection of endangered species is therefore a key agenda in Kenya as set out under the *Wildlife Conservation and Management Act of Kenya*.

⁶⁶ Ibid

⁶⁷ Ibid, article X

⁶⁸ International Fund for Animal Welfare., '20 of the Most Endangered Animals and Wildlife in Africa' Available at <https://www.ifaw.org/international/journal/20-most-endangered-animals-wildlife-africa> (Accessed on 13/05/2024)

⁶⁹ *Wildlife Conservation and Management Act of Kenya*., No. 47 of 2013., Government Printer, Nairobi

⁷⁰ Ibid

⁷¹ Ibid

⁷² Ibid

⁷³ Ibid

⁷⁴ Ibid, article 92 (1)

⁷⁵ Ibid

Protecting Our Endangered Species for Sustainability

From the foregoing, it is evident that protecting endangered species is a major concern at the global, regional, and national levels. These species serve as the bedrock of ecosystems, contributing to the conditions necessary for life, both individually and collectively⁷⁶. For example, pollinators like bees and butterflies are vital for the reproduction of many plants, including essential food crops⁷⁷. Therefore decline in their populations can lead to reduced crop yields and even crop failures thereby threatening sustainability of both humanity and nature⁷⁸. Similarly predators such as wolves and big cats help maintain the balance of other species within their ecosystems⁷⁹. In addition, it has been noted that some of the endangered wildlife species, throughout their interaction with the environment, are the missing link between biodiversity and climate⁸⁰. These species play a crucial role in controlling the planet's carbon cycle across a variety of ecosystems through foraging, depositing nutrients and organic carbon, dispersing seeds among other functions⁸¹. Endangered species with high potentials for carbon capture and storage include the African buffalo, white rhino, puma, dingo, primates, hornbills, fruit bats, seals, sea turtles⁸².

3.0 Conclusion

Protecting endangered species is key for sustainability since biological diversity is the core of healthy and productive ecosystems⁸³. However, factors such as habitat degradation and destruction, poaching and illegal trade in wild fauna and flora, and pollution are resulting in the unprecedented loss of

⁷⁶ Protecting the Endangered Species from Extinction., Available at <https://www.linkedin.com/pulse/protecting-endangered-species-from-extinction-anumeenacare/> (Accessed on 13/05/2024)

⁷⁷ Ibid

⁷⁸ Ibid

⁷⁹ Ibid

⁸⁰ Cross. D., 'Rewilding Endangered Species can Help us Mitigate Climate Change' Available at <https://www.sustainability-times.com/environmental-protection/rewilding-endangered-species-can-help-us-mitigate-climate-change/> (Accessed on 13/05/2024)

⁸¹ Ibid

⁸² Ibid

⁸³ United Nations Environment Programme., 'Three ways the United Nations Environment Programme works to address illegal trade in wildlife' Op Cit

Protecting Our Endangered Species for Sustainability

species⁸⁴. In addition, human activities are resulting in the destruction of nature for housing, agriculture, industry, leaving no space for biodiversity⁸⁵. Further, it has been noted that land use changes, resource exploitation, climate change, and pollution contribute to the decline of global biodiversity⁸⁶. It is necessary to address these challenges in order to protect our endangered species. Among the key approaches towards this end include habitat restoration⁸⁷. This entails restoring degraded ecosystems to their natural state⁸⁸. This can be achieved by restoring forests, wetlands, and other ecosystems that have been destroyed by human activities⁸⁹. Habitat restoration can help endangered species by providing them with the food, shelter, and breeding sites they need for survival⁹⁰. It is also vital to raise awareness, enforce laws and enlist the support of local communities to stop the illegal trade in wildlife⁹¹. It is therefore necessary for states to strengthen their environmental governance to meet CITES requirements to combat illegal trade in wildlife⁹².

Protecting endangered species also requires negative practices that threaten the existence of these species to be combated⁹³. These activities include poaching, pollution, and the introduction of invasive species to ecosystems⁹⁴. In addition, it has been noted that species conservation efforts should expand to include many more species that are lesser known and serve important ecosystem services⁹⁵. It is also vital to ensure that conservation efforts to create

⁸⁴ Ibid

⁸⁵ Protecting the Endangered Species from Extinction., Op Cit

⁸⁶ Ibid

⁸⁷ DGB Group., 'Why Should Endangered Species be Protected?' Op Cit

⁸⁸ Ibid

⁸⁹ Ibid

⁹⁰ Ibid

⁹¹ United Nations Environment Programme., 'Three ways the United Nations Environment Programme works to address illegal trade in wildlife' Op Cit

⁹² Ibid

⁹³ DGB Group., 'The Importance of Saving Endangered Species for a Sustainable Future' Op Cit

⁹⁴ Ibid

⁹⁵ International Institute for Sustainable Development., 'Protecting Endangered Species' Op Cit

Protecting Our Endangered Species for Sustainability

incentives for local communities to conserve endangered species⁹⁶. Protecting our endangered species is therefore an important agenda for both humanity and nature. We must therefore enhance efforts towards protecting our endangered species at the global, national, and regional levels for sustainability.

⁹⁶ Ibid

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

Abstract

Environmental governance models are evolving due to marketization, decentralization, and globalization, highlighting the importance of cross-scale problems and affecting individual environmental action. Collaborative governance is becoming more popular as corporations, political players, and civil society organizations allocate environmental costs. The political climate supporting environmental legislation is evolving, with more players involved in decision-making and a shift towards economic, informational, cooperative, or self-regulatory tactics. To ensure collective action for environmental protection and conservation, environmental governance approaches involving all players are needed. This paper makes a case for the place of a human rights approach, market-based approaches, the media and ethics in enhancing environmental governance, in addition to the existing traditional top-down approaches.

1.0 Introduction

Three main forces—marketization, decentralisation, and globalization—are laying the foundation for the hybridization of environmental governance approaches.¹ It has been observed that individual environmental action is becoming less successful as a result of these changes in social and governmental relations.² Cross-scale concerns are becoming increasingly important in environmental governance initiatives, and the weaknesses of any one governance agent are becoming more apparent.³ As political players in state agencies, business offices, non-governmental organisations, and civil society organisations try to divide the costs of environmental action, this has resulted in increasingly loud calls for collaborative forms of governance.⁴

The structure and substance of the main environmental issues that environmental policymaking must address have undergone a significant

¹ Lemos, M.C. and Agrawal, A., 2009. Environmental governance and political science. *Governance for the environment: New perspectives*, pp.69-97, p.73.

² *Ibid.*, p.73.

³ *Ibid.*, p.73.

⁴ *Ibid.*, p.73.

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

transformation.⁵ Concurrently, there is a significant shift occurring in the political context that supports environmental legislation.⁶ A wider range of actors participating in political decision-making, the growing significance of governmental levels other than the nation-state, and a shift in the modes of steering away from direct regulation and towards a greater emphasis on economic, informational, cooperative, or self-regulatory strategies are the characteristics of this change.⁷

Environmental policy faces significant challenges in addressing environmental problems and addressing strategies.⁸ Despite some successes, the focus is now on areas where policy has not significantly improved over time. The regulatory repertoire and actors involved have grown, but traditional hierarchical intervention is being replaced by cooperative governance.⁹ This may weaken state authority and democratic legitimacy, while new policy instruments can help address unresolved environmental problems. Despite this, traditional hierarchical intervention remains dominant.¹⁰

Climate change is causing a re-evaluation of society's foundations. Businesses argue technology can save the environment, while politicians advocate for international environmental agreements.¹¹ Economists advocate for forest

⁵ Jänicke, M. and Jörgens, H., 2020. New approaches to environmental governance. In *The ecological modernisation reader* (pp. 156-189). Routledge, p.167.

⁶ *Ibid.*, p. 167.

⁷ *Ibid.*, p.167; *New Tech, New Threats, and New Governance Challenges: An Opportunity to Craft Smarter Responses?* (no date). Available at: <https://carnegieendowment.org/research/2019/08/new-tech-new-threats-and-new-governance-challenges-an-opportunity-to-craft-smarter-responses?lang=en> (Accessed: 13 May 2024); Gunningham, N. (2009) 'Environment Law, Regulation and Governance: Shifting Architectures', *Journal of Environmental Law*, 21(2), pp. 179–212; 'Diplomacy as an instrument of good governance - Diplo Resource' (1998), 14 August. Available at: <https://www.diplomacy.edu/resource/diplomacy-as-an-instrument-of-good-governance/> (Accessed: 13 May 2024).

⁸ Jänicke, M. and Jörgens, H., 2020. New approaches to environmental governance. In *The ecological modernisation reader* (pp. 156-189). Routledge, p.168.

⁹ *Ibid.*, p.168.

¹⁰ *Ibid.*, p.168.

¹¹ Evans, J.P., 2012. *Environmental governance*. Routledge; cf. *Why relying on new technology won't save the planet* (no date) *ScienceDaily*. Available at:

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

protection, while environmentalists question the solution to ecological problems.¹² Governance plays a crucial role in coordinating these diverse voices and securing collective action for a sustainable future.¹³ Institutionalism's insights have gained widespread acceptance, impacting governance by emphasizing the importance of rules in securing cooperation and providing certainty for various actors.¹⁴

Some authors have rightly argued that while new modes of environmental governance are often linked to less hierarchical and "softer" forms of steering, they also carry a normative agenda to open up politics and make environmental decision-making more effective and performance-oriented, but also more inclusive, transparent, accountable, and reflective.¹⁵ The deliberative shift, thus, refers to the variety of comparatively overt initiatives to democratize environmental politics while concurrently promoting more

<https://www.sciencedaily.com/releases/2020/04/200420125510.htm> (Accessed: 13 May 2024); Wright, C. and Nyberg, D. (2017) 'An Inconvenient Truth: How Organizations Translate Climate Change into Business as Usual', *The Academy of Management Journal*, 60(5), pp. 1633–1661; Hariram, N.P. et al. (2023) 'Sustainalism: An Integrated Socio-Economic-Environmental Model to Address Sustainable Development and Sustainability', *Sustainability*, 15(13), p. 10682. Available at: <https://doi.org/10.3390/su151310682>.

¹² Evans, J.P., 2012. *Environmental governance*. Routledge.

¹³ Evans, J.P., 2012. *Environmental governance*. Routledge; Glass, L.-M. and Newig, J. (2019) 'Governance for achieving the Sustainable Development Goals: How important are participation, policy coherence, reflexivity, adaptation and democratic institutions?', *Earth System Governance*, 2, p. 100031. Available at: <https://doi.org/10.1016/j.esg.2019.100031>; *Reimagining governance for a just energy transition* (no date) UNDP. Available at: <https://www.undp.org/blog/reimagining-governance-just-energy-transition> (Accessed: 13 May 2024); Ireland, P. and Thomalla, F. (2011) 'The Role of Collective Action in Enhancing Communities' Adaptive Capacity to Environmental Risk: An Exploration of Two Case Studies from Asia', *PLoS Currents*, 3, p. RRN1279. Available at: <https://doi.org/10.1371/currents.RRN1279>.

¹⁴ Evans, J. and Thomas, C. (2023) 'Institutions, rules and actors', in *Environmental Governance*. 2nd edn. Routledge.

¹⁵ Bäckstrand, K., Khan, J., Kronsell, A. and Lovbrand, E., 2010. The promise of new modes of environmental governance. In *Environmental politics and deliberative democracy*. Edward Elgar Publishing, p.3.

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

successful environmental policies.¹⁶ It is associated with the deliberative principles of democracy as expressed by researchers of democracy, governance, and policy.¹⁷

It is against this background that this paper critically examines the role of a human rights approach, market forces, the media and ethics in enhancing environmental governance, in addition to the existing traditional top-down approaches to environmental governance.

2.0 Environmental Governance: Challenges and Prospects

The seventeenth century saw the emergence of the notion of government, which maintained that power was not only wielded by the state and by laws but also by a wider range of individuals and organisations.¹⁸ This redefines the role of the sovereign in maintaining the state since it means that powers other than the state can frequently sustain the state more successfully than their own institutions.¹⁹

In general, governance is described as the structures, procedures, and people that decide who decides what, how, and for whom, as well as if, what, and how actions are performed, by whom, and with what outcome.²⁰ The procedures via which governance works and is performed are known as governance processes.²¹ These include the formulation of institutional mandates, the negotiation of values, the settlement of conflicts, the enactment of laws, the creation of policies, the dissemination of information, and the

¹⁶ Ibid., p.3; see also Bennett, N.J. and Satterfield, T., 2018. Environmental governance: A practical framework to guide design, evaluation, and analysis. *Conservation Letters*, 11(6), p. e12600, p.6.

¹⁷ Ibid., p.4.

¹⁸ Evans, J. and Thomas, C. (2023) 'Governing the environment', in *Environmental Governance*. 2nd edn. Routledge.

¹⁹ Ibid.

²⁰ Bennett, N.J. and Satterfield, T., 2018. Environmental governance: A practical framework to guide design, evaluation, and analysis. *Conservation Letters*, 11(6), p. e12600, p.2.

²¹ Bennett, N.J. and Satterfield, T., 2018. Environmental governance: A practical framework to guide design, evaluation, and analysis. *Conservation Letters*, 11(6), p. e12600, p.6.

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

implementation of policies.²² As a result, these procedures are crucial to the decision-making process as well as its execution.²³

The application of institutionalised power to shape environmental outcomes and processes is known as environmental governance.²⁴ Certain scholars assert that it highlights the connection between power and governance, highlights the role that institutions play in governance, and implies that the goal of governance is to affect both the results of the environment and the processes that lead to these consequences.²⁵ Managing individual or group behaviours in the interest of public environmental benefits and associated social consequences is the specific goal of environmental governance.²⁶ Understanding how environmental choices are made and if the ensuing laws and procedures provide socially and environmentally sustainable results is the essence of understanding environmental governance.²⁷

Although environmental issues are frequently perceived as having managerial, technological, or behavioural components, environmental governance is receiving more focus as a comprehensive approach to dealing with these difficulties.²⁸ Research on topics including resource shortages and conflicts, allocation and access, and biodiversity protection in forest, agricultural, freshwater, marine, and even atmospheric systems has been spurred by interest in environmental governance.²⁹ It has been suggested that one of the key variables influencing whether environmental management and conservation are successful or unsuccessful is governance.³⁰

²² Ibid., p.6.

²³ Ibid., p.6.

²⁴ Lemos, M.C. and Agrawal, A., 2009. Environmental governance and political science. *Governance for the environment: New perspectives*, pp.69-97, p.71.

²⁵ Ibid, p.71.

²⁶ Bennett, N.J. and Satterfield, T., 2018. Environmental governance: A practical framework to guide design, evaluation, and analysis. *Conservation Letters*, 11(6), p. e12600, p.2.

²⁷ Ibid., p.6.

²⁸ Bennett, N.J. and Satterfield, T., 2018. Environmental governance: A practical framework to guide design, evaluation, and analysis. *Conservation Letters*, 11(6), p. e12600, p.1.

²⁹ Ibid., p.1.

³⁰ Ibid., p.1.

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

Environmental issues require multilateral action, driven by global meetings organized by intergovernmental organizations, NGOs, and multinational corporations.³¹ International relations studies show how nation-states interact, with realist, neo-realist, and liberalist theories being influential.³² Liberalist scholars argue that non-state actors like NGOs are the most critical players in international relations.³³ Multilateral environmental agreements can take the form of declarations or treaties, with the latter being legally binding.³⁴ The transboundary nature of environmental issues necessitates collective action, with global environmental governance primarily driven by global meetings.³⁵ Think tanks, religious institutions, the media, campaigners, and humanitarian organisations are just a few of the many entities that fall under the umbrella term "NGOs."³⁶ Networks, which comprise several independent players connected by voluntary agreements, represent the shift from government to governance.³⁷ Global civil society networks, on the other hand, are an example of pure governance that includes non-state players and goes beyond the state.³⁸

This paper thus looks at the role of some of these non-state actors and the guiding principles that should inform their active role and participation in enhancing environmental governance for sustainability.

³¹ *Global governance | 4 | v2 | Environmental Governance | James Evans, C* (no date). Available at: <https://www.taylorfrancis.com/chapters/mono/10.4324/9781003334699-4/global-governance-james-evans-craig-thomas?context=ubx&refId=d0438e39-4764-4e93-96ef-516a2dbd10a5> (Accessed: 12 May 2024).

³² *Ibid.*

³³ *Ibid.*

³⁴ *Ibid.*

³⁵ *Ibid.*

³⁶ Lemos, M.C. and Agrawal, A., 2009. Environmental governance and political science. *Governance for the environment: New perspectives*, pp.69-97.

³⁷ *Networks | 5 | v2 | Environmental Governance | James Evans, Craig Thom* (no date). Available at: <https://www.taylorfrancis.com/chapters/mono/10.4324/9781003334699-5/networks-james-evans-craig-thomas?context=ubx&refId=e8c2474b-9329-4db7-babe-dc97c24f9630> (Accessed: 12 May 2024).

³⁸ *Ibid.*

3.0 Human Rights and Environmental Governance

Human rights are inextricably linked to the environment; one cannot enjoy one's rights without a clean, safe, and healthy environment, and one cannot have sustainable environmental governance without first establishing and upholding human rights.³⁹ Given that the right to a healthy environment is guaranteed by more than 100 international constitutions, awareness of this link is growing.⁴⁰ For instance, the Constitution of Kenya guarantees that 'every person has the right to a clean and healthy environment, which includes the right-(a) to have the environment protected for the benefit of present and future generations through legislative and other measures, particularly those contemplated in Article 69; and (b) to have obligations relating to the environment fulfilled under Article 70.⁴¹ This is closely connected to economic and social rights under Article 43 thereof some of which cannot possibly be realised without securing the right to clean and healthy environment, to wit, 'every person has the right-to the highest attainable standard of health, which includes the right to health care services, including reproductive health care; to accessible and adequate housing, and to reasonable standards of sanitation; to be free from hunger, and to have adequate food of acceptable quality; and to clean and safe water in adequate quantities.⁴²

The environment is the subject of numerous recognised human rights. Substantial (or basic) rights and procedural (or means of achieving substantial) rights make up environmental rights.⁴³ Substantive rights include civil and political rights like the freedom of association, life, and immunity from discrimination; economic and social rights like the right to food, health care,

³⁹ Environment, U.N. (2018) *What are environmental rights? UNEP - UN Environment Programme*. Available at: <http://www.unep.org/explore-topics/environmental-rights-and-governance/what-we-do/advancing-environmental-rights/what> (Accessed: 12 May 2024).

⁴⁰ Ibid.

⁴¹ Article 42, Constitution of Kenya, 2010, Government Printer, Nairobi: Available at: <http://www.kenyalaw.org:8181/exist/kenyalex/actview.xql?actid=Const2010> (Accessed: 12 May 2024).

⁴² Article 43, Constitution of Kenya 2010.

⁴³ Environment, U.N. (2018) *What are environmental rights? UNEP - UN Environment Programme*. Available at: <http://www.unep.org/explore-topics/environmental-rights-and-governance/what-we-do/advancing-environmental-rights/what> (Accessed: 12 May 2024).

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

and a decent standard of living; cultural rights like the right to visit places of worship; and collective rights impacted by environmental degradation like the rights of indigenous peoples.⁴⁴ Legal rights must be enforced in accordance with formal procedures specified by procedural rights. Three essential access rights are encompassed by procedural rights: participation by the public, access to justice, and information access.⁴⁵

The concept of human rights has influenced international law and a number of global governance organisations.⁴⁶ Alongside this process of impact, the breadth and scale of human rights have expanded in the context of international politics.⁴⁷ Treaties, conventions, and general principles that both state and non-state entities acknowledge serve as the primary sources of international law.⁴⁸

In environmental governance, a stronger emphasis must be placed on human rights concepts. For example, addressing the fundamental unfairness of climate change from a human rights viewpoint can assist, as the individuals who have contributed the least to the issue will be the ones most affected by its repercussions.⁴⁹ Notably, this is not only applicable to climate change but also all other aspects of environmental governance, so as to come up with governance structures that take care of human rights, including greater participation of people in governance structures for sustainability.

The fundamental recognition of the close connections and mutual reinforcements of human rights, peace and security, and development is the

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Bloor, K. (2022) 'Global Governance: Human Rights and Environmental Governance', *E-International Relations*, 19 May. Available at: <https://www.e-ir.info/2022/05/19/global-governance-human-rights-and-environmental-governance/> (Accessed: 12 May 2024).

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Lewis, B. (2010) 'The role of human rights in environmental governance: the challenge of climate change', *Environmental Law, Ethics and Governance* [Preprint]. Available at: <https://repository.globethics.net/handle/20.500.12424/4239889> (Accessed: 12 May 2024).

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

basis of the 2030 Agenda.⁵⁰ In order to accelerate the achievement of all other Sustainable Development Goals (SDGs), SDG Goal 16 offers a foundation for justice for all, peace, and strong institutions.⁵¹ For the 2030 Agenda to be fulfilled in its entirety, SDG16 is therefore both a prerequisite and an enabler.⁵² Creating strong environmental governance structures arguably falls under implementation of SDG 16.⁵³

4.0 Role of Markets in Environmental Governance

Market-based environmental governance techniques have gained prominence as a result of decentralisation and globalization, which have contributed to the state's downfall.⁵⁴ By carefully weighing the costs and benefits of different environmental strategies, market- and agent-focused instruments seek to mobilise individual incentives in favour of environmentally positive outcomes rather than depending on hierarchically organized, regulatory control, or even purely participatory structures.⁵⁵ In some aspects, including where their legitimacy and authority come from, they are different from more traditional regulatory methods, where others argue that the effectiveness of these instruments stems from their use of market exchanges and incentives to promote environmental compliance.⁵⁶

Market mechanisms are many and include, among the main examples, voluntary agreements, eco-taxes and subsidies based on a combination of

⁵⁰ U.N.E.P (2021) 'Human Rights and the Environmental Rule of Law - Issue Brief SDG 16'. Available at: <https://wedocs.unep.org/xmlui/handle/20.500.11822/35408> (Accessed: 12 May 2024).

⁵¹ Ibid.

⁵² Ibid.

⁵³ de Wit, M.P. (2020) 'Environmental Governance: Complexity and Cooperation in the Implementation of the SDGs', in W. Leal Filho et al. (eds) *Affordable and Clean Energy*. Cham: Springer International Publishing, pp. 1-15. Available at: https://doi.org/10.1007/978-3-319-71057-0_25-1; Amaruzaman, S., Trong Hoan, D., Catacutan, D., Leimona, B. and Malesu, M., 2022. Polycentric environmental governance to achieving SDG 16: evidence from Southeast Asia and Eastern Africa. *Forests*, 13(1), p.68.

⁵⁴ Lemos, M.C. and Agrawal, A., 2009. Environmental governance and political science. *Governance for the environment: New perspectives*, pp.69-97, p.76.

⁵⁵ Ibid., p.76.

⁵⁶ Ibid., p.76.

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

market incentives and regulation, certification and eco-labeling, and informational systems.⁵⁷

Markets are increasingly incorporating environmental goods like clean air and water, and it is crucial to understand how this logic is implemented and how common environmental resources can be captured in market valuations.⁵⁸ Markets for carbon emissions are particularly important, as they represent the most ambitious attempt to apply market principles.⁵⁹ Markets solve the tragedy of the commons by turning common resources into private property, which are then allocated or sold to individuals and groups.⁶⁰ Market advocates believe that institutions create markets for environmental goods, allowing them to be traded like any other good.⁶¹

Governments' willingness to experiment with market-oriented initiatives can be partially explained by the challenges associated with implementing traditional regulatory tools.⁶² Additional components of the argument include rising consumer knowledge of environmental problems and the significant expenses associated with complying with environmental rules.⁶³ The internalization of favourable environment preferences among relevant stakeholders, most notably citizens and consumers, is critical to the effectiveness of market mechanisms.⁶⁴

As a reaction to the ecological destruction, the usage and promotion of "green markets" has grown recently, despite the difficulties in valuing biological

⁵⁷ Ibid., p. 76.

⁵⁸ *Markets | 6 | v2 | Environmental Governance | James Evans, Craig Thoma* (no date). Available at: <https://www.taylorfrancis.com/chapters/mono/10.4324/9781003334699-6/markets-james-evans-craig-thoma?context=ubx&refId=81cb4804-d871-46fa-ae41-64e55b8157fd> (Accessed: 12 May 2024).

⁵⁹ Ibid.

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² Lemos, M.C. and Agrawal, A., 2009. Environmental governance and political science. *Governance for the environment: New perspectives*, pp.69-97, p. 77.

⁶³ Ibid., p.77.

⁶⁴ Ibid., p.77.

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

variety and its benefits and quantifying natural wealth.⁶⁵ Market-driven policy tools have proliferated, including certification programmes, carbon or biodiversity offsets, payments for environmental services, and wetlands banking.⁶⁶ The question of whether these processes are generating the unwarranted commoditization of ecosystem services or if they merely represent a reductionist version of free market fundamentalism is up for debate.⁶⁷ Market approaches are not currently the most popular policy alternatives for biodiversity conservation and environmental preservation, despite their importance.⁶⁸ Various models and mechanisms are used to achieve environmental governance; they frequently combine market tools, community-based institutional arrangements, and governmental command and control.⁶⁹ Certain scholars contend that hybrid regimes are better equipped to handle governance issues arising from the underlying complexity and common good nature of ecosystem services.⁷⁰

Certain writers contend that under certain situations, financial incentives might help enhance the governing structures of natural ecosystems.⁷¹ But we

⁶⁵ Muradian, R. and Rival, L. (2012) 'Between markets and hierarchies: The challenge of governing ecosystem services', *Ecosystem Services*, 1(1), pp. 93–100. Available at: <https://doi.org/10.1016/j.ecoser.2012.07.009>.

⁶⁶ Ibid.; see also Gómez-Baggethun, E. and Muradian, R., 2015. In markets we trust? Setting the boundaries of market-based instruments in ecosystem services governance. *Ecological Economics*, 117, pp.217-224, p. 217.

⁶⁷ Ibid.

⁶⁸ Ibid.; see also *Market-Based Approaches to Biodiversity Conservation: An Overview of Experience in Developed and Developing Countries* (no date). Available at: https://www.researchgate.net/publication/317692003_Market-Based_Approaches_to_Biodiversity_Conservation_An_Overview_of_Experience_in_Developed_and_Developing_Countries (Accessed: 13 May 2024).

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ Muradian, R. and Rival, L. (2012) 'Between markets and hierarchies: The challenge of governing ecosystem services', *Ecosystem Services*, 1(1), pp. 93–100. Available at: <https://doi.org/10.1016/j.ecoser.2012.07.009>; see also Organisation for Economic Co-operation and Development, 1996. *Saving biological diversity: economic incentives*. OECD; Emerton, L., 2001. Community-based incentives for nature conservation; Ling, M. and Xu, L. (2021) 'How and when financial incentives crowd out pro-environmental motivation: A longitudinal quasi-experimental study', *Journal of Environmental Psychology*, 78, p. 101715. Available at: <https://doi.org/10.1016/j.jenvp.2021.101715>; Langat, D., 2017. Guidelines for

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

also need to pay close attention to how they are designed, making sure that they work specifically well in certain socioeconomic circumstances and that they have the ability to change the way that rules are made.⁷² When it comes to societal acceptance and efficacy, these two factors are crucial.⁷³

Market instruments should thus consider these factors and also be used together with the other instruments in order to enhance environmental governance for sustainability.

5.0 Role of Media in promoting Environmental Governance

In order to promote fairness and transparency in the decision-making processes, the United Nations Economic Commission for Europe signed the *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* (Aarhus Convention)⁷⁴ in 1998.⁷⁵ This comprehensive agreement places a strong emphasis on the right to

establishing payment for ecosystem services schemes in Kenya; Ramsdell, P., Sorice, M. and Dwyer, A. (2015) 'Using financial incentives to motivate conservation of an at-risk species on private lands', *Environmental Conservation*, 1, pp. 1-11. Available at: <https://doi.org/10.1017/S0376892915000302>; Lubchenco, J. *et al.* (2016) 'The right incentives enable ocean sustainability successes and provide hope for the future', *Proceedings of the National Academy of Sciences of the United States of America*, 113(51), pp. 14507-14514. Available at: <https://doi.org/10.1073/pnas.1604982113>; Tedesco, A.M. *et al.* (2022) 'The role of incentive mechanisms in promoting forest restoration', *Philosophical Transactions of the Royal Society B: Biological Sciences*, 378(1867), p. 20210088. Available at: <https://doi.org/10.1098/rstb.2021.0088>; Emerton, L., Kallesoe, M.F. and De Alwis, D., 2005. Financial incentives for ecosystem conservation: a review of the development of markets for environmental services in Sri Lanka; Piñeiro, V. *et al.* (2020) 'A scoping review on incentives for adoption of sustainable agricultural practices and their outcomes', *Nature Sustainability*, 3(10), pp. 809-820. Available at: <https://doi.org/10.1038/s41893-020-00617-y>;

⁷² Ibid.

⁷³ Ibid.

⁷⁴ Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, Aarhus, Denmark, 25 June 1998, United Nations, Treaty Series, vol. 2161, p. 447.

⁷⁵ *Introduction to Human Rights and the Environment | UNEP Law and Environment Assistance Platform* (no date). Available at: <https://leap.unep.org/en/courses/introduction-human-rights-and-environment> (Accessed: 12 May 2024).

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

information and public participation in environmental issues.⁷⁶ The Preamble to the Convention notes and acknowledges the importance of making use of the media and of electronic or other, future forms of communication.⁷⁷ The preambular paragraphs place a strong emphasis on the value of creating capacity, education, and better communication via the use of media and technology means.⁷⁸

According to studies, a lack of relevant information more than a lack of knowledge is the reason why the public is reluctant to get involved in environmental conservation.⁷⁹ An alternate reason for the Willingness of Citizens to Pay (WTP) for environmental governance can be found in the media.⁸⁰ According to the study, media frequency greatly raised people's WTP, with personal environmental responsibility serving as a moderating factor.⁸¹ The usage of traditional media, as opposed to new media, has a substantial impact on people' WTP.⁸²

According to environmental communication theory, the media is a vital source of environmental information for the general public as well as a major force in influencing public opinion on environmental concerns.⁸³

In response to stakeholder expectations for accountability and transparency, businesses are depending more and more on Voluntary Environmental

⁷⁶ Ibid.

⁷⁷ Preamble, *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* (Aarhus Convention), 1998.

⁷⁸ *The Aarhus Convention: An Implementation Guide (second edition)* | UNECE (no date). Available at: <https://unece.org/environment-policy/publications/aarhus-convention-implementation-guide-second-edition> (Accessed: 12 May 2024).

⁷⁹ Wang H, 'Knowledge or Responsibility? The Role of Media Use on Citizens' Willingness to Pay for Environment Governance' (2022) 14 Sustainability 14538 <<https://www.mdpi.com/2071-1050/14/21/14538>> accessed 12 May 2024.

⁸⁰ Ibid.

⁸¹ Ibid.

⁸² Ibid.

⁸³ Wang H, 'Knowledge or Responsibility? The Role of Media Use on Citizens' Willingness to Pay for Environment Governance' (2022) 14 Sustainability 14538 <<https://www.mdpi.com/2071-1050/14/21/14538>> accessed 12 May 2024.

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

Disclosures, or VED.⁸⁴ Although the financial performance of the firm is the primary interest of shareholders, non-shareholder stakeholders frequently have concerns that are only tangentially connected to that success (e.g., environmental stewardship, company alliances, among others).⁸⁵ In reference to Voluntary Environmental Disclosure (VED), there is a contention that some facets of governance, publicity, and VED quality are related to one another.⁸⁶ Studies indicate that coverage of environmental issues in the media, unfavourable coverage of environmental issues in the media, and the independence, diversity, and skill of the board are all positively correlated with VED quality.⁸⁷ Supplemental study results indicate that managerial choices regarding environmental reporting are influenced by institutional investors only when adverse environmental media coverage occurs.⁸⁸ Further evidence that the quality of environmental disclosures improves with time comes from longitudinal analysis results.⁸⁹ In other words, according to the findings, companies that are perceived by the media as having poor environmental legitimacy actively work to alter public opinions by providing voluntary, high-quality disclosures of environmental information.⁹⁰

It has also been observed that environmental protection agencies are increasingly using official social media channels to promote environmental governance, particularly in fast emerging nations, as a result of increased concerns about environmental challenges and information and communication technology improvements.⁹¹ The use of social media by the government has brought about a number of improvements in environmental governance efficacy, but it has also brought about certain difficulties.⁹²

⁸⁴ Rupley, K.H., Brown, D. and Marshall, S., 2012. Governance, Media and the Quality of Environmental Disclosure. *Journal of Accounting and Public Policy*, *Forthcoming*.

⁸⁵ *Ibid.*, p.4.

⁸⁶ Rupley, K.H., Brown, D. and Marshall, S., 2012. Governance, Media and the Quality of Environmental Disclosure. *Journal of Accounting and Public Policy*, *Forthcoming*.

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*

⁸⁹ *Ibid.*

⁹⁰ *Ibid.*, pp. 33-34.

⁹¹ Chang, H., Li, Y. and Liu, M. (2024) 'The role of government social media in enhancing environmental governance', *China Economic Journal*, 17(1), pp. 40-55. Available at: <https://doi.org/10.1080/17538963.2023.2300865>.

⁹² *Ibid.*

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

Environmental awareness is a strategic communication strategy that aims to increase environmental knowledge, inform people about the dire consequences of human progress, and educate them about sustainable development.⁹³ In the creation and sharing of awareness, the general public, local producers, scientists, administrators, policymakers, and government politicians all have significant responsibilities to play.⁹⁴

It is obvious that raising environmental awareness is essential to igniting interest in the environment for the benefit of our planet.⁹⁵ People's knowledge of the environment is greatly increased via social media, conferences, seminars, and the media.⁹⁶ There are several government environmental

⁹³ Jharotia, A.K., 2018, March. Role of media in enhancement of environmental awareness. In *Conference: Power of Media: Shaping the Future, At Tecnia Auditorium, New Delhi*.

⁹⁴ Shumshunnahar, M. and Amin, M. (2023) 'Role of Mass Media in Promoting Environmental Health and Awareness in Bangladesh: A Case Study', *Advances in Social Sciences Research Journal*, 10, pp. 32–40. Available at: <https://doi.org/10.14738/assrj.108.15214>.

⁹⁵ Ibid.; see also Bailleau, R. (2024) 'The benefits of raising environmental awareness', *i2Comply*, 8 April. Available at: <https://www.i2comply.com/health-safety/the-benefits-of-raising-environmental-awareness/> (Accessed: 13 May 2024); Fiel'ardh, K., Fardhani, I. and Fujii, H. (2023) 'Integrating Perspectives from Education for Sustainable Development to Foster Plant Awareness among Trainee Science Teachers: A Mixed Methods Study', *Sustainability*, 15(9), p. 7395. Available at: <https://doi.org/10.3390/su15097395>; 'Why Environmental Education and Awareness are Crucial for a Sustainable Future' (2023), 10 April. Available at: <https://greenliving.guru/environmental-education-and-awareness/> (Accessed: 13 May 2024); Piscitelli, A. and D'Uggento, A.M. (2022) 'Do young people really engage in sustainable behaviors in their lifestyles?', *Social Indicators Research*, 163(3), pp. 1467–1485. Available at: <https://doi.org/10.1007/s11205-022-02955-0>; Fang, W.-T., Hassan, A. and LePage, B.A. (2023) 'Environmental Literacy', in W.-T. Fang, Arba'at Hassan, and B.A. LePage (eds) *The Living Environmental Education: Sound Science Toward a Cleaner, Safer, and Healthier Future*. Singapore: Springer Nature, pp. 93–126. Available at: https://doi.org/10.1007/978-981-19-4234-1_4.

⁹⁶ Ibid.; see also Scholtz, B., Burger, C. and Zita, M. (2016) 'A Social Media Environmental Awareness Campaign to Promote Sustainable Practices in Educational Environments', in pp. 355–369. Available at: https://doi.org/10.1007/978-3-319-23455-7_19; Reimer, T. (2023) 'Environmental factors to maximize social media engagement: A comprehensive framework', *Journal of Retailing and Consumer Services*, 75, p. 103458. Available at: <https://doi.org/10.1016/j.jretconser.2023.103458>;

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

awareness radio and television programmes available.⁹⁷ Environmental awareness has been greatly aided by social media, an online communication platform that is expanding quickly.⁹⁸ On social networks, people exchange posts, videos, images, and comments along with their emotions. Social media has completely changed how people communicate and how the world is

Ghermandi, A. *et al.* (2023) 'Social media data for environmental sustainability: A critical review of opportunities, threats, and ethical use', *One Earth*, 6(3), pp. 236–250. Available at: <https://doi.org/10.1016/j.oneear.2023.02.008>; Pabian, A. and Pabian, B. (2023) 'Role of Social Media in Managing Knowledge of the Young Generation in the Sustainability Area', *Sustainability*, 15(7), p. 6008. Available at: <https://doi.org/10.3390/su15076008>.

⁹⁷ Ibid.; Ngigi, S. (2018) 'Media and Environmental Awareness in Kenya: A Case of TV', Vol. 67, 2018; 'Environment Education & Awareness – Ministry of Agriculture, Climate Change and Environment' (no date). Available at: <https://macce.gov.sc/environment-department/environment-education/> (Accessed: 13 May 2024); Sun, W. and Lei, W., 2018. 'My health is my own business': Radio, television and advice media in post-Mao China. *International Journal of Cultural Studies*, 21(2), pp.139-154; Saikia, R., 2017. Role of mass media in creating environmental awareness. *Natl J Multidiscip Res Dev*, 1(2), pp.1-4; Paudel, P.K., Bastola, R. and Lopchan, P.T. (2020) 'The coverage of environmental issues in FM radios in Nepal: the current status and challenges', *Heliyon*, 6(7), p. e04354. Available at: <https://doi.org/10.1016/j.heliyon.2020.e04354>; 'Raising Awareness through Public Outreach Campaigns' (no date) *SDG Accountability Portal*. Available at: <https://www.sdgaccountability.org/working-with-informal-processes/raising-awareness-through-public-outreach-campaigns/> (Accessed: 13 May 2024); National Environment Management Authority, *Green Initiatives in Kenya*, National Environment Management Authority, 2012, First published 2012. Available at <http://nema.go.ke/images/Docs/Media%20centre/Brochures/Green%20Economy%20Booklet.pdf> (Accessed: 13 May 2024).

⁹⁸ Ibid.; see also (PDF) *Social Media and Environmental Activism: Exploring the Influence of Facebook on Pro-environmental Behaviour of Undergraduates* (no date). Available at: https://www.researchgate.net/publication/373265589_Social_Media_and_Environmental_Activism_Exploring_the_Influence_of_Facebook_on_Pro-environmental_Behaviour_of_Undergraduates (Accessed: 13 May 2024); *Can social media help to save the environment?* (2016) *World Economic Forum*. Available at: <https://www.weforum.org/agenda/2016/04/can-social-media-help-to-save-the-environment/> (Accessed: 13 May 2024).

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

constructed.⁹⁹ It has brought global information to the public and has aided in raising environmental consciousness among people all over the world.¹⁰⁰

Without information, there cannot be an appropriate public communication process or successful public engagement, which makes information a crucial component of environmental governance.¹⁰¹ The media typically has a significant impact on the dissemination of vital information to the public, especially with regard to environmental concerns.¹⁰²

From the foregoing, it is clear that all forms of media play an important role in influencing environmental governance and this should be given a space in promoting effective environmental governance for sustainability. Journalists have an obligation to hold all parties involved – the government, business community, and individual citizens – responsible.¹⁰³ Despite this, it has been noted that journalists lack specialized understanding of environmental and sustainable development concerns for financial reasons related to the unstable nature of the industry, employers' editorial decisions, a lack of technical expertise, or even a lack of personal resources.¹⁰⁴ At the beginning of any

⁹⁹ Ibid; see also Ausat, A.M.A., 2023. The Role of Social Media in Shaping Public Opinion and Its Influence on Economic Decisions. *Technology and Society Perspectives (TACIT)*, 1(1), pp.35-44.

¹⁰⁰ Ibid.; see also Puentes, C., 2021. Social media and environmental activism: An evolving relationship. Retrieved March, 17, p.2022; Hindmarsh, R. and Calibeo, D.L., 2017. The potential of new and social media for environmental activism. *Sociotechnical*, p.55.

¹⁰¹ Huang, Y. et al. (2021) 'Predicting citizens' participatory behavior in urban green space governance: Application of the extended theory of planned behavior', *Urban Forestry & Urban Greening*, 61, p. 127110. Available at: <https://doi.org/10.1016/j.ufug.2021.127110>.

¹⁰² Ibid.

¹⁰³ 'Media plays a vital role in addressing the environmental crisis, says CS Owalo - Kenya News Agency' (2024), 3 May. Available at: <https://www.kenyanews.go.ke/media-plays-a-vital-role-in-addressing-the-environmental-crisis-says-cs-owalo/> (Accessed: 12 May 2024).

¹⁰⁴ Nwaha RNN, Iamero F and Souhe LE, 'Increasing the Role of Media in Natural Resources Governance: Where Do We Want to Go and How? - Experiences and Lessons and Perspectives' (February 2021) <https://cidt.org.uk/wp-content/uploads/2021/03/Rachel-Natacha-NGO-NWAHA-EN.pdf> (Accessed: 12 May 2024); 'Lack of financial resources - FPU Knowledge & Quality' (no date). Available at: <https://kq.freepressunlimited.org/themes/media-and-conflict/lack-of-financial-resources/> (Accessed: 12 May 2024).

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

project, journalists should be systematically trained through workshops with the goal of acquainting them with the activities that will be carried out in order to facilitate their comprehension and, therefore, public perception.¹⁰⁵ There is a need for media houses to continually invest in their journalists and build capacity in order to enhance their role in reporting and influencing environmental governance. Collaboration in such capacity building with environmental experts would go a long way in achieving this.

6.0 Ethics and Environmental Governance

The transition from accumulating financial prosperity to maintaining built, natural, human, and social capital that is equally distributed throughout society and nations requires an earth stewardship strategy.¹⁰⁶ The public's desire for this vision may reach societal tipping points due to the widespread worry about the planet's future and support for sustainable growth paths.¹⁰⁷ Earth stewardship involves proactive shaping of physical, biological, and social conditions to sustain critical earth-system processes, supporting nature and human wellbeing at local-to-planetary scales.¹⁰⁸ It prioritizes sustainable and equitable future changes over returning to a prior system state.¹⁰⁹

In tackling the 2030 Agenda, which is people-centered and recognises that a healthy planet is a necessary condition for Sustainable Development, adopting an ethical and values-based approach where humans learn to live in peace with nature and with one another is crucial.¹¹⁰

¹⁰⁵ Ibid.

¹⁰⁶ Chapin, F.S. *et al.* (2022) 'Earth stewardship: Shaping a sustainable future through interacting policy and norm shifts', *Ambio*, 51(9), pp. 1907–1920. Available at: <https://doi.org/10.1007/s13280-022-01721-3>.

¹⁰⁷ Ibid.

¹⁰⁸ Ibid.; Chapin, F.S., Pickett, S.T., Power, M.E., Jackson, R.B., Carter, D.M. and Duke, C., 2011. Earth stewardship: a strategy for social–ecological transformation to reverse planetary degradation. *Journal of Environmental Studies and Sciences*, 1, pp.44–53.

¹⁰⁹ Ibid.

¹¹⁰ Environment, U.N. (2021) *The Role of Environmental and Spiritual Ethics in Global Environmental Governance*, UNEP - UN Environment Programme. Available at: <http://www.unep.org/resources/policy-and-strategy/role-environmental-and-spiritual-ethics-global-environmental> (Accessed: 12 May 2024).

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

A new environmental governance system, the involvement of the entire spectrum of society, and the use of creative strategies that safeguard the environment based on ethical and behavioural shifts in environmental governance have all been suggested as necessary for the transition to a more sustainable future.¹¹¹ Arguably, building such an innovative paradigm benefits greatly from the stewardship role played by leaders of indigenous and religious groups.¹¹²

Some researchers have demonstrated the role of environmental ethics via the perspective of collaborative care by emphasizing restorative, liberatory practices that are based in reciprocal human-nature relations and caretaking ethics.¹¹³ These studies emphasise environmental governance systems that, by utilising a variety of community leadership, skills, and experience from throughout the globe, place decision-making at the centre of the people most linked to a particular resource and the material and spiritual nourishment it offers.¹¹⁴

The three principles of "care in place," "care in power," and "care in commoning" are central to collaborative care in environmental governance. By putting a priority on relationships, caring ethics, and social justice, these themes seek to tear down societal hierarchies.¹¹⁵ "Care in place" explores how communities revitalize their relationships with their lands and waters, while "Care in power" examines how communities engage in resource decision-

¹¹¹ United Nations Environment Programme (2021) 'The Role of Environmental and Spiritual Ethics in Global Environmental Governance - Policy Brief'. Available at: <https://wedocs.unep.org/xmlui/handle/20.500.11822/36627> (Accessed: 12 May 2024).

¹¹² Ibid.; see also Omoyajowo, Koleayo *et al.* (2023) 'Exploring the interplay of environmental conservation within spirituality and multicultural perspective: insights from a cross-sectional study', *Environment, Development and Sustainability* [Preprint]. Available at: <https://doi.org/10.1007/s10668-023-03319-5>.

¹¹³ Diver, S., Vaughan, M.B. and Baker-Medard, M. (2024) 'Collaborative care in environmental governance: restoring reciprocal relations and community self-determination', *Ecology and Society*, 29(1). Available at: <https://doi.org/10.5751/ES-14488-290107>.

¹¹⁴ Ibid.

¹¹⁵ Diver, S., Vaughan, M.B. and Baker-Medard, M. (2024) 'Collaborative care in environmental governance: restoring reciprocal relations and community self-determination', *Ecology and Society*, 29(1). Available at: <https://doi.org/10.5751/ES-14488-290107>.

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

making and environmental governance.¹¹⁶ "Care in commoning" explores creative collective action and commoning practices, challenging exploitation models and celebrating collective capacities for cross-boundary connections.¹¹⁷ Collaborative care, rooted in Indigenous knowledge systems, emphasizes the importance of community-led cultivation of reciprocal relations for the sustainability of our cultures, societies, and Earth.¹¹⁸ Care in place is embedded in various Indigenous knowledge systems, worldviews, and practices. For example, Hawaiian cultures have ethics of care rooted in *kuleana*, which refers to rights and responsibilities stemming from long-standing relationships with

¹¹⁶ Ibid.; Reed, R. and Diver, S. (2023) 'Pathways to healing: Indigenous revitalization through family-based land management in the Klamath Basin', *Ecology and Society*, 28. Available at: <https://doi.org/10.5751/ES-13861-280135>.

¹¹⁷ Ibid.; Austin Locke, T., 2020. *Fields of Commoning: Attempts at Creating (Un) Common Worlds in New Cross* (Doctoral dissertation, Goldsmiths, University of London).

¹¹⁸ Ibid.; *Collaborative care in environmental governance: restoring reciprocal relations and community self-determination | Request PDF* (no date). Available at: https://www.researchgate.net/publication/377449643_Collaborative_care_in_environmental_governance_restoring_reciprocal_relations_and_community_self-determination (Accessed: 13 May 2024); Campos Navarrete, M. and Zohar, A. (2021) 'Rethinking sustainable development by following Indigenous approaches to community wellbeing', *Tapuya: Latin American Science, Technology and Society*, 4(1), p. 1946315. Available at: <https://doi.org/10.1080/25729861.2021.1946315>; David-Chavez, D.M., Valdez, S., Estevez, J.B., Meléndez Martínez, C., Garcia Jr, A.A., Josephs, K. and Troncoso, A., 2020. Community-based (rooted) research for regeneration: understanding benefits, barriers, and resources for Indigenous education and research. *AlterNative: An International Journal of Indigenous Peoples*, 16(3), pp.220-232; Mazzocchi, F. (2020) 'A deeper meaning of sustainability: Insights from indigenous knowledge', *The Anthropocene Review*, 7(1), pp. 77-93. Available at: <https://doi.org/10.1177/2053019619898888>; Diver, S. et al. (2019) 'Recognizing "reciprocal relations" to restore community access to land and water', 13(1), p. 400. Available at: <https://doi.org/10.18352/ijc.881>; Turner, N.J., Cuerrier, A. and Joseph, L. (2022) 'Well grounded: Indigenous Peoples' knowledge, ethnobiology and sustainability', *People and Nature*, 4(3), pp. 627-651. Available at: <https://doi.org/10.1002/pan3.10321>; *Indigenous knowledge and implications for the sustainable development agenda - UNESCO Digital Library* (no date). Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000245623> (Accessed: 13 May 2024).

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

resources and land.¹¹⁹ Restoring these relationships is crucial for restoring the land and remaking injured places recovering from resource extraction.¹²⁰

Care practices enhance community-level intrinsic responsibility, sometimes replacing state-based governance approaches with extrinsic, top-down practices.¹²¹

The revitalization of place-based relationships requires communities most affected by resource use to be involved in decision-making at local and global scales.¹²² This involves challenging uneven power relations and incorporating

¹¹⁹ Ibid.; *Evolving wildlife management cultures of governance through Indigenous Knowledges and perspectives - Fisk - The Journal of Wildlife Management - Wiley Online Library* (no date). Available at: <https://wildlife.onlinelibrary.wiley.com/doi/10.1002/jwmg.22584> (Accessed: 13 May 2024); Tuteur, N.M. (2022) 'Reframing Kānāwai: Towards a Restorative Justice Framework for Indigenous Peoples', *The Indigenous Peoples' Journal of Law, Culture, & Resistance*, 7, pp. 59–92; Mokuau, N. (2011) 'Culturally Based Solutions to Preserve the Health of Native Hawaiians', *Journal of Ethnic & Cultural Diversity in Social Work*, 20, pp. 98–113. Available at: <https://doi.org/10.1080/15313204.2011.570119>; *Cultivating Aloha 'Āina Through Critical Indigenous Pedagogies of Place* (no date) *Journal of Folklore and Education*. Available at: <https://jfepublications.org/article/cultivating-aloha-aina/> (Accessed: 13 May 2024); Kamelamela, K.L. et al. (2022) 'Kōkua aku, Kōkua mai: An Indigenous Consensus-driven and Place-based Approach to Community Led Dryland Restoration and Stewardship', *Forest Ecology and Management*, 506, p. 119949. Available at: <https://doi.org/10.1016/j.foreco.2021.119949>; Conway, D.M. (2005) 'Safeguarding Hawaiian Traditional Knowledge and Cultural Heritage: Supporting the Right to Self-Determination and Preventing the Commodification of Culture'. Rochester, NY. Available at: <https://doi.org/10.2139/ssrn.1371372>; Antonio, M.C.K. et al. (2024) 'Cultural Practice and 'Āina Connectedness as Tenants of Maui Ola, Optimal Health and Wellbeing', *Genealogy*, 8(2), p. 39. Available at: <https://doi.org/10.3390/genealogy8020039>.

¹²⁰ Ibid; Antonio, M.C., Felipe, K., Keaulana, S., Furukawa, S.K., Taitague-Laforga, M., Irvine, J.L., Makua, K.L., Vegas, J.K., Keli 'iholokai, L., Ke Ola O Ka 'Āina Research Team and Thought Partners and Ho-Lastimosa, H.I., 2024. Cultural Practice and 'Āina Connectedness as Tenants of Maui Ola, Optimal Health and Wellbeing. *Genealogy*, 8(2), p.39.

¹²¹ Ibid.; Marshall, G.R., Hine, D.W. and East, M.J., 2017. Can community-based governance strengthen citizenship in support of climate change adaptation? Testing insights from Self-Determination Theory. *Environmental Science & Policy*, 72, pp.1-9.

¹²² Diver, S., Vaughan, M.B. and Baker-Medard, M. (2024) 'Collaborative care in environmental governance: restoring reciprocal relations and community self-determination', *Ecology and Society*, 29(1). Available at: <https://doi.org/10.5751/ES-14488-290107>.

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

Indigenous knowledge systems into environmental governance.¹²³ Collaborative care frameworks emphasize the importance of family, including non-human relatives, in environmental governance.¹²⁴ This requires transforming environmental governance systems through meaningful power sharing, dismantling knowledge hierarchies, and reallocating land and resources, thus calling for a shift in environmental governance systems.¹²⁵

Care in power emphasizes the importance of environmental governance in addressing structural inequities in decision-making, contributing to environmental and racial injustice, and the need for Indigenous environmental justice to foster reciprocal relationships between Indigenous peoples and land and waters.¹²⁶ Indigenous care ethics aim to challenge dominant power structures, challenge colonial legacies, and assert Indigenous self-determination through a relational approach.¹²⁷

Collaborative care and commoning aim to re-establish reciprocal socio-natural relationships by restructuring consumption, production, waste, and information exchange.¹²⁸ This process dismantles colonization, capitalism, and patriarchy, focusing on rebuilding care connections.¹²⁹ Commoning connects people and places across social, political, economic, and ecological boundaries,

¹²³ Ibid.

¹²⁴ Ibid.; Austin Locke, T., 2020. *Fields of Commoning: Attempts at Creating (Un) Common Worlds in New Cross* (Doctoral dissertation, Goldsmiths, University of London).

¹²⁵ Ibid.; see also *Understanding the role of place in environmental sustainability* (no date) *The British Academy*. Available at: <https://www.thebritishacademy.ac.uk/publications/understanding-the-role-of-place-in-environmental-sustainability/> (Accessed: 13 May 2024).

¹²⁶ Diver, S., Vaughan, M.B. and Baker-Medard, M. (2024) 'Collaborative care in environmental governance: restoring reciprocal relations and community self-determination', *Ecology and Society*, 29(1). Available at: <https://doi.org/10.5751/ES-14488-290107>.

¹²⁷ Ibid.

¹²⁸ Diver, S., Vaughan, M.B. and Baker-Medard, M. (2024) 'Collaborative care in environmental governance: restoring reciprocal relations and community self-determination', *Ecology and Society*, 29(1). Available at: <https://doi.org/10.5751/ES-14488-290107>.

¹²⁹ Ibid.

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

forming networks of place-based communities.¹³⁰ These connected communities support broader social movements for survival, dignity, equality, and freedom. Commoning emphasizes the interconnectedness of people, species, and ecosystems across time, space, and difference.¹³¹

According to some studies, there are a number of ways to ensure that environmental policies reflect ethical considerations, empower communities, address systemic inequalities, promote democratic governance, enhance ethical awareness, and facilitate collaborative solutions to global environmental challenges.¹³² These include boosting community engagement, promoting environmental justice, enhancing transparency, implementing ethical education, and fostering international cooperation.¹³³

7.0 Entrenching the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

Environmental governance should involve communities and the public for ethical, practical, and substantive reasons. Participation involves designing institutions and rules that allow all parties to participate in decision-making, forming a legitimate basis.¹³⁴ SDG Target 16.3 emphasizes the importance of the rule of law in ensuring civic space, diversified media, information access, and basic freedoms.¹³⁵ It is in favour of inclusive society, citizen involvement, and institutional responsibility. Realising economic, social, and cultural rights,

¹³⁰ Ibid.; Austin Locke, T., 2020. *Fields of Commoning: Attempts at Creating (Un) Common Worlds in New Cross* (Doctoral dissertation, Goldsmiths, University of London).

¹³¹ Ibid.

¹³² Baker, Elijah. (2024). Ethical Implications of Environmental Policies and Practices. *International Journal of Philosophy*. 3. 37-40. Available at: <https://doi.org/10.47941/ijp.1868>.

¹³³ Ibid.

¹³⁴ *Participation and politics | 9 | v2 | Environmental Governance | James* (no date). Available at: <https://www.taylorfrancis.com/chapters/mono/10.4324/9781003334699-9/participation-politics-james-evans-craig-thomas?context=ubx&refId=07b48d0a-d1c3-4d94-abbe-855b1b456c7a> (Accessed: 12 May 2024).

¹³⁵ U.N.E.P (2021) 'Human Rights and the Environmental Rule of Law - Issue Brief SDG 16'. Available at: <https://wedocs.unep.org/xmlui/handle/20.500.11822/35408> (Accessed: 12 May 2024).

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

including the right to a safe, clean, healthy, and sustainable environment, and accomplishing the objective of "leaving no one behind" depend on these SDG 16 components as well as strong, transparent institutions.¹³⁶

Participation in environmental decision-making is one of the rights granted under Articles 21 and 25 of the International Covenant on Civil and Political Rights (ICCPR)¹³⁷. This includes formulating laws, regulations, policies, projects, and initiatives. Including the perspectives of those affected by environmental policy increases public support, promotes deliberative governance, and protects rights based on a clean, safe, and sustainable environment.¹³⁸ A number of international environmental instruments, such as the Rio Declaration's Principle 10¹³⁹, the Stockholm Convention on persistent organic pollutants (POPs)'s Article 10(1)(d)¹⁴⁰, the Convention on Biological Diversity (CBD)'s Article 14(1)(a)¹⁴¹, the United Nations Convention to Combat Desertification (UNCCD)'s Article 3(a)¹⁴², and the United Nations Framework Convention on Climate Change (UNFCCC)'s Article 6(a)¹⁴³, acknowledge the value of public involvement in environmental decision-

¹³⁶ Ibid.

¹³⁷ UN General Assembly, International Covenant on Civil and Political Rights, United Nations, Treaty Series, vol. 999, p. 171, 16 December 1966.

¹³⁸ Knox, J.H. and Morgera, E., 2022. *Human Rights and the environment: the interdependence of human rights and a healthy environment in the context of national legislation on natural resources* (Vol. 109). Food & Agriculture Org., p. 14.

¹³⁹ United Nations, Rio Declaration on Environment and Development (A/CONF.151/26, vol. I).

¹⁴⁰ United Nations, The Stockholm Convention on Persistent Organic Pollutants, opened for signature May 23, 2001, UN Doc. UNEP/POPS/CONF/4, App. II (2001), reprinted in 40 ILM 532 (2001).

¹⁴¹ United Nations Environment Programme (1992) *Convention on biological diversity*, June 1992. Available at: <https://wedocs.unep.org/20.500.11822/8340> (Accessed: 13 May 2024).

¹⁴² United Nations, United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, Paris, 14 October 1994, United Nations, Treaty Series, vol. 1954, p. 3; depositary notification C.N.176. 1995.TREATIES-6 of 27 July 1995.

¹⁴³ United Nations, United Nations Framework Convention on Climate Change, May 9, 1992, S. Treaty Doc No. 102-38, 1771 U.N.T.S. 107.

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

making.¹⁴⁴ Once more, the specific obligations included in Articles 1 and 6–8 of the Aarhus Convention are closely related to the human right to a healthy environment.¹⁴⁵

The Bali Guidelines state that early public engagement in the decision-making process and open participation to all members of the public who may be impacted are necessary for it to be effective.¹⁴⁶ States must take more action to encourage the involvement of women and people from marginalised communities, as well as give the general public a sufficient chance to voice their opinions.¹⁴⁷ According to Guideline 11, states are required to make sure that the appropriate authorities consider public opinions when making final decisions, provide reasons for their judgements, and make the decisions and explanations available to the public.¹⁴⁸

A collaborative approach from government agencies, human rights players, market players, media and community at large can go a long way in informing, coming up with and putting in place an effective environmental governance structure that not only takes care of the environment but also addresses the needs and concerns of all stakeholders, in fulfilment of sustainable development goals.

8.0 Conclusion

This paper has explored the various roles and place of human rights, market instruments, media and ethics in informing effective environmental governance. From the discussion, it is clear that the traditional top-down approaches to environmental governance are not adequate but also that the new approaches suggested are collaborative and require to be implemented together. For instance, from the foregoing discussion, it is clear that human

¹⁴⁴ Knox, J.H. and Morgera, E., 2022. *Human Rights and the environment: the interdependence of human rights and a healthy environment in the context of national legislation on natural resources* (Vol. 109). Food & Agriculture Org., p. 14.

¹⁴⁵ Ibid., p.14.

¹⁴⁶ Ibid., p.14; Etemire, U., 2016. Insights on the UNEP Bali guidelines and the development of environmental democratic rights. *Journal of Environmental Law*, 28(3), pp.393-413.

¹⁴⁷ Ibid., p.14.

¹⁴⁸ Ibid., p.14.

Examining the Role of Human Rights, Markets, Media and Ethics in Environmental Governance

rights approaches guarantee the rights of communities but also give them a platform and a voice to actively participate in informing decision-making processes. It has also emerged that the market-based instruments present a viable tool that can empower communities financially while also promoting environmental protection and conservation. In addition, it is also clear that all forms of media play a huge role in not only information dissemination but also in whistleblowing on environmental ills. They hold all persons accountable for environmental responsibilities. Environmental ethics, if well cultivated, can go a long way in enhancing effective environmental governance structures.

It is therefore important that all these are not only recognised but government agencies in charge of policy- making actively engage them in informing environmental governance structures for societal acceptance and support.

Human Rights, Market Instruments, Media and Ethics remain key in effective Environmental Governance.

Reconceptualizing the Role of Women Lawyers in Climate Justice

Abstract

The idea of climate justice seeks to foster the rights of people and communities that are most vulnerable to climate impacts including people living in small island nations and those in developing countries. Effective climate action requires climate justice to be realized. It envisages the participation of people and communities most impacted by climate change including those in developing countries, indigenous communities, women and children as part of the climate solution in order to foster climate justice. This paper critically explores the role of women lawyers in climate justice. The paper argues that women lawyers have a crucial role to play in fostering climate justice. It discusses the concept of climate justice and highlights its core tenets. It further highlights ways through which women lawyers contribute in achieving the ideal of climate justice. The paper further examines the progress made towards embracing the role of women lawyers in climate justice and challenges thereof. It also offers some ideas towards strengthening the role of women lawyers in climate justice.

1.0 Introduction

The impacts of climate change such as intense droughts, water scarcity, severe wild fires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity are being witnessed across the world threatening the achievement of Sustainable Development¹. As a result, climate change has been described as the most defining challenge of our time². It is a major global concern that is affecting both developed and developing countries in their efforts towards realization of the Sustainable Development agenda³. Climate change is an undesirable phenomenon that affects realization of the Sustainable Development agenda across the world by affecting the sustainability of the planet's ecosystems, the stability of the global economy and the future of humankind⁴. It has been noted that if left unchecked, climate

¹ United Nations., 'What is Climate Change?' Available at <https://www.un.org/en/climatechange/what-is-climate-change> (Accessed on 08/05/2024)

² Ibid

³ Muigua. K., 'Achieving Sustainable Development, Peace and Environmental Security.' Glenwood Publishers Limited, 2021

⁴ Climate Change., 'Meaning, Definition, Causes, Examples and Consequences.' Available at <https://youmatter.world/en/definition/climate-change-meaning-definition-causes-and-consequences/> (Accessed on 08/05/2024)

Reconceptualizing the Role of Women Lawyers in Climate Justice

change will undo a lot of the development progress made over the past years and will also provoke mass migrations that will lead to instability and wars⁵.

Due to its severe impacts, climate change has risen to the top of the policy agenda, at local, national, and global levels⁶. The United Nations *2030 Agenda for Sustainable Development*⁷ acknowledges that climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve Sustainable Development. Sustainable Development Goal 13 urges states to take urgent action to combat climate change and its impacts⁸. In addition, Africa Union's *Agenda 2063*⁹ also recognizes climate change as a major challenge for the continent's development. Agenda 2063 seeks to address climate change by fostering environmentally sustainable and climate resilient economies and communities in Africa¹⁰. Responding to climate change is therefore key in realizing Sustainable Development. Effective climate action requires climate justice to be realized¹¹. It has been observed that some people and communities are more vulnerable to climate impacts including people living in small island nations and those developing countries¹². In addition, it has been noted that the communities that have contributed the least to climate change are the ones that are the most affected

⁵ United Nations., 'Goal 13: Take Urgent Action to Combat Climate Change and its Impacts.' Available at <https://www.un.org/sustainabledevelopment/climate-change/> (Accessed on 08/05/2024)

⁶ United Nations Department of Economic and Social Affairs., 'Forum on Climate Change and Science and Technology Innovation.' Available at <https://www.un.org/en/desa/forum-climate-changeandscience-and-technology-innovation> (Accessed on 08/05/2024)

⁷ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 08/05/2024)

⁸ Ibid

⁹ Africa Union., 'Agenda 2063: The Africa we Want.' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 08/05/2024)

¹⁰ Ibid

¹¹ Muigua. K., 'Fostering Climate Justice for Development' Available at <https://kmco.co.ke/wp-content/uploads/2023/07/Fostering-Climate-Justice-for-Sustainable-Development.pdf> (Accessed on 08/05/2024)

¹² United Nations., 'What is Climate Change?' Op Cit

Reconceptualizing the Role of Women Lawyers in Climate Justice

by its impacts¹³. The concept of Climate Justice has thus therefore emerged to deal with the justice concerns brought about by climate change¹⁴. Therefore, in designing appropriate responses to climate change, it needs to be acknowledged that the people who have contributed least to the changing climate are being affected by it the most, and are likely to be less able to protect themselves from the impacts¹⁵. Effective climate action therefore envisages the participation of the people and communities most impacted by climate change including developing countries, indigenous communities, women and children as part of the climate solution in order to foster climate justice¹⁶.

This paper critically explores the role of women lawyers in climate justice. The paper argues that women lawyers have a crucial role to play in fostering climate justice. It discusses the concept of climate justice and highlights its core tenets. It further highlights ways through which women lawyers contribute in achieving the ideal of climate justice. The paper further examines the progress made towards embracing the role of women lawyers in climate justice and challenges thereof. It also offers some ideas towards strengthening the role of women lawyers in climate justice.

2.0 Conceptualizing Climate Justice

Climate justice recognizes the disproportionate impacts of climate change on the people and communities least responsible for this global problem¹⁷. Climate justice seeks solutions that address the root causes of climate change and in doing so, simultaneously address a broad range of social, racial, and environmental injustices¹⁸. The climate crisis brings enormous injustices since

¹³ Sultana. F., 'Critical Climate Justice' Available at <https://www.farhanasultana.com/wpcontent/uploads/Sultana-Critical-climate-justice.pdf> (Accessed on 08/05/2024)

¹⁴ Muigua. K., 'Fostering Climate Justice for Development' Op Cit

¹⁵ Oxfam., 'Climate Justice.' Available at <https://www.oxfam.org.au/what-we-do/climate-justice/> (Accessed on 08/05/2024)

¹⁶ Muigua. K., 'Fostering Climate Justice for Development' Op Cit

¹⁷ Center for Climate Justice., 'What is Climate Justice?' Available at <https://centerclimatejustice.universityofcalifornia.edu/what-is-climate-justice/#:~:text=Climate%20justice%20connects%20the%20climate,least%20responsible%20for%20the%20problem.> (Accessed on 08/05/2024)

¹⁸ Ibid

Reconceptualizing the Role of Women Lawyers in Climate Justice

it affects everyone, but not equally¹⁹. It has been noted that people and communities who have contributed least to climate change are being affected by it the most, and are likely to be less able to protect themselves from its impacts²⁰. For example, people and communities in developing nations in places such as Africa, Asia, the Caribbean Islands and the Pacific Islands which due to an unfortunate mixture of economic and geographic vulnerability, continue to shoulder the brunt of the burdens of climate change despite their relative innocence in causing it²¹. These countries are more vulnerable to adverse impacts of climate change including severe flooding, intense droughts, sea level rise, increasing temperatures and frequency and intensity of tropical cyclones, and storm surges despite their very little contribution to greenhouse gas emissions when compared to countries such as China and large industrialized economies of Europe and North America including the United States of America²².

Climate justice connects the climate crisis to the social, racial and environmental issues in which it is deeply entangled²³. This concept recognizes the disproportionate impacts of climate change on low-income communities around the world, the people and places least responsible for the problem²⁴. This concept acknowledges that while climate change is global, the poor are disproportionately vulnerable to its effects²⁵. This is due to the fact that they lack the resources to afford goods and services they need to buffer themselves and recover from the effects of climate change²⁶. Climate justice therefore links human rights and development to achieve a human-centred approach, safeguarding the rights of the most vulnerable people and sharing

¹⁹ Oxfam., 'Climate Justice.' Op Cit

²⁰ Ibid

²¹ Giles. M., 'The Principles of Climate Justice at CoP27.' Available at <https://earth.org/principlesofclimatejustice/#:~:text=That%20response%20should%20be%20based,the%20consequences%20of%20climate%20change> (Accessed on 08/05/2024)

²² Ibid

²³ Center for Climate Justice., 'What is Climate Justice?' Op Cit

²⁴ Ibid

²⁵ United Nations Environment Programme., 'Responding to Climate Change.' Available at <https://www.unep.org/regions/africa/regional-initiatives/responding-climate-change> (Accessed on 08/05/2024)

²⁶ Ibid

Reconceptualizing the Role of Women Lawyers in Climate Justice

the burdens and benefits of climate change and its impacts equitably and fairly²⁷. It involves understating climate change as an issue that relates to equity, fairness, ethics and human rights and not just an environmental phenomena²⁸. This concept provides a framework that focuses on the intersection between climate change and social inequalities²⁹. It examines the concepts of equality and human rights within the lens of climate change³⁰. Climate justice focuses on how climate change impacts people differently, unevenly and disproportionately and seeks to address the resultant injustices in fair and equitable ways³¹.

According to the United Nations Environment Programme (UNEP), climate justice is underpinned by principles of equity, non-discrimination, equal participation, transparency, fairness, accountability and access to justice³². UNEP further notes that climate justice entails issues of equity and equality within a nation, between nations and between generations³³. These principles of climate justice are foundational building blocks for achieving a just transition out of the climate crisis³⁴.

Climate justice seeks to achieve various facets of justice including distributive justice, procedural justice, and justice as recognition³⁵. Distributive justice involves identifying and acknowledging the disproportionate impacts that climate change is already having and will continue to have on the people,

²⁷ Mary Robinson Foundation Climate Justice., 'Principles of Climate Justice.' Available at <https://www.mrfcj.org/principles-of-climate-justice/> (Accessed on 08/05/2024)

²⁸ United Nations Environment Programme., 'Climate Justice.' Available at <https://leap.unep.org/knowledge/glossary/climate-justice> (Accessed on 08/05/2024)

²⁹ Ibid

³⁰ Sultana. F., 'Critical Climate Justice' Op Cit

³¹ Ibid

³² United Nations Environment Programme., 'UN Resolution Billed as a Turning Point in Climate Justice' Available <https://www.unep.org/cep/news/story/un-resolution-billed-turning-point-climate-justice> (Accessed on 08/05/2024)

³³ Ibid

³⁴ Ibid

³⁵ Monica. T & Bronwyn. L., 'Community Lawyering and Climate Justice: A New Frontier.' *Alternative Law Journal* (47) 3 pp 199-203

Reconceptualizing the Role of Women Lawyers in Climate Justice

communities and countries that are least responsible for climate change but which bear the full brunt of its devastating impacts³⁶; Procedural justice aims to address distributive injustices by tackling climate change through processes that are participatory, accessible, fair and inclusive³⁷; while justice as recognition refers to the importance of centring the voices of people who have traditionally been marginalised in climate action as a result of structural inequality³⁸.

The concept of climate justice is therefore key in climate action. It seeks to address the causes and impacts of climate change in a manner that recognizes and fosters the rights and concerns of vulnerable people, communities and countries³⁹. Climate justice also aims to achieve equal access to natural resources, fair and effective solutions in response to climate change and the assigning of responsibility for those who contribute most to the global threat of climate change⁴⁰. Climate justice has been described as an important aspect of just transition toward a sustainable future⁴¹. This concept suggests that the responsibilities in addressing climate change should be divided according to who is contributing most to the problem, while addressing systemic, socioeconomic, and intergenerational inequalities⁴². It is therefore necessary to foster climate justice for effective climate action and Sustainable Development.

³⁶ Ibid

³⁷ Ibid

³⁸ Ibid

³⁹ Schlosberg, D & Collins, L., 'From Environmental to Climate Justice: Climate Change and the Discourse of Environmental Justice.' *WIREs Clim Change*, 2014

⁴⁰ New Internationalist., 'Four Principles for Climate Justice.' Available at <https://newint.org/features/2009/01/01/principles-climate-justice> (Accessed on 08/05/2024)

⁴¹ United Nations Development Programme., 'Climate Change is a Matter of Justice – Here's Why.' Available at <https://climatepromise.undp.org/news-and-stories/climate-change-matter-justice-hereswhy> (Accessed on 08/05/2024)

⁴² Ibid

3.0 The Role of Women Lawyers in Climate Justice: Opportunities and Challenges

Lawyers in general play a key role in climate justice⁴³. It has been correctly noted that members of the legal profession as a whole must get behind the movement to protect the planet from the catastrophic impacts of climate change⁴⁴. Lawyers as agents of social engineering can foster climate justice by operating on a *pro bono*, volunteer, or reduced fee basis, for those negatively affected by the climate crisis, as well as advising clients of the potential risks, liability, and reputational damage arising from activity that negatively contributes to the climate crisis⁴⁵. It has also been asserted that lawyers as influential figures and thought leaders within society can enhance climate action by living responsibly in the face of the climate crisis through measures such as reducing their environmental footprint in every-day actions and by supporting positive changes in the workplace, including the adoption of more sustainable practices, such as greater reliance on electronic file storage facilities and digital technologies, embracing the use of more energy efficient offices, and more climate-friendly practices⁴⁶.

Lawyers play a crucial role in achieving climate justice through approaches such as climate litigation⁴⁷. This involves cases before judicial and quasi-judicial bodies that involve material issues of climate change science, policy, or law⁴⁸. Through climate change litigation, lawyers are able to help courts and

⁴³ Muigua. K., 'Re-Imagining the Role of Lawyers in Climate Justice' Available at <https://kmco.co.ke/wp-content/uploads/2023/07/Re-imagining-the-Role-of-Lawyers-in-Climate-Justice-Kariuki-Muigua-20th-July-2023.pdf> (Accessed on 09/05/2024)

⁴⁴ The Role Lawyers Can Play in Addressing the Climate Crisis' Available at <https://www.wtwco.com/engb/insights/2022/02/the-role-lawyers-can-play-in-addressing-the-climate-crisis> (Accessed on 09/05/2024)

⁴⁵ Ibid

⁴⁶ Dernbach. JC., Russell. IS., & Bogoshian M, 'Advocating for the Future', *The Environmental Forum*, March/April (2021).

⁴⁷ Muigua. K., 'Redefining the Role of Lawyers in Climate Justice' Available at <https://kmco.co.ke/wp-content/uploads/2023/06/Redefining-the-Role-of-Lawyers-in-Climate-Justice-.pdf> (Accessed on 09/05/2024)

⁴⁸ Ibid

Reconceptualizing the Role of Women Lawyers in Climate Justice

tribunals adjudicate upon pertinent issues in climate change such mitigation and adaptation measures as well as climate change-related loss and damage⁴⁹.

In addition, lawyers can also enhance climate justice by fostering public awareness, public participation and public access to information on climate matters⁵⁰. It has been noted that through such initiatives, the public will be better informed and able to effectively participate in the climate change discourse towards attaining climate justice⁵¹. Lawyers also have a key role to play in climate justice by unlocking climate finance⁵². This can be achieved by shaping the legal, policy, and institutional environments on climate finance in order to unlock funding necessary to support mitigation and adaptation measures that are vital in achieving climate justice⁵³. In addition, lawyers can contribute to climate justice by participating in the formulation of laws and policies on climate change⁵⁴. Through such participation, lawyers can promote climate justice through the implementation of efficient programmes, policies and plans towards climate change mitigation and adaptation⁵⁵.

Greening of the legal profession is another key approach through which lawyers can foster climate justice⁵⁶. It has been noted that adopting practices such as the use of electronic correspondence, electronic filing of court documents, use of electronic bundles at hearings, encouraging the use of videoconferencing facilities for client interviews and virtual court sessions as

⁴⁹ Setzer, J., 'Climate Change Litigation: A Review of Research on Courts and Litigants in Climate Governance.' Available at https://www.researchgate.net/profile/JoanaSetzer/publication/331499727_Climate_change_litigation_A_review_of_research_on_courts_and_litigants_in_climate_governance/links/5e89690d92851c2f527f820d/Climate-change-litigation-A-review-ofresearch-on-courts-and-litigants-in-climate-governance.pdf (Accessed on 09/05/2024)

⁵⁰ Muigua, K., 'Redefining the Role of Lawyers in Climate Justice' Op Cit

⁵¹ Ibid

⁵² Ibid

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ Ibid

⁵⁶ Muigua, K., 'Green Arbitration: Aligning Arbitration with Sustainable Development.' Available at <http://kmco.co.ke/wp-content/uploads/2023/04/Green-Arbitration-Aligning-Arbitration-withSustainable-Development-Kariuki-Muigua-April-2023.pdf> (Accessed on 09/05/2024)

Reconceptualizing the Role of Women Lawyers in Climate Justice

an alternative to travel, where appropriate and selecting suppliers and service providers that are committed to the Sustainable Development agenda can lessen the carbon footprint of the legal profession therefore strengthening climate action⁵⁷. Lawyers in general therefore have an integral role to play in achieving climate justice.

Women lawyers in particular have a vital role in climate justice. Women have been identified as the key for the future of climate action throughout the world⁵⁸. It has been noted that the climate crisis perpetuates and magnifies structural inequalities, such as those between women and men⁵⁹. For example, in Africa, women bear an unequal burden when it comes to climate change impacts⁶⁰. Many women in the continent rely primarily on climate-sensitive livelihoods, such as small-scale farming and manual labour⁶¹. This makes them highly exposed to the impacts of extreme weather events such as recurring droughts and floods which damage crops and kill livestock upon which their livelihoods depend⁶². In addition, women face increased risks to the long-term consequences of these impacts including heightened vulnerability to food insecurity, deepening poverty, and increased exposure to violence and displacement⁶³. This presents an opportunity for women lawyers to foster climate justice by spearheading climate action through advocacy, community engagement and innovative solutions in order to achieve gender-responsive climate solutions⁶⁴.

Women lawyers can also foster climate justice by spearheading feminist climate action⁶⁵. The vision for feminist climate justice is of a world in which

⁵⁷ Ibid

⁵⁸ United Nations Development Programme., 'Women are Key for the Future of Climate Action in Africa' Available at <https://climatepromise.undp.org/news-and-stories/women-are-key-future-climate-action-africa> (Accessed on 09/05/2024)

⁵⁹ Ibid

⁶⁰ Ibid

⁶¹ Ibid

⁶² Ibid

⁶³ Ibid

⁶⁴ Ibid

⁶⁵ United Nations Women., 'Feminist Climate Justice: A Framework for Action' Available at <https://www.unwomen.org/en/digital->

Reconceptualizing the Role of Women Lawyers in Climate Justice

everyone can enjoy the full range of human rights, free from discrimination, and flourish on a planet that is healthy and sustainable⁶⁶. According to the International Development Law Organization (IDLO), women and girls are at the forefront of climate justice and must be recognized as active agents of change who possess diverse knowledge and skills essential to transformative climate action⁶⁷. It notes that the persistence of gender-based discrimination, inequality and patriarchal institutions contribute to women disproportionately experiencing harmful effects of climate change⁶⁸. Therefore, gender equality and climate justice are inextricably linked⁶⁹. Women lawyers can foster a rule of law approach to feminist climate action through: empowering diverse groups of women and girls to claim environmental rights, access justice and actively participate in climate-related decision-making processes⁷⁰; participating in the development of gender-transformative approaches to legal, institutional and regulatory processes related to climate and biodiversity⁷¹; and participating in programmes aimed at strengthening women's capacity to access and benefit from land and other natural resources, including through enhanced tenure security, elimination of discriminatory laws, and greater gender-responsiveness of customary and informal justice institutions⁷².

According to the United Nations Development Programme (UNDP), gender equality is a cornerstone for climate justice⁷³. Women lawyers can therefore

[library/publications/2023/11/feminist-climate-justice-a-framework-for-action](https://www.idlo.int/sites/default/files/pdfs/publications/a_rule_of_law_approach_to_feminist_climate_action.pdf)

(Accessed on 09/05/2024)

⁶⁶ Ibid

⁶⁷ International Development Law Organization., 'Climate Justice for Women and Girls: A Rule of Law Approach to Feminist Climate Action' Available at https://www.idlo.int/sites/default/files/pdfs/publications/a_rule_of_law_approach_to_feminist_climate_action.pdf (Accessed on 09/05/2024)

⁶⁸ Ibid

⁶⁹ United Nations Women., 'Feminist Climate Justice: A Framework for Action' Op Cit

⁷⁰ International Development Law Organization., 'Climate Justice for Women and Girls: A Rule of Law Approach to Feminist Climate Action' Op Cit

⁷¹ Ibid

⁷² Ibid

⁷³ United Nations Development Programme., 'Gender Equality: A Cornerstone for Environmental and Climate Justice' Available at

<https://www.undp.org/blog/gender-equality-cornerstone-environmental-and-climate-justice> (Accessed on 09/05/2024)

Reconceptualizing the Role of Women Lawyers in Climate Justice

play a role in promoting justice and accountability in environmental and climate change matters through the realization of environmental rights and the promotion of the environmental rule of law⁷⁴. This can be realized through participation in the development of an enabling and gender sensitive legal framework that enables women to enjoy their right to a healthy environment, advocating for the development of people-centred institutions that are key in delivering gender sensitive responses for climate justice, and fostering access to justice for women in climate matters⁷⁵. Enhancing access to justice is vital in preventing and responding to violence against women and girls in contexts of climate and environmental crises and disasters⁷⁶. In order to achieve this ideal, it has been noted that victims and survivors should have equal and unimpeded access to high-quality services; women environmental human rights defenders should be guaranteed protection; and effective investigations of violations and abuses should lead to accountability of perpetrators and justice for victims⁷⁷. Women lawyers therefore have an important role to play in achieving access to justice for women in climate matters.

From the foregoing, it is evident that women lawyers have a crucial role to play in climate justice. It has been correctly observed that climate change exacerbates existing social inequalities, leaving women disproportionately vulnerable to climate impacts⁷⁸. This is due to the fact that women are more dependent for their livelihood on natural resources that are threatened by climate change⁷⁹; women are often constrained in their response to sudden onset disasters such as floods and cyclones⁸⁰; women farmers are disproportionately affected by climate change as a result of their limited access to natural resources and limited access to information and services about climate resilient and adaptive agricultural strategies and technologies; and

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Ibid

⁷⁷ Ibid

⁷⁸ Mary Robinson Foundation Climate Justice., 'Women's Participation: An Enabler of Climate Justice' Available at <https://www.mrfcj.org/wp-content/uploads/2015/11/MRFCJ- Womens-Participation-An-Enabler-of-Climate-Justice 2015.pdf> (Accessed on 09/05/2024)

⁷⁹ Ibid

⁸⁰ Ibid

Reconceptualizing the Role of Women Lawyers in Climate Justice

women face additional social, economic and political barriers that limit their participation and coping capacity⁸¹. Therefore, acknowledging that men and women are impacted differently by climate change and enabling equal participation in the design, planning and implementation of climate policies and programmes can contribute to the development of gender-responsive climate policies which are ultimately better for people and planet⁸². Women lawyers thus have a pertinent role to play in climate justice by participating in the design and implementation of gender responsive climate policy and climate action. It has been noted that realizing the ideal of climate justice for women is hindered by factors such as gender-blind laws and regulatory frameworks that exacerbate the injustices of climate change, systematic discrimination and diverse cultural barriers which create inaccessible pathways to justice, gender-based violence emanating from the climate crisis, gender insensitive approaches to climate-related security risks and funding, and limited access to land and natural resources, and prevailing food insecurity⁸³. Women lawyers have an important role to play in addressing these challenges in order to achieve climate justice for women and society at large.

4.0 Conclusion

Climate justice is a key concept that seeks solutions that address the root causes of climate change and in doing so, simultaneously address a broad range of social, racial, and environmental injustices⁸⁴. It seeks to address the causes and impacts of climate change in a manner that recognizes and fosters the rights and concerns of vulnerable people, communities and countries⁸⁵. Climate justice is an important aspect of just transition towards a sustainable future⁸⁶. Lawyers are critical agents of climate justice⁸⁷. They can foster the

⁸¹ Ibid

⁸² Ibid

⁸³ International Development Law Organization., 'Climate Justice for Women and Girls: A Rule of Law Approach to Feminist Climate Action' Op Cit

⁸⁴ Center for Climate Justice., 'What is Climate Justice?' Op Cit

⁸⁵ Schlosberg. D & Collins. L., 'From Environmental to Climate Justice: Climate Change and the Discourse of Environmental Justice.' Op Cit

⁸⁶ United Nations Development Programme., 'Climate Change is a Matter of Justice – Here's Why.' Op Cit

⁸⁷ Muigua. K., 'Redefining the Role of Lawyers in Climate Justice' Op Cit

Reconceptualizing the Role of Women Lawyers in Climate Justice

achievement of the ideal of climate justice by enhancing access to justice through climate litigation, fostering public awareness, public participation and public access to information on climate matters, spearheading the law reform agenda to ensure effective legal, policy, and institutional frameworks on climate change, and greening of the legal profession⁸⁸. Climate justice is of utmost importance to women who face an unequal burden when it comes to climate change impacts⁸⁹. Climate change exacerbates existing social inequalities, leaving women disproportionately vulnerable to climate impacts⁹⁰. Women lawyers can foster the attainment of climate justice by spearheading feminist climate action, advocating for gender equality in the climate agenda, enhancing access to justice for women in climate matters, and participating in the design and implementation of gender responsive climate policy and climate action⁹¹. It is therefore necessary for women lawyers and members of the legal profession at large to participate in legal, policy, and institutional initiatives that aim to decrease emissions of greenhouse gases and increase resilience to the effects of climate change⁹².

Since confronting climate change is essential to the effective functioning of the entire society, the legal profession cannot ignore its role in climate action⁹³. Women lawyers are key in strengthening the participation, leadership, empowerment, and access to justice for women in climate matters. The role of women lawyers in climate justice therefore needs to be reconceptualized in order to make them key agents in the quest towards the ideal of climate justice and the just transition towards a sustainable future⁹⁴.

⁸⁸ Ibid

⁸⁹ United Nations Development Programme., 'Women are Key for the Future of Climate Action in Africa' Op Cit

⁹⁰ Mary Robinson Foundation Climate Justice., 'Women's Participation: An Enabler of Climate Justice' Op Cit

⁹¹ International Development Law Organization., 'Climate Justice for Women and Girls: A Rule of Law Approach to Feminist Climate Action' Op Cit

⁹² Muigua. K., 'Re-Imagining the Role of Lawyers in Climate Justice' Op Cit

⁹³ Ibid

⁹⁴ United Nations Development Programme., 'Climate Change is a Matter of Justice - Here's Why.' Op Cit

Examining the African Continental Free Trade Area Protocol on Digital Trade: Challenges and Promises

Examining the African Continental Free Trade Area Protocol on Digital Trade: Challenges and Promises

Abstract

The African Continental Free Trade Area (AfCFTA) Protocol on Digital Trade was adopted at the 37th African Union Heads of States Summit held in February 2024. The Protocol is an integral part of the AfCFTA Agreement and the wider vision of Africa Union's Agenda 2063. It has been hailed as vital in supporting the movement of capital and digital services and products in Africa. This paper critically examines the AfCFTA Protocol on Digital Trade. The paper explores the concept of digital trade and how this idea has been embraced in Africa. It also discusses the effectiveness of the AfCFTA Protocol on Digital Trade and its role in strengthening Intra-African trade in the digital sphere. The paper also highlights some of the challenges likely to arise in the implementation of AfCFTA Protocol on Digital Trade. It further suggests reforms aimed at enhancing the viability of the AfCFTA Protocol on Digital Trade towards strengthening Intra-African trade.

1.0 Introduction

The Agreement Establishing the African Continental Free Trade Area¹, establishes the African Continental Free Trade Area (AfCFTA) whose objectives include to create a single market for goods, services, facilitated by movement of persons in order to deepen the economic integration of the African continent and in accordance with the Pan African Vision of “An integrated, prosperous and peaceful Africa” enshrined in Agenda 2063²; to create a liberalised market for goods and services through successive rounds of negotiations³; to contribute to the movement of capital and natural persons and facilitate investments building on the initiatives and developments in the State Parties and Regional Economic Communities⁴; to enhance the competitiveness of the economies of State Parties within the continent and the global market⁵; to promote industrial development through diversification and regional value

¹ African Union., 'Agreement Establishing the African Continental Free Trade Area.' Available at https://au.int/sites/default/files/treaties/36437-treaty-consolidated_text_on_cfta_-_en.pdf (Accessed on 02/05/2024)

² Ibid

³ Ibid

⁴ Ibid

⁵ Ibid

*Examining the African Continental Free Trade Area Protocol on Digital Trade:
Challenges and Promises*

chain development, agricultural development and food security⁶; and to resolve the challenges of multiple and overlapping memberships and expedite the regional and continental integration processes⁷.

AfCFTA has been hailed for creating the world's largest free trade area and a single market for goods and services worth \$3.4 trillion for more than 1.3 billion Africans⁸. It has been argued that AfCFTA is appropriately designed to deepen integration, foster trade and investment, enhance the mobility of capital and labour, support industrialization, and the development of a dynamic services sector in Africa⁹. In addition, it provides Africa with a renewed opportunity to steer its economic relations away from a reliance on external donors, foreign creditors and excessive commodity dependence, ushering in a new economic era focused on self-reliant cooperation, deeper integration and higher levels of intra-African trade¹⁰. It has been noted that implementation of AfCFTA would reshape markets and economies across the continent and boost output in the services, manufacturing and natural resources sectors¹¹. AfCFTA also has the potential to increase employment opportunities and incomes, helping to expand opportunities for all Africans¹². According to the United Nations, the successful implementation of the AfCFTA will lead to the creation of more decent jobs, improved welfare and better quality of life for all citizenry, and Sustainable Development¹³.

⁶ Ibid

⁷ Ibid

⁸ United Nations., 'Africa's Free Trade on Track, More Efforts Needed.' Available at [https://www.un.org/africarenewal/magazine/january-2023/africa%E2%80%99s-free-trade-track-moreefforts-needed#:~:text=lies%20ahead%2C%20though.-,Presently%2C%20intra%20Africa%20trade%20stands%20low%20at%20just%2014.4%25%20of,day\)%2C%20according%20to%20UNCTAD](https://www.un.org/africarenewal/magazine/january-2023/africa%E2%80%99s-free-trade-track-moreefforts-needed#:~:text=lies%20ahead%2C%20though.-,Presently%2C%20intra%20Africa%20trade%20stands%20low%20at%20just%2014.4%25%20of,day)%2C%20according%20to%20UNCTAD) (Accessed on 02/05/2024)

⁹ Ibid

¹⁰ Ibid

¹¹ The World Bank Group., 'The African Continental Free Trade Area.' Available at <https://www.worldbank.org/en/topic/trade/publication/the-african-continental-free-trade-area> (Accessed on 02/05/2024)

¹² Ibid

¹³ United Nations., 'AU Summit 2023: Powering Trade through AfCFTA' Available at <https://www.un.org/africarenewal/magazine/february-2023/au-summit-2023-powering-trade-through-afcfta> (Accessed on 02/05/2024)

*Examining the African Continental Free Trade Area Protocol on Digital Trade:
Challenges and Promises*

The Agreement establishing AfCFTA also contains a *Protocol on Trade in Goods*¹⁴ which aims to create a liberalised market for trade in goods through progressive elimination of tariffs¹⁵; progressive elimination of non-tariff barriers¹⁶; enhanced efficiency of customs procedures, trade facilitation and transit; enhanced cooperation in the areas of technical barriers to trade and sanitary and phytosanitary measures¹⁷; development and promotion of regional and continental value chains¹⁸; and enhanced socio-economic development, diversification and industrialisation across Africa¹⁹. It also contains a *Protocol on Trade in Services*²⁰ which aims at creating a single liberalised market for trade in service through measures such as enhancing competitiveness of services through: economies of scale, reduced business costs, enhanced continental market access, and an improved allocation of resources including the development of trade-related infrastructure²¹; promoting sustainable development in accordance with the Sustainable Development Goals (SDGs)²²; fostering domestic and foreign investment²³; accelerating efforts on industrial development to promote the development of regional value chains²⁴; progressively liberalizing trade in services across the African continent on the basis of equity, balance and mutual benefit, by eliminating barriers to trade in services²⁵; and promoting research and technological advancement in the field of services to accelerate economic and social development in Africa²⁶.

