



Realizing True

Sustainable Development

Kariuki Muigua

Realizing True Sustainable Development

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Realizing True Sustainable Development

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Dedication

This book is dedicated
to those
who must reflect on
the question
What is development?

What is Sustainable Development?
Is it realizable?

To those who ask the Question
How do we measure
Development?

Is Development subjective
or objective
Or a mix of both?

And
To the mother
who must think of food,
water and the health of
her children

To those who watch
the sun
rise

And hope for a warm
merciful day
And an end
to stormy days- giving way
To peace and prosperity

This work is dedicated
to those

who take care of the
Environment

Nurturing Mother Earth

To those who seek to
free the world
of Poverty,
hunger disease
and want

To those who seek peace
and human dignity

This work is for those
who value
Human health
And the health of the
Environment

To those who conserve
Biodiversity
Recognising that the Earth
is a home for all of us

Dedicated to the child whose dream
is big, vivid
and Real

The child who knows
they will pursue
Quality education
Have access to health care
And that human rights
will be respected

To the child who seeks

Safe drinking water
and sanitation

And to the ideal that
the child
Will not know the pangs of
hunger
And that nutritious food
will be available
and affordable

This work is dedicated
To those who fight
For human dignity
The rule of law, justice
and opportunities for all

This work is for
those
Whose vision
is to live in
harmony with nature

To those who value the rights
of all
Living species

And to those who sing along
with the birds
every morning

To those who realize
that Sustainable Development
must include the well being
of the body, mind and Soul

And that
Sustainable Development
must be real
and True.

Acknowledgements

Every morning when I wake up on this side of the Earth, I thank my maker for allowing me to see the light of a new day. I do so again today, with humility.

I am grateful to all those who encourage me and walk with me through rocky paths, through storms, rain, lightning and thunder.

I thank those who are truly happy for me; Those who constantly remind me that today may be difficult, but tomorrow is a better day.

I recognize the sages at whose feet I have learnt a lot. I have been reminded that dreaming big is still worthwhile. And that we ultimately become what we think of most.

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Finally, I acknowledge my very supportive family. They have stood by me during dark times and devastating hurricanes. I walk with them through the journey of grief and healing. Step by step we move towards achieving every dream we ever conceived. And yes, there is hope for a brighter today and tomorrow.

Author's Note

Sustainable development means development that meets the needs of the present generation without compromising the ability of future generations to meet their needs by maintaining the carrying capacity of supporting ecosystems.¹

It is related to “sustainable use” which is the present use of the environment or natural resources which does not compromise the ability to use the same by future generations or degrade the carrying capacity of the supporting ecosystems.²

In 2016, the 2030 Agenda for Sustainable Development was adopted by the United Nations .³ The Agenda is a plan of action for people, planet and prosperity. It also seeks to strengthen peace in larger freedom and also eradicate poverty in all its forms and dimensions.⁴

The Document lists 17 Sustainable Development Goals and 169 targets. They seek to build on the Millennium Development Goals and complete what these did not achieve. The goals are integrated and balance the three dimensions of Sustainable Development: the social, economic and environmental. ⁵

¹ Sec. 2, *Environmental Management and Coordination Act*, No.8 of 1999, Laws of Kenya.

² ‘Sustainable Use | InforMEA’ <<https://www.informea.org/en/terms/sustainable-use>> accessed 24 April 2023; ‘Sustainable Use Definition and Meaning | Collins English Dictionary’ (17 April 2023) <<https://www.collinsdictionary.com/dictionary/english/sustainable-use>> accessed 24 April 2023; ‘Sustainable Resource Use’ <<https://www.eionet.europa.eu/gemet/en/concept/15308>> accessed 24 April 2023; ‘The Sustainable Use of Natural Resources: The Governance Challenge’ (International Institute for Sustainable Development) <<https://www.iisd.org/articles/deep-dive/sustainable-use-natural-resources-governance-challenge>> accessed 24 April 2023; Nations U, ‘Sustainability’ (United Nations) <<https://www.un.org/en/academic-impact/sustainability>> accessed 24 April 2023.

³ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development*, 21 October 2015, A/RES/70/1

⁴ *Ibid*, Preamble.

⁵ *Ibid*.

It has been opined that true Sustainable Development would be environmentally sustainable, socially just and personally meaningful.⁶ The book discusses Sustainable Development and reflects on the roles that various actors have to play if true sustainable development is to be attained.