¹⁴ Agreement Establishing the African Continental Free Trade Area., Protocol on Trade in Goods

¹⁵ Ibid

¹⁶ Ibid

¹⁷ Ibid

¹⁸ Ibid

¹⁹ Ibid

²⁰ Agreement Establishing the African Continental Free Trade Area., Protocol on Trade in Services

²¹ Ibid

²² Ibid

²³ Ibid

²⁴ Ibid

²⁵ Ibid

²⁶ Ibid

Examining the African Continental Free Trade Area Protocol on Digital Trade: Challenges and Promises

The Agreement establishing AfCFTA has been described as a highly ambitious trade agreement, with a comprehensive scope that includes critical areas of Africa's economy, such as digital trade and investment protection, amongst other areas²⁷. By eliminating barriers to trade in Africa, the objective of the AfCFTA is to significantly boost intra-Africa trade, particularly trade in value-added production and trade across all sectors of Africa's economy²⁸. The 37th African Union Heads of States Summit held in February 2024 adopted the *AfCFTA Protocol on Digital Trade*²⁹. The Protocol is an integral part of the AfCFTA Agreement and the wider vision of Africa Union's *Agenda 2063*³⁰. It has been pointed out that the AfCFTA Protocol on Digital Trade is vital to support the movement of capital and digital services and products³¹.

This paper critically examines the AfCFTA Protocol on Digital Trade. The paper explores the concept of digital trade and how this idea has been embraced in Africa. It also discusses the effectiveness of the AfCFTA Protocol on Digital Trade and its role in strengthening Intra-African trade in the digital sphere. The paper also highlights some of the challenges likely to arise in the implementation of AfCFTA Protocol on Digital Trade. It further suggests reforms aimed at enhancing the viability of the AfCFTA Protocol on Digital Trade towards strengthening Intra-African trade.

²⁷ East African Community., 'African Continental Free Trade Area (AfCFTA) Agreement' Available at <https://www.eac.int/trade/international-trade/trade-agreements/african-continental-free-trade-area-afcfta-agreement> (Accessed on 02/05/2024)

²⁸ Ibid

²⁹ Protocol to the Agreement Establishing the African Continental Free Trade Area on Digital Trade., Available at https://www.bilaterals.org/IMG/pdf/afcfta_digital_trade_protocol_-_9_february_2024_draft.pdf (Accessed on 02/05/2024)

³⁰ Africa Union., 'Agenda 2063: The Africa we Want' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 02/05/2024)

³¹ Acquah, I., 'The Digital Trade Protocol: Challenges & Opportunities' Available at <https://www.linkedin.com/pulse/digital-trade-protocol-challenges-opportunities-isobel-afful-mensah-hbyvf/> (Accessed on 02/05/2024)

Examining the African Continental Free Trade Area Protocol on Digital Trade: Challenges and Promises

2.0 The Place of Digital Trade in Africa

Digital trade entails trade in goods and services enabled by the internet, and other Information and Communication Technologies (ICT)³². Digital trade can take several forms including instances where goods or services are ordered digitally and delivered physically³³; or where goods or services are ordered digitally and delivered digitally³⁴. Digital trade can also refer to commerce enabled by electronic means such as telecommunications and/or ICT services³⁵. It covers trade in both goods and services³⁶. It has also been pointed out that digital trade encompasses digitally enabled transactions of trade in goods and services that can either be digitally or physically delivered, and that involve consumers, firms, and governments³⁷. In addition, it has been observed that while all forms of digital trade are enabled by digital technologies, not all digital trade is digitally delivered. Digital trade also involves the use of technologies in production or distribution processes such as tracking road cargo in real time to develop more efficient supply chains and the transfer of data across borders³⁸.

Digital trade is vital. It has been noted that digitalisation increases the scale, scope and speed of trade³⁹. It allows firms to bring new products and services

³² European Commission., 'Digital Trade Agreements' Available at https://policy.trade.ec.europa.eu/help-exporters-and-importers/accessing-markets/goods-and-services/digital-trade/digital-trade-agreements_en#:~:text=What%20are%20Digital%20Trade%20Agreements,safe%20online%20environment%20for%20consumers (Accessed on 02/05/2024)

³³ Ibid

³⁴ Ibid

³⁵ European Commission., 'Digital Trade' Available at https://policy.trade.ec.europa.eu/help-exporters-and-importers/accessing-markets/goods-and-services/digital-trade_en#:~:text=Digital%20trade%20refers%20to%20commerce,Digital%20trade (Accessed on 02/05/2024)

³⁶ Ibid

³⁷ Organisation for Economic Co-operation and Development., 'Digital Trade' Available at <https://www.oecd.org/trade/topics/digital-trade/> (Accessed on 02/05/2024)

³⁸ European Commission., 'Digital Trade Agreements' Op Cit

³⁹ Organisation for Economic Co-operation and Development., 'Digital Trade' Op Cit

Examining the African Continental Free Trade Area Protocol on Digital Trade: Challenges and Promises

to a larger number of digitally-connected consumers across the globe⁴⁰. It has also been noted that digital trade also enables firms, notably smaller ones, to use new and innovative digital tools to overcome barriers to growth, helping facilitate payments, enabling collaboration, avoiding investment in fixed assets through the use of cloud-based services, and using alternative funding mechanisms such as crowdfunding⁴¹.

Digital trade is growing in Africa⁴². The continent is experiencing a technological revolution with an upsurge in the use of mobile devices, social media, ICT, and big data, creating new channels for human interactions, and economic opportunities including trade and commerce⁴³. Digital trade presents significant opportunities for African countries to enhance economic growth, create jobs and reduce poverty⁴⁴. It has been noted that African governments are increasingly embracing digitalization for trade facilitation, especially in the form of digital portals⁴⁵. The growth of digital trade in Africa will be of particular benefit to micro, small and medium-sized enterprises, which constitute more than 80 per cent of the continent's enterprises⁴⁶.

⁴⁰ Ibid

⁴¹ Ibid

⁴² World Trade Organization., 'New WTO-World Bank Project Seeks to Boost Africa's Participation in Digital Trade' Available at https://www.wto.org/english/news_e/news24_e/dtech_24feb24_e.htm#:~:text=The%20project%20%E2%80%94%20entitled%20%E2%80%9CDigital%20Trade,African%20officials%20in%20July%202023. (Accessed on 02/05/2024)

⁴³ United Nations Economic Commission for Africa., 'Concept Note on the ECA on Digital Identity, Trade and Economy Initiative and Center of Excellence' Available at <https://www.uneca.org/sites/default/files/uploaded-documents/DITE-Africa/concept-note.pdf> (Accessed on 02/05/2024)

⁴⁴ World Trade Organization., 'New WTO-World Bank Project Seeks to Boost Africa's Participation in Digital Trade' Op Cit

⁴⁵ United Nations Development Programme., 'Scaling up Intra-African Trade through Digital Public Infrastructure' Available at <https://www.undp.org/africa/blog/scaling-intra-african-trade-through-digital-public-infrastructure> (Accessed on 02/05/2024)

⁴⁶ United Nations Economic Commission for Africa., 'Concept Note on the ECA on Digital Identity, Trade and Economy Initiative and Center of Excellence' Op Cit

*Examining the African Continental Free Trade Area Protocol on Digital Trade:
Challenges and Promises*

The *Digital Transformation Strategy for Africa*⁴⁷ acknowledges that digital transformation is a driving force for innovative, inclusive and sustainable growth⁴⁸. According to the Strategy, innovations and digitalization are stimulating job creation and contributing to addressing poverty, reducing inequality, facilitating the delivery of goods and services, and contributing to the attainment of Africa Union's Agenda 2063 and the Sustainable Development Goals⁴⁹. The Strategy seeks to harness digital technologies and innovation to transform African societies and economies to promote Africa's integration, generate inclusive economic growth, stimulate job creation, break the digital divide, and eradicate poverty for the continent's socio-economic development and ensure Africa's ownership of modern tools of digital management⁵⁰. It also aims to strengthen digital trade in Africa⁵¹. The Strategy aims to realize this goal by fostering policies that create an enabling environment for productive digital trade and digital payment systems to advance opportunities for digital work, fair competition for digital businesses, and contribute to an advantageous position of Africa in the global digital economy⁵². The Strategy also aims to integrate Africa to a single digital market as envisaged under the AfCFTA Agreement in order to create economies of scale and opportunities to grow Africa's economies⁵³. It recognizes that the key to unlocking these opportunities is the ability to adapt to digital trade and financial services⁵⁴. It also notes that e-commerce and Digital Financial Inclusion will be the basic enablers in ensuring that Africa becomes a single digital market⁵⁵.

The Strategy notes that while digital trade represents a multi-trillion-dollar market globally, Africa currently claims only a small slice of e-commerce

⁴⁷ African Union., 'The Digital Transformation Strategy for Africa (2020-2030)' Available at <https://au.int/sites/default/files/documents/38507-doc-dts-english.pdf> (Accessed on 02/05/2024)

⁴⁸ Ibid

⁴⁹ African Union., 'The Digital Transformation Strategy for Africa (2020-2030)' Op Cit

⁵⁰ Ibid

⁵¹ Ibid

⁵² Ibid

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ Ibid

*Examining the African Continental Free Trade Area Protocol on Digital Trade:
Challenges and Promises*

revenues⁵⁶. However, it also points out that digital trade in Africa is rapidly growing and is expected to constitute a growing share of trade towards the AfCFTA⁵⁷. The Strategy sets out policy recommendations and proposes actions towards strengthening digital trade in Africa. These include ensuring inclusive digital society extending to the under-banked and unbanked⁵⁸; promoting the development of cross-border digital commerce⁵⁹; reducing barriers to cross-border digital trade and market access⁶⁰; developing an enabling regulatory framework for e-commerce at the continental level, including common rules for consumer protection⁶¹; developing a regulatory framework for cross-border mobile money transfer⁶²; supporting programmes promoting e-Money adoption, especially in rural & peri-urban areas⁶³; including elements on e-commerce in the digital skills training programmes targeted at Africa's Micro, Small, and Medium Enterprises (MSMEs)⁶⁴; and developing training/outreach campaigns to increase awareness and trust on e-commerce and digital trade⁶⁵.

The Digital Transformation Strategy for Africa is therefore key in enhancing digital trade in Africa. African countries need leverage the AfCFTA to promote the Digital Transformation Strategy for Africa by harnessing digital technologies in order to boost intra-African trade and investment, generate sustainable and inclusive economic growth, and encourage the safe and responsible adoption of emerging and advanced technologies⁶⁶. The adoption

⁵⁶ Ibid

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ African Union., 'The Digital Transformation Strategy for Africa (2020-2030)' Op Cit

⁶¹ Ibid

⁶² Ibid

⁶³ Ibid

⁶⁴ Ibid

⁶⁵ Ibid

⁶⁶ Gathii. J., 'The AfCFTA's Digital Trade Rules are Not Fit for Africa' Available at <https://www.afronomicslaw.org/category/analysis/afctas-digital-trade-rules-are-not-fit-africa> (Accessed on 02/05/2024)

Examining the African Continental Free Trade Area Protocol on Digital Trade: Challenges and Promises

of the *AfCFTA Protocol on Digital Trade* is a key milestone towards realizing this goal⁶⁷.

3.0 The AfCFTA Protocol on Digital Trade: Challenges and Promises

The *AfCFTA Protocol on Digital Trade*⁶⁸ seeks to support the attainment of the objectives of the AfCFTA by establishing harmonized rules and common principles and standards that enable and support digital trade for sustainable and inclusive socio-economic development and the digital transformation of Africa⁶⁹. The Protocol defines digital trade as digitally enabled transactions of trade in goods and services that can either be digitally or physically delivered, and that involve natural and juristic persons⁷⁰. The specific objectives of the Protocol include promoting and facilitating Intra-African digital trade by eliminating barriers to digital trade among member states⁷¹; establishing predictable and transparent harmonized rules, and common principles and standards for digital trade⁷²; creating a transparent, predictable, secure, and trustworthy digital trade ecosystem for businesses and consumers⁷³; encouraging trusted, safe, ethical, and responsible adoption and regulation of the use of emerging and advanced technologies to support and promote digital trade⁷⁴; promoting digital skills development, innovation, and entrepreneurship⁷⁵; and providing a common legal framework for digital trade among state parties⁷⁶. The Protocol applies to measures adopted or maintained by a state party affecting digital trade but does not apply to

⁶⁷ Ibid

⁶⁸ Protocol to the Agreement Establishing the African Continental Free Trade Area on Digital Trade., Available at https://www.bilaterals.org/IMG/pdf/afcfta_digital_trade_protocol_-_9_february_2024_draft.pdf (Accessed on 03/05/2024)

⁶⁹ Ibid, article 2

⁷⁰ Ibid, article 1

⁷¹ Ibid, article 2 (2)

⁷² Ibid

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Ibid

*Examining the African Continental Free Trade Area Protocol on Digital Trade:
Challenges and Promises*

government procurement⁷⁷. It also allows states to regulate digital trade within their territories⁷⁸.

In order to foster digital trade in Africa, the Protocol contains provisions on market access and treatment of digital products⁷⁹. It precludes the imposition of customs duties on digital products transmitted electronically originating from other state parties⁸⁰. In addition, the Protocol sets out the principle of non-discrimination of digital products and forbids states from according less favourable treatment to digital products originating from other states compared to those originating within their territory⁸¹.

The Protocol requires African countries to facilitate digital trade through measures such as allowing electronic trust services including electronic signatures, electronic seals, and electronic time stamps⁸²; enhancing electronic authentication⁸³; accepting paperless trading⁸⁴; enhancing the regulatory environments for logistics and last mile delivery⁸⁵; embracing electronic contracts; accepting electronic invoicing as the equivalent of paper versions of such invoices⁸⁶; adopting and maintaining digital identity regimes for both natural and juridical persons; and promoting digital payment and settlement systems⁸⁷. The Protocol further requires states to promote the continuous development of digital infrastructure, and provide an enabling regulatory environment to enhance universal access to support participation in digital

⁷⁷ Ibid, article 3

⁷⁸ Ibid, article 4

⁷⁹ Ibid, Part II

⁸⁰ Ibid, article 6 (1)

⁸¹ Protocol to the Agreement Establishing the African Continental Free Trade Area on Digital Trade.,, article 7 (1)

⁸² Ibid, Part III

⁸³ Ibid

⁸⁴ Ibid

⁸⁵ Ibid

⁸⁶ Ibid

⁸⁷ Ibid

*Examining the African Continental Free Trade Area Protocol on Digital Trade:
Challenges and Promises*

trade⁸⁸. It requires states to ensure consumers in their territories have access to the internet⁸⁹.

In respect of data governance, the Protocol urges states to allow the cross-border transfer of data including personal data by electronic means provided that the underlying activity is for the conduct of digital trade by a person of a state party⁹⁰. It also requires state parties to enhance protection of personal data⁹¹. Further, it urges states to promote and support data innovation⁹². Cybersecurity is also a major theme under the Protocol. The AfCFTA Protocol on Digital Trade requires to adopt and maintain measures to ensure cybersecurity and combat cybercrimes within their jurisdictions⁹³.

The Protocol also seeks to enhance digital trade inclusion and require states to promote and facilitate the inclusion and participation of women, youth, indigenous peoples, rural and local communities, persons with disabilities, and other underrepresented groups in digital trade⁹⁴. It also requires states to ensure the participation of MSMEs in digital trade⁹⁵. The Protocol recognizes that digital innovation and entrepreneurship, and digital skills development are key in realizing digital inclusion in Africa⁹⁶. It also requires states to enhance financial technology⁹⁷. In order to achieve its objectives, the Protocol requires states to embrace technical assistance, capacity building, and collaboration in all areas related to digital trade⁹⁸.

The *AfCFTA Protocol on Digital Trade* has the potential to advance digitally-driven industrialisation in Africa by fostering a conducive environment for

⁸⁸ Ibid, article 18

⁸⁹ Ibid, article 26

⁹⁰ Ibid, article 20

⁹¹ Ibid, article 21

⁹² Ibid, article 23

⁹³ Ibid, article 25

⁹⁴ Ibid, article 30

⁹⁵ Ibid, article 31

⁹⁶ Ibid, article 32 & 33

⁹⁷ Ibid, article 35

⁹⁸ Ibid, part X

Examining the African Continental Free Trade Area Protocol on Digital Trade: Challenges and Promises

digital commerce and innovation⁹⁹. It establishes harmonised digital trade rules and principles which can lower transaction costs, enhance access to regional markets, and stimulate digital entrepreneurship¹⁰⁰. The Protocol can support the movement of capital and digital services and products in the continent therefore boosting Intra-African trade¹⁰¹. The harmonized rules and common principles and standards envisaged under the Protocol can spur an acceleration of technology driven innovation and commerce in Africa¹⁰². The Protocol covers important areas in digital trade including data governance, data protection, cross-border data transfers, online consumer protection, cybersecurity, and emerging technologies such as Artificial Intelligence¹⁰³. It has been pointed out that for multinational technology companies that operate across Africa, the Protocol is particularly important given the historic and current challenges relating to limited regulatory and commercial interoperability between jurisdictions, the high cost of compliance and transaction costs, and limited access to regional markets¹⁰⁴.

The AfCFTA Digital Trade Protocol comes at an opportune time and presents significant opportunities for African countries to build an inclusive, sustainable, and beneficial digital trade ecosystem¹⁰⁵. It can enable African countries to harness the transformative power of technology for economic

⁹⁹ Stuart. J., 'The Digital Trade Protocol of the AfCFTA and Digitally-Driven Development in Africa' Available at <https://www.tralac.org/blog/article/16306-the-digital-trade-protocol-of-the-afcfta-and-digitally-driven-development-in-africa.html> (Accessed on 03/05/2024)

¹⁰⁰ Ibid

¹⁰¹ Acquah. I., 'The Digital Trade Protocol: Challenges & Opportunities'

¹⁰² Ibid

¹⁰³ Protocol to the Agreement Establishing the African Continental Free Trade Area on Digital Trade., Op Cit

¹⁰⁴ Mkhize. M et al., 'Africa Technology Regulatory Update: Adoption of the AfCFTA Protocol on Digital Trade' Available at <https://www.covafrika.com/2024/02/africa-technology-regulatory-update-adoption-of-the-afcfta-protocol-on-digital-trade/> (Accessed on 03/05/2024)

¹⁰⁵ State Department for Industry., 'Brief on Kenya as the AfCFTA Digital Trade Champion' Available at https://www.industrialization.go.ke/sites/default/files/2024-02/BRIEF%20ON%20KENYA%20AS%20THE%20AfCFTA%20DIGITAL%20TRADE%20CHAMPION_0.pdf (Accessed on 03/05/2024)

Examining the African Continental Free Trade Area Protocol on Digital Trade: Challenges and Promises

development and regional and international competitiveness¹⁰⁶. By creating a harmonised and robust framework, the Protocol reduces barriers to trade, promoting a more efficient and interconnected continental marketplace¹⁰⁷. This in turn promotes digital inclusion, generates sustainable and inclusive economic growth, stimulates economic activity, encourages innovation, supports cross-border trade, generates sustainable and inclusive economic growth, attracts foreign investment, stimulates job creation, reduces inequality, and subsequently eradicates poverty¹⁰⁸. The Protocol is therefore vital in spurring digital trade in Africa.

However, there are some key concerns arising out of the Protocol. It has been pointed out that some of the key elements of the Protocol such as commitments to allow unfettered movement of data could result in governments giving up their regulatory authority to protect their citizens in the digital age¹⁰⁹. In addition, rules on data transfers and storage under the Protocol could result in technology firms having almost absolute control of data, including personal and sensitive information therefore raising privacy concerns¹¹⁰. The cross-border data transfers rules envisaged under the Protocol also give broad rights to companies, regardless of their true national origin in respect of free movement of data, a situation that could be exploited to transfer personal data from Africa to other regions¹¹¹. Further, it has been noted that digital infrastructure is still inadequate in many African countries, a situation that could hinder effective implementation of the AfCFTA Protocol on Digital Trade¹¹². It is necessary to address these challenges in order to ensure successful implementation of the AfCFTA Protocol on Digital Trade.

4.0 Conclusion

The AfCFTA Protocol on Digital Trade has the Potential to boost Intra-African trade by supporting the movement of capital and digital services and products

¹⁰⁶ Ibid

¹⁰⁷ Ibid

¹⁰⁸ Ibid

¹⁰⁹ Gathii, J., 'The AfCFTA's Digital Trade Rules are Not Fit for Africa' Op Cit

¹¹⁰ Ibid

¹¹¹ Ibid

¹¹² Acquah, I., 'The Digital Trade Protocol: Challenges & Opportunities' Op Cit

*Examining the African Continental Free Trade Area Protocol on Digital Trade:
Challenges and Promises*

in the continent¹¹³. Adoption of the Protocol comes at a critical time in light of Africa's digital transformation as envisaged under the *Digital Transformation Strategy for Africa*¹¹⁴. The Protocol presents significant opportunities for African countries to build an inclusive, sustainable, and beneficial digital trade ecosystem¹¹⁵. However, several challenges are likely to emerge in the implementation of the Protocol in areas such as data transfers, privacy, and conflicting national laws¹¹⁶. It is necessary to address these challenges in order to ensure effective implementation of the AfCFTA Protocol on Digital Trade. In order to realize the ideal of this Protocol, it is imperative to harmonize domestic laws in key areas such as data privacy and protection, competition law and Intellectual Property as well as building local skills to reduce the growing digital gap between the Global North and the Global South¹¹⁷. Adoption of the AfCFTA Protocol on Digital Trade is a welcome idea. It is necessary to actualize this Protocol in order to strengthen digital trade in Africa and accelerate the continent's digital transformation.

¹¹³ Ibid

¹¹⁴ African Union., 'The Digital Transformation Strategy for Africa (2020-2030)' Op Cit

¹¹⁵ State Department for Industry., 'Brief on Kenya as the AfCFTA Digital Trade Champion' Op Cit

¹¹⁶ Gathii. J., 'The AfCFTA's Digital Trade Rules are Not Fit for Africa' Op Cit

¹¹⁷ Ibid

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

Abstract

This paper explores the need to infuse Environmental, Social, and Governance (ESG) tenets into arbitration and Alternative Dispute Resolution (ADR). It argues that ESG factors are pertinent in arbitration and ADR. The paper critically discusses the link between ESG and ADR mechanisms including arbitration. It also examines some of the ESG concerns in arbitration and ADR. The paper further offers ideas towards infusing ESG tenets into arbitration and ADR for sustainability and effective conflict management.

1.0 Introduction

Environmental, Social, and Governance (ESG) is a concept that entails three central tenets that are used to measure the sustainability and ethical impact businesses and investments¹. ESG has also been defined as a framework that helps stakeholders understand how an organization is managing risks and opportunities related to environmental, social, and governance criteria (sometimes called ESG factors)². The idea of ESG takes the holistic view that sustainability extends beyond just environmental issues; it also seeks to incorporate social and governance criteria in the sustainability agenda³. ESG seeks to achieve sustainable, responsible and ethical investment by incorporating environmental, social and governance factors in corporate decision making⁴. ESG is usually a standard and strategy used by investors to

¹ Kiehne. D.O., 'Environmental, Social and Corporate Governance (ESG) -Also an Innovation Driver?' Available at https://www.researchgate.net/publication/334398123_Environmental_social_and_corporate_governance_ESG_-_also_an_innovation_driver (Accessed on 26/04/2024)

² Peterdy. K., & Miller. N., 'ESG (Environmental, Social, & Governance)' Available at <https://corporatefinanceinstitute.com/resources/esg/esg-environmental-social-governance/> (Accessed on 26/04/2024)

³ Ibid

⁴ Stuart. L.G et al., 'Firms and social responsibility: A review of ESG and CSR research in corporate finance.' *Journal of Corporate Finance* 66 (2021): 101889

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

evaluate corporate behaviour and to determine the future financial performance of businesses based on how they handle sustainability issues⁵.

ESG therefore seeks to incorporate environmental, social, and governance tenets into investment and business decision-making processes in order to foster sustainable, responsible, and ethical investments and business practices⁶. This concept urges businesses to embrace environmental factors including environmental sustainability and climate change concerns such as climate resilience and low carbon development⁷; social tenets such as improving social welfare and fostering inclusive participation with stakeholders⁸; and governance factors including fostering good governance practices internally and externally in order to realize sustainability⁹. It has also been noted that the main drivers of ESG are concerns regarding the environment such as climate change, energy conservation, waste management and sustainability in general¹⁰; social concerns like diversity, human rights, consumer protection or animal welfare¹¹; and corporate governance concerns including management structure, employment relations, compensation of staff and executive as well as questions of responsible investments¹².

The United Nations Development Programme (UNDP) notes that 'E' tenet in ESG focuses on businesses' impact on the environment through their consumption of energy and raw materials¹³. These standards cover many

⁵ Li. T.T et al., 'ESG: Research Progress and Future Prospects.' *Sustainability*, No. 13, 2021.

⁶ Stuart. L.G et al., 'Firms and social responsibility: A review of ESG and CSR research in corporate finance.' Op Cit

⁷ African Development Bank Group., 'Environmental, Social and Governance (ESG).' Available at <https://www.afdb.org/en/topics-and-sectors/topics/environmental-social-and-governance-esg> (Accessed on 26/04/2024)

⁸ Ibid

⁹ Ibid

¹⁰ Kiehne. D.O., 'Environmental, Social and Corporate Governance (ESG) -Also an Innovation Driver?' Op Cit

¹¹ Ibid

¹² Ibid

¹³ United Nations Environment Programme., 'Building a Sustainable Future: ESG Business Handbook' Available at <https://www.undp.org/sites/g/files/zskgke326/files/2023->

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

factors, including how businesses contribute to climate change, pollution, waste, and natural resource depletion¹⁴. In addition, the 'S' tenet focuses on the impact businesses make on society¹⁵. These factors are related to labour and human rights, inclusion, equality, and community development¹⁶. Further, the 'G' tenet concerns practices and procedures adopted and implemented within a business to ensure it follows the laws and standards set out by its relevant stakeholders¹⁷. These standards are measured by actions business takes to ensure fair and transparent management, information disclosure, prevention of corruption, enabling diversity, transparent decision-making processes, cybersecurity, and privacy among others¹⁸.

ESG tenets evaluate businesses' sustainability and impact on environmental, social and governance issues far beyond their financial performance¹⁹. Businesses are therefore embracing the idea of ESG to measure their impact on the environment, society, and the economy²⁰. It has been noted that some of the ESG standards are imposed by laws and regulations of the country where the business operates, and others result from stakeholders' expectations and investors' pressure due to growing concerns regarding human rights and environmental issues²¹. ESG tenets apply not only to the investment community but also to customers, suppliers, and employees, all of whom are increasingly interested in how sustainable an organization's operations are²².

[08/building_a_sustainable_future_esg_business_handbook.pdf](#) (Accessed on 26/04/2024)

¹⁴ Ibid

¹⁵ Ibid

¹⁶ Ibid

¹⁷ Ibid

¹⁸ Ibid

¹⁹ Ibid

²⁰ ESG., 'The Link Between ESG and Community Engagement: Building Stronger Relationships.' Available at <https://vakilsearch.com/blog/the-link-between-esg-and-community-engagement/> (Accessed on 26/04/2024)

²¹ United Nations Environment Programme., 'Building a Sustainable Future: ESG Business Handbook' Op Cit

²² Peterdy. K., & Miller. N., 'ESG (Environmental, Social, & Governance)' Op Cit

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

The concept of ESG is pertinent in the sustainability agenda and achievement of the United Nation's 2030 Agenda for Sustainable Development²³. The rise of ESG has been necessitated by global sustainability problems including climate change, corporate corruption and financial inequality²⁴. ESG includes key elements around environmental and social impact, as well as how governance structures can be amended to maximize stakeholder well-being towards sustainability²⁵. Realizing ESG tenets is therefore necessary in order to achieve sustainability.

This paper explores the need to infuse ESG tenets into arbitration and Alternative Dispute Resolution (ADR). It argues that ESG factors are pertinent in arbitration and ADR. The paper critically discusses the link between ESG and ADR mechanisms including arbitration. It also examines some of the ESG concerns in arbitration and ADR. The paper further offers ideas towards infusing ESG tenets into arbitration and ADR for sustainability and effective conflict management.

2.0 Overview of Arbitration and ADR

ADR is an all-encompassing term that entails multiple non-judicial methods of managing conflicts²⁶. It refers to a set of processes that are used to manage conflicts without resort to courts²⁷. ADR mechanisms may be linked to but

²³ Barbosa. A., et al., 'Integration of Environmental, Social, and Governance (ESG) Criteria: Their Impacts on Corporate Sustainability Performance.' *Humanities & Social Sciences Communications.*, 2023

²⁴ CMS., 'Putting the 'S' in 'ESG'- a Corporate Guide.' Available at <https://cms.law/en/int/publication/social-aspect-of-esg-lexicon-of-most-important-terms-and-phrases> (Accessed on 26/04/2024)

²⁵ Peterdy. K., & Miller. N., 'ESG (Environmental, Social, & Governance)' Op Cit

²⁶ Block. M. J., 'The Benefits of Alternate Dispute Resolution for International Commercial and Intellectual Property Disputes.' *Rutgers Law Record.*, Volume 44, 2016-2017

²⁷ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Glenwood Publishers Limited, 2015

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

function outside formal court litigation processes²⁸. The United Nations notes that ADR (sometimes also referred to as “Appropriate Dispute Resolution”) is a general term, used to define a set of approaches and techniques aimed at resolving disputes in a nonconfrontational way²⁹. ADR techniques include negotiation, mediation, arbitration, adjudication, neutral evaluation, enquiry, expert determination, Traditional Dispute Resolution Mechanisms (TDRMs) and conciliation among others³⁰.

The concept of ADR is embraced at the global level under the *Charter of the United Nations*³¹. The Charter provides that parties to a dispute shall first of all seek a solution by *negotiation, enquiry, mediation, conciliation, arbitration*, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice³²(Emphasis added). This idea has also been embraced in Kenya under the Constitution which mandates courts and tribunals to promote ADR mechanisms including reconciliation, mediation, arbitration and TDRMs³³.

It has been noted that ADR processes are ideal in realizing access to justice³⁴. These mechanisms are characterized by key attributes such as informality, privacy, confidentiality, party autonomy and the ability to foster expeditious and cost effective management of disputes³⁵. ADR techniques can therefore cure challenges in formal justice systems including high court filing fees, bureaucracy, complex legal procedures, illiteracy, distance from formal courts,

²⁸ Uwazie. E., ‘Alternative Dispute Resolution in Africa: Preventing Conflict and Enhancing Stability.’ *Africa Security Brief*, No. 16 of 2011

²⁹ United Nations., ‘Alternative Dispute Resolution Approaches and their Application in Water Management: A Focus on Negotiation, Mediation and Consensus Building’ Available at https://www.un.org/waterforlifedecade/water_cooperation_2013/pdf/adr_background_paper.pdf (Accessed on 26/04/2024)

³⁰ Muigua. K., ‘Alternative Dispute Resolution and Access to Justice in Kenya.’ Op Cit

³¹ United Nations, Charter of the United Nations, 24 October 1945, 1 UNTS XVI

³² Ibid, article 33 (1)

³³ Constitution of Kenya., 2010., article 159 (2) (c), Government Printer, Nairobi

³⁴ Muigua. K., ‘Alternative Dispute Resolution and Access to Justice in Kenya.’ Op Cit

³⁵ Ibid

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

backlog of cases in courts and lack of legal knowhow and ensure access to justice³⁶.

Arbitration as an ADR process refers to a private and consensual process where parties in dispute agree to present their grievances to a third party for resolution³⁷. It has also been defined as a dispute management mechanism where parties through an agreement submit their dispute to one or more neutral third parties who make a binding decision on the dispute³⁸. Arbitration has a number of key attributes that makes it ideal in managing disputes including privacy, confidentiality, party autonomy, flexibility, and finality³⁹. Arbitration also has a transnational applicability which means that it applies across different jurisdictions and therefore guarantees neutrality in the determination of disputes by addressing differences that may arise as a result of multiple legal systems⁴⁰. It also guarantees enforcement of decisions through the *New York Convention*⁴¹ which provides a harmonized legal framework for the recognition and enforcement of foreign awards in arbitration.

3.0 The Place of ESG in Arbitration and ADR

Despite the growing importance of ESG, some key concerns need to be addressed. One such challenge relates to the management of ESG disputes that may arise from time to time among stakeholders such as shareholders, investors, regulators, and communities⁴². The growth of ESG requirements has

³⁶ Ojwang. J.B , "The Role of the Judiciary in Promoting Environmental Compliance and Sustainable Development," 1 *Kenya Law Review Journal* 19 (2007), pp. 19-29: 29

³⁷ Muigua. K., 'Settling Disputes through Arbitration in Kenya.' Glenwood Publishers, 4th Edition, 2022

³⁸ World Intellectual Property Organization., 'What is Arbitration' Available at <https://www.wipo.int/amc/en/arbitration/what-is-arb.html> (Accessed on 26/04/2024)

³⁹ Muigua. K., 'Settling Disputes through Arbitration in Kenya.' Op Cit

⁴⁰ Moses, 'The Principles and Practice of International Commercial Arbitration' 2nd Edition, 2017, Cambridge University Press

⁴¹ United Nations Commission on International Trade Law., 'Convention on the Recognition and Enforcement of Foreign Arbitral Awards.' (New York, 1958)

⁴² Rathi. S., 'Cracking The ESG Conundrum: Is Arbitration The Key To Resolution Of ESG Disputes?' Available at <https://www.mondaq.com/india/arbitration--dispute->

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

seen businesses being increasingly required to embrace ESG tenets in their corporate practices⁴³. ESG factors have become a critical aspect of business operations and investment decisions in the corporate world around the globe⁴⁴. Corporations are under immense pressure to ensure that their operations remain sustainable, socially responsible, and governed ethically⁴⁵. As a result, ESG clauses are being adopted in commercial and investment contracts⁴⁶. In case of violation of such clauses, ESG related disputes are bound to occur⁴⁷. It has been asserted that the increasing adoption of ESG related practices into pre-existing environmental, social and governance models adopted by corporations is going to be disruptive⁴⁸. The inclusion of ESG clauses in commercial contracts not only points to the importance of ESG concerns to companies but it also serves as potential source of disputes where such considerations are not complied with⁴⁹. ESG issues are therefore not only

[resolution/1375770/cracking-the-esg-conundrum-is-arbitration-the-key-to-resolution-of-esg-disputes#:~:text=ESG%20issues%20usually%20involve%20multiple,arbitral%20awards%20across%20multiple%20jurisdictions](https://www.kmco.co.ke/wp-content/uploads/2022/09/The-Place-of-Environmental-Social-and-Governance-ESG-in-Arbitration-2.pdf) (Accessed on 26/04/2024)

⁴³ Muigua. K., 'The Place of Environmental, Social and Governance (ESG) in Arbitration' Available at <https://www.kmco.co.ke/wp-content/uploads/2022/09/The-Place-of-Environmental-Social-and-Governance-ESG-in-Arbitration-2.pdf> (Accessed on 26/04/2024)

⁴⁴ Rathi. S., 'Cracking The ESG Conundrum: Is Arbitration The Key To Resolution Of ESG Disputes?' Op Cit

⁴⁵ Ibid

⁴⁶ International Arbitration in 2022., 'The Rising Significance of ESG and the Role of International Arbitration' available at <https://www.freshfields.com/en-gb/our-thinking/campaigns/internationalarbitration-in-2022/the-rising-significance-of-esg-and-the-role-of-international-arbitration/> (Accessed on 26/04/2024)

⁴⁷ Muigua. K., 'The Place of Environmental, Social and Governance (ESG) in Arbitration' Op Cit

⁴⁸ The ALP Review., 'The Importance of ESG and its effect on International Arbitration' available at <https://www.alp.company/sites/default/files/ALP%20Review%20-%20The%20Importance%20of%20ESG%20and%20its%20effect%20on%20International%20Arbitration.pdf> (Accessed on 26/04/2024)

⁴⁹ Ibid

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

reshaping sustainability and corporate behavior across the globe but can also be a potential battleground in international disputes⁵⁰.

ESG disputes encompass private law claims where claimants seek to recover damages against companies⁵¹. In such instances, the damages sought may be for environmental damage, violation of human rights, personal injury or damage to property, or secondary claims arising from a company misrepresenting its sustainability credentials to customers or investors⁵². In addition, it has been noted that ESG tenets also inspire contractual disputes⁵³. As ESG becomes ever more important, ESG standards are being incorporated into supply contracts, manufacturing contracts and joint venture agreements, resulting in increased inter-company disputes in relation to the application of such standards⁵⁴. Due to the breadth of subject matter covered by ESG, the range of disputes that can arise is expansive⁵⁵. ESG disputes can encompass conduct arising out of, for instance, a corporate governance dispute, to a labour matter involving the breach of a worker's human rights, to a mass tort claim arising out of an environmental damage among others⁵⁶.

Effective management of ESG disputes is key in fostering sustainability and preserving the reputation and profitability of businesses⁵⁷. It has been correctly noted that litigation may not be well suited for addressing the unique issues that may arise in ESG disputes since they often involve multiple legal,

⁵⁰ Hamilton. J & Coulet-Diaz. M., 'Arbitration & the ESG Era' available at <https://www.whitecase.com/news/media/arbitration-esg-era> (Accessed on 26/04/2024)

⁵¹ Ashurst., 'Global Trends in ESG Disputes' Available at <https://www.ashurst.com/en/insights/global-trends-in-esg-disputes/> (Accessed on 26/04/2024)

⁵² Ibid

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ International Bar Association., 'Report on Use of ESG Contractual Obligations and Related Disputes' Available at <https://www.ibanet.org/document?id=report-on-use-of-esg-contractual-obligations> (Accessed on 26/04/2024)

⁵⁶ Ibid

⁵⁷ Rathi. S., 'Cracking The ESG Conundrum: Is Arbitration The Key To Resolution Of ESG Disputes?' Op Cit

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

social, and ethical issues⁵⁸. In addition, it has been pointed out that since ESG disputes often involve multiple parties and stakeholders with different perspectives, it may be difficult to arrive at a satisfactory resolution through litigation⁵⁹. Arbitration and ADR therefore have a key role to play in managing ESG disputes.

ADR mechanisms such as mediation and arbitration are ideal in managing ESG disputes by fostering privacy, confidentiality, cost effective and expeditious management of disputes while also allowing parties to select experts to hear and determine contentious ESG matters⁶⁰. It has been observed that businesses would normally prefer to have their disputes managed in a private manner in order to prevent ruining their image in public and also in an expeditious and cost-effective manner in order to protect business interests⁶¹. ADR techniques such as arbitration and mediation allow businesses to attain these benefits by ensuring privacy, confidentiality, cost effectiveness and expeditiousness in management of disputes and further promoting the enforceability of decisions⁶².

Arbitration is a viable mechanism for managing ESG disputes. Some of the key advantages of utilizing arbitration in managing ESG disputes is that arbitral awards are likely to be recognized and enforced (almost) globally pursuant to the New York Convention⁶³; injunctions can (in principle) be obtained quickly in cases of irreversible environmental damage or gross human rights violations⁶⁴. Arbitration also ensures neutrality of forum and flexibility as to

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Thailand Arbitration Center., 'Alternative Dispute Resolution: Significance of ESG in Arbitration.' Available at <https://thac.or.th/alternative-dispute-resolution-significance-esg-arbitration/> (Accessed on 26/04/2024)

⁶¹ Ibid

⁶² Moses, 'The Principles and Practice of International Commercial Arbitration' Op Cit

⁶³ Akeb. S., 'Here We Go: ESG-Disputes in International Arbitration' Available at <https://www.taylorwessing.com/en/insights-and-events/insights/2023/07/here-we-go-esg-disputes-in-international-arbitration> (Accessed on 26/04/2024)

⁶⁴ Ibid

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

where proceedings are held in addition to flexibility of procedure and availability of specialized procedural rules on ESG disputes⁶⁵.

Arbitration is also viable in managing ESG disputes since parties have the ability to appoint independent arbitrators with specific expertise in ESG issues, such as climate change and human rights⁶⁶. Arbitration allows parties to select experts to hear and determine contentious and technical ESG matters⁶⁷. ESG disputes may involve complex scientific and technical issues⁶⁸. For example, in climate change disputes, there may be need to determine whether the carbon emission of a company is in adequate compliance with the international climate targets⁶⁹. The principle of party autonomy allows parties to select arbitrators with capacity and knowledge in such matters therefore ensuring effective and efficient management of ESG disputes⁷⁰.

Arbitration is also suitable in managing ESG disputes based on international trade and investment treaties⁷¹. It has been noted that international trade and investment treaties are increasingly incorporating ESG protections with the purpose of ensuring that contracting parties promote and effectively achieve their ESG objectives⁷². Consequently host states are more likely to bring claims or counterclaims against foreign investors for failure to meet their ESG-related obligations or in situations where investor protection clauses frustrate a host state's ESG objectives⁷³. Investors and states may be subject to arbitration

⁶⁵ Gaffney, J., 'In Praise and Criticism of Arbitration as a Means of Resolving ESG Disputes' Available at <https://arbitrationblog.kluwerarbitration.com/2023/04/18/in-praise-and-criticism-of-arbitration-as-a-means-of-resolving-esg-disputes/> (Accessed on 26/04/2024)

⁶⁶ Akeb, S., 'Here We Go: ESG-Disputes in International Arbitration' Op Cit

⁶⁷ Thailand Arbitration Center., 'Alternative Dispute Resolution: Significance of ESG in Arbitration.' Op Cit

⁶⁸ Rathi, S., 'Cracking The ESG Conundrum: Is Arbitration The Key To Resolution Of ESG Disputes?' Op Cit

⁶⁹ Ibid

⁷⁰ Ibid

⁷¹ Akeb, S., 'Here We Go: ESG-Disputes in International Arbitration' Available at <https://www.taylorwessing.com/en/insights-and-events/insights/2023/07/here-we-go-esg-disputes-in-international-arbitration> (Accessed on 26/04/2024)

⁷² Ibid

⁷³ Ibid

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

proceedings pursuant to existing investment treaties or pursuant to ESG clauses in investment treaties⁷⁴. The activities of investors such as Multinational Corporations especially those involved in the exploration of natural resources in the global south have resulted in environmental concerns such as environmental degradation, extinction of biodiversity, contamination and destruction of soil and air pollution affecting the socio-economic lives of indigenous populations⁷⁵. They have also been accused of flouting human rights through bad labour practices, displacement of people and land injustices against the neighbouring communities while undertaking investment activities in developing countries⁷⁶. As a result, there has been rise in investment treaty arbitration across the globe including Africa where MNCs are contractually bound through investment treaties to comply with ESG standards such as environmental governance and respect for human rights and are further subjected to ADR mechanisms especially arbitration when they violate ESG requirements stipulated in investment treaties⁷⁷.

International commercial arbitration is also crucial in managing cross-border ESG disputes⁷⁸. It has been noted that cross-border ESG disputes may be managed via international commercial arbitration if the underlying business agreements contain arbitration clauses⁷⁹. The advantages of international commercial arbitration over litigation such as providing faster, more efficient

⁷⁴ International Bar Association., 'Report on Use of ESG Contractual Obligations and Related Disputes' Op Cit

⁷⁵ Ajibade, L.T & Awomuti, A.A. 'Petroleum Exploitation or Human Exploitation? An Overview of Niger Delta Oil Producing Communities in Nigeria' *African Research Review*, Vol. 3 (1), 2009. Pp. 111-124

⁷⁶ Ibid

⁷⁷ Dagbanja. D., 'The Environment, Human Rights, and Investment Treaties in Africa: A Constitutional Perspective.' *Handbook on International Investment Law and Policy*, 2020, P 1-30

⁷⁸ Muigua. K., 'Linking Alternative Dispute Resolution (ADR) and Environmental, Social and Governance (ESG) Tenets for Sustainable Development' Available at <https://kmco.co.ke/wp-content/uploads/2023/07/Linking-Alternative-Dispute-Resolution-ADR-and-Environmental-Social-and-Governance-ESG-Tenets-for-Sustainable-Development.pdf> (Accessed on 26/04/2024)

⁷⁹ ESG-Related Arbitrations: A New Kid on the Block., Available at <https://www.schoenherr.eu/content/esg-related-arbitrations-a-new-kid-on-the-block> (Accessed on 26/04/2024)

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

and less expensive solutions are especially important in ESG disputes⁸⁰. International commercial arbitration also ensures confidentiality and allows for the application of interim measures, which are often very important in ESG disputes⁸¹. Further, in international commercial arbitration, parties can also engage their own experts or allow third parties to join the arbitration proceedings, such as environmental or compliance specialists, human rights practitioners among others therefore ensuring the viability of the process⁸².

The use of arbitration in managing ESG disputes can also ensure grant of interim reliefs in instances like irreversible environmental damage or gross violation of human rights⁸³. It has been observed that in arbitration proceedings, injunctive reliefs can be obtained in an expedited manner, and since ESG disputes usually require initial adjudication that cannot be delayed, injunctive reliefs from arbitration proceedings are best suited for such purposes⁸⁴. For example, in the event that a business practice could cause irreparable environmental damage, the parties concerned could take advantage of emergency arbitration procedures before the constitution of the arbitral tribunal⁸⁵.

Arbitration is therefore a key approach for effective management of ESG disputes. Other ADR processes are also vital in the ESG debate. For example, utilizing mediation in managing ESG related disputes can offer a quick, flexible, consensual, and win-win solution based on the mutually accepted interests of the parties therefore enhancing a sustainability-oriented business culture⁸⁶. Mediation has been described as an ESG tool and its use adds ESG value to businesses⁸⁷. It is therefore ideal in managing ESG disputes where

⁸⁰ Ibid

⁸¹ Ibid

⁸² Ibid

⁸³ Mondaq., 'International Arbitration and ESG: A New Trend in Dispute Resolution.' Available at <https://www.mondaq.com/pdf/1273354.pdf> (Accessed on 26/04/2024)

⁸⁴ Ibid

⁸⁵ Ibid

⁸⁶ Gramatidis.B & Emvalomenos. D., 'Sustainability in Dispute Resolution -Mediation as an ESG Practice.' Available at <https://www.bahagram.com/sustainability-in-dispute-resolution-mediation-as-an-esgpractice/> (Accessed on 26/04/2024)

⁸⁷ Ibid

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

there is need to preserve consumer and business relationships⁸⁸. Mediation plays a key role by offering an efficient and collaborative means to resolve disputes quickly and fairly⁸⁹. By opting for mediation, companies can avoid protracted litigation, reduce legal costs, and preserve valuable business relationships⁹⁰. Mediation also promotes transparency and accountability, two essential pillars under the 'G' tenet of ESG⁹¹. By resolving disputes in an open and transparent manner through mediation, companies demonstrate their commitment to good governance and accountability⁹². Utilizing mediation also fosters participation therefore allowing companies to build stronger and long-term relationships with their stakeholders and to promote corporate social responsibility⁹³.

Another key ADR process that is applicable in ESG is negotiation. This technique is an informal process that involves the parties meeting to identify and discuss issues at hand so as to arrive at a mutually acceptable solution without the help of a third party⁹⁴. It can facilitate parties in coming up with creative solutions in various contexts including the workplace⁹⁵. Negotiation can therefore be utilized to achieve ESG requirements at workplaces such as fair labour practices that entail the right to equal pay, workplace safety and

⁸⁸ Ibid

⁸⁹ Maia. A., 'The Importance of Mediation in ESG: Promoting Sustainability in Corporations' Available at [https://mediationblog.kluwarbitration.com/2024/03/08/the-importance-of-mediation-in-esg-promoting-sustainability-in-corporations/#:~:text=The%20Importance%20of%20Mediation%20in%20ESG%3A%20Promoting%20Sustainability%20in%20Corporations,-Andrea%20Maia%20\(Mediar360&text=Environmental%2C%20Social%2C%20and%20Governance%20\(to%20align%20with%20ESG%20principles.](https://mediationblog.kluwarbitration.com/2024/03/08/the-importance-of-mediation-in-esg-promoting-sustainability-in-corporations/#:~:text=The%20Importance%20of%20Mediation%20in%20ESG%3A%20Promoting%20Sustainability%20in%20Corporations,-Andrea%20Maia%20(Mediar360&text=Environmental%2C%20Social%2C%20and%20Governance%20(to%20align%20with%20ESG%20principles.) (Accessed on 26/04/2024)

⁹⁰ Ibid

⁹¹ Ibid

⁹² Ibid

⁹³ Ibid

⁹⁴ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Op Cit

⁹⁵ ESG., 'The Path to Equal Pay is Through Negotiation.' Available at <https://esgnews.bg/en/the-path-to-equal-pay-is-through-negotiation/> (Accessed on 26/04/2024)

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

leave among other entitlements⁹⁶. Fair labour practices are a crucial component of the 'Social' pillar in the ESG debate⁹⁷. Negotiation is a big part of life and can be used effectively at workplaces by employees to negotiate with their employers for favorable working terms and conditions including fair labor practices which are vital in the ESG agenda⁹⁸.

It is therefore evident that arbitration and other ADR processes such as mediation and negotiation have a key role to play in realizing ESG tenets. Due to the increased integration of ESG tenets into commercial contracts, international trade and investment treaties, laws and regulations, it is inevitable that ESG disputes will be majorly be managed through arbitration and other ADR processes⁹⁹. The attractive features of arbitration and ADR makes these processes appropriate means of managing ESG disputes¹⁰⁰. It is therefore necessary to infuse ESG tenets into arbitration and ADR for sustainability. It is also vital to address some of the key concerns in arbitration and ADR that affect the suitability of these processes in managing ESG disputes. These include enforceability challenges, court intervention, difficulties in quantification of damages in ESG disputes, power imbalances, and complexity of evidence¹⁰¹.

4.0 Infusing ESG tenets into Arbitration and ADR

It is necessary to infuse tenets into arbitration and ADR for sustainability and effective conflict management. This goal can be realized by integrating ESG clauses in commercial and investment contracts including clauses concerning respect for human rights, environmental conservation, fair labour practices and climate action¹⁰². This can ensure enforcement and compliance with ESG

⁹⁶ Ibid

⁹⁷ Stuart. L.G et al., 'Firms and social responsibility: A review of ESG and CSR research in corporate finance.' Op Cit

⁹⁸ ESG., 'The Path to Equal Pay is Through Negotiation.' Op Cit

⁹⁹ Akeb. S., 'Here We Go: ESG-Disputes in International Arbitration' Op Cit

¹⁰⁰ Ibid

¹⁰¹ Rathi. S., 'Cracking The ESG Conundrum: Is Arbitration The Key To Resolution Of ESG Disputes?' Op Cit

¹⁰² Millar. L., 'Reviewing and Negotiating Climate Change and other ESG clauses in Commercial Contracts.' Available at <http://in->

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

requirements by businesses¹⁰³. It has been observed that one way in which companies can embrace sustainable business practices is through incorporating ESG factors into commercial contracts¹⁰⁴. Such clauses can be incorporated into many different types of contracts including supply contracts, transactional documents, public sector contracts, employment agreements, shipping agreements, and insurance agreements among others¹⁰⁵. By introducing these commitments into contracts, businesses seek not only to avoid harmful business practices, but also to improve stakeholder relationships, achieve wider reputational benefits and ensure regulatory compliance¹⁰⁶. In addition, businesses may be held accountable for breach of such commitments through arbitration and ADR¹⁰⁷. By integrating ESG clauses into contracts, organizations can demonstrate their commitment to comply with ESG standards while also subject themselves to dispute management processes that may flow from failure to comply with such standards¹⁰⁸. Arbitration and ADR may be utilized in such circumstances.

It is also necessary to uphold human rights in arbitration and ADR¹⁰⁹. Human rights standards are integral in the ESG agenda¹¹⁰. The 'S' tenet of ESG seeks to foster human rights among other social factors¹¹¹. Human rights are pertinent in arbitration since they may apply to arbitral proceedings through procedural safeguards in relation to impartiality and independence of the

houseblog.practicallaw.com/reviewing-and-negotiating-climate-change-and-other-esgclauses-in-commercial-contracts/ (Accessed on 27/04/2024)

¹⁰³ Ibid

¹⁰⁴ International Bar Association., 'Report on Use of ESG Contractual Obligations and Related Disputes' Op Cit

¹⁰⁵ Ibid

¹⁰⁶ Ibid

¹⁰⁷ Ibid

¹⁰⁸ Ibid

¹⁰⁹ Muigua. K., 'Reflections on Human Rights in Arbitration' Available at <https://kmco.co.ke/wp-content/uploads/2023/06/Reflections-on-Human-Rights-in-Arbitration.pdf> (Accessed on 27/04/2024)

¹¹⁰ Ibid

¹¹¹ Kiehne. D.O., 'Environmental, Social and Corporate Governance (ESG) -Also an Innovation Driver?' Op Cit

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

tribunal¹¹²; recourse to arbitration may come into tension with human rights norms guaranteeing the right of access to court, due process and the right to a public hearing¹¹³; and human rights can be considered in commercial arbitration as established trade practices involving the corporate responsibility to respect human rights¹¹⁴. They can also apply in the form of business and human rights arbitration, specifically designed to arbitrate human rights impacts or failures to respect human rights in the global supply chain¹¹⁵. In addition human rights are often invoked in arbitration between states and foreign investors, through allegations of either state or investor infringements of such rights¹¹⁶. Human rights are therefore key in arbitration and ADR. The *United Nations Guiding Principles on Business and Human Rights*¹¹⁷ provide a framework for realizing Environmental, Social and Governance standards by enshrining the corporate responsibility to respect human rights towards attaining the ESG pillars through sound environmental management, protection of human rights and good corporate governance. In addition, the *Hague Rules on Business and Human Rights Arbitration*¹¹⁸ flow from the UN Guiding Principles on Business and Human Rights and provide a framework through which business entities can be compelled to comply with ESG standards including human rights through arbitration. It is therefore necessary to foster human right in arbitration in order to realize ESG factors especially the 'S' tenet that covers human rights.

¹¹² Agius. M., 'Human Rights in International Arbitration' Available at <https://globalarbitrationreview.com/review/the-european-arbitration-review/2023/article/human-rights-in-international-arbitration> (Accessed on 27/04/2024)

¹¹³ Ibid

¹¹⁴ Ibid

¹¹⁵ Ibid

¹¹⁶ Ibid

¹¹⁷ United Nations Guiding Principles on Business and Human Rights., Available at https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinesshr_en.pdf (Accessed on 27/04/2024)

¹¹⁸ The Hague Rules on Business and Human Rights Arbitration., Available at https://www.cilc.nl/cms/wp-content/uploads/2019/12/The-Hague-Rules-on-Business-and-HumanRights-Arbitration_CILC-digital-version.pdf (Accessed on 27/04/2024)

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

In addition, it is vital to foster good corporate governance through ADR processes¹¹⁹. These mechanisms can promote good corporate governance by fostering effective management of governance conflicts¹²⁰. For example, it has been noted that mediation is often more appropriate where interests of the disputing parties need to be addressed and where commercial relationships need to be preserved and even enhanced¹²¹. It can therefore promote good corporate governance by fostering collaboration, cooperation and preserving relationships among various stakeholders in an organization¹²². Arbitration is also applicable in managing governance conflicts between organizations and third parties¹²³. Negotiation is also suitable in managing governance conflicts such as conflicts between board members or board members and shareholders¹²⁴. ADR techniques can therefore foster good corporate governance by providing an avenue for effective management of governance conflicts¹²⁵. It has been noted that good corporate governance cannot thrive in an environment of conflicts¹²⁶. Good corporate governance is one of the fundamental factors in the ESG agenda under the 'G' pillar¹²⁷. Arbitration and ADR are vital in enhancing good corporate governance and it is therefore necessary to embrace these processes.

¹¹⁹ Muigua. K., 'Managing Governance Conflicts Through Alternative Dispute Resolution in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2020/08/Managing-Governance-Conflicts-Through-Alternative-Dispute-Resolution-in-Kenya-3.pdf> (Accessed on 27/04/2024)

¹²⁰ Ibid

¹²¹ King Report on Governance for South Africa, available at https://cdn.ymaws.com/www.iodsa.co.za/resource/resmgr/king_iii/King_Report_on_Governance_fo.pdf (Accessed on 27/04/2024)

¹²² Ibid

¹²³ Muigua. K., 'Managing Governance Conflicts Through Alternative Dispute Resolution in Kenya' Op Cit

¹²⁴ Ibid

¹²⁵ Ibid

¹²⁶ Ibid

¹²⁷ Kiehne. D.O., 'Environmental, Social and Corporate Governance (ESG) -Also an Innovation Driver?' Op Cit

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

Finally, it is imperative for ADR practitioners including arbitrators and mediators to build capacity in relation to ESG tenets¹²⁸. ADR practitioners should enhance their capacity on ESG-related trends, regulations and standards, and ensure that they are proactive in complying with ESG best practices so as to promote appropriate ADR procedures for ESG-related disputes¹²⁹. Institutional capacity can also be strengthened by ADR institutions adopting specialized procedural rules for ESG disputes and further developing training and certification programmes in ESG dispute management¹³⁰. Capacity building is a crucial technique in infusing ESG tenets into arbitration and ADR.

5.0 Conclusion

The increasing adoption of ESG related practices into pre-existing environmental, social and governance models adopted by corporations is resulting in ESG disputes¹³¹. ESG issues are therefore not only reshaping sustainability and corporate behavior across the globe but can also be a potential battleground in international disputes¹³². Effective management of ESG disputes is key in fostering sustainability and preserving the reputation and profitability of businesses¹³³. Arbitration and ADR techniques are ideal in managing ESG disputes. They can enhance privacy, confidentiality, efficiency, and flexibility while also fostering cost effective and expeditious management of ESG disputes¹³⁴. Arbitration also allows parties to select tribunals with expertise in ESG while its transnational applicability is relevant in cross-border ESG disputes¹³⁵. It is therefore necessary to infuse ESG tenets in arbitration and ADR. This ideal can be realized through integrating ESG

¹²⁸ Mondaq., 'International Arbitration and ESG: A New Trend in Dispute Resolution.' Op Cit

¹²⁹ Ibid

¹³⁰ Ibid

¹³¹ The ALP Review., 'The Importance of ESG and its effect on International Arbitration' Op Cit

¹³² Hamilton. J & Coulet-Diaz. M., 'Arbitration & the ESG Era' Op Cit

¹³³ Rathi. S., 'Cracking The ESG Conundrum: Is Arbitration The Key To Resolution Of ESG Disputes?' Op Cit

¹³⁴ Thailand Arbitration Center., 'Alternative Dispute Resolution: Significance of ESG in Arbitration.' Op Cit

¹³⁵ Akeb. S., 'Here We Go: ESG-Disputes in International Arbitration' Op Cit

Infusing Environmental, Social, and Governance Tenets into Arbitration and Alternative Dispute Resolution

clauses in commercial and investment contracts¹³⁶; upholding human rights in arbitration and ADR¹³⁷; fostering good corporate governance through ADR processes¹³⁸; and building capacity on ESG and ADR¹³⁹. Infusing ESG tenets into arbitration and ADR is integral in realizing sustainability and effective conflict management. This ideal should therefore be accelerated.

¹³⁶ Millar. L., 'Reviewing and Negotiating Climate Change and other ESG clauses in Commercial Contracts.' Op Cit

¹³⁷ Muigua. K., 'Reflections on Human Rights in Arbitration' Op Cit

¹³⁸ Muigua. K., 'Managing Governance Conflicts Through Alternative Dispute Resolution in Kenya' Op Cit

¹³⁹ Mondaq., 'International Arbitration and ESG: A New Trend in Dispute Resolution.' Op Cit

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

Abstract

Due to mounting problems facing the attainment of Sustainable Development including the triple planetary crisis of climate change, loss of biodiversity, and pollution, the world needs to embrace other approaches towards Sustainable Development. Utilising science, technology, and innovation can accelerate the achievement of Sustainable Development. One of the key tools under this approach that can foster Sustainable Development is Artificial Intelligence (AI). Harnessing the positive impacts of AI and other frontier technologies holds significant potential for supporting inclusivity, reducing inequalities, and fast-tracking the achievement of the SDGs. This paper critically explores the role of AI in Sustainable Development. It argues that AI can accelerate the realization of the Sustainable Development Agenda and therefore needs to be effectively harnessed. The paper defines AI and examines ways through which it can foster Sustainable Development. It also highlights some of the key concerns in AI and how to address such challenges. The paper proposes measures towards fostering secure and trustworthy AI systems for Sustainable Development.

1.0 Introduction

The idea of Sustainable Development seeks to ensure development that meets the needs of the present without compromising the ability of future generations to meet their own needs¹. This concept has been embraced as the global blueprint for development in order to address society's greatest challenges². These problems include environmental challenges such as climate change, pollution, and loss of biodiversity together with issues of poverty, increasing disparity between societies and the tensions brought by social inequalities³. Sustainable Development envisages creating and maintaining the conditions under which humanity and nature can exist in productive

¹ World Commission on Environment and Development., 'Our Common Future.' Oxford, (Oxford University Press, 1987)

² Giovannoni. E., & Fabietti. G., 'What Is Sustainability? A Review of the Concept and Its Applications.' In: Busco, C., Frigo, M., Riccaboni, A., Quattrone, P. (eds) Integrated Reporting. Springer, Cham. Available at https://doi.org/10.1007/978-3-319-02168-3_2 (Accessed on 09/04/2024)

³ Ibid

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

harmony to support present and future generations⁴. It seeks to achieve this ideal by striking a balance between environmental conservation, economic development and social progress⁵.

The United Nation's *2030 Agenda for Sustainable Development*⁶ sets the global targets towards achieving the ideal of Sustainable Development. The Agenda envisions attainment of the ideal of Sustainable Development through 17 Sustainable Development Goals (SDGs) which seek to strike a balance between social, economic and environmental facets of sustainability⁷. At a continental level, Africa Union's *Agenda 2063*⁸ seeks to foster Sustainable Development in Africa. Agenda 2063 seeks to promote inclusive growth and Sustainable Development in Africa by addressing economic, social, and environmental problems in the continent⁹. At a national level, the *Constitution of Kenya*¹⁰ captures Sustainable Development as one of the national values and principles of governance¹¹. In addition, Kenya's *Vision 2030*¹² is the long-term development blueprint for the country which seeks to achieve Sustainable Development by transforming Kenya into a newly-industrializing, middle

⁴ United States Environmental Protection Agency., 'What is Sustainability.' Available at <https://www.epa.gov/sustainability/learn-about-sustainability> (Accessed on 09/04/2024)

⁵ Fitzmaurice. M., 'The Principle of Sustainable Development in International Development Law.' *International Sustainable Development Law.*, Vol 1

⁶ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 09/04/2024)

⁷ Ibid

⁸ Africa Union., 'Agenda 2063' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 09/04/2024)

⁹ Ibid

¹⁰ Constitution of Kenya., 2010., Government Printer, Nairobi

¹¹ Ibid, article 10 (2) (d)

¹² Government of the Republic of Kenya., 'Kenya Vision 2030' Available at <https://nairobi.aics.gov.it/wp-content/uploads/2019/01/Kenya-Vision-2030.pdf> (Accessed on 09/04/2024)

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

income country providing a high quality of life to all its citizens in a clean and secure environment¹³.

The ideal of Sustainable Development is therefore well captured at the global, continental, and national levels. Various approaches have been embraced towards fostering Sustainable Development. This has largely involved legal, policy, and institutional interventions¹⁴. However, in light of mounting problems facing the attainment of Sustainable Development including the triple planetary crisis of climate change, loss of biodiversity, and pollution, the world needs to adopt other approaches towards Sustainable Development¹⁵.

It has been suggested that science, technology, and innovation can accelerate the achievement of Sustainable Development¹⁶. One of the key tools under this approach that can foster Sustainable Development is Artificial Intelligence (AI)¹⁷. It has been pointed out that AI and other frontier technologies hold significant potential for supporting inclusivity, reducing inequalities, and fast-tracking the achievement of the SDGs¹⁸. Harnessing the positive impacts of AI can therefore enhance Sustainable Development.

This paper critically explores the role of AI in Sustainable Development. It argues that AI can accelerate the realization of the Sustainable Development Agenda and therefore needs to be effectively harnessed. The paper defines AI and examines ways through which it can foster Sustainable Development. It also highlights some of the key concerns in AI and how to address such

¹³ Ibid

¹⁴ Muigua. K., 'Embracing Science, Technology and Innovation for Sustainable Development' Available at <https://kmco.co.ke/wp-content/uploads/2023/08/Embracing-Science-Technology-and-Innovation-for-Sustainable-Development.pdf> (Accessed on 09/04/2024)

¹⁵ Ibid

¹⁶ Ibid

¹⁷ United Nations., 'Artificial Intelligence' Available at <https://unscebe.org/topics/artificial-intelligence#:~:text=Use%20and%20adoption%20of%20artificial,AI%20internally%20in%20its%20work> (Accessed on 09/04/2024)

¹⁸ Ibid

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

challenges. The paper proposes measures towards fostering secure and trustworthy AI systems for Sustainable Development.

2.0 Artificial Intelligence and Sustainable Development: Opportunities and Challenges

AI refers to technology that enables computers and machines to simulate human intelligence and problem-solving capabilities¹⁹. AI has also been defined as simulation of human intelligence processes by machines, especially computer systems²⁰. The concept of AI refers to a machine's ability to perform the cognitive functions associated with human minds, such as perceiving, reasoning, learning, interacting with the environment, problem-solving, and even exercising creativity²¹. It has been noted that AI systems work by ingesting large amounts of labeled training data, analyzing the data for correlations and patterns, and using these patterns to make predictions about future states²². AI systems have become important especially in the business world due to their potential to process large amounts of data at a much faster pace and make predictions more accurately than human capabilities²³. AI systems have the ability to perform tasks much better than humans particularly when it comes to repetitive and detail-oriented tasks²⁴.

The benefits of AI can be effectively utilized to unlock Sustainable Development²⁵. According to the United Nations, AI could open up tremendous opportunities for achieving the SDGs set out in the 2030 Agenda

¹⁹ IBM., 'What is Artificial Intelligence (AI)?' Available at <https://www.ibm.com/topics/artificial-intelligence> (Accessed on 10/04/2024)

²⁰ Laskowski. N., & Tucci. L., 'Artificial Intelligence (AI)' Available at <https://www.techtarget.com/searchenterpriseai/definition/AI-Artificial-Intelligence> (Accessed on 10/04/2024)

²¹ McKinsey & Company., 'What is AI (Artificial Intelligence)?' Available at <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-ai> (Accessed on 10/04/2024)

²² Laskowski. N., & Tucci. L., 'Artificial Intelligence (AI)' Op Cit

²³ Ibid

²⁴ Ibid

²⁵ United Nations., 'Towards an Ethics of Artificial Intelligence' Available at <https://www.un.org/en/chronicle/article/towards-ethics-artificial-intelligence> (Accessed on 10/04/2024)

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

for Sustainable Development²⁶. The United Nations notes that AI applications enable innovative solutions, improved risk assessment, better planning and faster knowledge sharing which are vital processes that can be harnessed for Sustainable Development²⁷.

It has been noted that AI's unparalleled data-harnessing abilities allow it to be an invaluable tool for Sustainable Development²⁸. The intersection of AI and Sustainable Development can redefine humanity's collective response to urgent global challenges²⁹. It has been correctly asserted that with mounting environmental concerns including climate change, pollution, and loss of biodiversity, the call to accelerate our path towards Sustainable Development has become more urgent³⁰. It is therefore necessary to embrace AI not merely as a technological marvel but as a powerful force sparking positive transformation towards Sustainable Development³¹. There are immense opportunities to find solutions to pressing environmental, social, and economic challenges through AI towards Sustainable Development³². If AI is deployed effectively and harnessed responsibly, it promises to drive inclusive and sustainable growth, reducing poverty and inequality, advancing environmental sustainability, improving lives, and empowering individuals in all societies across all stages of development³³.

²⁶ Ibid

²⁷ Ibid

²⁸ World Economic Forum., '4 Ways AI Can Super-Charge Sustainable Development' Available at <https://www.weforum.org/agenda/2023/11/ai-sustainable-development/#:~:text=AI's%20unparalleled%20data%2Dharnessing%20abilities,large%20round%20to%20the%20cause> (Accessed on 10/04/2024)

²⁹ Ibid

³⁰ Ibid

³¹ Ibid

³² Ibid

³³ United States Department of State., 'Artificial Intelligence for Accelerating Progress on the Sustainable Development Goals: Addressing Society's Greatest Challenges' Available at <https://www.state.gov/artificial-intelligence-for-accelerating-progress-on-the-sustainable-development-goals-addressing-societys-greatest-challenges/> (Accessed on 10/04/2024)

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

AI systems are useful in a number of key themes under the Sustainable Development agenda. For example, in the field of environmental governance, AI can help humanity use resources more efficiently and sustainably and reduce and manage waste more effectively³⁴. AI can help improve waste management by analyzing data on waste production, collection, and disposal³⁵. This approach can help cities and municipalities optimize their waste management systems, reduce waste, and increase recycling rates³⁶. AI can also enhance food security due to its potential to aid sustainable agriculture practices by analyzing soil data, predicting crop yields, and identifying pest and disease outbreaks³⁷. This can help farmers optimize their crop production while reducing the use of pesticides and fertilizers³⁸.

Further, AI systems are being utilized to fight biodiversity loss by analysing vast amounts of data, monitoring ecosystems and spotting trends over time³⁹. AI can foster the conservation of biodiversity by investigating data on species populations, habitats, and threats⁴⁰. This can strengthen conservation strategies and improve humanity's understanding of the complex relationships between different species and their environments⁴¹. AI can be harnessed for biodiversity conservation by employing advanced algorithms to

³⁴ Sustainability for All., 'The Alliance Between Artificial Intelligence and Sustainable Development' Available at https://www.activesustainability.com/sustainable-development/the-alliance-between-artificial-intelligence-and-sustainable-development/?_adin=02021864894 (Accessed on 10/04/2024)

³⁵ Genghini. L., '8 Ways Artificial Intelligence Can Contribute to Environmental Conservation' Available at <https://2030.builders/8-ways-ai-can-contribute-to-environmental-conservation/> (Accessed on 10/04/2024)

³⁶ Ibid

³⁷ Ibid

³⁸ Ibid

³⁹ Thompson. T., 'How AI Can Help to Save Endangered Species' Available at <https://www.nature.com/articles/d41586-023-03328-4#:~:text=Scientists%20are%20using%20artificial%20intelligence,and%20spotting%20trends%20over%20time.&text=An%20increasing%20number%20of%20researchers,efforts%20to%20help%20endangered%20species.> (Accessed on 10/04/2024)

⁴⁰ Genghini. L., '8 Ways Artificial Intelligence Can Contribute to Environmental Conservation' Op Cit

⁴¹ Ibid

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

analyze biodiversity data and track changes in ecosystems⁴². This technology therefore has a crucial role in the conservation and protection of critical natural habitats and species⁴³. It can be effectively harnessed to monitor biodiversity and bolster efforts to protect endangered species⁴⁴. It has been asserted that unlike conventional conservation methods that can disrupt ecosystems or require considerable time, labour and resources, AI has the potential to quickly and effectively analyse vast quantities of real-time data⁴⁵.

According to the United Nations Environment Programme, AI can play a role in tackling environmental challenges, from designing more energy-efficient buildings to monitoring deforestation to optimizing renewable energy deployment⁴⁶. One approach that has been embraced towards fostering energy efficiency is the International Methane Emissions Observatory (IMEO) which leverages AI to revolutionize monitoring and mitigating methane emissions⁴⁷. UNEP notes that reducing the energy sector's methane emissions is one of the quickest, most feasible, and cost-effective ways to limit the impacts of climate change and reliable data-driven action will play a big role in achieving these reductions⁴⁸. AI can also aid in the development of renewable energy sources such as wind and solar power by predicting energy output, optimizing performance, and improving maintenance⁴⁹. In addition, AI systems can help create smarter energy grids by analyzing data from sensors, meters, and other devices⁵⁰. This can help utilities better manage the supply and demand of

⁴² Ibid

⁴³ Ibid

⁴⁴ Thompson. T., 'How AI Can Help to Save Endangered Species' Op Cit

⁴⁵ Ibid

⁴⁶ United Nations Environment Programme., 'How Artificial Intelligence is Helping tackle Environmental Challenges' Available at <https://www.unep.org/news-and-stories/story/how-artificial-intelligence-helping-tackle-environmental-challenges> (Accessed on 10/04/2024)

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ Genghini. L., '8 Ways Artificial Intelligence Can Contribute to Environmental Conservation' Op Cit

⁵⁰ Ibid

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

electricity, reduce energy waste, and improve reliability⁵¹. AI is therefore vital in the energy transition.

AI is also a vital tool in the global response towards climate change⁵². AI systems can help predict weather patterns therefore helping communities and authorities to better plan how to adapt to climate change and mitigate its impacts⁵³. It has been noted that through AI, improved modelling and predicting climate change patterns can help communities and authorities to draft effective adaptation and mitigation strategies⁵⁴. In addition, it has been asserted that as extreme weather events unfold with more frequency and intensity, AI can help communities around the world to better brace for climate disasters⁵⁵. For example, in areas susceptible to landslides, mapping can help local authorities plan and implement Sustainable Development measures, reduce risks and ensure the safety of residents in vulnerable communities⁵⁶. In addition, leveraging the benefits of AI can ensure that everyone on the planet is protected from hazardous weather, water or climate events through early warning systems⁵⁷.

AI systems can also strengthen climate change mitigation and adaptation measures by unlocking sustainable climate finance⁵⁸. It has been observed that finance plays a vital role in climate action by enhancing the mitigation and adaptation capabilities of countries especially in the developing world⁵⁹.

⁵¹ Ibid

⁵² World Economic Forum., '9 ways AI is Helping Tackle Climate Change' Available at <https://www.weforum.org/agenda/2024/02/ai-combat-climate-change/#:~:text=The%20use%20of%20artificial%20intelligence,the%20World%20Economic%20Forum%20says>. (Accessed on 10/04/2024)

⁵³ Ibid

⁵⁴ United Nations., 'Explainer: How AI Helps Combat Climate Change' Available at <https://news.un.org/en/story/2023/11/1143187> (Accessed on 10/04/2024)

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷ Ibid

⁵⁸ World Economic Forum., '4 Ways AI Can Super-Charge Sustainable Development' Op Cit

⁵⁹ Steckel. J. C., 'From Climate Finance toward Sustainable Development Finance.' *WIREs Climate Change*, 2017

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

Climate finance refers to local, national, regional and global financing of public and private investment that seeks to support mitigation of and adaptation to climate change⁶⁰. It has been argued that AI-powered tools stand out as invaluable instruments for analyzing vast datasets, including climate and financial data, to identify climate risks and investment opportunities in the field of climate finance⁶¹. AI can make it possible to quantify climate risks and opportunities in financial terms towards unlocking climate finance⁶².

Further, AI is of utmost importance in education which is one of the key themes under the Sustainable Development agenda⁶³. According to the United Nations, education is already being profoundly transformed by AI⁶⁴. The acquisition of digital skills now stands at the centre of most education programmes around the world⁶⁵. AI is being widely embraced in education to improve operational processes and provide equitable access to resources among other opportunities⁶⁶. By using AI-powered tools and strategies, educators can personalize learning, improve student outcomes, and better prepare students for success in the digital age⁶⁷. It has been noted that AI tools such as advanced chatbots could be used as powerful classroom aids that make lessons more interactive, teach students media literacy, generate personalized lesson plans, and save teachers time⁶⁸. It is therefore necessary to embrace AI in order to achieve SDG 4 which seeks to ensure inclusive and quality education for all⁶⁹.

⁶⁰ Hong, H., Karolyi, G. A., & Scheinkman, J.A., 'Climate Finance.' Review of Financial Studies, Volume 33, Issue 3 (2020)

⁶¹ World Economic Forum., '4 Ways AI Can Super-Charge Sustainable Development' Op Cit

⁶² Ibid

⁶³ United Nations., 'Towards an Ethics of Artificial Intelligence' Op Cit

⁶⁴ Ibid

⁶⁵ Ibid

⁶⁶ Ibid

⁶⁷ AI for Education., 'Artificial Intelligence is Poised to Change Teaching and Learning Forever' Available at <https://www.aiforeducation.io/> (Accessed on 10/04/2024)

⁶⁸ Heaven. W. D., 'ChatGPT is Going to Change Education, Not Destroy It' Available at <https://www.technologyreview.com/2023/04/06/1071059/chatgpt-change-not-destroy-education-openai/> (Accessed on 10/04/2024)

⁶⁹ United Nations., 'Towards an Ethics of Artificial Intelligence' Op Cit

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

Another key theme under the Sustainable Development agenda that can be strengthened by AI is conflict management. Managing conflicts effectively has been identified as a prerequisite for realising Environmental, Social and Governance (ESG) tenets of the Sustainable Development agenda⁷⁰. Conflicts are inherent within any social group and the need to perceive, analyse and manage them is crucial in order to move towards Sustainable Development⁷¹. AI can strengthen conflict management processes⁷². For example, AI systems are revolutionizing the frontier of peace and mediation⁷³. Digital solutions are being embraced to facilitate conflict management where human intervention is not feasible such as in war situations or travel restrictions as was witnessed at the peak of the COVID-19 restrictions⁷⁴. It has been noted that AI transforms conflict management by analyzing root causes through pattern recognition, enhancing communication with real-time feedback, and generating diverse solutions via simulations⁷⁵. AI can also streamline agreement implementation through automated tasks and monitoring adherence to agreements⁷⁶. In addition, it has been noted that

⁷⁰ Muigua. K., 'Understanding the Place of Conflict Management in Sustainable Development Agenda' Available at <https://kmco.co.ke/wp-content/uploads/2022/09/Understanding-the-Place-of-Conflict-Management-in-Sustainable-Development-Agenda.pdf> (Accessed on 11/04/2024)

⁷¹ Martinez-Martin. R., & Lozano-Martin. A., 'Sustainability and Conflict Management in the University Environment. Analysis of Students of the Degrees in Labour Relations and Human Resources, and Social Work at the University of Granada (Spain)' Available at <https://www.mdpi.com/2071-1050/13/23/13431> (Accessed on 11/04/2024)

⁷² Pietromarchi. V., 'Can AI Mediate Conflict Better than Humans? Available at <https://www.aljazeera.com/news/2024/2/29/can-ai-mediate-conflict-better-than-humans#:~:text=%E2%80%9CGroundbreaking%20technological%20advancements%20are%20revolutionising,among%20other%20war%2Drelated%20tasks.> (Accessed on 11/04/2024)

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Holmes. N., 'What are the Best Practices for Using AI in Conflict Resolution?'. Available at <https://www.linkedin.com/advice/3/what-best-practices-using-ai-conflict-resolution-kutte#:~:text=AI%20transforms%20conflict%20resolution%20by,generating%20diverse%20solutions%20via%20simulations.> (Accessed on 11/04/2024)

⁷⁶ Ibid

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

learning from AI's feedback refines conflict management skills⁷⁷. It is therefore necessary to embrace AI for effective conflict management.

Embracing AI can also strengthen democracy and governance⁷⁸. It has been noted that AI techniques can potentially improve the policy-making process, including optimization and decision support techniques, data and opinion mining, game theory, and agent-based simulation⁷⁹. AI can promote good governance by streamlining administrative processes, improving decision making, enhancing customer support services, predicting the needs of citizens, and improving the management of resources⁸⁰. AI can also strengthen election processes by ensuring integrity and correctness of election systems⁸¹. Fostering secure and trustworthy AI systems can therefore promote good governance for Sustainable Development.

From the foregoing, it emerges that AI is of utmost importance in the Sustainable Development agenda. AI is vital in a number of key themes under the Sustainable Development agenda including environmental sustainability, climate change, energy, education, conflict management, and governance⁸². Embracing AI can therefore accelerate progress towards the SDGs.

The role of AI in Sustainable Development has been recognized by the United Nations General Assembly whose *Resolution*⁸³ urges all countries to seize the

⁷⁷ Ibid

⁷⁸ Sharma. G., Yadav. A., & Chopra. R., 'Artificial Intelligence and Effective Governance: A review, Critique and Research Agenda' Available at <https://www.sciencedirect.com/science/article/pii/S2666188819300048> (Accessed on 11/04/2024)

⁷⁹ Ibid

⁸⁰ Ibid

⁸¹ Ibid

⁸² United States Department of State., 'Artificial Intelligence for Accelerating Progress on the Sustainable Development Goals: Addressing Society's Greatest Challenges' Op Cit

⁸³ United Nations General Assembly., 'Seizing the Opportunities of Safe, Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development' A/78/L.49., Available at <https://documents.un.org/doc/undoc/ltd/n24/065/92/pdf/n2406592.pdf?token=96jPMb6t2eR5RDhxIy&fe=true> (Accessed on 11/04/2024)

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

opportunities of safe, secure and trustworthy AI systems for Sustainable Development. According to the Resolution, safe, secure and trustworthy AI systems have the potential to accelerate and enable progress towards the achievement of all 17 SDGs and Sustainable Development in its three dimensions – economic, social and environmental – in a balanced and integrated manner; promote digital transformation; promote peace; overcome digital divides between and within countries; and promote and protect the enjoyment of human rights and fundamental freedoms for all, while keeping human beings at the centre⁸⁴. The Resolution sets out the need to bridge the AI and other digital divides between and within countries in order to foster Sustainable Development⁸⁵. It urges all countries to promote safe, secure and trustworthy AI systems in order to accelerate progress towards the full realization of the 2030 Agenda for Sustainable Development⁸⁶. The Resolution further seeks to enhance the capacity and participation of all countries, in particular developing countries, in digital transformation to harness the benefits and effectively participate in the development, deployment and use of safe, secure and trustworthy AI systems for Sustainable Development⁸⁷. It also aims to increase funding for Sustainable Development Goals related research and innovation related to digital technologies and safe, secure and trustworthy AI systems especially in developing countries⁸⁸. Further, the Resolution urges all countries to ensure that human rights and fundamental freedoms are respected, protected and promoted throughout the life cycle of AI systems⁸⁹. The Resolution also urges all countries to ensure effective governance of AI systems for Sustainable Development⁹⁰. It is necessary to implement this Resolution in order to ensure safe, secure and trustworthy AI systems for Sustainable Development.

AI therefore has a crucial role to play in the Sustainable Development agenda. Harnessing the opportunities of safe, secure and trustworthy AI systems can

⁸⁴ Ibid

⁸⁵ Ibid

⁸⁶ Ibid

⁸⁷ Ibid

⁸⁸ Ibid

⁸⁹ Ibid

⁹⁰ Ibid

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

accelerate progress towards the SDGs and the 2030 Agenda for Sustainable Development⁹¹. However, there are some key concerns that need to be addressed in order to effectively embrace AI for Sustainable Development. It has been noted that AI systems and algorithms can infringe fundamental human rights from privacy and data confidentiality to freedom of choice and freedom of conscience⁹². In addition, social and cultural stereotypes can be replicated in AI programming, notably when it comes to gender discrimination, racial and other forms of discrimination⁹³. There are also challenges relating to the regulation and governance of AI systems⁹⁴. Further, the digital divide between developed and developing countries means that the latter lack capacity to effectively harness AI for development⁹⁵. It is necessary to address these challenges in order to foster secure and trustworthy AI systems for Sustainable Development.

3.0 Way Forward

In order to foster secure and trustworthy AI systems, it is necessary to ensure appropriate governance of AI⁹⁶. In light of the rapid development and deployment of AI and other frontier technologies, the need for appropriate governance of these powerful technologies is vital⁹⁷. The United Nations General Assembly Resolution urges all countries to develop and support regulatory and governance approaches and frameworks related to safe, secure and trustworthy use of AI⁹⁸. The Resolution requires all countries to promote the development and implementation of domestic regulatory and governance approaches and frameworks, in line with their respective national, and where applicable subnational, policies and priorities and obligations under international law, to support responsible and inclusive AI innovation and

⁹¹ United Nations General Assembly., 'Seizing the Opportunities of Safe, Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development' Op Cit

⁹² United Nations., 'Towards an Ethics of Artificial Intelligence' Op Cit

⁹³ Ibid

⁹⁴ United Nations General Assembly., 'Seizing the Opportunities of Safe, Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development' Op Cit

⁹⁵ Ibid

⁹⁶ United Nations., 'Towards an Ethics of Artificial Intelligence' Op Cit

⁹⁷ United Nations., 'Artificial Intelligence' Op Cit

⁹⁸ United Nations General Assembly., 'Seizing the Opportunities of Safe, Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development' Op Cit

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

investment for Sustainable Development, while simultaneously promoting safe, secure and trustworthy AI systems⁹⁹. Responsible use and governance of AI is vital in ensuring secure and trustworthy AI systems¹⁰⁰. It is therefore necessary to enhance responsible governance of AI through approaches such as efficient legal and regulatory frameworks and partnership between governments, private sector and other stakeholders in order to maximize the opportunity of using AI as a catalyst to meet SDGs¹⁰¹.

In addition, it is vital to embrace an ethical approach towards AI that fosters human rights¹⁰². It has been noted that AI can impact fundamental human rights including privacy and data confidentiality to freedom of choice and freedom of conscience¹⁰³. It is therefore necessary to ensure that AI is developed through a humanist approach, based on values and human rights¹⁰⁴. It has been suggested that there is need to regulate AI developments and applications so that they conform to the fundamental rights that frame our democratic horizon¹⁰⁵. According to the United Nations, AI systems must be grounded in human rights¹⁰⁶. It further points out that human rights must be embedded in AI's entire lifecycle from the collection and selection of data; as well as the design, development, deployment and use of the resulting models, tools and services¹⁰⁷. Embracing a human rights framework towards AI provides an essential foundation that can strengthen efforts to exploit the enormous potential of AI, while preventing and mitigating its enormous

⁹⁹ Ibid

¹⁰⁰ Ibid

¹⁰¹ The Role of AI in Achieving Sustainable Development Goals., Available at <https://vasscompany.com/en/insights/blogs-articles/the-role-of-ai-in-achieving-sustainable-development-goals/> (Accessed on 11/04/2024)

¹⁰² United Nations., 'Towards an Ethics of Artificial Intelligence' Op Cit

¹⁰³ Ibid

¹⁰⁴ Ibid

¹⁰⁵ Ibid

¹⁰⁶ Office of the United Nations High Commissioner for Human Rights., 'Artificial Intelligence Must be Grounded in Human Rights, says High Commissioner' Available at <https://www.ohchr.org/en/statements/2023/07/artificial-intelligence-must-be-grounded-human-rights-says-high-commissioner> (Accessed on 11/04/2024)

¹⁰⁷ Ibid

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

risks¹⁰⁸. The United Nations General Assembly Resolution urges all countries to ensure that AI systems are human-centric, reliable, explainable, ethical, inclusive, in full respect of promotion and protection of human rights and international law, privacy preserving, Sustainable Development oriented, and responsible¹⁰⁹. According to the Resolution, secure and trustworthy AI systems protect the enjoyment of human rights and fundamental freedoms for all, while keeping human beings at the centre¹¹⁰. It is therefore necessary to ensure that AI systems are grounded in the human rights framework in order to foster Sustainable Development.

Finally, it is imperative to bridge the digital divides between and within countries¹¹¹. It has been noted that developing countries face unique challenges in keeping pace with this rapid acceleration and development of AI which cause obstacles in realizing Sustainable Development¹¹². It has been noted that AI products that come out have biases and are primarily designed in the Global North¹¹³. For example, to function correctly, these services need to be fed with good local data¹¹⁴. Such data must be available in sufficient quantities and properly annotated¹¹⁵. It has been noted that both conditions still need to be met for emerging countries, which already suffer from a lack of access to connectivity, which is essential for their economic growth¹¹⁶. AI systems may therefore not function properly in such environments. Further, developing countries often lack the necessary financial, technical, and human capacity to foster innovation and development of AI systems suitable to their local conditions¹¹⁷. The United Nations General Assembly Resolution sets out

¹⁰⁸ Ibid

¹⁰⁹ United Nations General Assembly., 'Seizing the Opportunities of Safe, Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development' Op Cit

¹¹⁰ Ibid

¹¹¹ Ibid

¹¹² Ibid

¹¹³ Bridging or Widening the Digital Divide: The Challenge of AI in Africa., Available at <https://hellofuture.orange.com/en/bridging-or-widening-the-digital-divide-the-challenge-of-ai-in-africa/> (Accessed on 11/04/2024)

¹¹⁴ Ibid

¹¹⁵ Ibid

¹¹⁶ Ibid

¹¹⁷ Ibid

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

the importance of narrowing the existing disparities between developed and developing countries in terms of conditions, possibilities and capacities in AI by stressing the urgency of strengthening capacity building and technical and financial assistance to developing countries while also supporting developing countries' effective, equitable and meaningful participation and representation in international processes and forums on the governance of AI systems¹¹⁸. It is therefore necessary for developed countries to support the development of AI in developing countries through financial and technical assistance in order to ensure that all countries are able to harness the benefits of AI in the Sustainable Development agenda¹¹⁹.

Through the foregoing among other measures, it is possible to foster secure and trustworthy AI systems for Sustainable Development.

4.0 Conclusion

AI can be effectively utilized to unlock Sustainable Development¹²⁰. AI applications enable innovative solutions, improved risk assessment, better planning and faster knowledge sharing which are vital processes that can be harnessed for Sustainable Development¹²¹. The unparalleled data-harnessing abilities of AI allow it to be an invaluable tool for Sustainable Development¹²². AI systems are being increasingly embraced in a number of key themes under the Sustainable Development agenda including environmental sustainability, climate change, energy, education, conflict management, and governance¹²³. Embracing AI can therefore accelerate progress towards the SDGs. The United Nations General Assembly vide a Resolution¹²⁴ urges all countries to seize the

¹¹⁸ United Nations General Assembly., 'Seizing the Opportunities of Safe, Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development' Op Cit

¹¹⁹ Ibid

¹²⁰ United Nations., 'Towards an Ethics of Artificial Intelligence' Op Cit

¹²¹ Ibid

¹²² World Economic Forum., '4 Ways AI Can Super-Charge Sustainable Development' Op Cit

¹²³ United States Department of State., 'Artificial Intelligence for Accelerating Progress on the Sustainable Development Goals: Addressing Society's Greatest Challenges' Op Cit

¹²⁴ United Nations General Assembly., 'Seizing the Opportunities of Safe, Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development' Op Cit

Fostering Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development

opportunities of safe, secure and trustworthy AI systems for Sustainable Development. However, the adoption of AI can result in several concerns including human rights infringements, entrenchment of social and cultural stereotypes, regulation and governance challenges, and digital divide between and within countries¹²⁵. It is necessary to address these problems in order to foster secure and trustworthy AI systems for Sustainable Development. This can be realized through ensuring appropriate governance of AI¹²⁶; embracing an ethical approach towards AI that fosters human rights¹²⁷; and bridging the digital divides between and within countries¹²⁸. Fostering secure and trustworthy AI systems for Sustainable Development is an ideal that should be pursued and realized in both developed and developing countries.

¹²⁵ United Nations., 'Towards an Ethics of Artificial Intelligence' Op Cit

¹²⁶ Ibid

¹²⁷ United Nations., 'Towards an Ethics of Artificial Intelligence' Op Cit

¹²⁸ Ibid

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

Abstract

This paper critically evaluates the areas of synergy between the 2015 Paris Agreement on climate change and the 2030 Agenda for Sustainable Development and how these areas can be exploited and strengthened in order to achieve sustainability for the current and future generations. The author argues that there is a need to exploit the corresponding goals in the 2015 Paris Agreement on climate change and the 2030 Agenda on Sustainable Goals in order to combat the triple planetary crises of pollution, climate change, and loss of nature and biodiversity for sustainable lives, environment and human rights for all.

1.0 Introduction

The Special Edition of the 2023 Sustainable Development Goals Report states that there is a limited amount of time left to prevent the worst effects of climate change, ensure climate justice for individuals, communities, and nations that are most affected by the phenomenon, and keep global temperature increases to 1.5 degrees Celsius. As carbon dioxide continues to climb, it has reached a level not seen in two million years.¹ As such, since 2015, there has been an increase in the number of people experiencing food insecurity and hunger, which has been made worse by the pandemic, conflicts, climate change, and widening disparities.²

The negative consequences of climate change have caused significant harm and more irreparable losses to ecosystems and human life. They have also led to food shortages, population displacement, and the destruction of buildings and infrastructure. As temperatures rise, these extreme events will become more intense and challenging to regulate. Additionally, the effectiveness of adaptive techniques decreases with increased global warming.³

¹ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN.

² *Ibid*, p. 14.

³ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p.38

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

In order to ensure that global warming stays far below 2 degrees Celsius, and ideally stays at 1.5 degrees Celsius, above pre-industrial levels, nations united to obligate themselves through the Paris Agreement. Being the first legally binding pact in the history of climate action, the accord represents a significant turning point in global collaboration to combat climate change.⁴

A popular strategy for success in the fight against climate change is to focus on specific activities that have measurable effects and minimise trade-offs on several fronts in order to advance quickly in the race against climate change.⁵ The Sustainable Development Goals (SDGs), which represent the global action plan for attaining sustainability and resilience for both people and the planet, are strongly related to climate change and the 2030 Agenda.⁶ By utilising the synergies between the Climate and SDGs, it is possible to maximize the connections between the 2030 Agenda and the Paris Agreement, which might lead to the accomplishment of both goals and ensure that future generations will live in a habitable world.⁷

Thus, swift, coordinated action and policy solutions are needed to address structural inequities, restructure food systems, finance sustainable agricultural techniques, and minimise the impact of conflict and the pandemic on global nutrition and food security if we are to reach zero hunger by 2030.⁸

This paper critically assesses the areas in which the 2030 Agenda for Sustainable Development and the 2015 Paris Climate Agreement have

⁴ *Climate Action and Synergies* | Department of Economic and Social Affairs (no date). Available at: <https://sdgs.un.org/topics/climate-action-synergies#description> (Accessed: 10 April 2024).

⁵ *Climate Action and Synergies* | Department of Economic and Social Affairs (no date). Available at: <https://sdgs.un.org/topics/climate-action-synergies#description> (Accessed: 10 April 2024).

⁶ Ibid.

⁷ Ibid.

⁸ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p.14.

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

common ground, as well as the ways in which these areas may be enhanced and leveraged to achieve sustainability for present and future generations.

2.0 The Paris Agreement and Sustainability

A legally binding global climate agreement, the Paris Agreement was ratified by 196 Parties on December 12, 2015, during the UN Climate Change Conference (COP21) in Paris, France. It became operative on November 4, 2016.⁹ Under the rules of the Paris Agreement, all countries must pledge to cut their emissions. In order to keep global average temperature from rising 2°C (3.6°F) beyond preindustrial levels, governments must set goals known as nationally determined contributions (NDCs) and work to keep it below 1.5°C (2.7°F). Furthermore, it aims to attain global net-zero emissions in the latter half of the century, which denotes a situation in which the amount of greenhouse gases extracted from the environment and the amount emitted into it are equal.¹⁰ The UN's Intergovernmental Panel on Climate Change indicates that crossing the 1.5°C threshold risks unleashing far more severe climate change impacts, including more frequent and severe droughts, heatwaves and rainfall. To limit global warming to 1.5°C, greenhouse gas emissions must peak before 2025 at the latest and decline 43% by 2030. The Paris Agreement is considered a landmark in the multilateral climate change process because, for the first time, a binding agreement brings all nations together to combat climate change and adapt to its effects.¹¹

Based on the most recent scientific findings, the Paris Agreement's implementation calls for significant social and economic change. The Paris Agreement is based on a five-year cycle of countries taking more and more aggressive climate action. Nationally Determined Contributions (NDCs), or national climate action plans, have been submitted by nations since 2020. Every new NDC is intended to represent a progressively greater level of

⁹ *The Paris Agreement* | UNFCCC (no date). Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement> (Accessed: 2 April 2024).

¹⁰ *Global Climate Agreements: Successes and Failures* (no date) Council on Foreign Relations. Available at: <https://www.cfr.org/backgrounders/paris-global-climate-change-agreements> (Accessed: 10 April 2024).

¹¹ *The Paris Agreement* | UNFCCC (no date). Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement> (Accessed: 2 April 2024).

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

ambition than the one before it.¹² Countries outline the steps they will take to cut their greenhouse gas emissions in their NDCs in order to meet the objectives of the Paris Agreement. Additionally, nations outline in their NDCs the steps they plan to take to increase resilience so they can adapt to the effects of climate change.¹³

It is worth pointing out that the Paris Agreement called on all nations to establish emissions targets, acknowledging that climate change is a shared burden, in contrast to the Kyoto Protocol, which primarily obliged developed countries to decrease emissions.¹⁴

3.0 The 2030 Agenda for Sustainable Development and Sustainability

Adopted by all United Nations Member States in 2015, the 2030 Agenda for Sustainable Development offers a common roadmap for peace and prosperity for people and the planet both now and in the future.¹⁵ Its core tenets are the seventeen Sustainable Development Goals (SDGs), which represent a pressing need for global cooperation and action from both wealthy and developing nations.¹⁶ They recognise the interdependence of tackling poverty and other forms of deprivation, halting climate change, preserving our forests and oceans, and fostering economic development. Increasing access to healthcare and education, reducing inequality, and fostering economic growth are some of these strategies.¹⁷ The impoverished are disproportionately impacted by higher living costs as a result of the interruptions to global trade caused by the Ukraine crisis. The battle against poverty also faces significant threats as a

¹² *The Paris Agreement* | UNFCCC (no date). Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement> (Accessed: 5 April 2024).

¹³ *The Paris Agreement* | UNFCCC (no date). Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement> (Accessed: 5 April 2024).

¹⁴ *Global Climate Agreements: Successes and Failures* (no date) Council on Foreign Relations. Available at: <https://www.cfr.org/backgrounder/paris-global-climate-change-agreements> (Accessed: 10 April 2024).

¹⁵ UN General Assembly, Transforming our world: the 2030 Agenda for Sustainable Development, A/RES/70/1, 21 October 2015 [accessed 10 April 2024].

¹⁶ *THE 17 GOALS | Sustainable Development* (no date). Available at: <https://sdgs.un.org/goals> (Accessed: 10 April 2024).

¹⁷ *THE 17 GOALS | Sustainable Development* (no date). Available at: <https://sdgs.un.org/goals> (Accessed: 10 April 2024).

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

result of climate change. By the end of 2022, some 670 million people, or 8.4% of the world's population, may still be living in extreme poverty.¹⁸ According to estimates, 575 million people, or 7% of the world's population, would still be living in severe poverty by 2030 if present trends continue, with the majority of them being in sub-Saharan Africa. According to this estimate, poverty has decreased by less than 30% since 2015.¹⁹

SDG 6 requires countries to ensure availability and sustainable management of water and sanitation for all.²⁰ Water stress and shortage are still issues in many places of the world, despite a 9% increase in water usage efficiency. 2.4 billion people were living in water-stressed nations in 2020. Climate change and conflict exacerbate the problems.²¹ Increasing sector-wide investment and capacity-building, encouraging innovation and evidence-based action, improving cross-sectoral coordination and cooperation among all stakeholders, and implementing a more integrated and holistic approach to water management are important tactics to refocus Goal 6.²²

Water-related ecosystems sustain biodiversity, control floods and droughts, and supply clean water. However, a number of risks to these ecosystems exist, including as overexploitation, pollution, and climate change.²³ Around the world, surface water bodies, including lakes, rivers, and reservoirs, are changing quickly. Over the previous three centuries, wetland habitats have lost an estimated 85% of their area due to drainage and land change.²⁴ A startling 81% of species that depend on inland wetlands have dropped since

¹⁸ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p.12.

¹⁹ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p.12.

²⁰ Goal 6 | Department of Economic and Social Affairs (no date). Available at: <https://sdgs.un.org/goals/goal6> (Accessed: 10 April 2024).

²¹ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p.24.

²² United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p.24.

²³ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p.25.

²⁴ Ibid.

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

1970, outpacing losses in other biomes, and a growing proportion are in danger of becoming extinct. Large-scale wetland preservation and restoration must be given top priority.²⁵

SDG 13 requires countries to take urgent action to combat climate change and its impacts.²⁶ Target 13.1 thereof requires countries to strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.²⁷ Target 13.2 requires countries to integrate climate change measures into national policies, strategies and planning. Target 13.3 requires countries to improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning. Target 13.a requires countries to implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible. Target 13.b requires countries to promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities.²⁸

SDG 14 requires countries to conserve and sustainably use the oceans, seas and marine resources for sustainable development.²⁹ However, according to the 2023 SDGs Special Report, due to the worsening effects of plastic pollution, ocean warming, acidification, and eutrophication, the ocean is currently in a

²⁵ Ibid.

²⁶ *Goal 13 | Department of Economic and Social Affairs* (no date). Available at: <https://sdgs.un.org/goals/goal13> (Accessed: 10 April 2024).

²⁷ SDG 13, Target 13.1.

²⁸ SDG 13, Target 13.b

²⁹ SDG 13.

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

state of emergency. Furthermore, the concerning pattern of overfishing continues, depleting more than one-third of the world's fish populations.³⁰ Furthermore, although considerable progress has been made in enlarging marine protected areas, battling illicit, unreported, and unregulated fishing, outlawing fishing subsidies, and aiding small-scale fishermen, these efforts are not proceeding at the rate or scope necessary to achieve Goal 14.³¹ The Report thus recommends that fast and well-coordinated international action is needed to reverse these trends. To protect the planet's greatest ecosystem, this means boosting financing for ocean science, stepping up conservation efforts, developing nature- and ecosystem-based solutions, addressing the linkages and effects of human-induced stresses, and quickly reversing the course of climate change.³²

SDG 15 calls on countries to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.³³ 2023 SDGs Report observes that because they support more than half of the world economy and a wide range of cultural, spiritual, and economic values, terrestrial ecosystems are essential to the continuation of human life. Nonetheless, pollution, biodiversity loss, and climate change provide a triple catastrophe for the global community.³⁴ The earth and human population are seriously threatened by the increasing trends of forest loss, land degradation, and species extinction.³⁵

³⁰ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 40.

³¹ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 40.

³² United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 40.

³³ *Goal 15 | Department of Economic and Social Affairs* (no date). Available at: <https://sdgs.un.org/goals/goal15> (Accessed: 10 April 2024).

³⁴ *What is the Triple Planetary Crisis? | UNFCCC* (no date). Available at: <https://unfccc.int/news/what-is-the-triple-planetary-crisis> (Accessed: 10 April 2024).

³⁵ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 42.

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

The majority of accomplishments have been little, despite some gains in protected areas, sustainable forest management, national biodiversity values adoption, and natural capital accounting. Goal 15 is given fresh life by the newly enacted Kunming-Montreal Global Biodiversity Framework, which outlines 23 objectives to be met by 2030 and four outcome-oriented goals to be accomplished by 2050.³⁶

In addition to quicker action to address the underlying causes of these interrelated problems and greater appreciation of nature's immense worth, a fundamental change in humanity's relationship with nature is necessary to achieve Goal 15.³⁷

4.0 Strengthening the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability: Challenges and Prospects

Governments generally agree on the science behind climate change, but they disagree on who is most responsible, how to track emissions-reduction goals, and whether to compensate harder-hit countries.³⁸ This has been noted despite the fact that countries have been debating how to combat climate change since the early 1990s, with these negotiations yielding several important accords, including the Kyoto Protocol and the Paris Agreement.³⁹

By 2035, the world is likely to have surpassed the crucial 1.5°C tipping point, the Intergovernmental Panel on Climate Change (IPCC) says, unless cross-sectoral measures are tightened.⁴⁰ The decisions we make now will determine how habitable the planet is for both present and future generations. Starting

³⁶ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 42.

³⁷ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 42.

³⁸ *The What, When, and How of Net-Zero Emissions* | World Resources Institute (no date). Available at: <https://www.wri.org/insights/net-zero-ghg-emissions-questions-answered> (Accessed: 10 April 2024).

³⁹ *Global Climate Agreements: Successes and Failures* (no date) Council on Foreign Relations. Available at: <https://www.cfr.org/background/paris-global-climate-change-agreements> (Accessed: 10 April 2024).

⁴⁰ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 38.

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

today, all sectors must reduce their GHG emissions quickly, deeply, and sustainably in order to slow down climate change.⁴¹ Global climate-resilient development initiatives, expedited adaptation and mitigation strategies, and the utilisation of SDG synergies are all necessary for this. More funding, political will, well-coordinated legislation, global collaboration, ecosystem management, and inclusive governance are all critically needed for fair and successful climate action.⁴²

There is still work to be done to further create the new and potentially helpful policy architecture that the Paris Agreement lays forth. This effort includes developing the various regulations and guidelines that are required and providing more explicit instructions for how they should be implemented.⁴³ In addition to considering the barriers to the Paris Agreement's efficacy, governments, other interested parties, and scholars should look for institutions and procedures that could enhance both the Agreement and the UNFCCC process in general.⁴⁴ Some experts contend that other venues are the only places where significant climate action can take place. They believe that rather than concentrating on national emissions caps, nations should negotiate a worldwide carbon price as the most effective means of reducing global

⁴¹ Ibid, p. 38.

⁴² Ibid, p. 38.

⁴³ Stavins, R.N. and Stowe, R.C., 2016. The Paris agreement and beyond: International climate change policy post-2020. *Harvard Project on Climate Agreements*, p. 1; See also Cochran, I. and Pauthier, A., 2019. A framework for alignment with the Paris Agreement: why, what and how for financial institutions. *Institute for Climate Economics: Paris, France*, p.56; Roelfsema, M. et al. (2022) 'Developing scenarios in the context of the Paris Agreement and application in the integrated assessment model IMAGE: A framework for bridging the policy-modelling divide', *Environmental Science & Policy*, 135, pp. 104–116. Available at: <https://doi.org/10.1016/j.envsci.2022.05.001>; Cogswell, N. and Dagnet, Y. (2019) 'Why Does the Paris Climate Agreement Need a Rulebook? 7 Questions and Answers'. Available at: <https://www.wri.org/insights/why-does-paris-climate-agreement-need-rulebook-7-questions-and-answers> (Accessed: 10 April 2024); Hermansen, E.A.T., Boasson, E.L. and Peters, G.P. (2023) 'Climate action post-Paris: how can the IPCC stay relevant?', *npj Climate Action*, 2(1), pp. 1–8. Available at: <https://doi.org/10.1038/s44168-023-00058-1>.

⁴⁴ Stavins, R.N. and Stowe, R.C., 2016. The Paris agreement and beyond: International climate change policy post-2020. *Harvard Project on Climate Agreements*, pp.1-114.

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

emissions.⁴⁵ In order to supplement the Paris Accord, some propose other accords that pertain to certain industries or emissions.⁴⁶

The 2023 Special Report on SDGs observes that Global warming of 1.1°Celsius over pre-industrial levels has been directly attributed to human activity, namely over a century of burning fossil fuels, unsustainable energy and land use, and unsustainable consumption and production patterns, according to the most recent IPCC synthesis report.⁴⁷ Every region has experienced an increase in extreme weather and climate events as a result, and this is now the daily face of climate change. Communities who are vulnerable suffer disproportionately even when they have made the least contribution to climate change.⁴⁸

4.1 Financing Mechanisms

In addition to encouraging voluntary contributions from other Parties for the first time, the Paris Agreement reiterates that wealthier nations should lead the way in giving financial aid to less developed and more vulnerable nations. Since huge expenditures are needed to considerably cut emissions, climate financing is necessary for mitigation.⁴⁹ Climate finance is equally important

⁴⁵ *Why Countries Must Cooperate on Carbon Prices* (2022) IMF. Available at: <https://www.imf.org/en/Blogs/Articles/2022/05/19/blog-why-countries-must-cooperate-on-carbon-prices> (Accessed: 10 April 2024); Gianluca Di P.G.G.E. & I.L. and F.C. (no date) *Can a universal carbon price be fair for everyone?* Available at: https://www.ey.com/en_gl/insights/government-public-sector/can-a-universal-carbon-price-be-fair-for-everyone (Accessed: 10 April 2024); cf. Pearse, R. and Böhm, S. (2014) 'Ten reasons why carbon markets will not bring about radical emissions reduction', *Carbon Management*, 5(4), pp. 325–337. Available at: <https://doi.org/10.1080/17583004.2014.990679>

⁴⁶ *Global Climate Agreements: Successes and Failures* (no date) Council on Foreign Relations. Available at: <https://www.cfr.org/background/paris-global-climate-change-agreements> (Accessed: 10 April 2024).

⁴⁷ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 38.

⁴⁸ *Ibid*, p.38.

⁴⁹ *Climate Finance in the negotiations | UNFCCC* (no date). Available at: <https://unfccc.int/topics/climate-finance/the-big-picture/climate-finance-in-the-negotiations> (Accessed: 10 April 2024); *Developed Countries Must Deliver on Climate Change, Finance Commitments, Delegates Stress, as Second Committee Continues Its General Debate | Meetings Coverage and Press Releases* (no date). Available at:

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

for adaptation, as significant financial resources are needed to adapt to the adverse effects and reduce the impacts of a changing climate.⁵⁰

At COP 28, countries came up with new funding arrangements, including a fund, for responding to loss and damage.⁵¹ The purpose of the Fund is to assist developing countries that are particularly vulnerable to the adverse effects of climate change in responding to economic and non-economic loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events.⁵² The fund is meant to provide finance for addressing a variety of challenges associated with the adverse effects of climate change, such as climate-related emergencies, sea level rise, displacement, relocation, migration, insufficient climate information and data, and the need for climate-resilient reconstruction and recovery.⁵³ It is also meant to provide support for responding to economic and non-economic loss

<https://press.un.org/en/2022/gaef3566.doc.htm> (Accessed: 10 April 2024); *Climate Funds for Fragile States, Action to Reach Net Zero, Not Mere Promises, Only Way to Build Low-Carbon Future, Speakers Stress on Day Three of General Debate | Meetings Coverage and Press Releases* (no date). Available at: <https://press.un.org/en/2023/ga12534.doc.htm> (Accessed: 10 April 2024); Bos, J., Gonzalez, L. and Thwaites, J. (2021) 'Are Countries Providing Enough to the \$100 Billion Climate Finance Goal?' Available at: <https://www.wri.org/insights/developed-countries-contributions-climate-finance-goal> (Accessed: 10 April 2024).

⁵⁰ *The Paris Agreement* | UNFCCC (no date). Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement> (Accessed: 5 April 2024).

⁵¹ United Nations, Annex I: Decision 1/CP.28, Operationalization of the new funding arrangements, including a fund, for responding to loss and damage referred to in paragraphs 2–3 of decisions 2/CP.27 and 2/CMA.4, FCCC/CP/2023/11/Add.1, *Report of the Conference of the Parties on its twenty-eighth session, held in the United Arab Emirates from 30 November to 13 December 2023. Addendum. Part two: Action taken by the Conference of the Parties at its twenty-eighth session*, FCCC/CP/2023/11/Add.2. Available at: https://unfccc.int/sites/default/files/resource/cp2023_11a02_adv.pdf (Accessed: 5 April 2024).

⁵² Para. 2, Operationalization of the new funding arrangements, including a fund, for responding to loss and damage referred to in paragraphs 2–3 of decisions 2/CP.27 and 2/CMA.4.

⁵³ Para. 6, Operationalization of the new funding arrangements, including a fund, for responding to loss and damage referred to in paragraphs 2–3 of decisions 2/CP.27 and 2/CMA.4.

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

and damage associated with the adverse effects of climate change.⁵⁴ This support may include funding that is complementary to humanitarian actions taken immediately after an extreme weather event; funding for intermediate or long-term recovery, reconstruction or rehabilitation; and funding for actions that address slow onset events.⁵⁵ The Fund is able to receive contributions from a wide variety of sources of funding, including grants and concessional loans from public, private and innovative sources, as appropriate.⁵⁶

According to the 2023 SDGs Report, in order to address the climate catastrophe, climate funding is essential. As per the UNFCCC, there was a 12% surge in global climate financing flows from 2017 to 2020, with an average yearly amount of \$803 billion.⁵⁷ This expansion is explained by both an increase in adaptation financing and mitigation measures in infrastructure, transportation, and buildings. Though it has increased over the past ten years, climate money is still considered insufficient to stop global warming. Additionally, there is an unequal allocation of funds throughout areas. In 2020, fossil fuel-related flows also surpassed climate finance for mitigation and adaptation.⁵⁸ Developed nations have not yet fulfilled their pledge to raise \$100 billion in climate money yearly by 2020–2025.⁵⁹

A comprehensive strategy combining mandatory and voluntary measures, together with the mobilisation and alignment of funds for biodiversity, is

⁵⁴ Chandra, A. *et al.* (2023) 'Climate-Induced Non-Economic Loss and Damage: Understanding Policy Responses, Challenges, and Future Directions in Pacific Small Island Developing States', *Climate*, 11(3), p. 74. Available at: <https://doi.org/10.3390/cli11030074>.

⁵⁵ Para. 8, Operationalization of the new funding arrangements, including a fund, for responding to loss and damage referred to in paragraphs 2–3 of decisions 2/CP.27 and 2/CMA.4.

⁵⁶ Para. 54, Operationalization of the new funding arrangements, including a fund, for responding to loss and damage referred to in paragraphs 2–3 of decisions 2/CP.27 and 2/CMA.4.

⁵⁷ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 39.

⁵⁸ *Ibid*, p. 39.

⁵⁹ *Ibid*, p. 39.

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

needed to stop and reverse the loss of biodiversity.⁶⁰ Economic tools are essential for encouraging the preservation and sustainable use of biodiversity.⁶¹ They may also be used to raise funds and mainstream biodiversity in a variety of industries.⁶² These comprise legislative tools including taxes, levies, and charges pertaining to biodiversity, positive subsidies, payments for environmental services, and offsets for biodiversity.⁶³ One such source of funding for biodiversity is Official Development Assistance (ODA), such as those proposed under COP 27 and COP 28, among others.⁶⁴ The need to increase the use and ambition of economic tools to conserve biodiversity is highlighted by the fact that, despite advancements in international financing, there is still a budget shortfall for biodiversity conservation.⁶⁵

4.2 Technology

The goal of fully realising technological development and transfer for enhancing climate change resilience and lowering greenhouse gas emissions is included in the Paris Agreement.⁶⁶ It establishes a technology framework to

⁶⁰ *A Comprehensive Overview of Global Biodiversity Finance | System of Environmental Economic Accounting* (no date). Available at: <https://seea.un.org/content/comprehensive-overview-global-biodiversity-finance> (Accessed: 10 April 2024).

⁶¹ Fernández-Pons, X., 2021. Conservation and Sustainable Use of Biodiversity in the International Regulation of Trade in Goods. *Biological Diversity and International Law: Challenges for the Post 2020 Scenario*, pp.79-99; Ekpe, E. (2012) 'A Review of Economic Instruments Employed for Biodiversity Conservation', *Consilience: The Journal of Sustainable Development*, 9, pp. 16-32; Rice, R.E. (2021) 'Biodiversity Conservation, Economic Growth and Sustainable Development', in *Biodiversity of Ecosystems*. IntechOpen. Available at: <https://doi.org/10.5772/intechopen.99298>.

⁶² United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 42.

⁶³ *Ibid.*, p. 42.

⁶⁴ *Ibid.*, p. 42.

⁶⁵ *Ibid.*, p. 42.

⁶⁶ Sajid, M.J., Zhang, Y. and Janjua, L.R. (2024) 'Breaking barriers: Assessing technology transfer for climate-resilient development', *Environmental Technology & Innovation*, 33, p. 103471. Available at: <https://doi.org/10.1016/j.eti.2023.103471>; Chapter 16: Innovation, technology development and transfer (no date). Available at: <https://www.ipcc.ch/report/ar6/wg3/chapter/summary-for-policymakers/> (Accessed: 10 April 2024).

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

provide overarching guidance to the well-functioning Technology Mechanism. The mechanism is accelerating technology development and transfer through its policy and implementation arms.⁶⁷ It has been documented that subsidies for fossil fuels distort the energy market, obstruct the switch to greener, more sustainable alternatives, and weaken initiatives to mitigate climate change.⁶⁸ Global statistics indicated that governments were once again subsidizing the purchase of coal, oil, and gas in 2021, with an estimated \$732 billion being spent on these projects – nearly twice as much as in 2020, when just \$375 billion was invested. This was mostly ascribed to energy costs rising again in 2020 following a decline in 2020, which restored subsidies to levels seen in 2014.⁶⁹ Embracing technology in transitioning to greener technologies is important if reduction of fossil fuels is to be realised.⁷⁰ Beyond plans and pledges, decisive action that is both urgent and transformative is essential.⁷¹ Raising aspirations, addressing whole economies, and advancing climate-resilient development are necessary, along with providing a clear route to net-zero emissions.⁷² There is not much time left, therefore quick action is required to prevent disastrous outcomes and ensure future generations have a sustainable future.⁷³

In Decision 9/CP.28 adopted at COP 28 on ‘Enhancing climate technology development and transfer through the Technology Mechanism’, the Conference of the Parties noted the Technology Mechanism initiative on

⁶⁷ *The Paris Agreement* | UNFCCC (no date). Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement> (Accessed: 5 April 2024).

⁶⁸ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 36.

⁶⁹ *Ibid*, p. 36.

⁷⁰ Wang, Fang *et al.* (2021) ‘Technologies and perspectives for achieving carbon neutrality’, *The Innovation*, 2(4), p. 100180. Available at: <https://doi.org/10.1016/j.xinn.2021.100180>.

⁷¹ Martin (no date) ‘Climate Change’, *United Nations Sustainable Development*. Available at: <https://www.un.org/sustainabledevelopment/climate-change/> (Accessed: 10 April 2024).

⁷² Stern, N. and Valero, A. (2021) ‘Innovation, growth and the transition to net-zero emissions’, *Research Policy*, 50(9), p. 104293. Available at: <https://doi.org/10.1016/j.respol.2021.104293>.

⁷³ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 38.

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

artificial intelligence for climate action, the aim of which is to explore the role of artificial intelligence as a technological tool for advancing and scaling up transformative climate solutions for mitigation and adaptation action in developing countries, with a focus on the least developed countries and small island developing States, while also addressing the challenges and risks posed by artificial intelligence, such as energy consumption, data security and the digital divide.⁷⁴

They also noted the insufficient transfer and deployment of technology in developing countries, encourages the Technology Executive Committee and the Climate Technology Centre and Network to continue collaborating with the operating entities of the Financial Mechanism and relevant financial institutions with a view to enhancing the capacity of developing countries to prepare project proposals, facilitating their access to available funding for technology development and transfer and for implementing the results of their technology needs assessments and the technical assistance of the Climate Technology Centre and Network, and strengthening the transfer and deployment of technology and calls for regional balance in this work.⁷⁵

It has been observed that investing in better data is key to supporting a rescue plan for people and planet.⁷⁶ As such, building data capacity is more important than ever as governments need better data to help policymakers in the face of several health, food, energy, and climate issues. Additionally, it is crucial to make sure that the SDGs are effectively monitored and reported on.⁷⁷

⁷⁴ Para. 6, United Nations, Decision 9/CP.28, Enhancing climate technology development and transfer through the Technology Mechanism, 5th plenary meeting, 11 December 2023.

⁷⁵ Para. 9, United Nations, Decision 9/CP.28, Enhancing climate technology development and transfer through the Technology Mechanism, 5th plenary meeting, 11 December 2023.

⁷⁶ *Bridging Data Gaps Can Help Tackle the Climate Crisis* (2022) IMF. Available at: <https://www.imf.org/en/Blogs/Articles/2022/11/28/bridging-data-gaps-can-help-tackle-the-climate-crisis> (Accessed: 10 April 2024).

⁷⁷ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN.

4.3 Capacity-Building

Not all developing countries have sufficient capacities to deal with many of the challenges brought by climate change.⁷⁸ As a result, the Paris Agreement places great emphasis on climate-related capacity-building for developing countries and requests all developed countries to enhance support for capacity-building actions in developing countries.⁷⁹

In addition to technical capacity building, the 2023 Special Edition of SDGs Report reports that to get ready for a greener future, youth and students throughout the world are calling for comprehensive and high-quality climate education as well as climate action.⁸⁰ The majority of nations (94%) state that their curricula contain instruction on climate change. But the data seems to indicate otherwise. Nearly half (47%) of the national curricular frameworks in 100 nations do not even address climate change, according to a research.⁸¹ The Report also points out that based on their schooling, one in five young people feel unprepared for climate change and want further information to fully understand its intricacies.⁸² Youth have highlighted the need for proper teacher support as well as multidisciplinary, action-oriented education that is both globally relevant and customized to local conditions.⁸³

4.4 Tracking Progress

Countries created an enhanced transparency framework (ETF) with the Paris Agreement. Beginning in 2024, governments will be required by the ETF to disclose in a transparent manner their activities and advancements in mitigating and adapting to climate change, as well as any assistance given or

⁷⁸ *Poor and Vulnerable Countries Need Support to Adapt to Climate Change* (2022) IMF. Available at: <https://www.imf.org/en/Blogs/Articles/2022/03/23/blog032322-poor-and-vulnerable-countris-need-support-to-adapt-to-climate-change> (Accessed: 10 April 2024).

⁷⁹ *The Paris Agreement* | UNFCCC (no date). Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement> (Accessed: 5 April 2024).

⁸⁰ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 39.

⁸¹ *Ibid*, p. 39.

⁸² *Ibid.*, p. 39.

⁸³ *Ibid*, p. 39.

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

received..⁸⁴ It also provides for international procedures for the review of the submitted reports.⁸⁵

Every five years, countries must assess how well they are implementing the agreement through a process known as the global stocktake.⁸⁶ Governments were alerted by the first of these studies, which was published in September 2023, that "the world is not on track to meet the long-term goals of the Paris Agreement."⁸⁷ The information gathered through the ETF will feed into the Global stock-take which will assess the collective progress towards the long-term climate goals. This will lead to recommendations for countries to set more ambitious plans in the next round.⁸⁸

At the UN High-Level Political Forum on Sustainable Development, which takes place every July, governments, corporations, civil society, policymakers, and influencers come together to assess the state of affairs and expedite worldwide efforts to produce significant advancements on the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals.⁸⁹ Checks and balances are the focus of the High-Level Political Forum, which is run by the UN Economic and Social Council.⁹⁰ In light of the world's escalating geopolitical tensions, escalating climate emergency, and precarious global economy, the Forum has emerged as a crucial platform for the worldwide

⁸⁴ *Preparing for the Enhanced Transparency Framework* | UNFCCC (no date). Available at: <https://unfccc.int/process-and-meetings/transparency-and-reporting/preparing-for-the-ETF> (Accessed: 10 April 2024).

⁸⁵ *The Paris Agreement* | UNFCCC (no date). Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement> (Accessed: 5 April 2024).

⁸⁶ *What is the global stocktake of climate action and why does it matter?* (no date). Available at: <https://www.climatechangenews.com/2023/04/27/what-is-the-global-stocktake-of-climate-action-and-why-does-it-matter/> (Accessed: 10 April 2024).

⁸⁷ *Global Climate Agreements: Successes and Failures* (no date) Council on Foreign Relations. Available at: <https://www.cfr.org/backgrounder/paris-global-climate-change-agreements> (Accessed: 10 April 2024).

⁸⁸ *The Paris Agreement* | UNFCCC (no date). Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement> (Accessed: 5 April 2024).

⁸⁹ Martin (no date) 'Monitoring and Progress', *United Nations Sustainable Development*. Available at: <https://www.un.org/sustainabledevelopment/monitoring-and-progress-hlpf/> (Accessed: 10 April 2024).

⁹⁰ *Ibid.*

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

community to evaluate the status of the Goals and determine how best to expedite action.⁹¹ In addition, the Forum aims to highlight accomplishments, draw attention to novel and developing problems, and propose suggestions for carrying out the Goals.⁹²

In order to accomplish the SDGs and make sure they stay ambitious and relevant, countries present their Voluntary National Reviews (VNRs) to the Forum.⁹³ Annually, the Forum also evaluates specific goals. The following objectives will be reviewed for the next Forum, which is scheduled for July 8–18, 2024: Goal 1 is to end poverty; Goal 2 is to end hunger; Goal 13 is to combat climate change; Goal 16 is to promote inclusive and peaceful societies; and Goal 17 is to form partnerships.⁹⁴

These reporting mechanisms are relevant in creating synergies between ensuring that the goals under each of the two Frameworks-Paris Agreement and 2030 Agenda. Stakeholders should continually make use of these to achieve synergy.

5.0 Conclusion

By 2030, zero-carbon solutions could be competitive in sectors representing over 70% of global emissions.⁹⁵ The lives of 1.3 billion people, who are thought to be directly exposed to land degradation, were impacted by the loss of at least 100 million hectares of productive and healthy land annually between

⁹¹ *4 ways geopolitical tensions are increasing carbon emissions (2024) World Economic Forum.* Available at: <https://www.weforum.org/agenda/2024/03/geopolitics-carbon-emissions-ukraine-red-sea/> (Accessed: 10 April 2024); *With Climate Crisis Generating Growing Threats to Global Peace, Security Council Must Ramp Up Efforts, Lessen Risk of Conflicts, Speakers Stress in Open Debate | Meetings Coverage and Press Releases* (no date). Available at: <https://press.un.org/en/2023/sc15318.doc.htm> (Accessed: 10 April 2024).

⁹² Martin (no date) 'Monitoring and Progress', *United Nations Sustainable Development.* Available at: <https://www.un.org/sustainabledevelopment/monitoring-and-progress-hlpf/> (Accessed: 10 April 2024).

⁹³ Ibid.

⁹⁴ Ibid.

⁹⁵ *The Paris Agreement | UNFCCC* (no date). Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement> (Accessed: 5 April 2024).

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

2015 and 2019.⁹⁶ This loss is equal to twice the size of Greenland and has a significant impact on global food and water security. Around the world, human activities such as urbanization, deforestation, and conversion of grasslands, in conjunction with climate change, are the primary causes of land degradation. Governance issues, technological and investment disparities, and developments in the economy and population all play an indirect role.⁹⁷ Restoring land and ecosystems can help mitigate the effects of disasters, biodiversity loss, climate change, and food and water scarcity at a reasonable cost.⁹⁸ Hence, in order to preserve natural areas, increase the production of food that is beneficial to the environment, and create green urban areas, infrastructure, and supply chains, governments, corporations, and communities must work together.⁹⁹

It has rightly been pointed out that halfway to the 2030 deadline, the grim image of the Sustainable Development Goals in reverse serves as a stark reminder to the world to step up efforts to end poverty and hunger, promote gender equality, and combat the triple planetary crises of pollution, climate change, and loss of nature and biodiversity.¹⁰⁰ If we ignore that appeal, we will see more political unrest and displacement, a decline in public confidence in government agencies, economic collapse, and permanent damage to the environment.¹⁰¹ Above all, it will bring about great pain for present and future generations, particularly for the most vulnerable and impoverished people and countries on the planet.¹⁰²

⁹⁶ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 43.

⁹⁷ Ibid, p. 43.

⁹⁸ Nations, U. (no date) *Biodiversity - our strongest natural defense against climate change*, United Nations. United Nations. Available at: <https://www.un.org/en/climatechange/science/climate-issues/biodiversity> (Accessed: 10 April 2024).

⁹⁹ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 43.

¹⁰⁰ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 48.

¹⁰¹ Ibid.

¹⁰² Ibid, p. 48.

Exploiting the Synergies Between the Paris Agreement and the 2030 Agenda for Sustainability

The preservation of the air, water, land, and ecosystems that serve as the basis for life is critical to human well-being and is closely linked to environmental stewardship.¹⁰³ Securing these resources for sustainability, equality, and justice is essential to achieving the Paris Agreement and the 2030 Agenda for Sustainable Development.¹⁰⁴ The development of the Sustainable Development Goals may come to an abrupt halt if the present course towards climate change, biodiversity loss, pollution, and ecosystem degradation is not reversed.¹⁰⁵ This would exacerbate public health emergencies, hunger, poverty, and conflict. On the other hand, taking immediate action in these areas might assist the pledge to leave no one behind and accelerate progress towards the Goals.¹⁰⁶

It is indeed possible to achieve sustainability by creating synergies between the SDGs, Paris Agreement and all the other relevant legal instruments that are geared towards achieving sustainability and respect for the environment and human rights.

Exploiting the synergies between the Paris Agreement and the 2030 Agenda is necessary for sustainability.

¹⁰³ *Earth Stewardship: science for action to sustain the human-earth system - Chapin - 2011 - Ecosphere - Wiley Online Library* (no date). Available at: <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1890/ES11-00166.1> (Accessed: 10 April 2024).

¹⁰⁴ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 53.

¹⁰⁵ *Ibid.*, p. 53.

¹⁰⁶ *Ibid.*, p. 53.

Safeguarding Africa's Cultural and Natural Heritage for Development

Abstract

This paper critically examines the need to safeguard Africa's cultural and natural heritage. The paper posits that Africa is endowed with cultural and natural heritage which is crucial in unlocking Sustainable Development in the continent. It critically discusses the efficacy of the initiatives embraced towards safeguarding Africa's cultural and natural heritage. The paper also highlights some of the challenges hindering effective conservation of cultural and natural heritage in Africa. Further, it proposes measures towards safeguarding Africa's cultural and natural heritage for development.

1.0 Introduction

The United Nations Educational, Scientific, and Cultural Organisation (UNESCO) defines World Heritage as the designation for places on Earth that are of outstanding universal value to humanity and as such, have been inscribed on the World Heritage List to be protected for future generations to appreciate and enjoy¹. The *Convention Concerning the Protection of the World Cultural and Natural Heritage*² defines World Heritage to entail cultural and natural heritage. Cultural heritage includes monuments; architectural works; archeological sites; inscriptions, cave dwellings and buildings that are of outstanding value from the point of view of history, art and science³. Natural heritage on the other hand includes natural features consisting of physical and biological formations; geological and physiographical formations and natural sites of outstanding value from the point of view of science, conservation or natural beauty⁴.

¹ United Nations Educational, Scientific, and Cultural Organisation., 'What is World Heritage?' Available at <https://whc.unesco.org/en/faq/19> (Accessed on 01/04/2024)

² United Nations Educational, Scientific, and Cultural Organisation., 'The Convention Concerning the Protection of the World Cultural and Natural Heritage' available at <https://whc.unesco.org/archive/convention-en.pdf> (Accessed on 01/04/2024)

³ Ibid

⁴ Ibid

Safeguarding Africa's Cultural and Natural Heritage for Development

Protection of World Heritage is necessary for development⁵. It has been noted that safeguarding World's heritage can be a driver for Sustainable Development⁶. Conserving World Heritage can ensure effective use and management of cultural and natural heritage for the benefit of present and future generations⁷. It has been argued that cultural and natural heritage has the ability to strengthen a sense of community by consolidating its relationship to a place and can boost local, national, and regional economies through sustainable tourism practices⁸. In addition, cultural and heritage can foster cultural resilience, which can reduce disaster risk and support social cohesion⁹. Therefore, in an increasingly globalized and fragmented world, protecting heritage is a vital component in achieving Sustainable Development across all sectors¹⁰.

This paper critically examines the need to safeguard Africa's cultural and natural heritage. The paper posits that Africa is endowed with cultural and natural heritage which is crucial in unlocking Sustainable Development in the continent. It critically discusses the efficacy of the initiatives embraced towards safeguarding Africa's cultural and natural heritage. The paper also highlights some of the challenges hindering effective conservation of cultural and natural heritage in Africa. Further, it proposes measures towards safeguarding Africa's cultural and natural heritage for development.

⁵ United Nations Educational, Scientific, and Cultural Organisation., 'What is World Heritage?' Op Cit

⁶ United Nations Educational, Scientific, and Cultural Organisation., 'Safeguarding African World Heritage as a Driver for Sustainable Development' Available at <https://whc.unesco.org/en/events/1295/> (Accessed on 01/04/2024)

⁷ Taruvinga. P., 'World Heritage, Sustainable Development, and Africa' Available at <https://oxfordre.com/anthropology/display/10.1093/acrefore/9780190854584.001.0001/acrefore-9780190854584-e-240> (Accessed on 01/04/2024)

⁸ Island Innovation., 'SDG 11: What Safeguarding Natural and Cultural Heritage Means for Island Communities' Available at <https://islandinnovation.co/articles/sdg-11-what-safeguarding-natural-and-cultural-heritage-means-for-island-communities/> (Accessed on 01/04/2024)

⁹ Ibid

¹⁰ Ibid

2.0 Safeguarding Africa's Cultural and Natural Heritage: Promises and Pitfalls

Africa boasts a remarkable variety of natural and cultural wealth that constitutes the very essence of African cultural identity¹¹. It has been noted that the entirety of African people's cherished arts, customs, festivals, sacred or worship sites, norms, values, ideologies, dress and dress-patterns, traditional monuments and architectures, which are cherished and conserved for their historical, political, educational, recreational and religious significance among others represents cultural heritage in Africa¹². In Africa, there are many aspects as language, traditions, historical survivals, art work, archive and artefacts collections, cultural settings and cultural landscapes transmitted from generation to generation representing rich cultural heritage¹³.

The continent has some of the most outstanding natural and cultural heritage sites that offer a variety of options for socio-economic growth, including tourism and infrastructure development¹⁴. According to UNESCO, Africa currently has 98 properties inscribed on the World Heritage List, including 54 cultural properties, 39 natural properties and 5 mixed properties¹⁵. Some of the major most iconic World Heritage sites in Africa include the Victoria Falls in Zambia/Zimbabwe, Serengeti National Park in Tanzania, the Cradle of Humankind in South Africa, and Ngorongoro Conservation Area Tanzania¹⁶. Kenya also has key World Heritage sites including Lamu Old Town, Sacred Mijikenda Kaya Forests, Mount Kenya National Park/Natural Forest, Fort Jesus, and the Lake System in the Great Rift Valley¹⁷.

¹¹ South African Research and Documentation Centre., 'Safeguarding African Heritage for Sustainable Development' Available at <https://www.sardc.net/en/southern-african-news-features/safeguarding-african-heritage-for-sustainable-development/> (Accessed on 02/04/2024)

¹² Koiki-Owoyele. A., Alabi. A., & Egbunu. A., 'Safeguarding Africa's Cultural Heritage through Digital Preservation' Available at <https://www.jaistonline.org/13vol1/9.pdf> (Accessed on 02/04/2024)

¹³ Ibid

¹⁴ Ibid

¹⁵ United Nations Educational, Scientific, and Cultural Organisation., 'Africa' Available at <https://whc.unesco.org/en/africa/> (Accessed on 02/04/2024)

¹⁶ Ibid

¹⁷ Ibid

Safeguarding Africa's Cultural and Natural Heritage for Development

The need to safeguard cultural and natural heritage is enshrined under the United Nation's 2030 *Agenda for Sustainable Development*¹⁸. Under this Agenda, Sustainable Development Goal (SDG) 11 seeks to make cities and human settlements inclusive, safe, resilient, and sustainable¹⁹. Among the targets under SDG 11 is strengthening efforts to protect and safeguard the world's cultural and natural heritage²⁰. The 2030 Agenda for Sustainable Development recognizes the essential role of cultural and natural heritage as enablers of development²¹. According to UNESCO, culture is fundamental to achieving the SDGs, since truly sustainable, human-centred development is impossible without culture²². For example, culture provides a sense of identity and meaning, makes communities more resilient and cities more sustainable²³. Further, cultural heritage can play a critical role in reducing poverty by creating jobs and nurturing well-being²⁴. In addition, the protection of exceptional natural heritage properties cherished by people all over the world including great natural sceneries and landmark monuments can be considered as an intrinsic contribution to human wellbeing²⁵. Under the 2030 Agenda for Sustainable Development, preserving natural resources, including outstanding sites containing some of the richest combinations of terrestrial and marine biodiversity, is fundamental in achieving environmental sustainability²⁶. Safeguarding cultural and natural heritage is therefore crucial in the quest towards Sustainable Development.

¹⁸ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 02/04/2024)

¹⁹ Ibid

²⁰ Ibid

²¹ Ibid

²² United Nations Educational, Scientific, and Cultural Organisation., 'Culture and the 2030 Agenda' Available at https://en.unesco.org/sites/default/files/info_sheet_2030_agenda.pdf (Accessed on 02/04/2024)

²³ Ibid

²⁴ Ibid

²⁵ United Nations Educational, Scientific, and Cultural Organisation., 'World Heritage and Sustainable Development' Available at <https://whc.unesco.org/en/sustainabledevelopment/> (Accessed on 02/04/2024)

²⁶ Ibid

Safeguarding Africa's Cultural and Natural Heritage for Development

The *Convention Concerning the Protection of the World Cultural and Natural Heritage*²⁷ also sets out the need to safeguard World Heritage. The Convention notes that both cultural and natural heritage are increasingly threatened with destruction not only by the traditional causes of decay, but also by changing social and economic conditions²⁸. It further acknowledges that most countries are facing challenges with regard to conserving World Heritage including insufficient economic, scientific, and technological resources²⁹. The Convention urges the international community as a whole to participate in the protection of the cultural and natural heritage of outstanding universal value³⁰. Under the Convention, states have a duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage³¹. States are required to undertake several measures towards conserving cultural and natural heritage including adopting a general policy which aims to give the cultural and natural heritage a function in the life of the community and to integrate the protection of that heritage into comprehensive planning programmes³²; setting up within their territories, where such services do not exist, one or more services for the protection, conservation and presentation of the cultural and natural heritage³³; developing scientific and technical studies and research and to work out such operating methods as will make states capable of counteracting the dangers that threaten their cultural or natural heritage³⁴; taking appropriate legal, scientific, technical, administrative and financial measures necessary for the identification, protection, conservation, presentation and rehabilitation of cultural and natural heritage³⁵; and establishing national or regional centres for training in the protection,

²⁷ United Nations Educational, Scientific, and Cultural Organisation., 'The Convention Concerning the Protection of the World Cultural and Natural Heritage' Op Cit

²⁸ Ibid, Preamble

²⁹ Ibid

³⁰ Ibid

³¹ Ibid, article 4

³² Ibid, article 5

³³ Ibid

³⁴ Ibid

³⁵ Ibid

Safeguarding Africa's Cultural and Natural Heritage for Development

conservation and presentation of the cultural and natural heritage and to encourage scientific research in this field³⁶.

The Convention also sets up the World Heritage Committee which is responsible establishing, keeping up to date and publishing, under the title of 'World Heritage List', a list of properties forming part of the cultural heritage and natural heritage which it considers as having outstanding universal value³⁷. The World Heritage Committee is also required to establish, keep up to date and publish, whenever circumstances shall so require, under the title of 'List of World Heritage in Danger', a list of the property forming part of the cultural and natural heritage as is threatened by serious and specific dangers, such as the threat of disappearance caused by accelerated deterioration, large-scale public or private projects or rapid urban or tourist development projects; destruction caused by changes in the use or ownership of the land among others³⁸.

The Convention Concerning the Protection of the World Cultural and Natural Heritage is important in safeguarding World Heritage. It provides the criteria for inscribing and keeping sites on the World Heritage List in order to enhance their conservation³⁹. It also establishes a Fund for the protection of the World's cultural and natural heritage⁴⁰. It is necessary to implement this Convention in order to enhance conservation of cultural and natural heritage.

At a continental level, Africa Union's *Agenda 2063*⁴¹ seeks to safeguard Africa's cultural and natural heritage. Aspiration 5 under Agenda 2063 envisages an Africa with a strong cultural identity, common heritage, values and ethics⁴². This aspiration seeks to inculcate the spirit of Pan Africanism; tap into Africa's

³⁶ Ibid

³⁷ Ibid, article 11 (2)

³⁸ Ibid, article 11 (4)

³⁹ United Nations Educational, Scientific, and Cultural Organisation., 'The Convention Concerning the Protection of the World Cultural and Natural Heritage' Op Cit

⁴⁰ Ibid. article 15

⁴¹ Africa Union., 'Agenda 2063: The Africa we Want' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 02/04/2024)

⁴² Ibid

Safeguarding Africa's Cultural and Natural Heritage for Development

rich heritage and culture to ensure that the creative arts are major contributors to Africa's growth and transformation; and restore and preserve Africa's cultural heritage⁴³. Further, under Agenda 2063, Africa will be based on inclusive growth and Sustainable Development to enable the continent reclaim its natural heritage, build prosperous societies, and reduce vulnerability to climate change⁴⁴. It is therefore necessary to actualize Agenda 2063 in order to enhance preservation of Africa's cultural heritage including languages, customs, foods, traditions; and natural heritage including natural world heritage sites⁴⁵.

The *African Union Model Law on the Protection of Cultural Property and Heritage*⁴⁶ is a continental instrument which aims to assist African countries in developing national legislation or revising and strengthening their current national legislations on the protection of cultural property and heritage⁴⁷. The Model Law recognizes the importance of the protection of cultural diversity and the promotion of cultural pluralism through safeguarding tangible and intangible cultural property and heritage⁴⁸. It requires all cultural property and heritage in Africa to be protected against any form of violation, including trafficking and illicit transactions; theft; damage, destruction or disfiguration caused either intentionally, or negligently; unauthorised export or commercial or non-commercial transactions involving cultural property and heritage; and any form of treatment or disposal of cultural property and heritage deemed to be intentionally, or negligently offensive of any cultural, religious, non-religious, ethnic and spiritual traditions of its place of origin among other illegal activities⁴⁹. The Model Law also requires states to establish national bodies for the conservation of cultural property and heritage⁵⁰. It also urges states to embrace community forums towards conserving cultural property

⁴³ Ibid

⁴⁴ Ibid

⁴⁵ Ibid

⁴⁶ African Union., 'African Union Model Law on the Protection of Cultural Property and Heritage' Available at <https://au.int/es/node/40132> (Accessed on 02/04/2024)

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ Ibid

Safeguarding Africa's Cultural and Natural Heritage for Development

and heritage⁵¹. Embracing this Model Law can enhance efforts towards safeguarding cultural property and heritage in Africa.

At a national level, the *Constitution of Kenya*⁵² requires the state to promote all forms of national and cultural expression through literature, the arts, traditional celebrations, science, communication, information, mass media, publications, libraries and other cultural heritage⁵³. Protection and conservation of cultural and natural heritage in Kenya is also envisaged under the *National Museums and Heritage Act*⁵⁴. The Act seeks to enhance the identification, protection, conservation and transmission of the cultural and natural heritage of Kenya⁵⁵. It establishes the National Museums of Kenya which is mandated to serve as national repositories for matters of scientific, cultural, technological and human interest⁵⁶; serve as places where research and dissemination of knowledge in all fields of scientific, cultural, technological and human interest may be undertaken⁵⁷; identify, protect, conserve and transmit the cultural and natural heritage of Kenya⁵⁸; and promote cultural resources in the context of social and economic development⁵⁹. The Act further mandates the Cabinet Secretary for the time being responsible for the National Museums to declare protected areas in order to enhance the protection of natural heritage in Kenya⁶⁰. It also places a duty on National Museums to protect and maintain monuments in Kenya⁶¹.

It has been noted that Africa has gradually embraced the World Heritage concept, which advocates for the protection of cultural and natural heritage of

⁵¹ Ibid

⁵² Constitution of Kenya, 2010, Government Printer, Nairobi

⁵³ Ibid, article 11 (2)

⁵⁴ National Museums and Heritage Act, Cap 216, Government Printer, Nairobi

⁵⁵ Ibid, Preamble

⁵⁶ Ibid, S 3

⁵⁷ Ibid, S 4

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Ibid, S 25

⁶¹ Ibid, S 43

Safeguarding Africa's Cultural and Natural Heritage for Development

outstanding universal value⁶². Many countries have strengthened national efforts in preserving heritage on the continent by establishing laws and institutions mandated with safeguarding cultural and national heritage⁶³. It has been observed that the number of World Heritage sites inscribed from Africa is gradually increasing demonstrating the importance of cultural and natural heritage in Africa⁶⁴. However, cultural and natural heritage in Africa has not been sufficiently harnessed for development⁶⁵. It has been noted that the conservation of world heritage in Africa is threatened by certain factors including modernization and urban growth⁶⁶. Further, cultural and natural heritage is threatened by traditional causes of decay and emerging social and economic conditions including developments and construction⁶⁷. According to UNESCO, African heritage sites face challenges related to erratic development, armed conflicts and terrorism, uncontrolled movements of populations, poaching, weak management and climate change⁶⁸. UNESCO further notes that intentional destruction, looting and loss of heritage, including World Heritage sites, have become hallmarks of civil conflicts in some parts of Africa⁶⁹. In addition, displaced populations as a result of conflicts and wars, especially in the central part of Africa, seek refuge in protected areas and inadvertently negatively impact World Heritage sites in these areas⁷⁰. It is therefore necessary to safeguard Africa's cultural and natural heritage for development.

⁶² Taruvinga. P., 'World Heritage in Africa' Available at <https://courier.unesco.org/en/articles/world-heritage-africa> (Accessed on 02/04/2024)

⁶³ Ibid

⁶⁴ Ibid

⁶⁵ Ibid

⁶⁶ Ashrafi. B et al., 'Heritage Impact Assessment, Beyond an Assessment Tool: A comparative analysis of urban development impact on visual integrity in four UNESCO World Heritage Properties' *Journal of Cultural Heritage* 47 (2021) 199–207

⁶⁷ United Nations Educational, Scientific, and Cultural Organisation., 'The Convention Concerning the Protection of the World Cultural and Natural Heritage' Op Cit

⁶⁸ United Nations Educational, Scientific, and Cultural Organisation., 'Safeguarding African World Heritage as a Driver for Sustainable Development' Op Cit

⁶⁹ Ibid

⁷⁰ Ibid

3.0 Way Forward

It is necessary to embrace community engagement and the role of Indigenous peoples for effective conservation of World Heritage in Africa⁷¹. Indigenous communities in Africa have been at the heart of conservation efforts in relation to cultural and natural heritage for many centuries⁷². They have ensured that cultural heritage such as oral traditions, customs, language, and practices have been transferred from one generation to another⁷³. UNESCO correctly observes that World Heritage sites are often located within land managed by indigenous peoples whose land use, knowledge and cultural and spiritual values and practices are related to heritage⁷⁴. It is therefore necessary to recognize Indigenous peoples as stewards of a significant part of the world's biological, cultural and linguistic diversity⁷⁵. Ensuring full and effective participation of indigenous peoples in conservation efforts and embracing traditional and indigenous knowledge can strengthen efforts towards safeguarding cultural and natural heritage⁷⁶.

Further, it is imperative to embrace the concept of Heritage Impact Assessment for effective conservation of natural heritage in Africa⁷⁷. The idea of Heritage Impact Assessment has emerged in order to identify and evaluate the impacts of human activities on world heritage towards striking a balance between the conservation of world heritage and promoting economic and

⁷¹ United Nations Educational, Scientific, and Cultural Organisation., 'Engaging Local Communities in Stewardship of World Heritage' Available at <https://whc.unesco.org/en/series/40/#:~:text=The%20inclusion%20of%20communities%20as,link%20conservation%20and%20sustainable%20development>. (Accessed on 02/04/2024)

⁷² Ibid

⁷³ Ibid

⁷⁴ United Nations Educational, Scientific, and Cultural Organisation., 'World Heritage and Indigenous Peoples' Available at <https://whc.unesco.org/en/activities/496/#:~:text=As%20the%20UNESCO%20policy%20on,practices%20are%20related%20to%20heritage>. (Accessed on 02/04/2024)

⁷⁵ Ibid

⁷⁶ Ibid

⁷⁷ Muigua. K., 'Exploring Heritage Impact Assessment in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2022/10/Exploring-Heritage-Impact-Assessment-in-Kenya.pdf> (Accessed on 02/04/2024)

Safeguarding Africa's Cultural and Natural Heritage for Development

social development⁷⁸. It involves the requirement to undertake Environmental Impact Assessment at the project level or more strategic level in order to assist decision makers in identifying and preventing approval of developments that may destroy cultural and natural heritage⁷⁹. This concept is vital in safeguarding World Heritage during development projects⁸⁰. It explores the damage or benefits that may accrue on cultural and natural heritage as a result of human activities such as economic development and proposes appropriate mitigation measures⁸¹. According to UNESCO, Heritage Impact Assessment is key in evaluating potential impacts development including urbanisation, tourism infrastructures, dams, roads, power plants and other major interventions on world heritage, and finding appropriate mitigation measures and alternative options⁸². It is therefore necessary to embrace Heritage Impact Assessment in Africa in order to safeguard world heritage for development.

In addition, there is need to embrace digital preservation of cultural heritage⁸³. It has been noted that since cultural heritage resources are irreplaceable, their protection is critical⁸⁴. However, cultural heritage in Africa is susceptible to loss since it is usually transmitted from one generation to another in form of oral traditions⁸⁵. Digital preservation has therefore become a popular method

⁷⁸ Ashrafi. B et al., 'Heritage Impact Assessment, Beyond an Assessment Tool: A comparative analysis of urban development impact on visual integrity in four UNESCO World Heritage Properties' Op Cit

⁷⁹ Pereira Roders. A & Van Oers. R., 'Guidance on Heritage Impact Assessments: Learning from its application on World Heritage site management' *Journal of Cultural Heritage Management and Sustainable Development* Vol. 2 No. 2, 2012

⁸⁰ Ibid

⁸¹ Ibid

⁸² United Nations Educational, Scientific, and Cultural Organisation., 'Guidance and Toolkit for Impact Assessments in a World Heritage Context' Available at <https://whc.unesco.org/en/guidance-toolkit-impact-assessments/> (Accessed on 02/04/2024)

⁸³ Masenya. T., 'Digital Preservation of Cultural Heritage: Digital Innovative Approach Towards Sustainable Development of South African Rural Communities' Available at https://www.researchgate.net/publication/349905031_Digital_Preservation_of_Cultural_Heritage_Digital_Innovative_Approach_Towards_Sustainable_Development_of_South_African_Rural_Communities (Accessed on 02/04/2024)

⁸⁴ Ibid

⁸⁵ Ibid

Safeguarding Africa's Cultural and Natural Heritage for Development

for safeguarding cultural heritage resources in recent years⁸⁶. It is vital in ensuring sustainability and preventing the risk of the cultural heritage being lost forever⁸⁷. It is therefore necessary to harness the power of technology in order to safeguard Africa's cultural heritage. Digital preservation not only safeguards Africa's cultural heritage for future generations but also provides a platform to showcase Africa's cultural legacy to the global audience⁸⁸.

Finally, there is need to embrace sustainable tourism in order to safeguard natural heritage in Africa⁸⁹. Tourism can be a threat to conservation of World Heritage⁹⁰. Poorly managed and uncontrolled tourism has been identified as a threat to the long-term sustainability of natural heritage⁹¹. It can result in degradation of world heritage sites⁹². Natural and cultural heritage, diversities and living cultures are major tourism attractions⁹³. Excessive or poorly managed tourism and tourism-related development however can threaten their physical nature, integrity and significant characteristics⁹⁴. In addition, the ecological setting, culture and lifestyles of host communities may also be degraded as a result of unsustainable tourism practices⁹⁵. It is thus crucial to foster sustainable tourism in order to safeguard cultural and natural heritage in Africa. This can be achieved by embracing green tourism activities such as

⁸⁶ Hossain. N., 'Digital Heritage Preservation' Available at https://projects.cs.uct.ac.za/honsproj/cgi-bin/view/2015/hossain_mthimkulu_petersen.zip/threearch_petersen_mthimkulu_hossain/HTML/assets/Noosrat_downloads/LiteratureReview.pdf (Accessed on 02/04/2024)

⁸⁷ Ibid

⁸⁸ Ibid

⁸⁹ United Nations Educational, Scientific, and Cultural Organisation., 'World Heritage and Sustainable Tourism' Available at <https://whc.unesco.org/en/review/71/> (Accessed on 02/04/2024)

⁹⁰ Ibid

⁹¹ Ibid

⁹² Ibid

⁹³ Our World Heritage., 'Tourism and its Impacts on Conservation' Available at <https://www.ourworldheritage.org/2021debate-theme/tourism#:~:text=Tourism%20is%20often%20perceived%20as,its%20economic%20and%20social%20viability.> (Accessed on 02/04/2024)

⁹⁴ Ibid

⁹⁵ Ibid

Safeguarding Africa's Cultural and Natural Heritage for Development

eco-tourism, and creating visitor awareness of responsible behaviour in communities and the environment⁹⁶.

The foregoing measures among others are key in safeguarding Africa's cultural and natural heritage.

4.0 Conclusion

Africa is a continent that is rich in cultural and natural heritage. The outstanding natural and cultural heritage sites in Africa offer a variety of options for socio-economic growth, including tourism and infrastructure development⁹⁷. However, the conservation of world heritage in Africa is threatened by certain factors including modernization and urban growth⁹⁸. Some of the key challenges hindering effective conservation of cultural and natural heritage in Africa include erratic development, armed conflicts and terrorism, uncontrolled movements of populations, poaching, weak management and climate change⁹⁹. It is necessary to safeguard Africa's cultural and natural heritage for development. This can be realized through embracing community engagement and the role of Indigenous peoples for effective conservation of World Heritage in Africa¹⁰⁰; fostering Heritage Impact Assessment¹⁰¹; promoting digital preservation of cultural heritage¹⁰²;

⁹⁶ Muigua. K., 'Fostering Sustainable Tourism in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2023/08/Fostering-Sustainable-Tourism-in-Kenya.pdf> (Accessed on 02/04/2024)

⁹⁷ Koiki-Owoyele. A., Alabi. A., & Egbunu. A., 'Safeguarding Africa's Cultural Heritage through Digital Preservation'

⁹⁸ Ashrafi. B et al., 'Heritage Impact Assessment, Beyond an Assessment Tool: A comparative analysis of urban development impact on visual integrity in four UNESCO World Heritage Properties' Op Cit

⁹⁹ United Nations Educational, Scientific, and Cultural Organisation., 'Safeguarding African World Heritage as a Driver for Sustainable Development' Op Cit

¹⁰⁰ United Nations Educational, Scientific, and Cultural Organisation., 'Engaging Local Communities in Stewardship of World Heritage' Op Cit

¹⁰¹ Muigua. K., 'Exploring Heritage Impact Assessment in Kenya' Op Cit

¹⁰² Masenya. T., 'Digital Preservation of Cultural Heritage: Digital Innovative Approach Towards Sustainable Development of South African Rural Communities' Op Cit

Safeguarding Africa's Cultural and Natural Heritage for Development

and enhancing sustainable tourism¹⁰³. Safeguarding Africa's cultural and natural heritage for development is a goal that must be realized.

¹⁰³ United Nations Educational, Scientific, and Cultural Organisation., 'World Heritage and Sustainable Tourism' Op Cit

Applying Environmental Ethics for Sustainability

Abstract

The ideal of sustainability envisions striking a balance between environmental conservation, economic development and social progress. However, realizing this ideal is hindered by several challenges including the triple planetary crisis of climate change, biodiversity loss, and pollution. In light of such challenges, it is necessary to forge a new relationship between people and the planet in order to achieve sustainability. One of the key approaches that can be embraced towards fostering harmony between humanity and nature is environmental ethics. Applying environmental ethics can therefore lead to sustainability. This paper critically examines the role of environmental ethics in the sustainability agenda. It argues that environmental ethics can be a vital tool in fostering sustainability. The paper defines environmental ethics and discusses how this concept can enhance sustainability. It also discusses some of the concerns with utilizing environmental ethics as a tool for sustainability. Further, the paper suggests ideas towards applying environmental ethics for sustainability.

1.0 Introduction

Achieving sustainability refers to creating and maintaining the conditions under which humanity and nature can exist in productive harmony to support present and future generations¹. The concept of Sustainable Development embraces sustainability and seeks to foster development that meets the needs of the present without compromising the ability of future generations to meet their own needs². Sustainable Development aims to promote sustainability by embracing an integrated approach towards development that takes into consideration environmental conservation along with economic and social development³. The United Nation's 2030 *Agenda for Sustainable Development*⁴

¹ United States Environmental Protection Agency., 'What is Sustainability?' Available at <https://www.epa.gov/sustainability/learn-about-sustainability> (Accessed on 03/04/2024)

² World Commission on Environment and Development., 'Our Common Future.' Oxford, (Oxford University Press, 1987)

³ United Nations., 'Sustainability' Available at <https://www.un.org/en/academic-impact/sustainability> (Accessed on 03/04/2024)

⁴ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at

Applying Environmental Ethics for Sustainability

sets out the global blueprint for sustainability. The Agenda envisions attainment of the ideal of Sustainable Development through 17 Sustainable Development Goals (SDGs) which aim to strike a balance between social, economic and environmental facets of sustainability⁵.

Sustainability thus envisions striking a balance between environmental conservation, economic development and social progress⁶. However, realizing sustainability is hindered by problems such as climate change, pollution, and loss of biodiversity together with issues of poverty, increasing disparity between societies and the tensions brought by social inequalities⁷. Further, it has been noted that the triple planetary crisis of climate change, biodiversity loss, and pollution are major threats to environmental sustainability⁸.

In light of the foregoing challenges, it is necessary to forge a new relationship between people and the planet in order to achieve sustainability⁹. One of the key approaches that can be embraced towards fostering harmony between humanity and nature is environmental ethics¹⁰. Applying environmental ethics can therefore lead to sustainability¹¹. This paper critically examines the

<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 03/04/2024)

⁵ Ibid

⁶ Fitzmaurice. M., 'The Principle of Sustainable Development in International Development Law.' *International Sustainable Development Law.*, Vol 1

⁷ Giovannoni. E., & Fabietti. G., 'What Is Sustainability? A Review of the Concept and Its Applications.' In: Busco, C., Frigo, M., Riccaboni, A., Quattrone, P. (eds) *Integrated Reporting*. Springer, Cham. Available at https://doi.org/10.1007/978-3-319-02168-3_2 (Accessed on 03/04/2024)

⁸ United Nations Environment Programme., 'The Triple Planetary Crisis: Forging a New Relationship Between People and the Earth' Available at <https://www.unep.org/news-andstories/speech/tripleplanetary-crisis-forging-new-relationship-between-people-and-earth> (Accessed on 03/04/2024)

⁹ Ibid

¹⁰ United Nations Environment Programme., 'The Role of Environmental and Spiritual Ethics in Global Environmental Governance' Available at <https://www.unep.org/resources/policy-and-strategy/role-environmental-and-spiritual-ethics-global-environmental#:~:text=Adopting%20an%20ethics%20and%20values,essential%20requirement%20for%20Sustainable%20Development> (Accessed on 03/04/2024)

¹¹ Ibid

Applying Environmental Ethics for Sustainability

role of environmental ethics in the sustainability agenda. It argues that environmental ethics can be a vital tool in fostering sustainability. The paper defines environmental ethics and discusses how this concept can enhance sustainability. It also discusses some of the concerns with utilizing environmental ethics as a tool for sustainability. Further, the paper suggests ideas towards applying environmental ethics for sustainability.

2.0 Environmental Ethics and Sustainability

Ethics have been defined as well-based standards of right and wrong that prescribe what humans ought to do, usually in terms of rights, obligations, benefits to society fairness, or specific virtues¹². Ethics refers to the guidelines for conduct that address questions of morality¹³. It has been noted that ethics shape human conduct by determining what is right or wrong¹⁴. Ethics relate to an individual's morals and their sense of right and wrong¹⁵. They provide a lens for humanity to base its morality and shape its decision-making process¹⁶.

Environmental ethics is a concept that examines the moral basis of humanity's responsibility towards the environment¹⁷. It governs human beings' ethical relationship with the natural environment¹⁸. The purpose of environmental ethics is to guide how humanity should interact with the natural environment, including the nonhuman individuals that populate it and respond to

¹² Velasquez M., Andre C., Shanks, S.J., and Meyer M., (1987), "What is Ethics?", *Journal of Issues in Ethics*, IIE Vol. 1(1).

¹³ Evans. W. G., 'Ethics, Values and Practice' Available at http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S0011-85162019000600013 (Accessed on 03/04/2024)

¹⁴ Ibid

¹⁵ Sustainability Methods and Perspectives., Available at <https://pressbooks.pub/sustainabilitymethods/chapter/ethics-in-sustainability/#:~:text=Environmental%20ethics%20focuses%20on%20the%20relationship%20between%20human%20beings%20and,it%20can%20best%20be%20protected> (Accessed on 03/04/2024)

¹⁶ Ibid

¹⁷ Bourdeau. Ph., 'The Man Nature Relationship and Environmental Ethics' *Journal of Environmental Radioactivity* 72 (2004) 9-15

¹⁸ Hossain. S., 'Environmental Ethics and Sustainable Development: An Analysis of Rampal Coal Power Plant in Bangladesh' Available at <https://philarchive.org/archive/HOSEEA-2> (Accessed on 03/04/2024)

Applying Environmental Ethics for Sustainability

environmental challenges more appropriately¹⁹. This concept emphasizes for the increased and improved moral regard for nonhuman and ecological system²⁰. According to environmental ethics, lack of moral responsibility towards the environment is a fundamental cause of environmental damage and degradation²¹. Environmental ethics is therefore concerned with the issue of responsible human conduct with respect to natural landscapes, resources, species and non-human organisms²².

Environmental ethics are fundamental in achieving sustainability²³. It has been argued that with the increasing deterioration of the environment as evidenced by problems such as climate change, pollution, and loss of biodiversity, humanity cannot entirely rely on economic and judicial interventions alone to address these challenges.²⁴ Therefore, there is need to appeal to human beings' limitless internal ethical resources for enhanced environmental conservation²⁵. It has been argued that it is only through embracing an appropriate attitude towards nature and establishment of a new ethical relationship between humanity and nature that it will be possible to forge a harmonious relationship between human beings and the environment²⁶. According to the United Nations Environment Programme (UNEP), transitioning to a more sustainable future requires a new environmental governance system and the engagement of the full spectrum of society and the employment of innovative approaches that protect the natural environment based on behavioural and ethical changes in environmental governance²⁷.

¹⁹ Ibid

²⁰ Ibid

²¹ Ibid

²² Michael. J., 'Environmental Ethics and Sustainable Development: Ethical and Human Rights Issues in Implementing Indigenous Rights' *Macquarie Journal of International and Comparative Environmental Law*, 2005

²³ Ibid

²⁴ Muigua. K., 'Nurturing Our Environment for Sustainable Development' Glenwood Publishers Limited, 2016

²⁵ Ibid

²⁶ Ibid

²⁷ United Nations Environment Programme., 'The Role of Environmental and Spiritual Ethics in Global Environmental Governance' Available at <https://www.unep.org/resources/policy-and-strategy/role-environmental-and->

Applying Environmental Ethics for Sustainability

Environmental ethics seek to fill the gaps in political, legal, scientific, economic, and technological approaches towards environmental conservation²⁸. It has been noted that for a long time, human effects on the environment were regarded as neutral since it was assumed that nature was both impersonal and too vast to be injured by human interventions²⁹. However, environmental ethics acknowledge that human actions can result in massive and permanent damage to natural landscape, resources and ecosystems³⁰. Environmental ethics seek to instill a sense of moral obligation to act with care, foresight and at times, with forbearance and constraint for enhances environmental conservation³¹.

It has been argued that ethics are important to consider when solving major challenges related to sustainability since they take into account the needs and rights of a variety of groups³². Ethics consider the needs of present and future generations in the sustainability agenda. Therefore, when environmental decision-makers use ethical approaches to solve sustainability challenges, they consider how their decisions can have effects on the environment, economy, and humanity in general – now and in the future³³. Environmental ethics are therefore key in promoting the ideal of Environmental Justice³⁴. The idea of Environmental Justice refers to the right to have access to natural resources; not to suffer disproportionately from environmental policies, laws and regulations; and the right to environmental information, participation and involvement in decision-making³⁵. It envisages the fair treatment and

[spiritual-ethics-global-environmental#:~:text=Adopting%20an%20ethics%20and%20values,essential%20requirement%20for%20Sustainable%20Development](#) (Accessed on 03/04/2024)

²⁸ Michael. J., 'Environmental Ethics and Sustainable Development: Ethical and Human Rights Issues in Implementing Indigenous Rights' Op Cit

²⁹ Ibid

³⁰ Ibid

³¹ Ibid

³² Sustainability Methods and Perspectives., Op Cit

³³ Ibid

³⁴ Ibid

³⁵ Ako. R., 'Resource Exploitation and Environmental Justice: the Nigerian Experience' Available at

Applying Environmental Ethics for Sustainability

meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies³⁶. Environmental Justice seeks to ensure equality, equity and fairness in environmental matters³⁷. Applying ethics is key in realizing Environmental Justice which considers how environmental problems and benefits are divided among groups³⁸. It has been argued that Environmental justice is a subset of environmental ethics since it places the environment at the center of the sustainability debate and considers social and economic effects stemming from environmental problems³⁹. Applying environmental ethics is thus crucial in realizing Environmental Justice towards sustainability.

According to UNEP, adopting an ethics and values-based approach where humans learn to live in harmony with nature and with one another is critical in achieving the 2030 Agenda for Sustainable Development that is people-centered and acknowledges that a healthy planet is an essential requirement for Sustainable Development⁴⁰. The 2030 Agenda for Sustainable Development identifies key problems facing the planet including climate change, environmental degradation, depletion of natural resources, loss of biodiversity and pollution⁴¹. It has been argued that some of these problems especially climate change, depletion of natural resources, and deforestation have more negative impacts on future generations compared to the present⁴². As a result, human beings have an ethical obligation to solve such

https://www.elgaronline.com/display/edcoll/9781848446793/9781848446793.0001_1.xml (Accessed on 03/04/2024)

³⁶ United States Environmental Protection Agency; 'Environmental Justice.' Available at <https://www.epa.gov/environmentaljustice> (Accessed on 03/04/2024)

³⁷ Schlosberg, D & Collins, L., 'From Environmental to Climate Justice: Climate Change and the Discourse of Environmental Justice.' *WIREs Clim Change*, 2014

³⁸ Sustainability Methods and Perspectives., Op Cit

³⁹ Ibid

⁴⁰ United Nations Environment Programme., 'The Role of Environmental and Spiritual Ethics in Global Environmental Governance' Op Cit

⁴¹ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' Op Cit

⁴² Rajalakshmi, S., 'Sustainable Development through Environmental Ethics' *International Journal of Applied Research.*, Volume 2, No. 3, 2016

Applying Environmental Ethics for Sustainability

environmental problems for the benefit of both the present and future generations⁴³. Applying environmental ethics can therefore aid in solving environmental problems and achieving Sustainable Development.

One of the key sources of environmental ethics is the *Earth Charter*⁴⁴. This Charter stands apart from the many other United Nations Declarations, Conventions, and Treaties that address sustainability since it sets out a set of principles to live by, rather than a prescription for action⁴⁵. One of the fundamental purposes of the Earth Charter is to encourage all people to identify with the Whole Earth community as well as their local communities and to expand their moral concern and caring to include the present and future well-being of the entire humanity and the larger living world⁴⁶. According to the Charter, the world needs a shared vision of basic values to provide an ethical foundation for addressing challenges facing planet⁴⁷. The Charter presents a holistic worldview driven by such *ethical* concerns including respect for nature(Emphasis added)⁴⁸.

Some of key ethical principles and considerations under the Earth Charter include the recognition that all beings are interdependent and every form of life has value regardless of its worth to human beings⁴⁹; faith in the inherent dignity of all human beings and in the intellectual, artistic, ethical, and spiritual potential of humanity⁵⁰; right to own, manage, and use natural resources which comes with the duty to prevent environmental harm and to protect the rights of people⁵¹; the need to build democratic societies that are just, participatory, sustainable, and peaceful; promoting social and economic justice and enabling all to achieve a secure and meaningful livelihood that is

⁴³ Ibid

⁴⁴ Earth Charter., Available at <https://earthcharter.org/wp-content/uploads/2020/06/Booklet-Earth-Charter-52-FINAL.pdf> (Accessed on 04/04/2024)

⁴⁵ Ibid

⁴⁶ Ibid

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ Ibid

Applying Environmental Ethics for Sustainability

ecologically responsible⁵²; and the need to transmit to future generations values, traditions, and institutions that support the long-term flourishing of Earth's human and ecological communities⁵³. The Earth Charter urges humanity to respect the environment and ensure protection of the Earth's diversity, prevent ecological harm, and foster sustainable lifestyles⁵⁴. It also focuses on protection and preservation of the traditional knowledge and spiritual wisdom of Indigenous peoples, as well as the eradication of poverty as an ethical, social and environmental imperative⁵⁵. It has been argued that since the Earth Charter is not a legal document that requires ratification, its implementation is premised on changes in attitude and ethical behaviour⁵⁶. The Charter can therefore be a common standard for ethical, just and environmentally sound behaviour towards sustainability⁵⁷.

From the foregoing, it is evident that environmental ethics are key in realizing sustainability. Environmental ethics are essential for protecting the environment, species, and resources⁵⁸. They can promote sustainable practices and encourage people to become more aware of the impact their actions have on the environment⁵⁹. Environmental ethics further emphasize the interconnectedness of all living organisms and the need to respect them⁶⁰. They can also help humanity to build better relationships with nature by recognizing its intrinsic value and not just its instrumental value⁶¹. In addition, environmental ethics can aid in the adoption of better public policies and laws for effective environmental governance⁶². It is therefore necessary to embrace environmental ethics for sustainability. However, there are several

⁵² Ibid

⁵³ Earth Charter.,

⁵⁴ Ibid

⁵⁵ Ibid

⁵⁶ Michael. J., 'Environmental Ethics and Sustainable Development: Ethical and Human Rights Issues in Implementing Indigenous Rights' Op Cit

⁵⁷ Ibid

⁵⁸ Environmental Ethics: Types, Importance, Examples., Available at <https://www.geeksforgeeks.org/environmental-ethics/> (Accessed on 04/04/2024)

⁵⁹ Ibid

⁶⁰ Ibid

⁶¹ Michael. J., 'Environmental Ethics and Sustainable Development: Ethical and Human Rights Issues in Implementing Indigenous Rights' Op Cit

⁶² Ibid

Applying Environmental Ethics for Sustainability

challenges in environmental ethics including defining the boundaries of ethical obligation and implementing ethical obligations towards the environment⁶³. These challenges may hinder the effectiveness of environmental ethics in sustainability. It is therefore necessary to address such challenges in order to strengthen the role of environmental ethics for sustainability.

3.0 Way Forward

In order to embrace environmental ethics, there it is necessary to redefine the relationship between humanity and nature⁶⁴. There is need to establish harmony between humanity and nature in order to ensure that human beings preserve and protect nature while developing⁶⁵. It has been noted that for long time, human-beings have treated the environment as a commodity or resource to be exploited and discarded⁶⁶. This approach has resulted in the environment being susceptible to threat from human action through pollution, environmental degradation, climate change, and loss of biodiversity among other concerns⁶⁷. It is therefore necessary for humanity to build better relationships with nature by recognizing its intrinsic value and not just its instrumental value⁶⁸. Establishing harmony between humanity and nature can provide moral framework for how human beings interact with the natural environment⁶⁹. This approach can help humanity consider the effects its actions have on the planet and guide in making more ethical and sustainable

⁶³ Rolston. H., 'Challenges in Environmental Ethics' Available at <https://api.mountainscholar.org/server/api/core/bitstreams/db4c5a00-c1dc-4af7-abd7-4f76ee8dabd9/content> (Accessed on 04/04/2024)

⁶⁴ Song. W., & Cao. H., 'Historical Evolution and Reflections on "Harmony between Man and Nature"' Available at <https://www.scirp.org/journal/paperinformation?paperid=120602#:~:text=Harmony%20between%20man%20and%20nature%20means%20that%20man%20needs%20to,to%20preserve%20nature%20while%20developing> (Accessed on 04/04/2024)

⁶⁵ Ibid

⁶⁶ Ibid

⁶⁷ Ibid

⁶⁸ Michael. J., 'Environmental Ethics and Sustainable Development: Ethical and Human Rights Issues in Implementing Indigenous Rights' Op Cit

⁶⁹ Michael. J., 'Environmental Ethics and Sustainable Development: Ethical and Human Rights Issues in Implementing Indigenous Rights' Op Cit

Applying Environmental Ethics for Sustainability

decisions⁷⁰. Establishing harmony between humanity and nature is thus vital in applying environmental ethics for sustainability.

In addition, it is imperative to foster an ecocentric approach towards environmental governance⁷¹. An ecocentric approach towards environmental governance acknowledges that the environment, species and ecosystems have value and interests that should be respected regardless of whether they serve human needs and aspirations⁷². Ecocentrism represents the idea that everything in the natural world has its own intrinsic value and deserves moral consideration⁷³. This idea has been posited as the only effective approach to environmental ethics⁷⁴. It emphasizes the intrinsic value of nature and places a moral obligation on humanity to respect and conserve the environment for the benefit of present and future generations⁷⁵. Fostering an ecocentric approach towards environmental governance is therefore key in entrenching environmental ethics for sustainability.

Finally, it is necessary to strengthen environmental education⁷⁶. It has been noted that there is a close link between environmental degradation, lack of environmental justice, poverty, and low levels of education among citizens and provision of education is the crucial first step towards eliminating environmental challenges⁷⁷. Environmental education is important in promoting Sustainable Development and improving the capacity of people to address environment and development issues⁷⁸. It can help individuals, communities, and organizations learn more about the environment, and

⁷⁰ Ibid

⁷¹ Taylor. B., 'The Need for Ecocentrism in Biodiversity Conservation' Available at <https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/cobi.13541> (Accessed on 04/04/2024)

⁷² Ibid

⁷³ Proctor. J. D., 'Nature, Concepts of: Environmental and Ecological' Available at <https://www.sciencedirect.com/science/article/abs/pii/B0080430767041280> (Accessed on 04/04/2024)

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Muigua. K., 'Nurturing Our Environment for Sustainable Development' Op Cit

⁷⁷ Ibid

⁷⁸ Ibid

Applying Environmental Ethics for Sustainability

develop skills and understanding about how to address global environmental challenges⁷⁹. Environmental education can also influence humanity's attitudes and perceptions towards the environment⁸⁰. Therefore, environmental education is vital in fostering good ethics and morals towards the environment. According to UNEP, environmental education is a key element to transform values, behaviors and visions towards the environment⁸¹. It is therefore necessary to strengthen environmental education in order to effectively apply ethics for sustainability.

4.0 Conclusion

Environmental ethics are fundamental in achieving sustainability. They can help humanity to build better relationships with nature by recognizing its intrinsic value and not just its instrumental value⁸². They can also promote sustainable practices and encourage people to become more aware of the impact their actions have on the environment⁸³. Environmental ethics can also aid in the adoption of better public policies and laws for effective environmental governance⁸⁴. However, the efficacy of environmental ethics in sustainability is limited by challenges such as defining the boundaries of ethical obligation and implementing ethical obligations towards the environment⁸⁵. In order to effectively apply environmental ethics for sustainability, it is necessary to redefine the relationship between humanity and nature⁸⁶; foster an ecocentric approach towards environmental

⁷⁹ United Nations Environment Programme., 'Environmental Education' Available at <https://www.unep.org/regions/latin-america-and-caribbean/regional-initiatives/strengthening-environmental-governance-3> (Accessed on 04/04/2024)

⁸⁰ Ibid

⁸¹ Ibid

⁸² Michael. J., 'Environmental Ethics and Sustainable Development: Ethical and Human Rights Issues in Implementing Indigenous Rights' Op Cit

⁸³ Ibid

⁸⁴ Ibid

⁸⁵ Rolston. H., 'Challenges in Environmental Ethics' Op Cit

⁸⁶ Song. W., & Cao. H., 'Historical Evolution and Reflections on "Harmony between Man and Nature"' Op Cit

Applying Environmental Ethics for Sustainability

governance⁸⁷; and strengthen environmental education⁸⁸. Environmental ethics is a viable tool that needs to be effectively applied for sustainability.

⁸⁷ Taylor. B., 'The Need for Ecocentrism in Biodiversity Conservation' Op Cit

⁸⁸ Muigua. K., 'Nurturing Our Environment for Sustainable Development' Op Cit

Promoting Sustainable Waste Management for Posterity

Abstract

Sustainable waste management is fundamental. It mitigates adverse health and environmental impacts of waste, conserves resources, and improves the livability of human settlements. Further, sustainable waste management plays a significant role in Sustainable Development and the Circular Economy (CE) transition. This paper explores the need for sustainable waste management. It defines the idea of sustainable waste management. The paper also interrogates the progress made towards embracing sustainable waste management at the global, regional, and national levels. It further discusses the challenges facing the realization of sustainable waste management. In addition, the paper offers ideas towards promoting sustainable waste management for posterity.

1.0 Introduction

Waste management involves activities and actions that handle waste materials¹. It includes activities and actions such as collection, transportation, processing, and disposal of waste². The increasing volume and complexity of waste associated with the modern global economy is posing a serious risk to ecosystems and human health³. The United Nations Environment Programme (UNEP) estimates that every year, an estimated 11.2 billion tonnes of solid waste is collected worldwide and decay of the organic proportion of solid waste is contributing to approximately 5 per cent of global greenhouse gas emissions⁴. UNEP further notes that poor waste management ranging from non-existing collection systems to ineffective disposal causes air pollution, water and soil contamination⁵.

¹ Wan. C., Shen. G. Q., & Choi. S., 'Waste Management Strategies for Sustainable Development' Available at https://link.springer.com/referenceworkentry/10.1007/978-3-319-63951-2_194-1 (Accessed on 28/03/2024)

² Ibid

³ United Nations Environment Programme., 'Solid Waste Management' Available at <https://www.unep.org/explore-topics/resource-efficiency/what-we-do/cities/solid-waste-management> (Accessed on 27/03/2024)

⁴ Ibid

⁵ Ibid

Promoting Sustainable Waste Management for Posterity

Unsustainable waste management practices, exacerbated by rapid urbanization and financial and institutional limitations, negatively impacts public health and environmental sustainability⁶. The World Health Organization notes that improper disposal can lead to adverse health outcomes, for example through water, soil and air contamination⁷. It further notes that hazardous waste or unsafe waste treatment such as open burning can directly harm waste workers or other people involved in waste burning and neighbouring communities⁸. In addition, vulnerable groups such as children are at increased risk of adverse health outcomes of unsustainable waste management practices⁹.

Poor waste management also contributes to climate change¹⁰. Unmanaged waste has been identified as a hidden cause of climate change¹¹. According to the United Nations, waste transported illegally ends up in public ecosystems, illegal landfills or is burned in the open risking human health and sustainability of the planet¹². It further notes that failure to safely manage waste affects health, the environment and contributes to greenhouse gas emissions¹³.

Sustainable waste management is therefore a priority. It mitigates adverse health and environmental impacts of waste, conserves resources, and improves the livability of human settlements¹⁴. Further, sustainable waste

⁶ Abubakar. I. R et al., 'Environmental Sustainability Impacts of Solid Waste Management Practices in the Global South' *Int J Environ Res Public Health*. 2022 Oct; 19(19):

⁷ World Health Organization., 'Guidance on Solid Waste and Health' Available at <https://www.who.int/tools/compendium-on-health-and-environment/solid-waste> (Accessed on 27/03/2024)

⁸ Ibid

⁹ Ibid

¹⁰ United Nations Environment Programme., 'Solid Waste Management' Op Cit

¹¹ United Nations Office on Drugs and Crime., 'COP27 Side Event: Unmanaged Waste - A Hidden Cause of Climate Change' Available at <https://www.unodc.org/unodc/en/environment-climate/cop27-unmanaged-waste.html> (Accessed on 27/03/2024)

¹² Ibid

¹³ Ibid

¹⁴ Abubakar. I. R et al., 'Environmental Sustainability Impacts of Solid Waste Management Practices in the Global South' Op Cit

Promoting Sustainable Waste Management for Posterity

management plays a significant role in Sustainable Development and the Circular Economy (CE) transition¹⁵. This paper explores the need for sustainable waste management. It defines the idea of sustainable waste management. The paper also interrogates the progress made towards embracing sustainable waste management at the global, regional, and national levels. It further discusses the challenges facing the realization of sustainable waste management. In addition, the paper offers ideas towards promoting sustainable waste management for posterity.

2.0 Sustainable Waste Management: Opportunities and Challenges

Sustainability has become a clarion call throughout the world in light of key environmental challenges including climate change, loss of biodiversity, and pollution¹⁶. Poor waste management is one of the major causes of pollution and climate change¹⁷. Therefore, the move towards more sustainable societies requires greater sophistication in management of waste¹⁸. It has been asserted that a traditional reductionist approach towards waste management is unsustainable since it lacks flexibility and long term thinking¹⁹. Sustainable waste management is therefore required in order to foster sustainability. A sustainable waste management system incorporates feedback loops, is focused on processes, embodies adaptability and diverts wastes from disposal²⁰.

Sustainable waste management refers to the assessment of environmental, economic, and social impacts of available waste treatment options²¹. For a

¹⁵ Raut. N. A., 'Fundamentals of Waste Removal Technologies' Available at <https://www.sciencedirect.com/science/article/abs/pii/B9780323907606000096?via%3Dihub> (Accessed on 27/03/2024)

¹⁶ Giovannoni. E., & Fabietti. G., 'What Is Sustainability? A Review of the Concept and Its Applications.' In: Busco, C., Frigo, M., Riccaboni, A., Quattrone, P. (eds) *Integrated Reporting*. Springer, Cham. Available at https://doi.org/10.1007/978-3-319-02168-3_2 (Accessed on 28/03/2024)

¹⁷ United Nations Environment Programme., 'Solid Waste Management' Op Cit

¹⁸ Seadon . J., 'Sustainable Waste Management Systems' Available at <https://www.infona.pl/resource/bwmeta1.element.elsevier-1beea0ce-4f9b-37bf-acfa-e6d6afe1ae70> (Accessed on 28/03/2024)

¹⁹ Ibid

²⁰ Ibid

²¹ Cucchiella. F., D' Adamo. I., & Gastaldi. M., 'Sustainable Waste Management: Waste to Energy Plant as an Alternative to Landfill' *Energy Conversion & Management.*, 131 (2017) 18-31

Promoting Sustainable Waste Management for Posterity

waste management system to be sustainable, it needs to be environmentally effective, economically affordable and socially acceptable²². Economic affordability means that the cost of waste management is reasonable and cost effective, while social acceptability means that the society agrees to the waste management practices and services provided which meets their needs²³. Further, waste management also needs to be environmentally effective by adopting environmental conservation policies and principles²⁴. Therefore, sustainable waste management practices relate to local environmental, economic and social priorities²⁵.

The concept of sustainable waste management is guided by key principles including Sustainable Development, best practicable environmental option, waste management hierarchy, precaution, regionalization, polluter pays and producer responsibility²⁶. The principle of Sustainable Development means that waste management should consider the environmental, economic, and social needs of a society²⁷. The principle of best practicable environmental option means that for a given set of objectives in relation to waste management, the option that provides the most benefit or least damage to the environment as a whole, at an acceptable cost, in the long term as well as in the short term should be embraced²⁸. The principle of waste management

²² Morrissey. A. J., & Browne. J., 'Waste Management Models and their Application to Sustainable Waste Management' *Waste Management* 24 (2004) 297-308

²³ Elsaid. S., & Aghezzaf. E., 'A Framework for Sustainable Waste Management: Challenges and Opportunities' Available at https://www.researchgate.net/profile/Sarah-Elsaid-2/publication/283805590_A_framework_for_sustainable_waste_management_challenges_and_opportunities/links/58be8b0caca272b9b180596c/A-framework-for-sustainable-waste-management-challenges-and-opportunities.pdf (Accessed on 28/03/2024)

²⁴ Ibid

²⁵ Morrissey. A. J., & Browne. J., 'Waste Management Models and their Application to Sustainable Waste Management' Op Cit

²⁶ Elsaid. S., & Aghezzaf. E., 'A Framework for Sustainable Waste Management: Challenges and Opportunities' Op Cit

²⁷ Morrissey. A. J., & Browne. J., 'Waste Management Models and their Application to Sustainable Waste Management' Op Cit

²⁸ Parliament of the United Kingdom., 'Sustainable Waste Management' Available at <https://publications.parliament.uk/pa/cm199798/cmselect/cmenvtra/484/48407.htm> (Accessed on 28/03/2024)

Promoting Sustainable Waste Management for Posterity

hierarchy is a conceptual framework designed to guide and rank waste management decisions at both the individual and organisational level²⁹. It gives top priority to waste prevention, followed by re-use, recycling, recovery and finally disposal³⁰. This principle places emphasis on reducing, reusing, recycling and composting as key to sustainable waste management³¹. Regionalization entails shifting from decentralized waste management towards cooperation among larger units such as neighbouring cities, towns, counties or even countries in order to achieve more efficient outcomes in waste management³². The precautionary principle is based on avoiding and preventing the discharge of waste into the environment³³. Finally, the polluter pays and producer responsibility mean that persons or organizations responsible for producing waste should bear the costs of waste management³⁴.

The ideal of sustainable waste management is achieved when the generation of waste and harmful substances is minimised, waste is reused (using materials repeatedly), recycled (using materials to make new products) or recovered (producing energy from waste), and disposal of waste is minimized³⁵. Sustainable waste management is crucial in the pursuit of the

²⁹ United States Environmental Protection Agency., 'Sustainable Materials Management: Non-Hazardous Materials and Waste Management Hierarchy' Available at <https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy> (Accessed on 28/03/2024)

³⁰ Ibid

³¹ Ibid

³² Kojima. M., 'Regionalization of Solid Waste Management in Asia: Benefits and Challenges' Available at https://www.ide.go.jp/library/English/Publish/Reports/Ec/pdf/201903_ch01.pdf (Accessed on 28/03/2024)

³³ International Institute for Sustainable Development., 'The Precautionary Principle' Available at <https://www.iisd.org/articles/deep-dive/precautionary-principle> (Accessed on 28/03/2024)

³⁴ Elsaid. S., & Aghezzaf. E., 'A Framework for Sustainable Waste Management: Challenges and Opportunities' Op Cit

³⁵ Cucchiella. F., D' Adamo. I., & Gastaldi. M., 'Sustainable Waste Management: Waste to Energy Plant as an Alternative to Landfill' Op Cit

Promoting Sustainable Waste Management for Posterity

Sustainable Development Goals (SDGs)³⁶. The need for sustainable waste management is enshrined under various instruments at the global, regional, and national levels.

The United Nations *2030 Agenda for Sustainable Development*³⁷ sets out the global targets necessary to realize sustainable waste management. It urges all countries to embrace reduction and recycling of waste in order to safeguard human health and the environment³⁸. SDG 6 seeks to ensure availability and sustainable management of water and sanitation for all through approaches such as enhancing wastewater treatment³⁹. In addition, SDG 11 aims to make cities and human settlements inclusive, safe, resilient and sustainable through sustainable waste management among other approaches⁴⁰. Further, SDG 12 is geared towards ensuring sustainable consumption and production patterns through environmentally sound management of chemicals and all wastes throughout their lifecycle and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment⁴¹. SDG 12.5 envisages sustainable waste management and urges all countries to substantially reduce waste generation through prevention, reduction, recycling, and reuse⁴². Sustainable waste management is therefore at the heart of the 2030 Agenda for Sustainable Development. According to UNEP, sustainable waste management can help advance all the goals and targets in the 2030 Agenda for Sustainable Development, including SDG 11 on making cities and human settlements inclusive, safe, resilient and sustainable and SDG 12 on ensuring sustainable consumption and production patterns⁴³.

³⁶ United Nations Environment Programme., 'Sustainable Waste in Cities' Available at <https://www.unep.org/topics/cities/circular-economy-cities/sustainable-waste-cities> (Accessed on 28/03/2024)

³⁷ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 28/03/2024)

³⁸ Ibid

³⁹ Ibid

⁴⁰ Ibid

⁴¹ Ibid

⁴² Ibid

⁴³ United Nations Environment Programme., 'First International Day of Zero Waste Bolsters Actions to Address Global Pollution Crisis' Available at

Promoting Sustainable Waste Management for Posterity

Sustainable waste management is also envisioned in Africa under Africa Union's *Agenda 2063*⁴⁴. It identifies the problem of waste on key sectors of African economies including the Blue Economy⁴⁵. Agenda 2063 urges African countries to promote sustainable waste management practices such as recycling of waste⁴⁶. At a regional level, the *Treaty for the Establishment of the East African Community*⁴⁷ sets out the need for sustainable waste management within the East African Community (EAC). The Treaty urges EAC member states to co-operate and adopt common policies for control of transboundary movement of toxic and hazardous waste including nuclear materials and any other undesirable materials⁴⁸. It also requires EAC countries to co-operate and adopt common positions against illegal dumping of toxic chemicals, substances and hazardous wastes within the Community from either a partner state or any third party⁴⁹. Further, the *Protocol on the Establishment of the East African Community Common Market*⁵⁰ requires EAC member states to ensure sound environmental and natural resources management principles for the proper functioning of the Common Market, through prevention of activities that are detrimental to the environment. Under this provision, priority areas required for sustainable waste management include harmonization of pollution and waste management policies, laws and strategies⁵¹;

<https://www.unep.org/news-and-stories/press-release/first-international-day-zero-waste-bolsters-actions-address-global> (Accessed on 28/03/2024)

⁴⁴ Africa Union., 'Agenda 2063: The Africa we Want' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 28/03/2024)

⁴⁵ Ibid

⁴⁶ Ibid

⁴⁷ East African Community., 'The Treaty for the Establishment of the East African Community' Available at https://www.eala.org/uploads/The_Treaty_for_the_Establishment_of_the_East_Africa_Community_2006_1999.pdf (Accessed on 28/03/2024)

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ East African Community., 'Protocol on the Establishment of the East African Community Common Market' Available at <https://www.eac.int/common-market> (Accessed on 28/03/2024)

⁵¹ East African Community., 'Waste Management and Pollution Control' Available at <https://www.eac.int/environment/waste-management-and-pollution-control> (Accessed on 28/03/2024)

Promoting Sustainable Waste Management for Posterity

harmonization of the national laws, policies and strategies on toxic chemicals and products (substances) containing toxic chemicals level⁵²; development and review of policy, laws, regulations and guidelines on for handling of highly obsolete chemical and hazardous waste⁵³; development of mechanisms of handling and disposal of electronic waste⁵⁴; joint measures (inspection, enforcement) to control the illegal trafficking of chemicals proved scientifically to be hazardous toxic or persistent in the environment⁵⁵; and development of regional standards on waste including plastic packaging⁵⁶.

The idea of sustainable waste management has also been embraced in Kenya. The *Environmental Management and Co-Ordination Act*⁵⁷ requires the Cabinet Secretary in charge of matters relating to the environment on the recommendation of the National Environment Management Authority (NEMA) to prescribe standards for waste, their classification and analysis, and formulate and advise on standards of disposal methods and means for such wastes⁵⁸; and issue regulations for the handling, storage, transportation, segregation and destruction of any waste⁵⁹. The Act further prohibits against dangerous handling and disposal of wastes⁶⁰. It provides that no person shall discharge or dispose of any wastes, whether generated within or outside Kenya, in such manner as to cause pollution to the environment or ill health to any person⁶¹. The Act further stipulates that no person shall operate a wastes disposal site or plant without a licence issued by NEMA⁶². In addition, it requires individuals and organisations whose activities generate waste to employ measures essential to minimize wastes through treatment, reclamation and recycling among other measures⁶³. The Act also requires the

⁵² Ibid

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷ Environmental Management and Co-ordination Act., Cap 387., Government Printer, Nairobi

⁵⁸ Ibid, S 86 (c)

⁵⁹ Ibid, S 86 (d)

⁶⁰ Ibid, S 87

⁶¹ Ibid, S 87 (1)

⁶² Ibid, s 87 (3)

⁶³ Ibid, s 87 (4)

Promoting Sustainable Waste Management for Posterity

Cabinet Secretary in charge of environmental matters on the recommendation of NEMA to issue guidelines and regulations for the management of hazardous wastes⁶⁴. Another key provision of the Act geared towards sustainable waste management is the requirement for all projects on waste disposal to undergo Environmental Impact Assessment (EIA)⁶⁵. It has been noted that EIA is a key policy instrument to inform sustainable waste management and decision-making⁶⁶.

Sustainable waste management in Kenya is also enshrined under the *Sustainable Waste Management Act*⁶⁷. The Act defines sustainable waste management to mean using material resources efficiently as prioritized by waste hierarchy, circular economy and clean production in order to reduce the amount of waste that is generated, deposited or discarded in the environment including the management of materials that would otherwise have been dumped or wasted in a way that contributes to environmental, social and economic goals of Sustainable Development⁶⁸. The Act seeks to achieve several objectives which include promoting sustainable waste management; improving the health of all Kenyans by ensuring a clean and healthy environment; reducing air, land, fresh water and marine pollution; promoting and ensuring the effective delivery of waste services; creating an enabling environment for employment in the green economy in waste management, recycling and recovery; establishing an environmentally sound infrastructure and system for sustainable waste management; promoting circular economy practices for green growth; mainstreaming resource efficiency principles in sustainable consumption and production practices; and inculcating responsible public behaviour on waste and environment⁶⁹. Under the Act, sustainable waste management is guided by certain key principles which include promoting the right to a clean, and healthy environment, the

⁶⁴ Ibid, s 91 (2)

⁶⁵ Ibid, second schedule

⁶⁶ Claassens. C. E., 'The Consideration of Waste Management in Environmental Impact Assessment (EIA) for Developments in Protected Areas' Available at <https://www.tandfonline.com/doi/full/10.1080/14615517.2022.2080491> (Accessed on 28/03/2024)

⁶⁷ Sustainable Waste Management Act., Cap 387C, Government Printer, Nairobi

⁶⁸ Ibid, s 2

⁶⁹ Ibid, s 3

Promoting Sustainable Waste Management for Posterity

precautionary principle, the polluter pays principle, and the zero waste principle⁷⁰. The Act establishes a Waste Management Council whose functions include enhancing inclusive inter-governmental coordination for sustainable waste management; reviewing progress in implementation of the national sustainable waste management strategy; and recommending to the Cabinet Secretary the national waste management recycling and recovery targets⁷¹. It further identifies key ways for sustainable waste management in Kenya including recycling of waste, efficient waste collection, embracing waste-to-energy and waste-to-manure projects, and formation of waste collection, materials recovery and recycling savings and credit co-operative organisations⁷². The Act places the obligation for sustainable waste management on various stakeholders including the Cabinet Secretary in charge of matters relating to the environment, county governments, and the private sector⁷³. Achieving the objectives of this Act is vital in promoting sustainable waste management in Kenya.

In addition to the Environmental Management and Co-ordination Act and the Sustainable Waste Management Act, Kenya has adopted the *Waste Management Regulations*⁷⁴ in order to realize sustainable waste management. The Regulations envisage sustainable waste management in Kenya through cleaner production principles which include eliminating the use of toxic raw materials, reducing toxic emissions and wastes, embracing the recovery and re-use of waste where possible, and reclamation and recycling⁷⁵. There is need to implement these laws in order to realize sustainable waste management in Kenya.

Despite the recognition of the importance of sustainable waste management at the global, regional, and national levels, realizing this ideal still remains a

⁷⁰ Ibid, S 4

⁷¹ Ibid, s 6 & 7

⁷² Ibid, Part III

⁷³ Ibid

⁷⁴ Environmental Management and Co-ordination (Waste Management) Regulations, 2006, Legal Notice No. 121

⁷⁵ Ibid

Promoting Sustainable Waste Management for Posterity

challenge⁷⁶. It is estimated that municipal solid waste generation is set to grow to 3.8 billion tonnes by 2050 and cost up to USD 640.3 billion in waste management⁷⁷. Further, it has been noted that unsustainable waste management comes with hidden costs of pollution, poor health and climate change⁷⁸. As a result, the world urgently needs to shift to a zero waste approach, while improving waste management to prevent significant pollution, greenhouse gas emissions and negative impacts to human health⁷⁹. It is therefore necessary to promote sustainable waste management for posterity.

3.0 Way Forward

In order to promote sustainable waste management, it is necessary to embrace clean production techniques⁸⁰. The concept of clean production focuses on reduction of use of natural resources, thus minimizing the waste generated from the process⁸¹. In addition, it focuses on how to prevent wastes at the source by the use of cleaner technologies⁸². Clean production has been described as integrated preventive environmental strategy applied to processes, products and services to increase efficiency and reduce risk for humans and the environment⁸³. It includes conserving raw materials and energy, eliminating toxic raw materials, and reducing the quantity and toxicity of all emissions and wastes before they leave a process⁸⁴. Clean production is

⁷⁶ United Nations Environment Programme., 'World Must Move Beyond Waste Era and Turn Rubbish into Resource: UN Report' Available at <https://www.unep.org/news-and-stories/press-release/world-must-move-beyond-waste-era-and-turn-rubbish-resource-un-report> (Accessed on 28/03/2024)

⁷⁷ Ibid

⁷⁸ Ibid

⁷⁹ Ibid

⁸⁰ El-Haggar. S., 'Sustainability of Industrial Waste Management' Available at <https://www.sciencedirect.com/science/article/abs/pii/B9780123736239500125?via%3Dihub> (Accessed on 28/03/2024)

⁸¹ Ibid

⁸² Ibid

⁸³ Purwanto. P., 'Cleaner Production and Waste Minimization' Available at https://www.researchgate.net/publication/348446836_CLEANER_PRODUCTION_AND_WASTE_MINIMIZATION (Accessed on 28/03/2024)

⁸⁴ Ibid

Promoting Sustainable Waste Management for Posterity

therefore essential in minimizing waste⁸⁵. This process embraces prevention innovations aimed at protecting the environment by analysing the flow of materials and energy throughout the manufacturing process in order to minimize waste⁸⁶. In Kenya, the *Waste Management Regulations*⁸⁷ envisage sustainable waste management in Kenya through cleaner production principles such as eliminating the use of toxic raw materials, reducing toxic emissions and wastes, embracing the recovery and re-use of waste where possible, and reclamation and recycling⁸⁸. It is therefore necessary to embrace clean production approaches in order to promote sustainable waste management.

In addition, it is necessary to strengthen circular economy in order to enhance sustainable waste management⁸⁹. Circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible⁹⁰. In a circular economy, products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling, and composting⁹¹. This concept aims to minimize

⁸⁵ Mostaghimi. K., & Behnamian. J., 'Waste Minimization Towards Waste Management and Cleaner Production Strategies: A Literature Review' Available at <https://link.springer.com/article/10.1007/s10668-022-02599-7> (Accessed on 28/03/2024)

⁸⁶ Ibid

⁸⁷ Environmental Management and Co-ordination (Waste Management) Regulations, 2006, Legal Notice No. 121

⁸⁸ Ibid

⁸⁹ Muigua. K., 'Implementing Circular Economy for Sustainability' Available at <https://kmco.co.ke/wp-content/uploads/2023/12/Implementing-Circular-Economy-for-Sustainability.pdf> (Accessed on 28/03/2024)

⁹⁰ European Parliament., 'Circular Economy: Definition, Importance and Benefits.' Available at <https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economydefinition-importance-andbenefits#:~:text=The%20circular%20economy%20is%20a,cycle%20of%20product%20is%20extended> (Available at 28/03/2024)

⁹¹ Ellen MacArthur Foundation., 'What is a Circular Economy?.' Available at <https://www.ellenmacarthurfoundation.org/topics/circulareconomyintroduction/overview#:~:text=The%20circular%20economy%20is%20a,remanufacture%2C%20recycling%2C%20and%20composting> (Accessed on 28/03/2024)

Promoting Sustainable Waste Management for Posterity

waste and promote a sustainable use of natural resources, through smarter product design, longer use, recycling and more, as well as regenerate nature⁹². Circular economy is therefore pivotal in sustainable waste management. It can achieve this goal by substantially reducing waste generation through prevention, reduction, recycling and reuse⁹³. Further, it is widely accepted that circular economy ensures that resources, energy and waste volumes are minimized at every stage of a product lifecycle, as well as greenhouse gas emissions, pollution and public health risks⁹⁴. It is therefore necessary for all countries to embrace circular economy in order to achieve sustainable waste management in addition to other numerous environmental, economic, and social benefits⁹⁵.

Further, there is need to strengthen and implement waste management laws⁹⁶. It has been noted that there are gaps in the coordination and enforcement of environmental legislation on waste management in many countries including Kenya⁹⁷. Further, it has been asserted that laws related to waste management in some countries are fragmented and outdated leading to disparities in regulation and enforcement by different levels of government⁹⁸. As a result, it is imperative for all countries to strengthen their laws and policies on waste management in order to support sustainable waste management and the transition to circular economy⁹⁹. It has been argued that countries need to modernize their laws and policies on waste management on an ongoing basis

⁹² United Nations Development Programme., 'What is Circular Economy and Why Does it Matter?.' Available at <https://climatepromise.undp.org/news-and-stories/what-is-circular-economy-and-how-it-helps-fight-climate-change> (Accessed on 28/03/2024)

⁹³ Ibid

⁹⁴ United Nations Development Programme., 'Why the Green, Circular Economy is Key to Beating the Triple Planetary Crisis.' Available at <https://www.undp.org/blog/why-green-circular-economy-keybeating-triple-planetary-crisis> (Accessed on 28/03/2024)

⁹⁵ Ibid

⁹⁶ Republic of Kenya., 'National Sustainable Waste Management Policy' Available at <https://faolex.fao.org/docs/pdf/ken205137.pdf> (Accessed on 28/03/2024)

⁹⁷ Ibid

⁹⁸ Ibid

⁹⁹ Muigua. K., 'Implementing Circular Economy for Sustainability' Op Cit

Promoting Sustainable Waste Management for Posterity

to make them fit for the circular economy and the digital age¹⁰⁰. Strengthening laws and policies on waste management is therefore crucial in realizing sustainable waste management.

Finally, sustainable waste management can be realized through investing and financing waste management activities and projects¹⁰¹. It has been noted that government support through grants, loans, tax exemptions among other mechanisms is crucial in promoting sustainable waste management¹⁰². It is therefore necessary to support businesses dealing in waste management in order to achieve the ideal of sustainable waste management¹⁰³. In order to enhance waste management, it is necessary for all countries to invest in holistic systems that are designed to fit local needs¹⁰⁴. It has been noted that these systems should make it easy to collect, sort, and process all types of waste¹⁰⁵. Financial support can enhance action across the science-policy interface by unlocking innovation and accelerating the adoption of new technologies and processes towards sustainable waste management to support the laws and policies in place¹⁰⁶. It is thus necessary to strengthen investments and financing in order to achieve sustainable waste management.

4.0 Conclusion

Sustainable waste management involves the assessment of environmental, economic, and social impacts of available waste treatment options¹⁰⁷. Sustainable waste management systems are therefore environmentally

¹⁰⁰ Ibid

¹⁰¹ Organisation for Economic Cooperation and Development., 'Investment and Financing Mechanisms for Waste Management' Available at <https://www.oecd-ilibrary.org/sites/1f4e61ee-en/index.html?itemId=/content/component/1f4e61ee-en> (Accessed on 28/03/2024)

¹⁰² Ibid

¹⁰³ Ibid

¹⁰⁴ Ibid

¹⁰⁵ Ibid

¹⁰⁶ International Institute for Sustainable Development., 'Financing the Sound Management of Chemicals and Wastes' Available at <https://sdg.iisd.org/commentary/policy-briefs/financing-the-sound-management-of-chemicals-and-wastes/> (Accessed on 28/03/2024)

¹⁰⁷ Cucchiella. F., D' Adamo. I., & Gastaldi. M., 'Sustainable Waste Management: Waste to Energy Plant as an Alternative to Landfill' Op Cit

Promoting Sustainable Waste Management for Posterity

effective, economically affordable and socially acceptable¹⁰⁸. This ideal is crucial in the pursuit of the SDGs¹⁰⁹. However, this concept is yet to be fully realized as evidenced by poor waste management practices all over the world which result in pollution, poor health and climate change¹¹⁰. It is therefore pertinent to improve waste management in order to tackle pollution, reduce greenhouse gas emissions and address negative impacts of waste on human health¹¹¹. Sustainable waste management can be realized through approaches such as embracing clean production techniques¹¹²; embracing circular economy¹¹³; strengthening and implementing waste management laws¹¹⁴; and investing and financing waste management activities and projects¹¹⁵. Promoting sustainable waste management is an ideal that we must realize in the quest towards Sustainable Development.

¹⁰⁸ Morrissey. A. J., & Browne. J., 'Waste Management Models and their Application to Sustainable Waste Management' Op Cit

¹⁰⁹ United Nations Environment Programme., 'Sustainable Waste in Cities' Op Cit

¹¹⁰ United Nations Environment Programme., 'World Must Move Beyond Waste Era and Turn Rubbish into Resource: UN Report' Op Cit

¹¹¹ Ibid

¹¹² El-Haggar. S., 'Sustainability of Industrial Waste Management' Op Cit

¹¹³ Muigua. K., 'Implementing Circular Economy for Sustainability' Op Cit

¹¹⁴ Republic of Kenya., 'National Sustainable Waste Management Policy' Op Cit

¹¹⁵ Organisation for Economic Cooperation and Development., 'Investment and Financing Mechanisms for Waste Management' Op Cit

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

Abstract

Realizing Sustainable Development is a key priority in Africa as set out under the United Nation's 2030 Agenda for Sustainable Development and Africa Union's Agenda 2063. However, the continent's progress towards the SDGs has been slow. It is therefore necessary accelerate efforts to ensure that the continent meets the SDGs and the aspirations, goals, and targets of Agenda 2063. One of the key approaches that is vital in fast-tracking Sustainable Development in Africa is enhancing peace and diplomacy. This paper critically discusses the role of diplomacy, peace-making, and peace-keeping in the Sustainable Development agenda in Africa. It argues that fostering these concepts is necessary in accelerating the continents journey towards the SDGs. The paper defines diplomacy, peace-making, and peace-keeping and examines their role in the Sustainable Development agenda. It also suggests ways through which Africa can maximize diplomacy, peace-making, and peace-keeping for Sustainable Development.

1.0 Introduction

Sustainable Development refers to development that meets the needs of the present without compromising the ability of future generations to meet their own needs¹. This concept seeks to foster inclusive development which incorporates environmental protection, economic development and social progress². According to the United Nations, Sustainable Development requires an integrated approach towards development that takes into consideration environmental concerns along with economic and social development³.

Achieving Sustainable Development has become an urgent concern throughout the world. This is in light of problems facing the planet including

¹ World Commission on Environment and Development., 'Our Common Future.' Oxford, (Oxford University Press, 1987)

² Fitzmaurice. M., 'The Principle of Sustainable Development in International Development Law.' *International Sustainable Development Law.*, Vol 1

³ United Nations., 'Sustainability' Available at <https://www.un.org/en/academic-impact/sustainability> (Accessed on 30/03/2024)

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

environmental challenges such as climate change, pollution, and loss of biodiversity together with issues of poverty, increasing disparity between societies and the tensions brought by social inequalities⁴. Therefore, Sustainable Development is necessary in order to create and maintain the conditions under which humanity and nature can exist in productive harmony to support present and future generations⁵.

The need to realize Sustainable Development is envisaged under the United Nation's *2030 Agenda for Sustainable Development*⁶. The Agenda represents a shared blue print for peace and prosperity for people and the planet in the quest towards the ideal of Sustainable Development⁷. It envisions attainment of the ideal of Sustainable Development through 17 Sustainable Development Goals (SDGs) which seek to strike a balance between social, economic and environmental facets of sustainability⁸. Achieving the SDGs is vital in fostering Sustainable Development and ensuring harmony between human and nature for the benefit of present and future generations⁹.

Sustainable Development is also a key priority in Africa as enshrined by Africa Union's *Agenda 2063*¹⁰ which sets out the continent's shared strategic framework for inclusive growth and Sustainable Development that takes into account past achievements, challenges and opportunities at the national,

⁴ Giovannoni. E., & Fabietti. G., 'What Is Sustainability? A Review of the Concept and Its Applications.' In: Busco, C., Frigo, M., Riccaboni, A., Quattrone, P. (eds) *Integrated Reporting*. Springer, Cham. Available at https://doi.org/10.1007/978-3-319-02168-3_2 (Accessed on 30/03/2024)

⁵ United States Environmental Protection Agency., 'What is Sustainability.' Available at <https://www.epa.gov/sustainability/learn-about-sustainability> (Accessed on 30/03/2024)

⁶ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 30/03/2024)

⁷ Ibid

⁸ Ibid

⁹ United States Environmental Protection Agency., 'What is Sustainability.' Op Cit

¹⁰ African Union., 'Agenda 2063: The Africa we Want.' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 30/03/2024)

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

continental and global levels to provide the basis and context in which the continent's transformation is being designed and implemented¹¹. Agenda 2063 sets out several aspirations, goals, and targets which mainly cover the areas of: social and economic development; integration, democratic governance and peace and security towards Sustainable Development in Africa¹². Actualizing the aspirations, goals, and targets of the African Union's Agenda 2063 is vital in accelerating the Sustainable Development agenda in Africa¹³.

Despite the ideal of Sustainable Development in Africa, the continent continues to face numerous challenges such as poverty, hunger, food insecurity, drought, water scarcity, climate change, unemployment and inequalities which threaten the attainment of the SDGs¹⁴. It has been noted that Africa's progress on the SDGs and the aspirations, goals, and targets of the African Union's Agenda 2063 has been uneven, with significant differences among sub regions, countries, and rural and urban areas¹⁵. As a result, there is need for accelerated efforts to ensure that the continent meets the SDGs targets by the 2030 deadline¹⁶.

One of the key approaches that is vital in fast-tracking Sustainable Development in Africa is enhancing peace and diplomacy¹⁷. This paper critically discusses the role of diplomacy, peace-making, and peace-keeping in the Sustainable Development agenda in Africa. It argues that fostering these concepts is necessary in accelerating the continent's journey towards the SDGs. The paper defines diplomacy, peace-making, and peace-keeping and examines their role in the Sustainable Development agenda. It also suggests

¹¹ Ibid

¹² Ibid

¹³ Ibid

¹⁴ United Nations Development Programme., '2023 Africa Sustainable Development Report.' Available at <https://www.undp.org/africa/publications/2023-africa-sustainable-development-report> (Accessed on 30/03/2024)

¹⁵ Ibid

¹⁶ Ibid

¹⁷ United Nations., 'Promotion of Durable Peace and Sustainable Development in Africa' Available at https://www.un.org/osaa/sites/www.un.org.osaa/files/docs/2109875_osaa_sg_report_web_new.pdf (Accessed on 30/03/2024)

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

ways through which Africa can maximize diplomacy, peace-making, and peace-keeping for Sustainable Development.

2.0 The Role of Diplomacy, Peace-Making, and Peace-Keeping in Sustainable Development

Diplomacy has been defined as the art, the science, and the means by which nations, groups, or individuals conduct their affairs, in ways to safeguard their interests and promote their political, economic, cultural or scientific relations, while maintaining peaceful relationships¹⁸. It can also refer to a method that governments use to influence the actions of foreign governments through peaceful tactics such as negotiation and dialogue¹⁹. Diplomacy has often been utilized as a soft skill to shape mindsets and influence international and national agendas as well as the workings of governments²⁰. It has been noted that with the application of political support and concerted diplomacy, international cooperation can be forged to handle both longstanding and emerging global challenges²¹.

Peace-making is a term used to label and identify activities that work to restore peace in situations of conflict²². It is focused primarily on civil war and international conflict, although its methods are closely related to counseling models used to restore harmony within families and local communities²³. Peace-making is necessary in violent or severe nonviolent conflicts²⁴. It

¹⁸ What is Diplomacy? Available at

<https://www.cyber-diplomacytoolbox.com/Diplomacy.html#:~:text=Diplomacy%20is%20the%20art%20C%20the,relations%2C%20while%20maintaining%20peaceful%20relationships.> (Accessed on 30/03/2024)

¹⁹ Ibid

²⁰ Mabey. N., Gallagher. L., & Born. C., 'The Evolution of Climate Diplomacy and the International Climate Regime.' Available at <https://www.jstor.org/stable/resrep17706.6?seq=1> (Accessed on 30/03/2024)

²¹ Ibid

²² Lineham. P., 'Peace-Making in History' *International Encyclopedia of the Social & Behavioral Sciences*, 2nd Edition, 2015, pp 637-642

²³ Ibid

²⁴ Malek. C., 'Peacemaking' Available at <https://www.beyondintractability.org/coreknowledge/peacemaking> (Accessed on 30/03/2024)

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

employs approaches such as negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, use of regional agencies or arrangements, and sanctions in order to foster peace²⁵. Peace-making therefore involves stopping an ongoing conflict²⁶. It aims to accomplish reconciliation among parties to a conflict towards mutual understanding, peace, and stability²⁷. The idea of peacemaking envisages the use of diplomatic efforts to end conflicts²⁸.

Peace-keeping entails activities intended to create conditions that favour lasting peace²⁹. According to the United Nations, peace-keeping has proven to be one of the most effective tools available to assist host countries navigate the difficult path from conflict to peace³⁰. The United Nations notes that peace-keeping has unique strengths, including legitimacy, burden sharing, and an ability to deploy and sustain troops and police from around the globe, integrating them with civilian peacekeepers to advance multidimensional mandates³¹. Peace-keeping aims to protect civilians during armed conflict, actively prevent conflict, reduce violence, strengthen security and empower national authorities to assume these responsibilities during and after conflicts³².

Diplomacy, peace-making, and peace-keeping are necessary for Sustainable Development³³. It has been argued that diplomacy at both the governmental and corporate level has a vital role to play if the world is to achieve the SDGs³⁴.

²⁵ Ibid

²⁶ Khan. A., 'Peace-Making, Peace-Keeping, and Peace-Building' Available at <https://mgcub.ac.in/pdf/material/20200428092734eaba7dc2d0.pdf> (Accessed on 30/03/2024)

²⁷ Ibid

²⁸ Ibid

²⁹ Ibid

³⁰ United Nations., 'What is Peace-Keeping' Available at <https://peacekeeping.un.org/en/what-is-peacekeeping> (Accessed on 30/03/2024)

³¹ Ibid

³² Ibid

³³ Ibid

³⁴ Kenneth-Divine. P., 'The Role of Diplomacy in Achieving the Sustainable Development Goals' Available at <https://www.investmentmonitor.ai/comment/sdgs-role-of-diplomacy-in-achieving-the-sustainable-development-goals/#:~:text=The%20role%20of%20diplomacy%20in%20achieving%20the%20Sust>

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

It has been correctly opined that achieving the SDGs requires cooperation among key players within the international political, business, and diplomatic spheres³⁵. Diplomacy in both the political and business world can enhance public-private partnerships, sustainable investment, international trade, cross-border education, soft power, intercultural and artificial intelligence, and digital transformation towards achieving the SDGs³⁶.

The 2030 Agenda for Sustainable Development embraces the use of diplomacy towards meeting the SDGs³⁷. It embraces the idea of global partnership in the Sustainable Development agenda³⁸. SDG 17 focuses on strengthening the means of implementation and revitalizing global partnership for Sustainable Development. It identifies key areas for diplomacy and global cooperation towards Sustainable Development including finance, technology, capacity-building, trade, institutional and policy reforms, and multi-stakeholder partnerships³⁹. Embracing diplomacy can therefore foster Sustainable Development. For example, environmental diplomacy has led to the adoption of key instruments on Sustainable Development including *Agenda 21*⁴⁰ a daring program of action calling for new strategies to invest in the future to achieve overall sustainable development in the 21st century; the *Rio Declaration on Environment and Development*⁴¹ which seeks to balance the interests of states

[ainable%20Development%20Goals,the%20SDG%20targets%20by%202030.&text=The%20Sustainable%20Development%20Goals%20will,used%20on%20a%20global%20level.](#) (Accessed on 30/03/2024)

³⁵ Ibid

³⁶ Ibid

³⁷ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

³⁸ Ibid

³⁹ Ibid

⁴⁰ United Nations Conference on Environment & Development Rio de Janeiro, Brazil, 3 to 14 June 1992., 'Agenda 21.' Available at https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf?_gl=1*_9uipp7*_ga*MjA2NDk2MDMxMS4xNjcxMjU5NTEw*_ga_TK9BQL5X7Z*MTY5NDU5NjE3MS41NS4xLjE2OTQ1OTgzODUuM_C4wLjA (Accessed on 30/03/2024)

⁴¹ United Nations General Assembly., 'Report of the United Nations Conference on Environment and Development: Rio Declaration on Environment and Development.' A/CONF. 151/26 (Vol.1)

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

in exploiting their natural resources for development and environmental conservation with the aim of achieving Sustainable Development; and the 2030 Agenda for Sustainable Development⁴². Further, climate diplomacy has led to the adoption of key international legal instruments such as the *United Nations Framework Convention on Climate Change (UNFCCC)*⁴³; and the *Paris Agreement*⁴⁴ which have strengthened the global response towards climate change. It is therefore vital to maximize diplomacy in its various forms including economic diplomacy, cultural diplomacy, environmental diplomacy, climate diplomacy, digital diplomacy, sports diplomacy, corporate diplomacy, soft power diplomacy, and multilateral and bilateral diplomacy in order to achieve Sustainable Development⁴⁵.

Peace-making and peace-keeping are also key in promoting Sustainable Development⁴⁶. These processes are vital in transforming conflicts into more sustainable and peaceful relationships⁴⁷. Peace-making and peace-building lay the foundation for sustainable peace and development⁴⁸. Conflicts especially those that are violent in nature are an undesirable occurrence since they affect peace, sustainability and development⁴⁹. It has been noted that development is

⁴² United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

⁴³ United Nations Framework Convention on Climate Change., United Nations, 1992., Available at <https://unfccc.int/resource/docs/convkp/conveng.pdf> (Accessed on 30/03/2024)

⁴⁴ United Nations Framework Convention on Climate Change., 'Paris Agreement.' Available at https://unfccc.int/sites/default/files/english_paris_agreement.pdf (Accessed on 30/03/2024)

⁴⁵ Kenneth-Divine. P., 'The Role of Diplomacy in Achieving the Sustainable Development Goals' Op Cit

⁴⁶ Khan. A., 'Peace-Making, Peace-Keeping, and Peace-Building' Op Cit

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ Muigua. K., 'Reframing Conflict Management in the East African Community: Moving from Alternative to 'Appropriate' Dispute Resolution.' Available at <https://kmco.co.ke/wpcontent/uploads/2023/06/Reframing-Conflict-Management-in-the-EastAfrican-CommunityMoving-from-Alternative-to-Appropriate-Dispute-Resolution> (Accessed on 30/03/2024)

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

not feasible in a conflict situation⁵⁰. Effective, efficient and expeditious conflict management is therefore a desirable ideal in order to spur peace, development and sustainability⁵¹. It has been noted that the impact of conflict and violence on Sustainable Development can be significant and long-lasting⁵². For example, in areas affected by conflict and violence, development efforts are often disrupted, and essential services such as education, healthcare, and sanitation severely compromised⁵³. Conflicts can also result in the displacement of populations, resulting in loss of livelihoods, increased poverty, and social fragmentation⁵⁴. In addition, violent and armed conflicts can also result in environmental degradation, destruction of infrastructure, and the breakdown of institutions necessary for Sustainable Development⁵⁵. Peace-making and peace-keeping are therefore vital in managing conflicts and establishing conditions for peace, security, and stability which are necessary for Sustainable Development⁵⁶.

From the foregoing, it emerges that diplomacy, peace-making, and peace-keeping are vital in the Sustainable Development agenda. It is therefore necessary to maximize these concepts in order to achieve Sustainable Development.

⁵⁰ Muigua. K & Kariuki. F., 'ADR, Access to Justice and Development in Kenya.' Available at <http://kmco.co.ke/wp-content/uploads/2018/08/ADR-access-to-justice-and-developmentinKenyaRevised-version-of-20.10.14.pdf> (Accessed on 30/03/2024)

⁵¹ Ibid

⁵² Gray Group International., 'Peace and Sustainable Development: Synergies for Global Prosperity' Available at <https://www.graygroupintl.com/blog/peace-and-sustainable-development> (Accessed on 30/03/2024)

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ Ibid

⁵⁶ Khan. A., 'Peace-Making, Peace-Keeping, and Peace-Building' Op Cit

3.0 Maximizing Diplomacy, Peace-Making, and Peace-Keeping for Sustainable Development in Africa

Africa has been highly susceptible to intra and inter- state wars and conflicts for many years⁵⁷. There have been frequent conflicts across the Africa which are fueled by various factors, including but not limited to natural resources, fight for political control, poverty, negative ethnicity, religion, environmental causes, and external influence, among others⁵⁸. Numerous civil wars have occurred in several countries in Africa resulting in deaths and displacement of people creating a crisis of internally displaced persons, refugees and asylum seekers⁵⁹. Military coups have also been a common occurrence in some African countries further fueling the incidences of conflict, civil war, political instability, and insecurity⁶⁰.

Conflicts and wars are a major threat to Sustainable Development in Africa⁶¹. The United Nations notes that conflicts and wars have worsened instability, human rights abuses and humanitarian crises in Africa⁶². Further, it has been pointed out that social conflicts in Africa have affected national and social development in unprecedented ways that have resulted in mass exodus of people to other areas, as refugees⁶³. Wars and conflicts in Africa have had

⁵⁷ Olaosebikan. A., 'Conflicts in Africa: Meaning, Causes, Impact and Solution.' *African Research Review.*, Volume 4, No. 4 (2010)

⁵⁸ Muigua. K., 'Towards Effective Peacebuilding and Conflict Management in Kenya.' Available at <https://kmco.co.ke/wp-content/uploads/2021/05/Towards-Peacebuilding-and-Conflict-Managementin-Kenya.docx-Kariuiki-Muigua-MAY-2021x.pdf> (Accessed on 30/03/2024)

⁵⁹ Africa Center for Strategic Studies., 'African Conflicts Displace Over 40 Million People.' Available at <https://africacenter.org/spotlight/african-conflicts-displace-over-40-million-people/> (Accessed on 30/03/2024)

⁶⁰ Africa Center for Strategic Studies., 'Africa's Crisis of Coups.' Available at <https://africacenter.org/infocus/africa-crisis-coups/> (Accessed on 30/03/2024)

⁶¹ United Nations., 'UN-African Union Cooperation a Must, As Landscape of Conflict Shifts' Available at <https://www.un.org/africarenewal/magazine/october-2023/un-african-union-cooperation-must-landscape-conflict-shifts-0> (Accessed on 30/03/2024)

⁶² Ibid

⁶³ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Glenwood Publishers Limited, 2015

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

adverse economic, cultural, political, social, and environmental costs⁶⁴. According to the United Nations, across the world, but notably in Africa, instability and conflict continue to generate and exacerbate poverty and institutional fragility, which in turn decrease resilience and the prospects for peace⁶⁵. It further notes that it is necessary to prioritize conflict prevention and sustaining peace in order to remove the greatest obstacles to the implementation of both the 2030 Agenda for Sustainable Development and Agenda 2063 of the African Union⁶⁶. Due to frequent conflicts in some African countries, peace has become more challenging to sustain and protracted and recurring conflict more difficult to prevent or resolve, often because their underlying causes are not well understood or addressed⁶⁷. Strengthening peacebuilding efforts across Africa is therefore key to achieving inclusive, Sustainable Development⁶⁸. Diplomacy, peace-making, and peace-keeping have a major role to play towards peacebuilding in Africa⁶⁹.

Diplomacy can play a key role in fostering peace and Sustainable Development in Africa⁷⁰. It has been noted that forums for regional dialogue and development cooperation can play a major role in tackling fragility brought about by wars and conflicts and strengthening integration in Africa towards Sustainable Development⁷¹. Africa has numerous opportunities to maximize diplomacy for Sustainable Development. For example, it has been

⁶⁴ Uwazie. E., 'Alternative Dispute Resolution and Peace-building in Africa.' Available at <https://www.cambridgescholars.com/resources/pdfs/978-1-4438-5707-9-sample.pdf> (Accessed on 30/03/2024)

⁶⁵ United Nations., 'Promotion of Durable Peace and Sustainable Development in Africa' Op Cit

⁶⁶ Ibid

⁶⁷ Ibid

⁶⁸ United Nations Development Programme., 'Strengthening Peacebuilding Efforts Across Africa Key to Achieving Inclusive, Sustainable Development' Available at <https://www.undp.org/africa/news/strengthening-peacebuilding-efforts-across-africa-key-achieving-inclusive-sustainable-development> (Accessed on 30/03/2024)

⁶⁹ Ibid

⁷⁰ Pillai. V., & De. Corral. M., 'Tackling Fragility and Promoting Integration in the Horn of Africa through Development diplomacy' Available at <https://blogs.worldbank.org/en/nasikiliza/tackling-fragility-and-promoting-integration-horn-africa-through-development-diplomacy> (Accessed on 30/03/2024)

⁷¹ Ibid

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

noted that Africa is increasingly embracing climate diplomacy that is enabling the continent to embrace a coordinated common position in international climate change negotiations and to design robust policy approaches for a collective effort in confronting complex climate change challenges⁷². Climate diplomacy can also enable African countries to attract investments, financial support, and technology necessary for strengthening the continent's response towards climate change⁷³.

The establishment of the African Continental Free Trade Area and the presence of several Regional Economic Communities (RECs) and inter-governmental organizations in Africa including the Arab Maghreb Union (UMA); the Common Market for Eastern and Southern Africa (COMESA); the Community of Sahel-Saharan States (CEN-SAD); the East African Community (EAC); the Economic Community of Central African States (ECCAS); the Economic Community of West African States (ECOWAS); the Intergovernmental Authority on Development (IGAD) and the Southern African Development Community (SADC) further presents opportunities for economic diplomacy which can strengthen Intra-African trade for Sustainable Development⁷⁴.

Environmental diplomacy is also an available tool that can enable Africa strengthen environmental governance towards Sustainable Development⁷⁵. It has been noted that within the African Union's New Partnership for Africa's Development (AU/NEPAD) framework, African leaders have adopted an

⁷² AUDA-NEPAD., 'Climate Diplomacy in Africa' Available at <https://www.nepad.org/climate/publication/climate-diplomacy-africa#:~:text=Climate%20Diplomacy%20is%20the%20interface,finds%20the%20space%20for%20agreement>. (Accessed on 30/03/2024)

⁷³ Ibid

⁷⁴ Muigua. K., 'Strengthening Intra African Trade for Sustainable Development' Available at <https://kmco.co.ke/wp-content/uploads/2023/12/Strengthening-Intra-African-Trade-for-Sustainable-Development.pdf>

⁷⁵ Lisinge-Fotabong. E et al., 'Climate Diplomacy in Africa' Available at <https://www.nepad.org/file-download/download/public/15646#:~:text=Through%20the%20engagement%20of%20Heads,environmental%20challenges%20of%20the%20continent>. (Accessed on 30/03/2024)

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

Environment Action Plan (EAP) to confront the environmental challenges of the continent⁷⁶. African countries should therefore continue tapping into these among other opportunities in order to maximize diplomacy for Sustainable Development. It is also necessary for African countries to strengthen their capacity in diplomacy through measures such as appointment of envoys responsible for spearheading their regional, continental, and global agenda on climate change, finance, trade, peace, international relations among other key areas⁷⁷.

It is also necessary to enhance peace-making and peace-keeping in Africa. Peace-making is required in Africa in order to foster inclusive development, security and stability⁷⁸. It has been argued that in order to enhance peace-making in Africa, root causes of conflicts must be addressed⁷⁹. Alternative Dispute Resolution (ADR) mechanisms can therefore play a key role in peace-making and peace-building in Africa by addressing the root causes of conflicts⁸⁰. These processes have a pertinent role in building peace in Africa by preventing and managing conflicts and enhancing stability⁸¹. ADR mechanisms have been practiced in Africa for many centuries⁸². They are well suited to the African conception of justice and its core values of reconciliation, harmony, togetherness, social cohesion and peace as expressed by the African philosophy of '*ubuntu*'⁸³. Conflict management in African societies has throughout the years taken the form of informal negotiation, mediation,

⁷⁶ Ibid

⁷⁷ Ibid

⁷⁸ United Nations., 'Root Causes of Conflicts in Africa Must Be Addressed beyond Traditional Response, Special Adviser Tells Security Council Debate on Silencing Guns.' Available at <https://press.un.org/en/2023/sc15249.doc.htm> (Accessed on 30/03/2024)

⁷⁹ Ibid

⁸⁰ Uwazie. E., 'Alternative Dispute Resolution in Africa: Preventing Conflict and Enhancing Stability.' *Africa Security Brief*, No. 16 of 2011

⁸¹ Ibid

⁸² Muigua. K., 'Resolving Conflicts through Mediation in Kenya.' Glenwood Publishers Limited, 2nd Edition, 2017

⁸³ Muigua. K., 'Heralding a New Dawn: Achieving Justice through effective application of Alternative Dispute Resolution Mechanisms (ADR) in Kenya.' Available at <http://kmco.co.ke/wpcontent/uploads/2018/08/Heralding-a-New-Dawn-Access-to-Justice-PAPER.pdf> (Accessed on 30/03/2024)

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

reconciliation and arbitration among other techniques which were administered by institutions such as the council of elders⁸⁴. ADR processes can strengthen conflict management systems and bridge the gap between formal legal systems and traditional modes of African justice⁸⁵. It has been noted that these processes may have particular value in stabilization and state building efforts especially when judicial institutions are weak and social tensions are high⁸⁶. It is therefore necessary to embrace ADR techniques for effective peace-making in Africa.

The United Nations plays a key role in peace-keeping in Africa through its peace-keeping operations⁸⁷. Under this process, peace-keeping missions have been deployed to conflict-affected regions with the aim of maintaining peace, facilitating political dialogue, and supporting post-conflict reconstruction⁸⁸. It is also necessary to embrace Africa-led peace operations⁸⁹. These operations have been successfully deployed for peace-keeping in various part of Africa by the African Union and RECs including ECOWAS, EAC, and SADC⁹⁰. It has been noted that African-led peace operations have shown more doctrinal flexibility than United Nations sponsored peacekeeping missions, which are rarely deployed in the absence of a peace process or agreement⁹¹. In addition, it has been pointed out that African-led peace operations have helped African security forces significantly improve coordination with one another in addressing cross-border security challenges, another area that has been

⁸⁴ Kariuki. F., 'Conflict Resolution by Elders in Africa: Successes, Challenges and Opportunities.' Available at <http://kmco.co.ke/wp-content/uploads/2018/08/Conflict-Resolution-by-Elderssuccesseschallenges-and-opportunities-1.pdf> (Accessed on 30/03/2024)

⁸⁵ Uwazie. E., 'Alternative Dispute Resolution in Africa: Preventing Conflict and Enhancing Stability.' Op Cit

⁸⁶ Ibid

⁸⁷ United Nations., 'Peace, Dignity, and Equality on a Healthy Planet' Available at <https://www.un.org/en/global-issues/africa> (Accessed on 30/03/2024)

⁸⁸ Ibid

⁸⁹ Allen. D., 'African-Led Peace Operations: A Crucial Tool for Peace and Security' Available at <https://africacenter.org/spotlight/african-led-peace-operations-a-crucial-tool-for-peace-and-security/> (Accessed on 30/03/2024)

⁹⁰ Ibid

⁹¹ Ibid

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

neglected by state-centric United Nations peacekeeping operations⁹². Therefore, effective peace-keeping in Africa often requires collaboration between the United Nations, the African Union, and other international partners and regional organizations⁹³. Such coordinated efforts can help to build local capacities, strengthen institutions, and promote sustainable peace and stability⁹⁴.

Through the foregoing initiatives, it is possible to maximize diplomacy, peacemaking, and peace-keeping for Sustainable Development in Africa.

4.0 Conclusion

Conflicts and wars are a major to Sustainable Development in Africa⁹⁵. These incidences have worsened instability, human rights abuses and humanitarian crises in Africa⁹⁶. Wars and conflicts in Africa have had adverse economic, cultural, political, social, and environmental costs which hinder the achievement of the 2030 Agenda for Sustainable Development and the goals and aspirations of Africa Union's Agenda 2063⁹⁷. It is therefore necessary to prioritize conflict prevention and sustaining peace in Africa in order to remove the greatest obstacles to the implementation of these two agendas⁹⁸. Diplomacy, peace-making, and peace-keeping have a major role to play towards peacebuilding in Africa for Sustainable Development⁹⁹. It is therefore necessary to maximize diplomacy, peace-making, and peace-keeping for Sustainable Development in Africa. This can be realized through embracing and strengthening the capacity for diplomacy¹⁰⁰, utilizing ADR processes for

⁹² Ibid

⁹³ United Nations., 'Peace, Dignity, and Equality on a Healthy Planet' Op Cit

⁹⁴ Ibid

⁹⁵ United Nations., 'UN-African Union Cooperation a Must, As Landscape of Conflict Shifts' Op Cit

⁹⁶ Ibid

⁹⁷ United Nations., 'Promotion of Durable Peace and Sustainable Development in Africa' Op Cit

⁹⁸ Ibid

⁹⁹ United Nations Development Programme., 'Strengthening Peacebuilding Efforts Across Africa Key to Achieving Inclusive, Sustainable Development' Op Cit

¹⁰⁰ Pillai. V., & De. Corral. M., 'Tackling Fragility and Promoting Integration in the Horn of Africa through Development diplomacy' Op Cit

Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable Development in Africa

peace-making and peacebuilding in Africa¹⁰¹, and enhancing collaboration between the United Nations, the African Union, and other international partners and regional organizations for effective peace-keeping in Africa¹⁰². Maximizing diplomacy, peace-making, and peace-keeping for Sustainable Development in Africa is an agenda we must prioritize and achieve.

¹⁰¹ Uwazie. E., 'Alternative Dispute Resolution in Africa: Preventing Conflict and Enhancing Stability.' Op Cit

¹⁰² United Nations., 'Peace, Dignity, and Equality on a Healthy Planet' Op Cit

*Maximizing Diplomacy, Peace-Making and Peace-Keeping for Sustainable
Development in Africa*

Integrating Natural Resources Management for Efficacy

Abstract

Natural resources play a fundamental role in the life of human beings which may be classified as economic, social and cultural. The importance of natural resources therefore demands the effective use, access and management of natural resources for the benefit of present and future generations. Sustainable use and management for natural resources is therefore necessary for development. This paper discusses the need for integrating natural resources management for efficacy. It examines the concept of natural resources management. The paper explores various approaches adopted towards management of natural resources. It also highlights the strengths and weaknesses of such approaches. In addition, the paper offers suggestions towards integrating natural resources management for efficacy.

1.0 Introduction

The term natural resources refers to the functional utility that humanity derives from the environment¹. In addition, the term natural resources describes products of biological, ecological, or geological processes that satisfy human wants². It has further been noted that natural resources include all aspects of the environment which are not man-made and are of value to man such as forests, minerals, oceans, freshwater, soil and air³. The *Constitution of Kenya*⁴ defines natural resources to mean the physical non-human factors and components, whether renewable or non-renewable, including sunlight; surface and groundwater; forests, biodiversity and genetic resources; and rocks, minerals, fossil fuels and other sources of energy⁵.

It has been noted that natural resources play a fundamental role in the life of human beings which may be classified as economic, social and cultural⁶. Economically, natural resources are not only a source of food and raw

¹ Bridge. G., 'Natural Resources' *International Encyclopedia of Human Geography*, 2009., pp 261-268

² Ibid

³ Muigua. K., 'Natural Resources and Environmental Justice in Kenya' Glenwood Publishers Limited, 2015

⁴ Constitution of Kenya., 2010., Government Printer, Nairobi

⁵ Ibid, article 260

⁶ Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

Integrating Natural Resources Management for Efficacy

materials but are also a source of income for individuals and the state⁷. Socially, natural resources like water bodies play recreational role amongst others and also contribute to the improvement of the quality of life of individuals⁸. Culturally, communities especially in Africa attach importance to some natural resources that may be revered as shrines, dwelling places for ancestors and sacred sites where rites of passage and other cultural celebrations take place⁹.

According to the United Nations Environment Programme (UNEP), natural resources are the foundation of social and economic development¹⁰. Natural resources have also been described as the lifeblood of the world economy¹¹. They are the essential material conditions and bases for economic development¹². As a result, abundant natural resources are often regarded as a great advantage for a country's economic development, while resource shortage is associated with underdevelopment¹³.

The importance of natural resources therefore demands the effective use, access and management of natural resources for the benefit of present and future generations¹⁴. UNEP further notes that in order for all countries to reap the economic and social benefits inherent in their natural wealth, it is necessary to urgently address such issues as the management and the economic and

⁷ Costanza. R., 'The Ecological, Economic, and Social Importance of the Oceans.' *Ecological Economics*, Volume 31, No. 2 (1999)

⁸ Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

⁹ Ibid

¹⁰ United Nations Environment Programme., 'Sustainable Natural Capital' Available at <https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/sustainable-natural> (Accessed on 25/03/2024)

¹¹ Bridge. G., 'Natural Resources' Op Cit

¹² Ibid

¹³ Ibid

¹⁴ Child. B., et al. 'Zimbabwe's CAMPFIRE Programme: Natural Resource Management by the People.' *IUCN-ROSA Environmental Issues Series No. 2*, (1997)

Integrating Natural Resources Management for Efficacy

environmental impacts related to their sustainable use¹⁵. Sustainable use and management for natural resources is therefore necessary for development¹⁶.

This paper discusses the need for integrating natural resources management for efficacy. It examines the concept of natural resources management. The paper explores various approaches adopted towards management of natural resources. It also highlights the strengths and weaknesses of such approaches. In addition, the paper offers suggestions towards integrating natural resources management for efficacy.

2.0 Approaches to Natural Resources Management

Various approaches have been adopted towards managing natural resources. Key among them is the command and control approach¹⁷. It is one of the most commonly used approach towards environmental governance¹⁸. The command and control approach is based on standards or regulations¹⁹. Under this approach, the management of natural resources relies on laws, regulations and penalties²⁰. It has been noted that such laws typically involve three elements: identification of a type of environmentally harmful activity, imposition of specific conditions or standards on that activity, and prohibition²¹. Further, it has been asserted that command and control approach is one where political authorities mandate people, by enacting a law, to bring about a behavior and use an enforcement machinery to get people to obey the law²². It involves the setting of standards to protect or improve

¹⁵ United Nations Environment Programme., 'Our work in Africa' Available at <https://www.unep.org/regions/africa/our-work-africa#:~:text=Africa%20is%20rich%20in%20natural,%2C%20minerals%2C%20forests%20and%20wildlife> (Accessed on 25/03/2024)

¹⁶ Ibid

¹⁷ Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

¹⁸ Ibid

¹⁹ Ibid

²⁰ Davies. J.C., & Mazurek. J., 'Pollution Control in the United States: Evaluating the System' *Resources for the Future*, 1998, p 15

²¹ Ibid

²² Philippine Institute for Development Studies., 'A Law of Nature: The Command-and-Control Approach' Available at https://sswm.info/sites/default/files/reference_attachments/PIDS%202002%20Standards%20in%20Command%20and%20Control.pdf (Accessed on 26/03/2024)

Integrating Natural Resources Management for Efficacy

environmental quality²³. Under this approach, a standard is a mandated level of performance enforced through a piece of legislation²⁴. The command and control approach embraces environmental quality standards such as ambient, emission and technology standards²⁵.

This approach is embraced in Kenya under the *Environmental Management and Co-ordination Act*²⁶ which establishes the National Environment Management Authority (NEMA) as the body in charge of general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of Government in the implementation of all policies relating to the environment²⁷. The Act further sets out several environmental quality standards including water quality standards, air quality standards, standards for waste, and standards for noise²⁸. There is also a number of sectoral laws which create specific standards and establish agencies to deal with particular natural resources in Kenya. They include the *Wildlife Conservation and Management Act*²⁹, *Water Act*³⁰, and the *Forest Conservation and Management Act*³¹. The command and control approach can be effective in environmental governance due to several reasons including the establishment of criminal sanctions for environmental harm and protection of the public from environmental malpractices such as pollution³².

Another major approach towards managing natural resources is the market based approach³³. It has been noted that market-oriented environmental policies create incentives to allow firms or individuals to incorporate

²³ Ibid

²⁴ Ibid

²⁵ Ibid

²⁶ Environmental Management and Co-ordination Act, No. 8 of 1999, Government Printer, Nairobi

²⁷ Ibid, S 7 & 9

²⁸ Ibid, Part VIII

²⁹ Cap 376

³⁰ Cap 372

³¹ Cap 385

³² Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

³³ Ibid

Integrating Natural Resources Management for Efficacy

environmental conservation into their planning and operational processes³⁴. Market-oriented approaches to environmental management include pollution charges, marketable permits, and better-defined property rights³⁵. These approaches can be effective in managing natural resources. For example, a pollution charge is a tax imposed on the quantity of pollution that a firm emits³⁶. It has been noted that this approach gives a profit-maximizing firm an incentive to figure out ways to reduce its emissions as long as the marginal cost of reducing the emissions is less than the tax³⁷. Further, the ideal of property rights can provide private landowners with an incentive to protect endangered species on their land³⁸. It has been noted that the use of market based approaches such as incentives can achieve the same level of natural resources protection as command and control approaches but they allocate the burden of this protection more efficiently among different stakeholders including corporations³⁹.

Community Based Natural Resources Management (CBNRM) is another major approach towards managing natural resources⁴⁰. This approach is characterized by a commitment to involve community members and local institutions in management of natural resources, devolution of power and authority to the grass roots, a desire to reconcile the objectives of socio-economic development and environmental conservation, the tendency to defend and legitimize local and indigenous property rights and a desire to

³⁴ Khan Academy., 'What are Market-Oriented Environmental Tools?' Available at <https://www.khanacademy.org/economics-finance-domain/microeconomics/market-failure-and-the-role-of-government/environmental-regulation/a/market-oriented-environmental-tools-cnx#:~:text=Market%2Doriented%20environmental%20policies%20create,and%20better%2Ddefined%20property%20rights>. (Accessed on 26/03/2024)

³⁵ Ibid

³⁶ Ibid

³⁷ Ibid

³⁸ Ibid

³⁹ Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

⁴⁰ Ibid

Integrating Natural Resources Management for Efficacy

include traditional values in modern management of natural resources⁴¹. It is premised on the view that sustainable management of natural resources is most likely where local communities are able to manage and derive benefits from natural resources⁴². It has been noted that CBNRM is a major global strategy for enhancing environmental conservation outcomes while also seeking to improve rural livelihoods⁴³. It is a modern attempt to revive indigenous mechanisms for the conservation of natural resources⁴⁴. It has been argued that giving local communities the rights to manage, use or own resources, creates incentives for them to collectively invest in natural resources management⁴⁵.

Ecosystem based approaches are also key in managing natural resources⁴⁶. It has been noted that an ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way⁴⁷. It is based on appropriate scientific methodologies focused on levels of biological organization encompassing essential processed functions and interactions among organisms and their environment⁴⁸. This approach recognizes human beings and their cultural identities as integral components of ecosystems⁴⁹. It has been pointed out that Integrated Water Resource Management (IWRM) and Integrated Coastal Zones Management (ICZM) are some of the key examples of ecosystem-based

⁴¹ Nelson F. & Agrawal, A., "Patronage or Participation? Community-based Natural Resource Management Reform in Sub-Saharan Africa," *Journal of Development and Change*, Vol. 39, No.4, 2008

⁴² Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

⁴³ Pailler. S et al., 'Impacts of Community-Based Natural Resource Management on Wealth, Food Security and Child Health in Tanzania' Available at <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0133252> (Accessed on 26/03/2024)

⁴⁴ Nelson F. & Agrawal, A., "Patronage or Participation? Community-based Natural Resource Management Reform in Sub-Saharan Africa," Op Cit

⁴⁵ Ibid

⁴⁶ Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ Ibid

Integrating Natural Resources Management for Efficacy

approaches to natural resource management⁵⁰. According to UNEP, Integrated ecosystem-based management seeks to balance ocean, coastal, and freshwater resource use with conservation while acknowledging ecosystem connectivity⁵¹. It involves coordinated land and sea activity management to minimize cumulative impacts on marine and coastal ecosystems⁵². It has been noted that this approach overcomes limitations of single-sector strategies, offering holistic human-ecosystem interaction management⁵³.

The foregoing approaches have contributed to the efficient management of natural resources⁵⁴. However, there are some underlying challenges with these approaches. For example, under the command and control approach, it has been noted that penalties for violating standards tend to be too low and enforcement tends to be weak⁵⁵. Further, under this approach, there are complications and other considerations that have to be addressed such as the level of standards, uniformity of standards, equity effects and enforcement⁵⁶. In addition, it has been posited that the use of market based approaches such as incentives may be limited since such approaches do not fit to every problem⁵⁷. Uniform application of incentives does not categorically consider varying performance levels of environmental malpractices such as pollution thereby ignoring the efficiency principle⁵⁸. It has further been noted that there may be bureaucratic obstacles to the successful use of incentives including the

⁵⁰ Ibid

⁵¹ United Nations Environment Programme., 'Ecosystem-Based Approaches' Available at <https://www.unep.org/topics/ocean-seas-and-coasts/ecosystem-based-approaches#:~:text=Integrated%20ecosystem%2Dbased%20management%20seeks,orn%20marine%20and%20coastal%20ecosystems>. (Accessed on 26/03/2024)

⁵² Ibid

⁵³ Ibid

⁵⁴ Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

⁵⁵ Ibid

⁵⁶ Philippine Institute for Development Studies., 'A Law of Nature: The Command-and-Control Approach' Op Cit

⁵⁷ Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

⁵⁸ Philippine Institute for Development Studies., 'A Law of Nature: The Command-and-Control Approach' Op Cit

Integrating Natural Resources Management for Efficacy

difficulties of the economic calculations involved⁵⁹. Use of CBNRM also raises concerns over how to structure participation and representation⁶⁰. In light of these among other challenges, it has been correctly pointed out that there is need to integrate natural resources management for better environmental outcomes⁶¹.

3.0 Integrating Natural Resources Management

It has been noted that natural resources are embedded in complex social-ecological systems with a multitude of components, functions, and subsystems interacting across multiple levels and scales⁶². As a result, it has been asserted that effective environmental policies and programmes need to be informed by a comprehensive understanding of the biophysical, social, and economic components and processes of a system, their complex interactions, and how they respond to different changes⁶³. The recognition of this complexity, and the uncertainty that comes with it, has led to the recognition that the management of natural resources demands integrated approaches⁶⁴. Integrating natural resources management is necessary due to severe problems of fragmented policies and uncoordinated implementation which undermine natural resource management⁶⁵.

⁵⁹ Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

⁶⁰ Robinson. L. W et al., 'The Challenges of Community-Based Natural Resource Management in Pastoral Rangelands' Available at <https://www.tandfonline.com/doi/full/10.1080/08941920.2021.1946629> (Accessed on 26/03/2024)

⁶¹ Morrison. T. H., McDonald. G. T., & Lane. M. B., 'Integrating Natural Resource Management for Better Environmental Outcomes' Available at <https://www.tandfonline.com/doi/full/10.1080/0004918042000311304> (Accessed on 26/03/2024)

⁶² Tengberg. A., & Valencia. S., 'Integrated Approaches to Natural Resources Management – Theory and Practice' Available at https://www.researchgate.net/publication/324124744_Integrated_approaches_to_natural_resources_management-Theory_and_practice (Accessed on 26/03/2024)

⁶³ Ibid

⁶⁴ Ibid

⁶⁵ Morrison. T. H., McDonald. G. T., & Lane. M. B., 'Integrating Natural Resource Management for Better Environmental Outcomes' Op Cit

Integrating Natural Resources Management for Efficacy

Efforts towards managing natural resources are currently curtailed by several problems including climate change⁶⁶. It has been noted that climate change is putting enormous pressure on the sustainability and availability of natural resources such as fresh water food production, and energy⁶⁷. It has correctly been pointed out that in low-income countries, populations rely on natural resources such as water, land, forests, soil, wildlife, and fisheries for survival⁶⁸. However, climate change is threatening these benefits as extreme weather events such as intense droughts and floods and slow-onset climate impacts degrade ecosystems and natural resources many of which are conserved and sustainably managed by Indigenous Peoples and local communities⁶⁹. Other key challenges including loss of biodiversity and pollution are a major threat to the sustainability of natural resources⁷⁰. In light of these challenges, it has been argued that it is necessary to strengthen natural resource management in order to mitigate and reduce climate risks and build local capacity for resilience and resource sharing, including through socio-ecological approaches⁷¹. Therefore, a new model of integrated and sustainable management of natural resources that promotes resource efficiency and accelerates progress towards combating climate change is now becoming more urgent⁷².

Integrating natural resources management entails responsible and broad-based management of land, water, forest, biological resources among other

⁶⁶ United Nations Economic Commission for Europe., 'United Nations Resource Management System Principles and Requirements' Available at https://unece.org/sites/default/files/2023-02/2229237_E_ECE_ENERGY_144_WEB.pdf (Accessed on 26/03/2024)

⁶⁷ Ibid

⁶⁸ Natural Resource Management., Available at <https://www.climatelinks.org/sector/natural-resource-management> (Accessed on 26/03/2024)

⁶⁹ Ibid

⁷⁰ United Nations Climate Change., 'What is the Triple Planetary Crisis?' Available at <https://unfccc.int/news/what-is-the-triple-planetary-crisis> (Accessed on 26/03/2024)

⁷¹ Natural Resource Management., Op Cit

⁷² United Nations Economic Commission for Europe., 'United Nations Resource Management System Principles and Requirements' Op Cit

Integrating Natural Resources Management for Efficacy

natural resources in order to foster sustainability⁷³. This concept has been defined as a conscious process of incorporating multiple aspects of natural resource use into a system of sustainable management⁷⁴. It aims to achieve various goals including reducing poverty, increasing food security and achieving environmental protection⁷⁵. It has been noted that integrating natural resources management focuses on ecosystems rather than commodities⁷⁶; on underlying processes (both biophysical and socioeconomic) rather than simple relationships⁷⁷; and on managing the effects of interactions between various elements of an ecosystem⁷⁸.

Integrating natural resources management is a model that is uniquely suited to managing complex natural resource management challenges in densely settled areas where people are highly dependent on local resources for their livelihoods, thus heightening the tension between livelihood and conservation aims⁷⁹. This idea aims to foster environmental protection, and social well-being⁸⁰. Integrating natural resources management seeks to achieve the objectives of environmental protection and social well-being through: fostering sustainable management of natural resources including land, water, forests and fisheries⁸¹; enhancing local adaptive capacity while supporting adaptive management beyond community level⁸²; emphasizing sustainable livelihoods⁸³; and effectively solving problems related to the management of

⁷³ Hagmann, J. R., et al 'Success Factors in Integrated Natural Resource Management R&D: Lessons from Practice.' *Conservation Ecology*, Volume 5, No. 2: 29.

⁷⁴ Centre for International Forestry Research., 'Integrated Natural Resource Management Research in the CGIAR' Available at https://www.cifor.org/publications/pdf_files/Books/INRM2000.pdf (Accessed on 27/03/2024)

⁷⁵ Ibid

⁷⁶ Ibid

⁷⁷ Ibid

⁷⁸ Ibid

⁷⁹ German. L., Mowo. J., & Opondo. C., 'Integrated Natural Resource Management: From Theory to Practice' Integrated Natural Resource Management in the Highlands of Eastern Africa, International Development Research Centre., 2012

⁸⁰ Ibid

⁸¹ Ibid

⁸² Ibid

⁸³ Ibid

Integrating Natural Resources Management for Efficacy

natural resources⁸⁴. Integrating natural resources management is therefore necessary for sound, adaptive management of natural resources⁸⁵.

The *Report of the World Commission on Environment and Development*⁸⁶ notes the importance of integrating natural resources management. According to the Report, a new approach towards managing natural resources in which all nations aim at a type of development that integrates production with resource conservation and enhancement, and that links both to the provision for all of an adequate livelihood base and equitable access to resources is necessary for Sustainable Development⁸⁷. The Report acknowledges the importance of integrating the management of natural resources such as forests, land, and oceans⁸⁸.

Integrating natural resources management is also a key target under the United Nations *2030 Agenda for Sustainable Development*⁸⁹. The agenda sets out the need to protect the planet from degradation, including through sustainable consumption and production, *sustainably managing its natural resources*, and taking urgent action on climate change, so that it can support the needs of the present and future generations (Emphasis added)⁹⁰. It identifies key threats to natural resources including resource depletion, and adverse impacts of environmental degradation, including desertification, drought, land degradation, freshwater scarcity, loss of biodiversity, and climate change⁹¹. The 2030 Agenda for Sustainable Development urges states to *integrate* ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies (Emphasis added)⁹².

⁸⁴ Ibid

⁸⁵ Ibid

⁸⁶ World Commission on Environment and Development., 'Our Common Future.' Oxford, (Oxford University Press, 1987)

⁸⁷ Ibid

⁸⁸ Ibid

⁸⁹ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 27/03/2024)

⁹⁰ Ibid

⁹¹ Ibid

⁹² Ibid

Integrating Natural Resources Management for Efficacy

The *African Convention on the Conservation of Nature and Natural Resources*⁹³ also sets out the need for integrating natural resources management in Africa. It urges parties to take effective measures to prevent land degradation, and to that effect develop long-term *integrated strategies* for the conservation and sustainable management of land resources, including soil, vegetation and related hydrological processes⁹⁴. It also urges parties to implement policies for the planning, conservation, management, utilization and development of water *including integrated management of water resources (Emphasis added)*⁹⁵. Further, the Convention urges parties to integrate conservation and management of natural resources into national and local development plans⁹⁶. Integrating natural resources management is efficacious in fostering sustainability⁹⁷. This process can improve livelihoods, agro-ecosystem resilience, agricultural productivity and environmental services at community, national, regional and global levels⁹⁸. Integrating natural resources management has been effectively utilized to manage natural resources such as water, forests and coastal zones⁹⁹. With regard to water resources, it has been observed that Integrated Water Resources Management aims at ensuring the coordinated development of water, land and related resources to optimise economic and social welfare without compromising the

⁹³ African Union., 'African Convention on the Conservation of Nature and Natural Resources' Available at https://au.int/sites/default/files/treaties/41550-treaty Charter_ConservationNature_NaturalResources.pdf (Accessed on 27/03/2024)

⁹⁴ Ibid

⁹⁵ Ibid

⁹⁶ Ibid

⁹⁷ Thoma, R et al., 'Towards Integrated Natural Resources Management (INRM) in Dry Areas Subject to Land Degradation: The Example of The Khanasser Valley in Syria' Available at https://www.google.com/url?sa=i&url=https%3A%2F%2Flib.icimod.org%2Frecord%2F13678%2Ffiles%2F3742.pdf&psig=AOvVaw1HB2Y2GSo2lp3AZ0F_LMLq&ust=1711611536298000&source=images&cd=vfe&opi=89978449&ved=0CAUQn5wMahcKEwjAhdD-95OFaxUAAAAAHQAAAAAQCA (Accessed on 27/03/2024)

⁹⁸ Ibid

⁹⁹ Muigua, K., 'Integrated Natural Resources and Environmental Management for Sustainable Development in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2019/01/Integrated-Natural-Resources-and-Environmental-Management-for-Sustainable-Development-in-Kenya-Kariuki-Muigua-January-2019.pdf> (Accessed on 27/03/2024)

Integrating Natural Resources Management for Efficacy

sustainability of environmental systems¹⁰⁰. It is a systematic process for the Sustainable Development, allocation and monitoring of water resource use in the context of social, economic and environmental objectives¹⁰¹. This approach differs from the sectoral approach to the management of water resources which leads to uncoordinated water resource development and management, resulting in conflict, waste and unsustainable systems¹⁰². It has been correctly asserted that Integrated Water Resources Management can go a long way in realisation of Sustainable Development Goal (SDG) 6 which seeks to ensure availability and sustainable management of water and sanitation for all¹⁰³.

Integrating natural resources management can also be effectively utilized in managing forests¹⁰⁴. Integrated forest management refers to the management of forests for multiple societal demands such as wood production, biodiversity conservation, recreation, water and soil protection among other¹⁰⁵. This approach has the potential to combine biodiversity conservation with wood production and other ecosystem services for large forest areas if compromises between different objectives are made, and to take advantage of synergies between those objectives¹⁰⁶. Integrated forest management can foster the conservation of protected areas, good forest management, and forest landscape restoration¹⁰⁷.

The approach of integrating natural resources management can also be utilized to manage land¹⁰⁸. Integrated Land Management has been identified

¹⁰⁰ Global Water Partnership, "Integrated Water Resources Management", Global Water Partnership Technical Advisory Committee, Background Paper no.4, 2000

¹⁰¹ Ibid

¹⁰² Ibid

¹⁰³ Muigua. K., 'Integrated Natural Resources and Environmental Management for Sustainable Development in Kenya' Op Cit

¹⁰⁴ European Forest Institute., 'Advancing Biodiversity Conservation through Integrated Forest Management in Europe' Available at https://efi.int/sites/default/files/images/governance/policy_brief_INFORMAR_o_Forest.pdf (Accessed on 27/03/2024)

¹⁰⁵ Ibid

¹⁰⁶ Ibid

¹⁰⁷ Ibid

¹⁰⁸ World Bank Group., 'The Integrated Land Management: Case of the WAVES Program in Zambia' Available at

Integrating Natural Resources Management for Efficacy

as a strategically planned approach to managing the use and development of the land resource, to reduce human induced impacts¹⁰⁹. It has been noted that this approach can help countries to manage their land resources, while achieving sustainable utilization of all other natural resources such as water, forests, and wildlife¹¹⁰.

Integrating natural resources management can also be effectively applied in managing coastal zones¹¹¹. It has been noted that coastal zones are faced by problems of poor planning and uncoordinated coastal development as a result of a sectoral approach in planning and management¹¹²; poor waste management¹¹³; declining water quality¹¹⁴; destruction and loss of coastal and marine habitats as a result of over-exploitation, poor land use practices, encroachment and unplanned and unregulated human settlements and urban development, amongst others¹¹⁵. Integrating Coastal Zone Management can foster effective planning and management of coastal ecosystems and resources, while taking into account traditional, cultural and historical perspectives and conflicting interests and uses, all within the limits set by natural dynamics¹¹⁶. It can foster the sustainable management and use of coastal zones, taking into account the fragility of coastal ecosystems and landscapes, the diversity of activities and uses, their interactions, the maritime orientation of certain activities and uses and their impact on both the marine and land parts¹¹⁷. It has been argued that adoption of this approach can foster the attainment of SDG 14 which seeks to enhance the conservation and

https://seea.un.org/sites/seea.un.org/files/1_integrated_land_management_presentation_20191117_ver4.pdf (Accessed on 27/03/2024)

¹⁰⁹ Ibid

¹¹⁰ Ibid

¹¹¹ Muigua. K., 'Integrated Natural Resources and Environmental Management for Sustainable Development in Kenya' Op Cit

¹¹² Republic of Kenya., 'Integrated Coastal Zone Management Policy' Available at <https://www.nema.go.ke/images/Docs/Legislation%20and%20Policies/ICZM%20Draft%20Policy%20.pdf> (Accessed on 27/03/2024)

¹¹³ Ibid

¹¹⁴ Ibid

¹¹⁵ Ibid

¹¹⁶ Ibid

¹¹⁷ Ibid

Integrating Natural Resources Management for Efficacy

sustainable use of the oceans, seas and marine resources for Sustainable Development¹¹⁸.

Integrating natural resources management is thus an effective tool for effective management of natural resources including water, forests, land, and coastal zones. It is necessary to embrace this approach for Sustainable Development.

4.0 Conclusion

Natural resources play fundamental economic, social, and cultural functions¹¹⁹. The importance of natural resources therefore demands the effective use, access and management of natural resources for the benefit of present and future generations¹²⁰. Integrating natural resources management is necessary due to severe problems of fragmented policies and uncoordinated implementation which undermine natural resource management¹²¹. It can foster responsible and broad-based management of land, water, forest, coastal zones, biological resources among other natural resources in order to foster sustainability¹²². Integrating natural resources management for efficacy is the way to go towards Sustainable Development.

¹¹⁸ Muigua. K., 'Integrated Natural Resources and Environmental Management for Sustainable Development in Kenya' Op Cit

¹¹⁹ Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

¹²⁰ Ibid

¹²¹ Morrison. T. H., McDonald. G. T., & Lane. M. B., 'Integrating Natural Resource Management for Better Environmental Outcomes' Op Cit

¹²² Hagmann, J. R., et al 'Success Factors in Integrated Natural Resource Management R&D: Lessons from Practice.' Op Cit

Promoting Justice for People of African Descent through Reparations

Abstract

This paper critically examines the need for reparations for people of African Descent. It argues that reparations are a key measure in promoting justice for people of African descent. The paper discusses some of the key human rights violations faced by people of African descent including the legacies of slavery and colonialism. It also examines the progress made towards enhancing reparations for people of African descent and challenges thereof. In addition, the paper proposes reforms towards promoting justice for people of African descent through reparations.

1.0 Introduction

The concept of reparation for victims of violations of human rights or of International Humanitarian Law (IHL) is relatively new phenomenon in international law¹. It is recognized as part of the right to a remedy as recognised under international law for victims of serious violations of IHL and human rights². Reparations are meant to acknowledge and repair the causes and consequences of human rights violations and inequality in countries emerging from dictatorship, armed conflict, and political violence, as well as in societies dealing with racial injustice and legacies of colonization³.

Reparations take various forms including compensation or the payment of money⁴. Other key forms of reparations include the restitution of civil and political rights; physical rehabilitation; and granting access to land, housing, health care, or education⁵. In addition, reparations can also take the form of revealing the truth about the violations themselves and providing guarantees

¹ Reparation (Compensation), Available at <https://guide-humanitarian-law.org/content/article/3/reparation-compensation/#:~:text=There%20are%20several%20systems%20in,and%20guarantees%20of%20non%20Drepetition> (Accessed on 06/05/2024)

² Ibid

³ International Center for Transitional Justice., 'Reparations' Available at <https://www.ictj.org/reparations#:~:text=It%20is%20important%20to%20remember,%20health%20care%20or%20education> (Accessed on 06/05/2024)

⁴ Ibid

⁵ Ibid

Promoting Justice for People of African Descent through Reparations

that such violations will not be repeated⁶. Further, it has been asserted that symbolic reparations such as apologies, memorials, and commemorations are also important reparative measures that can be more meaningful when conferred alongside material reparations⁷.

According to the Office of the United Nations High Commissioner for Human Rights (OHCHR), all victims of human rights violations have a right to reparations⁸. It notes that reparations entail measures to redress violations of human rights by providing a range of material and symbolic benefits to victims or their families as well as affected communities⁹. In addition, it notes that reparations must be adequate, effective, prompt, and should be proportional to the gravity of the violations and the harm suffered¹⁰.

The *United Nations Basic Principles and Guidelines on the Right to a Remedy and Reparations for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law*¹¹ sets out the international legal framework on reparations. Under the Principles, States are under legal obligation to provide reparations for gross violations attributable to them, as are persons found liable for relevant war-time violations¹². In addition, States are also obligated to endeavour to provide repair and redress for victims in circumstances where those directly responsible are unwilling or unable to meet their obligations through measures such as establishment of reparations programmes¹³. The Principles recognize various forms of reparations

⁶ Ibid

⁷ Ibid

⁸ Office of the United Nations High Commissioner for Human Rights., 'Reparations: OHCHR and Transitional Justice' Available at <https://www.ohchr.org/en/transitional-justice/reparations> (Accessed on 06/05/2024)

⁹ Ibid

¹⁰ Ibid

¹¹ United Nations General Assembly., 'Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law' A/RES/60/147., Available at <https://www.ohchr.org/sites/default/files/2021-08/N0549642.pdf> (Accessed on 06/05/2024)

¹² Ibid

¹³ Ibid

Promoting Justice for People of African Descent through Reparations

including *restitution* which entails restoration of victims' rights, property, and citizenship status; *rehabilitation* through psychological and physical support; *compensation*; *satisfaction* through acknowledgement of guilt, apology, burial of victims, and construction of memorial sites among other measures; and *guarantee of non-repetition* through reformation of laws and civil and political structures that led to or fueled violence(Emphasis added)¹⁴.

Reparatory justice is a key agenda in Africa. It has been observed that Africans and people of African descent have for many centuries suffered and continue to suffer systemic racism, racial discrimination, xenophobia and related intolerance and other violations of their human rights¹⁵. Further, it has been noted that people of African descent face many prejudices and injustices through legacies of slavery and colonialism, as evidenced by many inequalities they face¹⁶. Reparations are therefore key in addressing the continued harm suffered by people of African descent¹⁷. It has been noted that reparations highlight the intrinsic link between the legacies of colonialism and enslavement and contemporary forms of systemic racism and racial discrimination, intolerance and xenophobia faced by people of African descent¹⁸.

This paper critically examines the need for reparations for people of African Descent. It argues that reparations are a key measure in promoting justice for people of African descent. The paper discusses some of the key human rights violations faced by people of African descent including the legacies of slavery and colonialism. It also examines the progress made towards enhancing

¹⁴ Ibid

¹⁵ African Commission on Human and Peoples' Rights., 'Resolution on Africa's Reparations Agenda and The Human Rights of Africans in the Diaspora and People of African Descent Worldwide - ACHPR/Res.543 (LXXIII) 2022' Available at <https://achpr.au.int/index.php/en/adopted-resolutions/543-resolution-africanas-reparations-agenda-and-human-rights-africans> (Accessed on 06/05/2024)

¹⁶ United Nations., 'UN Leaders Galvanize Action for Reparations for People of African Descent' Available at <https://news.un.org/en/story/2024/03/1147821> (Accessed on 06/05/2024)

¹⁷ United Nations., 'Strong Leadership and Political will Crucial to Ensure Reparatory Justice for People of African Descent - UN Report' Available at <https://www.ohchr.org/en/press-releases/2023/09/strong-leadership-and-political-will-crucial-ensure-reparatory-justice> (Accessed on 06/05/2024)

¹⁸ Ibid

Promoting Justice for People of African Descent through Reparations

reparations for people of African descent and challenges thereof. In addition, the paper proposes reforms towards promoting justice for people of African descent through reparations.

2.0 The Need for Reparations for People of African Descent

People of African descent have for many centuries endured worst forms of human rights violations including the lasting consequences of enslavement, the trade in enslaved Africans and colonialism¹⁹. Africans and people of African descent were victims of enslavement, the trade in enslaved Africans, including the transatlantic trade²⁰. It is estimated that between 25 and 30 million people were violently uprooted from Africa and transported to other regions of the world for enslavement during the transatlantic trade²¹. According to the United Nations, the transatlantic trade in enslaved Africans caused the largest and most concentrated deportation of human beings, involving several regions of the world for more than four centuries²². It has been argued that there is no institution in modernity, over the course of the last 500 years, that has changed the world as profoundly as the transatlantic slave trade and slavery²³. In addition, it has been noted that slavery and the slave trading enterprises were the greatest commercial enterprises in the world at that time and had an impact on the structure of the world economy, politics, race relations and cultural relations and how civilizations have interacted with each other²⁴. The impact of slavery and the transatlantic slave trade was so profound and deep-seated and sustained over several generations²⁵. It has shaped race relations and the development of racism as a philosophy for social organization, where most societies where it has touched are now structured in such a way that people of African descent are considered

¹⁹ Ibid

²⁰ United Nations., 'Implementation of the International Decade for People of African Descent' A/78/317., Available at <https://documents.un.org/doc/undoc/gen/n23/245/15/pdf/n2324515.pdf?token=CLwoAnKkVDXN3Dcqgv&fe=true> (Accessed on 06/05/2024)

²¹ Ibid

²² Ibid

²³ United Nations., 'Unravelling the Legacies of Slavery' Available at <https://news.un.org/en/story/2024/04/1148166> (Accessed on 06/05/2024)

²⁴ Ibid

²⁵ Ibid

Promoting Justice for People of African Descent through Reparations

the most marginalised people, and the descendants of the enslaved people still continue to suffer racism²⁶.

As a result of slavery and the transatlantic slave trade, for centuries, Africans were reduced to property in North and South America and the Caribbean Islands²⁷. It has been noted that slave traders had no trouble pricing a human life, and abolition-era economists repaid slave owners for the losses of their freed slaves²⁸. In addition, the loss of human life from Africa as a result of the transatlantic slave trade had a real cost²⁹. The continent was not only deprived of manpower and income, but also creativity, innovation, and relationships³⁰. It has been pointed out that these losses were multiplied by millions of lives, over hundreds of years, stunting the development of a continent whose governments have since struggled to find the will to ask for restitution³¹.

Colonialism has also had a lasting impact on people of African descent³². The weight of colonialism is still being carried today, most predominantly in the Global South, where political independence and decolonization have not been matched by Sustainable Development and the full enjoyment of human rights, including the right to development and socioeconomic rights³³. It has been noted that there is an intrinsic link between colonialism and contemporary forms of racism, racial discrimination, xenophobia and intolerance faced by people of African descent and indigenous peoples³⁴. It has been argued that while former colonies have gained independence since the establishment of

²⁶ Ibid

²⁷ Chutel. L., 'What Reparations are owed to Africa?' Available at <https://qz.com/africa/1915182/what-reparations-are-owed-to-africa> (Accessed on 06/05/2024)

²⁸ Ibid

²⁹ Ibid

³⁰ Ibid

³¹ Ibid

³² Office of the United Nations High Commissioner for Human Rights., 'Racism, Discrimination are Legacies of Colonialism' Available at <https://www.ohchr.org/en/get-involved/stories/racism-discrimination-are-legacies-colonialism> (Accessed on 06/05/2024)

³³ Ibid

³⁴ Ibid

Promoting Justice for People of African Descent through Reparations

the United Nations, the process of decolonization remains incomplete³⁵. Some of the negative impacts of colonialism on people of African descent include systemic racism, poverty, economic inequity, overincarceration, dispossession of traditional lands and territories, criminalization of indigenous human rights defenders, and loss of language and culture³⁶.

Colonialism also resulted in key human right abuses during the struggle for independence in Africa. For example, in Kenya, The Mau Mau movement, a resistance movement against colonial oppression, faced a relentless campaign of violence and intimidation by the British authorities³⁷. The Mau Mau fighters endured several atrocities including torture, imprisonment and death as they valiantly stood against the oppressive colonial regime³⁸. The Mau Mau movement played a key role in Kenya's independence but it was also a time of unimaginable suffering for the fighters³⁹. As a result, there have been persistent calls for reparations for the suffering endured by the Mau Mau fighters⁴⁰. It has been noted that reparations are key in ensuring that future generations understand the sacrifices made for Kenya's independence⁴¹. In addition, reparations can provide a semblance of justice for the atrocities endured by the Mau Mau fighters⁴².

As a result of the impacts of slavery, slave trade, and colonialism, people of African descent continue to suffer from contemporary forms of systemic racism and racial discrimination, intolerance and xenophobia⁴³. It has been observed that the formal abolition of enslavement, and decolonization processes, did not dismantle racially discriminatory structures affecting

³⁵ Ibid

³⁶ Ibid

³⁷ Wasike. A., 'Kenya's Mau Mau Demand 'Justice, Recognition and Reparations' for Britain's Colonial Atrocities' Available at <https://www.aa.com.tr/en/africa/kenya-s-mau-mau-demand-justice-recognition-and-reparations-for-britain-s-colonial-atrocities/3121678> (Accessed on 06/05/2024)

³⁸ Ibid

³⁹ Ibid

⁴⁰ Ibid

⁴¹ Ibid

⁴² Ibid

⁴³ United Nations., 'Strong Leadership and Political will Crucial to Ensure Reparatory Justice for People of African Descent - UN Report' Op Cit

Promoting Justice for People of African Descent through Reparations

people of African descent⁴⁴. Instead, they gave way to racially discriminatory policies and systems, including segregation and apartheid that perpetuated racial discrimination, oppression, and inequalities against people of African descent⁴⁵.

In addition, it has been noted that since time immemorial, indigenous communities in Africa have been victims of land rights abuses⁴⁶. With the advent of colonialism, these communities were dispossessed of their lands which were given to white settlers⁴⁷. Subsequent post-colonial African governments did not do anything to remedy these historical land injustices⁴⁸. It has been noted that this history of arbitrary dispossession continues in current times under the guise of conservation⁴⁹. For example, in Kenya, the Ogiek community has been routinely subjected to arbitrary forced evictions from their ancestral land without consultation or compensation, first by colonial authorities and subsequently by the Kenyan government⁵⁰. As a result, the rights of the Ogiek people over their traditionally owned lands have been systematically denied and ignored⁵¹. This has resulted in the Ogiek being prevented from practising their traditional way of life, therefore threatening their very existence⁵².

Reparations are therefore vital in promoting justice for people of African descent in light of the abuses they have endured including slavery and colonialism. It has been argued that reparations for serious human rights violations are an important instrument to help victims and survivors overcome the effects of conflicts and crimes, to restore their status as equal

⁴⁴ Ibid

⁴⁵ Ibid

⁴⁶ Minority Group Rights., 'Reparations at Last: Land Justice for Kenya's Ogiek' Available at <https://minorityrights.org/resources/reparations-at-last-land-justice-for-kenyas-ogiek/> (Accessed on 06/05/2024)

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ Ibid

⁵² Ibid

Promoting Justice for People of African Descent through Reparations

citizens, their trust in the state, and to recognise the harm suffered⁵³. International human rights practice suggests that comprehensive reparations should consist of a combination of several measures including: restitution; compensation; rehabilitation; satisfaction; and guarantees of non-repetition⁵⁴.

The need for reparations for people of African descent is acknowledged under the *Accra Proclamation on Reparations*⁵⁵ which was adopted during the Accra Reparations Conference. The conference was convened with a shared commitment to addressing historical injustices and injurious crimes committed against Africans and people of African descent, through transatlantic enslavement, colonialism and apartheid, and to addressing the inequities present in the international economic and political orders⁵⁶. The Accra Proclamation on Reparations seeks to advance the cause of reparatory justice and healing for Africans and for all people of African descent⁵⁷. It recognizes the profound and lasting impacts of slavery, colonialism, racial discrimination and neo-colonialism on Africans and people of African descent, and how these atrocities continue to cause immense suffering, cultural disruption, economic exploitation, emotional trauma and unending discrimination endured by Africans and people of African descent throughout history⁵⁸. According to the Accra Proclamation on Reparations, the fulfilment of reparations is a moral as well as a legal imperative rooted in principles of justice, human rights and human dignity, and that the claim for reparations represents a concrete step towards remedying historical wrongs and fostering healing among the people of Africa and people of African descent⁵⁹.

⁵³ Impunity Watch., 'Reparations as a Catalytic Power to Change Victims' and Survivors' Lives: Perspectives and Contributions from the Grassroots Level' Available at <https://www.impunitywatch.org/wp-content/uploads/2022/11/Reparations-as-a-catalytic-power-to-change-victims-and-survivors-lives-grassroots-Impunity-Watch.pdf> (Accessed on 06/05/2024)

⁵⁴ Ibid

⁵⁵ African Union., 'Accra Proclamation on Reparations' Available at https://au.int/sites/default/files/decisions/43383-Declaration_-_CIDO_.pdf (Accessed on 07/05/2024)

⁵⁶ Ibid

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ African Union., 'Accra Proclamation on Reparations' Op Cit

Promoting Justice for People of African Descent through Reparations

The Accra Proclamation on Reparations seeks to undertake several social, cultural, political, and economic towards promoting justice for people of African descent through reparations. These include: establishment of a Committee of Experts on Reparations for the purpose of developing a common African Policy on Reparations⁶⁰; establishment of a Global Reparations Fund, based in Africa and supported by multilateral institutions and agencies aligned with the reparatory justice agenda for people of African descent⁶¹; establishment of the Office of African Union Special Envoy on Reparations for Africans to help champion the international advocacy and campaign for reparations at the global level⁶²; recognition of African civil society efforts on reparations; exploration of legal and judicial options for reparations⁶³; increased role for the United Nations in the reparations agenda; amplification of marginalized voices in the reparatory justice movement⁶⁴; fostering a united front for the reform of global financial systems and structures⁶⁵; enhancing climate justice and reparatory justice⁶⁶; promoting repatriation, restitution and safeguarding of African cultural artifacts⁶⁷; and ending neo-colonialism⁶⁸. It is imperative to implement the commitments set out in the Accra Proclamation on Reparations in order to promote justice for people of African descent through reparations.

In addition, the *Resolution on Africa's Reparations Agenda and the Human Rights of Africans in the Diaspora and People of African Descent Worldwide*⁶⁹ adopted by the African Commission on Human and People's Rights recognizes the need for reparations for people of African descent. The Resolution recognizes that the human rights situation of Africans in the diaspora and people of African

⁶⁰ Ibid

⁶¹ Ibid

⁶² Ibid

⁶³ Ibid

⁶⁴ Ibid

⁶⁵ Ibid

⁶⁶ Ibid

⁶⁷ Ibid

⁶⁸ Ibid

⁶⁹ African Commission on Human and Peoples' Rights., 'Resolution on Africa's Reparations Agenda and The Human Rights of Africans in the Diaspora and People of African Descent Worldwide - ACHPR/Res.543 (LXXIII) 2022' Op Cit

Promoting Justice for People of African Descent through Reparations

descent worldwide remains an urgent concern⁷⁰. It also acknowledges that Africans and people of African descent continue to suffer systemic racism, racial discrimination, xenophobia and related intolerance and other violations of their human rights⁷¹. It notes that accountability and redress for legacies of the past including enslavement, the trade and trafficking of enslaved Africans, colonialism and racial segregation is integral to combatting systemic racism and to the advancement of the human rights of Africans and people of African descent⁷². The Resolution urges African countries to undertake several measures including: promoting and protecting the human rights of African migrant workers worldwide including in the Middle East and Arabo-Persian Gulf states⁷³; protecting the human rights of migrants and ensuring the right of all citizens to receive full and authentic information about migration⁷⁴; taking measures to eliminate barriers to acquisition of citizenship and identity documentation by Africans in the diaspora⁷⁵; and establishment of a committee within the African Union to consult, seek the truth, and conceptualize reparations from Africa's perspective⁷⁶. It is necessary to actualize this Resolution in order to enhance the reparations agenda for people of African descent and strengthen human rights of Africans in the diaspora and people of African descent worldwide⁷⁷.