The goal of the book is to examine the distinct functions of various players from the public and commercial sectors, as well as communities and non-governmental organizations (NGOs), and how they might work together to realize the sustainable development agenda. The book also examines how foreign actors fit into all of these.

As a result, the conversation takes a human rights-based perspective and consistently discusses concerns linked to ecosystem management, as well as other approaches envisioned within the Sustainable Development agenda.

The book also discusses several strategies that may be used to achieve the Sustainable Development Goals (SDGs), depending on the diverse situations, the intended outcomes, and the players involved.

The book also covers the two-pronged promotion of the idea of green arbitration, which aims to advance environmental sustainability while attaining sustainable justice. In Kenya and across the world, the author contends, this idea should be adopted.

In this book, the effectiveness of a framework legislation approach to environmental governance generally is also covered. Moreover, it addresses the difficulties that emerge when EMCA is implemented and provides practical reforms that may be taken into account in order to increase its efficacy in ensuring that Kenya meets its objectives for the Sustainable Development Agenda.

⁶ 'True Sustainability - Nobel Prize for Sustainable Development' <<https://np4sd.org/proposal/true-sustainability/>> accessed 24 April 2023; 'True Sustainability | CarbonCycle' <<http://www.c2-energy.com/us/true-sustainability/>> accessed 24 April 2023.

The author generally contends that Kenya's aim of becoming a model nation for efficient environmental governance for sustainability will remain a mirage until the identified challenges are resolved.

The author also makes the case that using the law alone is insufficient to do this and suggests a hybrid strategy that makes use of both legal and non-legal compliance mechanisms to improve environmental governance in the nation. This book also includes a chapter on disputes about the ramifications of climate change and how those disagreements might be settled through arbitration. The author makes the case that arbitration is more practical for resolving the relevant disputes than litigation due to a number of benefits it has over the latter.

The book also argues that Kenya should implement the globally recognised polluter pays concept as a cornerstone for the achievement of the Sustainable Development Goals (SDGs), which effectively guarantees that more actors contribute to sustainability.

The book also argues for Biodiversity Impact Assessments in the most delicate ecological areas to protect any potential biological variety present there and to improve conservation efforts. The author makes the case that a standard Environmental Impact Assessment (EIA) may not accurately capture the true impact of a given project, policy, or programme on biological diversity. The book also examines the role of science and technology and how they might be used to various sectors of the economy in order to attain sustainability.

Realizing True Sustainable Development is an ideal whose time is now.

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Table of Figures

Fig. 1. Number of used vehicle units imported to some African countries in 2019.

List of Abbreviations

ABNJ	Areas Beyond the National Jurisdiction
ACHPR	African Charter on Humans and People’s Rights
ADR	Alternative Dispute Resolution
AfCFTA	African Continental Free Trade Area
BMAP	Biodiversity Monitoring and Assessment Programme
CBD	Convention on Biological Diversity.
CBDR	Common But Differentiated Responsibilities.
CO2	Carbon Dioxide
COP	Conference of the Parties
CSR	Corporate Social Responsibility
DPP	Director of Public Prosecutions
EBA	Ecosystem-Based Approaches
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIA	Environmental Impact Assessment.
ELC	Environment and Land Court
EMCA	Environmental Management and Coordination Act

ENACT	Enhancing Nature-based Solutions for an Accelerated Climate Transformation
EPR	Extended Polluter Responsibility.
ESG	Environmental, Social, and Corporate Governance
GHG	Green House Gases.
GIS	Geographic Information System
HFCs	Hydrofluorocarbons
HiAP	Health in All Policies
HRBA	Human Rights-Based Approach
ICC	International Chamber of Commerce
ICESR	International Covenant on Economic, Social and Cultural Rights
INDC	Intended Nationally Determined Contribution.
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
NACOSTI	National Commission for Science, Technology and Innovation
NAPs	National Adaptation Plans
NbS	Nature-based Solutions
NDC	Nationally Determined Contribution.

NEMA	National Environment Management Authority
NET	National Environment Tribunal
NGOs	Non-Governmental Organisations
NHRIs	National Human Rights Institutions
OECD	Organization for Economic Co-operation and Development.
PAHO	Pan American Health Organization
PCA	Permanent Court of Arbitration
REDD	Reducing Emissions from Deforestation and Forest Degradation
SDGs	Sustainable Development Goals
SEA	Strategic Environmental Assessment
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme.
UNFCCC	UN Framework Convention on Climate Change
UNGA	United Nations General Assembly
WMO	World Meteorological Organization

CHAPTER ONE

Sustainable Development Agenda and the General Actors: The Introduction

1.1 Introduction

The United Nations 2030 Agenda for Sustainable Development¹ captures the global goals towards securing environmental, economic, social and political development and sustainability for the sake of current and future generations. Notably, this means that the goals call for action from various actors from the state agencies, private sector, communities, among others.