Despite the ideal of reparatory justice for people of African descent, it has been noted that reparations continue to be an afterthought in many post-conflict situations⁷⁸. It has been observed that states are often reluctant to provide comprehensive reparations, which have more potential to transform the lives of survivors⁷⁹. In instances where reparations are provided, they are often limited to monetary compensation and to a certain group of individuals⁸⁰. It is

⁷⁰ Ibid

⁷¹ Ibid

⁷² Ibid

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Ibid

⁷⁷ Ibid

⁷⁸ Impunity Watch., 'Reparations as a Catalytic Power to Change Victims' and Survivors' Lives: Perspectives and Contributions from the Grassroots Level' Op Cit

⁷⁹ Ibid

⁸⁰ Ibid

Promoting Justice for People of African Descent through Reparations

imperative to address these challenges in order to promote justice for people of African descent through reparations.

3.0 Towards Reparatory Justice for People of African Descent

There is need to promote justice for people of African descent through effective and adequate reparations. Reparatory justice is key in addressing the continued harm suffered by people of African descent⁸¹. It highlights the intrinsic link between the legacies of colonialism and enslavement and contemporary forms of systemic racism and racial discrimination, intolerance and xenophobia faced by people of African descent⁸². Ensuring adequate, effective, prompt and appropriate remedies, and reparation for victims of violations of human rights is an obligation that is enshrined in international and regional human rights instruments⁸³. Some of the key approaches towards achieving this goal include: truth-seeking and truth-telling processes, public apology and acknowledgment, memorialization, education and awareness raising, restitution, medical and psychological rehabilitation, compensation, as well as guarantees of non-repetition⁸⁴. In addition, it has been noted that strong leadership and political will are vital in tackling the lasting consequences of enslavement, the trade in enslaved Africans and colonialism⁸⁵.

There is need to consider establishment of a Global Reparation Fund in order to ensure effective and adequate compensation as a form of reparations⁸⁶. It has been observed that financial reparations are long overdue to Africans and the diaspora as compensation for the enslavement of people of African descent during the transatlantic slave trade in addition to the human rights violations committed during colonialism⁸⁷. Establishment of a Global Reparations Fund

⁸¹ United Nations., 'Strong Leadership and Political will Crucial to Ensure Reparatory Justice for People of African Descent – UN Report' Op Cit

⁸² Ibid

⁸³ United Nations., 'Strong Leadership and Political will Crucial to Ensure Reparatory Justice for People of African Descent – UN Report' Op Cit

⁸⁴ Ibid

⁸⁵ Ibid

⁸⁶ Kokutse. F., 'Ghana Reparations Summit Calls for Global Fund to Compensate Africans for Slave Trade' Op Cit

⁸⁷ Ibid

Promoting Justice for People of African Descent through Reparations

can therefore achieve the ideal of reparatory justice for people of African descent. It has also been noted that reparations should go beyond direct financial payments to also include developmental aid for countries, the return of colonized resources and the systemic correction of oppressive policies and laws⁸⁸. In addition, it has been asserted that reparatory justice for freedom fighters during the colonial era is not just a plea for economic restitution, but is also a resounding cry for recognition and justice, acknowledging the pain and sacrifices they endured during the struggle for independence in Africa⁸⁹. Therefore, in addition to compensation, other forms of reparations including restoration through return of property taken from Africa during colonialism, rehabilitation through psychological and physical support for those affected by human right abuses, satisfaction through acknowledgement of guilt, apology, burial of victims, and construction of memorial sites, and guarantee of non-repetition through reformation of laws and civil and political structures that led to or fueled violence are integral in ensuring reparatory justice for people of African descent⁹⁰.

Further, it has been suggested that establishment of an international tribunal on atrocities related to the transatlantic trade among other human rights violations would enhance justice for people of African descent⁹¹. A tribunal, modelled on other ad-hoc courts such as the Nuremberg trials of Nazi war criminals after World War Two can strengthen the reparatory justice agenda⁹². Such a tribunal is necessary to address reparations for enslavement, apartheid, genocide, and colonialism⁹³. It also has the capacity to establish legal norms for complex international and historical reparations claims⁹⁴. It is therefore

⁸⁸ Ibid

⁸⁹ Wasike. A., 'Kenya's Mau Mau Demand 'Justice, Recognition and Reparations' for Britain's Colonial Atrocities' Op Cit

⁹⁰ United Nations General Assembly., 'Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law' Op Cit

⁹¹ The East African., 'Slavery Tribunal? African, Caribbean Countries Unite on Reparations' Available at <https://www.theeastafrican.co.ke/tea/news/world/slavery-tribunal-africa-caribbean-unite-on-reparations-4578630> (Accessed on 07/05/2024)

⁹² Ibid

⁹³ Ibid

⁹⁴ Ibid

Promoting Justice for People of African Descent through Reparations

necessary to fast-track efforts towards establishment of an international tribunal aimed at promoting justice for people of African descent through reparations.

Finally, it is imperative to foster economic empowerment for people of African descent and dismantling racism, racial discrimination, xenophobia and intolerance⁹⁵. The United Nations notes that there is an intrinsic link between colonialism and contemporary forms of racism, racial discrimination, xenophobia and intolerance faced by Africans and people of African descent⁹⁶. It is therefore necessary for all countries to dismantle the structures of racism and to promote human rights and Sustainable Development⁹⁷. Economic empowerment is also vital in ensuring that Africa and people of African descent are self-reliant towards ending neocolonialism and socio-economic marginalization⁹⁸.

The foregoing measures are vital in promoting justice for people of African descent through reparations.

4.0 Conclusion

Reparatory justice is a key agenda in Africa in light of the many human right violations suffered by people of African descent including slavery, colonialism, systemic racism, racial discrimination, xenophobia and related intolerance⁹⁹. Despite the ideal of reparatory justice for people of African descent, it has been noted that reparations continue to be an afterthought in many post-conflict situations with states being reluctant to provide comprehensive reparations¹⁰⁰. It is therefore necessary to promote justice for people of African descent through reparations. This can be realized through

⁹⁵ Office of the United Nations High Commissioner for Human Rights., 'Racism, Discrimination are Legacies of Colonialism' Op Cit

⁹⁶ Ibid

⁹⁷ Ibid

⁹⁸ Ibid

⁹⁹ African Commission on Human and Peoples' Rights., 'Resolution on Africa's Reparations Agenda and The Human Rights of Africans in the Diaspora and People of African Descent Worldwide - ACHPR/Res.543 (LXXIII) 2022' Op Cit

¹⁰⁰ Impunity Watch., 'Reparations as a Catalytic Power to Change Victims' and Survivors' Lives: Perspectives and Contributions from the Grassroots Level' Op Cit

Promoting Justice for People of African Descent through Reparations

ensuring adequate, effective, prompt and appropriate remedies, and reparation for victims of violations of human rights¹⁰¹; establishment of a Global Reparation Fund in order to ensure effective and adequate compensation as a form of reparations¹⁰²; embracing other forms of reparations including restoration, rehabilitation, satisfaction, and guarantee of non-repetition¹⁰³; establishment of an international tribunal on atrocities related to the transatlantic trade among other human rights violations¹⁰⁴; and fostering economic empowerment for people of African descent and dismantling racism, racial discrimination, xenophobia and intolerance¹⁰⁵. Promoting justice for people of African descent through reparations is a long overdue agenda that needs to fast-tracked and realized.

¹⁰¹ United Nations., 'Strong Leadership and Political will Crucial to Ensure Reparatory Justice for People of African Descent - UN Report'

¹⁰² Kokutse. F., 'Ghana Reparations Summit Calls for Global Fund to Compensate Africans for Slave Trade'

¹⁰³ United Nations General Assembly., 'Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law' Op Cit

¹⁰⁴ The East African., 'Slavery Tribunal? African, Caribbean Countries Unite on Reparations' Op Cit

¹⁰⁵ Office of the United Nations High Commissioner for Human Rights., 'Racism, Discrimination are Legacies of Colonialism' Op Cit

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

Abstract

A huge section of Kenyan communities has suffered from chronic food insecurity for the longest time since independence due to various factors that include poverty, land degradation, unsustainable land use practices, erratic weather patterns due to climate change, among others. This paper makes a case for the transformation of food production methods in Kenya through adopting an inclusive, rights-based approach to governance of the agricultural sector as a way of promoting food security, eradicating poverty and guaranteeing the socio-economic rights of all. The paper argues that unless these challenges are effectively addressed, achieving food security for the Kenyan people will remain a dream.

1.0 Introduction

In 2020, the United Nations Development Programme (UNDP) released a report documenting that 26% of Kenya's GDP comes from the agricultural sector, and 70% of Kenyans living in rural areas depend on it for their livelihood.¹ A negative shock might be harmful to the agriculture industry, which is essential for creating jobs, generating revenue, and ensuring food security.²

The Food and Agriculture Organization of the United Nations (FAO) 2023 Report on "*The State of Food Security and Nutrition in the World 2023*" states that as urbanisation rises, the boundaries between rural and urban regions are becoming increasingly hazy and entangled.³ FAO observes that an rising number of small and medium-sized cities and rural towns are experiencing

¹ Ochieng, O. (2021) 'Crisis impacts on rural lives and livelihoods in Kenya - Southern Voice', 8 February. Available at: <https://southernvoice.org/crisis-impacts-on-rural-lives-and-livelihoods-in-kenya/>, <http://southernvoice.org/crisis-impacts-on-rural-lives-and-livelihoods-in-kenya/> (Accessed: 4 May 2024).

² Ibid.

³ AO, IFAD, UNICEF, WFP and WHO. 2023. *The State of Food Security and Nutrition in the World 2023. Urbanization, agrifood systems transformation and healthy diets across the rural-urban continuum*. Rome, FAO. Available at: <https://doi.org/10.4060/cc3017en> (Accessed: 4 May 2024).

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

population expansion, which "bridges" the gap between the rural hinterland and huge metropolises.⁴ They thus point out in the 2023 Report that agrifood systems are altering as a result of the shifting demographic agglomeration patterns along this rural-urban continuum.⁵ This presents possibilities as well as problems in ensuring that everyone has access to reasonably priced, healthful diets. FAO thus advocates for a thorough grasp of the interactions between the agrifood systems and the rural-urban continuum as necessary to guide actions and policy initiatives that will help overcome the obstacles and take advantage of the possibilities.⁶

Indeed, Kenya has not been spared from shifting changes in land use and urbanisation has greatly affected the available land for farming in favour of housing projects in places such as Kiambu County and the other areas surrounding fast developing towns.⁷ The data that is currently available from

⁴ Ibid.

⁵ Ibid.

⁶ Ibid.

⁷ Musa, M. and Odera, P. (2015) 'Land Use Land Cover Changes and their Effects on Agricultural Land: A Case Study of Kiambu County -Kenya', *Kabarak Journal of Research and Innovation*, 3, pp. 74-86; see also Museleku, E.K., 2013. *An Investigation into Causes and Effects of Agricultural Land Use Conversions in the Urban Fringes: A Case Study of Nairobi-Kiambu Interface* (Doctoral dissertation, University of Nairobi,); Macharia, C.K., 2018. *Implications for conversion of agricultural land use in peri urban areas of Gitothua Ward, Ruiru Sub County* (Doctoral dissertation, School of Built Environment, University of Nairobi); *Rapid urbanisation in Kiambu has brought about misery* (2020) *Nation*. Available at: <https://nation.africa/kenya/blogs-opinion/blogs/dot9/rapid-urbanisation-in-kiambu-has-brought-about-misery--157498> (Accessed: 4 May 2024); Njiru, E.B.K., 2019. *Urban expansion and loss of agricultural land: A GIS based study of Kiambu County*. *International Journal of Science and Research*, 8(9), p.915; Simiyu, L.B., 2002. *Effects of urbanization on the use and control of land: A Case of Ngong fringe* (Doctoral dissertation, University of Nairobi); Kioko, V.M., Mwendwa, P.K. and Imteyaz, A., 2022. *The effects of urban sprawl on agricultural land use on the rural fringes of Towns; a case of Machakos town, Kenya*. *J Afr Interdiscip Stud*, 6(10), pp.196-212; Bon, B., Simonneau, C., Denis, E. and Delville, P.L., 2023. *Ordinary changes in land use linked to urbanisation in the global South Housing, capitalisation, agricultural changes* (Doctoral dissertation, Comité Technique" Foncier et développement"); Abuya, D.O., 2020. *Management of The Effects of Land Use Changes On Urban Infrastructure Capacity: A Case Study of Ruaka Town, Kiambu County, Kenya* (Doctoral dissertation, University of Nairobi); Njiru, B.E., 2016. *Evaluation of urban expansion and its implications on land use in Kiambu County, Kenya*. *Kenyatta University*.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

the National Council for Population and Development demonstrates that landholding sizes and cultivated areas in Kenya have been decreasing over time and are inversely correlated with population density.⁸ In the most crowded regions, smallholders' landholdings have been declining, and in certain counties, like Kiambu, there's a chance that there won't be any land left for small-scale farming very soon.⁹ Furthermore, as a result of Kenya's fast population growth, additional agricultural land is currently being turned into settlements in a number of the country's counties.¹⁰ Land fragmentation, or the division of land among the adult members of a family, is a result of growing populations and larger families, which has caused a continual decrease in farm sizes.¹¹

Furthermore, it has been noted that there are detrimental effects on food security, social welfare, and agricultural productivity when farms are too

⁸ The National Council for Population and Development, *Effects of Population Growth and Uncontrolled Land Use On Climate Change in Kenya*, Policy Brief No. 60, June 2018. Available at: <https://ncpd.go.ke/wp-content/uploads/2021/02/60-PB-Effects-of-population-Growth-on-climate.pdf> (Accessed: 4 May 2024).

⁹ Ibid., p. 1; Jayne, T. and Muyanga, M. (2012) 'Land constraints in Kenya's densely populated rural areas: Implications for food policy and institutional reform', *Food Security*, 4. Available at: <https://doi.org/10.1007/s12571-012-0174-3>.

¹⁰ Ibid., p.1; 'Implications of Agricultural Land Subdivision in Kenya - KIPPRA' (no date). Available at: <https://kippra.or.ke/implications-of-agricultural-land-subdivision-in-kenya/> (Accessed: 4 May 2024).

¹¹ Ibid., p.1; *Land Fragmentation - an overview | ScienceDirect Topics* (no date). Available at: <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/land-fragmentation> (Accessed: 4 May 2024); Smith, K. and Cubbage, F. (2024) 'Land Fragmentation and Heirs Property: Current Issues and Policy Responses', *Land*, 13(4), p. 459. Available at: <https://doi.org/10.3390/land13040459>; Niroula, G. and Thapa, G. (2005) 'Impacts and causes of land fragmentation, and lessons learned from land consolidation in South Asia', *Land Use Policy*, 22, pp. 358-372. Available at: <https://doi.org/10.1016/j.landusepol.2004.10.001>; Alemu, G.T., Berhanie Ayele, Z. and Abelieneh Berhanu, A. (2017) 'Effects of Land Fragmentation on Productivity in Northwestern Ethiopia', *Advances in Agriculture*, 2017, p. e4509605. Available at: <https://doi.org/10.1155/2017/4509605>; Macharia, M. (2020) *Effects of Land Fragmentation on Land Use and Food Security Case Study of Nyamira, Laikipia, Nandi, Trans Nzoia, Taita Taveta, Kiambu, Kajiado, Nakuru, Tana River, Makueni, Isiolo, Kisumu and Vihiga*.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

small to be economically viable.¹² These effects result in a lack of investment in land improvement, particularly in Arid and Semi-Arid Areas (ASALs), which causes land degradation and out-migration from Kenya.¹³ As a result, growing food crops for the people is getting harder on the already deteriorated agricultural land in the majority of Kenya.¹⁴

Notably, apart from the population and land tenure challenges in the country, the erratic rainfall patterns in Kenya due to climate change also make a great contribution to the food insecurity in the country.¹⁵ This has not only hampered the realisation of the socio-economic right to food but has also affected the other related rights such as the right to health, education and economic empowerment, among others.¹⁶

Increasing food and nutrition security, alleviating poverty, particularly in low-income countries (LICs), and achieving climatic and environmental goals for sustainable development are all made possible by well-functioning agrifood

¹² The National Council for Population and Development, *Effects of Population Growth and Uncontrolled Land Use On Climate Change in Kenya*, Policy Brief No. 60, June 2018., p.1.

¹³ *Ibid.*, p.1.

¹⁴ *Ibid.*, p.1.

¹⁵ *High levels of acute food insecurity prevail following fifth consecutive below-average rainy season | FEWS NET* (no date). Available at: <https://fews.net/east-africa/kenya/food-security-outlook-update/december-2022> (Accessed: 4 May 2024); *Food insecurity hits hard in Kenya's urban and rural centres (2022) RFI*. Available at: <https://www.rfi.fr/en/africa/20220808-food-insecurity-hits-hard-in-kenya-s-urban-and-rural-centres> (Accessed: 4 May 2024); *Soberly address food insecurity | Nation* (no date). Available at: <https://nation.africa/kenya/blogs-opinion/opinion/-soberly-address-food-insecurity-4202994> (Accessed: 4 May 2024); *The chronic hunger song is exasperating- leaders need to change the hymnbook | Heinrich Böll Stiftung | Nairobi Office Kenya, Uganda, Tanzania* (no date). Available at: <https://ke.boell.org/en/2021/12/01/chronic-hunger-song-exasperating-leaders-need-change-hymnbook> (Accessed: 4 May 2024).

¹⁶ 'Kenya: Acute Food Insecurity Situation February 2023 and Projection for March – June 2023' (no date). Available at: <https://aiap.or.ke/index.php/2023/05/08/kenya-acute-food-insecurity-situation-february-2023-and-projection-for-march-june-2023/> (Accessed: 4 May 2024).

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

systems.¹⁷ Given the current state of affairs with growing costs and food insecurity, they are especially crucial.¹⁸

It is for the foregoing reasons that this paper makes a case for the need to transform agri-food systems through putting in place inclusive, rights-based governance for food security and economic empowerment in Kenya. The paper argues that unless there is a paradigm shift in production and governance approach to agricultural sector, Kenya will not only continue experiencing acute food insecurity but will also report higher cases due to the growing population and other intervening factors, both locally and internationally.

2.0 Food Security and Sustainable Development Goals

SDG 2 requires countries to end hunger, achieve food security and improved nutrition and promote sustainable agriculture.¹⁹ Countries are expected to ensure that by 2030, they end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.²⁰ They are also to ensure that by 2030, they end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.²¹ By 2030, they are also to double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.²²

¹⁷ *Building inclusive, productive, and sustainable agrifood systems* | Independent Evaluation Group (2022). Available at: <https://ieg.worldbankgroup.org/blog/building-inclusive-productive-and-sustainable-agrifood-systems> (Accessed: 4 May 2024).

¹⁸ Ibid.

¹⁹ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development*, A/RES/70/1, 21 October 2015.

²⁰ SDG 2, Target 2.1.

²¹ SDG 2, Target 2.2.

²² SDG 2, Target 2.3.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

In addition, by 2030, they are to ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.²³

By 2020, countries are to maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.²⁴

As a way of achieving SDG 2, countries are also expected to increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries.²⁵ They are also to correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round.²⁶ Countries are also required to adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility.²⁷

SDG 12 requires countries to ensure sustainable consumption and production patterns.²⁸ Target 12.3 thereof requires countries to ensure that by 2030, they

²³ SDG 2, Target 2.4.

²⁴ SDG 2, Target 2.5.

²⁵ SDG 2, Target 2.a.

²⁶ SDG 2, Target 2.b.

²⁷ SDG 2, Target 2.c.

²⁸ SDG 12.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.²⁹

The *Sustainable Development Goals Report 2023: Special Edition* records that Since 2015, there has been an increase in the number of people experiencing food insecurity and hunger, which has been made worse by the pandemic, conflicts, climate change, and widening disparities.³⁰ According to the Report, approximately 735 million individuals, or 9.2% of the global population, suffered from chronic hunger in 2022; this is 122 million more people than in 2019.³¹ 2.4 billion people, or 29.6% of the world's population, were thought to be moderately or severely food insecure, which means they lacked access to enough food. This number represents a startling 391 million additional individuals than in 2019.³²

The Special Report thus proposes that urgent coordinated action and policy solutions are necessary to address systemic injustices, restructure food systems, finance sustainable agricultural practices, and lessen the negative effects of conflict and the pandemic on global nutrition and food security if we are to achieve zero hunger by 2030.³³

The Report documents that investing in agriculture is essential to reducing poverty and hunger as well as enhancing production, efficiency, and income development.³⁴ The agricultural orientation index (AOI), which measures the sector's contribution to GDP, decreased from 0.50 in 2015 to 0.45 in 2021, despite record-high nominal state investment on agriculture of \$700 billion in 2021 during the pandemic.³⁵ With the exception of Europe and North America,

²⁹ SDG 12, Target 12.3.

³⁰ United Nations Department of Economic and Social Affairs, 2023. *The Sustainable Development Goals Report 2023: Special Edition*. UN, p. 14.

³¹ *Ibid.*, p. 14.

³² *Ibid.*, p.14.

³³ *Ibid.*, p. 14.

³⁴ *Ibid.*, p.14.

³⁵ *Ibid.*, p.14.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

where governments implemented historically large stimulus packages, this fall was noted around the world.³⁶

In reference to the escalating cost of food, the report notes that, while the percentage of nations suffering moderately to excessively high food prices decreased from 48.1% in 2020 to 21.5% in 2021, it remained higher than the average of 15.2% for the years 2015–2019.³⁷ The prolonged price rises were caused by a number of factors, including growing demand, rising input (fertiliser and energy) and transportation prices, interruptions in the supply chain, and changes in trade policy.³⁸ In the meanwhile, pricing pressures were exacerbated by internal causes such as unfavourable weather, depreciating currencies, unstable political environments, and production shortages.³⁹ The least developed nations (LDCs) and sub-Saharan Africa faced extra problems due to macroeconomic issues, deteriorating security situations, and a high degree of reliance on imported food and agricultural inputs.⁴⁰

The *2015 Paris Agreement*⁴¹ recognizes the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change.⁴² Article 2 thereof states that this Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by, *inter alia*: increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production.⁴³

³⁶ *Ibid.*, p.14.

³⁷ *Ibid.*, p. 15.

³⁸ *Ibid.*, p.15.

³⁹ *Ibid.*, p. 15.

⁴⁰ *Ibid.*, p.15.

⁴¹ United Nations, *Paris Agreement*, United Nations, Treaty Series, vol. 3156, p.79. Paris Agreement was adopted on 12 December 2015 at the twenty-first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change held in Paris from 30 November to 13 December 2015.

⁴² *Ibid.*, preamble.

⁴³ *Ibid.*, Article 2(1)(b).

The SDGs form a firm basis for implementation of policies, laws, programmes and plans aimed at modernizing agricultural production in Kenya and achieving the universal right to food and other related socio-economic rights for all.

3.0 Agriculture and Food Production Systems in Kenya: Challenges and Prospects

It has been accurately noted that systemic hunger has become the norm in Kenya over the course of more than 50 years. Mzee Jomo Kenyatta, the founder of Kenya, pledged in one of his addresses to combat sickness, famine, and illiteracy.⁴⁴ These three basic rights include access to food, healthcare, and education. But even after Kenya gained independence over 60 years ago, these rights are still illusory.⁴⁵ Access to and cost of food affects more people than only the impoverished in rural areas, despite popular belief.⁴⁶ Due to growing population density and mobility, it has spread throughout suburbs and into cities. In Nairobi, for instance, just one out of every five homes has enough food, and almost half of all households are classified as "food-insecure with both adult and child hunger."⁴⁷

⁴⁴ *The chronic hunger song is exasperating- leaders need to change the hymnbook* | Heinrich Böll Stiftung | Nairobi Office Kenya, Uganda, Tanzania (no date). Available at: <https://ke.boell.org/en/2021/12/01/chronic-hunger-song-exasperating-leaders-need-change-hymnbook> (Accessed: 4 May 2024).

⁴⁵ *Ibid*; *Analysis warns of food insecurity for 5.4 million Kenyans* (2023) *AP News*. Available at: <https://apnews.com/article/kenya-government-william-ruto-nairobi-climate-and-environment-6e0955fc8c399135bc7c8e566cca522f> (Accessed: 4 May 2024); *Officials talk biodiversity as drought stunts Kenya wildlife* (2022) *AP News*. Available at: <https://apnews.com/article/united-nations-animals-elephants-kenya-biodiversity-4ac99955ffc7816bfc4513e742bac790> (Accessed: 4 May 2024); week, S. up to date on the editors' picks of the (2023) *Severe food insecurity rate doubles in Kenya*, *Business Daily*. Available at: <https://www.businessdailyafrica.com/bd/economy/severe-food-insecurity-rate-doubles-in-kenya--4405802> (Accessed: 4 May 2024).

⁴⁶ *The chronic hunger song is exasperating- leaders need to change the hymnbook* | Heinrich Böll Stiftung | Nairobi Office Kenya, Uganda, Tanzania (no date). Available at: <https://ke.boell.org/en/2021/12/01/chronic-hunger-song-exasperating-leaders-need-change-hymnbook> (Accessed: 4 May 2024).

⁴⁷ *Ibid*.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

With the reduced agricultural land, climate change, population growth and urbanisation, Kenya has moved more towards relying on food aid as well as importation of food from other countries.⁴⁸ This is well demonstrated by the adverse impacts on food security that the Ukraine-Russia war had on Kenya.⁴⁹ According to the Kenya Institute for Public Policy Research and Analysis (KIPPRA), Russia and Ukraine provide Kenya with wheat, oil, steel, iron, and fertilisers. Wheat imports into East Africa are primarily from Russia and

⁴⁸ 'Kenya aims to reduce its reliance on food imports – Kenya News Agency' (2023), 30 November. Available at: <https://www.kenyanews.go.ke/kenya-aims-to-reduce-its-reliance-on-food-imports/> (Accessed: 5 May 2024); Emongor, R.A., 2014. Food price crisis and food insecurity in Kenya. *Kenya Agricultural Research Institute*. Available at: <https://elibrary.acbfpact.org/acbf/collect/acbf/index/assoc/HASH01b5/cd96f147/6ca2937f/79e1.dir/Food%20crisis%20and%20food%20insecurity%20in%20Kenya.pdf> [Accessed 5 May 2024]; D'Alessandro, S.P., Caballero, J., Lichte, J. and Simpkin, S., 2015. Kenya: Agricultural sector risk assessment; Huho, J.M. and Mugalavai, E.M., 2010. The effects of droughts on food security in Kenya. *The International Journal of Climate Change: Impacts and Responses*, 2(2), p.61; European Court of Auditors (2020) *EU development aid to Kenya*. LU: Publications Office (Special report No ... (European Court of Auditors. Online)). Available at: <https://data.europa.eu/doi/10.2865/843768> (Accessed: 5 May 2024); Lokuruka, M.N.I. (2020) 'Food and Nutrition Security in East Africa (Kenya, Uganda and Tanzania): Status, Challenges and Prospects', in *Food Security in Africa*. IntechOpen. Available at: <https://doi.org/10.5772/intechopen.95036>; *Agriculture, Food and Water Security | Kenya* (2023) U.S. Agency for International Development. Available at: <https://www.usaid.gov/kenya/agriculture-food-and-water-security> (Accessed: 5 May 2024); Birch, I., 2018. Agricultural productivity in Kenya: barriers and opportunities. *K4D Helpdesk Report*. Brighton, UK: Institute of Development Studies, 19; Nyaura, J.E., 2014. Urbanization Process in Kenya: The Effects and Consequences in the 21 st Century. *International Journal of Novel Research in Humanity and Social Sciences*, 1(2), pp.33-42; *How Africa Can Escape Chronic Food Insecurity Amid Climate Change* (2022) IMF. Available at: <https://www.imf.org/en/Blogs/Articles/2022/09/14/how-africa-can-escape-chronic-food-insecurity-amid-climate-change> (Accessed: 5 May 2024); Gutu Sakketa, T. (2023) 'Urbanisation and rural development in sub-Saharan Africa: A review of pathways and impacts', *Research in Globalization*, 6, p. 100133. Available at: <https://doi.org/10.1016/j.resglo.2023.100133>.

⁴⁹ Ochieng, D.J., Oscar (2023) 'Kenya's Battle with Famine and Food Insecurity - Southern Voice', 8 February. Available at: <https://southernvoice.org/kenyas-battle-with-famine-and-food-insecurity/>, <https://southernvoice.org/kenyas-battle-with-famine-and-food-insecurity/> (Accessed: 4 May 2024); *What Does the Ukraine-Russia War Mean for Kenya?* – KIPPRA (no date). Available at: <https://kippra.or.ke/what-does-the-ukraine-russia-war-mean-for-kenya/> (Accessed: 4 May 2024).

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

Ukraine.⁵⁰ The wheat that is consumed in Kenya comes from three countries: Russia (67%), Ukraine (22%), and the rest of the world (11%).⁵¹ The majority of fertiliser exported by Russia is sent to East Africa, making it the largest fertiliser exporter in the world.⁵²

a. The Constitution of Kenya 2010 and Agriculture

Article 43 (1) of the Constitution of Kenya⁵³ on economic and social rights guarantees that every person has the right, *inter alia* – to the highest attainable standard of health, which includes the right to health care services, including reproductive health care; to be free from hunger, and to have adequate food of acceptable quality; to clean and safe water in adequate quantities; and to social security.

The Fourth Schedule to the Constitution on Distribution of Functions Between the National Government and the County Governments provides for the functions of the National Government as including: protection of the environment and natural resources with a view to establishing a durable and sustainable system of development, including, in particular – fishing, hunting and gathering; protection of animals and wildlife; water protection, securing sufficient residual water, hydraulic engineering and the safety of dams; and energy policy; and agricultural policy.⁵⁴

The functions and powers of the county are – Agriculture, including – crop and animal husbandry; livestock sale yards; county abattoirs; plant and animal disease control; and fisheries; County planning and development, including – statistics; land survey and mapping; and boundaries and fencing; Implementation of specific national government policies on natural resources and environmental conservation, including – soil and water conservation; and forestry; and Ensuring and coordinating the participation of communities and

⁵⁰ *What Does the Ukraine-Russia War Mean for Kenya?* – KIPPRA (no date). Available at: <https://kippra.or.ke/what-does-the-ukraine-russia-war-mean-for-kenya/> (Accessed: 4 May 2024).

⁵¹ *Ibid.*

⁵² *Ibid.*

⁵³ Republic of Kenya, *The Constitution of Kenya*, 27 August 2010, Nairobi.

⁵⁴ Constitution of Kenya, Fourth Schedule, Part One.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

locations in governance at the local level and assisting communities and locations to develop the administrative capacity for the effective exercise of the functions and powers and participation in governance at the local level.⁵⁵

It is therefore evident that fixing the agricultural sector is a shared responsibility between the two levels of Government, which must work together if any significant progress is to be realised in the sector.⁵⁶

There are a number of laws, policies and plans that hold a promise for Kenya in pursuit of food security, if effectively implemented.

b. Kenya Agricultural and Livestock Research Act, Cap 319

The Kenya Agricultural and Livestock Research Act⁵⁷ was enacted to provide for the establishment and functions of the Kenya Agricultural and Livestock Research Organization; to provide for organs of the Organization; to provide for the coordination of agricultural research activities in Kenya, and for connected purposes.⁵⁸ The Kenya Agricultural and Livestock Research Organization is established is to—promote, streamline, co-ordinate and regulate research in crops, livestock, genetic resources and biotechnology in Kenya; promote, streamline, co-ordinate and regulate research in crops and animal diseases; and expedite equitable access to research information, resources and technology and promote the application of research findings and technology in the field of agriculture.⁵⁹

c. Agriculture and Food Authority Act, Cap 317

⁵⁵ Constitution of Kenya, Fourth Schedule, Part Two.

⁵⁶ Timamy, M., 2019. Is Agriculture a National or County Governments' Policy Function in Kenya: Interrogating Section 4 of the AFA Act Together with the Fourth Schedule and Article 191 of the Constitution. *Strathmore L. Rev.*, 4, p.155.

⁵⁷ Kenya Agricultural and Livestock Research Act, Cap 319, Laws of Kenya.

⁵⁸ *Ibid.*, preamble.

⁵⁹ *Ibid.*, sec. 5(1).

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

The Agriculture and Food Authority Act⁶⁰ was enacted to provide for the consolidation of the laws on the regulation and promotion of agriculture generally, to provide for the establishment of the Agriculture and Food Authority, to make provision for the respective roles of the national and county governments in agriculture excluding livestock and related matters in furtherance of the relevant provisions of the Fourth Schedule to the Constitution and for connected purposes.⁶¹

The Agriculture and Food Authority is mandated with, in consultation with the county governments, to perform the following functions – administer the Crops Act (Cap. 318), in accordance with the provisions of these Acts; promote best practices in, and regulate, the production, processing, marketing, grading, storage, collection, transportation and warehousing of agricultural products excluding livestock products as may be provided for under the Crops Act (Cap. 318); collect and collate data, maintain a database on agricultural products excluding livestock products, documents and monitor agriculture through registration of players as provided for in the Crops Act (Cap. 318); be responsible for determining the research priorities in agriculture and to advise generally on research thereof; advise the national government and the county governments on agricultural levies for purposes of planning, enhancing harmony and equity in the sector; carry out such other functions as may be assigned to it by this Act, the Crops Act (Cap. 318), and any written law while respecting the roles of the two levels of governments.⁶²

Part iv of the Act provides for Policy Guidelines on Development, Preservation and Utilization of Agricultural Land. Section 21 (1) requires the Cabinet Secretary shall, on the advice of the Authority, and in consultation with the National Land Commission, provide general guidelines, in this Act referred to as land development guidelines, applicable in respect of any category of agricultural land to the owners or the occupiers thereof.⁶³ These guidelines may require the adoption of such system of management or

⁶⁰ Agriculture and Food Authority Act, Cap 317, Laws of Kenya.

⁶¹ Ibid., Preamble.

⁶² Ibid., sec. 4.

⁶³ Ibid., sec. 21(1).

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

farming practice or other system in relation to land in question (including the execution of such work and the placing of such things in, on or over the land, from time to time) as may be necessary for the proper development of land for agricultural purposes.⁶⁴

In addition, the Cabinet Secretary is required to, on the advice of the Authority, and in consultation with the National Land Commission, make general rules for the preservation, utilization and development of agricultural land either in Kenya generally or in any particular part thereof.⁶⁵ These rules may – prescribe the manner in which owners (whether or not also occupiers) shall manage their land in accordance with rules of good estate management; prescribe the manner in which occupiers shall farm their land in accordance with the rules of good husbandry; advise on the control or prohibition of the cultivation of land or the keeping of stock or any particular kind of stock thereon; advise on the kinds of crops which may be grown on land; provide for controlling the erection of buildings and other works on agricultural land; and provide for such exemptions or conditional exemptions from the provisions thereof as may be desirable or necessary.⁶⁶

National and county governments are required to execute their respective mandates under the Act as per their roles as provided for under the Fourth Schedule to the Constitution of Kenya.⁶⁷

Notably, section 40(1) provides for participation of farmers where it states that for purposes of ensuring effective participation of farmers in the governance of the agricultural sector in Kenya, there shall be close consultation with all registered stakeholder organisations in the development of policies or regulations and before the making of any major decision that has effect on the agricultural sector.⁶⁸

d. Agricultural Development Corporation Act, Cap 444

⁶⁴ Ibid., sec. 21(3).

⁶⁵ Ibid., sec. 22(1).

⁶⁶ Ibid., sec. 22(2).

⁶⁷ Ibid., sec.29.

⁶⁸ Ibid., sec. 40(1).

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

The Agricultural Development Corporation Act⁶⁹ was enacted to provide for the establishment of the Agricultural Development Corporation and for connected purposes.⁷⁰ The functions of the Corporation are – to promote the production of Kenya’s essential agricultural inputs as the Corporation may decide from time to time, such as seeds and pedigree and high grade livestock including, hybrid seed maize, cereal seed, potato seed, pasture seed, vegetable seed, pedigree and high grade cattle, sheep, goats, pigs, poultry and bees; to undertake such activities as the Corporation may decide from time to time for the purpose of developing agricultural production in specific areas or specific fields of production; and to participate in activities in agricultural production which are related to the primary and secondary functions of the Corporation and which in the view of the Corporation are commercially viable.⁷¹ In the performance of its functions under this Act the Corporation is to have proper regard to the economic and commercial merits of any undertakings it plans to initiate, assist or expand.⁷²

The Corporation has power, *inter alia* – to provide credit and finance by means of loans or the subscription of loan or share capital or otherwise for agricultural undertakings in Kenya.⁷³

e. Special Economic Zones Act, 2015

The Special Economic Zones Act, 2015⁷⁴ was enacted to provide for the establishment of special economic zones; the promotion and facilitation of global and local investors; the development and management of enabling environment for such investments, and for connected purposes.⁷⁵ Under the Act, The Cabinet Secretary shall, on the recommendation of the Authority, and in consultation with the Cabinet Secretary responsible for matters relating to finance declare, by notice in the Gazette, any area as a Special Economic Zone as set out in the First Schedule.⁷⁶

⁶⁹ Agricultural Development Corporation Act, Cap 444, Laws of Kenya.

⁷⁰ Ibid., preamble.

⁷¹ Ibid., sec. 12(1).

⁷² Ibid., sec. 12(2).

⁷³ Ibid., sec. 13(2)(a).

⁷⁴ Special Economic Zones Act, No. 16 of 2015, Laws of Kenya.

⁷⁵ Ibid., preamble.

⁷⁶ Ibid., sec. 4(1).

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

An area declared as a special economic zone under this section may be designated as a single sector or multiple sector special economic zone, and may include, but not limited to, *inter alia*- agricultural zones; and livestock zones.⁷⁷ Under the Act, "agricultural zone" means a special economic zone declared as such under section 4 to facilitate the agricultural sector, its services and associated activities while "livestock zone" means a special economic zone declared as such under section 4, in which the following activities are carried out: livestock marshalling and inspection; livestock feeding or fattening, abattoir and refrigeration; deboning; value addition; manufacture of veterinary products, and other related activities.⁷⁸

In the wake of indiscriminate conversion of agricultural land into commercial land and residential areas around the country, this law can go a long way in designating certain areas as agricultural zone to protect them from the pressures of urbanization.

f. National Spatial Plan 2015-2045

By identifying the key sites of the flagship projects outlined in Kenya Vision 2030 and offering a framework for mitigating their spatial implications, the National Spatial Plan facilitates the implementation of important national projects.⁷⁹ It attempts to bridge the long-standing gap between physical and economic planning by offering a coordinating framework for sectoral planning, which has been absent in the nation.⁸⁰

The Plan is crucial at this stage of devolution because it will serve as a roadmap for the counties' development planning as they carry out their mandate to create county and local plans.⁸¹ The county-level plans are supposed to express

⁷⁷ Ibid., sec. 4(6)(f) & (i).

⁷⁸ Ibid., sec. 2.

⁷⁹ 'Kenya National Spatial Plan (2015 - 2045) | Kenya Vision 2030' (no date), Government of Kenya, First published in 2016. Available at: <https://vision2030.go.ke/publication/kenya-national-spatial-plan-2015-2045/> (Accessed: 4 May 2024).

⁸⁰ Ibid.

⁸¹ Ibid.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

and disseminate the physical planning policies provided by the National Spatial Plan. Rich agricultural land protection, preservation of designated ecologically sensitive regions, urban confinement, and encouragement of industrial growth are a few of these strategies.⁸²

According to the Plan, the main danger to agricultural land is land fragmentation brought on by rapid population increase and competing land uses like urbanisation. The underutilization of prospective agricultural regions results in a reduction in land production. Rich farmland has also been lost to urban development applications such as real estate development.⁸³

According to the Plan, compared to investments in other sectors, agricultural investment reduces poverty five times more effectively. It contributes to the upkeep of rural areas and makes them desirable places to live for a new generation of farmers, fishermen, and small business owners.⁸⁴ Almost half of farmers in developing countries are women, who are held back by the unequal access to resources, and rural development may help solve this issue by providing equitable access to resources.⁸⁵ This Plan holds a great potential for revolutionizing agricultural production in Kenya, if fully implemented.

g. Ministry of Agriculture and Livestock Development: Agriculture Strategic Plan 2023 – 2027

The Strategic Plan 2023-2027⁸⁶ was developed by the Ministry of Agriculture and Livestock Development and identifies strategic issues as; Inadequate agricultural policy, legal and institutional framework; Low agricultural production and productivity; Limited value addition, market access and trade; Food and nutrition insecurity; Low involvement of youth, women and vulnerable groups in agriculture.⁸⁷

⁸² Ibid.

⁸³ Ibid., p. 94.

⁸⁴ Ibid., p. 113.

⁸⁵ Ibid., p. 113.

⁸⁶ Republic of Kenya, *Ministry of Agriculture and Livestock Development: Agriculture Strategic Plan 2023 – 2027*.

⁸⁷ Ibid., p. xi.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

The Ministry is attempting to address the issues and challenges raised by concentrating on five major strategic objectives, which are: creating a legal, institutional, and policy framework that is appropriate for sustainable agricultural development; increasing agricultural productivity and production; improving agricultural value addition, market access, and trade; improving food and nutrition security; and increasing the involvement of youth, women, and vulnerable groups in agricultural value chains.⁸⁸ The following major outcome areas will be implemented in order to meet the goal: Agricultural value addition, market access, trade, food and nutrition security, agricultural policy, institutional and legal frameworks, productivity, and social inclusion in agriculture.⁸⁹

This Strategic Plan should not be executed by the ministry unilaterally but should instead involve the other stakeholders such as communities in order to not only succeed but also to ensure that their interests and goodwill are secured. This is important considering that the participants in the agriculture sector, the activities these actors carry out, and the broader supportive environment make up agrifood systems.⁹⁰ Farmers, agribusiness companies, processors, distributors, and consumers are all represented by the performers. Policies, guidelines, and financial commitments that impact market accessibility and sustainable production are all part of the enabling environment.⁹¹

h. Ministry of Agriculture and Livestock Development: Livestock Strategic Plan 2023 – 2027

With its ability to secure food and nutrition, supply raw materials for production, generate revenue, create jobs, and generate cash through exports, the livestock industry significantly boosts the economy.⁹²

⁸⁸ Ibid., p. xi-xii.

⁸⁹ Ibid.

⁹⁰ *Building inclusive, productive, and sustainable agrifood systems | Independent Evaluation Group* (2022). Available at: <https://ieg.worldbankgroup.org/blog/building-inclusive-productive-and-sustainable-agrifood-systems> (Accessed: 4 May 2024).

⁹¹ Ibid.

⁹² Republic of Kenya, *Ministry of Agriculture and Livestock Development: Livestock Strategic Plan 2023 – 2027*.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

The Livestock Strategic Plan identifies several challenges and corresponding mitigation measures which are being addressed through this Plan's strategic objectives and proposed interventions.⁹³ Key among them are: inadequate human, physical and financial resources; inadequate capacity within the livestock training institutions, farms, stations and laboratories; lack of structured data and knowledge management systems and bureaucracy on information sharing; livestock diseases and pests that affect productivity, quality of livestock products and trade; inadequate legal framework and weak regulation of the livestock sector; unsecured and encroachment of institutional land; inadequacy of quality livestock feed and inadequate pasture due to recurrent and prolonged droughts; high cost of inputs for livestock production; climate change and diminishing livestock resource base; poor breeding and management of livestock resulting to low producing livestock; sanitary and phytosanitary concerns affecting livestock and livestock trade such as aflatoxin and antibiotic residues; and livestock resources based conflicts, among others.⁹⁴

In order to tackle these obstacles, the State Department has adopted a number of strategic objectives that will be carried out through tactical interventions, strategies, and activities.⁹⁵ These include: creating a framework of laws, policies, and institutions that facilitates the development of livestock resources; raising productivity and production levels; improving value addition, market accessibility, and trade for livestock and livestock products by enhancing the safety of food derived from animals; and bolstering resilience for durable livestock development. Last but not least, the Strategic Plan offers an implementation matrix along with a monitoring and assessment system.⁹⁶

i. National Irrigation Policy 2017

⁹³ Ibid., p.x.

⁹⁴ Ibid., p. x.

⁹⁵ Ibid., p.x.

⁹⁶ Ibid., p. x.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

The National Irrigation Policy 2017 seeks to accelerate the growth and enhance the performance of the irrigation sector in order to provide food security, wealth and employment creation, and poverty reduction.⁹⁷ In more detail, the Policy suggests that in order to fully utilise irrigation potential, 40,000 ha more area should be covered annually; creative technologies such as water harvesting, wastewater treatment, flood control, and sustainable groundwater exploitation should be used to increase the amount of water available for irrigation; and the Government should mobilise resources for investments from a variety of stakeholders in order to increase irrigation funding to at least 2% of the annual national budget.⁹⁸

Some of the other main goals are to conduct research and development on irrigation, develop the technical staff and irrigators' capacity, encourage stakeholder participation in irrigation development and management, adopt an integrated approach to sustainable commercial irrigation farming, and create an institutional, legal, and regulatory framework that is appropriate for the industry.⁹⁹

j. Irrigation Act, 2019

The Irrigation Act, 2019¹⁰⁰ was enacted to provide for the development, management and regulation of irrigation, to support sustainable food security and socioeconomic development in Kenya, and for connected purposes.¹⁰¹ The provisions of this Act are to apply to matters relating to the development, management, financing, provision of support services and regulation of the entire irrigation sector in Kenya.¹⁰² The Act also establishes the National Irrigation Authority¹⁰³ whose functions are to –develop and improve irrigation infrastructure for national or public schemes; provide irrigation

⁹⁷ Republic of Kenya, 'National Irrigation Policy 2017 – National Irrigation Authority' (no date). Available at: <https://irrigation.go.ke/download/national-irrigation-policy-2017/> (Accessed: 4 May 2024).

⁹⁸ Ibid.

⁹⁹ Ibid.

¹⁰⁰ Irrigation Act, No. 14 of 2019, Laws of Kenya.

¹⁰¹ Ibid., preamble.

¹⁰² Ibid., sec. 3(1).

¹⁰³ Ibid., sec. 7.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

support services to private medium and smallholder schemes, in consultation and cooperation with county governments and other stakeholders; provide technical advisory services to irrigation schemes in design, construction supervision, administration, operation and maintenance under appropriate modalities, including agency contracts, as may be elaborated in regulations to this Act.¹⁰⁴

With the frequent floods experienced in the country, there is a need for the Authority to work closely with the Cabinet Secretary and the water resources management bodies to harvest the water especially in the arid and semi-arid areas in order to use the same during dry and drought periods for both crop and livestock production by the vulnerable communities.¹⁰⁵

k. Physical and Land Use Planning Act, 2019

The Physical and Land Use Planning Act, 2019¹⁰⁶ was enacted to make provision for the planning, use, regulation and development of land and for connected purposes.¹⁰⁷ The objects of this Act are to provide, *inter alia* – the principles, procedures and standards for the preparation and implementation of physical and land use development plans at the national, county, urban, rural and cities level; the administration and management of physical and land use planning in Kenya; the procedures and standards for development control and the regulation of physical planning and land use; a framework for the co-ordination of physical and land use planning by county governments; a framework for equitable and sustainable use, planning and management of land; the functions of and the relationship between planning authorities; a robust, comprehensive and responsive system of physical and land use planning and regulation; and a framework to ensure that investments in property benefit local communities and their economies.¹⁰⁸

¹⁰⁴ Ibid., sec. 8.

¹⁰⁵ Nabinejad, S. and Schüttrumpf, H. (2023) 'Flood Risk Management in Arid and Semi-Arid Areas: A Comprehensive Review of Challenges, Needs, and Opportunities', *Water*, 15(17), p. 3113. Available at: <https://doi.org/10.3390/w15173113>.

¹⁰⁶ Physical and Land Use Planning Act, No. 13 of 2019, Laws of Kenya.

¹⁰⁷ Ibid., preamble.

¹⁰⁸ Ibid., sec. 3.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

Every person engaged in physical and land use planning and regulation is required to adhere to the principles and norms of physical and land use planning, *inter alia* – physical and land use planning shall promote sustainable use of land and liveable communities which integrates human needs in any locality; physical and land use planning shall take into consideration long-term optimum utilization of land and conservation of scarce land resource including preservation of land with important functions; and physical and land use planning shall be inclusive and must take into consideration the culture and heritage of people concerned.¹⁰⁹

Under section 60(1), within seven days of receiving an application for development permission, the county executive committee member is required to give a copy of the application to the relevant authorities or agencies to review and comment and the relevant authorities or agencies shall comment on all relevant matters including, *inter alia* – agriculture and livestock; and environment and natural resources.¹¹⁰

The contents of national, inter-county and county physical and land use development plans should include the situational analysis of *inter alia* Economy- industry, agriculture, commerce, mining and quarrying, fisheries.¹¹¹ The contents of local physical and land use development plans should also include *inter alia* Economic analysis focusing on; Agricultural potential of the urban region; and Problems of transforming the agricultural land into urban use.¹¹²

Before commencing preparation of a local spatial development plan a survey report should be prepared providing details on *inter alia* – problems of transforming the agricultural land into urban use.¹¹³

¹⁰⁹ Ibid., sec. 5.

¹¹⁰ Ibid., sec. 60(1) (c) (f).

¹¹¹ Ibid., First schedule.

¹¹² Ibid., second schedule, Part A, para. 5(c).

¹¹³ Ibid., second schedule, Part B, para. 8(i).

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

In ensuring development control, if any development application requires subdivision or change of user of any agricultural land, the county government shall require the applicant to obtain consent from the relevant Board.¹¹⁴ Under the Act, planning authorities shall also require applications for major developments to be subjected to environmental and social impact assessment.¹¹⁵

The institutions empowered under this law should work closely and curb the indiscriminate conversion of agricultural land into commercial and residential land which has had and continues to adversely affect agricultural production.

4.0 Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

Kenya's food security is founded on human rights, according to Article 43 (1) (c) of the Constitution on Social and Economic Rights, which declares that "every person has a right to be free from hunger, and to have adequate food of acceptable quality."¹¹⁶ Even if this constitutional clause is seen as a step in the right direction towards the realisation of the right to food, over 12 million people lack access to food.¹¹⁷ Notwithstanding the assurances given by successive governments, the grim facts show that Kenyans are sleeping with empty bellies.¹¹⁸

Temperatures and the ratio of yearly rainfall to potential evaporation are used to split the nation into seven agroclimatic zones.¹¹⁹ All agroclimatic zones are used for the production of crops and livestock, although the types and amounts of rainfall, soil conditions, other meteorological factors, market demand, production costs, and the availability of technologies to support the

¹¹⁴ Ibid., Third Schedule, para. 3.

¹¹⁵ Ibid., Third Schedule, para. 4.

¹¹⁶ *The chronic hunger song is exasperating- leaders need to change the hymnbook* | Heinrich Böll Stiftung | Nairobi Office Kenya, Uganda, Tanzania (no date). Available at: <https://ke.boell.org/en/2021/12/01/chronic-hunger-song-exasperating-leaders-need-change-hymnbook> (Accessed: 4 May 2024).

¹¹⁷ Ibid.

¹¹⁸ Ibid.

¹¹⁹ Republic of Kenya, *Kenya National Spatial Plan (2015 – 2045)*, p. 94.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

chosen enterprises are just a few of the many determining factors.¹²⁰ All these factors thus ought to be considered in transforming agri-food systems in the country in order to ensure the highest returns on investments for maximum food production.

Kenya's wide and varied agricultural potential is highlighted in the National Spatial Plan 2015–2045.¹²¹ This is because the country is home to several agroclimatic and agroecological zones, as well as natural resources including lakes, rivers, and mountains.¹²² Among the capacities are grain basket areas, whose primary purpose is to produce the basic foods of the country, wheat and maize.¹²³ Both agricultural and livestock production may be done in the transition zones. The places that have the ability to receive irrigation offer a chance to increase agricultural potential, as well as a means of boosting output and yielding high-value products.¹²⁴

The ASALS regions serve as a nation's "meat basket," producing livestock on a vast scale and exporting both live animals and livestock products.¹²⁵ Fish farming is supported in the places with promise for aquaculture and marine culture. While regions with ocean and sea fishing potential may sustain the large-scale fishing industry, locations with lake and river fishing potential serve the purpose of producing fish under natural conditions.¹²⁶

5.0 Promoting Safe and Sustainable Urban-Based Agriculture for Food Security

Kenya is quickly urbanising, which is raising demand for agricultural products since there is a greater need for food supply in the expanding cities and towns.¹²⁷ Some urban people are forced to partially adopt livelihood

¹²⁰ Ibid., p. 94

¹²¹ Ibid., pp. 123-126.

¹²² Ibid., p. 125.

¹²³ Ibid., p. 125.

¹²⁴ Ibid., p. 125.

¹²⁵ Ibid., p. 126.

¹²⁶ Ibid., p. 126.

¹²⁷ Omondi, S.O., Oluoch-Kosura, W. and Jirstrom, M., 2017. The role of urban-based agriculture on food security: Kenyan case studies. *Geographical research*, 55(2), pp.231-241.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

options based on urban agriculture due to high unemployment rates, urban poverty, and food and nutrition insecurity.¹²⁸

Urban agriculture has rightfully gained the right to require recognition as a valid urban land use in order for these operations to be properly planned, regulated, and managed.¹²⁹ Additionally, by including provisions for community gardens and other group cultivation activities in open spaces, as well as taking into consideration home cultivation activities within public housing programmes and slum upgrading schemes, urban agriculture should be easier to incorporate into municipal land use and management plans.¹³⁰ Norms and standards that support environmentally friendly production techniques and microenterprises connected to the short food supply chain can be created in the event that this land use is recognised.¹³¹ It can be aided in placemaking, urban greening, and urban redevelopment initiatives, and it has the potential to be a very successful community development project.¹³²

Nairobi and other rapidly growing cities and towns around the country should consider incorporating urban agricultural practice within their borders to address food security for their most vulnerable population. Past research has shown that when compared to households who do not farm, a greater proportion of those involved in urban farming and urban-based rural agriculture generally have higher food security.¹³³ Urban food strategies should incorporate urban farming as it has the potential to increase family food security and provide fungible revenue.¹³⁴

¹²⁸ Ibid.

¹²⁹ Steenkamp, J. *et al.* (2021) 'Food for Thought: Addressing Urban Food Security Risks through Urban Agriculture', *Sustainability*, 13(3), p. 1267. Available at: <https://doi.org/10.3390/su13031267>.

¹³⁰ Ibid.

¹³¹ Ibid.

¹³² Ibid.

¹³³ Omondi, S., Kosura, W. and Jirström, M. (2017) 'The role of urban-based agriculture on food security: Kenyan case studies: Urban-based agriculture and food security', *Geographical Research*, 55, pp. 231-241. Available at: <https://doi.org/10.1111/1745-5871.12234>.

¹³⁴ Ibid.

6.0 Diversifying Production and Behavioral Changes Towards Sustainable Practices and Standards

Supporting farmers and agribusiness companies to diversify their production beyond conventional staples to include high-value and more nutritious food products like fruit trees, vegetables, food legumes, fish, poultry, and animals is something the World Bank strongly pushes for.¹³⁵ According to them, smallholder farmers and SMEs stand to gain from sustainable diversification since they frequently struggle to expand their agricultural businesses or production to include high-value goods that will boost agricultural productivity and supply nutrient-dense foods that are currently either scarce or prohibitively expensive for low-income consumers.¹³⁶

In order for producers to gain access to competitive, regional, and international markets, it will be necessary to supply them with adequate financing, assist them in adhering to food safety and quality requirements, and support farmers and agribusiness companies as they implement sustainable practices.¹³⁷ Climate-smart methods that preserve biodiversity, consume less water and land, and leave fewer environmental footprints should be promoted to producers and other value-chain participants.¹³⁸

7.0 Investing in Forest Ecosystem for Enhanced Productivity

The ability of humans to generate enough food and pasture for their animals is impacted by the destruction of forests and its connection to climate

¹³⁵ *Building inclusive, productive, and sustainable agrifood systems | Independent Evaluation Group* (2022). Available at: <https://ieg.worldbankgroup.org/blog/building-inclusive-productive-and-sustainable-agrifood-systems> (Accessed: 4 May 2024).

¹³⁶ Ibid.

¹³⁷ Ibid; see also Faour-Klingbeil, D. and Todd, E.C.D. (2018) 'A Review on the Rising Prevalence of International Standards: Threats or Opportunities for the Agri-Food Produce Sector in Developing Countries, with a Focus on Examples from the MENA Region', *Foods*, 7(3), p. 33. Available at: <https://doi.org/10.3390/foods7030033>.

¹³⁸ Ibid; von Braun, J., Ulimwengu, J.M., Nwafor, A. and Nhlengethwa, S., 1 Empowering African Food Systems for the Future. *Africa's Food Systems for the Future*, p.14; Matteoli, F., Schnetzer, J. and Jacobs, H. (2021) 'Climate-Smart Agriculture (CSA): An Integrated Approach for Climate Change Management in the Agriculture Sector', in J.M. Luetz and D. Ayal (eds) *Handbook of Climate Change Management: Research, Leadership, Transformation*. Cham: Springer International Publishing, pp. 409–437. Available at: https://doi.org/10.1007/978-3-030-57281-5_148.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

change.¹³⁹ Forest ecosystems have the potential to significantly improve food security in the following ways: they protect soil and water resources, which improves soil fertility and enrichment; they regulate climate and act as a home for naturally occurring pollinators of food crops; they support a wide variety of edible plants, fungi, and fruits, which increases dietary diversity and availability; they provide a sustainable source of bioenergy, which lessens the strain on conventional energy resources and indirectly supports food production; and finally, forests generate income and employment opportunities, particularly for the communities that are close by, improving economic access to food.¹⁴⁰

Thus, people's capacity to grow, get, and consume food efficiently is threatened by forest degradation and inadequate forest governance, putting the populace at risk of a food insecurity catastrophe.¹⁴¹

Promoting a mixed farming approach where farmers also actively engage in afforestation can potentially have the advantage of achieving food security while also promoting forests conservation to achieve the desired tree cover of at least 10% as per Article 69 of the Constitution of Kenya 2010.

8.0 Investing in the Bottom-up Economic Transformation Agenda

The agricultural industry is given priority under the government's "Bottom-up Economic Transformation Agenda (BETA)," which focuses on increased agricultural productivity, value addition, and marketing.¹⁴² The value chains for tea, textiles and clothing, rice, dairy, cattle, and leather development are the ones that are given priority. According to the BETA plan, Kenya has enormous potential to improve its agricultural sector based on three

¹³⁹ 'Leveraging Forest Ecosystem to Boost Food Security in Kenya – KIPPRA' (no date). Available at: <https://kippra.or.ke/leveraging-forest-ecosystem-to-boost-food-security-in-kenya/> (Accessed: 4 May 2024).

¹⁴⁰ Ibid.

¹⁴¹ Ibid.

¹⁴² Republic of Kenya, *Ministry of Agriculture and Livestock Development: Agriculture Strategic Plan 2023 – 2027*.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

agricultural pillars: increasing exports, reducing food imports, and ensuring food security.¹⁴³

Agrifood systems are necessary for human life and for a world free from hunger; without them, no goal—including the end of poverty and hunger—can be accomplished.¹⁴⁴ It is also true that agrifood systems contribute significantly to harmful emissions, are imbalanced, and have the potential to perpetuate inequity.¹⁴⁵ We have to isolate the components of agrifood systems that thrive on inequity and environmental degradation if we are to make them firmly the solution rather than the issue.¹⁴⁶ We have to start at the local community level in order to accomplish this effectively and perfectly.¹⁴⁷

Combining production and market techniques is necessary, according to the World Bank: For the most part, Low Income Countries (LICs) and nations that are still developing their agrifood systems have inadequately connected production operations with markets.¹⁴⁸ Reducing poverty and enhancing food security is hampered by the low agricultural production that many LICs face.¹⁴⁹ Due to their restricted access to markets and value chains, low productivity, and vulnerability to different shocks, smallholders and small producers in local economic communities continue to live in poverty.¹⁵⁰ Transitioning from semi-subsistence farming to more commercial agrifood businesses is a challenge for many of them.¹⁵¹

¹⁴³ Ibid.

¹⁴⁴ *Agrifood systems transformation and the SDGs* (no date). Available at: <https://doi.org/10.4060/cc2063en>.

¹⁴⁵ Ibid.

¹⁴⁶ Ibid.; *Climate-Smart Agriculture* (no date). Available at: <https://www.worldbank.org/en/topic/climate-smart-agriculture> (Accessed: 4 May 2024).

¹⁴⁷ Ibid.

¹⁴⁸ *Building inclusive, productive, and sustainable agrifood systems | Independent Evaluation Group* (2022). Available at: <https://ieg.worldbankgroup.org/blog/building-inclusive-productive-and-sustainable-agrifood-systems> (Accessed: 4 May 2024).

¹⁴⁹ Ibid.

¹⁵⁰ Ibid.

¹⁵¹ Ibid.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

If effectively implemented, this approach may not only guarantee food security but would also economically empower communities thus improving their socio-economic status.

9.0 Conclusion

It is critically important to address the use of food as a political weapon, particularly during election seasons, as well as the absence of genuine political commitment as would be demonstrated by the implementation of existing laws and policies.¹⁵² The existing and legal frameworks in the country, especially the National Spatial Plan 2015-2045 have very viable recommendations on how best to address challenges in all the agro climatic zones in the country. The various institutions established under the laws, policies and plans ought to work together towards modernizing agriculture while addressing the climate change challenges affecting agricultural production in the country. Physical planning challenges should be addressed urgently in order to safeguard the viable agricultural land available against encroachment by urbanisation. This is important considering that the backdrop of development in Kenya is heavily impacted by land ownership and usage. As a result, for almost all groups, land has enormous cultural, spiritual, and political value.¹⁵³ Most Kenyans rely on smallholder farming for their livelihoods, which is why the industry is dominated by them.¹⁵⁴

These efforts should be informed by a human rights approach that is geared towards realising the socio-economic rights as guaranteed under article 43 of the Constitution of Kenya, economic empowerment and ensuring that all the players including communities are included in the plans and programmes for them to embrace them and ensure that they succeed. Unless these challenges

¹⁵² *The chronic hunger song is exasperating- leaders need to change the hymnbook* | Heinrich Böll Stiftung | Nairobi Office Kenya, Uganda, Tanzania (no date). Available at: <https://ke.boell.org/en/2021/12/01/chronic-hunger-song-exasperating-leaders-need-change-hymnbook> (Accessed: 4 May 2024).

¹⁵³ Komba, E., Odary, K.V. and Letura, A., 2018. Land Reform in The Context of Devolution: Lessons from Kajiado County, Kenya. *African Journal of Land Policy and Geospatial Sciences*, 1(2), pp.31-40.

¹⁵⁴ Ali, A.H. and Farah, S.A., 2019. Understanding the influence and effects of devolution on agricultural development: A case study of Garissa county, Kenya. *International Journal of Contemporary Research and Review*, 10(10), pp.110-114.

Transforming Agri-food Systems via Inclusive, Rights-based Governance for Food Security and Economic Empowerment in Kenya

are adequately and urgently addressed, food security in Kenya will remain a mirage. Transforming Agri- food systems via Inclusive Rights-based governance for Food Security and Economic Empowerment in Kenya is an ideal whose time is now.

Ensuring Safe and Healthy Work Environments in Africa

Abstract

Sustainable Development Goal (SDG) 8 under the United Nations 2030 Agenda for Sustainable Development calls upon the global community to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. One of the key ways of realizing SDG 8 is ensuring safe and healthy work environments. Work is considered decent when it guarantees a secure form of employment and safe working conditions. This paper critically explores the need for safe and healthy work environments in Africa. It argues that ensuring safe and healthy work environments in Africa is key in realizing SDG 8 by fostering decent work and sustained, inclusive, and sustainable economic growth. The paper examines the idea of safe and healthy work environments and some of the key approaches towards realizing this ideal. It also examines the progress made and challenges faced towards ensuring safe and healthy work environments in Africa. The paper also offers proposals towards ensuring safe and healthy work environments in Africa.

1.0 Introduction

The International Labour Organization (ILO) opines that productive employment and decent work are key elements to achieving a fair globalization and poverty reduction¹. According to ILO, decent work sums up the aspirations of people in their working lives². It further notes that decent work involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for all, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men³. Work is considered decent when it: pays a fair income, guarantees a secure form of employment and safe working conditions, ensures equal opportunities and treatment for all, includes social protection for the workers and their families, offers prospects for personal development and encourages

¹ International Labour Organization., 'Decent Work' Available at <https://www.ilo.org/topics/decent-work#:~:text=It%20involves%20opportunities%20for%20work,that%20affect%20their%20lives%20and> (Accessed on 01/05/2024)

² Ibid

³ Ibid

Ensuring Safe and Healthy Work Environments in Africa

social integration, ensures that workers are free to express their concerns and to organize⁴.

It has been argued that increasing employment and ensuring decent work for all are essential aspects of Sustainable Development⁵. Quality employment and decent work conditions help reduce inequalities and poverty, and empower people, especially women, young people and the most vulnerable such as people with disabilities⁶. Decent work is central to poverty reduction and is a path to achieving equitable, inclusive, and Sustainable Development⁷.

The United Nation's *2030 Agenda for Sustainable Development*⁸ seeks to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature⁹. Under the Agenda, states resolve to create conditions for sustainable, inclusive and sustained economic growth, shared prosperity and decent work for all, taking into account different levels of national development and capacities¹⁰. Sustainable Development Goal (SDG) 8 calls upon the global community to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all¹¹.

One of the key ways of realizing SDG 8 is ensuring safe and healthy work environments¹². SDG 8 seeks to achieve several targets including protecting labour rights and promoting safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those

⁴ European Commission., 'Employment and Decent Work' Available at https://international-partnerships.ec.europa.eu/policies/sustainable-growth-and-jobs/employment-and-decent-work_en (Accessed on 01/05/2024)

⁵ Ibid

⁶ Ibid

⁷ Ibid

⁸ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 01/05/2024)

⁹ Ibid

¹⁰ Ibid

¹¹ Ibid

¹² European Commission., 'Employment and Decent Work' Op Cit

Ensuring Safe and Healthy Work Environments in Africa

in precarious employment¹³. It has been pointed out that work is considered decent when it guarantees a secure form of employment and safe working conditions¹⁴. This paper critically explores the need for safe and healthy work environments in Africa. It argues that ensuring safe and healthy work environments in Africa is key in realizing SDG 8 by fostering decent work and sustained, inclusive, and sustainable economic growth. The paper examines the idea of safe and healthy work environments and some of the key approaches towards realizing this ideal. It also examines the progress made and challenges faced towards ensuring safe and healthy work environments in Africa. The paper also offers proposals towards ensuring safe and healthy work environments in Africa.

2.0 Conceptualizing Safe and Healthy Work Environments

A safe and healthy working environment also known as Occupational Safety and Health (OSH) is an ideal that seeks to prevent work-related injuries and diseases, as well as ensuring the protection and promotion of the health of workers¹⁵. It also refers to the improvement of working conditions and working environments for workers to ensure their safety and health are maintained while working and providing compensation if a work-related injury occurs¹⁶. OSH aims to achieve several objectives including the promotion and maintenance of the highest degree of physical, mental and social wellbeing in all occupations¹⁷; the prevention amongst workers of departures from health caused by their working conditions¹⁸; the protection of workers in their employment from risks resulting from factors adverse to health¹⁹; and the placing and maintenance of the worker in an occupational

¹³ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

¹⁴ Ibid

¹⁵ United Nations Global Compact., 'A Safe and Healthy Working Environment' Available at <https://unglobalcompact.org/take-action/safety-andhealth> (Accessed on 01/05/2024)

¹⁶ Ibid

¹⁷ Muigua. K., 'Realising Occupational Safety and Health as a Fundamental Human Right in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2018/08/Realising-Occupational-Safety-and-Health-as-a-Fundamental-Human-Right-in-Kenya.pdf> (Accessed on 01/05/2024)

¹⁸ Ibid

¹⁹ Ibid

Ensuring Safe and Healthy Work Environments in Africa

environment adapted to its physiological and psychological equipment²⁰. It has been noted that safety and health in the workplace does not just apply to typically dangerous jobs, such as working at height or in industries that deal with chemicals, but to all places of employment, including offices²¹. Safe and healthy work environments also include the requirement of employers to adapt work and the workplace to the capabilities of the workers in light of their physical and mental health²². In addition, ensuring safe and healthy work environments also entails having a zero-tolerance policy on any form of violence, gender discrimination, harassment or victimization²³.

Realizing the right to safe and health working environments features prominently in key human rights instruments. For example, the *Universal Declaration of Human Rights*²⁴ stipulates the right of every person to work which includes the requirement for just and favourable conditions of work²⁵. In addition, the *International Covenant on Economic, Social and Cultural Rights*²⁶ urges all states to recognize the right of everyone to the enjoyment of just and favourable conditions of work which ensure, and in particular *safe and healthy working conditions*²⁷. Ensuring safe and healthy work environments is therefore a fundamental human right.

According to ILO, a safe and healthy working environment is a fundamental principle and right at work²⁸. The protection of workers' health and safety

²⁰ Ibid

²¹ United Nations Global Compact., 'A Safe and Healthy Working Environment' Op Cit

²² Ibid

²³ Munnoo, S., 'The Fundamental Human Right to Health & Safety at Work' Available at <https://www.fem.co.za/the-fundamental-human-right-to-health-safety-at-work/> (Accessed on 01/05/2024)

²⁴ Universal Declaration of Human Rights., Available at https://www.ohchr.org/sites/default/files/UDHR/Documents/UDHR_Translations/eng.pdf (Accessed on 01/05/2024)

²⁵ Ibid, article 23 (1)

²⁶ International Covenant on Economic, Social and Cultural Rights., Available at <https://www.ohchr.org/sites/default/files/cescr.pdf> (Accessed on 01/05/2024)

²⁷ Ibid, article 7 (b)

²⁸ International Labour Organization., 'A Safe and Healthy Working Environment is a Fundamental Principle and Right at Work' Available at 591

Ensuring Safe and Healthy Work Environments in Africa

features prominently among the constitutional objectives of the ILO²⁹. The Preamble to the ILO Constitution notes that the protection of the worker against sickness, disease and injury arising out of his employment is among the improvements that are urgently required³⁰. In addition, the *ILO Declaration on Fundamental Principles and Rights at Work*³¹ includes five categories of core principles and rights at work which are: freedom of association and the effective recognition of the right to collective bargaining; the elimination of all forms of forced or compulsory labour; the effective abolition of child labour; the elimination of discrimination in respect of employment and occupation; and *a safe and healthy working environment (Emphasis added)*³². ILO notes that a safe and healthy working environment is not only a fundamental principle and right at work but also an essential requirement for fostering sustainable and inclusive economic growth, full and productive employment and decent work for all³³. The International Labour Conference held in 2022 declared a safe and healthy working environment as a fundamental principle and right at work³⁴. This also included designating the *OSH Convention*³⁵, and the *Promotional Framework for Occupational Safety and Health Convention*³⁶ as fundamental Conventions. As a result, all member states of the ILO, regardless of their ratification status of these fundamental Conventions, have an obligation arising from the very fact of membership in the ILO to respect,

https://webapps.ilo.org/wcmsp5/groups/public/---ed_dialogue/---lab_admin/documents/publication/wcms_850673.pdf (Accessed on 01/05/2024)

²⁹ Ibid

³⁰ Ibid

³¹ International Labour Organization Declaration on Fundamental Principles and Rights at Work., Available at https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_467653.pdf (Accessed on 01/05/2024)

³² Ibid

³³ International Labour Organization., 'Safe and Healthy Working Environments for All: Realizing the Fundamental Right to a Safe and Healthy Working Environment Worldwide' Available at https://webapps.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_906187.pdf (Accessed on 01/05/2024)

³⁴ International Labour Organization., 'A Safe and Healthy Working Environment is a Fundamental Principle and Right at Work' Op Cit

³⁵ Occupational Safety and Health Convention, 1981 (No. 155)

³⁶ Promotional Framework for Occupational Safety and Health Convention., 2006 (No. 187)

Ensuring Safe and Healthy Work Environments in Africa

promote and realize, in good faith and in accordance with the ILO Constitution, the principles concerning the fundamental right to a safe and healthy working environment³⁷.

According to the United Nations, building a positive safety and health culture in the workplace ensures that employees feel comfortable raising concerns about possible OSH risks or hazards at work, with management collaborating with them proactively to find appropriate, effective and sustainable solutions³⁸. Creating a positive safety and health culture in the workplace not only prevents human suffering and ill health, but also benefits workers and employers alike³⁹. Ensuring safe and healthy work environments contribute to higher productivity and job satisfaction among workers⁴⁰. In addition, achieving this ideal promotes success at all levels within an enterprise, which, in turn, can support positive outcomes in the larger society⁴¹. A safe and healthy work environment prioritizes the well-being, safety, and protection of all employees and encompasses both physical and psychological aspects⁴². It is characterized by aspects such as physical safety of all employees, occupational health, psychological well-being, supportive culture, and constant improvement⁴³. It has been noted that the productivity rate of employees grows when they operate in a healthy, safe, and secure workplace contributing to the growth and development of the organization while also helping employees build their careers in the organization⁴⁴. It is therefore necessary to ensure safe and healthy work environments.

³⁷ International Labour Organization., 'A Safe and Healthy Working Environment is a Fundamental Principle and Right at Work' Op Cit

³⁸ United Nations., 'Together We Can Build a Culture of Safety and Health at Work' Available at <https://www.un.org/en/un-chronicle/together-we-can-build-culture-safety-and-health-work> (Accessed on 01/05/2024)

³⁹ Ibid

⁴⁰ Ibid

⁴¹ Ibid

⁴² Implementing a Healthy, Safe and Secured Workplace., Available at <https://www.greatplacetowork.co.ke/en/resources/blog/implementing-a-healthy,-safe-and-secured-workplace> (Accessed on 01/05/2024)

⁴³ Ibid

⁴⁴ Ibid

3.0 Ensuring Safe and Healthy Work Environments in Africa: Prospects and Challenges

Ensuring safe and healthy work environments is a fundamental global priority. It has been noted that in Africa, where diverse cultures, industries, and regulations intersect, maintaining compliance with health and safety regulations is of utmost importance⁴⁵. Africa Union's *Agenda 2063*⁴⁶ sets out the ideal of safe and healthy work environments in Africa. Among the key aspirations of Agenda 2063 is the realization of a prosperous Africa based on inclusive growth and Sustainable Development⁴⁷. This aspiration seeks to end inequalities of income and opportunity and enhance job creation in Africa⁴⁸. It recognizes that incomes, jobs and decent work are vital in achieving the goal of a high standard of living, quality of life and wellbeing for all citizens in Africa⁴⁹. In order to achieve this goal, Agenda 2063 seeks to structurally transform African economies to ensure equitable growth, fair distribution of opportunities and decent employment, labour standards and safe working conditions for all, including enhanced women's productivity, access to basic services and commodities and income distribution⁵⁰.

In addition, the *Africa Health Strategy*⁵¹ seeks to build an effective, African-driven response to reduce the burden of disease through strengthened health systems, scaled-up health interventions, intersectoral action and empowered communities⁵². It aims to achieve Universal Health Coverage in Africa by

⁴⁵ Jegede. O., 'How to Stay Compliant With Health and Safety Regulations in Africa' Available at https://www.linkedin.com/pulse/how-stay-compliant-health-safety-regulations-african-jegade?utm_source=share&utm_medium=member_android&utm_campaign=share_via (Accessed on 01/05/2024)

⁴⁶ Africa Union., 'Agenda 2063: The Africa we Want' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 01/05/2024)

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ African Union., 'Africa Health Strategy' Available at https://au.int/sites/default/files/documents/24098-au_ahs_strategy_clean.pdf (Accessed on 01/05/2024)

⁵² Ibid

Ensuring Safe and Healthy Work Environments in Africa

fulfilling existing global and continental commitments which strengthen health systems and improve social determinants of health in Africa⁵³. It urges African countries to expand social protection in order to achieve equity⁵⁴. According to the Strategy, social protection is an important instrument to achieve universal access to key health and social services, including basic primary health care, education, nutrition and environmental health⁵⁵. It recognizes that social protection programs tackle multiple dimensions of poverty and deprivation in areas such as decent work, education, health care, food security, income security and can therefore be powerful tools in the battle against poverty and inequality, vulnerability and poverty⁵⁶. It has been noted that social protection measures including access to sickness benefits are vital in ensuring safe and healthy work environments⁵⁷. It is therefore necessary to implement the Africa Healthy Strategy in order to ensure safe and healthy work environments in Africa.

At a national level, the *Constitution of Kenya*⁵⁸ envisages access to employment for all persons including youths, minorities and marginalized groups⁵⁹. It also enshrines core labour rights including the right to fair remuneration, to *reasonable working conditions*, to form, join or participate in the activities and programmes of a trade union; and to go on strike (Emphasis added)⁶⁰. The constitution also guarantees every Kenyan the right to a clean and healthy environment⁶¹. It has been argued that this right is applicable in all contexts and therefore requires work environments to be clean and healthy⁶². Attaining

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷ World Employment Confederation., 'Safe and Healthy Working Environments: From a Right to a Reality!' Available at <https://weceurope.org/news-post/safe-and-healthy-working-environments-from-a-right-to-a-reality/> (Accessed on 01/05/2024)

⁵⁸ Constitution of Kenya., 2010., Government Printer, Nairobi

⁵⁹ Ibid, article 55 (c), & 56 (c)

⁶⁰ Ibid, article 41

⁶¹ Ibid, article 32

⁶² Muigua. K., 'Realising Occupational Safety and Health as a Fundamental Human Right in Kenya' Op Cit

Ensuring Safe and Healthy Work Environments in Africa

OHS at the workplace therefore requires attaching importance to the health of employees as well as to the environment in which they work⁶³.

In addition, the *Occupational Safety and Health Act*⁶⁴ of Kenya seeks to provide for the safety, health and welfare of workers and all persons lawfully present at workplaces. The objectives of the Act are to secure the safety, health and welfare of persons at work; and to protect persons other than persons at work against risks to safety and health arising out of, or in connection with, the activities of persons at work⁶⁵. The Act requires every occupier to ensure the safety, health and welfare at work of all persons working in their workplace⁶⁶. It also requires every occupier to carry out appropriate risk assessments in relation to the safety and health of persons employed and, on the basis of these results, adopt preventive and protective measures to ensure that under all conditions of their intended use, all chemicals, machinery, equipment, tools and process under the control of the occupier are safe and without risk to health⁶⁷. In addition, the Act requires every occupier to establish a safety and health committee at the workplace if there are twenty or more persons employed at the workplace⁶⁸. It also places a duty on employees to ensure their own safety and health and that of other persons who may be affected by their acts or omissions at the workplace; wear or use any protective equipment or clothing provided by the employer for the purpose of preventing risks to their safety and health; comply with the safety and health procedures, requirements and instructions; report any accident or injury that arises in the course of or in connection with their work⁶⁹. In addition, the Act establishes the office of the Director of Occupational Safety and Health Services who is responsible for the administration of the Act⁷⁰. It also establishes a National Council for Occupational Safety and Health which is responsible for matters such as the formulation and development of national occupational safety and health, policy framework; legislative proposals on occupational safety and health,

⁶³ Ibid

⁶⁴ Occupational Safety and Health Act., 2007, Government Printer, Nairobi

⁶⁵ Ibid, S 3

⁶⁶ Ibid, s 6 (1)

⁶⁷ Ibid, s 6 (3)

⁶⁸ Ibid, s 9 (1) (a)

⁶⁹ Ibid, s 13 (1)

⁷⁰ Ibid, s 23 (1)

Ensuring Safe and Healthy Work Environments in Africa

including ways and means to give effect to ILO Conventions, and other international conventions and instruments relating to occupational safety, health, compensation and rehabilitation services; the establishment, maintenance and development of a safety and health preventative culture; and the statistical analysis of work related deaths and injuries⁷¹. Implementing this Act is critical in ensuring safe and healthy work environments in Kenya.

In addition, the *Work Injury Benefits Act*⁷² of Kenya provides a legal framework for compensation to employees for work related injuries and diseases contracted in the course of their employment⁷³. The Act requires every employer to obtain and maintain an insurance policy in respect of any liability that the employer may incur to any of his or her employees⁷⁴. It enshrines the right to compensation and provides that an employee who is involved in an accident resulting in the employee's disablement or death is entitled to the benefits provided for under the Act⁷⁵. The employer is liable to pay such compensation⁷⁶. However, under the Act, an employee is not entitled to compensation if an accident, not resulting in serious disablement or death, is caused by the deliberate and willful misconduct of the employee⁷⁷. The Act provides a schedule for the computation of work injury benefits⁷⁸. This Act is therefore vital in ensuring safe and healthy work environments in Kenya. According to ILO, employment injury benefit is a key component of OSH⁷⁹. It notes that these benefits can take the form of temporary incapacity cash benefits which are paid to injured workers until they return to work or have reached maximum medical recovery⁸⁰; and permanent incapacity and survivorship benefits which are paid after the medical condition of the injured person has stabilized and the worker has gone through vocational

⁷¹ Ibid, S 27 (1)

⁷² Work Injury Benefits Act., 2007., Government Printer, Nairobi

⁷³ Ibid

⁷⁴ Ibid, S 7 (1)

⁷⁵ Ibid, S 10 (1)

⁷⁶ Ibid, S 10 (2)

⁷⁷ Ibid, S 10 (3)

⁷⁸ Ibid

⁷⁹ International Labour Organization., 'Components of Employment Injury Benefit' Available at <https://www.ilo.org/resource/components-employment-injury-benefit> (Accessed on 01/05/2024)

⁸⁰ Ibid

Ensuring Safe and Healthy Work Environments in Africa

rehabilitation programmes, whenever these are available⁸¹. In instances when a worker dies due to a work-related accident or disease, benefits are paid to the survivors⁸². Employment injury benefits also include medical expenses and rehabilitation benefits⁸³. It is therefore necessary to implement the Work Injury Benefits Act of Kenya in order to foster the role of employment injury benefits in OSH.

The Draft *National Occupational Safety and Health Policy of Kenya*⁸⁴ aims to uphold worker safety and health as fundamental rights, aligning with international standards set by the ILO and the objectives of Kenya Vision 2030⁸⁵. The policy's objectives include legislative guidance, institution strengthening, enforcement mechanisms, capacity building, and public awareness initiatives, aiming to create a safe working environment across all sectors and forms of employment while promoting social dialogue and inclusivity⁸⁶. The Draft Policy is guided by several principles which include recognition that OSH laws applies to all workers and employers in all sectors of the economy and in all forms of employment; all occupational accidents and health incidents are preventable; preventive and rehabilitative occupational health services are essential for a well-rounded healthcare system; equitable compensation and rehabilitative support following work injury or illness; occupiers bear the responsibility to ensure workplaces are safe and free from hazard; recognition that a safe workplace contributes to productivity, employee morale, and cost saving; fairness, inclusivity and respect for human rights; and non -discrimination in the workplace including on race, gender, ethnicity, religion, disability or any other characteristic⁸⁷. The Draft Policy seeks to apply to OSH issues in: all workplaces, for persons working therein, 'employees' and 'employers' alike, in all sectors of the economy; emerging

⁸¹ Ibid

⁸² Ibid

⁸³ Ibid

⁸⁴ Draft National Occupational Safety and Health Policy of Kenya., Available at <https://labour.go.ke/sites/default/files/2024-04/Draft%20National%20OSH%20Policy%202024%20for%20Public%20participation.pdf> (Accessed on 01/05/2024)

⁸⁵ Ibid

⁸⁶ Ibid

⁸⁷ Ibid

Ensuring Safe and Healthy Work Environments in Africa

non-standard employee-employer relationships found in teleworking, gig-working and remote working; and all government and non-governmental entities with interconnecting roles in safety and health at work⁸⁸. It is imperative to fast-track the adoption of this Policy in order to ensure safe and healthy work environments in Kenya.

From the foregoing, it is evident that there has been progress towards ensuring safe and healthy environments. Several laws and policies have been enacted at the global, continental, and regional level towards this end. However, the ideal of safe and healthy work environments is yet to be realized in Africa and across the globe. It has been noted that many workers die from occupational accidents and work-related diseases while others suffer from non-fatal occupational accidents⁸⁹. In addition, it has been observed that workplace-related deaths exceed the average annual deaths from road accidents, war, violence, and HIV/AIDS⁹⁰. According to ILO, workers are exposed to many risks in the workplace, ranging from biological, chemical and physical hazards, to psychosocial and ergonomic hazards⁹¹. It notes that millions of workers lose their lives each year due to occupational accidents and diseases, with many more suffering from debilitating work-related injuries and chronic conditions⁹². Despite these dangers, adequate OSH measures to prevent accidents and diseases at work are often lacking in many countries⁹³. For example, in Kenya, it has been pointed out that workers are exposed to several safety and health risks including increasing occupational accidents, inadequate inspection of workplaces, inadequate investigation of accidents and diseases, low awareness on safety and health, and minimal and delay in compensation for the injured and dead⁹⁴. It is necessary to address these

⁸⁸ Ibid

⁸⁹ United Nations Global Compact., 'A Safe and Healthy Working Environment' Op Cit

⁹⁰ Ibid

⁹¹ International Labour Organization., 'Implementing a Safe and Healthy Working Environment: Where are we now?' Available at https://webapps.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_876334.pdf (Accessed on 02/05/2024)

⁹² Ibid

⁹³ Ibid

⁹⁴ Office of the Auditor-General of Kenya., 'Performance Audit Report on Protection of the Safety and Health of Workers at Workplaces' Available at

Ensuring Safe and Healthy Work Environments in Africa

challenges in order to ensure safe and healthy work environments in Kenya, Africa, and all over the world.

4.0 Conclusion

In order to ensure safe and healthy work environments in Africa, it is necessary for employers to ensure safety and absence of risks to health in connection with the use, handling, storage and transport of articles and substances at workplaces⁹⁵. In addition, provision of information, instruction, training and supervision of workers as is necessary is very crucial in maintain safe and healthy work environments⁹⁶. Workplaces and work environment that are safe, without health risks and adequate in relation to facilities and arrangements for the worker's welfare at work should therefore be maintained⁹⁷. In addition, it is important for workers to be well informed of any risks and imminent danger related to new technologies and they should participate in the application and review of safety and health measures⁹⁸. Employers should also conduct regular risk assessments to identify potential hazards in the workplace in order to develop adequate mitigation measures⁹⁹. Maintaining accurate records on aspects of OSH such as safety training, incidents, and compliance efforts is also invaluable in case of audits or investigations and can demonstrate and strengthen efforts towards ensuring safe and healthy work environments¹⁰⁰.

It is also vital to effectively implement OSH laws, policies and programmes¹⁰¹. ILO notes that OSH policies and programmes can enhance decent work for all

<https://www.oagkenya.go.ke/wp-content/uploads/2023/01/Protection-and-of-the-Safety-and-Health-of-Workers-at-Workplace.pdf> (Accessed on 02/05/2024)

⁹⁵ Health and Safety., Available at <https://africapay.org/kenya/labour-laws/health-and-safety-at-work#:~:text=It%20is%20obligatory%20for%20an,transport%20of%20articles%20and%20substances> (Accessed on 02/05/2024)

⁹⁶ Ibid

⁹⁷ Ibid

⁹⁸ Ibid

⁹⁹ Jegede. O., 'How to Stay Compliant With Health and Safety Regulations in Africa' Op Cit

¹⁰⁰ Ibid

¹⁰¹ International Labour Organization., 'Implementing a Safe and Healthy Working Environment: Where are we now?' Op Cit

Ensuring Safe and Healthy Work Environments in Africa

workers by integrating the OSH needs of all groups of workers and addressing inequalities in OSH practice, thereby promoting equal access to safe and healthy working environments, occupational health services and healthcare¹⁰². This calls for implementation of measures such as the identification and registration of all eligible workplaces in both the formal and informal sector, making training more affordable to workplaces, creating more awareness on occupational safety and health issues, operationalizing OSH committees at work places, and enhancing inspection of workplaces and work-related accidents, diseases, and deaths¹⁰³. Measures and policies geared towards ensuring timely and adequate compensation for work-related injuries, diseases and deaths should also be implemented¹⁰⁴. If effectively implemented, these measures can reduce accidents, diseases, and deaths at workplaces therefore ensuring safe and healthy work environments.

In addition, the ideal of safe and healthy work environments in Africa can be realized through establishment of national recording and notification system for work-related accidents and diseases¹⁰⁵. It has been noted that the collection and analysis of data concerning occupational accidents and diseases is essential for identifying their causes, detecting new hazards and emerging risks, and developing preventive measures towards ensuring safe and healthy work environments¹⁰⁶. Accurate and reliable data on occupational accidents and diseases are critical for defining priorities and designing effective preventive strategies on OSH¹⁰⁷. African countries should therefore strengthen national recording and notification systems for work-related accidents and diseases towards ensuring safe and healthy work environments.

¹⁰² Ibid

¹⁰³ Office of the Auditor-General of Kenya., 'Performance Audit Report on Protection of the Safety and Health of Workers at Workplaces' Op Cit

¹⁰⁴ Office of the Auditor-General of Kenya., 'Performance Audit Report on Protection of the Safety and Health of Workers at Workplaces' Op Cit

¹⁰⁵ International Labour Organization., 'Implementing a Safe and Healthy Working Environment: Where are we now?' Op Cit

¹⁰⁶ Ibid

¹⁰⁷ Ibid

Ensuring Safe and Healthy Work Environments in Africa

The ideal of safe and healthy work environments is attainable. It is therefore necessary to ensure safe and healthy work environments in Africa for prosperity.

Promoting Peace and Environmental Security in Africa through Mediation

Abstract

Mediation is among the fundamental Alternative Dispute Resolution (ADR) mechanisms. The attributes of mediation including informality, flexibility, efficiency, confidentiality, party autonomy and the ability to promote expeditious and cost effective management of disputes makes it ideal in dispute resolution. Mediation has been identified as an efficient and cost-effective way of managing disputes while preserving, and at times even enhancing, the relationship of the parties. Due to its attributes and advantages, mediation is applicable in a wide range of areas and disputes. If effectively embraced, mediation has the ability to promote peace and environmental security in Africa. This paper critically discusses the role of mediation in promoting peace and environmental security in Africa. It argues that mediation is a vital tool in realizing peace and environmental security in the continent. The paper critically explores the concepts of peace and environmental security. It also examines some of the challenges hindering the attainment of peace and environmental security in Africa. In light of these challenges, the paper urges African countries to embrace mediation and offers ideas towards promoting peace and security in Africa through this key ADR process.

1.0 Introduction

Mediation is one of the fundamental Alternative Dispute Resolution (ADR) processes¹. The idea of ADR involves the use of several mechanisms that are applied in managing disputes that may be linked to but function outside formal court litigation processes². ADR entails a set of processes that are applied to manage disputes without resort to adversarial litigation³. It encompasses various processes including negotiation, mediation, arbitration, conciliation, adjudication, expert determination, early neutral evaluation, and Traditional Dispute Resolution Mechanisms (TDRMs) among others⁴. These techniques have been recognized at the global and national levels. At the

¹ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Glenwood Publishers Limited, 2015

² Uwazie. E., 'Alternative Dispute Resolution in Africa: Preventing Conflict and Enhancing Stability.' *Africa Security Brief*, No. 16 of 2011

³ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Op Cit

⁴ Ibid

Promoting Peace and Environmental Security in Africa through Mediation

global level, the *Charter of the United Nations*⁵ envisages the use of ADR processes including negotiation, enquiry, mediation, conciliation, arbitration, resort to regional agencies or arrangements, or other peaceful mechanisms in managing disputes between member states of the United Nations⁶. At a national level, the *Constitution of Kenya*⁷ mandates courts and tribunals to promote ADR mechanisms including reconciliation, mediation, arbitration and TDRMs⁸.

Mediation is a method of conflict management where conflicting parties gather to seek solutions to the conflict, with the assistance of a third party who facilitates discussions and the flow of information therefore aiding parties in the process of reaching an agreement⁹. In a mediation process, an intermediary, the mediator, helps the parties to reach a mutually satisfactory resolution of their dispute¹⁰. Mediation is usually a continuation of the negotiation process since it arises where parties to a conflict have attempted negotiations, but have reached a deadlock¹¹. As a result of the deadlock in negotiation, parties involve a third party known as a mediator to assist them continue with the negotiations and ultimately break the stalemate towards amicable resolution of their dispute¹². Unlike a judge or an arbitrator, a mediator does not decide the outcome of a dispute¹³. The role of the mediator is to help parties to a dispute to resolve their grievances through a process that encourages each side to air disputes; identify the strengths and weaknesses of their case; reach a compromise where necessary; and agree on a mutually

⁵ United Nations, Charter of the United Nations, 24 October 1945, 1 UNTS XVI, Article 33 (1)

⁶ Ibid, article 33 (1)

⁷ Constitution of Kenya., 2010., Government Printer, Nairobi

⁸ Ibid, article 159 (2) (c)

⁹ Muigua. K., 'Resolving Conflicts through Mediation in Kenya.' Glenwood Publishers Limited, 2nd Edition., 2017

¹⁰ World Intellectual Property Organization., 'What is Mediation?' Available at <https://www.wipo.int/amc/en/mediation/what-mediation.html> (Accessed on 19/04/2024)

¹¹ Bercovitch. J., 'Mediation Success or Failure: A Search for the Elusive Criteria.' *Cardozo Journal of Conflict Resolution*, Vol. 7, p 289

¹² Ibid

¹³ O'Neill. C., 'Mediation: The Six Stages' Available at <https://www.nolo.com/legal-encyclopedia/mediation-six-stages-30252.html> (Accessed on 19/04/2024)

Promoting Peace and Environmental Security in Africa through Mediation

satisfactory solution¹⁴. A mediator therefore does not have the power to impose a resolution, but rather facilitates communication, promotes understanding, focuses the parties on their interests, and uses creative problem solving to enable the parties to reach their own agreement¹⁵.

Mediation has been hailed as a viable mechanism in enhancing access to justice¹⁶. Its attributes including informality, flexibility, efficiency, confidentiality, party autonomy and the ability to promote expeditious and cost effective management of disputes makes it ideal in dispute resolution¹⁷. It has also the ability to preserve relationships due to its potential to address the root causes of the conflict thus negating the need for future conflict or conflict management¹⁸. As a result, it has been correctly opined that mediation is an efficient and cost-effective way of managing disputes while preserving, and at times even enhancing, the relationship of the parties¹⁹.

Due to its attributes and advantages, mediation is applicable in a wide range of areas and disputes. It has been noted that if effectively embraced, mediation has the ability to promote peace and environmental security in Africa²⁰. This paper critically discusses the role of mediation in promoting peace and environmental security in Africa. It argues that mediation is a vital tool in realizing peace and environmental security in the continent. The paper critically explores the concepts of peace and environmental security. It also examines some of the challenges hindering the attainment of peace and environmental security in Africa. In light of these challenges, the paper urges African countries to embrace mediation and offers ideas towards promoting peace and security in Africa through this key ADR process.

¹⁴ Ibid

¹⁵ Bercovitch. J., 'Mediation Success or Failure: A Search for the Elusive Criteria.' Op Cit

¹⁶ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Op Cit

¹⁷ Muigua. K., 'Resolving Conflicts through Mediation in Kenya.' Op Cit

¹⁸ Ibid

¹⁹ World Intellectual Property Organization., 'What is Mediation?' Op Cit

²⁰ Muigua. K., 'Building Peace in Africa through Alternative Dispute Resolution' Available at <https://kmco.co.ke/wp-content/uploads/2023/10/Building-Peace-in-Africa-through-Alternative-Dispute-Resolution-.pdf> (Accessed on 19/04/2024)

2.0 Suitability of Mediation in Promoting Peace and Environmental Security in Africa

The concept of peace entails ideas such as the normal, non-warring condition of a nation, group of nations, or the world; an agreement or treaty between warring or antagonistic nations, communities and groups to end hostilities and abstain from further fighting or antagonism; and a state of mutual harmony between people or groups, especially in personal relations²¹. According to the United Nations, peace means dignity and well-being for all, and not just absence of war²². It has also been noted that the absence of violent conflict and the presence of respect and understanding between people and communities are the two characteristics that define peace²³. In addition, negotiation, compromise, and cooperation among groups with different interests and viewpoints are frequently necessary to bring peace²⁴. Peace can be classified into positive peace that entails attitudes, institutions and structures, which when strengthened, lead to peaceful societies; and negative peace which entails the absence of violence²⁵.

The advancement of human rights, social justice, and Sustainable development are all dependent on the pursuit of peace²⁶. The United Nations *2030 Agenda for Sustainable Development*²⁷ acknowledges that there can be no Sustainable Development without peace and no peace without Sustainable Development. It seeks to foster peaceful, just and inclusive societies which are

²¹ Herath. O., 'A critical analysis of Positive and Negative Peace.' Available at <http://repository.kln.ac.lk/bitstream/handle/123456789/12056/journal1%20%281%29.104-107.pdf?sequence=1&isAllowed=y> (Accessed on 22/04/2024)

²² United Nations., 'Peace Means Dignity, Well-Being for All, Not Just Absence of War – UN Officials' Available at <https://news.un.org/en/story/2014/09/476992> (Accessed on 22/04/2024)

²³ Mustafa. G., & Jamshed. U., 'Peace: A Conceptual Understanding' Available at https://www.researchgate.net/publication/370062968_Peace_A_Conceptual_Understanding (Accessed on 22/04/2024)

²⁴ Ibid

²⁵ Herath. O., 'A critical analysis of Positive and Negative Peace.' Op Cit

²⁶ Mustafa. G., & Jamshed. U., 'Peace: A Conceptual Understanding' Op Cit

²⁷ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 22/04/2024)

Promoting Peace and Environmental Security in Africa through Mediation

free from fear and violence²⁸. Sustainable Development Goal 16 aims to achieve peaceful and inclusive societies for Sustainable Development, foster access to justice for all and build effective, accountable and inclusive institutions at all levels²⁹. Promoting peace is therefore vital in achieving the Sustainable Development agenda.

Environmental security is a concept that examines threats posed by environmental events and trends to individuals, communities or nations³⁰. Environmental security may focus on the impact of human conflict and international relations on the environment, or on how environmental problems cross state borders³¹. According to the United Nations Environment Programme (UNEP), environmental security comprises of preventing or repairing military damage to the environment; preventing or responding to environmentally caused conflicts; and protecting the environment due to its inherent moral value³². It has also been pointed out that environmental security is a concept that is concerned with the linkages between environment and security, particularly between environmental effects, such as natural disasters, water shortages and famine, and their effects on the security of people and societies³³. It is the process of peacefully reducing human vulnerability to human-induced environmental degradation by addressing the root causes of environmental degradation and human insecurity³⁴.

Mediation is a key process in promoting peace and environmental security in Africa. Africa has for many decades experienced protracted and recurrent

²⁸ Ibid

²⁹ Ibid

³⁰ United Nations Environment Programme., 'Environmental Security' Available at <https://leap.unep.org/en/knowledge/glossary/environmental-security> (Accessed on 22/04/2024)

³¹ Ibid

³² Ibid

³³ Whyte. A.V., 'Environmental Security' *International Encyclopedia of the Social & Behavioral Sciences.*, (2001), pp 4663-4667

³⁴ F. Rita, "The Environmental Security Debate and Its Significance for Climate Change," *The International Spectator: Italian Journal of International Affairs*, Vol. 43, Issue 3, 2008, pp.51-65 at p. 56

Promoting Peace and Environmental Security in Africa through Mediation

violent community conflicts³⁵. The continent has been highly susceptible to intra and inter- state wars and conflicts for many years³⁶. There have been frequent conflicts across the African continent, which are fueled by various factors, including but not limited to natural resources, fight for political control, poverty, negative ethnicity, religion, environmental causes, and external influence, among others³⁷. In addition, it has been pointed out that these conflicts are related to the challenges of climate change, population pressure, food insecurity and proliferation of firearms exacerbated by porous borders³⁸. As a result of the conflicts in Africa, peace has become more challenging to sustain and protracted and recurring conflict more difficult to prevent or resolve, often because their underlying causes are not well understood or addressed³⁹.

Mediation alongside other ADR processes can strengthen efforts towards building peace in Africa through objectives such as decongestion of the court system, the creation of access to justice, promotion of peaceful out of court settlements, conflict prevention or de-escalation, and timely management of conflicts⁴⁰. Mediation is also an effective process in addressing root causes of conflicts⁴¹. It has been noted that for efficient peace building in Africa, the root

³⁵ Abdi. D. I., & Mason. S. J., 'Mediation and Governance in Fragile Contexts: Small Steps to Peace' Available at <https://css.ethz.ch/en/think-tank/themes/mediation-support-and-peace-promotion/mediation-governance.html> (Accessed on 23/04/2024)

³⁶ Olaosebikan. A., 'Conflicts in Africa: Meaning, Causes, Impact and Solution.' *African Research Review.*, Volume 4, No. 4 (2010)

³⁷ Muigua. K., 'Towards Effective Peacebuilding and Conflict Management in Kenya.' Available at <https://kmco.co.ke/wp-content/uploads/2021/05/Towards-Peacebuilding-and-Conflict-Managementin-Kenya.docx-Kariuiki-Muigua-MAY-2021x.pdf> (Accessed on 23/04/2024)

³⁸ Abdi. D. I., & Mason. S. J., 'Mediation and Governance in Fragile Contexts: Small Steps to Peace' Op Cit

³⁹ United Nations., 'Promotion of Durable Peace and Sustainable Development in Africa.' Available at https://www.un.org/osaa/sites/www.un.org.osaa/files/docs/2109875_osaa_sg_report_web_new.pdf (Accessed on 23/04/2024)

⁴⁰ Uwazie. E., 'Alternative Dispute Resolution and Peace-building in Africa.' Available at <https://www.cambridgescholars.com/resources/pdfs/978-1-4438-5707-9-sample.pdf> (Accessed on 22/04/2024)

⁴¹ Muigua. K., 'Resolving Conflicts through Mediation in Kenya.' Op Cit

Promoting Peace and Environmental Security in Africa through Mediation

causes of conflicts must be addressed beyond traditional responses⁴². It is therefore necessary to address the internal and external root causes of conflicts in Africa beyond the traditional response, which only tackled their symptoms, in order to create the capacities that help African countries overcome the peace and security challenges they face, which have deep historical roots⁴³. Mediation can foster the attainment of this goal since it addresses the root causes of conflict resulting in mutually satisfying and long lasting outcomes therefore creating a suitable environment for peace by eliminating the likelihood of conflicts reemerging in future⁴⁴. Mediation has the potential to preserve and at times even enhance the relationship of parties to a conflict making it an ideal process in promoting peace⁴⁵.

Mediation is also key in promoting environmental security by fostering effective management of natural-resource based conflicts⁴⁶. It has been noted that conflicts over scarce natural resources, such as minerals, fish, water, and particularly territory, is a traditional source of armed struggle⁴⁷. Environmental degradation may also be viewed as a contribution to armed conflict in the sense of exacerbating conflicts or adding new dimensions⁴⁸. Population growth and environmental degradation are intensifying competition over already scarce resources, such as land and water, and climate change threatens to increase such competition even further⁴⁹. Resource

⁴² United Nations., 'Root Causes of Conflicts in Africa Must Be Addressed beyond Traditional Response, Special Adviser Tells Security Council Debate on Silencing Guns.' Available at <https://press.un.org/en/2023/sc15249.doc.htm> (Accessed on 22/04/2024)

⁴³ Ibid

⁴⁴ Muigua. K., 'Resolving Conflicts through Mediation in Kenya.' Op Cit

⁴⁵ World Intellectual Property Organization., 'What is Mediation?' Op Cit

⁴⁶ Muigua. K., 'Mediating Natural Resource- Based Conflicts for Peace and Prosperity' Available at <https://kmco.co.ke/wp-content/uploads/2024/01/Mediating-Natural-Resource-Based-Conflicts-for-Peace-and-Prosperity-.pdf> (Accessed on 23/04/2024)

⁴⁷ N.P. Gleditsch, "Armed Conflict and the Environment: A Critique of the Literature," *Journal of Peace Research* Vol. 35, No. 3, Special Issue on Environmental Conflict (May, 1998), pp. 381-400, p. 381

⁴⁸ Ibid

⁴⁹ ReliefWeb., 'Natural Resources and Conflict: A Guide for Mediation Practitioners.' Available at <https://reliefweb.int/report/world/natural-resources-and-conflict-guide-mediation->

Promoting Peace and Environmental Security in Africa through Mediation

abundance can also result in conflicts over resources as has been witnessed in many African States⁵⁰. As a result, it has been argued that efforts towards achieving environmental security must tackle problems related to conflicts and environmental degradation where they are likely to occur⁵¹. Environmental security involves addressing natural-resource based conflicts, environmental degradation, resource depletion, natural disasters, and pollution among other environmental challenges⁵². Mediation can help promote environmental security in Africa by ensuring effective management of environmental and natural resource-based conflicts.

Conflicts over natural resources have also been a common occurrence in Africa⁵³. Despite being endowed with abundance of natural resources, Africa has over the years suffered from resource-based conflicts which usually form a threat to Sustainable Development and have the potential of undermining economic development and sustainability⁵⁴. Africa has for many decades experienced the 'resource curse phenomenon' which refers to the paradox that countries endowed with natural resources tend to be embroiled in conflicts and have incidences of poverty⁵⁵. Mediation can enhance collaboration in the management of natural resources and conflicts related to such resources⁵⁶. This process can help stakeholders of natural resources to identify ways to maximize shared benefits and address common problems and challenges

[practitioners0#:~:text=One%20of%20the%20prerequisites%20to,by%20an%20independent%20third%20party](#) (Accessed on 23/04/2024)

⁵⁰ Muigua. K., Wamukoya. D., & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

⁵¹ Muigua. K., 'Achieving Environmental Security in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2018/08/Environmental-Security-in-Kenya-30th-April-2018-Kariuki-Muigua-PhD-1.pdf> (Accessed on 23/04/2024)

⁵² Ibid

⁵³ Muigua. K., Wamukoya. D., & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Glenwood Publishers Limited, 2015

⁵⁴ Ibid

⁵⁵ Henri. A., 'Natural Resources Curse: A Reality in Africa.' *Resources Policy*, Volume 63, 2019

⁵⁶ Food and Agriculture Organization., 'An introduction to Natural Resource Conflicts, Collaborative Management and Sustainable Livelihoods.' Available at <https://www.fao.org/3/a0032e/a0032e04.htm> (Accessed on 22/04/2024)

Promoting Peace and Environmental Security in Africa through Mediation

together⁵⁷. Through mediation alongside other collaborative approaches including negotiation, natural resources can be treated as a platform for cooperation that transcends religious, ideological, political, or tribal differences, which can be leveraged to tackle more challenging problems down the line⁵⁸.

Mediation is therefore an effective mechanism for managing natural resource-based conflicts due to its potential to build peace and bring people together, binding them towards the common goal of sharing resources⁵⁹. It has been argued that while natural resource disputes can contribute to conflict, shared resources and common challenges can also help to bind countries and communities together⁶⁰. Therefore, utilizing mediation in managing natural resource-based disputes at communal, national, and trans-boundary levels is vital in helping different parties move from a position of conflict to one of cooperation⁶¹. In natural resource-based conflicts, sustainable outcomes are more desirable because the shared benefits of these resources often cross tribal, societal, communal, and national boundaries⁶². Collaboration over the ownership, management, and use of such resources is therefore critical to peace and stability⁶³. Embracing mediation is therefore key in effective management of natural-resources based conflicts towards environmental security⁶⁴.

⁵⁷ United Nations Department of Political Affairs., 'Natural Resources and Conflict: A Guide for Mediation Practitioners.' Available at <https://gsdrc.org/document-library/natural-resources-and-conflict-a-guidefor-mediation-practitioners/> (Accessed on 22/04/2024)

⁵⁸ Ibid

⁵⁹ International Organization for Peace Building., 'Natural Resources and Conflict: A Path to Mediation.' Available at <https://www.interpeace.org/2015/11/natural-resources-and-conflict-a-path-to-mediation/> (Accessed on 22/04/2024)

⁶⁰ African Union., 'Report of the African Union Panel of the Wise on Improving the Mediation and Resolution of Natural Resource-Related Conflicts Across Africa' Available at <https://wedocs.unep.org/bitstream/handle/20.500.11822/31043/AUP.pdf?sequence=1&isAllowed=y> (Accessed on 22/04/2024)

⁶¹ Ibid

⁶² ReliefWeb., 'Natural Resources and Conflict: A Guide for Mediation Practitioners.' Op Cit

⁶³ Ibid

⁶⁴ Ibid

Despite the effectiveness of mediation in promoting peace and environmental security in Africa, this ideal is yet to be realized. Conflicts are still prevalent in the continent with adverse economic, cultural, political, social, and environmental costs⁶⁵. The prevalence of conflicts and wars has been a major hindrance in the achievement of Sustainable Development in Africa⁶⁶. Environmental security in Africa is also threatened by factors such as natural-resource based conflicts, environmental degradation, resource depletion, natural disasters, and pollution among other environmental challenges⁶⁷. It is therefore necessary to promote peace and environmental security in Africa through mediation.

3.0 Promoting Peace and Environmental Security in Africa through Mediation

It is necessary to effectively embrace mediation in order to promote peace and environmental security in Africa⁶⁸. Mediation is key in promoting peace through decongestion of the court system, the creation of access to justice, promotion of peaceful out of court settlements, conflict prevention or de-escalation, and timely management of conflicts⁶⁹. This process also addresses the root causes of conflict resulting in mutually satisfying and long- lasting outcomes therefore creating a suitable environment for peace by eliminating the likelihood of conflicts reemerging in future⁷⁰. Mediation is also vital in enhancing environmental security by strengthening collaboration in the management of natural resources and conflicts related to such resources therefore helping stakeholders of natural resources to identify ways to maximize shared benefits and address common problems and challenges⁷¹.

⁶⁵ Uwazie. E., 'Alternative Dispute Resolution and Peace-building in Africa.' Op Cit

⁶⁶ United Nations., 'Promotion of Durable Peace and Sustainable Development in Africa.' Op Cit

⁶⁷ Muigua. K., 'Achieving Environmental Security in Kenya' Op Cit

⁶⁸ Uwazie. E., 'Alternative Dispute Resolution and Peace-building in Africa.' Op Cit

⁶⁹ Ibid

⁷⁰ Muigua. K., 'Resolving Conflicts through Mediation in Kenya.' Op Cit

⁷¹ United Nations Department of Political Affairs., 'Natural Resources and Conflict: A Guide for Mediation Practitioners.' Available at <https://gsdrc.org/document-library/natural-resources-and-conflict-a-guidefor-mediation-practitioners/>

(Accessed on 22/04/2024)

Promoting Peace and Environmental Security in Africa through Mediation

Mediation alongside other ADR processes have been practiced in Africa for many centuries⁷². These mechanisms were the first point of call in conflict management in African societies⁷³. They were considered 'Appropriate' and not 'Alternative' in managing conflicts⁷⁴. It has been noted that conflict management in African societies was aimed at creating consensus, facilitating reconciliation, fostering peace, harmony and cohesion and gave prominence to communal needs over individual needs⁷⁵. African societies therefore developed conflict management strategies that were designed to uphold the values and norms that held such societies together⁷⁶. Conflict management in African societies took the form of informal negotiation, mediation, reconciliation and arbitration among other techniques which were administered by institutions such as the council of elders⁷⁷. These techniques fitted comfortably within traditional concepts of African justice, particularly its core value of reconciliation⁷⁸. Mediation alongside other ADR processes can therefore strengthen conflict management in Africa and bridge the gap between formal legal systems and traditional modes of African justice⁷⁹. It has been noted that mediation and other ADR techniques may have particular value in stabilization and peace-building efforts when judicial institutions are weak and social tensions are high⁸⁰. While some conflict is inevitable in any

⁷² Muigua. K., 'Resolving Conflicts through Mediation in Kenya.' Op Cit

⁷³ Muigua. K., 'Reframing Conflict Management in the East African Community: Moving from Alternative to 'Appropriate' Dispute Resolution' Available at <https://kmco.co.ke/wp-content/uploads/2023/06/Reframing-Conflict-Management-in-the-East-African-Community-Moving-from-Alternative-to-Appropriate-Dispute-Resolution-1.pdf> (Accessed on 23/04/2024)

⁷⁴ Ibid

⁷⁵ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Op Cit

⁷⁶ Muigua. K., 'Preparing for the Future: ADR and Arbitration from an African Perspective' Available at <https://kmco.co.ke/wp-content/uploads/2023/10/Preparing-for-the-Future-ADR-and-Arbitration-from-an-African-Perspective.pdf> (Accessed on 23/04/2024)

⁷⁷ Kariuki. F., 'Conflict Resolution by Elders in Africa: Successes, Challenges and Opportunities.' Available at <http://kmco.co.ke/wp-content/uploads/2018/08/Conflict-Resolution-by-Elders-successeschallenges-and-opportunities-1.pdf> (Accessed on 23/04/2024)

⁷⁸ Uwazie. E., 'Alternative Dispute Resolution in Africa: Preventing Conflict and Enhancing Stability.' Op Cit

⁷⁹ Ibid

⁸⁰ Ibid

Promoting Peace and Environmental Security in Africa through Mediation

society, effective management directly hinges on the availability of trusted processes and skilled personnel⁸¹. Mediation is a practical tool to foster peacebuilding, conflict resolution and environmental security at both the community, national, and regional levels⁸². Mediation is a major intervention tool in Africa⁸³. It has been used by entities such as the African Union to prevent and resolve many violent conflicts in Africa⁸⁴. Interventions by the African Union in several conflict prone areas have promoted peace and environmental security through mediation⁸⁵. It is therefore vital to continue promoting peace and environmental security in Africa through mediation.

Finally, it important to strengthen the legal, policy, institutional, and human capacity on mediation in Africa⁸⁶. Government support is vital in promoting mediation in Africa by putting in place adequate legal regimes and infrastructure to enhance its uptake⁸⁷. Governments can enhance the role of mediation in Africa by designing laws that promote mediation and institutionalizing mediation in a manner which preserves its key attributes such as flexibility, informality, privacy and confidentiality⁸⁸. The current practice of mediation in Africa has been described as a professional craft that requires skilled endeavour⁸⁹. It is therefore necessary to enhance the capacity of mediators and other ADR practitioners through education, training and mentorship⁹⁰. This will enhance their skills and ability to manage disputes in a manner that safeguards the key concepts of justice such as human rights

⁸¹ Ibid

⁸² Ibid

⁸³ Tieku. T., 'Lessons Learned from Mediation by an African Regional Organization' Available at https://peacemaker.un.org/sites/peacemaker.un.org/files/LessonsLearnedfromMediationbyanAfricanRegionalOrg_Tieku2011.pdf (Accessed on 23/04/2024)

⁸⁴ Ibid

⁸⁵ Ibid

⁸⁶ Muigua. K., 'Preparing for the Future: ADR and Arbitration from an African Perspective' Op Cit

⁸⁷ Ibid

⁸⁸ Ibid

⁸⁹ Tieku. T., 'Lessons Learned from Mediation by an African Regional Organization' Op Cit

⁹⁰ Muigua. K., 'Reframing Conflict Management in the East African Community: Moving from Alternative to 'Appropriate' Dispute Resolution' Op Cit

Promoting Peace and Environmental Security in Africa through Mediation

towards promoting peace and environmental security⁹¹. Strengthening national and regional institutions and mediation processes is also key in promoting peace and environmental security in Africa⁹². It is also necessary to link the environment and natural resources aspects to peace building and development processes in order to promote peace and environmental security through mediation in Africa⁹³. Finally there is need for continued public sensitization and enhancing access to information on mediation and other ADR processes in order to boost support and accelerate the uptake of these mechanisms in Africa for peace and environmental security⁹⁴.

4.0 Conclusion

Mediation has the potential to foster peace and environmental security in Africa⁹⁵. This process addresses the root causes of conflict resulting in mutually satisfying and long- lasting outcomes therefore creating a suitable environment for peace by eliminating the likelihood of conflicts reemerging in future⁹⁶. Utilizing mediation in managing natural resource-based disputes at communal, national, and trans-boundary levels is also vital in helping different parties move from a position of conflict to one of cooperation⁹⁷. This cooperation is key fostering environmental security by enhancing collaboration toward addressing problems such as natural-resource based conflicts, environmental degradation, resource depletion, natural disasters, and pollution among other environmental challenges⁹⁸. However, the ideal of promoting peace and environmental security in Africa is yet to be realized as a result of numerous conflicts and environmental challenges prevalent in the

⁹¹ Ibid

⁹² African Union., 'Report of the African Union Panel of the Wise on Improving the Mediation and Resolution of Natural Resource-Related Conflicts Across Africa' Op Cit

⁹³ Ibid

⁹⁴ Ibid

⁹⁵ Uwazie. E., 'Alternative Dispute Resolution and Peace-building in Africa.' Op Cit

⁹⁶ Muigua. K., 'Resolving Conflicts through Mediation in Kenya.' Op Cit

⁹⁷ African Union., 'Report of the African Union Panel of the Wise on Improving the Mediation and Resolution of Natural Resource-Related Conflicts Across Africa' Op Cit

⁹⁸ Muigua. K., 'Achieving Environmental Security in Kenya' Op Cit

Promoting Peace and Environmental Security in Africa through Mediation

continent⁹⁹. In order to realize the goal of promoting peace and environmental security in Africa through mediation, there is need to: effectively embrace mediation¹⁰⁰; entrench the place of mediation in conflict management in Africa¹⁰¹; strengthen the legal, policy, institutional, and human capacity on mediation in Africa¹⁰²; and link the environment and natural resources aspects to peace building and development processes¹⁰³. Promoting peace and environmental security in Africa through mediation is a worthy agenda for the prosperity of the continent.

⁹⁹ Uwazie. E., 'Alternative Dispute Resolution and Peace-building in Africa.' Op Cit; Muigua. K., 'Achieving Environmental Security in Kenya' Op Cit

¹⁰⁰ Uwazie. E., 'Alternative Dispute Resolution and Peace-building in Africa.' Op Cit

¹⁰¹ Muigua. K., 'Reframing Conflict Management in the East African Community: Moving from Alternative to 'Appropriate' Dispute Resolution' Op Cit

¹⁰² Muigua. K., 'Preparing for the Future: ADR and Arbitration from an African Perspective' Op Cit

¹⁰³ African Union., 'Report of the African Union Panel of the Wise on Improving the Mediation and Resolution of Natural Resource-Related Conflicts Across Africa' Op Cit

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

Abstract

Responding to climate change has become both a national priority and a global responsibility as a result of the adverse impacts associated with climate change. The world is responding to climate change through mitigation and adaptation strategies. One key climate change adaptation strategy involves enhancing climate information and early warning systems. Strengthening the resilience and capacity of all countries especially developing states to adapt to climate change cannot be achieved without scientific knowledge and data on climate change and its impacts. Climate information and early warning systems aim to achieve this goal. This paper critically examines the role of climate information and early warning systems in climate change mitigation. It argues that strengthening climate information and early warning systems can bolster environmental governance. The paper conceptualizes climate information and early warning systems and discusses how these ideas can enhance the global response towards climate change. It also discusses the progress and challenges towards embracing these two vital concepts and offers proposals towards strengthening climate information and early warning systems for effective environmental governance.

1.0 Introduction

The impacts of climate change including intense droughts, water scarcity, severe fires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity are being witnessed all over the world¹. Due to these impacts, climate change has been described as the main global challenge that is affecting both developed and developing countries in their efforts towards realization of the Sustainable Development agenda². Climate change has therefore risen to the top of the policy agenda, at local, national, and international levels³. Responding to climate change has become both a both

¹ United Nations., 'What is Climate Change?' Available at <https://www.un.org/en/climatechange/what-is-climate-change> (Accessed on 08/04/2024)

² Muigua. K., 'Achieving Sustainable Development, Peace and Environmental Security.' Glenwood Publishers Limited, 2021

³ United Nations Department of Economic and Social Affairs., 'Forum on Climate Change and Science and Technology Innovation.' Available at

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

national priority and a global responsibility⁴. The United Nations *2030 Agenda for Sustainable Development*⁵ acknowledges that climate change is one of the greatest challenges facing humanity and its adverse impacts undermine the ability of all countries to achieve Sustainable Development. Sustainable Development Goal 13 urges all countries to take urgent action to combat climate change and its impacts⁶.

The world is responding to climate change through mitigation and adaptation strategies⁷. Mitigation involves reducing greenhouse gas emissions and stopping the problem of climate change from growing⁸. Adaptation on the other hand involves learning how to live with the existing threat of climate change and protecting humanity from its future effects⁹. Climate change mitigation involves actions aimed at reducing or preventing greenhouse gas emissions such as reducing energy consumption, prioritizing renewable energy or absorbing carbon from the atmosphere¹⁰. Climate change adaptation meanwhile entails ecological, social or economic adjustments that can be taken to enable humanity to thrive in the face of changing climate such as planning

<https://www.un.org/en/desa/forum-climate-changeandscience-and-technology-innovation> (Accessed on 08/04/2024)

⁴ United Nations Development Programme., 'Islamic Finance's Answer to SDGs and Climate Change.' Available at <https://www.undp.org/blog/islamic-finance-answer-sdgs-and-climate-change> (Accessed on 08/04/2024)

⁵ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 08/04/2024)

⁶ Ibid

⁷ World Vision., 'How is the World Responding to Climate Change?' Available at https://www.worldvision.com.au/docs/default-source/school-resources/how-is-the-world-responding-to-climate-change.pdf?sfvrsn=32021b89_0 (Accessed on 08/04/2024)

⁸ Ibid

⁹ Ibid

¹⁰ Ramsey County., 'On climate justice: Climate Change and Environmental Justice.' Available at <https://www.ramseycounty.us/content/climate-justice-climate-change-and-environmentaljustice#:~:text=Climate%20Justice%20is%20a%20subset,the%20impact%20of%20climate%20change> (Accessed on 08/04/2024)

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

for emergencies, ensuring that vulnerable individuals have reliable access to cooling and heating systems and planting drought tolerant crops¹¹.

One of the key climate change adaptation strategy involves enhancing climate information and early warning systems¹². It has been noted that strengthening the resilience and capacity of all countries especially developing states to adapt to climate change cannot be achieved without scientific knowledge and data on climate change and its impacts¹³. Climate information and early warning systems aim to achieve this goal¹⁴.

This paper critically examines the role of climate information and early warning systems in climate change mitigation. It argues that strengthening climate information and early warning systems can bolster environmental governance. The paper conceptualizes climate information and early warning systems and discusses how these ideas can enhance the global response towards climate change. It also discusses the progress and challenges towards embracing these two vital concepts and offers proposals towards strengthening climate information and early warning systems for effective environmental governance.

2.0 The Need for Climate Information and Early Warning Systems

Early warning systems are processes aimed at reducing the impact of natural hazards by providing timely and relevant information in a systematic way¹⁵. Climate information and early warnings systems are necessary in strengthening the global response towards climate change. With the ongoing threat of climate change, the frequency and intensity of climate-related

¹¹ Ibid

¹² United Nations Environment Programme., 'New UNEP Programme to Support Climate Resilience in Pacific Islands through Early Warning Systems' Available at <https://www.unep.org/news-and-stories/press-release/new-unep-programme-support-climate-resilience-pacific-islands> (Accessed on 08/04/2024)

¹³ Ibid

¹⁴ Ibid

¹⁵ United Nations Development Programme., 'Five Approaches to Build Functional Early Warning Systems' Available at https://www.adaptation-undp.org/sites/default/files/resources/undp_brochure_early_warning_systems.pdf (Accessed on 08/04/2024)

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

hazards is expected to increase¹⁶. Climate information and early warning systems have a great potential to avert disaster risk and minimize loss and damage associated with climate-related hazards through supporting well-informed science-based decision-making¹⁷. The use of climate information and early warning systems is an adaptive measure towards climate change that utilizes integrated communication systems to help communities prepare for hazardous climate-related events¹⁸.

It has been noted that climate information and early warning systems are key elements of climate change adaptation and disaster risk reduction which aim to avoid or reduce the damages caused from hazards¹⁹. This approach embraces the use of sound scientific and technical data and focuses on people, communities or sectors mostly exposed to the adverse impacts of climate change²⁰. It involves the adoption of a system approach incorporating all relevant risk factors, whether arising from the climate-hazards or social vulnerabilities, and from short-term or long-term processes²¹. Some of the key early warning systems include detection, analysis, prediction, and then warning dissemination followed by response decision-making and implementation²². It has been noted that climate information and early warning systems are being utilized in many parts of the world to monitor, forecast, and warn people and communities about adverse consequences of climate change such as tropical cyclones, floods, storms, tsunamis, avalanches,

¹⁶ United Nations Environment Programme., 'Climate Information and Early Warning Systems' Available at <https://www.unep.org/topics/climate-action/climate-transparency/climate-information-and-early-warning-systems> (Accessed on 08/04/2024)

¹⁷ Ibid

¹⁸ United Nations., 'Early Warning Systems' Available at <https://www.un.org/en/climatechange/climate-solutions/early-warning-systems> (Accessed on 08/04/2024)

¹⁹ Climate Adapt., 'Establishment of Early Warning Systems' Available at <https://climate-adapt.eea.europa.eu/en/metadata/adaptation-options/establishment-of-early-warning-systems> (Accessed on 08/04/2024)

²⁰ Ibid

²¹ Ibid

²² Ibid

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

tornadoes, severe thunderstorms, volcanic eruptions, extreme heat and cold, forest fires, and drought among others²³.

Strengthening climate information and early warning systems is vital in saving lives and jobs, land and infrastructures and supporting long-term sustainability²⁴. It has been noted that climate information and early warning systems are directly relevant for diverse sectors that are primary affected by climate-related events²⁵. These sectors include health, disaster risk reduction, agriculture, forestry, buildings, coastal and urban areas²⁶. In addition, it has been asserted that other sectors that can indirectly benefit from early warning systems include the transport sector, if roads or rails are closed in advance before humans are negatively impacted, or tourism, when ensuring that tourist groups are warned to access or refrain from accessing certain areas during extreme weather periods²⁷. If effectively implemented, climate information and early warning systems can contribute to increasing the resilience of developing countries to natural disasters and climate-related events while offering simultaneous support for the achievement of the Sustainable Development Goals (SDGs) especially in reducing the loss of life and livelihood²⁸.

Climate information and early warning systems are therefore proven cost-effective disaster risk reduction and climate change adaptation measures which have been demonstrated to save lives, livelihoods and ecosystems in the face of climate-related events²⁹. This approach addresses an urgent need to provide an evidence base for planning, decision-making and responses towards climate change that have the potential to save lives and livelihoods³⁰.

²³ Ibid

²⁴ United Nations., 'Early Warning Systems' Op Cit

²⁵ Climate Adapt., 'Establishment of Early Warning Systems' Op Cit

²⁶ Ibid

²⁷ Ibid

²⁸ United Nations Development Programme., 'Five Approaches to Build Functional Early Warning Systems' Op Cit

²⁹ United Nations Environment Programme., 'Climate Information and Early Warning Systems' Op Cit

³⁰ United Nations Environment Programme., 'New UNEP Programme to Support Climate Resilience in Pacific Islands through Early Warning Systems' Op Cit

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

Strengthening climate information and early warning systems can improve the capacity to observe and predict the impacts of climate change and contribute to more effective environmental management, disaster risk reduction and food security³¹. It can also facilitate effective disaster risk reduction and climate change adaptation, empowering populations and communities at risk to initiate timely and appropriate actions to reduce the impact of climate-related hazards and extreme weather events³². Strengthening climate information and early warning systems ensures the provision of timely and effective information, through identified institutions, that allows individuals exposed to climate hazards to take action to avoid or reduce their risk and prepare for effective response³³.

The need to strengthen climate information and early warning systems is recognized at the global, regional, and national levels. In order to effectively confront climate change, SDG 13 urges all countries to improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and *early warning*³⁴. Further, the *Early Warnings for All Initiative (EW4All)* was launched at COP 27³⁵. The Initiative calls for the whole world to be covered by an early warning system by the end of 2027³⁶. The Initiative articulates four pillars for implementation of effective early warning systems which are: risk knowledge and management; observations and forecasting; dissemination and communication; and preparedness to respond³⁷. Holistic strengthening of all these elements can

³¹ Ibid

³² Ibid

³³ United Nations Development Programme., 'Five Approaches to Build Functional Early Warning Systems' Op Cit

³⁴ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Op Cit

³⁵ United Nations Office for Disaster Risk Reduction., 'Early Warnings for All Initiative Scaled Up into Action on the Ground' Available at <https://www.undrr.org/news/early-warnings-all-initiative-scaled-action-ground#:~:text=Background%20to%20the%20initiative,by%20the%20end%20of%202027>. (Accessed on 08/04/2024)

³⁶ Ibid

³⁷ Ibid

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

accelerate evidence-based policy, planning and early action towards climate change.

At the continental level, the *African Union Climate Change and Resilient Development Strategy and Action Plan*³⁸ recognizes the role of climate information and early warning systems in confronting climate change in Africa. The Strategy and Action Plan urges African countries to enhance climate information services and improve climate literacy and awareness³⁹. It acknowledges that climate data, information and related products are useful in multiple climate-sensitive socio-economic sectors such as: agriculture; disasters risk management; water resources; health; and energy for societal benefits⁴⁰. In addition, the Strategy and Action Plan recognizes that early warning systems can help to build resilience by responding to climate crises before they occur⁴¹. It states that if early warning systems are properly linked with national social protection systems, they have the potential to not only help smooth climate-related shocks, avoiding set-backs in development, but also to enable poor and vulnerable people to manage climate risks more effectively and in a proactive manner⁴². The Strategy and Action Plan requires African countries to strengthen their prediction, early warning and preparation activities in order to effectively respond to climate change⁴³. It is necessary to implement the *African Union Climate Change and Resilient Development Strategy and Action Plan* in order to strengthen climate information and early warning systems for effective environmental governance.

³⁸ African Union., 'African Union Climate Change and Resilient Development Strategy and Action Plan' Available at https://au.int/sites/default/files/documents/42276-doc-CC_Strategy_and_Action_Plan_2022-2032_23_06_22_ENGLISH-compressed.pdf (Accessed on 09/04/2024)

³⁹ Ibid

⁴⁰ Ibid

⁴¹ Ibid

⁴² Ibid

⁴³ Ibid

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

In addition, the *African Leaders Nairobi Declaration on Climate Change and Call to Action*⁴⁴ recognizes the need to strengthen climate information and early warning systems for effective environmental governance in Africa. It urges African countries to strengthen early warning systems and climate information services, as well as take early action to protect lives, livelihoods and assets and inform long-term decision-making related to climate change risks⁴⁵. The Nairobi Declaration also emphasizes the importance of embracing indigenous knowledge and citizen science in both adaptation strategies and early warning systems for effective response towards climate change in Africa⁴⁶.

At a regional level, the *East African Community (EAC) Climate Change Policy*⁴⁷ requires EAC member states to strengthen climate information and early warning systems. It identifies climate information services as a key tool in the response towards climate change in the EAC region⁴⁸. It urges EAC member states to strengthen research and promote data and information exchange⁴⁹. The Policy further notes that early warning system is a functional approach for generation and provision of timely and effective information, through identified institutions, that allows individuals exposed to a hazard to take action to avoid or reduce their risk and prepare for effective response⁵⁰. The Policy requires EAC member states to develop timely, reliable and adequate early warning information systems for extreme weather and climatic disasters⁵¹. It also requires EAC member states to enhance disaster risk preparedness through, inter alia, production, acquisition and dissemination of weather and climate information services for improved early warning

⁴⁴ African Leaders Nairobi Declaration on Climate Change and Call to Action., Available at https://au.int/sites/default/files/decisions/43124-Nairobi_Declaration_06092023.pdf (Accessed on 09/04/2024)

⁴⁵ Ibid

⁴⁶ Ibid

⁴⁷ East African Community Climate Change Policy., Available at <https://www.eac.int/environment/climate-change/eac-climate-change-policy-framework> (Accessed on 09/04/2024)

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ Ibid

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

systems⁵². It is imperative for EAC member states to embrace and implement this Policy in order to enhance climate information and early warning systems for effective environmental governance in the region.

At a national level, Kenya's *National Framework for Climate Services*⁵³ sets out the importance of strengthening climate information and early warning systems. The Framework notes that climate information includes climate data, climate products and climate knowledge⁵⁴. It seeks to enhance the capacity to generate and use climate information and products for effective climate action in Kenya⁵⁵. It also requires Kenya to enhance investments in disaster risk reduction and early warning systems to mitigate the impact of extreme weather events⁵⁶. According to the Framework, Kenya being one of the countries severely impacted by climate change and increased frequency and magnitude of extreme climate events should be at the forefront of ensuring protection of its citizens by early warning systems and information⁵⁷. It is therefore vital to strengthen climate information and early warning systems for effective environmental governance in Kenya.

Despite the key role played by climate information and early warning systems in environmental governance, several factors hinder their effective uptake. For example, gaps in legal, institutional and policy frameworks can prevent the operationalisation of early warning systems and the integration of climate information into decision-making across all sectors⁵⁸. It has correctly been noted that laws and regulations are of paramount importance for clearly defining roles, responsibilities, and actions to undertake for the operation and management of climate information and early warning systems⁵⁹. Therefore

⁵² Ibid

⁵³ Republic of Kenya., 'National Framework for Climate Services' Available at https://meteo.go.ke/sites/default/files/downloads/NFCS_Kenya_11_Oct_2023_0.pdf (Accessed on 09/04/2024)

⁵⁴ Ibid

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷ Ibid

⁵⁸ United Nations Development Programme., 'Five Approaches to Build Functional Early Warning Systems' Op Cit

⁵⁹ Ibid

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

an inefficient legal and institutional framework can result in confusion and delayed reaction especially in an emergency situation where the time factor is crucial⁶⁰. It has also been noted that in many developing countries, the public sector lacks human resources with the necessary experience, skills, and expertise to maintain and operate early warning systems⁶¹. In addition, many developing countries lack the necessary technology, infrastructure, and forecasting capability⁶². For example, it has been observed that despite the progress made towards the development of observational networks in Africa, the continent's observational infrastructure has not yet met the optimum standards for effective forecasts and early warning systems⁶³. It is necessary to solve these challenges in order to strengthen climate information and early warning systems for effective environmental governance.

3.0 Way Forward

In order to strengthen climate information and early warning systems, there is need to enhance dissemination of climate information⁶⁴. Climate information is a very vital component of the global response towards climate change⁶⁵. It enables citizens and communities to better understand and manage their exposure to climate change⁶⁶. It can also support well-informed science-based decision-making on climate action⁶⁷. Climate information can also enable populations to initiate timely and appropriate actions to reduce the impact of hazards and extreme events⁶⁸. Climate information is therefore a key tool for climate change adaptation that makes it possible to observe and predict the impacts of climate change therefore contributing to more effective

⁶⁰ Ibid

⁶¹ Ibid

⁶² Ibid

⁶³ African Union., 'African Union Climate Change and Resilient Development Strategy and Action Plan' Op Cit

⁶⁴ United Nations Development Programme., 'Five Approaches to Build Functional Early Warning Systems' Op Cit

⁶⁵ African Union., 'African Union Climate Change and Resilient Development Strategy and Action Plan' Op Cit

⁶⁶ Ibid

⁶⁷ United Nations., 'Early Warning Systems' Op Cit

⁶⁸ United Nations Environment Programme., 'New UNEP Programme to Support Climate Resilience in Pacific Islands through Early Warning Systems' Op Cit

*Strengthening Climate Information and Early Warning Systems for Effective
Environmental Governance*

environmental management, disaster risk reduction and food security⁶⁹. It is therefore necessary for all countries to enhance access to climate information for improved environmental governance.

It is also vital to build effective early warning systems⁷⁰. It has been noted that effective early warning systems ensure that precursors to events are monitored on a continuous basis, data is analysed to generate a forecast, and that if there is a forecast of a large event, a warning is issued⁷¹. According to the United Nations Development Programme, effective early warning systems comprise of risk knowledge which is the interplay between establishing organisational arrangements, identifying natural hazards, community vulnerability assessment, risk assessment, and information storing and sharing⁷²; monitoring and warning services which comprises of the infrastructure that delivers forecasts and warnings⁷³; dissemination and communication services which involves distribution of understandable warnings and preparedness information to those at risk of a hazard⁷⁴; and response capability which entails centralised knowledge, plans, and inputs needed for timely and appropriate action by authorities and those at risk⁷⁵. It is necessary for all countries to build effective early warning systems. If correctly implemented, early warning systems can help to reduce losses of lives and property, and to minimise environmental damage associated with the adverse impacts of climate change⁷⁶.

In addition, it is imperative to embrace public participation and the role of indigenous knowledge in order to strengthen climate information and early warning systems⁷⁷. It has been correctly noted that to be effective, early

⁶⁹ Ibid

⁷⁰ Ibid

⁷¹ Republic of Kenya., 'National Framework for Climate Services' Op Cit

⁷² United Nations Development Programme., 'Five Approaches to Build Functional Early Warning Systems' Op Cit

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Ibid

⁷⁷ African Leaders Nairobi Declaration on Climate Change and Call to Action., Op Cit

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

warning systems need to actively involve the people and communities at risk from a range of hazards, facilitate public education and awareness of risks, disseminate messages and warnings efficiently and ensure that there is a constant state of preparedness and that early action is enabled⁷⁸. Therefore, the significance of an effective early warning system lies in the recognition of its benefits by people at local levels who are mostly exposed to climate hazards⁷⁹. Participatory or people-centered early warning systems have great potential to improve decisions taken by both emergency institutions and communities exposed or affected by climate hazards⁸⁰. In addition, indigenous knowledge can help in disaster risk reduction and increase the resilience of vulnerable communities⁸¹. Indigenous communities in places such as Africa have over the years developed an array of early warning indicators and well-developed structures through which the wisdom of the community is applied to deal quickly and efficiently with disasters⁸². These include the ability to predict extreme weather events such as heavy rainfall, droughts, and famine which enabled communities to prepare adequately for the impacts of such events⁸³. Therefore, integrating indigenous knowledge with modern scientific approaches can strengthen climate information and early warning systems⁸⁴.

⁷⁸ Climate Adapt., 'Establishment of Early Warning Systems' Op Cit

⁷⁹ Ibid

⁸⁰ Marchezini. V et al., 'A Review of Studies on Participatory Early Warning Systems (P-EWS): Pathways to Support Citizen Science Initiatives' Available at <https://www.frontiersin.org/articles/10.3389/feart.2018.00184/full> (Accessed on 09/04/2024)

⁸¹ Haokip. T., 'Indigenous Knowledge as Early Warning Guide in Disaster Management' Available at https://link.springer.com/referenceworkentry/10.1007/978-981-19-8388-7_8#:~:text=However%2C%20indigenous%20knowledge%20is%20often,the%20resilience%20of%20vulnerable%20communities. (Accessed on 09/04/2024)

⁸² United Nations Office for Disaster Risk Reduction., 'Indigenous Disaster Early Warning, Preparedness, and Response' Available at https://www.unisdr.org/preventionweb/files/18123_indigenousdisasterearlywarningprepa.pdf (Accessed on 09/04/2024)

⁸³ Ibid

⁸⁴ Ibid

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

Finally, it is necessary to enhance the legal, institutional, policy, technical and human capacity for effective climate information and early warning systems⁸⁵. Countries should therefore enact laws and policies with precise indications of roles, responsibilities, and actions in climate information and early warning systems⁸⁶. It is also necessary for all countries to strengthen institutional capacities which refers to the ability of governments and institutions to effectively perform functions in a sustainable and long-term manner⁸⁷. In addition, it is imperative to enhance human capacity through training and capacity building in prediction, early warning and preparation activities⁸⁸. International, continental, and regional cooperation is also key in strengthening climate information and early warning systems in developing countries through financial, technological and capacity development components⁸⁹. Further, it is vital for all countries to invest in scientific and technical tools necessary for effective forecasts and early warning systems⁹⁰. It has been noted that scientific and technological solutions offer an opportunity for low-cost advances in early warning systems, contributing to increased resilience⁹¹. These solutions can foster the automation and rapid processing of a series of fundamental steps within the early warning chain⁹².

The foregoing among other approaches are vital in strengthening early warning systems for effective environmental governance.

4.0 Conclusion

Climate information and early warning systems are key elements of climate change adaptation and disaster risk reduction which aim to avoid or reduce

⁸⁵ United Nations Development Programme., 'Five Approaches to Build Functional Early Warning Systems' Op Cit

⁸⁶ Ibid

⁸⁷ Ibid

⁸⁸ African Union., 'African Union Climate Change and Resilient Development Strategy and Action Plan' Op Cit

⁸⁹ Ibid

⁹⁰ Ibid

⁹¹ United Nations Development Programme., 'Five Approaches to Build Functional Early Warning Systems' Op Cit

⁹² Ibid

Strengthening Climate Information and Early Warning Systems for Effective Environmental Governance

the damages caused from hazards⁹³. Strengthening climate information and early warning systems is vital in saving lives and jobs, land and infrastructures and supporting long-term sustainability⁹⁴. Effective implementation of climate information and early warning systems can contribute to increasing the resilience of developing countries to natural disasters and climate-related events while offering simultaneous support for the achievement of the SDGs⁹⁵. Despite their key role in climate action, several factors hinder effective uptake of climate information and early warning systems. These factors include gaps in legal, institutional and policy frameworks; and insufficient human and technical capacity⁹⁶. It is necessary to address these challenges in order to strengthen climate information and early warning systems for effective environmental governance. This can be realized through enhancing dissemination of climate information⁹⁷; building effective early warning systems⁹⁸; embracing public participation and the role of indigenous knowledge for enhanced climate information and early warning systems⁹⁹; and strengthening the legal, institutional, policy, technical and human capacities for effective climate information and early warning systems¹⁰⁰. Strengthening climate information and early warning systems for effective environmental governance is a goal that needs to be pursued and realized by all countries.

⁹³ Climate Adapt., 'Establishment of Early Warning Systems' Op Cit

⁹⁴ United Nations., 'Early Warning Systems' Op Cit

⁹⁵ United Nations Development Programme., 'Five Approaches to Build Functional Early Warning Systems' Op Cit

⁹⁶ Ibid

⁹⁷ Ibid

⁹⁸ United Nations Environment Programme., 'New UNEP Programme to Support Climate Resilience in Pacific Islands through Early Warning Systems' Op Cit

⁹⁹ African Leaders Nairobi Declaration on Climate Change and Call to Action., Op Cit

¹⁰⁰ United Nations Development Programme., 'Five Approaches to Build Functional Early Warning Systems' Op Cit

Utilizing Alternative Dispute Resolution in Climate Change Disputes

Abstract

Climate change is a major threat to Sustainable Development in both developing and developed countries. It is the most pressing challenge currently facing humanity. In addition to its adverse environmental, social, and economic impacts, climate change is causing many disputes. Such disputes can affect the achievement of climate goals at levels. Effective management of climate change disputes is therefore crucial in strengthening the response towards climate change and delivering climate justice. This paper critically discusses the viability of Alternative Dispute Resolution (ADR) mechanisms in managing climate change disputes. It argues that ADR mechanisms are ideal in managing climate change related disputes and need to be widely embraced. The paper examines the nature and causes of climate change disputes. It also explores the suitability of ADR processes in handling such disputes and points out the key advantages of ADR techniques towards this end. The paper further discusses some of the concerns that may arise in applying ADR techniques in climate change disputes. Further, it offers suggestions towards utilizing ADR mechanisms for effective management of climate change disputes.

1.0 Introduction

Climate change continues to be a major global challenge that is affecting both developed and developing countries in their efforts towards realization of the Sustainable Development agenda¹. It has been described as the most defining challenge of our time². Climate change alongside pollution and biodiversity loss have been identified as the triple planetary crisis which is a term that refers the three main interlinked issues that humanity currently faces³.

¹ Muigua. K., 'Achieving Sustainable Development, Peace and Environmental Security.' Glenwood Publishers Limited, 2021

² United Nations Department of Economic and Social Affairs., 'Forum on Climate Change and Science and Technology Innovation.' Available at <https://www.un.org/en/desa/forum-climate-change-and-science-and-technology-innovation> (Accessed on 21/03/2024)

³ United Nations Climate Change., 'What is the Triple Planetary Crisis?' Available at <https://unfccc.int/news/what-is-the-triple-planetary-crisis> (Accessed on 21/03/2024)

Utilizing Alternative Dispute Resolution in Climate Change Disputes

It has been noted that climate change is now affecting every country on every continent⁴. According to the United Nations, climate change is disrupting national economies and affecting lives, costing people, communities and countries dearly today and even more tomorrow⁵. The impacts of climate change such as intense droughts, water scarcity, severe fires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity are being witnessed across the world⁶. Climate change therefore presents a major threat to long-term growth and prosperity, and it has a direct impact on the economic and social wellbeing of all countries⁷. It has been noted that if left unchecked, climate change will undo a lot of the development progress made over the past years and will also provoke mass migrations that will lead to instability and wars⁸. Responding to climate change has therefore become a top policy agenda, at local, national, and global levels⁹. The United Nations *2030 Agenda for Sustainable Development*¹⁰ acknowledges that climate change is one of the greatest challenge of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development. Sustainable Development Goal (SDG) urges all countries to take urgent action to combat climate change and its impacts¹¹.

⁴ United Nations., 'Climate Action.' Available at <https://www.un.org/sustainabledevelopment/climateaction/> (Accessed on 21/03/2024)

⁵ Ibid

⁶ United Nations., 'What is Climate Change?' Available at <https://www.un.org/en/climatechange/whatis-climate-change> (Accessed on 21/03/2024)

⁷ Ibid

⁸ United Nations., 'Goal 13: Take Urgent Action to Combat Climate Change and its Impacts.' Available at <https://www.un.org/sustainabledevelopment/climate-change/> (Accessed on 21/03/2024)

⁹ United Nations Department of Economic and Social Affairs., 'Forum on Climate Change and Science and Technology Innovation.' Available at <https://www.un.org/en/desa/forum-climate-changeandscience-and-technology-innovation> (Accessed on 21/03/2024)

¹⁰ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 21/03/2024)

¹¹ Ibid

Utilizing Alternative Dispute Resolution in Climate Change Disputes

In addition to its adverse environmental, social, and economic impacts, climate change is causing many disputes¹². It has been noted that climate change disputes can affect the achievement of climate goals at levels¹³. Effective management of climate change disputes has been identified as crucial in strengthening the response towards climate change and delivering climate justice¹⁴.

This paper critically discusses the viability of Alternative Dispute Resolution (ADR) mechanisms in managing climate change disputes. It argues that ADR mechanisms are ideal in managing climate change related disputes and need to be widely embraced. The paper examines the nature and causes of climate change disputes. It also explores the suitability of ADR processes in handling such disputes and points out the key advantages of ADR techniques towards this end. The paper further discusses some of the concerns that may arise in applying ADR techniques in climate change disputes. Further, it offers suggestions towards utilizing ADR mechanisms for effective management of climate change disputes.

2.0 Climate Change Disputes: Causes and Effects

It has been noted that climate change disputes are consistently rising throughout the world¹⁵. With states increasingly implementing measures to combat the adverse impacts of climate change, it has been asserted that such measures may collide with aspirations for economic growth and social progress¹⁶. This results in disagreements among various stakeholders including the state, citizens, and the private sector a situation that could trigger

¹² United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Available at <https://www.unep.org/news-and-stories/press-release/climate-litigation-more-doubles-five-years-now-key-tool-delivering> (Accessed on 21/03/2024)

¹³ Ibid

¹⁴ Ibid

¹⁵ Burianski. M., & Kuhnle. F. P., 'A New Wave of African Climate Change Disputes on the Horizon' Available at <https://www.whitecase.com/insight-our-thinking/africa-focus-winter-2023-climate-change#:~:text=Disputes%20could%20involve%20liability%20and,and%20enforced%2C%20and%20investment%20disputes.> (Accessed on 22/03/2024)

¹⁶ Ibid

Utilizing Alternative Dispute Resolution in Climate Change Disputes

disputes¹⁷. It has been noted that climate change disputes fall into various categories including cases seeking to enforce human rights enshrined in international law and national constitutions¹⁸; challenges to domestic non-enforcement of climate-related laws and policies¹⁹; litigants seeking to keep fossil fuels in the ground²⁰; advocates for greater climate disclosures and an end to greenwashing²¹; claims addressing corporate liability and responsibility for climate harms²²; and claims addressing failures to adapt to the impacts of climate change²³.

Further, it has been opined that climate change is a threat multiplier which can increase human security issues such as food and water scarcity while also leading to (violent) conflict in climate-vulnerable regions and countries²⁴. This is as a result of the fact that climate change's negative repercussions, such as water scarcity, crop failure, food insecurity, economic shocks, migration, and displacement, can exacerbate the risk of conflict and violence²⁵. It has been noted that as the global population continues to rise, the global demand for natural resources continues to grow, and the impacts of climate change begin to materialize, the competition over natural resources is set to intensify, a situation that could spiral into more natural resource based conflicts and disputes²⁶. Population growth and environmental degradation are intensifying competition over already scarce resources, such as land and

¹⁷ Ibid

¹⁸ United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Op Cit

¹⁹ Ibid

²⁰ Ibid

²¹ Ibid

²² Ibid

²³ Ibid

²⁴ Froese. R., & Janpeter. S, 'The Nexus of Climate Change, Land Use, and Conflicts' (2019)

²⁵ Ibid

²⁶ United Nations Environment Programme., 'Environmental Cooperation and Peacebuilding.' Available at <https://www.unep.org/topics/fresh-water/disasters-and-climatechange/environmentsecurity/environmentalcooperationand#:~:text=International%20law%2C%20environment%20and%20conflict,and%20reliance%20on%20conflict%20resources> (Accessed on 22/03/2024)

Utilizing Alternative Dispute Resolution in Climate Change Disputes

water, and climate change threatens to increase such competition even further a situation that could spiral into conflicts and disputes²⁷.

There has been a growing number of climate change disputes concerning climate change commitments by governments²⁸. It has been observed that there is a huge gap between the level of greenhouse gas reductions the world needs to achieve in order to meet its temperature targets, and the actions that governments are actually taking to lower emissions²⁹. This inevitably results in disputes with individuals or organizations seeking legal channels to hold governments accountable for their climate change commitments³⁰. It has been noted that there have been a rise of legal disputes challenging government decisions based on a project's inconsistency with the goals of the Paris Agreement or a country's net-zero commitments³¹. With governments increasingly implementing net-zero carbon targets and companies establishing their own carbon-neutral or carbon-negative pledges, climate change related disputes are growing throughout the world³². These disputes focus on issues such as infrastructure projects and whether these projects are aligned with the Paris Agreement³³, contribution by companies towards the effects of climate change, and commercial disputes arising out of climate change events such as insurance claims and claims related to potential force majeure events³⁴.

In addition, there has been a rise of climate change disputes involving corporations³⁵. According to UNEP, the growing awareness of climate change in recent years has also spurred legal action against corporations which

²⁷ Ibid

²⁸ United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Op Cit

²⁹ Ibid

³⁰ Ibid

³¹ Ibid

³² Latham & Watkins LLP., 'ESG Litigation Roadmap.' Available at <https://www.lw.com/admin/upload/SiteAttachments/ESG-Litigation-Roadmap.pdf> (Accessed on 22/03/2024)

³³ Ibid

³⁴ Ibid

³⁵ United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Op Cit

Utilizing Alternative Dispute Resolution in Climate Change Disputes

include cases seeking to hold fossil fuel companies and other greenhouse gas emitters responsible for climate harm³⁶. The growth of Environmental, Social, and Governance (ESG) has also resulted in ESG disputes against corporations on various issues including climate change³⁷. ESG integrates environmental factors including environmental sustainability and climate change concerns such as climate resilience and low carbon development; social tenets such as improving social welfare and fostering inclusive participation with stakeholders; and governance factors including fostering good governance practices internally and externally in order to realize sustainability³⁸. It has been noted that a company's performance on various ESG tenets including impacts or misconduct related to climate and human rights can be a source of disputes³⁹. Indeed, it has been pointed out that there has been growth of ESG suits on issues such as climate change⁴⁰. Such disputes usually involve themes such as climate rights, domestic enforcement, keeping fossil fuels in the ground, corporate accountability and responsibility, failure to adapt and the implications of adaptation, climate disclosures and greenwashing⁴¹. It has been noted that organizations are increasingly facing direct litigation risks including suits challenging investors' mismanagement of climate and biodiversity-related risk, breaches of fiduciary duty, greenwashing, or financing environmental and human rights-related harms⁴². ESG is therefore a key contributor of climate change disputes.

³⁶ Ibid

³⁷ African Development Bank Group., 'Environmental, Social and Governance (ESG).' Available at <https://www.afdb.org/en/topics-and-sectors/topics/environmental-social-and-governance-esg> (Accessed on 22/03/2024)

³⁸ Ibid

³⁹ Hackett. D et al., 'Growing ESG Risks: The Rise of Litigation.' Available at https://www.bakermckenzie.com/-/media/files/insight/publications/2020/10/growing_esg_risks_the_rise_of_litigation.pdf (Accessed on 22/03/2024)

⁴⁰ Ibid

⁴¹ Ibid

⁴² Grogan-Fenn. J., 'Investors Face Direct Risk from Climate Litigation' Available at <https://www.esginvestor.net/investors-face-direct-risk-from-climate-litigation/#:~:text=Released%20last%20week%2C%20Baker%20McKenzie's,as%20a%20key%20client%20concern>. (Accessed on 22/03/2024)

Utilizing Alternative Dispute Resolution in Climate Change Disputes

There has also been a growth of climate change disputes in Africa⁴³. It has been noted that Africa's heavy reliance on fossil fuels for economic growth, set against the backdrop of strict environmental regulations and emissions-reduction targets, creates a perfect storm of factors that could increase climate change-related disputes in Africa⁴⁴. Africa faces exponential collateral damage from the effects of climate change posing systemic risks to its economies, infrastructure investments, water and food systems, public health, agriculture, and livelihoods, threatening to undo its modest development gains and slip into higher levels of extreme poverty⁴⁵. Increasing temperatures and sea levels, changing precipitation patterns and more extreme weather are threatening human health and safety, food and water security and socio-economic development in Africa⁴⁶. It has been observed that climate change is having a growing impact on the African continent, hitting the most vulnerable hardest, and contributing to food insecurity, population displacement and stress on water resources⁴⁷. Cases of devastating floods, invasion of desert locusts and severe droughts are vivid examples of the impacts of climate change on the continent⁴⁸. As a result of the impacts of climate change in Africa, states have undertaken various measures to respond to the problem including increasing renewable energy generation in Africa, embracing environmentally sound technologies, decarbonizing key sectors including transport, industry, and infrastructure, and investments in carbon markets⁴⁹. It has been noted that these measures may trigger climate change disputes in Africa: On the one hand, if states fail to adopt and implement these measures effectively,

⁴³ Burianski. M., & Kuhnle. F. P., 'A New Wave of African Climate Change Disputes on the Horizon' Available at <https://www.whitecase.com/insight-our-thinking/africa-focus-winter-2023-climate-change#:~:text=Disputes%20could%20involve%20liability%20and,and%20enforced%2C%20and%20investment%20disputes>. (Accessed on 22/03/2024)

⁴⁴ Ibid

⁴⁵ African Development Bank Group., 'Climate Change in Africa.' Available at <https://www.afdb.org/en/cop25/climate-change-africa> (Accessed on 22/03/2024)

⁴⁶ United Nations Framework Convention on Climate Change., 'Climate Change is an Increasing Threat to Africa.' Available at <https://unfccc.int/news/climate-change-is-an-increasing-threat-to-africa> (Accessed on 22/03/2024)

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ Burianski. M., & Kuhnle. F. P., 'A New Wave of African Climate Change Disputes on the Horizon' Op Cit

Utilizing Alternative Dispute Resolution in Climate Change Disputes

individuals or interest groups may sue these states to force them to act⁵⁰. Further, if adopted, these measures may contrast with these states' attempts to grow their economies also contributing to disputes⁵¹.

Climate change disputes are undesirable and can affect peace and security⁵². It has been pointed out that in many of the countries that are most vulnerable to climate change, fragility and conflict have weakened coping mechanisms, people are dependent on natural resources for their livelihoods, and stark inequalities exist between men and women, or between culturally defined or identity-based groups⁵³. Climate change disputes can also hinder the achievement of climate goals at levels⁵⁴. Effective management of climate change disputes has been identified as crucial in strengthening the response towards climate change and delivering climate justice⁵⁵. It has been noted that climate change results in disputes and problems that are not easily addressed by existing legal principles and frameworks⁵⁶. This is because: climate change is a polycentric problem⁵⁷; the assessment of future climate impacts must deal with uncertainty⁵⁸; climate change is a socio-political controversial issue⁵⁹; and addressing climate change requires recognising a dynamic physical environment⁶⁰. It is therefore necessary to embrace ADR mechanisms for effective management of climate change disputes.

⁵⁰ Ibid

⁵¹ Ibid

⁵² United Nations Department of Political and Peacebuilding Affairs., 'The Implications of Climate Change for Mediation and Peace Processes' Available at <https://peacemaker.un.org/sites/peacemaker.un.org/files/DPPAPracticeNote-TheImplicationsofClimateChangeforMediationandPeaceProcesses.pdf> (Accessed on 22/03/2024)

⁵³ Ibid

⁵⁴ United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Op Cit

⁵⁵ Ibid

⁵⁶ Fisher. E., Scotford. E., & Barritt. E., 'The Legally Disruptive Nature of Climate Change' Available at <https://core.ac.uk/reader/77063250> (Accessed on 22/03/2024)

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Ibid

3.0 Suitability of Alternative Dispute Resolution (ADR) Processes in Climate Change Disputes

Alternative Dispute Resolution (ADR) entails a set of mechanisms that are utilized to manage disputes without resort to adversarial litigation⁶¹. It has been noted that ADR covers all dispute management methods other than court proceedings⁶². ADR processes may be linked to but function outside formal court litigation processes⁶³. These techniques include negotiation, mediation, arbitration, conciliation, adjudication, expert determination, early neutral evaluation, and Traditional Dispute Resolution Mechanisms (TDRMs) among others⁶⁴.

There has been recognition of ADR mechanisms at the global and national levels. At the global level, ADR processes are provided for under the *Charter of the United Nations*⁶⁵. The Charter provides that parties to a dispute shall first of all seek a solution by *negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice* (Emphasis added)⁶⁶. At a national level, the *Constitution of Kenya*⁶⁷ embraces ADR mechanisms. It mandates courts and tribunals to promote ADR mechanisms including reconciliation, mediation, arbitration and TDRMs⁶⁸.

It has been argued that there is need to consider ADR mechanisms as 'Appropriate' and not 'Alternative' in the access to justice discourse⁶⁹. This is

⁶¹ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Glenwood Publishers Limited, 2015

⁶² Uwazie. E., 'Alternative Dispute Resolution in Africa: Preventing Conflict and Enhancing Stability.' *Africa Security Brief*, No. 16 of 2011

⁶³ Ibid

⁶⁴ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Op Cit

⁶⁵ United Nations, Charter of the United Nations, 24 October 1945, 1 UNTS XVI

⁶⁶ Ibid

⁶⁷ Constitution of Kenya., 2010., Government Printer, Nairobi

⁶⁸ Ibid, article 159 (2) (c)

⁶⁹ Muigua. K., 'Reframing Conflict Management in the East African Community: Moving from Alternative to 'Appropriate' Dispute Resolution' Available at <https://kmco.co.ke/wp-content/uploads/2023/06/Reframing-Conflict-Management-in-the-East-African-Community-Moving-from-Alternative-to-Appropriate-Dispute-Resolution-1.pdf> (Accessed on 22/03/2024)

Utilizing Alternative Dispute Resolution in Climate Change Disputes

because the term 'Alternative' connotes that ADR processes are subordinate to formal justice systems⁷⁰. However, ADR mechanisms are ideal in enhancing access to justice and are increasingly becoming more preferable than formal court processes in enhancing access to justice⁷¹. They contain certain key attributes including informality, party autonomy, privacy, confidentiality, flexibility and the ability to promote expeditious and cost-effective management of disputes which makes them a viable tool of enhancing access to justice⁷². ADR mechanisms have been practiced in Africa for many centuries and were the first point of call whenever a dispute arose⁷³. ADR techniques fitted comfortably within traditional concepts of African justice, particularly its core value of reconciliation⁷⁴. It is therefore necessary to consider ADR as 'Appropriate' and not 'Alternative' in the access to justice debate.

The appropriateness of ADR makes these mechanisms suitable in managing a wide range of disputes including those related to climate change. It has been noted that disputes related to climate change may increase in future due to: actions of commercial entities giving rise to groups or affected individuals having rights of action⁷⁵; climate change inaction – failure by states to take measures in response to climate change, giving rise to potential inter-state and investor-state disputes, and claims by groups of concerned citizens; climate change action- taking response measures, giving rise to potential inter-state and investor-state disputes⁷⁶; dilution or revocation of responsive measures by states, giving rise to potential renewable energy treaty arbitrations⁷⁷; commercial contract enforcement – private sector is central to climate change mitigation, and there may be an increase commercial contracts relating to

⁷⁰ Ibid

⁷¹ Ibid

⁷² Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Op Cit

⁷³ Muigua. K., 'Resolving Conflicts through Mediation in Kenya.' Glenwood Publishers Limited, 2nd Edition, 2017

⁷⁴ Uwazie. E., 'Alternative Dispute Resolution in Africa: Preventing Conflict and Enhancing Stability.' Op Cit

⁷⁵ Muigua. K., 'The Viability of Arbitration in management of Climate Change Related Disputes in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2022/04/The-Viability-of-Arbitration-in-management-of-Climate-Change-Related-Disputes-in-Kenya-11th-April-2022.pdf> (Accessed on 22/03/2024)

⁷⁶ Ibid

⁷⁷ Ibid

Utilizing Alternative Dispute Resolution in Climate Change Disputes

climate change mitigation and adaptation⁷⁸; and compliance with climate change commitments under the Paris Agreement⁷⁹. ADR mechanisms provide a suitable platform for managing these disputes. It has been pointed out that in light of climate change concerns and the need to transition towards green economies, ADR mechanisms will be increasingly useful in managing environmental and sustainability disputes such as those concerning renewable energy, carbon reduction, waste management, electrification, sustainable transport and infrastructure among others⁸⁰.

It has been argued that ADR may be more preferable in managing climate change disputes due to several factors such as actual or perceived partiality by courts⁸¹. Courts in many countries have been accused of lack of independence and impartiality which is a major challenge in accessing justice⁸². ADR mechanisms such as mediation and arbitration on the other hand allow parties to select independent, impartial, and neutral third parties to facilitate the dispute management process⁸³. This makes them ideal in enhancing access to justice in climate change disputes towards climate justice⁸⁴.

Another key factor that makes ADR mechanisms more preferable over formal court processes in managing climate change disputes is the lack of judicial expertise with regard to complex climate change science⁸⁵. This can be a significant deterrent in access to justice in climate change disputes since parties may not have confidence in the competence of courts in relation to scientific

⁷⁸ Ibid

⁷⁹ Ibid

⁸⁰ World Intellectual Property Organization., 'WIPO Alternative Dispute Resolution for Green Technology and Sustainability.' Available at <https://www.wipo.int/amc/en/center/specificsectors/greentechnology-sustainability/> (Accessed on 22/03/2024)

⁸¹ Hong Kong International Arbitration Centre., 'Beyond the Litigation Narrative: The Place and Roles of ADR in Climate change Disputes' Available at <https://www.hkiac.org/content/beyond-litigation-narrative-place-and-roles-adr-climate-change-disputes> (Accessed on 22/03/2024)

⁸² Ibid

⁸³ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Op Cit

⁸⁴ Hong Kong International Arbitration Centre., 'Beyond the Litigation Narrative: The Place and Roles of ADR in Climate change Disputes' Op Cit

⁸⁵ Ibid

Utilizing Alternative Dispute Resolution in Climate Change Disputes

and technical issues on climate change⁸⁶. However, ADR mechanisms such as arbitration allows parties to select a third party with requisite knowledge and experience in such matters in order to promote effective management of their dispute⁸⁷.

ADR mechanisms such as mediation can also aid parties in coming up with creative and mutually acceptable outcomes. It has been noted that mediation permits parties to devise 'win-win' solutions outside of the usual judicial remedies, in a way that promotes ownership over the dispute and its outcome, and preserves the parties' relationships⁸⁸. In addition, it has been contended that even where disputes cannot be entirely resolved, mediation can narrow the issue for judicial attention and encourage parties to assess their options realistically⁸⁹. Attributes of mediation including voluntary participation and agreement, confidentiality of exchanges among parties, the search of mutually satisfactory solutions have been identified as well suited for the multi-party complex context of climate change disputes⁹⁰. Mediation is perfectly suited for climate change disputes such as those concerning energy transition and renewable energy projects where it is desirable to preserve relationships and complete projects in order to realize access to clean and affordable energy for all⁹¹.

⁸⁶ Ibid

⁸⁷ Muigua. K., 'The Viability of Arbitration in management of Climate Change Related Disputes in Kenya' Available at <http://kmco.co.ke/wp-content/uploads/2022/04/The-Viability-of-Arbitrationinmanagement-of-Climate-Change-Related-Disputes-in-Kenya-11th-April-2022.pdf> (Accessed on 22/03/2024)

⁸⁸ Hong Kong International Arbitration Centre., 'Beyond the Litigation Narrative: The Place and Roles of ADR in Climate Change Disputes' Op Cit

⁸⁹ Ibid

⁹⁰ Kaufman. S., 'Mediation in Environmental Disputes.' Available at <https://www.eolss.net/samplechapters/c14/E1-40-03-03.pdf> (Accessed on 22/03/2024)

⁹¹ Muigua. K., 'Attaining Environmental Justice through Alternative Dispute Resolution' Available at <https://kmco.co.ke/wp-content/uploads/2023/07/Attaining-Environmental-Justice-through-Alternative-Dispute-Resolution.pdf> (Accessed on 22/03/2024)

Utilizing Alternative Dispute Resolution in Climate Change Disputes

Further, ADR processes including mediation and negotiation can promote collaborative approaches to managing disputes⁹². Collaborative conflict management refers to the use of a wide range of informal approaches where competing or opposing stakeholder groups work together to reach an agreement on a controversial issue⁹³. It is a powerful approach towards managing disputes built on cooperation, open communication, and finding win-win outcomes⁹⁴. It has been noted that in climate change disputes, mediation can encourage collaboration by encouraging parties and other stakeholders to focus on localized, tangible effects of climate change⁹⁵. It also fosters the participation of women and marginalized groups, who face particular climate risks, as well as environmental defenders and, where applicable, indigenous people, whose expertise can help identify key issues and priorities towards formulating acceptable outcomes⁹⁶.

Finally, ADR processes are ideal in managing climate change disputes especially those that are transnational in nature⁹⁷. It has been observed that environmental conflicts may involve parties from different nationalities since the effects of issues such as pollution and climate change may spread across different states⁹⁸. Such disputes cannot be managed by national courts due to jurisdictional concerns⁹⁹. ADR mechanisms such as arbitration and mediation

⁹² Muigua, K., 'Applying Collaborative Approaches towards Conflict Management' Available at <https://kmco.co.ke/wp-content/uploads/2024/03/Applying-Collaborative-Approaches-towards-Conflict-Management.pdf> (Accessed on 22/03/2024)

⁹³ Food and Agriculture Organization., 'Collaborative Conflict Management for Enhanced National Forest Programmes (NFPs)' Available at <https://www.fao.org/3/i2604e/i2604e00.pdf> (Accessed on 22/03/2024)

⁹⁴ Ibid

⁹⁵ United Nations Department of Political and Peacebuilding Affairs., 'The Implications of Climate Change for Mediation and Peace Processes' Op Cit

⁹⁶ Ibid

⁹⁷ Muigua, K., 'The Viability of Arbitration in management of Climate Change Related Disputes in Kenya' Op Cit

⁹⁸ Elborough, L., 'International Climate Change Litigation: Limitations and Possibilities for International Adjudication and Arbitration in Addressing the Challenge of Climate Change.' Available at <http://www.nzlii.org/nz/journals/NZJlEnvLaw/2017/5.pdf> (Accessed on 22/03/2024)

⁹⁹ Ibid

Utilizing Alternative Dispute Resolution in Climate Change Disputes

are able to promote management of such disputes since they apply across multiple jurisdictions and further guarantee enforcement of decisions¹⁰⁰.

Despite their efficacy, ADR mechanisms suffer from certain drawbacks that may hinder their suitability in managing climate change disputes. For example, it has been noted that mediation suffer from enforceability challenges creates concerns about the enforcement of outcomes¹⁰¹. Further, lack of urgent protection measures such as injunctions may limit the efficacy of ADR mechanisms such as mediation especially where there is need for such orders in order to protect the environment from imminent harm¹⁰². In addition, the use of arbitration may result in delays and costs especially in instances of court interference¹⁰³. Further, it has been noted that since arbitration is a settlement mechanism, it may not effectively address the underlying issues in a dispute and can also severe relationships¹⁰⁴. It is necessary to consider these factors and address them accordingly in order to enhance the role of ADR in managing climate change disputes.

4.0 Way Forward

There is need to utilize ADR mechanisms in order to foster the effective management of climate change disputes. Mechanisms such as mediation are appropriate and can foster a collaborative approach towards managing climate change disputes by involving all stakeholders¹⁰⁵. It also has the ability to preserve relationships which is essential in climate change disputes such as those involving energy transition¹⁰⁶. Another key ADR mechanism that is viable in managing climate change disputes is arbitration. It enables parties to select experts in technical and scientific aspects of climate change and is also

¹⁰⁰ Ibid

¹⁰¹ Muigua. K., 'Attaining Environmental Justice through Alternative Dispute Resolution' Op Cit

¹⁰² Ibid

¹⁰³ Ibid

¹⁰⁴ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Op Cit

¹⁰⁵ United Nations Department of Political and Peacebuilding Affairs., 'The Implications of Climate Change for Mediation and Peace Processes' Op Cit

¹⁰⁶ Muigua. K., 'Attaining Environmental Justice through Alternative Dispute Resolution' Op Cit

Utilizing Alternative Dispute Resolution in Climate Change Disputes

suitable for transnational climate change disputes¹⁰⁷. It is therefore necessary to embrace these among other ADR mechanisms in order to promote the effective management of climate change disputes.

In addition, it is imperative to enhance the capacity of ADR mechanisms of ADR processes in order to enhance their suitability in managing climate change disputes¹⁰⁸. This can be achieved by strengthening the legal and institutional framework on ADR at all levels including national levels in order to enhance the uptake of these processes in climate change disputes¹⁰⁹. The legal framework on ADR can be strengthened through the enactment sound legal and policy frameworks on ADR that promotes the legitimization of these processes while preserving their key attributes¹¹⁰. The institutional framework on ADR towards this end can be enhanced through the development of rules and/or expertise specific to the management of climate change disputes by ADR institutions especially arbitral institutions¹¹¹. ADR institutions should also consider offering specialized training in climate change dispute management in order to build human capacity.

Finally, there is an urgent need to combat climate change¹¹². It is an undesirable phenomenon that affects realization of the Sustainable Development agenda across the world by affecting the sustainability of the

¹⁰⁷ Muigua. K., 'The Viability of Arbitration in management of Climate Change Related Disputes in Kenya' Op Cit

¹⁰⁸ Muigua. K., 'Environmental Conflict Management Institutions and Approaches.' Available at <https://kmco.co.ke/wp-content/uploads/2022/09/Environmental-Conflict-ManagementInstitutions-and-Approaches.pdf> (Accessed on 22/03/2024)

¹⁰⁹ Ibid

¹¹⁰ Muigua. K., 'Legitimising Alternative Dispute Resolution in Kenya: Towards a Policy and Legal Framework.' Available at <http://kmco.co.ke/wpcontent/uploads/2018/08/LEGITIMISINGALTERNATIVE-DISPUTE-RESOLUTIONMECHANISMS-IN-KENYA.pdf> (Accessed on 22/03/2024)

¹¹¹ International Chamber of Commerce., 'Resolving Climate Change Related Disputes through Arbitration and ADR' Available at <https://iccwbo.org/wp-content/uploads/sites/3/2019/11/icc-arbitration-adr-commission-report-on-resolving-climate-change-related-disputes-english-version.pdf> (Accessed on 22/03/2024)

¹¹² Muigua. K., 'Taking Urgent Action to Combat Climate Change' Available at <https://kmco.co.ke/wp-content/uploads/2023/09/Taking-Urgent-Action-to-Combat-Climate-Change.pdf> (Accessed on 22/03/2024)

Utilizing Alternative Dispute Resolution in Climate Change Disputes

planet's ecosystems, the stability of the global economy and the future of humankind¹¹³. It is also resulting in disputes¹¹⁴. It has been noted that climate change related disputes come with many implications across all sectors of economy from environmental, political, economic and even social¹¹⁵. Combating climate change is therefore a vital strategy in managing disputes related to this undesirable event¹¹⁶. It has been noted that putting in place measures meant to address climate change disputes is part of the mitigation and adaptation approaches to address climate change since while mitigation and adaptation policies have different goals and opportunities for implementation, many drivers of mitigation and adaptation are common, and solutions can be interrelated¹¹⁷. Combating climate change and effective management of climate change disputes are therefore mutually compatible goals.

5.0 Conclusion

Climate change is resulting in adverse environmental, economic, and social impacts which are affecting both developed and developing countries in their efforts towards realization of the Sustainable Development agenda¹¹⁸. Climate change is also causing many disputes¹¹⁹. These disputes involve various stakeholders including the state, citizens, and the private sector¹²⁰. These disputes occur in various forms including natural resource- based conflicts

¹¹³ Climate Change., 'Meaning, Definition, Causes, Examples and Consequences.' Available at <https://youmatter.world/en/definition/climate-change-meaning-definition-causes-and-consequences/> (Accessed on 22/03/2024)

¹¹⁴ United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Op Cit

¹¹⁵ Muigua. K., 'The Viability of Arbitration in management of Climate Change Related Disputes in Kenya' Op Cit

¹¹⁶ United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Op Cit

¹¹⁷ Muigua. K., 'The Viability of Arbitration in management of Climate Change Related Disputes in Kenya' Op Cit

¹¹⁸ Muigua. K., 'Achieving Sustainable Development, Peace and Environmental Security.' Op Cit

¹¹⁹ United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Op Cit

¹²⁰ Burianski. M., & Kuhnle. F. P., 'A New Wave of African Climate Change Disputes on the Horizon' Op Cit

Utilizing Alternative Dispute Resolution in Climate Change Disputes

causes or worsened by climate change, disputes in relation to climate change commitments and policies by states, and disputes involving corporations¹²¹. Climate change disputes are undesirable and can hinder the achievement of climate goals at levels¹²². Effective management of climate change disputes is therefore key in enhancing the global response towards climate change¹²³. Litigation is not ideal in managing climate change disputes due to concerns over expertise, independence, impartiality, delays, costs, and jurisdiction in transnational disputes¹²⁴. It is therefore necessary to embrace ADR mechanisms for effective management of climate change disputes¹²⁵. There is need to enhance the legal, institutional, and human capacity of ADR towards this end¹²⁶. Further, it is vital for all countries to take urgent action to combat climate change¹²⁷. Utilizing ADR in climate change disputes is a key measure that should be embraced globally in order to strengthen the response towards climate change.

¹²¹ Ibid

¹²² United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Op Cit

¹²³ Ibid

¹²⁴ Hong Kong International Arbitration Centre., 'Beyond the Litigation Narrative: The Place and Roles of ADR in Climate change Disputes' Op Cit

¹²⁵ Ibid

¹²⁶ Ibid

¹²⁷ Muigua. K., 'Taking Urgent Action to Combat Climate Change' Op Cit

Addressing Chemical Pollution in Kenya for Sustainability

Abstract

This paper critically discusses chemical pollution and the adverse effects that toxic substances have on human rights and all the associated aspects. It highlights the adequacy of and the challenges that arise in implementation legal and policy instruments that are geared towards addressing this form of pollution, both internationally and in Kenya. The author argues that there is an urgent need to address chemical pollution in Kenya for sustainability.

1.0 Introduction

Chemical pollution has become a rampant problem worldwide, having huge impacts not only on the environment but also on human health and human rights generally.¹ Chemicals are, in some ways, tangible representations of human progress and development as well as scientific, technological, and agricultural innovation.² However, because chemicals are present in many aspects of daily life and can be harmful when misused, an alarming number of premature deaths and severe health effects on both humans and the environment result from the overuse of certain chemicals.³

¹ *Chemical pollution – the next global crisis* (no date) *World Bank Blogs*. Available at: <https://blogs.worldbank.org/en/climatechange/chemical-pollution-next-global-crisis> (Accessed: 27 April 2024).

² *Ibid.*; see also Mohamed, M.M.A., Liu, P. and Nie, G. (2022) 'Causality between Technological Innovation and Economic Growth: Evidence from the Economies of Developing Countries', *Sustainability*, 14(6), p. 3586. Available at: <https://doi.org/10.3390/su14063586>; Dziallas, M. and Blind, K. (2019) 'Innovation indicators throughout the innovation process: An extensive literature analysis', *Technovation*, 80–81, pp. 3–29. Available at: <https://doi.org/10.1016/j.technovation.2018.05.005>; Anand, S., 2017. The role of science, technology and innovation in ensuring food security by 2030; Jasanoff, S. (2002) 'New Modernities: Reimagining Science, Technology and Development', *Environmental Values*, 11(3), pp. 253–276; *Industrialization and scientific and technological progress - UNESCO Digital Library* (no date). Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000148272> (Accessed: 27 April 2024).

³ *Chemical pollution – the next global crisis* (no date) *World Bank Blogs*. Available at: <https://blogs.worldbank.org/en/climatechange/chemical-pollution-next-global-crisis> (Accessed: 27 April 2024); *10 chemicals of public health concern* (no date). Available at: <https://www.who.int/news-room/photo-story/photo-story-detail/10-chemicals-of-public-health-concern> (Accessed: 27 April 2024); Pathak, V.M. *et al.* (2022) 'Current status of pesticide effects on environment, human health and it's eco-

Addressing Chemical Pollution in Kenya for Sustainability

Human rights agreements mandate that states make the most use of all of their resources in order to achieve both sustainable development and the achievement of human rights.⁴ Every human is reliant on their living environment. To the fullest extent possible, a safe, clean, healthy, and sustainable environment is essential for the realisation of several human rights, such as the rights to food, water, life, health, and sanitation.⁵ We cannot achieve our goals in the absence of an environment that is healthy.⁶

Despite this, it has been observed that businesses commit numerous violations of human rights, such as poisoning communities, workers, and consumers with toxic substances from extractive industries, using pesticides in agriculture, using industrial chemicals in manufacturing, emitting emissions from factories, power plants, cars, and other sources, and, of course, disposing of waste improperly.⁷ The most vulnerable groups, such as the working class, minorities, indigenous peoples, and those living in poverty, are frequently

friendly management as bioremediation: A comprehensive review', *Frontiers in Microbiology*, 13, p. 962619. Available at: <https://doi.org/10.3389/fmicb.2022.962619>; US EPA, O. (2014) *Persistent Organic Pollutants: A Global Issue, A Global Response*. Available at: <https://www.epa.gov/international-cooperation/persistent-organic-pollutants-global-issue-global-response> (Accessed: 27 April 2024); 'Living healthily in a chemical world – European Environment Agency' (no date). Available at: <https://www.eea.europa.eu/signals-archived/signals-2020/articles/living-healthily-in-a-chemical-world> (Accessed: 27 April 2024).

⁴ *UN experts urge States to address human rights impact of nuclear testing* (no date) OHCHR. Available at: <https://www.ohchr.org/en/press-releases/2024/03/un-experts-urge-states-address-human-rights-impact-nuclear-testing> (Accessed: 27 April 2024).

⁵ *About human rights and the environment* (no date) OHCHR. Available at: <https://www.ohchr.org/en/special-procedures/sr-environment/about-human-rights-and-environment> (Accessed: 27 April 2024).

⁶ Ibid.

⁷ *About toxics and human rights* (no date) OHCHR. Available at: <https://www.ohchr.org/en/special-procedures/sr-toxics-and-human-rights/about-toxics-and-human-rights> (Accessed: 27 April 2024); see also *Exposure to highly hazardous pesticides: a major public health concern* (no date). Available at: <https://www.who.int/publications-detail-redirect/WHO-CED-PHE-EPE-19.4.6> (Accessed: 27 April 2024).

Addressing Chemical Pollution in Kenya for Sustainability

impacted by exposure to poisonous and other dangerous substances.⁸ Cases of hazardous exposure typically include women's and children's rights.⁹ There is a need to come up with ways of holding these corporations accountable through such principles as the 'polluter pays' principle. This must be done within a well-established legal framework.

This paper critically discusses the adverse effects that toxic chemicals have on human rights and all the associated aspects. It highlights the adequacy of and the challenges that arise in implementation legal and policy instruments that are geared towards addressing this form of pollution, both internationally and in Kenya, for sustainability.

2.0 Definition and Forms of Chemical Pollution

The Environmental Management and Co-ordination Act, 1999¹⁰ (EMCA) defines "chemical" to mean a chemical substance in any form whether by itself or in a mixture or preparation, whether manufactured or derived from nature and for the purposes of this Act includes industrial chemicals, pesticides, fertilizers and drugs.¹¹ EMCA also defines "hazardous substance" to mean any chemical, waste, gas, medicine, drug, plant, animal or microorganism which is likely to be injurious to human health or the environment.¹² "Hazardous waste" means any waste which has been determined by the Authority to be hazardous waste or to belong to any other category of waste provided for in section 91 under EMCA.

Under EMCA "pollutant" includes any substance whether liquid, solid or gaseous which— may directly or indirectly alter the quality of any element of the receiving environment; is hazardous or potentially hazardous to human health or the environment; and includes objectionable odours, radio-activity,

⁸ *About toxics and human rights* (no date) OHCHR. Available at: <https://www.ohchr.org/en/special-procedures/sr-toxics-and-human-rights/about-toxics-and-human-rights> (Accessed: 27 April 2024).

⁹ *Ibid.*

¹⁰ Environmental Management and Co-ordination Act, No. 8 of 1999, Laws of Kenya.

¹¹ S. 2, EMCA.

¹² S. 2, EMCA.

Addressing Chemical Pollution in Kenya for Sustainability

noise, temperature change or physical, chemical or biological change to any segment or element of the environment.¹³

EMCA also defines "waste" to include any matter prescribed to be waste and any matter whether liquid, solid, gaseous or radioactive, which is discharged, emitted or deposited in the environment in such volume, composition or manner likely to cause an alteration of the environment.¹⁴

The term "chemical pollution" refers to the growing amount of contaminants, particularly synthetic ones, in our surroundings.¹⁵ We come into contact with man-made chemicals virtually wherever we go in our daily lives, including in the food, drink, and air we breathe. It should come as no surprise that some of them can spread to our surroundings given their extensive existence in our globe.¹⁶ Chemical pollution is also defined as the presence of chemicals in our environment that are either naturally occurring or present in amounts that are higher than their background values.¹⁷ Most synthetic chemicals that end up in the environment are a result of numerous human activities that include using harmful compounds for different goals.¹⁸

Both radioactive and chemical pollutants can damage DNA and induce mutations that, if they appear in the germ line, can be passed down to subsequent generations.¹⁹

¹³ S. 2, EMCA.

¹⁴ S. 2, EMCA.

¹⁵ *What is chemical pollution? The impact on the environment - Airly WP | Air Quality Monitoring. Monitor in UK & Europe. Airly Data Platform and Monitors* (no date). Available at: <https://airly.org/en/what-is-chemical-pollution/> (Accessed: 28 April 2024).

¹⁶ Ibid.

¹⁷ Sharma, K. (2023) *Chemical Pollution: Definition, Causes, Effects, Prevention*. Available at: <https://scienceinfo.com/chemical-pollution-causes-effects-prevention/> (Accessed: 28 April 2024).

¹⁸ Ibid.

¹⁹ Aleström, P. and Winther-Larsen, H.C. (2016) '7 - Zebrafish offer aquaculture research their services', in S. MacKenzie and S. Jentoft (eds) *Genomics in Aquaculture*. San Diego: Academic Press, pp. 165–194. Available at: <https://doi.org/10.1016/B978-0-12-801418-9.00007-X>.

In general, pollutants may be divided into two main groups. Even if, in most cases, there are other categories based on their presence in nature, they will fall into one of these two groups upon serious analysis.²⁰ They are contaminants, both man-made and natural. They might also be referred to as qualitative and quantitative pollutants, respectively.²¹ Because the chemicals that contaminate all three resources are interconnected, there is a linkage between pollution of the air, water, and land.²²

3.0 International and Regional Legislative Framework on Chemical Pollution Control

While advanced countries often have highly established procedures in place to register pesticides and regulate their sale and usage, this is not always the case in other regions.²³ Therefore, international organisations and international treaties provide guidelines and legal frameworks on the use, management, and sale of pesticides, including HHPs, as well as on correct storage and handling (as well as for other potentially hazardous chemicals); they should be enforced internationally.²⁴

3.1 International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996

The *International Convention On Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996*²⁵ applies exclusively: to any damage caused in the territory, including the territorial sea, of a State Party; to damage by contamination of the environment caused in the exclusive economic zone of a State Party, established in

²⁰ Ajibade, F.O., Adelodun, B., Lasisi, K.H., Fadare, O.O., Ajibade, T.F., Nwogwu, N.A., Sulaymon, I.D., Ugya, A.Y., Wang, H.C. and Wang, A., 2021. Environmental pollution and their socioeconomic impacts. In *Microbe mediated remediation of environmental contaminants* (pp. 321-354). Woodhead Publishing.