The book seeks to explore the specific roles of each of these actors, overlapping areas and how they can all collaborate towards realisation of the sustainable development agenda. The book also looks at the place of international actors in all these.

The discourse adopts a human rights based approach, ecosystem management approaches as well as other approaches envisaged under the Sustainable Development agenda, and the related topics thus feature prominently across the book.

The first chapter will offer a general introduction and background information on the various aspects of sustainable development and highlight the envisaged actors especially under the 2030 Agenda on Sustainable Development. The chapter also provides a glimpse of the general thread that binds the rest of the discussion together to enable the reader follow and appreciate the same.

1.2 Background Information on Sustainable Development and the General Actors

The idea of sustainable development stretches back to traditional societies and ancient civilizations, predating the 1972 Stockholm Conference.² It aims to reduce pollution of the environment, the depletion of non-renewable

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

² Per Judge Christopher Weeramantry in *Hungary v Slovakia*, 1997 WL 1168556 (I.C.J-1997).

resources, and environmental damage caused by anthropogenic activities.³ The *Brundtland Commission*⁴ defined sustainable development as, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”⁵ Under section 2 of *Environmental Management and Co-ordination Act, 1999*⁶ (EMCA), sustainable development is defined as development that meets the needs of the present generation without compromising the ability of future generations to meet their needs by maintaining the carrying capacity of the supporting ecosystems. Essentially, sustainable development seeks to address *intra-generational equity*, that is equity among present generations, and *inter-generational equity*, that is equity between generations.⁷

When referred to as sustainable human development, sustainable development is also associated with the right to development, human rights, and good governance. Focus is placed on both tangible and immaterial aspects of human development, such as participation and rights, in order to achieve sustainable human development. Moreover, it aspires to a variety of objectives, including the eradication of poverty, the advancement of human rights, the promotion of equal opportunities, the preservation of the environment, and the evaluation of the effects of development efforts.⁸

³ Cullet P., *Differential Treatment in International Environmental Law and its Contribution to the Evolution of International Law* (Aldershot: Ashgate, 2003), pp.8 -9.

⁴ The Brundtland Commission was established by the United Nations in 1983 to address the problem of deterioration of natural resources. Its mission was to unite countries to pursue sustainable development together. The Commission was named after its chairperson, Gro Harlem Brundtland, a former Prime Minister of Norway. It was officially dissolved in 1987 after releasing a report entitled *Our Common Future*, also known as the *Brundtland Report*. This report defined the meaning of the term Sustainable Development.

⁵ World Commission on Environment and Development, *Our Common Future*, GAOR, 42ndSess, Supp. No. 25, UN Doc, A/42/25 (1987), p.27; See also the Rio Declaration of 1992, UN Doc. A/CONF.151/26 (Vol. I).

⁶ Environmental Management and Co-ordination Act, No. 8 of 1999, Laws of Kenya.

⁷ Weiss, E.B., “In Fairness to Future Generations and Sustainable Development,” *American University International Law Review*, Vol.8, 1992.

⁸ See generally Amartya S., *Development as Freedom* (Anchor Books, New York, 1999), pp.35-53; See also UNDP, Human Development Report 2011, *The Real Wealth of Nations: Pathways to Human Development*, (Palgrave Macmillan Houndmills, Basingtoke, Hampshire, 2011), p. (i)-12. This report defines sustainable human

Chapter One: Sustainable Development Agenda and the General Actors: The Introduction

Kenya's Vision 2030 adopts sustainable human development as it seeks to address the economic, social and political pillars. It thus fosters both material factors and non-material factors.⁹ Sustainable human development is, therefore, inextricably linked to people's livelihoods, and is thus requisite in moving towards environmental justice.