²¹ Ibid.

²² Ibid., p. 328.

²³ *Exposure to highly hazardous pesticides: a major public health concern* (no date). Available at: <https://www.who.int/publications-detail-redirect/WHO-CED-PHE-EPE-19.4.6> (Accessed: 27 April 2024).

²⁴ Ibid.

²⁵ International Maritime Organization, *International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996* (May 3, 1996), [IUCN](#) (ID: ANA-062010).

Addressing Chemical Pollution in Kenya for Sustainability

accordance with international law, or, if a State Party has not established such a zone, in an area beyond and adjacent to the territorial sea of that State determined by that State in accordance with international law and extending not more than 200 nautical miles from the baselines from which the breadth of its territorial sea is measured; to damage, other than damage by contamination of the environment, caused outside the territory, including the territorial sea, of any State, if this damage has been caused by a substance carried on board a ship registered in a State Party or, in the case of an unregistered ship, on board a ship entitled to fly the flag of a State Party; and to preventive measures, wherever taken.²⁶ This Convention applies to claims, other than claims arising out of any contract for the carriage of goods and passengers, for damage arising from the carriage of hazardous and noxious substances by sea.²⁷

3.2 International Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter, 1972

Article 1 of the *International Convention On the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972*²⁸ provides that Contracting Parties shall individually and collectively promote the effective control of all sources of pollution of the marine environment, and pledge themselves especially to take all practicable steps to prevent the pollution of the sea by the dumping of waste and other matter that is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea. Under Article 2, Contracting Parties are required to, as provided for in the following Articles, take effective measures individually, according to their scientific, technical and economic capabilities, and collectively, to prevent marine pollution caused by dumping and shall harmonize their policies in this regard.

²⁶ Article 3.

²⁷ Article 4(1).

²⁸ United nations, *International Convention On the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972*, 1046 UNTS 120, [ATS] 1985 16, 11 ILM 1294 (1972), UKTS 43 (1976).

3.3 Convention Relating to Civil Liability in The Field of Maritime Carriage of Nuclear Material, 1971

Under Article 1 of the *Convention Relating to Civil Liability in The Field of Maritime Carriage of Nuclear Material, 1971*²⁹, any person who by virtue of an international convention or national law applicable in the field of maritime transport might be held liable for damage caused by a nuclear incident shall be exonerated from such liability: if the operator of a nuclear installation is liable for such damage under either the Paris or the Vienna Convention, or if the operator of a nuclear installation is liable for such damage by virtue of a national law governing the liability for such damage, provided that such law is in all respects as favourable to persons who may suffer damage as either the Paris or the Vienna Convention.³⁰

3.4 International Convention On Civil Liability for Oil Pollution Damage, 1969

Under Article 2 of the *International Convention On Civil Liability for Oil Pollution Damage, 1969*³¹, this Convention is to apply exclusively to pollution damage caused on the territory including the territorial sea of a Contracting State and to preventive measures taken to prevent or minimize such damage.³²

3.5 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 1998

Under Article 1 of the *Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 1998*³³, the objective of this Convention is to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the

²⁹ United Nations, *Convention Relating to Civil Liability in The Field of Maritime Carriage of Nuclear Material, 1971*, Adoption: 17 December 1971; Entry into force: 15 July 1975.

³⁰ *Ibid.*, Article 1.

³¹ United Nations, *International Convention On Civil Liability for Oil Pollution Damage, 1969*, Adoption: 29 November 1969; Entry into force: 19 June 1975; Being replaced by 1992 Protocol: Adoption: 27 November 1992; Entry into force: 30 May 1996.

³² *Ibid.*, Article 2.

³³ United Nations, *Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade*, Rotterdam, 10 September 1998, United Nations, Treaty Series, vol. 2244, p. 337; C.N.846.2002.TREATIES-8 of 20 August 2002.

Addressing Chemical Pollution in Kenya for Sustainability

environment from potential harm and to contribute to their environmentally sound use, by facilitating information exchange about their characteristics, by providing for a national decision-making process on their import and export and by disseminating these decisions to Parties.³⁴

3.6 Stockholm Convention on Persistent Organic Pollutants, 2001

As per Article 1 of the *Stockholm Convention on Persistent Organic Pollutants, 2001*³⁵, mindful of the precautionary approach as set forth in Principle 15 of the Rio Declaration on Environment and Development, the objective of this Convention is to protect human health and the environment from persistent organic pollutants.³⁶

3.7 Vienna Convention for The Protection of Ozone Layer, 1985

Under Article 2(1) of the Vienna Convention for The Protection of Ozone Layer, 1985³⁷, the Parties to this Convention are required to take appropriate measures in accordance with the provisions of this Convention and of those protocols in force to which they are party to protect human health and the environment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer.³⁸

3.8 Basel Convention On the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989

Under Article 1 on the scope of the *Basel Convention On the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989*³⁹, the following wastes that are subject to transboundary movement shall be “hazardous wastes” for the purposes of this Convention: wastes that belong to any category contained in Annex I, unless they do not possess any of the

³⁴ Ibid, Article 1.

³⁵ United Nations, *Stockholm Convention On Persistent Organic Pollutants, 2001*, The Convention was adopted on 22 May 2001 at the Conference of Plenipotentiaries on the *Stockholm Convention on Persistent Organic Pollutants, Stockholm, 22-23 May 2001*.

³⁶ Ibid., Article 1.

³⁷ United Nations, *Vienna Convention for The Protection of Ozone Layer, 1985*, 1513 UNTS 293, 26 ILM 1529 (1987), [1988] ATS 26.

³⁸ Ibid., Article 1.

³⁹ United Nations, *Basel Convention On the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989*, United Nations, Treaty Series, vol. 1673, p. 57; and depositary notifications C.N.302. 1992.TREATIES-9 of 25 November 1992.

characteristics contained in Annex III; and wastes that are not covered under paragraph (a) but are defined as, or are considered to be, hazardous wastes by the domestic legislation of the Party of export, import or transit; wastes that belong to any category contained in Annex II that are subject to transboundary movement shall be "other wastes" for the purposes of this Convention; wastes which, as a result of being radioactive, are subject to other international control systems, including international instruments, applying specifically to radioactive materials, are excluded from the scope of this Convention; and wastes which derive from the normal operations of a ship, the discharge of which is covered by another international instrument, are excluded from the scope of this Convention.⁴⁰

Under Article 4(1), Parties exercising their right to prohibit the import of hazardous wastes or other wastes for disposal shall inform the other Parties of their decision pursuant to Article 13. In addition, Parties shall prohibit or shall not permit the export of hazardous wastes and other wastes to the Parties which have prohibited the import of such wastes, when notified pursuant to subparagraph (a) above.⁴¹

3.9 Bamako Convention On the Ban of the Import into Africa and The Control of TransBoundary Movement and Management of Hazardous Wastes Within Africa, 1991

Under Article 1 of the Bamako Convention On the Ban of the Import into Africa and The Control of TransBoundary Movement and Management of Hazardous Wastes Within Africa, 1991⁴², the following substances are considered "hazardous wastes" for the purposes of this convention: (a) Wastes that belong to any category contained in Annex I of this Convention; (b) Wastes that are not covered under paragraph (a) above but are defined as, or are considered to be, hazardous wastes by the domestic legislation of the State of export, import or transit; (c) Wastes which possess any of the characteristics contained in Annex II of this Convention; (d) Hazardous substances which have been banned, cancelled or refused registration by government regulatory

⁴⁰ Ibid., Article 1.

⁴¹ Ibid, Article 4.

⁴² African Union, *Bamako Convention On the Ban of the Import into Africa and The Control of TransBoundary Movement and Management of Hazardous Wastes Within Africa, 1991*, 22 April 1998, in accordance with article 25.

Addressing Chemical Pollution in Kenya for Sustainability

action, or voluntarily withdrawn from registration in the country of manufacture, for human health or environmental reasons; wastes which, as a result of being radioactive, are subject to any international control systems, including international instruments, applying specifically to radioactive materials, are included in the scope of this Convention; and wastes which derive from the normal operations of a ship, the discharge of which is covered by another international instrument, shall not fall within the scope of this Convention.⁴³

3.10 Treaty Establishing Common Market for Eastern and Southern Africa

The *Treaty Establishing Common Market for Eastern and Southern Africa* 1993⁴⁴ establishes a Common Market for Eastern and Southern Africa. Article 100 of the Treaty on Strategy and Priority Areas provides that for the purposes of Article 99 of this Treaty, the Member States undertake to formulate an industrial strategy aimed at, *inter alia*: the rehabilitation, maintenance and upgrading of agro-industries and the metallurgical, engineering, chemical and building materials industries.⁴⁵ Article 124(2) provides that for the purposes of paragraph 1 of this Article, the Member States undertake to, *inter alia*: adopt common environmental control regulations, incentives and standards; develop capabilities for the assessment of all forms of environmental degradation and pollution and the formulation of regional solutions; encourage the manufacture and use of biodegradable pesticides, herbicides and packaging materials; discourage the excessive use of agricultural chemicals and fertilizers; adopt sound land management techniques for the control of soil erosion, desertification and bush encroachment; promote the use of ozone and environmental friendly chemicals; promote the utilisation and strengthen the facilities of training and research institutions within the Common Market; adopt common standards for the control of atmospheric industrial and water pollution arising from urban and industrial development activities; exchange information on atmospheric, industrial and other forms of pollution and conservation technology; adopt common regulations for the

⁴³ *Ibid.*, Article 1.

⁴⁴ African Union, *Treaty Establishing Common Market for Eastern and Southern Africa* 1993, Adopted: November 5, 1993 [Kampala]. Entry into force: December 8, 1994.

⁴⁵ Article 100(k).

Addressing Chemical Pollution in Kenya for Sustainability

management of shared natural resources; and adopt community environmental management criteria.⁴⁶

3.11 Treaty Establishing East African Community

Article 108 of the *Treaty Establishing East African Community 1999*⁴⁷ provides that the Partner States shall: harmonise policies, legislation and regulations for enforcement of pests and disease control; harmonise and strengthen regulatory institutions; harmonise and strengthen zoo-sanitary and phyto-sanitary services inspection and certification; establish regional zoo-sanitary and phyto-sanitary laboratories to deal with diagnosis and identification of pests and diseases; adopt common mechanism to ensure safety, efficacy and potency of agricultural inputs including chemicals, drugs and vaccines; and co-operate in surveillance, diagnosis and control strategies of trans-boundary pests and animal diseases.⁴⁸ Article 112(1) provides that for purposes of Article 111 of this Treaty, the Partner States undertake to co-operate in the management of the environment and agree to: develop a common environmental management policy that would sustain the eco-systems of the Partner States, prevent, arrest and reverse the effects of environmental degradation; develop special environmental management strategies to manage fragile ecosystems, terrestrial and marine resources, noxious emissions and toxic and hazardous chemicals; take measures to control trans-boundary air, land and water pollution arising from developmental activities; take necessary disaster preparedness, management, protection and mitigation measures especially for the control of natural and man-made disasters. These include oil spills, bio-hazards, floods, earthquakes, marine accidents, drought and bush fires; and integrate environmental management and conservation measures in all developmental activities such as trade, transport, agriculture, industrial development, mining and tourism in the Community.⁴⁹

Article 113 provides that the Partner States undertake to co-operate and adopt common positions against illegal dumping of toxic chemicals, substances and

⁴⁶ Article 124(2)

⁴⁷ African Union, *Treaty Establishing East African Community 1999*, Entry into force: July 7, 2000.

⁴⁸ Article 108.

⁴⁹ Article 112.

Addressing Chemical Pollution in Kenya for Sustainability

hazardous wastes within the Community from either a Partner State or any third party; the Partner States shall harmonise their legal and regulatory framework for the management, movement, utilisation and disposal of toxic substances; and the Partner States undertake to ratify or accede to international environmental conventions that are designed to improve environmental policies and management.⁵⁰

The international and regional instruments are important in setting the minimum standards upon which Party States can base their domestic laws when it comes to chemical pollution control.

4.0 Legislative Framework on Chemical Pollution Control in Kenya

4.1 The Constitution of Kenya 2010

According to Article 42 of the 2010 Kenyan Constitution⁵¹, every individual is guaranteed the right to a clean and healthy environment.⁵² This includes the right to have environmental obligations under Article 70 fulfilled and the environment protected for the benefit of current and future generations through legislative and other measures, especially those mentioned in Article 69.⁵³

In addition, Article 43(1) guarantees that every person has the right, *inter alia* – to the highest attainable standard of health, which includes the right to health care services, including reproductive health care; to accessible and adequate housing, and to reasonable standards of sanitation; to be free from hunger, and to have adequate food of acceptable quality; and to clean and safe water in adequate quantities.⁵⁴

Regarding consumer protection from harmful goods and services, Article 46 (1) provides that consumers have the right – to goods and services of reasonable quality; to the information necessary for them to gain full benefit

⁵⁰ Article 113.

⁵¹ Constitution of Kenya 2010 (Republic of Kenya, 2010, Nairobi). Available at <http://www.kenyalaw.org:8181/exist/kenyalex/actview.xql?actid=Const2010>

⁵² Art. 42, Constitution of Kenya 2010 (Republic of Kenya, 2010, Nairobi).

⁵³ *Ibid.*

⁵⁴ Article 43(1), Constitution of Kenya 2010.

Addressing Chemical Pollution in Kenya for Sustainability

from goods and services; to the protection of their health, safety, and economic interests; and to compensation for loss or injury arising from defects in goods or services.⁵⁵

The Constitution also obligates the State to, *inter alia*: ensure sustainable exploitation, utilisation, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits; establish systems of environmental impact assessment, environmental audit and monitoring of the environment; and eliminate processes and activities that are likely to endanger the environment.⁵⁶

In addition to any other available legal remedies, a person may apply to a court for redress if they believe that their right to a clean and healthy environment – which is recognised and protected under Article 42 – has been, is being, or is likely to be denied, violated, infringed, or threatened.⁵⁷ When a request is made under clause (1), the court has the authority to issue any directives or orders that it deems necessary in order to protect the environment, compel public officials to take action to prevent or stop environmentally harmful acts or omissions, or compensate anyone who has been harmed by a violation of their right to a clean and healthy environment.⁵⁸

4.2 Environmental Management and Co-ordination Act, 1999

The Environmental Management and Co-ordination Act, 1999⁵⁹ (EMCA) provides for the establishment of an appropriate legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto.⁶⁰ Section 3 of EMCA adopts the provisions of Articles 42 and 70 of the Constitution. Section 3(5) requires that in exercising the jurisdiction conferred upon it under subsection (3), the Environment and Land Court should be guided by the following principles of sustainable development – the principle of public participation in the development of policies, plans and processes for the management of the environment; the

⁵⁵ Article 46(1), *ibid.*

⁵⁶ Article 69(1), *ibid.*

⁵⁷ Article 70(1), *ibid.*

⁵⁸ Article 70(2), *ibid.*

⁵⁹ Environmental Management and Co-ordination Act, No. 8 of 1999, Laws of Kenya.

⁶⁰ *Ibid.*, preamble.

Addressing Chemical Pollution in Kenya for Sustainability

cultural and social principles traditionally applied by any community in Kenya for the management of the environment or natural resources in so far as the same are relevant and are not repugnant to justice and morality or inconsistent with any written law; the principle of international co-operation in the management of environmental resources shared by two or more states; the principles of intergenerational and intragenerational equity; the polluter-pays principle; and the pre-cautionary principle.⁶¹

Section 92 of EMCA provides for regulations of toxic and hazardous materials, among others, where it provides that the Cabinet Secretary may, on the advice of the Authority make regulations prescribing the procedure and criteria for – classification of toxic and hazardous chemicals and materials in accordance with their toxicity and the hazard they present to the human health and to the environment; registration of chemicals and materials; labelling of chemicals and materials; packaging for chemicals and materials; advertising of chemicals and materials; control of imports and exports of toxic and hazardous chemicals and materials permitted to be so imported or exported; distribution, storage, transportation and handling of chemicals and materials; monitoring of the effect of chemicals and their residue on human health and the environment; disposal of expired and surplus chemicals and materials; and restriction and banning of toxic and hazardous substances and energy.⁶²

Section 93 provides for the prohibition of discharge of hazardous substances, chemicals and materials or oil into the environment and spiller's liability. Section 94 provides for standards of pesticides and toxic substances. Section 97 provides for registration of pesticides and toxic substances. Section 98 provides for offences relating to pesticides and toxic substances and states that no person should – detach, alter or destroy any labelling on a pesticide or toxic substance contrary to the provisions of this Act; change the composition of a pesticide or toxic substance, contrary to the provisions of this Act; or use or dispose into the environment a pesticide or toxic substance in contravention of the provisions of this Act.⁶³

⁶¹ S. 3(5), EMCA.

⁶² S. 92, EMCA.

⁶³ S. 98, EMCA.

Addressing Chemical Pollution in Kenya for Sustainability

Under section 99, any pesticide or toxic substance which the Authority reasonably suspects to be the subject matter of an offence under this Act shall be liable to seizure by the Authority. Under section 100, the Cabinet Secretary is, in consultation with the relevant lead agencies, to make regulations prescribing the contents of any application and the conditions for the registration of pesticides and toxic substances under this Act.

Section 141 of the Act provides for offences relating to hazardous wastes, materials, chemicals and radioactive substances. Section 142 provides for offences relating to pollution and makes it an offence for any person to discharge any dangerous materials, substances, oil, oil mixtures into land, water, air, or aquatic environment contrary to the provisions of this Act; or pollute the environment contrary to the provisions of this Act.⁶⁴

The Second Schedule to EMCA provides projects requiring submission of an Environmental Impact Assessment Study Report and outlines all activities dealing with chemicals and industries dealing with such chemicals and other substances likely to cause chemical pollution as envisaged under section 58 of EMCA.⁶⁵

These provisions lay out the overarching legal framework which should inform other sectoral laws that deal with the chemicals in question and their derivatives.

Other related regulations under the Act that regulate toxic chemicals and waste sector include: Environmental Management and Co-ordination (Waste Management) Regulations, 2006;⁶⁶ Environmental (Impact Assessment and Audit) Regulations, 2003;⁶⁷ Environmental (Prevention of Pollution in Coastal

⁶⁴ S. 142, EMCA.

⁶⁵ Second schedule, EMCA.

⁶⁶ Environmental Management and Co-ordination (Waste Management) Regulations, Legal Notice 121 of 2006.

⁶⁷ Environmental (Impact Assessment and Audit) Regulations, Legal Notice 101 of 2003, Legal Notice 133 of 2007, Legal Notice 30 of 2009, Legal Notice 32 of 2019].

Addressing Chemical Pollution in Kenya for Sustainability

Zone and Other Segments of the Environment) Regulation;⁶⁸ Environmental Management and Co-ordination (Water Quality) Regulations;⁶⁹ Environmental Management and Co-ordination (Controlled Substances) Regulations;⁷⁰ Environmental Management and Co-ordination (Wetlands, Riverbanks, Lake Shores and Sea Shore Management) Regulations;⁷¹ Environmental Management and Co-ordination (Air Quality) Regulations;⁷² and Environmental Management and Co-ordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations⁷³. These regulations and the Act are to be applied in a complementary manner in order to cover all sectors that deal or interact with potentially toxic chemicals.

4.3 The Food, Drugs and Chemical Substances Act, Cap 254

The Food, Drugs and Chemical Substances Act⁷⁴ makes provision for the prevention of adulteration of food, drugs and chemical substances and for matters incidental thereto and connected therewith.⁷⁵ The Act defines "chemical substance" to mean any substance or mixture of substances prepared, sold or represented for use as—a germicide; an antiseptic; a disinfectant; a pesticide; an insecticide; a rodenticide; a vermicide; or a detergent, or any other substance or mixture or substances which the Cabinet Secretary may, after consultation with the Board, declare to be a chemical substance.⁷⁶ Section 3 of the Act provides for prohibition against sale of unwholesome, poisonous or adulterated food.

⁶⁸ Environmental (Prevention of Pollution in Coastal Zone and other Segments of the Environment) Regulations, Legal Notice 159 of 2003.

⁶⁹ Environmental Management and Co-ordination (Water Quality) Regulations, Legal Notice 120 of 2006, Legal Notice 85 of 2012.

⁷⁰ Environmental Management and Co-ordination (Controlled Substances) Regulations, Legal Notice 73 of 2007.

⁷¹ Environmental Management and Co-ordination (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulation, Legal Notice 19 of 2009.

⁷² Environmental Management and Co-ordination (Air Quality) Regulations, Legal Notice 34 of 2014.

⁷³ Environmental Management and Co-ordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, Legal Notice 160 of 2006.

⁷⁴ Food, Drugs and Chemical Substances Act, CAP 254, Laws of Kenya.

⁷⁵ *Ibid.*, Preamble.

⁷⁶ S. 2, Food, Drugs and Chemical Substances Act, CAP 254.

Addressing Chemical Pollution in Kenya for Sustainability

Section 20 provides that any person who sells any chemical substance that – is adulterated; or consists in whole or in part of any filthy, putrid, disgusting, rotten, decomposed or diseased substance or foreign matter, shall be guilty of an offence. Section 22 provides that where a standard has been prescribed for a chemical substance, any person who labels, packages, sells or advertises any other substance in such a manner that it is likely to be mistaken for that chemical substance shall be guilty of an offence unless the substance complies with the prescribed standard for such chemical substance.

Under section 24, any person who uses or disposes of any chemical substance in a manner likely to cause contamination of food or water for human consumption or in a manner liable to be injurious or dangerous to the health of any person shall be guilty of an offence.

Under section 27, the Act establishes the Public Health (Standards) Board mandated with enforcing the Act. Under section 28, the Cabinet Secretary may make regulations to enforce the Act.⁷⁷

4.4 The Fertilizers and Animal Foodstuffs Act, Cap 345

the Fertilizers and Animal Foodstuffs Act⁷⁸ is an Act of Parliament to regulate the importation, manufacture and sale of agricultural fertilizers and animal foodstuffs and substances of animal origin intended for the manufacture of such fertilizers and foodstuffs, and to provide for matters incidental to and connected with the foregoing.⁷⁹

Section 2A establishes the Fertilizer and Animal Foodstuffs Board of Kenya which is mandated with regulating the fertilizers and animal foodstuffs industry in Kenya including the production, manufacture, packaging, importation and marketing of fertilizers and animal foodstuffs and importation of raw materials for the manufacture of animal foodstuffs, among others.

⁷⁷ See the Food, Drugs and Chemical Substances (Food Hygiene) Regulations, 1978.

⁷⁸ Fertilizers and Animal Foodstuffs Act, CAP 345, Laws of Kenya.

⁷⁹ *Ibid.*, preamble.

Addressing Chemical Pollution in Kenya for Sustainability

Section 3(1) provides that no person shall import, manufacture, compound, mix or sell any fertilizer or animal foodstuff other than a substance declared by rule made under section 19 of this Act to be an approved fertilizer or an approved animal foodstuff, as the case may be.

Under section 19, the Cabinet Secretary on recommendation of the Board may make rules generally for the better carrying out of the purposes and provisions of this Act.⁸⁰

4.5 The Occupational Safety and Health Act, Cap 236A

The Occupational Safety and Health Act⁸¹ provides for the safety, health and welfare of workers and all persons lawfully present at workplaces, to provide for the establishment of the National Council for Occupational Safety and Health and for connected purposes.⁸²

Section 83 makes provision for the handling, transportation and disposal of chemicals and other hazardous substances. Section 84 makes provision for material safety data sheets. The Act also makes provision for labelling and marking;⁸³ classification of hazardous chemicals and substances;⁸⁴ corrosive substances;⁸⁵ exposure limits to hazardous substances;⁸⁶ control of air pollution, noise and vibration;⁸⁷ and redeployment on medical advice⁸⁸.

⁸⁰ See Fertilizers and Animal Foodstuffs (Analysis) Rules; Fertilizers and Animal Foodstuffs (Approved Animal Foodstuffs) Rules; Fertilizers and Animal Foodstuffs (Approved Fertilizers) Rules; Fertilizers and Animal Foodstuffs (Declaration and Warranty) Rules; Fertilizers and Animal Foodstuffs (Packing of Approved Animal Foodstuffs) Rules; Fertilizers and Animal Foodstuffs (Packing of Approved Fertilizers) Rules; Fertilizers and Animal Foodstuffs (Records and Returns) Rules; Fertilizers and Animal Foodstuffs (Sampling) Rules; Fertilizers and Animal Foodstuffs (Sterilization of Bones) Rules; and Fertilizers and Animal Foodstuffs (Importation and Use of Meat and Bone Meal)

(Prohibition) Regulations.

⁸¹ Occupational Safety and Health Act, Cap 236A, Laws of Kenya.

⁸² *Ibid.*, preamble.

⁸³ S. 85.

⁸⁴ S. 86.

⁸⁵ S. 87.

⁸⁶ S. 88.

⁸⁷ S. 89.

⁸⁸ S. 90.

4.6 The Biosafety Act, Cap 320

The Biosafety Act⁸⁹ was enacted to regulate activities in genetically modified organisms, to establish the National Biosafety Authority, and for connected purposes.⁹⁰ The objects of this Act are – to facilitate responsible research into, and minimize the risks that may be posed by, genetically modified organisms; to ensure an adequate level of protection for the safe transfer, handling and use of genetically modified organisms that may have an adverse effect on the health of the people and the environment; and to establish a transparent, science-based and predictable process for reviewing and making decisions on the transfer, handling and use of genetically modified organisms and related activities.⁹¹

The Act also establishes the National Biosafety Authority whose object and purpose is to exercise general supervision and control over the transfer, handling and use of genetically modified organisms with a view to ensuring – safety of human and animal health; provision of an adequate level of protection of the environment.⁹²

4.7 The Public Health Act, Cap 242

The Public Health Act⁹³ is an Act of Parliament to make provision for securing and maintaining health.⁹⁴ The Act establishes a Central Board of Health whose function is to advise the Cabinet Secretary upon all matters affecting the public

⁸⁹ Biosafety Act, Cap 320, Laws of Kenya.

⁹⁰ *Ibid.*, preamble.

⁹¹ *Ibid.*, s. 4.

⁹² *Ibid.*, S. 7(1).

⁹³ Public Health Act, Cap 242, Laws of Kenya.

⁹⁴ *Ibid.*, preamble.

health, and particularly upon all matters mentioned in subsection (2) of section 10⁹⁵.⁹⁶

Generally, the Act seeks to protect public health through safeguarding food and water resources for safe human consumption.

4.8 The Nuclear Regulatory Act, Cap 243

The Nuclear Regulatory Act⁹⁷ was enacted to provide for a comprehensive framework for the regulation of safe, secure and peaceful utilization of atomic energy and nuclear technology; the production and use of radiation sources and the management of radioactive waste; the repeal of the Radiation Protection Act and for connected purposes.⁹⁸

The objects and purposes of this Act are to—regulate the safe, secure and peaceful development, production, possession, use, storage, transport, transfer, disposal or handling of nuclear and radioactive materials, activities and facilities and other apparatus generating radiation; and protect persons, property and the environment in relation to nuclear and radioactive material, activities and facilities and other apparatus generating ionizing radiation.⁹⁹

The Act establishes the Kenya Nuclear Regulatory Authority whose objects and functions of the Authority shall be to—ensure the safe, secure and

⁹⁵ 10 (2) The functions of the Medical Department shall be, subject to the provisions of this Act, to prevent and guard against the introduction of infectious disease into Kenya from outside; to promote the public health and the prevention, limitation or suppression of infectious, communicable or preventable disease within Kenya; to advise and direct local authorities in regard to matters affecting the public health; to promote or carry out researches and investigations in connexion with the prevention or treatment of human diseases; to prepare and publish reports and statistical or other information relative to the public health; and generally to carry out in accordance with directions the powers and duties in relation to the public health conferred or imposed by this Act.

(3) It shall be the duty of the department to obtain and publish periodically such information regarding infectious disease and other health matter in Kenya, and such procurable information regarding epidemic disease in territories adjacent to Kenya or in other countries, as the interests of the public health may require.

⁹⁶ Public Health Act, s. 3 and 8.

⁹⁷ Nuclear Regulatory Act, Cap 243, Laws of Kenya.

⁹⁸ *Ibid.*, preamble.

⁹⁹ *Ibid.*, S. 3.

Addressing Chemical Pollution in Kenya for Sustainability

peaceful use of nuclear science and technology; provide for the protection of persons, property and the environment against the harmful effects of ionizing radiation through the establishment of a system of regulatory control; exercise regulatory control over—(i) siting, design construction, operation, manufacture of component parts and decommissioning of facilities; (ii) nuclear and radioactive materials and facilities; and (iii) such other activities as may, with the prior approval of the National Assembly, be prescribed which the Authority may seek to exercise regulatory control over; ensure compliance with the conditions of authorization through the implementation of a system of inspections and enforcement; co-ordinate the fulfillment of national obligations in respect of nuclear safety, security and safeguards; co-operate with any relevant international agency by providing any assistance or information required; establish appropriate awareness methods and procedures for informing and consulting the public and other interested parties about the regulatory process and the safety, health and environmental aspect of regulated activities including incidents, accidents and abnormal occurrences; and perform any other functions as may be provided for in this Act.¹⁰⁰

The Authority is required to—establish a system of control over radiation sources to ensure they are safely managed and securely protected during and at the end of their useful lives; and prescribe a categorization of sources based on the potential injury to people and the environment.¹⁰¹

The foregoing statutes, regulations and institutions are mandated to protect the environment and human health through regulation of various sources of toxic chemicals pollution. They are all expected to work in collaboration while enforcing their respective regulatory frameworks as well as the international legal instruments on control of toxic chemicals pollution.

5.0 Toxic Chemicals and Their Impact on Human Rights

Even though artificial and anthropogenic chemicals have greatly benefited human civilization—for example, by reducing disease and increasing food production—their advantages are currently being outweighed by equally

¹⁰⁰ *Ibid.*, S. 6.

¹⁰¹ *Ibid.*, S. 37.

Addressing Chemical Pollution in Kenya for Sustainability

significant drawbacks brought on by accidental exposure to humans and the environment as well as subtle toxicity.¹⁰² Currently, there are hundreds of thousands of man-made compounds, by-products, metabolites, and abiotically generated transformation products.¹⁰³ As a result, both people and wildlife are subjected to complicated mixtures – never just one chemical at a time and never with a single, overpowering impact.¹⁰⁴ Therefore, it is imperative to devise methods for evaluating the cumulative effects of exposure to various dangerous substances.¹⁰⁵

In low- and middle-income countries (LMICs), environmental pollution – the contamination of air, water, and soil by human activity – is the leading cause of sickness and mortality.¹⁰⁶ According to World Health Organisation (WHO) estimates, pollution-related illnesses claim the lives of 8.9 million people annually, with 8.4 million (94%) of those deaths occurring in developing nations.¹⁰⁷ Globally, toxic chemicals are becoming a more significant source of pollution. They are found in the bodies of most individuals today, are utilised in a wide range of goods, and are widely distributed in the worldwide environment.¹⁰⁸ Many have never undergone sufficient safety testing and numerous disorders are associated with toxic substances.¹⁰⁹

In LMICs, chemical contamination is rising quickly. Globalization is a major factor driving this trend in the chemical production, recycling, and other

¹⁰² Naidu, R., Biswas, B., Willett, I.R., Cribb, J., Singh, B.K., Nathanail, C.P., Coulon, F., Semple, K.T., Jones, K.C., Barclay, A. and Aitken, R.J., 2021. Chemical pollution: A growing peril and potential catastrophic risk to humanity. *Environment International*, 156, p.106616, p. 8.

¹⁰³ Drakvik, E., Altenburger, R., Aoki, Y., Backhaus, T., Bahadori, T., Barouki, R., Brack, W., Cronin, M.T., Demeneix, B., Bennekou, S.H. and van Klaveren, J., 2020. Statement on advancing the assessment of chemical mixtures and their risks for human health and the environment. *Environment international*, 134, p.105267.

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

¹⁰⁶ Landrigan, P.J. and Fuller, R., 2015. Global health and environmental pollution. *International journal of public health*, 60, pp.761-762.

¹⁰⁷ Ibid.

¹⁰⁸ Ibid.

¹⁰⁹ Ibid.

Addressing Chemical Pollution in Kenya for Sustainability

polluting industries.¹¹⁰ These businesses are moving to developing nations where labour costs are cheap, environmental laws are rarely enforced, and public health facilities are few.¹¹¹ In LMICs, hazardous chemical exposure to workers and communities is growing, frequently in grossly unregulated environments.¹¹²

A historic resolution recognising that access to a clean, healthy, and sustainable environment is a fundamental right was adopted by the UN fundamental Rights Council on October 8.¹¹³ In the battle against the triple global catastrophes of pollution, biodiversity loss, and climate change, the Human Rights Council decision marks a turning point.¹¹⁴ In order to achieve a clean, healthy, and sustainable environment, persistent efforts must be made to prevent accidents, diseases, and injuries at work; implement a "just transition" strategy that avoids compromising the human right to a healthy environment with the right to work; and preserve biodiversity by assisting the livelihoods of indigenous peoples.¹¹⁵

The Human Rights Council acknowledged in resolution 51/35 that "toxic nuclear waste and nuclear radiation and contamination from decades ago continue to have an adverse impact on the human rights of the people of the Marshall Islands, including persons belonging to displaced communities" and that these issues affect a variety of the people's rights, such as the rights to life,

¹¹⁰ Landrigan, P.J. and Fuller, R., 2015. Global health and environmental pollution. *International journal of public health*, 60, pp.761-762.

¹¹¹ Ibid.

¹¹² Ibid.

¹¹³ *Advancing the Right to a Healthy Environment | UNEP - UN Environment Programme* (no date). Available at: <https://www.unep.org/explore-topics/environmental-rights-and-governance/what-we-do/advancing-right-healthy-environment> (Accessed: 27 April 2024).

¹¹⁴ Ibid.

¹¹⁵ *UN General Assembly recognizes human right to a clean, healthy, and sustainable environment | International Labour Organization* (2022). Available at: <https://www.ilo.org/resource/article/un-general-assembly-recognizes-human-right-clean-healthy-and-sustainable> (Accessed: 27 April 2024).

Addressing Chemical Pollution in Kenya for Sustainability

health, food, housing, water, and a sustainable environment, as well as their rights to cultural rights and life.¹¹⁶

Arguably, chemical pollution interferes with the rights to life, health, food, housing, water, and a sustainable environment.¹¹⁷ The United Nations General Assembly recognizes that sustainable development, in its three dimensions (social, economic and environmental), and the protection of the environment, including ecosystems, contribute to and promote human well-being and the full enjoyment of all human rights, for present and future generations.¹¹⁸ The Assembly also reaffirmed that States have the obligation to respect, protect and promote human rights, including in all actions undertaken to address environmental challenges, and to take measures to protect the human rights of all, as recognized in different international instruments, and that additional measures should be taken for those who are particularly vulnerable to environmental degradation, noting the framework principles on human rights and the environment.¹¹⁹

¹¹⁶ UN experts urge States to address human rights impact of nuclear testing (no date) OHCHR. Available at: <https://www.ohchr.org/en/press-releases/2024/03/un-experts-urge-states-address-human-rights-impact-nuclear-testing> (Accessed: 27 April 2024).

¹¹⁷ Environment, U.N. (2021) *Human Rights and Hazardous Substances: Key Messages, UNEP - UN Environment Programme*. Available at: <http://www.unep.org/resources/report/human-rights-and-hazardous-substances-key-messages> (Accessed: 28 April 2024); 'Toxic Pollution Demands "Immediate, Ambitious Action" | Human Rights Watch' (2022), 10 March. Available at: <https://www.hrw.org/news/2022/03/10/toxic-pollution-demands-immediate-ambitious-action> (Accessed: 28 April 2024).

¹¹⁸ United Nations, UNGA Resolution 76/300 - The human right to a clean, healthy and sustainable environment, *Seventy-sixth session Agenda item 74 (b), Promotion and protection of human rights: human rights questions, including alternative approaches for improving the effective enjoyment of human rights and fundamental freedoms*, Resolution adopted by the General Assembly on 28 July 2022. [without reference to a Main Committee (A/76/L.75 and A/76/L.75/Add.1)].

¹¹⁹ Ibid.

Addressing Chemical Pollution in Kenya for Sustainability

Along with climate change and the loss of natural areas, exposure to harmful chemicals shortens life expectancy and negatively affects human welfare.¹²⁰ Pollution is a significant barrier to eradicating poverty on a planet that is habitable.¹²¹

It is thus important that chemical pollutants, which have broad effects across all sectors, should be urgently addressed as part of efforts towards not only achieving sustainable development goals but also safeguarding the human rights of all persons.

6.0 Addressing Chemical Pollution in Kenya to Safeguard Human Rights

Two of the primary issues mentioned in Agenda 21 – especially for poor nations – are the absence of adequate scientific data for risk assessments and the scarcity of resources for chemical assessments for which data are available.¹²² While this may still be true for some of the developing nations due to other factors, the World Health Organization (WHO) has made impressive steps since adoption of Agenda 21 in providing this important data. According to WHO, through an evaluation procedure designed to produce a consensual scientific description of the dangers of chemical exposure, the health impacts of chemicals are ascertained.¹²³ Governments and national and international organisations can utilise these descriptions as the foundation for preventative measures against harmful effects on the environment and public health by publishing them in assessment reports and other relevant publications.¹²⁴ Chemicals utilised in the workplace are also covered, and information about them may be given in an easily digestible manner, especially those of significant public health concern, either individually or in combination.¹²⁵

¹²⁰ *Chemicals and waste.. Sustainable Development Knowledge Platform* (no date). Available at: <https://sustainabledevelopment.un.org/topics/chemicalsandwaste> (Accessed: 27 April 2024).

¹²¹ *Ibid.*

¹²² *Chemicals and waste.. Sustainable Development Knowledge Platform* (no date). Available at: <https://sustainabledevelopment.un.org/topics/chemicalsandwaste> (Accessed: 27 April 2024).

¹²³ *Providing information on the health effects of chemicals* (no date). Available at: <https://www.who.int/activities/providing-information-on-the-health-effects-of-chemicals> (Accessed: 27 April 2024).

¹²⁴ *Ibid.*

¹²⁵ *Ibid.*

Addressing Chemical Pollution in Kenya for Sustainability

These documents are frequently the starting point for developing policies and norms pertaining to the usage of chemicals as well as drinking water standards. They can also be employed in favour of pesticide control.¹²⁶ This is especially important considering that exposure to pesticide residues in food and perhaps drinking water can also occur as a consequence of environmental pollution.¹²⁷ Under the auspices of the Inter-Organizational Programme for the Sound Management of Chemicals (IOMC), WHO collaborates with other international organisations, including the Organisation for Economic Cooperation and Development (OECD), to minimise duplication and maximize the use of assessment resources.¹²⁸

The following three steps are some of the suggestions by the World Bank on what legislators may do to enhance chemical management: (a) determine what need management- Currently, there is no standardized method for quantifying chemical contamination. The World Bank has put forward rules for the gathering and examination of chemical samples from the surrounding environment or from locally grown products, as well as for the recycling of used lead acid batteries and small-scale artisanal gold mining.¹²⁹ To monitor chemicals in the environment and in humans, however, governments,

¹²⁶ *Providing information on the health effects of chemicals* (no date). Available at: <https://www.who.int/activities/providing-information-on-the-health-effects-of-chemicals> (Accessed: 27 April 2024); for instance, see *The WHO recommended classification of pesticides by hazard and guidelines to classification, 2009 edition* (no date). Available at: <https://www.who.int/publications-detail-redirect/9789241547963> (Accessed: 27 April 2024); *The WHO Recommended Classification of Pesticides by Hazard and guidelines to classification, 2019 edition* (no date). Available at: <https://www.who.int/publications-detail-redirect/9789240005662> (Accessed: 27 April 2024).

¹²⁷ *Exposure to highly hazardous pesticides: a major public health concern* (no date). Available at: <https://www.who.int/publications-detail-redirect/WHO-CED-PHE-EPE-19.4.6> (Accessed: 27 April 2024); see also *Pesticide residues in food* (no date). Available at: <https://www.who.int/news-room/fact-sheets/detail/pesticide-residues-in-food> (Accessed: 27 April 2024).

¹²⁸ *Providing information on the health effects of chemicals* (no date). Available at: <https://www.who.int/activities/providing-information-on-the-health-effects-of-chemicals> (Accessed: 27 April 2024).

¹²⁹ *Chemical pollution – the next global crisis* (no date) *World Bank Blogs*. Available at: <https://blogs.worldbank.org/en/climatechange/chemical-pollution-next-global-crisis> (Accessed: 27 April 2024).

Addressing Chemical Pollution in Kenya for Sustainability

academic institutions, and development partners must collaborate on international protocols;¹³⁰ (b) embrace the "precautionary principle," which calls for demonstrating a chemical's safety before usage- with this strategy, legislators must have a fair dosage of skepticism regarding novel compounds;¹³¹ and (c) implementing frameworks for policies based on evidence- strict environmental and safety regulations, holding polluters accountable, and the elimination of ecologically damaging subsidies – on which governments already spend trillions of dollars annually.¹³²

The accumulation and concentration of contaminants in the food chain through absorption is rapidly accelerated by metabolic reactions, which frequently result in high levels of toxicity, making water pollution a serious health risk.¹³³ It would be beneficial to take into account both point and non-point causes of water pollution while controlling the contamination.¹³⁴

It is important to control and reduce non-point source water pollution using effective techniques.¹³⁵ There is also a need to employ effective and scientifically proven treatment technologies to reduce and control water contamination from point sources.¹³⁶

¹³⁰ Ibid.

¹³¹ Ibid.

¹³² Ibid.

¹³³ Ajibade, F.O., Adelodun, B., Lasisi, K.H., Fadare, O.O., Ajibade, T.F., Nwogwu, N.A., Sulaymon, I.D., Ugya, A.Y., Wang, H.C. and Wang, A., 2021. Environmental pollution and their socioeconomic impacts. In *Microbe mediated remediation of environmental contaminants* (pp. 321-354). Woodhead Publishing, p. 336.

¹³⁴ Ibid.

¹³⁵ Ibid.; US EPA, O. (2015) *Basic Information about Nonpoint Source (NPS) Pollution*. Available at: <https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution> (Accessed: 28 April 2024); Read 'Watershed Management for Potable Water Supply: Assessing the New York City Strategy' at NAP.edu (no date). Available at: <https://doi.org/10.17226/9677>; Jain, C.K. and Singh, S. (2019) 'Best management practices for agricultural nonpoint source pollution: Policy interventions and way forward', *World Water Policy*, 5(2), pp. 207–228. Available at: <https://doi.org/10.1002/wwp2.12015>.

¹³⁶ Ajibade, F.O., Adelodun, B., Lasisi, K.H., Fadare, O.O., Ajibade, T.F., Nwogwu, N.A., Sulaymon, I.D., Ugya, A.Y., Wang, H.C. and Wang, A., 2021. Environmental pollution and their socioeconomic impacts. In *Microbe mediated remediation of environmental contaminants* (pp. 321-354), p. 336.

Air emissions are essentially endlessly numerous and random. Though it is seasonal in nature and not very effective, precipitation is the most well-known air purifier.¹³⁷ Effective pollution control and potential pollution emission are prerequisites for maintaining sustainable air quality. Controlling or preventing air pollution is expensive and technically challenging.¹³⁸ Notwithstanding, several approaches or strategies have been utilised and verified effective in managing air pollution, and the relevant parties have to contemplate their suitability in the context of Kenya.¹³⁹

Where the level of pollution is sufficiently higher than the advised standard, remediation or cleaning of the contaminated soil is required.¹⁴⁰ Excavating the contaminated soil and securely disposing of it in an authorized landfill (also known as "dig and dump") or removing it from the site (also known as ex situ remediation) are common methods used.¹⁴¹ Nevertheless, the use of in situ cleanup techniques has become widespread due to the high expense of trucking and landfilling.¹⁴²

¹³⁷ Ibid., p. 337.

¹³⁸ Ibid., p. 337; see also Kjellstrom, T. *et al.* (2006) 'Air and Water Pollution: Burden and Strategies for Control', in D.T. Jamison *et al.* (eds) *Disease Control Priorities in Developing Countries*. 2nd edn. Washington (DC): The International Bank for Reconstruction and Development / The World Bank. Available at: <http://www.ncbi.nlm.nih.gov/books/NBK11769/> (Accessed: 28 April 2024); Sjöholm, P. *et al.* (2001) '13 - Gas-Cleaning Technology', in Howard Goodfellow and E. Tähti (eds) *Industrial Ventilation Design Guidebook*. San Diego: Academic Press, pp. 1197-1316. Available at: <https://doi.org/10.1016/B978-012289676-7/50016-3>; Krupnick, A.J. and Portney, P.R. (1991) 'Controlling Urban Air Pollution: A Benefit-Cost Assessment', *Science*, 252(5005), pp. 522-528.

¹³⁹ Ibid., p. 337.

¹⁴⁰ Ibid; Inglezakis, V.J. *et al.* (2016) 'Chapter 3 - Aquatic Environment', in Stavros G. Pouloupoulos and Vassilis J. Inglezakis (eds) *Environment and Development*. Amsterdam: Elsevier, pp. 137-212. Available at: <https://doi.org/10.1016/B978-0-444-62733-9.00003-4>.

¹⁴¹ Ibid.

¹⁴² Ibid; Liu, L. *et al.* (2018) 'Remediation techniques for heavy metal-contaminated soils: Principles and applicability', *Science of The Total Environment*, 633, pp. 206-219. Available at: <https://doi.org/10.1016/j.scitotenv.2018.03.161>.

Addressing Chemical Pollution in Kenya for Sustainability

The stakeholders should work closely with the other relevant government and private agencies towards coming up with the best approaches, while incorporating the latest scientific data in order to tackle chemical pollution in Kenya.

7.0 Conclusion

Chemical usage and manufacture are expanding globally, especially in developing countries.¹⁴³ The World Health Organization rightly argues that if responsible chemical management is not maintained, this is probably going to have a worsening effect on health.¹⁴⁴ It is very necessary to take multisectoral action to safeguard human health from the damaging impacts of poorly handled chemicals.¹⁴⁵ The national institutions discussed above should work closely to tackle toxic chemicals pollution where physical, chemical, and biological methods can be employed to reduce the pollutants' impact on the environment and human health.¹⁴⁶

While toxic chemicals pollution has increasingly affected the environment and human health across the globe, it is not too late to address the same. Kenya has the requisite legal and institutional framework that should continually be updated in line with emerging the scientific research. With enough current data, employment of science and technology as well as embracing sustainable production methods and political goodwill, Kenya can indeed address chemical pollution for sustainability.

¹⁴³ 10 chemicals of public health concern (no date). Available at: <https://www.who.int/news-room/photo-story/photo-story-detail/10-chemicals-of-public-health-concern> (Accessed: 27 April 2024).

¹⁴⁴ Ibid.

¹⁴⁵ Ibid.

¹⁴⁶ Saravanan, A. *et al.* (2021) 'Effective water/wastewater treatment methodologies for toxic pollutants removal: Processes and applications towards sustainable development', *Chemosphere*, 280, p. 130595. Available at: <https://doi.org/10.1016/j.chemosphere.2021.130595>.

Loss and Damage Fund: A lifeline for Developing Countries?

Abstract

This paper examines potential challenges and gaps in financing for loss and damage, with an emphasis on resolving loss and damage. It argues that the success of the Loss and Damage Fund will depend on the political goodwill of continued contribution by the developed nations into the fund as well as the design of models and frameworks that ensure effective distribution and utilisation of this fund by the most vulnerable nations and communities. It makes recommendations on how best to implement the Loss and Damage Fund in order to benefit the most vulnerable communities in the developing nations.

1.0 Introduction

The Global South has been pushing for action on loss and damage for decades, especially the small islands. In contrast, the Global North nations have traditionally rejected both culpability and compensation to address the issue, as well as a legal separation between climate adaptation and loss and damage.¹ Notably, throughout the more than thirty years that have passed between 1991 and 2022, activists from the Global South and members of civil society have advocated more and more forcefully that the Global North should bear the financial burden of compensating for losses and suffering brought on by climate change.² These nations bear a disproportionate amount of the liability and have a greater capacity to mitigate the effects. Opposition to loss and damage funding is "the ultimate manifestation of climate injustice" since it is essential to vulnerable nations' ability to manage climate consequences independently.³ Only in 2022, at the twenty-seventh Conference of the Parties to the UNFCCC (COP27), did the parties decide to formalize a financial system by creating a fund for loss and damage.⁴

¹ Falzon, D., Shaia, F., Roberts, J.T., Hossain, M.F., Robinson, S.A., Khan, M.R. and Ciplet, D., 2023. Tactical opposition: Obstructing loss and damage finance in the United Nations climate negotiations. *Global Environmental Politics*, 23(3), pp.95-119, p. 96.

² Falzon, D., Shaia, F., Roberts, J.T., Hossain, M.F., Robinson, S.A., Khan, M.R. and Ciplet, D., 2023. Tactical opposition: Obstructing loss and damage finance in the United Nations climate negotiations. *Global Environmental Politics*, 23(3), pp.95-119, p. 96.

³ *Ibid.*, p. 96.

⁴ *Ibid.*, p. 96.

Loss and Damage Fund: A lifeline for Developing Countries?

The term "loss and damage" often refers to the adverse effects of climate change that persist in spite of attempts at adaptation and mitigation.⁵ Loss and Damage also refers to the discussions about loss and damage within the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement.⁶ The term "loss and damage" may also be used to describe the after-effects of climate change, for which mitigation and adaptation strategies might not be sufficient to avert negative consequences.⁷ In its Sixth Assessment Report, the Intergovernmental Panel on Climate Change (IPCC) Working Group II notes that "Losses and damages are unequally distributed across systems, regions, and sectors and are not comprehensively addressed by current financial, governance, and institutional arrangements, particularly in vulnerable developing countries."⁸ It is also explicitly acknowledged in the decision made at the 27th Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) in Sharm el-Sheikh, Egypt, that the current arrangements for funding loss and damage are insufficient to address the existing funding gaps related to providing action and support in responding to loss and damage associated with the adverse effects of climate change. These gaps exist both now and in the future.⁹

World leaders committed to create the Loss and Damage Fund in 2022 at COP27, and they struck a historic agreement to operationalize it at COP28. The fund had received pledges from numerous nations totaling around \$300

⁵ FAO (2023) *Loss and damage and agrifood systems: Addressing gaps and challenges*. Rome, Italy: FAO. Available at: <https://doi.org/10.4060/cc8810en>.

⁶ FAO (2023) *Loss and damage and agrifood systems: Addressing gaps and challenges*. Rome, Italy: FAO, p. ix. Available at: <https://doi.org/10.4060/cc8810en>.

⁷ Effiong, C.J., Musa Wakawa Zanna, J., Hannah, D. and Sugden, F., 2024. Exploring loss and damage from climate change and global perspectives that influence response mechanism in vulnerable communities. *Sustainable Environment*, 10(1), p.2299549.

⁸ McDonnell, S. (2023) 'The COP27 decision and future directions for loss and damage finance: Addressing vulnerability and non-economic loss and damage', *Review of European, Comparative & International Environmental Law*, 32(3), pp. 416–427. Available at: <https://doi.org/10.1111/reel.12521>.

⁹ McDonnell, S. (2023) 'The COP27 decision and future directions for loss and damage finance: Addressing vulnerability and non-economic loss and damage', *Review of European, Comparative & International Environmental Law*, 32(3), pp. 416–427. Available at: <https://doi.org/10.1111/reel.12521>.

Loss and Damage Fund: A lifeline for Developing Countries?

million as of December 2022.¹⁰ It remains to be seen if the funding will keep flowing.

In addition to analysing the decision reached at COP27 to create funding arrangements for reacting to loss and damage associated with the negative consequences of climate change, this paper also examines potential challenges and gaps in financing for loss and damage, with an emphasis on resolving loss and damage. It makes recommendations on how best to implement the Loss and Damage Fund in order to benefit the most vulnerable communities in the developing nations.

2.0 Understanding the Loss and Damage Agreement: The Background

The first item on the COP28 summit's agenda was the Loss and Damage Fund. The fund was initially established during the COP27 and was intended to help very vulnerable developing, impoverished, and small island nations adapt to and lessen the effects of human climate change.¹¹ The Loss and Damage Fund was established on the first day's opening session of COP28.¹² A total of USD 792 million was committed by 19 different nations to the fund.¹³

Through decisions 2/CP.27 and 2/CMA.4, the Conference of the Parties (COP) and the Conference of the Parties acting as the Meeting of the Parties to the Paris Agreement (CMA) established new funding arrangements to support developing nations that are especially vulnerable to the negative effects of climate change in their efforts to respond to loss and damage.¹⁴

¹⁰ *FAO report: Agrifood sector faces growing threat from climate change-induced loss and damage* (no date) *Newsroom*. Available at: <https://www.fao.org/newsroom/detail/fao-report-agrifood-sector-faces-growing-threat-from-climate-change-induced-loss-and-damage/en> (Accessed: 13 April 2024).

¹¹ Arora, P. (2024) 'COP28: ambitions, realities, and future', *Environmental Sustainability*, 7(1), pp. 107–113. Available at: <https://doi.org/10.1007/s42398-024-00304-0>.

¹² *Ibid.*

¹³ *Ibid.*

¹⁴ *Fund for responding to loss and damage | UNFCCC* (no date). Available at: <https://unfccc.int/loss-and-damage-fund-joint-interim-secretariat> (Accessed: 13 April 2024).

Loss and Damage Fund: A lifeline for Developing Countries?

In this regard, it was also decided by the COP and the CMA to create a fund for loss and damage response, with a mandate that includes addressing loss and damage to support developing nations that are especially susceptible to the negative effects of climate change in dealing with non-economic and economic loss and damage related to these effects, such as slow-onset events and extreme weather.¹⁵

The UNFCCC released Decision -/CP.27-/CMA.4 (UNFCCC 2022a) on November 20, 2022. A Transitional Committee comprising "10 members from developed country Parties and 14 members from developing country Parties" was established by the agreement to address the financial issue. Its job was to recommend ways to operationalize loss and damage funding in the lead-up to COP28 (UNFCCC 2022a).¹⁶

During its 28th and 5th sessions, the COP and CMA established the Loss and Damage Fund as an organisation responsible for managing the Convention's Financial Mechanism, which also supports the Paris Agreement. The COP and the CMA will be the Fund's supervisors and providers of oversight.¹⁷

The Parties to the Paris Agreement, the Conference of the Parties, and the Conference of the Parties serving as the meeting of the Parties, acknowledged the urgent and immediate need for new, additional, predictable, and adequate financial resources to support developing countries that are particularly vulnerable to the adverse effects of climate change in responding to economic and non-economic loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, especially in the context of ongoing and ex post (including rehabilitation,

¹⁵ *Fund for responding to loss and damage* | UNFCCC (no date). Available at: <https://unfccc.int/loss-and-damage-fund-joint-interim-secretariat> (Accessed: 13 April 2024).

¹⁶ Naylor, A.W. and Ford, J. (2023) 'Vulnerability and loss and damage following the COP27 of the UN Framework Convention on Climate Change', *Regional Environmental Change*, 23(1), p. 38. Available at: <https://doi.org/10.1007/s10113-023-02033-2>; Serdeczny, O. and Lissner, T. (2023) 'Research agenda for the loss and damage fund', *Nature Climate Change*, 13(5), pp. 412-412. Available at: <https://doi.org/10.1038/s41558-023-01648-x>.

¹⁷ *Fund for responding to loss and damage* | UNFCCC (no date). Available at: <https://unfccc.int/loss-and-damage-fund-joint-interim-secretariat> (Accessed: 13 April 2024).

Loss and Damage Fund: A lifeline for Developing Countries?

recovery, and reconstitution).¹⁸ They made the decision to create new funding arrangements in order to support developing nations that are especially vulnerable to the negative effects of climate change in responding to loss and damage, with an emphasis on addressing loss and damage through the provision of and assistance in the mobilisation of new and additional resources. These new arrangements complement and comprise sources, funds, processes, and initiatives both inside and outside of the Paris Agreement and the Convention.¹⁹

Additionally, they reaffirmed paragraph 64 of decision 1/CMA.3, which calls on developed country Parties, the Financial Mechanism's operating entities, United Nations entities, intergovernmental organisations, and other bilateral and multilateral institutions, including non-governmental organisations and private sources, to increase and augment their support for initiatives aimed at mitigating loss and damage brought on by climate change.²⁰

The COP28 meeting focused on global financing and financial resources for resilient systems and climate catastrophes.²¹ Participating nations made significant financial pledges towards a range of global goals. The commitment of funds, although not yet sufficient to meet the costs of creating a sustainable and resilient world, heralds a new era of worldwide financial mobilisation.²² The establishment of the Loss and Damage Fund would aid vulnerable developing countries in their battle against damages resulting from climate disasters.²³ But the fund's success will largely depend on how it is implemented. Across Asia and Africa, impoverished and developing

¹⁸ *Funding arrangements for responding to loss and damage associated with the adverse effects of climate change, including a focus on addressing loss and damage* | UNFCCC (no date). Available at: https://unfccc.int/sites/default/files/resource/cma4_auv_8f.pdf (Accessed: 13 April 2024), para. 1.

¹⁹ *Ibid.*, para. 2.

²⁰ *Ibid.*, para. 13.

²¹ Arora, P. (2024) 'COP28: ambitions, realities, and future', *Environmental Sustainability*, 7(1), pp. 107–113. Available at: <https://doi.org/10.1007/s42398-024-00304-0>.

²² Arora, P. (2024) 'COP28: ambitions, realities, and future', *Environmental Sustainability*, 7(1), pp. 107–113. Available at: <https://doi.org/10.1007/s42398-024-00304-0>.

²³ *Ibid.*

Loss and Damage Fund: A lifeline for Developing Countries?

countries continue to underinvest in essential services like universal healthcare and education.²⁴

3.0 Loss and Damage Agreement: A lifeline for Developing Countries?

The consequences of climate change are becoming more noticeable, and with it, a new era of risk with greater weather-related losses and catastrophes.²⁵ Notably, Global North nations for long blocked prospects for climate justice in the UNFCCC by employing both hard and soft bargaining techniques to hinder loss and damage financing. For decades, these nations rejected the establishment of financial channels to remedy the loss and harm they were responsible for inflicting upon the Global South.²⁶ Critics contend that industrialized nations should not be diverted from their efforts to prevent losses and damages by decarbonisation and adaptation, but rather should concentrate on preventing them already.²⁷ Some contend that because developed nations have not done enough to lessen the unjust burden that has been placed on developing nations, developed nations alone should bear the financial responsibility of compensating for losses and damages.²⁸ It is important to note that developed nations frequently prioritize adaptation and mitigation strategies, whereas vulnerable populations call for immediate action and paradigm shifts.²⁹

²⁴ Ibid.

²⁵ Lyubchich, V., Newlands, N.K., Ghahari, A., Mahdi, T. and Gel, Y.R., 2019. Insurance risk assessment in the face of climate change: Integrating data science and statistics. *Wiley Interdisciplinary Reviews: Computational Statistics*, 11(4), p.e1462.

²⁶ Falzon, D., Shaia, F., Roberts, J.T., Hossain, M.F., Robinson, S.A., Khan, M.R. and Ciplet, D., 2023. Tactical opposition: Obstructing loss and damage finance in the United Nations climate negotiations. *Global Environmental Politics*, 23(3), pp.95-119, pp. 111-112.

²⁷ *A funding mosaic for loss and damage | Science* (no date). Available at: <https://www.science.org/doi/full/10.1126/science.adg5740> (Accessed: 13 April 2024).

²⁸ *A funding mosaic for loss and damage | Science* (no date). Available at: <https://www.science.org/doi/full/10.1126/science.adg5740> (Accessed: 13 April 2024).

²⁹ Effiong, C.J. *et al.* (2024) 'Exploring loss and damage from climate change and global perspectives that influence response mechanism in vulnerable communities', *Sustainable Environment* [Preprint]. Available at: <https://www.tandfonline.com/doi/abs/10.1080/27658511.2023.2299549> (Accessed: 13 April 2024).

Loss and Damage Fund: A lifeline for Developing Countries?

A resolution on new loss and damage finance arrangements, including a new fund, was made at the 27th Conference of the Parties (COP27), the international climate discussions, in November 2022, breaking the deadlock.³⁰ In spite of the fact that the decision to turn Loss and Damage from a theoretical idea to a real financing mechanism was widely hailed as a victory in the international climate change negotiations, others contend that it is the inevitable result of repeated under-investments in preventative and predictive action combined with a collective effort that failed to mitigate catastrophic levels of global warming.³¹ Additionally, it has been noted that households with the greatest risk in the economies most vulnerable to climate change are currently bearing the financial burden of climate change rather than the nations with the highest carbon intensity. Additionally, it is dependent on a global assistance network that continues to supply food help in the wake of natural catastrophes caused by climate change, despite not having been built or funded to serve as the primary global response system for loss and damage caused by the phenomenon.³²

It has been correctly noted that while new financing sources are appearing in the field of loss and damage finance, determining and measuring the losses and damages from extreme weather events linked to climate change continues to be a challenging issue.³³ For example, it has been suggested that although policy and research agendas have mostly focused on adaptation to climate change, it is equally important to address the question of why some communities and peoples are disproportionately exposed to and impacted by climatic hazards.³⁴ A dynamic social approach to vulnerability is most likely

³⁰ *A funding mosaic for loss and damage* | Science (no date). Available at: <https://www.science.org/doi/full/10.1126/science.adg5740> (Accessed: 13 April 2024).

³¹ Laganda, G. (2023) 'Responding to loss and damage in food systems', *Nature Food*, 4(2), pp. 133–134. Available at: <https://doi.org/10.1038/s43016-023-00702-3>.

³² Ibid.

³³ Fabian, F. (2024) *Quantifying and attributing pay-out and premia increases of parametric insurance to climate change – A framework for scalable, objective, transparent and pragmatic integration into a loss and damage finance architecture*. EGU24-19327. Copernicus Meetings. Available at: <https://doi.org/10.5194/egusphere-egu24-19327>.

³⁴ Thomas, K. *et al.* (2019) 'Explaining differential vulnerability to climate change: A social science review', *WIREs Climate Change*, 10(2), p. e565. Available at:

Loss and Damage Fund: A lifeline for Developing Countries?

to enhance planning efforts for mitigation and adaptation since vulnerability is a multifaceted process rather than an immutable condition.³⁵ Although no one is immune to the effects of climate change, certain social groups are more severely affected than others in terms of resource loss, livelihood disruption, and cultural identity erosion.³⁶ Social rather than physical variables are the main cause of this unequal vulnerability to equivalent amounts of physical change.³⁷

There was little analysis of the social drivers of climate change vulnerability or the unequal distribution of risk in the 1990 Intergovernmental Panel on Climate Change First Assessment Report, which framed the issue primarily in terms of exposure to physical impacts on specific sectors, regions, and countries.³⁸ Since then, a great deal of social science research has produced methodological guidelines, empirical data, and theoretical revelations that have revolutionized our understanding of climate change vulnerability.³⁹ The dominant responses to climate change remain scientific and technological, despite these noteworthy advancements, so largely ignoring the underlying social determinants of vulnerability.⁴⁰

<https://doi.org/10.1002/wcc.565>; Green, F. and Healy, N., 2022. How inequality fuels climate change: The climate case for a Green New Deal. *One Earth*, 5(6), pp.635-649.

³⁵ Ibid.

³⁶ Jorgenson, A.K. *et al.* (2019) 'Social science perspectives on drivers of and responses to global climate change', *WIREs Climate Change*, 10(1), p. e554. Available at: <https://doi.org/10.1002/wcc.554>.

³⁷ Thomas, K. *et al.* (2019) 'Explaining differential vulnerability to climate change: A social science review', *WIREs Climate Change*, 10(2), p. e565. Available at: <https://doi.org/10.1002/wcc.565>; Lomborg, B., 2020. Welfare in the 21st century: Increasing development, reducing inequality, the impact of climate change, and the cost of climate policies. *Technological Forecasting and Social Change*, 156, p.119981.

³⁸ Thomas, K. *et al.* (2019) 'Explaining differential vulnerability to climate change: A social science review', *WIREs Climate Change*, 10(2), p. e565. Available at: <https://doi.org/10.1002/wcc.565>; Houghton, J.T. ed., 1995. *Climate change 1994: radiative forcing of climate change and an evaluation of the IPCC 1992 IS92 emission scenarios*. Cambridge University Press.

³⁹ Thomas, K. *et al.* (2019) 'Explaining differential vulnerability to climate change: A social science review', *WIREs Climate Change*, 10(2), p. e565. Available at: <https://doi.org/10.1002/wcc.565>.

⁴⁰ Thomas, K. *et al.* (2019) 'Explaining differential vulnerability to climate change: A social science review', *WIREs Climate Change*, 10(2), p. e565. Available at: <https://doi.org/10.1002/wcc.565>.

4.0 Tackling Climate Change: Making the Loss and Damage Fund Work for Third World Countries and Vulnerable Communities

Many have suggested that long-term impacts of climate change on the real economy are expected, including lower employment, less social cohesion, lower productivity, and loss of cultural heritage. Public and corporate budgets, as well as society, are the focus of these.⁴¹ Planned or unexpected migration or displacement may be part of climate-related emergencies, and rehabilitation and recovery efforts may need to be climate resilient.⁴² The movement of populations may be a factor in slow-onset events. Data on the economy, society, and climate will need to be analyzed for this. In order to improve people's circumstances, these requirements should be met rather than keeping them in danger of dying.⁴³

Stakeholders are also urged to support creative solutions incorporating risk transfers that take into account the increasing risk exposures due to the exponential increase in the effect of natural catastrophes on economies in recent decades, particularly in vulnerable areas.⁴⁴ Given the ever-increasing effects of climate change, financial solutions intended to assist impacted nations and people need to be in line with the practical need for disaster risk finance that is predictable and responsive.⁴⁵ Although it is not a cure-all, some writers contend that insurance has historically been seen as a significant participant in the field of loss and damage financing.⁴⁶ However, in many

⁴¹ *A funding mosaic for loss and damage | Science* (no date). Available at: <https://www.science.org/doi/full/10.1126/science.adg5740> (Accessed: 13 April 2024).

⁴² Ibid.

⁴³ *A funding mosaic for loss and damage | Science* (no date). Available at: <https://www.science.org/doi/full/10.1126/science.adg5740> (Accessed: 13 April 2024).

⁴⁴ Radu, N. and Alexandru, F., 2022. Parametric insurance—a possible and necessary solution to insure the earthquake risk of Romania. *Risks*, 10(3), p.59.

⁴⁵ Fabian, F. (2024) *Quantifying and attributing pay-out and premia increases of parametric insurance to climate change – A framework for scalable, objective, transparent and pragmatic integration into a loss and damage finance architecture*. EGU24-19327. Copernicus Meetings. Available at: <https://doi.org/10.5194/egusphere-egu24-19327>.

⁴⁶ Fabian, F. (2024) *Quantifying and attributing pay-out and premia increases of parametric insurance to climate change – A framework for scalable, objective, transparent and pragmatic integration into a loss and damage finance architecture*. EGU24-19327. Copernicus Meetings. Available at: <https://doi.org/10.5194/egusphere-egu24-19327>.

Loss and Damage Fund: A lifeline for Developing Countries?

places, insurance premiums become unaffordable, and some risks progressively become uninsurable.⁴⁷ Reducing the cost and increasing the use of insurance, for example through subsidies, might lessen the effects and provide impacted areas with steady cash flows.⁴⁸ It is suggested here that parametric insurance is a typically good option that has benefits above conventional indemnity insurance.⁴⁹ It offers clear and prompt financial reactions in the wake of major weather disasters and is less vulnerable to adverse selection and moral hazard.⁵⁰ In response to the increasing difficulties associated with the vulnerability of human populations and their assets to natural catastrophes, parametric insurance has the potential to serve as a vehicle for innovation in the insurance sector.⁵¹ Parametric insurance, often known as index-based insurance, is one modern approach to addressing the need to make vulnerable populations more resilient to natural catastrophes.⁵² A variety of economic sectors, including agriculture, renewable energy (solar and wind), building and construction, and pandemics, can be impacted by

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Lyubchich, V. *et al.* (2019) 'Insurance risk assessment in the face of climate change: Integrating data science and statistics', *WIREs Computational Statistics*, 11(4), p. e1462. Available at: <https://doi.org/10.1002/wics.1462>; Radu, N. and Alexandru, F. (2022) 'Parametric Insurance – A Possible and Necessary Solution to Insure the Earthquake Risk of Romania', *Risks*, 10, p. 59. Available at: <https://doi.org/10.3390/risks10030059>; Lopez, O. and Thomas, M. (2023) *Parametric insurance for extreme risks: the challenge of properly covering severe claims*; Lawrence, W., Tarr, J.A., Brook, N., Chaperon, M. and Sorel, A., 2024. Parametric Insurance. In *The Global Insurance Market and Change* (pp. 127-156). Informa Law from Routledge; Lawrence, W., Tarr, J.A., Brook, N., Chaperon, M. and Sorel, A., 2024. Parametric Insurance. In *The Global Insurance Market and Change* (pp. 127-156). Informa Law from Routledge; *From niche to mainstream – Closing the protection gap through parametric insurance | PwC Switzerland* (no date). Available at: <https://www.pwc.ch/en/insights/fs/closing-the-gap-with-parametrics-insurance.html> (Accessed: 13 April 2024).

⁵⁰ Fabian, F. (2024) *Quantifying and attributing pay-out and premia increases of parametric insurance to climate change – A framework for scalable, objective, transparent and pragmatic integration into a loss and damage finance architecture*. EGU24-19327. Copernicus Meetings. Available at: <https://doi.org/10.5194/egusphere-egu24-19327>.

⁵¹ Radu, N. and Alexandru, F., 2022. Parametric insurance – a possible and necessary solution to insure the earthquake risk of Romania. *Risks*, 10(3), p.59.

⁵² Ibid., p.59.

Loss and Damage Fund: A lifeline for Developing Countries?

occurrences connected to natural catastrophes, unfavourable weather, cyberattacks, and pandemics hence the need for this type of insurance.⁵³

These proposed solutions are designed to optimize and expedite the indemnification process, which can ultimately be beneficial for both policyholders and insurers alike.⁵⁴ By utilising tools like parametric insurance, a loss and damage finance architecture can both take advantage of the benefits that come with it and make sure that resources are allocated in a way that is more closely in line with changes in weather patterns and the impacts that are caused by climate change.⁵⁵

While the establishment of a new loss and damage fund is encouraging, more work has to be done to provide the billions of dollars required to finance the low-carbon transition.⁵⁶ Achieving climate targets requires a persistent political commitment supported by strong governance frameworks and accountability systems.⁵⁷ This may be advanced in a number of ways with the aid of climate law, which has shown to be a useful instrument for creating and establishing reliable institutions for climate governance.⁵⁸ Clear roles across several branches of government are mandated by law, which is crucial for implementing the COPs' agreed-upon conclusions.⁵⁹

⁵³ Ibid, p.59; Lopez, O. and Thomas, M., 2023. Parametric insurance for extreme risks: the challenge of properly covering severe claims. *arXiv preprint arXiv:2301.07776*.

⁵⁴ Radu, N. and Alexandru, F., 2022. Parametric insurance—a possible and necessary solution to insure the earthquake risk of Romania. *Risks*, 10(3), p.59.

⁵⁵ Fabian, F., 2024. *Quantifying and attributing pay-out and premia increases of parametric insurance to climate change—A framework for scalable, objective, transparent and pragmatic integration into a loss and damage finance architecture* (No. EGU24-19327). Copernicus Meetings.

⁵⁶ Usman, Z. (no date) *As Financial Pledges Trickle in, Did COP27 Meet Its Goal of Implementation?* Carnegie Endowment for International Peace. Available at: <https://carnegieendowment.org/2022/11/21/as-financial-pledges-trickle-in-did-cop27-meet-its-goal-of-implementation-pub-88452> (Accessed: 14 April 2024).

⁵⁷ *What Role Could Legislation and Litigation Play Following COP27 in Closing Implementation Gaps On Mitigation and Loss and Damage?* (no date) Grantham Research Institute on climate change and the environment. Available at: <https://www.lse.ac.uk/granthaminstitute/news/what-role-could-legislation-and-litigation-play-following-cop27-in-closing-implementation-gaps-on-mitigation-and-loss-and-damage/> (Accessed: 14 April 2024).

⁵⁸ Ibid.

⁵⁹ Ibid.

Loss and Damage Fund: A lifeline for Developing Countries?

Concerns about climate change can be more effectively incorporated into other important areas of public policy, especially with the introduction of "framework" legislation.⁶⁰ Multisectoral in nature, framework laws set the institutions, strategies, and goals necessary to achieve the goals set forth by the national climate change agenda.⁶¹ They give an extra degree of security during periods of political upheaval and incorporate political aspirations into domestic climate legislation.⁶² They may make it more challenging for governments to reverse agreements made on policies by earlier administrations.⁶³ It is worth noting that Kenya has in place Climate Change Act 2016⁶⁴ which focuses on adaptation and has put in place important institutions through which the Government can take advantage of the Loss and Damage Fund. Notably, one of the objects of the Act is to ensure that the National and county governments mobilize and transparently manage public and other financial resources for climate change response.⁶⁵ The Act provides for a regulatory framework for enhanced response to climate change; to provide for mechanism and measures to achieve low carbon climate development, and for connected purposes.⁶⁶

Designing legislation that can effectively address the local socioeconomic, geographical, and political settings while taking climate change governance

⁶⁰ *What Role Could Legislation and Litigation Play Following COP27 in Closing Implementation Gaps On Mitigation and Loss and Damage?* (no date) Grantham Research Institute on climate change and the environment. Available at: <https://www.lse.ac.uk/granthaminstitute/news/what-role-could-legislation-and-litigation-play-following-cop27-in-closing-implementation-gaps-on-mitigation-and-loss-and-damage/> (Accessed: 14 April 2024).

⁶¹ *What Role Could Legislation and Litigation Play Following COP27 in Closing Implementation Gaps On Mitigation and Loss and Damage?* (no date) Grantham Research Institute on climate change and the environment. Available at: <https://www.lse.ac.uk/granthaminstitute/news/what-role-could-legislation-and-litigation-play-following-cop27-in-closing-implementation-gaps-on-mitigation-and-loss-and-damage/> (Accessed: 14 April 2024).

⁶² *Ibid.*

⁶³ *Ibid.*

⁶⁴ Climate Change Act, No. 11 of 2016, Laws of Kenya. (Amended by the Climate change amendment Act, No 9 2023).

⁶⁵ *Ibid.*, sec. 3(2)(i).

⁶⁶ *Ibid.*, Preamble.

Loss and Damage Fund: A lifeline for Developing Countries?

demands and national requirements into account is crucial.⁶⁷ As such, it is important that the Loss and Damage Fund should not be so rigid as not allow governments to identify key areas that they wish to be funded through this kitty as part of their efforts to respond to climate change loss and damage. This is so notwithstanding the report that the necessary investment gap for developing countries has grown from USD 2.5 trillion in 2015 to USD 4 trillion in 2023, according to the World Investment Report 2023.⁶⁸ The majority of these expenditures are necessary to provide the populations' fundamental needs. Some have suggested that this might compel the governments to apply the money they have been given to these issues instead of allocating them to adaptation, mitigation, and energy transition.⁶⁹ Because of this, the UN must keep an eye on the money that vulnerable and developing countries get and make sure that it is being utilised for the right objectives.⁷⁰ Arguably, these objectives should be allowed to take into account the special needs of each country as far as the loss and damage emanating from climate change are concerned.

As some have correctly noted, civil society organizations—especially those from the global south—have long pushed for locally led action, which would grant affected people autonomy and decision-making power over how funds are allocated, as well as direct access to climate finance for the most vulnerable and marginalised individuals and communities.⁷¹ This autonomy is granted to

⁶⁷ *What Role Could Legislation and Litigation Play Following COP27 in Closing Implementation Gaps On Mitigation and Loss and Damage?* (no date) Grantham Research Institute on climate change and the environment. Available at: <https://www.lse.ac.uk/granthaminstitute/news/what-role-could-legislation-and-litigation-play-following-cop27-in-closing-implementation-gaps-on-mitigation-and-loss-and-damage/> (Accessed: 14 April 2024).

⁶⁸ Arora, P. (2024) 'COP28: ambitions, realities, and future', *Environmental Sustainability*, 7(1), pp. 107–113. Available at: <https://doi.org/10.1007/s42398-024-00304-0>.

⁶⁹ Arora, P. (2024) 'COP28: ambitions, realities, and future', *Environmental Sustainability*, 7(1), pp. 107–113. Available at: <https://doi.org/10.1007/s42398-024-00304-0>.

⁷⁰ Arora, P. (2024) 'COP28: ambitions, realities, and future', *Environmental Sustainability*, 7(1), pp. 107–113. Available at: <https://doi.org/10.1007/s42398-024-00304-0>.

⁷¹ McKenzie, J. (2023) 'COP28 creates fund for vulnerable countries for loss and damage from climate change—but will it reach vulnerable people?', *Bulletin of the*

Loss and Damage Fund: A lifeline for Developing Countries?

some extent by the agreed decision on the new loss and damage fund, which also highlights the possibility of "small grant funding for communities."⁷² If the Fund is to be effective especially in developing nations, there is a need for inclusion of mechanisms for locally led grants. A good example of how the funding can be used for grants for locally led action by both relevant government parastatals and non-governmental organizations is the GEF Trust Fund (GEF-7). The GEF-7 Inclusive Conservation Initiative, is a new model for increased direct financing to Indigenous and local community organizations to deliver multiple global environmental benefits and support related cultural and economic development initiatives.⁷³ The GEF Pavilion at CBD COP 15 hosted the official launch of the GEF-7 Inclusive Conservation Initiative (ICI) on December 9, 2022. In order to promote linked cultural and economic development activities and provide several worldwide environmental advantages, the new model increases direct finance to Indigenous Peoples and Local Communities (IPs and LCs).⁷⁴ The goals of the community-based programmes are to reduce poverty and promote local empowerment while also bringing about beneficial changes in the environment.⁷⁵

If Loss and Damage Fund is to have a direct positive effect on the most affected communities in developing countries, there is a need to consider incorporating similar approaches as those adopted in the GEF-7 projects. This will not only help in identifying the loss and damage, both economic and non-economic, in

Atomic Scientists, 6 December. Available at: <https://thebulletin.org/2023/12/cop28-creates-fund-for-vulnerable-countries-for-loss-and-damage-from-climate-change-but-will-it-reach-vulnerable-people/> (Accessed: 14 April 2024).

⁷² Ibid.

⁷³ *GEF-7 Inclusive Conservation Initiative: translating pledges to IPLCs into action for biodiversity and climate* (no date). Available at: <https://thegef.shorthandstories.com/gef-7-inclusive-conservation-initiative/> (Accessed: 14 April 2024).

⁷⁴ *Highlights of the launch of the GEF-7 Inclusive Conservation Initiative (ICI) at CBD COP 15 (2022) ICI*. Available at: <https://inclusiveconservationinitiative.org/highlights-of-the-launch-of-the-gef-7-inclusive-conservation-initiative-at-cbd-cop-15/> (Accessed: 14 April 2024).

⁷⁵ 'GEF Small Grants Programme: UNDP Call for Proposals for Kenya - fundsforNGOs' (2023), 14 November. Available at: <https://www2.fundsforngos.org/latest-funds-for-ngos/undp-gef-small-grants-programme-call-for-proposals-in-kenya/> (Accessed: 14 April 2024).

Loss and Damage Fund: A lifeline for Developing Countries?

the most vulnerable communities, but will also involve these communities thus addressing the other indirect challenges such as poverty. Thus, it is suggested that funders that deal with loss and damage ought to prioritize small, locally driven grants in their portfolio as a way to evaluate requirements on the ground, facilitate quick action, test novel strategies, and increase the agency and capacity of vulnerable populations. Such awards must also incorporate adaptable clauses for non-monetary loss and harm as well as psychological assistance.⁷⁶ Even with scope and scale constraints, smaller grants that go straight to local organisations may be extremely important for providing emergency support, increasing awareness, and developing local capacity.⁷⁷

There is also a need to enable participatory and collaborative approaches. It is important to use inclusive, participatory procedures that provide marginalised community members and other impacted groups the authority to prioritize loss and damage and decide how best to use resources locally.⁷⁸ Grant recipients may determine how the funds are allocated based on local discussions with impacted households, women, youth, the elderly, individuals with disabilities, and indigenous people.⁷⁹

It may be argued that this can strongly connect the final initiatives with fairness and equality principles and advance human rights among participating populations.⁸⁰ Such inclusive self-determination procedures also

⁷⁶ Shawoo, Z. and Bakhtaoui, I. (2023) 'How small and locally led grants can address loss and damage: early lessons from the Scottish government's 2021 funding commitment'. Available at: <https://doi.org/10.51414/sei2023.061>.

⁷⁷ McKenzie, J. (2023) 'COP28 creates fund for vulnerable countries for loss and damage from climate change—but will it reach vulnerable people?', *Bulletin of the Atomic Scientists*, 6 December. Available at: <https://thebulletin.org/2023/12/cop28-creates-fund-for-vulnerable-countries-for-loss-and-damage-from-climate-change-but-will-it-reach-vulnerable-people/> (Accessed: 14 April 2024).

⁷⁸ McKenzie, J. (2023) 'COP28 creates fund for vulnerable countries for loss and damage from climate change—but will it reach vulnerable people?', *Bulletin of the Atomic Scientists*, 6 December. Available at: <https://thebulletin.org/2023/12/cop28-creates-fund-for-vulnerable-countries-for-loss-and-damage-from-climate-change-but-will-it-reach-vulnerable-people/> (Accessed: 14 April 2024).

⁷⁹ Ibid.

⁸⁰ Ibid.

Loss and Damage Fund: A lifeline for Developing Countries?

often encourage local project ownership and sustainability even after financing is terminated.⁸¹

In order to determine what loss and damage mean to the most affected parties and how best to resolve it in accordance with their own requirements and objectives, the fund should guarantee that those individuals have the autonomy and agency to do so.⁸² This might be accomplished by transferring decision-making authority to lower levels and including representatives of impacted communities in the fund's governance structure.⁸³

There is also a need to move away from the strict separation of adaptation and loss and damage. It has been argued that while communities are recovering from loss and damage, it is crucial to increase their resilience to future effects.⁸⁴ Addressing loss and damage inherently overlaps with adaptation strategies implemented on the ground, and trying to establish a clear distinction between the two can be ineffective.⁸⁵ In order to prevent burdening the receiving nations and communities, the fund should figure out how to make sure that adaptation and response to loss and damage may be supported equally.⁸⁶ Rather than attaching funding to a rigid list of activities, funders should allow the impacted populations to use the money however they see fit, provided that it also serves the objective of guaranteeing the agency, dignity, and well-being of people and communities suffering from the effects of climate change.⁸⁷

It is arguable that, in addition to mitigation and adaptation, the Loss and Damage Fund and loss and damage finance should be acknowledged as the third pillar of climate action.⁸⁸ They should be grant-based, avoid adding to

⁸¹ Ibid.

⁸² Ibid.

⁸³ Ibid.

⁸⁴ McKenzie, J. (2023) 'COP28 creates fund for vulnerable countries for loss and damage from climate change—but will it reach vulnerable people?', *Bulletin of the Atomic Scientists*, 6 December. Available at: <https://thebulletin.org/2023/12/cop28-creates-fund-for-vulnerable-countries-for-loss-and-damage-from-climate-change-but-will-it-reach-vulnerable-people/> (Accessed: 14 April 2024).

⁸⁵ Ibid.

⁸⁶ Ibid.

⁸⁷ Ibid.

⁸⁸ *Six ways we can make Loss and Damage finance work for children* | Innocenti Global Office of Research and Foresight (no date). Available at:

Loss and Damage Fund: A lifeline for Developing Countries?

the debt burden of countries that are vulnerable to climate change, and give priority to the most marginalised and vulnerable groups while enhancing their resilience.⁸⁹

5.0 Conclusion

In addition to the amount of money raised, the distribution of funds and who receives them will determine the effectiveness of loss and damage financing.⁹⁰ Giving much-needed help to the most disadvantaged individuals and communities is the ultimate goal of the new loss and damage fund.⁹¹ The loss and damage fund's operationalization should be centred on local needs and objectives, according to COP28.⁹² It is important that these issues of effective accessibility and the adequacy of the Loss and Damage Fund are fully addressed if developing countries, which are most affected by climate change are to not only access the Fund equitably but are also to fully benefit from the same. There must also be effective frameworks in place in these developing countries in order to ensure that the most vulnerable communities benefit from the Fund.⁹³ Thus, there is a need for adoption of alternative eligibility requirements, adoption of approaches that have proved to work for philanthropic and humanitarian support to reach the local level, adoption of participatory and representative decision-making approaches, adoption of a

<https://www.unicef.org/innocenti/stories/six-ways-we-can-make-loss-and-damage-finance-work-children> (Accessed: 14 April 2024).

⁸⁹ *Six ways we can make Loss and Damage finance work for children | Innocenti Global Office of Research and Foresight* (no date). Available at: <https://www.unicef.org/innocenti/stories/six-ways-we-can-make-loss-and-damage-finance-work-children> (Accessed: 14 April 2024).

⁹⁰ McKenzie, J. (2023) 'COP28 creates fund for vulnerable countries for loss and damage from climate change—but will it reach vulnerable people?', *Bulletin of the Atomic Scientists*, 6 December. Available at: <https://thebulletin.org/2023/12/cop28-creates-fund-for-vulnerable-countries-for-loss-and-damage-from-climate-change-but-will-it-reach-vulnerable-people/> (Accessed: 14 April 2024).

⁹¹ Ibid.

⁹² Ibid.

⁹³ *The great loss and damage fund debate* (2023) *The Express Tribune*. Available at: <https://tribune.com.pk/story/2449525/the-great-loss-and-damage-fund-debate> (Accessed: 14 April 2024).

Loss and Damage Fund: A lifeline for Developing Countries?

flexible, grants-based approach, and adoption of comprehensive, full-spectrum approaches to Loss and Damage finance.⁹⁴

It is possible for this Fund to work towards addressing Loss and Damage especially in developing countries but there must be put in place effective tools and infrastructure to support the same.

The Loss and Damage Fund has the potential to be a crucial lifeline for Developing Countries, if applied efficaciously.

⁹⁴ Schultheiß, L., Shawoo, Z., Bakhtaoui, I., Ahmed, L., Lindsay, C. and Sircar, A., 2023. Operationalising the Loss and Damage Fund.

Enhancing Information Security Management in Online Arbitration and Mediation

Abstract

Digital transformation has permeated into the field of Alternative Dispute Resolution (ADR) leading to the widespread adoption of online arbitration and mediation. These processes have improved access to justice in the digital world by providing users with expeditious and cost effective dispute resolution services when compared to traditional ADR. However, online arbitration and mediation is associated with information security concerns. The systems supporting online arbitration and mediation may be subject to cyberattacks which threaten data security and privacy. This paper critically discusses the need to enhance information security management in online arbitration and mediation. It argues that enhancing information security management is vital for the effectiveness of online arbitration and mediation. The paper explores some of the information security concerns in online arbitration and mediation and their impacts on the viability of these processes. It further offers ideas towards enhancing information security management in online arbitration and mediation towards ensuring access to justice.

1.0 Introduction

Arbitration and mediation are key Alternative Dispute Resolution (ADR) processes¹. ADR is an umbrella term that covers a set of techniques that are applied to manage disputes without resort to adversarial litigation². These processes include negotiation, mediation, arbitration, conciliation, adjudication, expert determination, early neutral evaluation, and Traditional Dispute Resolution Mechanisms (TDRMs) among others³. ADR techniques have been upheld at a global level under the *Charter of the United Nations*⁴ which urges parties to a dispute to first seek a solution by *negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means* of their own choice (Emphasis

¹ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Glenwood Publishers Limited, 2015

² Ibid

³ Ibid

⁴ United Nations, Charter of the United Nations, 24 October 1945, 1 UNTS XVI

added)⁵. At a national level, the *Constitution of Kenya*⁶ recognizes ADR mechanisms. It mandates courts and tribunals to promote ADR mechanisms including reconciliation, mediation, arbitration and TDRMs⁷. ADR techniques are viewed as ideal in fostering access to justice due to their key attributes which include privacy, confidentiality, flexibility, informality, efficiency, party autonomy and the ability to foster expeditious and cost effective management of disputes⁸.

Arbitration and mediation have for many years been conducted through physical meetings involving the arbitral and mediation tribunals, parties, parties' representatives and witnesses⁹. However, the growth of technology and digital transformation has changed the landscape of dispute resolution¹⁰. Technology has permeated into the field of ADR with practices such as online mediation, online arbitration, smart contracts and block chain arbitration being widely embraced¹¹. It has been noted that online arbitration and mediation have been improved access to justice in the digital world¹². These techniques

⁵ Ibid, article 33 (1)

⁶ Constitution of Kenya., 2010., Government Printer, Nairobi

⁷ Ibid, article 159 (2) (c)

⁸ Muigua. K & Kariuki. F., 'ADR, Access to Justice and Development in Kenya.' Available at <http://kmco.co.ke/wp-content/uploads/2018/08/ADR-access-to-justiceanddevelopmentinKenyaSTRATHMORE-CONFERENCE-PRESENTATION.pdf> (Accessed on 05/06/2024)

⁹ Muigua. K., 'Virtual Arbitration Amidst Covid19 : Efficacy and Checklist for Best Practices' Available at <https://kmco.co.ke/wp-content/uploads/2020/05/Virtual-Arbitration-Proceedings-Amidst-COVID-19-Efficacy-and-Checklist-for-Best-Practices69523-Revised.pdf> (Accessed on 05/06/2024)

¹⁰ Eidemuller. H., & Wagner. G., 'Digital Dispute Resolution.' Available at <https://blogs.law.ox.ac.uk/business-law-blog/blog/2021/09/digital-dispute-resolution> (Accessed on 05/06/2024)

¹¹ Yeoh. D., 'Is Online Dispute Resolution the future of Alternative Dispute Resolution.' Available at <https://arbitrationblog.kluwerarbitration.com/2018/03/29/online-dispute-resolution-future-alternativedispute-resolution/> (Accessed on 05/06/2024)

¹² Abedi. F., Zeleznikow. J., & Brien. C., 'Developing Regulatory Standards for the Concept of Security in Online Dispute Resolution Systems' Available at https://www.researchgate.net/publication/334056927_Developing_regulatory_standards_for_the_concept_of_security_in_online_dispute_resolution_systems (Accessed on 05/06/2024)

provide users with expeditious and cost effective dispute resolution services when compared to traditional ADR¹³.

However, online arbitration and mediation raises several concerns key among them being information security challenges¹⁴. The systems supporting online arbitration and mediation may be subject to cyberattacks threatening data security and privacy.¹⁵ As a result, it is vital to provide secure digital environments where the exchange of communications, storage of evidence and files, and virtual hearings can be conducted remotely and securely in order to enhance the viability of online arbitration and mediation¹⁶.

This paper critically discusses the need to enhance information security management in online arbitration and mediation. It argues that enhancing information security management is vital for the effectiveness of online arbitration and mediation. The paper explores some of the information security concerns in online arbitration and mediation and their impacts on the viability of these processes. It further offers ideas towards enhancing information security management in online arbitration and mediation towards ensuring access to justice.

2.0 Information Security Concerns in Online Arbitration and Mediation

It has been noted that data and information powers much of the world economy¹⁷. Consequently, cyberattacks targeting personal and organizational information have become more common, damaging, and

¹³ Ibid

¹⁴ Muigua. K., 'Navigating the Digital Dispute Resolution Landscape: Challenges and Opportunities' Available at <https://kmco.co.ke/wp-content/uploads/2023/08/Navigating-the-Digital-Dispute-Resolution-Landscape-Challenges-and-Opportunities-.pdf> (Accessed on 05/06/2024)

¹⁵ Ibid

¹⁶ Gonzales. W., & Masumy. N., 'Online Dispute Resolution Platforms: Cybersecurity Champions in the COVID-19 Era? Time for Arbitral Institutions to Embrace ODRs' Available at <https://arbitrationblog.kluwerarbitration.com/2020/09/25/online-dispute-resolution-platforms-cybersecurity-champions-in-the-covid-19-era-time-for-arbitral-institutions-to-embrace-odrs/> (Accessed on 05/06/2024)

¹⁷ IBM., 'What is Information Security?' Available at <https://www.ibm.com/topics/information-security> (Accessed on 06/06/2024)

costly¹⁸. Information security relates to the protection of personal or an organization's important information including digital files and data, paper document, physical media, even human speech - against unauthorized access, disclosure, use or alteration¹⁹. Information security entails a set of policies, procedures and principles for safeguarding digital data and other kinds of information from unwarranted access²⁰.

It has been observed that organizations usually apply information security measures to guard digital information as part of an overall cybersecurity program²¹. The idea of cyber security involves the activity or process, ability or capability, or state whereby information and communications systems and the information contained therein are protected from and/or defended against damage, unauthorized use or modification, or exploitation²². Cybersecurity is the art of protecting networks, devices, and data from unauthorized access or criminal use and the practice of ensuring confidentiality, integrity, and availability of information²³. Cybersecurity comprises of any technology, measure or practice for preventing cyberattacks or mitigating their impact²⁴. It aims to protect individuals' and organizations' systems, applications, computing devices, sensitive data and financial assets against computer

¹⁸ Ibid

¹⁹ Ibid

²⁰ Yasar. K., 'Information Security (infosec)' Available at <https://www.techtarget.com/searchsecurity/definition/information-security-infosec> (Accessed on 06/06/2024)

²¹ Ibid

²² Bay. M., 'What is Cybersecurity? In Search of an Encompassing Definition for the Post-Snowden Era' Available at https://www.researchgate.net/profile/MortenBay/publication/308609163_WHAT_IS_CYBERSECURITY_In_search_of_an_encompassing_definition_for_the_post-Snowden_era/links/57e8575608ae9e5e4558c7d9/WHAT-IS-CYBERSECURITY-In-search-of-an-encompassing-definition-for-the-post-Snowden-era.pdf (Accessed on 06/06/2024)

²³ Cyber Security and Infrastructure Security Agency., 'What is Cybersecurity?' Available at <https://www.cisa.gov/news-events/news/what-cybersecurity> (Accessed on 06/06/2024)

²⁴ IBM., 'What is Cybersecurity?' Available at <https://www.ibm.com/topics/cybersecurity> (Accessed on 06/06/2024)

viruses, sophisticated and costly ransomware attacks, among other cyberattacks²⁵.

Cybersecurity is therefore a form of information security²⁶. It has been noted that information security is an umbrella term that includes all data, and not just data stored within the cyberspace²⁷. The concept of information security extends its protective umbrella not only cover digitally-stored data, but also other forms of data, such as paper-based information²⁸. Information security is premised on several principles including *confidentiality* which ensures that parties cannot access data they are not authorized to access²⁹; *integrity* which ensures that all information contained within an organization's database is complete and accurate, and has not been tampered with³⁰; and *availability* which ensures that users can access the information they are authorized to access, when they need it(Emphasis added)³¹.

Enhancing information security management is vital in online arbitration and mediation. It has been noted that the greater utilization of these online platforms and digitization has coincided with the growing frequency and sophistication of cyber-attacks³². Cyber security breaches are now an everyday reality, permeating all aspects of business and private life, including the world of online arbitration and mediation³³. Some of the disputes submitted to international arbitration and international mediation generally require evidence of facts which

²⁵ Ibid

²⁶ Galarita. B., & Swanston. B., 'Information Security vs Cybersecurity: What's The Difference?' Available at <https://www.forbes.com/advisor/education/it-and-tech/information-security-vs-cybersecurity/> (Accessed on 06/06/2024)

²⁷ Ibid

²⁸ Ibid

²⁹ IBM., 'What is Information Security?' Op Cit

³⁰ Ibid

³¹ Ibid

³² Gonzales. W., & Masumy. N., 'Online Dispute Resolution Platforms: Cybersecurity Champions in the COVID-19 Era? Time for Arbitral Institutions to Embrace ODRs' Op Cit

³³ Corporate Disputes., 'Cyber Security Concerns in International Arbitration' Available at <https://www.corporatedisputesmagazine.com/cyber-security-concerns-in-international-arbitration> (Accessed on 06/06/2024)

are not in the public domain and which may have the potential to influence politics and financial markets therefore being a target for cyberattacks³⁴. Further, it has been noted that the size and scope of proceedings in international arbitration and mediation may require a large number of professionals, including in-house lawyers, counsels, arbitrators and mediators and others to travel and work remotely in locations which may not have adequate security protocols therefore being exposed to cyberattacks³⁵.

Enhancing information security management creates trust in the technology used for online arbitration and mediation³⁶. These processes often utilize technologies such as email communication and videoconferencing to facilitate exchange of information between parties, parties' representatives, arbitral and mediation tribunals, and witnesses³⁷. These technologies may be subject to cyberattacks³⁸. In such cases, unauthorized persons may access the systems supporting online arbitration and mediation and engage in unwarranted practices including stealing of information, deleting information or sending unwanted information to the detriment of some parties³⁹. Therefore, in online arbitration and mediation, the privacy and security of the user is susceptible to being compromised since technology can be hacked or exploited to steal information and spy on people among other malpractices⁴⁰. Enhancing information security management is therefore key for the success of online arbitration and mediation.

³⁴ Ibid

³⁵ Ibid

³⁶ Abedi. F., Zeleznikow. J., & Brien. C., 'Developing Regulatory Standards for the Concept of Security in Online Dispute Resolution Systems' Op Cit

³⁷ Ibid

³⁸ Muigua. K., 'Legal Practice and New Frontiers: Embracing Technology for Enhanced Efficiency and Access to Justice' available at <http://kmco.co.ke/wp-content/uploads/2020/06/Legal-Practice-andNew-Frontiers-EmbracingTechnology-for-Enhanced-Efficiency-and-Access-to-Justice-Kariuki-MuiguaPh.D-June-2020.pdf> (Accessed on 06/06/2024)

³⁹ Ibid

⁴⁰ Ibid

3.0 Enhancing Information Security Management in Online Arbitration and Mediation

One of the key measures towards enhancing the success of online arbitration and mediation is ensuring that information is kept secure and confidential⁴¹. There is threat of unauthorized access to information or interception of data during transmission in online arbitration and mediation⁴². This can result in disclosure of information and loss of confidentiality⁴³. It is therefore imperative to enhance information security management for the devices and systems supporting online arbitration and mediation including computers and web-servers⁴⁴. Information security management is essential in online arbitration and mediation in order to prevent unauthorized people from accessing the technologies and systems supporting these processes and obtaining information especially where such information relates to the dispute at hand⁴⁵.

Enhancing information security management in online arbitration and mediation aims to prevent third parties from hacking the systems and technologies supporting these processes and obtaining non-public information, whether such information directly relates to a dispute (such as pictures uploaded as evidence in an online arbitration or mediation case) or whether it relates to personal information (such as addresses and phone numbers)⁴⁶. It also entails setting in place internal limitations to ensure that parties to a dispute or their neutrals cannot access areas or information they are not allowed to view (such as protecting a conversation held in a private caucus chat room between one party and a mediator from being viewable by the other party)⁴⁷.

⁴¹ Abedi. F., Zeleznikow. J., & Brien. C., 'Developing Regulatory Standards for the Concept of Security in Online Dispute Resolution Systems' Op Cit

⁴² Ibid

⁴³ Ibid

⁴⁴ Ibid

⁴⁵ Ebner. N., & Zeleznikow. J., 'Fairness, Trust and Security in Online Dispute Resolution.' *Journal of Public Law and Policy*, Volume 36, Issue 2 (2015)

⁴⁶ Ibid

⁴⁷ Ibid

The *Protocol on Cybersecurity in International Arbitration*⁴⁸ provides a framework to determine reasonable information security measures for individual arbitration matters⁴⁹. It includes procedural and practical guidance to assess security risks and identify available measures that may be implemented towards enhancing information security management in online arbitration⁵⁰. According to the Protocol, effective information security management in a particular arbitration requires all custodians of arbitration-related information including tribunals, parties, and administering institutions to adopt reasonable information security practices⁵¹. The Protocol requires parties, arbitrators, and administering institutions to ensure that all persons directly or indirectly involved in an arbitration on their behalf are aware of, and follow, any information security measures adopted in a proceeding, as well as the potential impact of any security incident⁵².

The Protocol sets out the criteria for determining the specific information security measures for a particular arbitration. This criteria includes: the risk profile of the arbitration; the existing information security practices, infrastructure, and capabilities of the parties, arbitrators, and any administering institution; the burden, costs, and the relative resources of the parties, arbitrators, and any administering institution; proportionality relative to the size, value, and risk profile of the dispute; and the efficiency of the arbitral process⁵³. Further, the Protocol provides that in considering the specific information security measures to be applied in an arbitration, consideration should be given to: asset management, access controls, encryption, communications security, physical and environmental security, operations security, and information security incident management⁵⁴.

⁴⁸ ICCA-NYC Bar-CPR Protocol on Cybersecurity in International Arbitration, 2020 Edition., Available at <https://documents.nyccbar.org/files/ICCA-NYC-Bar-CPR-Cybersecurity-Protocol-for-International-Arbitration-Electronic-Version.pdf> (Accessed on 07/06/2024)

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ Ibid

⁵² Ibid

⁵³ Ibid

⁵⁴ Ibid

Enhancing Information Security Management in Online Arbitration and Mediation

In order to enhance information security management in online arbitration, the Protocol requires information security issues to be raised as early as practicable in the arbitration, which ideally should not be later than the first case management conference⁵⁵. Further, in the event of a breach of the information security measures adopted for an arbitration proceeding or the occurrence of an information security incident, the Protocol gives power to an arbitral tribunal may, in its discretion: to allocate related costs among the parties; and/or impose sanctions on the parties⁵⁶. Implementing this Protocol can enhance information security management in both online arbitration and mediation.

One of the key measures that can be embraced towards enhancing information security management in online arbitration and mediation is enhancing multi-factor authentication⁵⁷. It has been noted that two-step verification is a salient feature of cybersecurity that limits the potential for data exposure⁵⁸. This feature provides an additional layer of security that ensures that only authorized individuals are accessing sensitive information⁵⁹. It allows participants in online arbitration and mediation to obtain a unique identification that can be utilized to access proceedings or information which has to be validated by a second factor or device upon login on a phone or via e-mail⁶⁰. Multi-factor authentication is therefore a key feature in enhancing information security management in online arbitration and mediation⁶¹.

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷ Gonzales. W., & Masumy. N., 'Online Dispute Resolution Platforms: Cybersecurity Champions in the COVID-19 Era? Time for Arbitral Institutions to Embrace ODRs' Op Cit

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Ibid

⁶¹ American Arbitration Association., 'Multi Factor Authentication' Available at https://www.adr.org/sites/default/files/document_repository/Multi-Factor_Authentication_FAQ_0.pdf (Accessed on 07/06/2024)

Encryption of data is also vital in enhancing information security management in online arbitration and mediation⁶². This is a cybersecurity feature that protects information by using extremely complex and unique codes that mix up data and prevents unauthorized users from deciphering sensitive information⁶³. Encryption plays an important part in ensuring confidentiality and data security⁶⁴. Encryption makes it possible for the arbitral and mediation tribunal and the parties to communicate without the risk of unauthorized third parties having access to their communication, thus creating secure data communication⁶⁵.

It is also necessary to embrace good practices in collecting and storing information through identifying, classifying, and controlling of information during online arbitration and mediation⁶⁶. Under this feature, information generated or utilized during online arbitration or mediation proceedings is initially stored securely and then later destroyed at the conclusion of the proceedings⁶⁷. Managing data breaches is also vital in enhancing information security management in online arbitration and mediation⁶⁸. In cases of data breaches, it is imperative to act promptly to mitigate a data breach and recover lost or stolen information⁶⁹. Arbitral and mediation centres also have a key role to play in enhancing information security management in online arbitration and mediation by offering guidance on cybersecurity and investing in secure devices, technologies, and systems that can enhance the viability of online arbitration and mediation.

⁶² Gonzales. W., & Masumy. N., 'Online Dispute Resolution Platforms: Cybersecurity Champions in the COVID-19 Era? Time for Arbitral Institutions to Embrace ODRs' Op Cit

⁶³ Ibid

⁶⁴ Organisation for Economic Co-operation and Development., 'Online Dispute Resolution as a Solution to Cross-Border E-Disputes' Available at <https://web.archive.oecd.org/2012-06-15/168889-1878940.pdf> (Accessed on 07/06/2024)

⁶⁵ Ibid

⁶⁶ Gonzales. W., & Masumy. N., 'Online Dispute Resolution Platforms: Cybersecurity Champions in the COVID-19 Era? Time for Arbitral Institutions to Embrace ODRs' Op Cit

⁶⁷ Ibid

⁶⁸ Ibid

⁶⁹ Ibid

Finally, it is important for arbitral and mediation tribunals to ensure that all communication to the parties especially notification of the arbitral award by the arbitral tribunal is carried out by a secure email that is automatically timed and dated and is accompanied by secured electronic signatures of the arbitrator(s)⁷⁰.

4.0 Conclusion

Enhancing information security management is vital in online arbitration and mediation. The technologies and systems supporting online arbitration and mediation may be subject to cyberattacks where unauthorized persons may access them and engage in unwarranted practices including stealing of information, deleting information or sending unwanted information to the detriment of some parties⁷¹. Enhancing information security management creates trust in the technology used for online arbitration and mediation and ensures the effectiveness of the proceedings and outcomes in online arbitration and mediation⁷². Information security management in online arbitration and mediation can be enhanced through embracing multi-factor authentication⁷³; encryption of data⁷⁴; enhancing the collection and storage of information⁷⁵; managing data breaches⁷⁶; investing in

⁷⁰ Wolff. R., 'E-Arbitration Agreements and E-Awards - Arbitration Agreements Concluded in an Electronic Environment and Digital Arbitral Awards' Available at <https://www.cambridge.org/core/books/abs/arbitration-in-the-digital-age/earbitration-agreements-and-eawards-arbitration-agreements-concluded-in-an-electronic-environment-and-digital-arbitral-awards/4B7766BE1DD4D34ED44F1D9821028BF2> (Accessed on 07/06/2024)

⁷¹ ⁷¹ Muigua. K., 'Legal Practice and New Frontiers: Embracing Technology for Enhanced Efficiency and Access to Justice' Op Cit

⁷² Abedi. F., Zeleznikow. J., & Brien. C., 'Developing Regulatory Standards for the Concept of Security in Online Dispute Resolution Systems' Op Cit

⁷³ Gonzales. W., & Masumy. N., 'Online Dispute Resolution Platforms: Cybersecurity Champions in the COVID-19 Era? Time for Arbitral Institutions to Embrace ODRs' Op Cit

⁷⁴ Organisation for Economic Co-operation and Development., 'Online Dispute Resolution as a Solution to Cross-Border E-Disputes' Op Cit

⁷⁵ Gonzales. W., & Masumy. N., 'Online Dispute Resolution Platforms: Cybersecurity Champions in the COVID-19 Era? Time for Arbitral Institutions to Embrace ODRs' Op Cit

⁷⁶ Ibid

Enhancing Information Security Management in Online Arbitration and Mediation

information security management by arbitral and mediation centres⁷⁷; and ensuring secure communication from arbitral and mediation tribunals⁷⁸. It is imperative to enhance Information Security Management in order to ensure the success of online arbitration and mediation.

⁷⁷ Ibid

⁷⁸ Wolff. R., 'E-Arbitration Agreements and E-Awards – Arbitration Agreements Concluded in an Electronic Environment and Digital Arbitral Awards' Op Cit

Towards Healthy Ecosystems: Addressing Plastic Pollution for Sustainability

Abstract

Burning, landfilling, and incineration of plastic waste pollutes the environment and costs money. The worldwide buildup of plastic pollution exceeds 8.3 billion metric tonnes since 1950. Home plastic waste has increased because to the COVID-19 epidemic, causing a global waste management catastrophe. Synthetic oil byproduct plastics are affordable, durable, lightweight, flexible, stiff, vivid, moldable, and resistant to high temperatures, corrosion, UV radiation, and chemicals.

Africa is the second most polluted continent, importing about 500 garbage cargo containers weekly. Plastic garbage costs USD 13 billion annually in tourism, leisure, and fishing. To mitigate the social and environmental impacts of poorly managed plastic garbage, sustainable development must be prioritized. In 2017, Kenya outlawed the use, production, and importation of all commercial and home plastic bags. Exempt were medical garbage, construction, food packaging, and trash bin liners. Single-use plastic bags dropped 80% after the ban.

The restriction helped, but the nation still faces plastic pollution from other sources. This article shows the negative consequences of plastic pollution on human health and the ecosystem and contributes to sustainability literature on how best to address this pollution challenge.

1.0 Introduction

Plastic garbage is being released into the environment at an alarming pace due to excessive manufacturing, incorrect landfill disposal, and insufficient recycling.¹ This is causing major difficulties for the expanding populations of emerging nations.² The exponential increase in population has a direct impact

¹ Kumar, R., Verma, A., Shome, A., Sinha, R., Sinha, S., Jha, P.K., Kumar, R., Kumar, P., Shubham, Das, S. and Sharma, P., 2021. Impacts of plastic pollution on ecosystem services, sustainable development goals, and need to focus on circular economy and policy interventions. *Sustainability*, 13(17), p.9963.

² Ibid.

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

on the abundance of plastic garbage, ultimately leading to environmental contamination.³ The buildup of plastic garbage is a substantial worldwide problem, since conventional practices like open burning, landfilling, and incineration result in the release of greenhouse gases and economic losses.⁴ Since 1950, the global accumulation of plastic pollution is estimated to exceed 8.3 billion metric tonnes, mostly driven by advancements in technology.⁵ Due to the COVID-19 pandemic, there has been a significant surge in plastic trash generated at home, resulting in a worldwide crisis in waste management.⁶ Inadequate handling of plastic garbage may have a detrimental effect on the environment, as well as the animals and organisms that live in it.⁷

Plastics, originating from the Greek term "plastikos," are organic compounds composed of complex molecules, mostly produced from synthetic oil byproducts.⁸ These materials are cost-effective, easy to use, very durable, lightweight, flexible, stiff, vibrant, moldable, and capable of withstanding high

³ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233; Pilapitiya, P.N.T. and Ratnayake, A.S., 2024. The world of plastic waste: a review. *Cleaner Materials*, p.100220; Alabi, O.A., Ologbonjaye, K.I., Awosolu, O. and Alalade, O.E., 2019. Public and environmental health effects of plastic wastes disposal: a review. *J Toxicol Risk Assess*, 5(021), pp.1-13.

⁴ Maitlo, G., Ali, I., Maitlo, H.A., Ali, S., Unar, I.N., Ahmad, M.B., Bhutto, D.K., Karmani, R.K., Naich, S.U.R., Sajjad, R.U. and Ali, S., 2022. Plastic waste recycling, applications, and future prospects for a sustainable environment. *Sustainability*, 14(18), p.11637.

⁵ Maitlo, G., Ali, I., Maitlo, H.A., Ali, S., Unar, I.N., Ahmad, M.B., Bhutto, D.K., Karmani, R.K., Naich, S.U.R., Sajjad, R.U. and Ali, S., 2022. Plastic waste recycling, applications, and future prospects for a sustainable environment. *Sustainability*, 14(18), p.11637; Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

⁶ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

⁷ Ibid.

⁸ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233; Ilyas, M., Ahmad, W., Khan, H., Yousaf, S., Khan, K. and Nazir, S., 2018. Plastic waste as a significant threat to environment—a systematic literature review. *Reviews on environmental health*, 33(4), pp.383-406.

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

temperatures, corrosion, UV radiation, and chemical exposure.⁹ Their characteristics differ mainly as a result of their origin, manufacturing procedure, or additions. Plastics are categorized into four groups: natural, semi-synthetic, bioplastics, and virgin or synthetic plastics.¹⁰

Manufacturing has outpaced other sectors in terms of growth, and Africa is now the second most polluted continent globally, with a monthly import of over five hundred cargo containers filled with waste.¹¹ The yearly economic impact of plastic trash amounts to around USD 13 billion, including losses in tourist revenue resulting from reduced visual appeal, diminished recreational opportunities, and negative effects on fishing activities.¹² It is crucial to prioritize sustainable development objectives in order to address and reduce the social and environmental consequences of poorly managed plastic trash.¹³ It is worth noting that Kenya Plastic Bag Ban effected through Gazette Notice No. 2356 dated February 28, 2017 and issued under the Environmental Management and Co-ordination Act (Plastic Bag Ban on Secondary Packaging), with effect from 6 months from the date of this notice banned the use, manufacture and importation of all plastic bags used for commercial and household packaging defined as follows: (a) Carrier bag – bag constructed with handles, and with or without gussets; (b) Flat bag – bag constructed without handles, and with or without gussets.¹⁴ Medical trash, construction, food packaging, and rubbish bin liners were exempt. Plastic bag manufacturers and users risk up to four years in prison or a \$40,000 (4.4 million

⁹ Ibid.; Ilyas, M., Ahmad, W., Khan, H., Yousaf, S., Khan, K. and Nazir, S., 2018. Plastic waste as a significant threat to environment—a systematic literature review. *Reviews on environmental health*, 33(4), pp.383-406.

¹⁰ Ibid.

¹¹ Ibid.; Pandey, P., Dhiman, M., Kansal, A. and Subudhi, S.P., 2023. Plastic waste management for sustainable environment: techniques and approaches. *Waste Disposal & Sustainable Energy*, 5(2), pp.205-222.

¹² Maitlo, G., Ali, I., Maitlo, H.A., Ali, S., Unar, I.N., Ahmad, M.B., Bhutto, D.K., Karmani, R.K., Naich, S.U.R., Sajjad, R.U. and Ali, S., 2022. Plastic waste recycling, applications, and future prospects for a sustainable environment. *Sustainability*, 14(18), p.11637.

¹³ Ibid.

¹⁴ Republic of Kenya, Gazette Notice No. 2356, *the Kenya Gazette*, Vol.CXIX-No.31, Page. 1077, 14 March,2017. Available at http://kenyalaw.org/kenya_gazette/gazette/notice/181293

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

Kenyan shillings) fine, among of the worst punishments in the world.¹⁵ Earlier efforts to ban these plastic bags failed, but this ban worked, even though the Kenyan Association of Manufacturers complained.¹⁶ The use of single-use plastic bags dropped by 80%.¹⁷ Support from the people and involvement of stakeholders are big parts of success.¹⁸ This was followed by a number of related policies. The Ministry of Tourism and Wildlife also issued official notice No. 4858 on June 6, 2019, about a ban on single-use plastics in protected areas starting June 5, 2020.¹⁹ Despite this ban and the associated success, the country is still struggling with the problem as well as other non-banned sources of plastic pollution.²⁰

This paper highlights the adverse effects of plastic pollution on not only human health but also the environment in general and also adds to the existing literature on how the problem can be effectively addressed to sustainability.

¹⁵ 'Kenya Plastic Bag Ban Notice No. 2356 - The Environmental Management and Co-ordination Act (Plastic Bag Ban on Secondary Packaging)' (no date) *Global Plastics Policy Centre*. Available at: <https://plasticpolicy.port.ac.uk/policy-reviews/kenya-plastic-bag-ban/> (Accessed: 11 June 2024).

¹⁶ Ibid.

¹⁷ Kimeu C, 'After a Plastic Bag Ban, Kenya Takes Another Shot at Its Pollution Problem' *The Guardian* (30 May 2023) <<https://www.theguardian.com/global-development/2023/may/30/kenya-wrestles-with-its-plastic-pollution-problem>> accessed 11 June 2024.

¹⁸ Ibid.; *National Environment Management Authority (NEMA) - Judges upholds plastic bags ban* (no date). Available at: https://www.nema.go.ke/index.php?option=com_content&view=article&id=225;judges-upholds-plastic-bags-ban&catid=10:news-and-events&Itemid=375 (Accessed: 11 June 2024).

¹⁹ *Policies, Laws & Regulations (2024) Conservation Alliance of Kenya*. Available at: <https://www.conservationalliance.or.ke/resources/policies-laws> (Accessed: 11 June 2024).

²⁰ *The return of single-use plastics six years after ban (2023) Nation*. Available at: <https://nation.africa/kenya/health/the-return-of-single-use-plastics-six-years-after-ban-4258862> (Accessed: 11 June 2024); Machingira, D.A. (2019) 'Current status on dealing with plastics in Kenya', *Mazingira Safi*, 18 December. Available at: <https://www.mazingirasafi.com/current-status-on-dealing-with-plastics-in-kenya/> (Accessed: 11 June 2024); week, S. up to date on the editors' picks of the (2020) *Plastic ban a major step in achieving green economy goals, Business Daily*. Available at: <https://www.businessdailyafrica.com/bd/opinion-analysis/columnists/plastic-ban-a-major-step-in-achieving-green-economy-goals-2169460> (Accessed: 11 June 2024).

2.0 Plastic Pollution Control: Challenges and Prospects

The exponential surge in plastic trash has resulted in a catastrophic impact on the environment, as the demand for plastic continues to grow each year.²¹ The extensive exploitation, disregard, non-biodegradable characteristics, and physical and chemical features of plastic trash have led to a significant pollution burden on the environment.²² Plastic infiltrates the food chain and may result in severe health complications for both aquatic creatures and people.²³

The deterioration of plastic garbage and its social implications are substantial concerns that need attention.²⁴ Inadequate management of manufacture, utilisation, and disposal practices results in the depletion of finite resources, environmental issues, climate change, and detrimental effects on the survival of plant and animal life.²⁵

Plastic polymers are classified based on their environmental toxicity, which might harm the organisms living in their vicinity.²⁶ The majority of plastic trash is disposed of by incineration, landfilling, littering, or recycling after it is no longer functional, which leads to the release of carbon or methane

²¹ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

²² Pandey, P., Dhiman, M., Kansal, A. and Subudhi, S.P., 2023. Plastic waste management for sustainable environment: techniques and approaches. *Waste Disposal & Sustainable Energy*, 5(2), pp.205-222; Evode, N., Qamar, S.A., Bilal, M., Barceló, D. and Iqbal, H.M., 2021. Plastic waste and its management strategies for environmental sustainability. *Case Studies in Chemical and Environmental Engineering*, 4, p.100142.

²³ Ibid.

²⁴ Maitlo, G., Ali, I., Maitlo, H.A., Ali, S., Unar, I.N., Ahmad, M.B., Bhutto, D.K., Karmani, R.K., Naich, S.U.R., Sajjad, R.U. and Ali, S., 2022. Plastic waste recycling, applications, and future prospects for a sustainable environment. *Sustainability*, 14(18), p.11637.

²⁵ Ibid.

²⁶ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

emissions over a period of time.²⁷ In order to mitigate the accumulation of garbage in landfills, stakeholders and governments are striving to minimise the quantity of waste generated.²⁸

The challenges of recycling wasted plastic include insufficient infrastructure for collecting and processing plastic trash, intricate recycling procedures, limited economic benefits, and a lack of sufficient end-users for the recycled plastic.²⁹ The low cost of crude oil incentivizes the manufacturing of new plastic from virgin materials, making it cheaper than recycling.³⁰ This results in a low rate of recycling, highlighting the significant shortcomings of the conventional "take, make, and discard" approach.³¹

Recycling, recovering, and reuse are more effective methods for mitigating the wastage of raw materials and the excessive exploitation of resources.³² To encourage the use of the recycling system and reduce the waste of raw materials, it is necessary to implement long-term solutions such as open-loop and closed-loop systems.³³ The issue of wasted plastic may be mitigated by

²⁷ Ibid.; Ilyas, M., Ahmad, W., Khan, H., Yousaf, S., Khan, K. and Nazir, S., 2018. Plastic waste as a significant threat to environment—a systematic literature review. *Reviews on environmental health*, 33(4), pp.383-406.

²⁸ Ibid.

²⁹ Maitlo, G., Ali, I., Maitlo, H.A., Ali, S., Unar, I.N., Ahmad, M.B., Bhutto, D.K., Karmani, R.K., Naich, S.U.R., Sajjad, R.U. and Ali, S., 2022. Plastic waste recycling, applications, and future prospects for a sustainable environment. *Sustainability*, 14(18), p.11637.

³⁰ Ibid.; Kiernan, G. (2020) *The Price of Oil, The Cost to Plastic, Pakire Polymers*. Available at: <https://pakirepolymers.com/the-price-of-oil-the-cost-to-plastic/> (Accessed: 11 June 2024); Foster, L. (no date) *Plastic Is Choking the World. Why People Are Using More of It.*, barrons. Available at: <https://www.barrons.com/articles/cheap-new-plastic-choking-the-world-9b318936> (Accessed: 11 June 2024); Basham, K. (2019) *How Oil Prices affect Plastic Recycling*, *Plastic Expert*. Available at: <https://www.plasticexpert.co.uk/oil-prices-plastic-recycling/> (Accessed: 11 June 2024); Kramer, S. (no date) *The one thing that makes recycling plastic work is falling apart*, *Business Insider*. Available at: <https://www.businessinsider.com/low-oil-prices-hurt-plastics-recycling-2016-4> (Accessed: 11 June 2024).

³¹ Ibid.

³² Ibid.; David, A., Thangavel, Y.D. and Sankriti, R., 2019. Recover, recycle and reuse: An efficient way to reduce the waste.

³³ Ibid.; 5.2. *Recycling: open-loop versus closed-loop thinking* | *EME 807: Technologies for Sustainability Systems* (no date). Available at: <https://www.e->

technological innovation, however, it is crucial to also consider the sustainability of these innovations and their application.³⁴

3.0 Marine litter and plastic pollution

The current global strategies to tackle plastic pollution are inadequate in effectively resolving the issue.³⁵ Existing legislative measures prohibiting the disposal of plastic garbage in the ocean, as well as volunteer initiatives and collaborations involving many stakeholders focused on waste management and marine litter, have not proven effective in sufficiently decreasing the quantity of plastic debris that ends up in the marine ecosystem.³⁶

The long-term durability of plastics in aquatic environments has the potential to cause marine pollution, which may have adverse effects on aquatic organisms.³⁷ The increasing accumulation of plastic garbage in the ocean is

education.psu.edu/eme807/node/624 (Accessed: 11 June 2024); Morsetto, P. (2020) 'Targets for a circular economy', *Resources, Conservation and Recycling*, 153, p. 104553. Available at: <https://doi.org/10.1016/j.resconrec.2019.104553>; Team, G. (2023) *Growth of the Circular Economy and Development of Closed-Loop Supply Chains, Global Partner Solutions*. Available at: <https://www.gpsi-intl.com/blog/growth-of-the-circular-economy-and-development-of-closed-loop-supply-chains/> (Accessed: 11 June 2024); Huysman, S. *et al.* (2015) 'The recyclability benefit rate of closed-loop and open-loop systems: A case study on plastic recycling in Flanders', *Resources, Conservation and Recycling*, 101. Available at: <https://doi.org/10.1016/j.resconrec.2015.05.014>.

³⁴ Ibid.; Mashudi *et al.* (2023) 'Innovative Strategies and Technologies in Waste Management in the Modern Era Integration of Sustainable Principles, Resource Efficiency, and Environmental Impact', *International Journal of Science and Society*, 5, pp. 87–100. Available at: <https://doi.org/10.54783/ijssoc.v5i4.767>.

³⁵ Simon, N. and Schulte, M.L., 2017. Stopping global plastic pollution: The case for an international convention. In *Stopping global plastic pollution: the case for an international convention: Simon, Nils | uSchulte, Maro Luisa*. Berlin: Heinrich-Böll-Stiftung, p.7.

³⁶ Manyara P, Raubenheimer K and Sadan Z, 'Legal and Policy Frameworks to Address Marine Litter Through Improved Livelihoods' in Thomas Maes and Fiona Preston-Whyte (eds), *The African Marine Litter Outlook* (Springer International Publishing 2023) <https://doi.org/10.1007/978-3-031-08626-7_4> accessed 11 June 2024; da Costa JP and others, 'The Role of Legislation, Regulatory Initiatives and Guidelines on the Control of Plastic Pollution' (2020) 8 *Frontiers in Environmental Science* <<https://www.frontiersin.org/articles/10.3389/fenvs.2020.00104>> accessed 11 June 2024.

³⁷ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

creating an urgent need for effective and environmentally-friendly solutions to address the issue.³⁸ Plastics have harmful effects on the ecosystem since they ruin habitats, entangle marine creatures, aid the spread of invasive species across habitats, and accumulate in sediments, potentially impacting the animals that reside and search for food on the ocean floor.³⁹

Approximately 80% of the 59 million tonnes of rubbish generated ends up on shorelines, while a mere 12% is recycled. The residual plastic garbage contaminates the coastline.⁴⁰ Plastic debris in waterways has properties that make it attracted to water and have a high electrical charge compared to land.⁴¹ Additionally, the presence of microbes may cause the plastics to break down into smaller pieces called microplastics. Bacterial growth and adherence to plastic debris may lead to the formation of microcolonies, which can have detrimental effects on aquatic life.⁴² Scientists predict that by 2050, there will be a shortage of fish caused by the presence of plastics in the seas. Specifically, out of the 500 billion plastic bags, around 13 million tonnes of them wind up on the beach, resulting in the death of over 100,000 aquatic animals.⁴³ Plastics that are exposed to the ocean's surface undergo weathering, which releases harmful greenhouse gases such as ethylene and methane.⁴⁴

One possible solution is the development and deployment of devices designed to either prevent the entry of plastics into waterways or to gather and remove

³⁸ Schmaltz, E., Melvin, E.C., Diana, Z., Gunady, E.F., Rittschof, D., Somarelli, J.A., Virdin, J. and Dunphy-Daly, M.M., 2020. Plastic pollution solutions: emerging technologies to prevent and collect marine plastic pollution. *Environment international*, 144, p.106067; Kosior, E. and Crescenzi, I., 2020. Solutions to the plastic waste problem on land and in the oceans. In *Plastic waste and recycling* (pp. 415-446). Academic Press.

³⁹ *ibid*

⁴⁰ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

⁴¹ *Ibid*.

⁴² *Ibid*.

⁴³ *Ibid*.; Maitlo, G., Ali, I., Maitlo, H.A., Ali, S., Unar, I.N., Ahmad, M.B., Bhutto, D.K., Karmani, R.K., Naich, S.U.R., Sajjad, R.U. and Ali, S., 2022. Plastic waste recycling, applications, and future prospects for a sustainable environment. *Sustainability*, 14(18), p.11637.

⁴⁴ *Ibid*.

plastic pollution in marine and riverine environments.⁴⁵ These technologies have the potential to effectively support governmental initiatives in addressing the issue of marine plastic pollution.⁴⁶ The UNEA Resolution 2/11 proposes that member nations collaborate at both regional and international levels to address the issue of marine plastic hotspots.⁴⁷ It also calls for the development of ecologically sustainable systems and techniques to effectively remove and dispose of marine litter.⁴⁸ However, it is to be noted that at the moment, there is a lack of efficient methods for the collection and remediation of plastic and microplastic pollution in the seas.⁴⁹ The primary effort needed to address plastic pollution and its related effects is prevention at the source.⁵⁰ To avoid more plastic pollution and harm to aquatic ecosystems and human health, a comprehensive strategy that integrates technology, legislation, and activism is necessary.⁵¹ As it is, the existing international regulations, governmental policies, non-state regulations, and consumer practices are insufficient in their strength and comprehensiveness to adequately safeguard the environment on a worldwide scale.⁵²

4.0 Plastics and Public Health

Uncontrolled dumping of plastics on land and the act of burning them in the open may result in the emission of harmful chemicals into the atmosphere, which poses a risk to public health.⁵³ Plastic pollution has a direct influence on

⁴⁵ Schmaltz, E., Melvin, E.C., Diana, Z., Gunady, E.F., Rittschof, D., Somarelli, J.A., Virdin, J. and Dunphy-Daly, M.M., 2020. Plastic pollution solutions: emerging technologies to prevent and collect marine plastic pollution. *Environment international*, 144, p.106067.

⁴⁶ Ibid.

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Kosior, E. and Crescenzi, I., 2020. Solutions to the plastic waste problem on land and in the oceans. In *Plastic waste and recycling* (pp. 415-446). Academic Press.

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Schmaltz, E., Melvin, E.C., Diana, Z., Gunady, E.F., Rittschof, D., Somarelli, J.A., Virdin, J. and Dunphy-Daly, M.M., 2020. Plastic pollution solutions: emerging technologies to prevent and collect marine plastic pollution. *Environment international*, 144, p.106067.

⁵³ Alabi, O.A., Ologbonjaye, K.I., Awosolu, O. and Alalade, O.E., 2019. Public and environmental health effects of plastic wastes disposal: a review. *J Toxicol Risk Assess*, 5(021), pp.1-13.

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

both human health and the environment, which in turn affects the environmental performance rating of any country.⁵⁴ Plastic additives, such as endocrine disruptors and carcinogens, have the potential to cause damage to people via skin contact, ingestion, and inhalation.⁵⁵ Microplastics are widespread environmental pollutants that people inevitably consume, leading to particle toxicity in all living organisms. This toxicity manifests as oxidative stress, inflammatory damage, and enhanced absorption or movement of artificial particles.⁵⁶ The immune system's failure to eliminate artificial particles may lead to persistent inflammation and heighten the likelihood of developing neoplasms.⁵⁷ Microplastics have the ability to release components, pollutants, and harmful organisms, which means they may be found everywhere in the environment and in consumer items.⁵⁸

The non-toxic nature of plastic polymers, along with the existence of additives and leftover monomers, poses a huge danger to humanity. Plastic additives are substances that may alter the endocrine system and cause cancer.⁵⁹ They

⁵⁴ Pandey, P., Dhiman, M., Kansal, A. and Subudhi, S.P., 2023. Plastic waste management for sustainable environment: techniques and approaches. *Waste Disposal & Sustainable Energy*, 5(2), pp.205-222.

⁵⁵ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

⁵⁶ Ibid.; Zhao, B. *et al.* (2024) 'The potential toxicity of microplastics on human health', *Science of The Total Environment*, 912, p. 168946. Available at: <https://doi.org/10.1016/j.scitotenv.2023.168946>; Emenike, E.C. *et al.* (2023) 'From oceans to dinner plates: The impact of microplastics on human health', *Heliyon*, 9(10), p. e20440. Available at: <https://doi.org/10.1016/j.heliyon.2023.e20440>; Bhuyan, M.S. (2022) 'Effects of Microplastics on Fish and in Human Health', *Frontiers in Environmental Science*, 10. Available at: <https://doi.org/10.3389/fenvs.2022.827289>; Ziani, K. *et al.* (2023) 'Microplastics: A Real Global Threat for Environment and Food Safety: A State of the Art Review', *Nutrients*, 15(3), p. 617. Available at: <https://doi.org/10.3390/nu15030617>.

⁵⁷ Ibid.; Gonzalez, H., Hagerling, C. and Werb, Z. (2018) 'Roles of the immune system in cancer: from tumor initiation to metastatic progression', *Genes & Development*, 32(19–20), pp. 1267–1284. Available at: <https://doi.org/10.1101/gad.314617.118>.

⁵⁸ Ibid.; Lee, Y., Cho, J., Sohn, J. and Kim, C., 2023. Health effects of microplastic exposures: current issues and perspectives in South Korea. *Yonsei Medical Journal*, 64(5), p.301.

⁵⁹ Ibid.; Ullah, Sana *et al.* (2022) 'A review of the endocrine disrupting effects of micro and nano plastic and their associated chemicals in mammals', *Frontiers in*

can affect people when they come into touch with the skin, are ingested, or are inhaled. Humans inevitably consume microplastics, which are widespread environmental pollutants, via eating, breathing, and skin contact.⁶⁰

Exposure to microplastics may lead to particle toxicity in all living organisms, resulting in many harmful effects such as oxidative stress, inflammatory lesions, increased absorption or movement of particles, aberrant rearrangement of chromosomes, chronic inflammation, and heightened chance of developing carcinogenesis.⁶¹ The primary route of human exposure is by ingestion, with an estimated intake of 39,000-52,000 particles per person per year. The interaction between the skin and microplastics is considered to be a less significant pathway of exposure.⁶² Plastic additives and microplastics may be detrimental to people if consumed by animals.⁶³ Animals are very

Endocrinology, 13. Available at: <https://doi.org/10.3389/fendo.2022.1084236>; Bryce, E. (no date) *How Do Chemicals in Plastics Impact Your Endocrine System?*, *Scientific American*. Available at: <https://www.scientificamerican.com/article/how-do-chemicals-in-plastics-impact-your-endocrine-system/> (Accessed: 11 June 2024); Maddela, N.R., Kakarla, D., Venkateswarlu, K. and Megharaj, M., 2023. Additives of plastics: Entry into the environment and potential risks to human and ecological health. *Journal of Environmental Management*, 348, p.119364; Meeker, J.D., Sathyanarayana, S. and Swan, S.H. (2009) 'Phthalates and other additives in plastics: human exposure and associated health outcomes', *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1526), pp. 2097–2113. Available at: <https://doi.org/10.1098/rstb.2008.0268>.

⁶⁰ Ibid.; Lin, Y.-D. *et al.* (2023) 'Sources, Degradation, Ingestion and Effects of Microplastics on Humans: A Review', *Toxics*, 11(9), p. 747. Available at: <https://doi.org/10.3390/toxics11090747>.

⁶¹ Ibid.; Rahman, A., Yadav, O.P., Sarkar, A., Achari, G. and Slobodnik, J., 2020. Environmental exposure to microplastics: a scoping review on potential human health effects and knowledge gaps. *BLDE University Journal of Health Sciences*, 5(Suppl 1), p. S25; Yee, M.S.-L. *et al.* (2021) 'Impact of Microplastics and Nanoplastics on Human Health', *Nanomaterials*, 11(2), p. 496. Available at: <https://doi.org/10.3390/nano11020496>.

⁶² Ibid.; Yee, M.S.-L. *et al.* (2021) 'Impact of Microplastics and Nanoplastics on Human Health', *Nanomaterials*, 11(2), p. 496. Available at: <https://doi.org/10.3390/nano11020496>.

⁶³ Ibid.

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

susceptible to encountering plastic debris on land or in bodies of water when they are eating, which may lead to fatalities in some instances.⁶⁴

The effectiveness of organic phosphorus and nitrogen is diminished as a result of the disruption caused by plastic debris on the humus. Plastic debris present in soil obstructs the openings in plant root cell walls, resulting in a reduction in the uptake of nutrients and water.⁶⁵ Landfills are causing increasing worry among environmentalists and public health experts due to the presence of harmful substances and their ability to seep into the surrounding areas.⁶⁶

It is thus evident from the foregoing that plastic pollution has penetrated every aspect of the environment and organisms' life. This creates a more urgent need to address the problem for sustainability.

5.0 International and Regional Approaches on Plastic Pollution Control

There is an increasing variety of suggestions on how to enhance international environmental legislation and policy in order to address the issue of plastic pollution, particularly in marine environments.⁶⁷ More than 80 nations have endorsed a Ministerial Statement advocating for an agreement that addresses plastic pollution across its entire life cycle and emphasizes the need to address the root causes of plastic pollution.⁶⁸

⁶⁴ Ibid.; *What Happens When Animals Eat Plastic* (no date) Plastic Soup Foundation. Available at: <https://www.plasticsoupfoundation.org/en/plastic-problem/plastic-affect-animals/animals-eat-plastic/> (Accessed: 11 June 2024); Zolotova, N. *et al.* (2022) 'Harmful effects of the microplastic pollution on animal health: a literature review', *PeerJ*, 10, p. e13503. Available at: <https://doi.org/10.7717/peerj.13503>; Lai, O. (2022) *The Detrimental Impacts of Plastic Pollution on Animals*, Earth.Org. Available at: <https://earth.org/plastic-pollution-animals/> (Accessed: 11 June 2024); Ziani, K. *et al.* (2023) 'Microplastics: A Real Global Threat for Environment and Food Safety: A State of the Art Review', *Nutrients*, 15(3), p. 617. Available at: <https://doi.org/10.3390/nu15030617>.

⁶⁵ Ibid.

⁶⁶ Alabi, O.A., Ologbonjaye, K.I., Awosolu, O. and Alalade, O.E., 2019. Public and environmental health effects of plastic wastes disposal: a review. *J Toxicol Risk Assess*, 5(201), pp.1-13.

⁶⁷ Barrowclough, D. and Birkbeck, C.D. (2022) 'Transforming the Global Plastics Economy: The Role of Economic Policies in the Global Governance of Plastic Pollution', *Social Sciences*, 11(1), p. 26. Available at: <https://doi.org/10.3390/socsci11010026>.

⁶⁸ Ibid.

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

The regulatory measures regarding plastic waste primarily target the reduction of plastic straws, plastic cutlery, and polystyrene items, including cups and microbeads. Nevertheless, the impact of multilateral accords and United Nations resolutions has been restricted up to this point.⁶⁹

The United Nations (UN) Environment Assembly adopted a momentous resolution on March 2, 2022, with the objective of eradicating plastic pollution.⁷⁰ The resolution supported the creation of an intergovernmental negotiating committee (INC) to begin discussions with the goal of finalising a legally binding agreement by the end of 2024.⁷¹ The resolution seeks to tackle three primary goals: exploring various options to manage the whole life cycle of plastic waste, promoting the development of plastic materials and products that may be recycled and reused, and enhancing international cooperation to promote the adoption of innovative technologies.⁷²

⁶⁹ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

⁷⁰ Maitlo, G., Ali, I., Maitlo, H.A., Ali, S., Unar, I.N., Ahmad, M.B., Bhutto, D.K., Karmani, R.K., Naich, S.U.R., Sajjad, R.U. and Ali, S., 2022. Plastic waste recycling, applications, and future prospects for a sustainable environment. *Sustainability*, 14(18), p.11637.

⁷¹ *Ibid.*; *Intergovernmental Negotiating Committee on Plastic Pollution* (no date) UNEP - UN Environment Programme. Available at: <http://www.unep.org/inc-plastic-pollution> (Accessed: 11 June 2024); 'Global Plastics Treaty | Intergovernmental Negotiating Committee' (no date) *Plastic Oceans International*. Available at: <https://plasticoceans.org/global-plastics-treaty-intergovernmental-negotiating-committee/> (Accessed: 11 June 2024); see also *3rd Session of the Intergovernmental Negotiating Committee to Develop an International Legally Binding Instrument on Plastic Pollution, Including in the Marine Environment (INC-3)* (2022) *IISD Earth Negotiations Bulletin*. Available at: <http://enb.iisd.org/plastic-pollution-marine-environment-negotiating-committee-inc3> (Accessed: 11 June 2024); *4th Session of the Intergovernmental Negotiating Committee to Develop an International Legally Binding Instrument on Plastic Pollution, Including in the Marine Environment (INC-4)* (2022) *IISD Earth Negotiations Bulletin*. Available at: <http://enb.iisd.org/plastic-pollution-marine-environment-negotiating-committee-inc4> (Accessed: 11 June 2024).

⁷² *Ibid.*; *Historic day in the campaign to beat plastic pollution: Nations commit to develop a legally binding agreement* (2022) UN Environment. Available at: <http://www.unep.org/news-and-stories/press-release/historic-day-campaign-beat-plastic-pollution-nations-commit-develop> (Accessed: 11 June 2024).

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

During the period from 2000 to 2019, a minimum of 28 global policies were implemented with the aim of decreasing plastic pollution.⁷³ Out of these, three policies are obligatory for member states: The Antarctic Treaty, London Convention and Protocol amendments, and the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex V.⁷⁴ Regional governments have committed to gradually eliminating plastic microbeads by expressing their support and implementing regional action plans.⁷⁵ In the last decade, both national and subnational governments have intensified their efforts to tackle the issue of plastic bags and single-use plastics.⁷⁶ These efforts have mostly included implementing bans, imposing levies, taxes, and fees, as

⁷³ Virdin, J., Karasik, R., Vegh, T., Pickle, A., Diana, Z., Rittschof, D., Bering, J. and Caldas, J., 2020. 20 Years of Government Responses to the Global Plastic Pollution Problem: The Plastics Policy Inventory.

⁷⁴ Schmaltz, E., Melvin, E.C., Diana, Z., Gunady, E.F., Rittschof, D., Somarelli, J.A., Virdin, J. and Dunphy-Daly, M.M., 2020. Plastic pollution solutions: emerging technologies to prevent and collect marine plastic pollution. *Environment international*, 144, p.106067.

⁷⁵ Ibid.; Usman, S. *et al.* (2022) 'The Burden of Microplastics Pollution and Contending Policies and Regulations', *International Journal of Environmental Research and Public Health*, 19(11), p. 6773. Available at: <https://doi.org/10.3390/ijerph19116773>; *Ban plastic microbeads in cosmetics | Department of Economic and Social Affairs* (no date). Available at: <https://sdgs.un.org/partnerships/ban-plastic-microbeads-cosmetics> (Accessed: 11 June 2024); *Economic consequences of unmanaged plastics and economic opportunities in the Western Indian Ocean: steps toward action plans - WIOMSA* (no date). Available at: <https://www.wiomsa.org/publications/economic-consequences-of-unmanaged-plastics-and-economic-opportunities-in-the-western-indian-ocean-steps-toward-action-plans/> (Accessed: 11 June 2024).

⁷⁶ Ibid.; Knoblauch, D. and Mederake, L. (2021) 'Government policies combatting plastic pollution', *Current Opinion in Toxicology*, 28, pp. 87-96. Available at: <https://doi.org/10.1016/j.cotox.2021.10.003>; *Annual Trends in Plastics Policy: A Brief | The Nicholas Institute for Energy, Environment & Sustainability* (no date). Available at: <https://nicholasinstitute.duke.edu/publications/annual-trends-plastics-policy-brief> (Accessed: 11 June 2024); Molloy, S. *et al.* (2022) 'Public Perceptions of Legislative Action to Reduce Plastic Pollution: A Case Study of Atlantic Canada', *Sustainability*, 14(3), p. 1852. Available at: <https://doi.org/10.3390/su14031852>; *International Cooperation on Plastic Pollution | Plastics and the Environment Series* (no date). Available at: <https://www.genevaenvironmentnetwork.org/resources/updates/international-cooperation-on-plastic-pollution/> (Accessed: 11 June 2024); *Kenya emerges as leader in fight against plastic pollution* (2021) UNEP. Available at: <http://www.unep.org/news-and-stories/story/kenya-emerges-leader-fight-against-plastic-pollution> (Accessed: 11 June 2024).

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

well as encouraging volunteer initiatives.⁷⁷ Countries in sub-Saharan Africa, such as Kenya, have implemented national policies that specifically address single-use plastic bags and other large plastic items, largely via the use of regulatory restrictions.⁷⁸

Simultaneously, several other organisations carried out research and initiatives concerning marine litter and microplastics. These include the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention), the Strategic Approach to International Chemicals Management (SAICM), the International Maritime Organisation (IMO), the World Health Organisation (WHO), the World Trade Organisation (WTO), and various Regional Seas Programmes and Conventions.⁷⁹

6.0 Towards Healthy Ecosystems: Addressing Plastic for Sustainability

Tackling the issue of plastics requires a comprehensive approach that encompasses legal, economic, and technical measures.⁸⁰ The proliferation of plastic pollution is projected to persist and grow in the next decades, despite the unsuccessful attempts of governments, civic society, and companies to

⁷⁷ Ibid.; Muposhi, A., Mpinganjira, M. and Wait, M. (2022) 'Considerations, benefits and unintended consequences of banning plastic shopping bags for environmental sustainability: A systematic literature review', *Waste Management & Research*, 40(3), pp. 248–261. Available at: <https://doi.org/10.1177/0734242X211003965>.

⁷⁸ Ibid.; *Kenya bans single-use plastics in protected areas* (no date). Available at: <https://www.unep.org/news-and-stories/story/kenya-bans-single-use-plastics-protected-areas> (Accessed: 11 June 2024).

⁷⁹ *Summary report 23–29 April 2024* (no date) *IISD Earth Negotiations Bulletin*. Available at: <http://enb.iisd.org/plastic-pollution-marine-environment-negotiating-committee-inc4-summary> (Accessed: 11 June 2024); see also *4th Session of the Intergovernmental Negotiating Committee to Develop an International Legally Binding Instrument on Plastic Pollution, Including in the Marine Environment (INC-4)* (2022) *IISD Earth Negotiations Bulletin*. Available at: <http://enb.iisd.org/plastic-pollution-marine-environment-negotiating-committee-inc4> (Accessed: 11 June 2024).

⁸⁰ *Environmental conservation from plastic pollution* (2023) *A Light Bulb of Youth In African Development*. Available at: <https://www.theyouthcafe.com/perspectives/environmental-conservation-from-plastic-pollution> (Accessed: 8 June 2024);

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

mitigate its impact.⁸¹ In order to address the issue of plastic pollution, it is necessary to develop sustainable markets by implementing a wide range of policy tools.⁸² These tools should include incentives for both producers and consumers, as well as steps to improve solid waste management systems.⁸³ However, it is important to note that transitioning to a comprehensive strategy takes careful planning and a step-by-step process.⁸⁴

The prevailing and traditional approach to managing plastic garbage in many countries involves the methods of landfilling and incineration.⁸⁵ Incinerating plastic garbage is ecologically detrimental because to its contribution to global warming and the potential for leaching into the environment.⁸⁶ Disposing of plastic garbage in landfills is undesirable because plastic is non-biodegradable and has the potential to release harmful substances into the environment.⁸⁷ In addition, the presence of plastic garbage in gutters creates ideal conditions for mosquitoes to flourish, leading to the transmission of diseases including malaria, dysentery, and epidemic cholera to the general population.⁸⁸

7.0 Development of Tailored Country Specific Strategies and National Action Plans

Given the rising worry over the detrimental effects of plastics on the environment and human well-being, several governments are taking more action to address this issue at the local, national, and international scales.⁸⁹ The

⁸¹ Barrowclough, D. and Birkbeck, C.D. (2022) 'Transforming the Global Plastics Economy: The Role of Economic Policies in the Global Governance of Plastic Pollution', *Social Sciences*, 11(1), p. 26. Available at: <https://doi.org/10.3390/socsci11010026>.

⁸² *Pathways out of Plastic Pollution* (no date) World Bank. Available at: <https://www.worldbank.org/en/topic/environment/publication/pathways-out-of-plastic-pollution> (Accessed: 8 June 2024).

⁸³ *ibid*

⁸⁴ *Ibid.*

⁸⁵ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

⁸⁶ *Ibid.*

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*

⁸⁹ Schmaltz, E., Melvin, E.C., Diana, Z., Gunady, E.F., Rittschof, D., Somarelli, J.A., Virdin, J. and Dunphy-Daly, M.M., 2020. Plastic pollution solutions: emerging

implementation of local laws aimed at reducing plastic pollution has had a global impact, leading to increasing efforts globally.⁹⁰ As part of the upcoming international agreement aimed at stopping plastic pollution, governments will probably be required to create action plans and policies to effectively handle plastic pollution.⁹¹ These plans should integrate conventional methods of managing solid waste with strategies focused on pollution reduction, such as industry and product regulations.⁹² It is necessary to guarantee that the plastics policy sets specific goals and accurately models the financial, social, fiscal, climatic, and employment effects of different policies on companies, people, and the government in order to prevent future difficulties in carrying out the policy.⁹³

8.0 Role of Technology

While governments do play a significant role in addressing marine trash, private business activity and technology innovation are more impactful in combatting this issue.⁹⁴ Both for-profit organisations and non-governmental organisations (NGOs) are actively working on creating new technologies aimed at mitigating the adverse effects of plastic pollution.⁹⁵ These technologies target various phases of the plastic life cycle, such as manufacture, use, and waste management, which may include landfilling, recycling, or repurposing.⁹⁶ Developing cutting-edge recycling technologies is crucial for identifying new recycled materials that possess beneficial characteristics, which may enhance industrial processes and aid all nations in

technologies to prevent and collect marine plastic pollution. *Environment international*, 144, p.106067.

⁹⁰ Ibid.

⁹¹ *Pathways out of Plastic Pollution* (no date) World Bank. Available at: <https://www.worldbank.org/en/topic/environment/publication/pathways-out-of-plastic-pollution> (Accessed: 8 June 2024).

⁹² Ibid.

⁹³ Ibid.

⁹⁴ Schmaltz, E., Melvin, E.C., Diana, Z., Gunady, E.F., Rittschof, D., Somarelli, J.A., Virdin, J. and Dunphy-Daly, M.M., 2020. Plastic pollution solutions: emerging technologies to prevent and collect marine plastic pollution. *Environment international*, 144, p.106067.

⁹⁵ Ibid.

⁹⁶ Ibid.

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

achieving worldwide sustainability objectives.⁹⁷ The progress of technology is crucial for the mitigation of plastic pollution, and funding for research and development is not inherently a political strategy but rather an outcome of a well-crafted combination of policies.⁹⁸ Remediation techniques for plastic waste include the conversion of garbage into power, energy, and value-added goods, such as chemicals.⁹⁹ The circular economy concept promotes the efficient utilisation of resources by implementing practices such as recycling, reusing, repairing, remanufacturing, and refurbishing things.¹⁰⁰ Effective collaboration among all parties involved is essential for the progress of plastic waste management in the circular economy.¹⁰¹

Technologies designed to tackle these problems focus on either 1) directly limiting the flow of plastic into rivers or 2) gathering and removing plastic pollution that already exists. Exploration of new recycling options, such as plastic-to-fuel and bioremediation, is taking place throughout the recycling process.¹⁰²

⁹⁷ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

⁹⁸ Ibid.; Tanuja, G. *et al.* (2023) 'Innovative Technologies for Sustainable Recycling and Re-manufacturing of Materials and Components', *E3S Web of Conferences*, 430. Available at: <https://doi.org/10.1051/e3sconf/202343001130>.

⁹⁹ Ibid.; Vuppaladadiyam, S.S.V. *et al.* (2024) 'Waste to energy: Trending key challenges and current technologies in waste plastic management', *Science of The Total Environment*, 913, p. 169436. Available at: <https://doi.org/10.1016/j.scitotenv.2023.169436>.

¹⁰⁰ Ibid.; *Circular economy introduction* (no date). Available at: <https://www.ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview> (Accessed: 11 June 2024).

¹⁰¹ Ibid.; *3 ways we can collaborate better for a circular economy* (2022) *World Economic Forum*. Available at: <https://www.weforum.org/agenda/2022/05/3-ways-we-can-collaborate-better-for-a-circular-economy/> (Accessed: 11 June 2024); Prabawati, A., Frimawaty, E. and Haryanto, J. (2023) 'Strengthening Stakeholder Partnership in Plastics Waste Management Based on Circular Economy Paradigm', *Sustainability*, 15, p. 4278. Available at: <https://doi.org/10.3390/su15054278>; *Steering the Course to a Zero Waste and Circular Economy* (no date) UNDP. Available at: <https://www.undp.org/ghana/blog/steering-course-zero-waste-and-circular-economy> (Accessed: 11 June 2024).

¹⁰² Schmaltz, E., Melvin, E.C., Diana, Z., Gunady, E.F., Rittschof, D., Somarelli, J.A., Virdin, J. and Dunphy-Daly, M.M., 2020. Plastic pollution solutions: emerging

9.0 Enhanced Public Awareness on Plastic Reuse, Waste Reduction and Recycling

The rising use of plastic goods has resulted in substantial plastic trash. It is essential to have a clear understanding of how they are used and to effectively manage their regular activities.¹⁰³ Plastics are being utilised more and more in many industries, such as food packaging, brewing, cosmetics, pharmaceuticals, and other manufacturing sectors, to ensure efficient and safe delivery.¹⁰⁴

It is essential to enhance public awareness about trash segregation and appropriate waste disposal protocols in order to reduce plastic use.¹⁰⁵ Waste reduction entails the creation and manufacturing of items that have a small size and contain low levels of toxins, hence promoting a longer lifespan for the product, utilisation of plastic waste for many objectives, including the construction of bricks, the reduction of trash generation, the mitigation of water deterioration and pollution, the minimization of dumping area, and the provision of a unique technique for using plastic waste.¹⁰⁶ Reutilization, recycling, and conversion of energy are techniques used to mitigate environmental contamination resulting from plastic trash.¹⁰⁷

The utilisation of plastic waste offers several advantages, such as minimising the consumption of natural resources in brick production, decreasing plastic waste generation, mitigating water degradation and pollution, reducing the

technologies to prevent and collect marine plastic pollution. *Environment international*, 144, p.106067.

¹⁰³ Evode, N., Qamar, S.A., Bilal, M., Barceló, D. and Iqbal, H.M., 2021. Plastic waste and its management strategies for environmental sustainability. *Case Studies in Chemical and Environmental Engineering*, 4, p.100142.

¹⁰⁴ Ibid.; Alabi, O.A., Ologbonjaye, K.I., Awosolu, O. and Alalade, O.E., 2019. Public and environmental health effects of plastic wastes disposal: a review. *J Toxicol Risk Assess*, 5(021), pp.1-13.

¹⁰⁵ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

¹⁰⁶ Ibid.; Vuppalladadiyam, S.S.V. *et al.* (2024) 'Waste to energy: Trending key challenges and current technologies in waste plastic management', *Science of The Total Environment*, 913, p. 169436. Available at: <https://doi.org/10.1016/j.scitotenv.2023.169436>.

¹⁰⁷ Ibid.

required space for waste disposal, expanding agricultural land, and providing an innovative method for utilising plastic waste.¹⁰⁸

10.0 Efficient Waste Management

Industrial development yields an abundance of products for human endeavours, but it also produces substantial amounts of environmental waste, including gases, water, and solid materials.¹⁰⁹ Plastic waste, a substantial commodity, has a key role in exacerbating these problems, underscoring the need for implementing sustainable measures in the sector.¹¹⁰

Efficient waste management and remediation techniques are crucial for improving technology that facilitate the recycling or energy extraction of plastics already present in landfills.¹¹¹ The waste-to-energy initiative focuses on implementing methods to reduce the accumulation of plastic in landfills and conducts campaigns to promote a shift in consumer behaviour, urging individuals to refrain from using throwaway products such as single-use plastics.¹¹²

Enhancing the proper disposal and prevention of plastic leakage after its usefulness has ended may have significant impacts on human beings, the environment, and the ecosystem.¹¹³

11.0 Role of Economic Policies

Extended Producer Responsibility (EPR) is a fundamental approach based on rights that aims to encourage waste reduction, reduce the use of new materials,

¹⁰⁸ Ibid.

¹⁰⁹ Zhang, F., Zhao, Y., Wang, D., Yan, M., Zhang, J., Zhang, P., Ding, T., Chen, L. and Chen, C., 2021. Current technologies for plastic waste treatment: A review. *Journal of Cleaner Production*, 282, p.124523.

¹¹⁰ Ibid.

¹¹¹ Khoaele, K.K., Gbadeyan, O.J., Chuniilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

¹¹² Ibid.

¹¹³ Pandey, P., Dhiman, M., Kansal, A. and Subudhi, S.P., 2023. Plastic waste management for sustainable environment: techniques and approaches. *Waste Disposal & Sustainable Energy*, 5(2), pp.205-222.

and promote the growth of the recycling sector.¹¹⁴ Imposing a charge on single-use plastics, together with promoting shifts in consumer preferences and implementing awareness programmes, might encourage investment in finding suitable alternative alternatives.¹¹⁵ Efficient incentives should be put in place to minimise the transportation of garbage to landfills.¹¹⁶ The government should promote the adoption of circular economy ideas by enterprises in the plastics industry. These principles emphasise the efficient utilisation of resources via practices such as recycling, reusing, repairing, remanufacturing, and refurbishing items.¹¹⁷

12.0 Conclusion

Plastic pollution is a worldwide problem that impacts both land-based and water-based ecosystems.¹¹⁸ The source of this issue may be attributed to irresponsible consumption, insufficient recycling practices, and the accumulation of waste in landfills.¹¹⁹ There is a significant and accelerating rise in the release of plastic garbage into ecosystems.¹²⁰ Researchers, politicians, and stakeholders have a significant problem in managing plastic trash.¹²¹

¹¹⁴ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

¹¹⁵ Ibid.

¹¹⁶ Ibid.

¹¹⁷ Ibid.; *Understanding the Circular Economy: Principles, Benefits, and Applications* | Heinrich-Böll-Stiftung | Tel Aviv - Israel (no date). Available at: <https://il.boell.org/en/2024/03/09/understanding-circular-economy-principles-benefits-and-applications> (Accessed: 11 June 2024).

¹¹⁸ Kumar, R., Verma, A., Shome, A., Sinha, R., Sinha, S., Jha, P.K., Kumar, R., Kumar, P., Shubham, Das, S. and Sharma, P., 2021. Impacts of plastic pollution on ecosystem services, sustainable development goals, and need to focus on circular economy and policy interventions. *Sustainability*, 13(17), p.9963.

¹¹⁹ Ibid.

¹²⁰ Ibid.

¹²¹ Ibid.; Nielsen, T.D. *et al.* (2020) 'Politics and the plastic crisis: A review throughout the plastic life cycle', *WIREs Energy and Environment*, 9(1), p. e360. Available at: <https://doi.org/10.1002/wene.360>; Bharadwaj, B. and Rai, R. (2021) 'Stakeholders Perception of Used Plastics', in. Available at: https://doi.org/10.1007/978-981-15-7525-9_54-1; Joseph, K. (2006) 'Stakeholder participation for sustainable waste management', *Habitat International*, 30(4), pp. 863–871. Available at: <https://doi.org/10.1016/j.habitatint.2005.09.009>; McNicholas, G. and Cotton, M. (2019) 'Stakeholder perceptions of marine plastic waste management in the United

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

Mitigation measures include the implementation of regulations to prohibit plastic, raising public awareness, conducting life cycle assessments, promoting circularity, and fostering innovation to minimise the use of plastics via reduction, reuse, recycling, and recovery.¹²² Facilitating the ability of communities and people to collectively engage in action is of paramount significance. The problem of plastic pollution is a global issue that needs a collective effort to be overcome.¹²³ Enhancing confidence in studies on plastic waste management should foster better cooperation among key stakeholders, including central governments, local governments, research institutions, NGOs, plastic producers, buyers, and waste dispersers or separators.¹²⁴

Plastic trash is a major contributor to the problem of white pollution and presents substantial health hazards to people, animals, and the environment.¹²⁵ The projected doubling of plastic imports over the next five years will have a substantial effect on human health, animal health, and the environment.¹²⁶ Ultimately, the use of reusing, recycling, and energy

Kingdom', *Ecological Economics*, 163, pp. 77–87. Available at: <https://doi.org/10.1016/j.ecolecon.2019.04.022>; Vandenberg, J. (2024) 'Plastic Politics of Delay: How Political Corporate Social Responsibility Discourses Produce and Reinforce Inequality in Plastic Waste Governance', *Global Environmental Politics*, 24(2), pp. 122–145. Available at: https://doi.org/10.1162/glep_a_00745.

¹²² Ibid.

¹²³ Ibid.; *Collective action against plastic pollution: A global priority agenda* (no date) *orfonline.org*. Available at: <https://www.orfonline.org/expert-speak/collective-action-against-plastic-pollution> (Accessed: 11 June 2024); *How empowering local communities can help solve global plastic waste* (2022) *World Economic Forum*. Available at: <https://www.weforum.org/agenda/2022/01/empowering-local-communities-help-solve-global-plastic-waste/> (Accessed: 11 June 2024); Kumar, Rakesh *et al.* (2021) 'Impacts of Plastic Pollution on Ecosystem Services, Sustainable Development Goals, and Need to Focus on Circular Economy and Policy Interventions', *Sustainability*, 13(17), p. 9963. Available at: <https://doi.org/10.3390/su13179963>; *How empowering local communities can help solve global plastic waste* (2022) *World Economic Forum*. Available at: <https://www.weforum.org/agenda/2022/01/empowering-local-communities-help-solve-global-plastic-waste/> (Accessed: 11 June 2024).

¹²⁴ Ibid.; *A vision for sustainable waste management in Nairobi* (no date). Available at: <https://www.climate-kic.org/news/a-vision-for-sustainable-waste-management-in-nairobi/> (Accessed: 11 June 2024).

¹²⁵ Ibid.

¹²⁶ Ibid.

Towards Healthy Ecosystems-Addressing Plastic Pollution for Sustainability

conversion proves to be an efficacious approach in mitigating the environmental contamination stemming from plastic waste.¹²⁷

There are several traditional and emergent approaches to effectively handle plastic garbage. Landfilling is a traditional method used for the management of plastic trash, while incineration is a contemporary and very efficient approach.¹²⁸ These methods have their benefits and drawbacks, but they need to be thoroughly evaluated and executed in order to efficiently control and diminish plastic trash. ¹²⁹

Additional investigation is required to transform plastic trash into raw materials for the production of high-value goods in order to accomplish a circular economy.¹³⁰

¹²⁷ Ibid.

¹²⁸ Maitlo, G., Ali, I., Maitlo, H.A., Ali, S., Unar, I.N., Ahmad, M.B., Bhutto, D.K., Karmani, R.K., Naich, S.U.R., Sajjad, R.U. and Ali, S., 2022. Plastic waste recycling, applications, and future prospects for a sustainable environment. *Sustainability*, 14(18), p.11637.

¹²⁹ Ibid.

¹³⁰ Khoaele, K.K., Gbadeyan, O.J., Chunilall, V. and Sithole, B., 2023. The Devastation of Waste Plastic on the Environment and Remediation Processes: A Critical Review. *Sustainability* 2023, 15, 5233.

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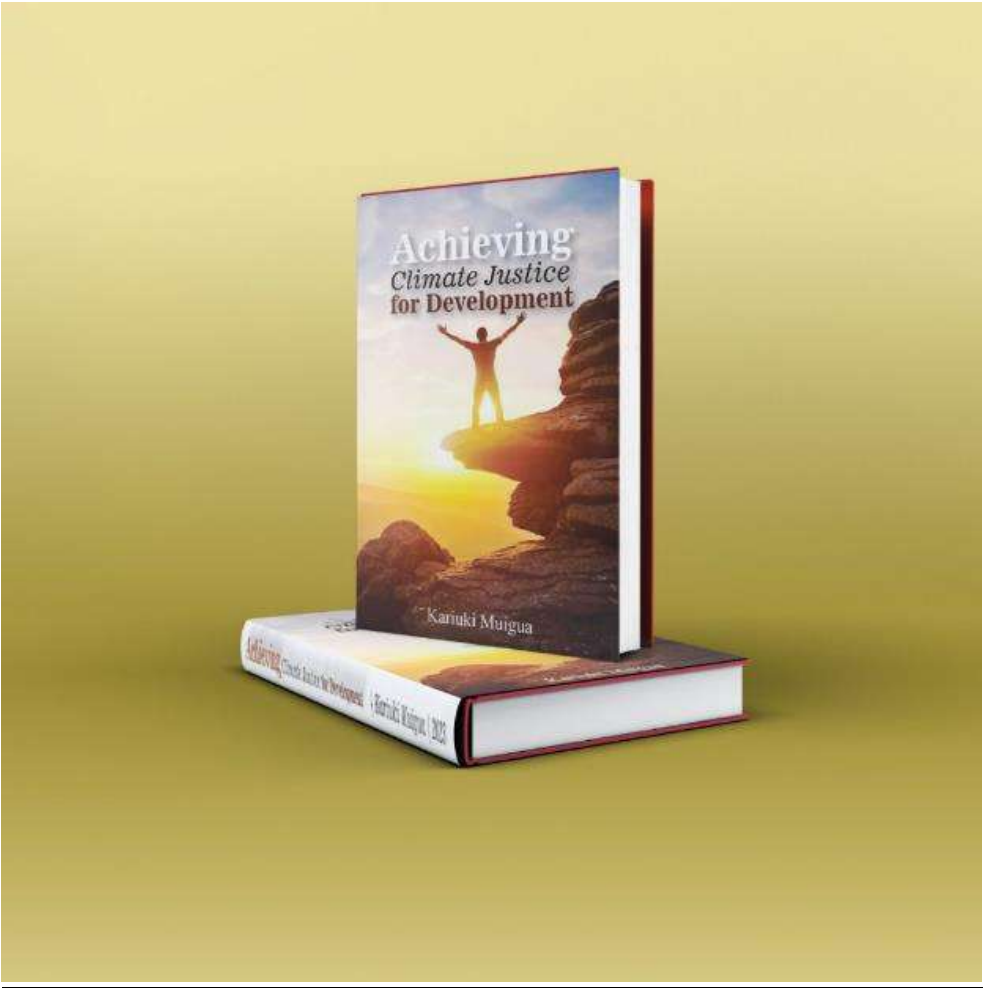
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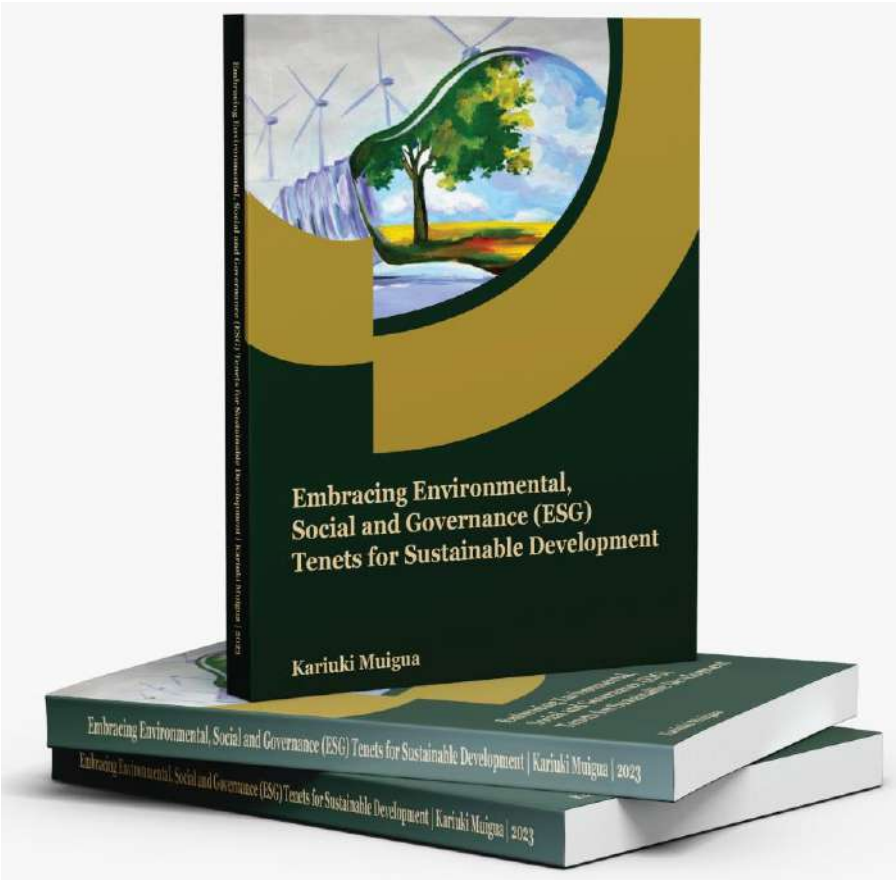
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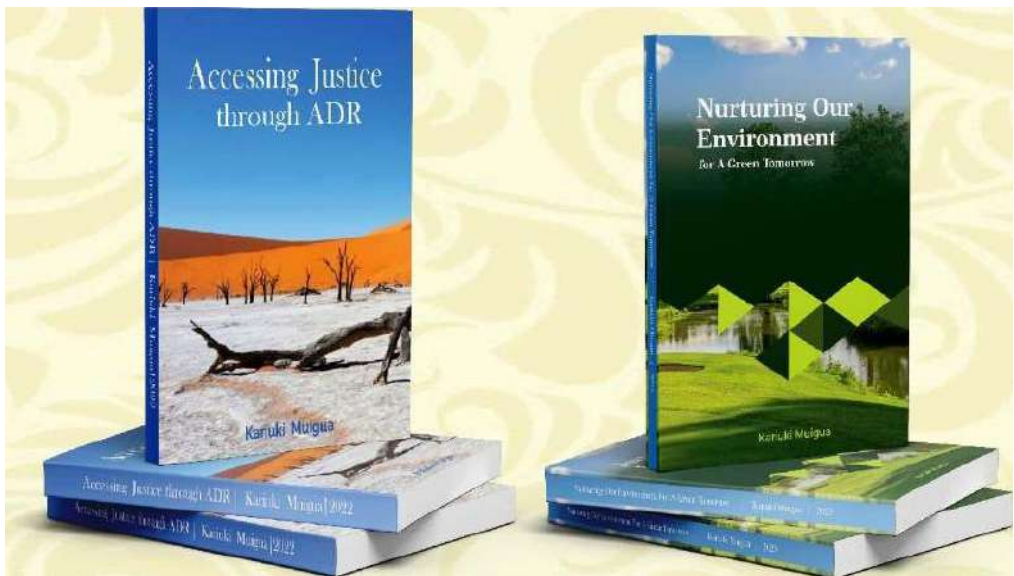
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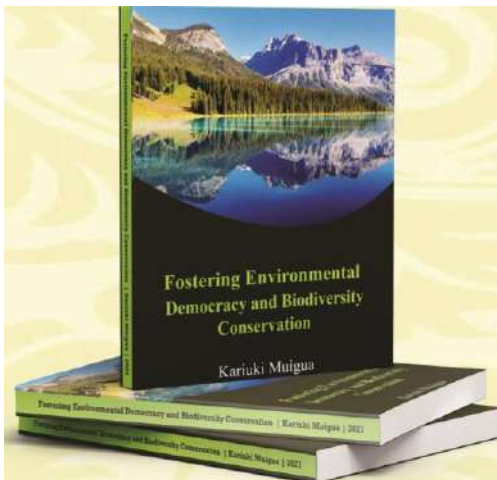
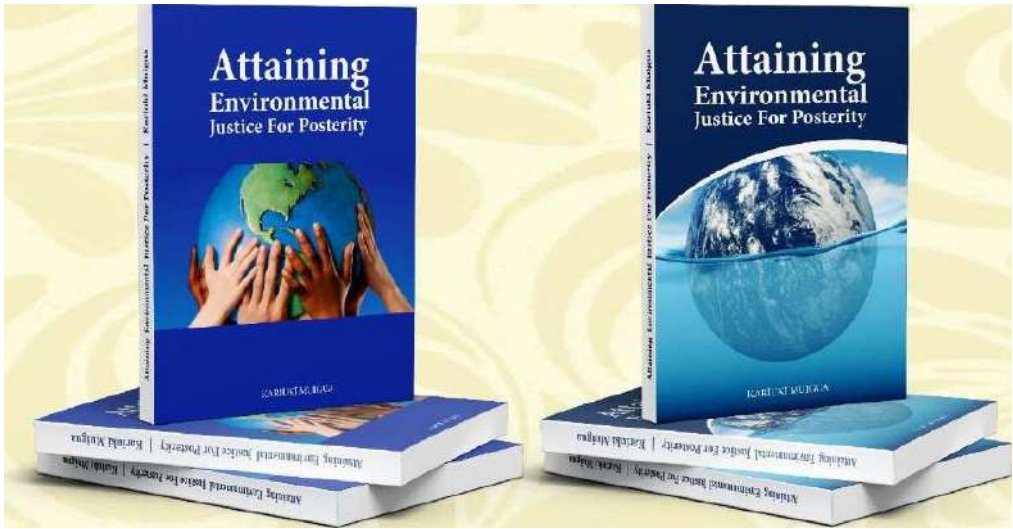


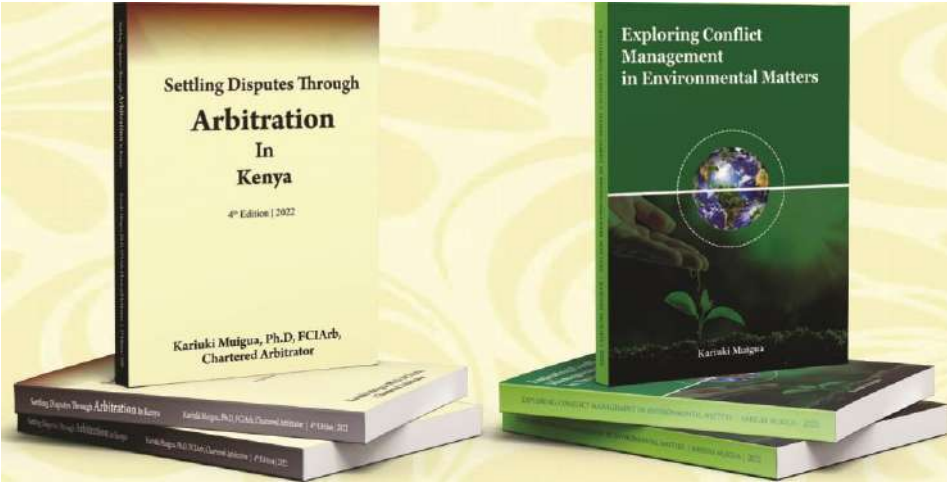


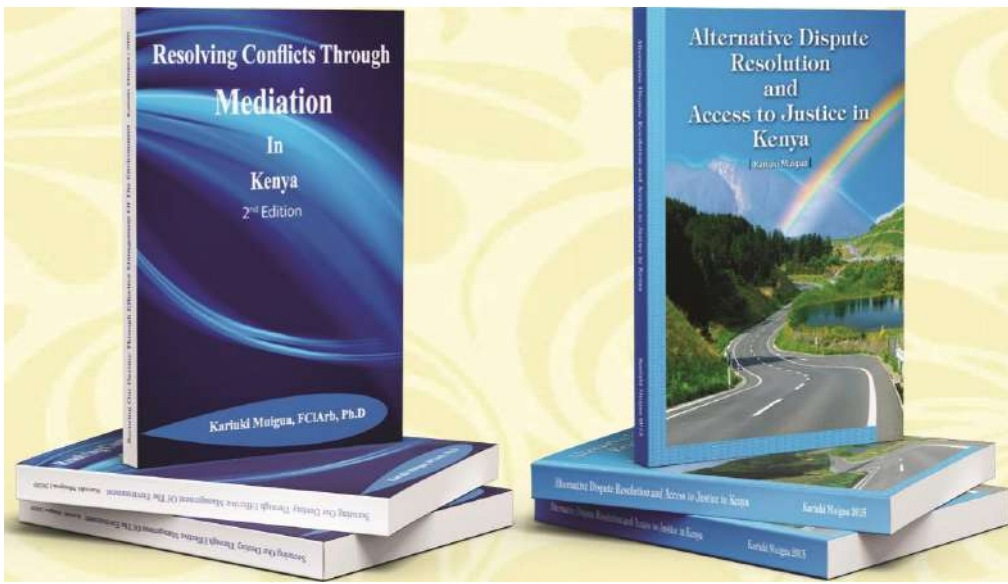
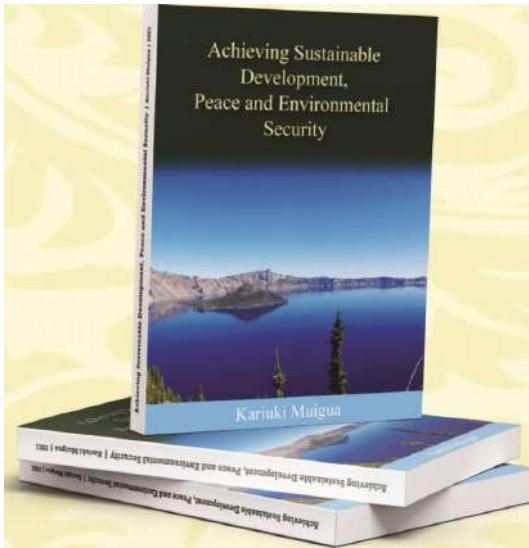


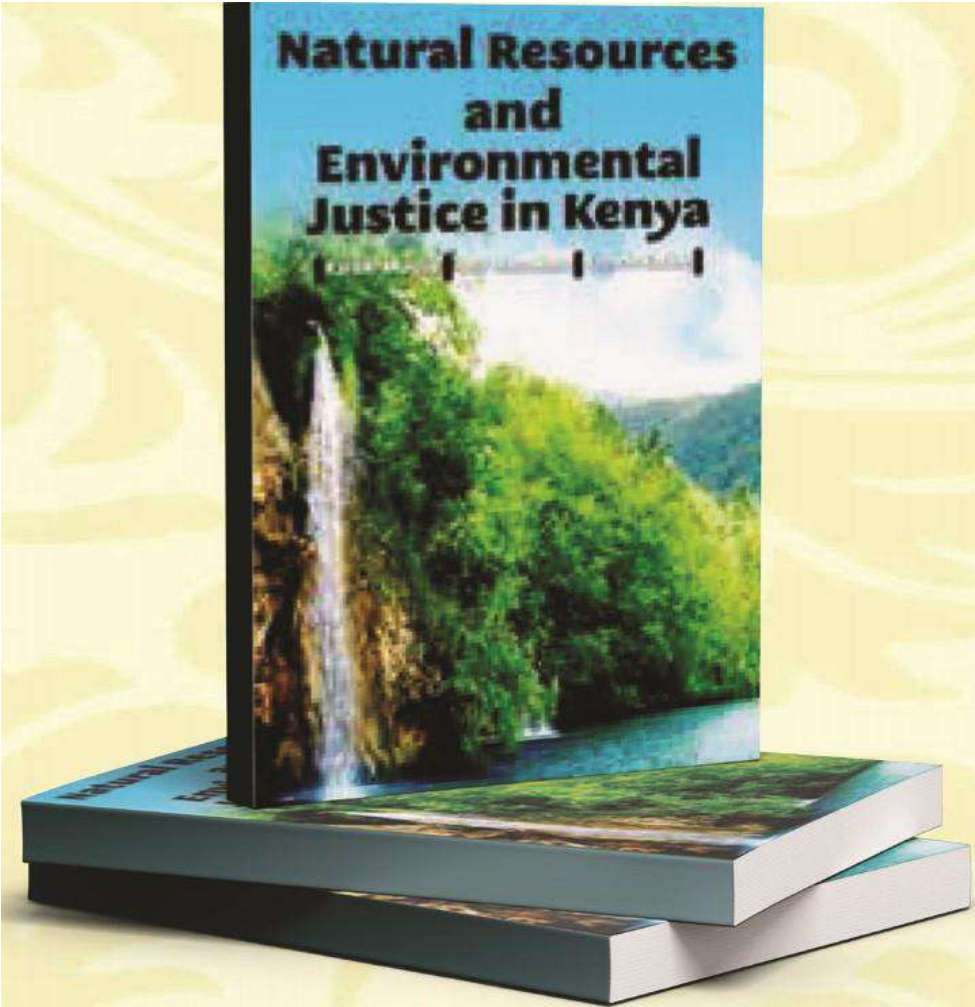












Actualizing the Right to a Clean and Healthy Environment is a book that brings together a collection of papers touching on the theme: Actualizing the Right to a Clean and Healthy Environment.

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Author's Bio-data

Hon. Prof. Karimki Muigua Ph.D., FCIArb, OGW, C. Arb is a holder of a Doctor of Philosophy (Ph.D.) degree in law from the University of Nairobi attained in 2011. He also holds a Master of Laws (LL.M) degree attained in 2005 and Bachelor of Laws (LL.B) degree awarded in 1988 both from the University of Nairobi.

He is a Professor of Law at the University of Nairobi Faculty of Law and the Centre for Advanced Studies in Environmental Law and Policy (CASELAP). He also teaches at the Wangari Maathai Institute for Peace and Environmental Studies.

He is a Member of the Permanent Court of Arbitration (PCA) nominated by the Republic of Kenya and has served as a Member of the National Environment Tribunal. He is a distinguished law scholar, Environmental Consultant, an accredited mediator and a Chartered arbitrator. He has widespread training and experience in both international and national commercial arbitration and mediation. He has received numerous awards and honours for his exemplary work in academia and Alternative Dispute Resolution.

Chambers and Partners Global Guide 2024 ranked him in Band 1 of Dispute Resolution (Arbitrators), the ranking which recognizes the Top 6 Arbitrators in Kenya noting that he is "highly recommended as a leading lawyer". He was awarded the "Academic Champion of ADR" at the inaugural Women in ADR Awards 2024. He was also awarded the Outstanding Mentor Award by his mentees in recognition of his guidance, care and support. He was recognized and awarded for his role as the Chartered Institute of Arbitrators (CIArb) Africa Trustee from 2019 to 2022 by CIArb Kenya Branch at the CIArb Kenya Branch ADR Excellence Awards 2022. His book, *Settling Disputes through Arbitration in Kenya, 4th Edition*, Glenwood publishers 2022, was awarded the Publication of the Year Award 2022 by CIArb Kenya Branch at the CIArb Kenya Branch ADR Excellence Awards 2022. He is the winner of ADR Practitioner of the Year Award at the AFAA Awards 2022. He is also the winner of the African Arbitrator of the Year 2022 award at the 3rd African Arbitration Awards held at Kigali Rwanda beating other competitors from Egypt, Mauritius, Ethiopia, Nigeria and Kenya. In 2022, Chambers and Partners ranked him in Band 1 of Dispute Resolution (Arbitrators) noting that "He has been involved in several ground-breaking arbitrations," "has an astute understanding of arbitration" and "is respected for litigation." He was awarded the Inaugural CIArb (Kenya Branch) ADR Lifetime Achievement Award 2021 as well as the ADR Publication of the Year Award 2021 by the Chartered Institute of Arbitrators (Kenya Branch). He also received the ADR Practitioner of the Year Award 2021 by the Law Society of Kenya, Nairobi Branch at the Nairobi Legal Awards. He is a recipient of the 8th C.B. Madan Prize of 2020 for commitment and outstanding scholarly contribution to constitutionalism and the rule of law in Kenya.

Hon. Prof. Muigua has on various occasions been appointed by leading arbitral institutions including the Chartered Institute of Arbitrators (CIArb-Kenya), the Nairobi Centre for International Arbitration (NCIA), the International Chamber of Commerce (ICC) and the London Court of International Arbitration (LCIA) among other institutions, as both a sole arbitrator and a member of an arbitral tribunal in arbitrations involving commercial disputes.

He is a Fellow of Chartered Institute of Arbitrators (CIArb-Kenya chapter). He is a member of the International Bar Association (IBA), the International Commission of Jurists, Human Rights Institute of the International Bar Association, the London Court of International Arbitration (LCIA), Chartered Institute of Arbitrators (UK) and Kenya Branch, Member of Commonwealth Lawyers Association and fellow of the Institute of Certified Public Secretaries of Kenya. He served as the Branch Chairman of CIArb-Kenya from 2012 to 2015. He was elected (unopposed) to the Chartered Institute of Arbitrators (CIArb) Board of Trustees as the Regional Trustee for Africa, for the term beginning 1st January 2019 for a term of four years until 31st December 2022.

Hon. Prof. Muigua also serves as the Editor in Chief of three leading peer reviewed journals in East Africa, the *Alternative Dispute Resolution Journal*, the *Journal of Conflict Management and Sustainable Development* and *Journal of ADR & Sustainability*. The three journals have been hailed as leading publications in the fields of ADR, Conflict Management and Sustainable Development. The *Alternative Dispute Resolution Journal* was awarded the Arbitration Publication of the Year Award 2020 at the Africa Arbitration Awards.

He is an Advocate of the High Court of Kenya of over 35 years standing and practicing at Karimki Muigua & Co. Advocates, a firm that specialises in environmental and commercial law litigation and Alternative Dispute Resolution. The firm is also listed as a leading Kenyan commercial law firm in the distinguished Martindale Hubbell Directory.

He has authored the following books: *Alternative Dispute Resolution and Access to Justice in Kenya*, (Glenwood Publishers, Nairobi, 2015); *Resolving Conflicts through Mediation in Kenya*, (Glenwood Publishers, Nairobi, 2013); *Natural Resources and Environmental Justice in Kenya*, (Glenwood Publishers, Nairobi, 2015); *Nurturing Our Environment for Sustainable Development*, (Glenwood Publishers, Nairobi, 2016); *Settling Disputes through Arbitration in Kenya* (Glenwood Publishers, Nairobi) 1st Edition (2012); 2nd Edition (2012); 3rd Edition (2017); and 4th Edition (2022).

His other works include *Securing Our Destiny through Effective Management of the Environment*, (Glenwood Publishers, Nairobi-2020); *Achieving Sustainable Development, Peace and Environmental Security*, (Glenwood Publishers, Nairobi, 2021); *Fostering Environmental Democracy and Biodiversity Conservation*, (Glenwood Publishers 2021); *Exploring Conflict Management in Environmental Matters*, (Glenwood Publishers 2022); *Attaining Environmental Justice for Posterity, Volume 1 and 2*, (Glenwood Publishers 2022); *Accessing Justice Through ADR*, (Glenwood Publishers 2022); *Nurturing our Environment for a Green Tomorrow*, (Glenwood Publishers 2023); *Realizing True Sustainable Development*, (Glenwood Publishers 2023); *Embracing Environmental Social and Governance (ESG) trends for Sustainable Development*, (Glenwood Publishers 2023); *Combating Climate Change for Sustainability*, (Glenwood Publishers 2023); *Achieving Climate Justice for Development*, (Glenwood Publishers 2023); and *Promoting The Rule of Law for Sustainable Development* (Glenwood Publishers 2024).

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