In the *Case Concerning the Gabčíkovo-Nagymoros Project*,¹⁰ ICJ Judge Weeramantry rightly opined that sustainable development reaffirms the need for both development and environmental protection, and that neither can be neglected at the expense of the other. He considered sustainable development to be a '*principle with normative value*' demanding a balance between development and environmental protection, and as a principle of reconciliation in the context of conflicting human rights, that is the *human right to development* and the *human right to protection of the environment*. Sustainable development reconciles these rights by ensuring that the right to development tolerates the '*reasonable demands of environmental protection*.'¹¹

SDG Goal 12.2 mandates that by 2030, all States should achieve the sustainable management and efficient use of natural resources in order to guarantee sustainable consumption and production patterns. The goal is to prevent the world from degrading, which includes doing so through sustainable production and consumption, managing its natural resources

development as the expansion of the substantive freedoms of people today while making reasonable efforts to avoid seriously compromising those of future generations.

⁹ Kenya Vision 2030, Government of Kenya, 2007.

¹⁰ The Gabčíkovo–Nagymaros Project relates to a large damming project on the Danube River. This river is classified as an international waterway as it passes through or touches the borders of ten European countries before emptying into the Black Sea. The Project was specific to the part of the river passing through Hungary and Slovakia. It was initiated by the Budapest Treaty of 1977 between Slovakia and Hungary and aimed at preventing floods, improving river navigability and producing clean electricity for the two countries. Only a part of the project was completed in Slovakia, under the name Gabčíkovo Dam. Hungary suspended the Project in its territory and then later tried to terminate it citing environmental and economic concerns. Slovakia then proceeded with an alternative solution, called "Variant C", which involved diverting the river. These developments caused an international dispute between the two countries and they turned to the International Court of Justice for redress.

¹¹ Hungary v Slovakia, 1997 WL 1168556 (I.C.J-1997).

responsibly, and taking immediate action to combat climate change, so that it may satisfy the demands of both the present and future generations.¹²

Sustainable use refers to the need to reduce and eliminate unsustainable patterns of production and consumption.¹³ It is described as use that in any way and rate does not lead to long-term decline of biological diversity, thereby maintaining its potential to meet the needs of present and future generations.¹⁴ It requires that present use of the environment and natural resources does not compromise the ability of future generations to use these resources or degrade the carrying capacity of supporting ecosystems.¹⁵ It is a principle that is applied to determine the permissibility of natural resource exploitation¹⁶ and is central to the principle of sustainable development.

In order to maintain strong sustainability as opposed to weak sustainability, governments and public bodies must assure sustainable usage. Strong sustainability recognises that the environment has benefits beyond economic potential. According to some observers, future generations shouldn't inherit a deteriorated ecosystem, regardless of how many other sources of income are available to them, because the environment provides services and benefits that cannot be replaced by wealth created by humans.¹⁷ Strong sustainability is preferable to weak sustainability for reasons such as 'non-substitutability',¹⁸ 'uncertainty'¹⁹ and 'irreversibility.'²⁰ Weak sustainability makes a wrong assumption that future generations will be adequately

¹² Preamble, *Transforming our world: the 2030 Agenda for Sustainable Development*, A/RES/70/1.

¹³ Principle 8 of the Rio Declaration.

¹⁴ Art.2, Convention on Biological Diversity.

¹⁵ S. 2 of Act, No. 8 of 1999.

¹⁶ See Birnie, P., Boyle, A. and Redgwell, C., *International Law and the Environment*, (3rd ed., Oxford 2009).

¹⁷ Beder, S., "Costing the Earth: Equity, Sustainable Development and Environmental Economics," *New Zealand Journal of Environmental Law*, Vol.4, 2000, pp.227-243.

¹⁸ Ibid. The argument is that there are many environmental assets for which there are no substitutes, such as the ozone layer, tropical forests, wetlands, etc.

¹⁹ Ibid. It has been said that scientific knowledge about the functions of natural systems and the possible consequences of depleting and degrading them is uncertain.

²⁰ Ibid. The depletion of natural capital can lead to irreversible losses such as species and habitats, which cannot be recreated using man-made resources.

compensated for any loss of environmental amenity by having alternative sources of wealth creation.²¹

Sustainable use, therefore, puts fetters in the utilization of natural resources. For example, not all forms of resource use will be permissible since certain forms of exploitation may lead to destruction of environmental resources with no substitutes, thus limiting the enjoyment of these resources by future generations.²²

Public, private, and nonprofit sectors can all be categorized as players who can support sustainable development.²³ Even throughout evaluation, sustainability is always being redefined and interpreted in new ways. Some scholars contend that in order to arrive at the basically normative concept of sustainable development, stakeholders' and citizens' perspectives must be taken into account while evaluating the application of international rules.²⁴ NGOs, workers' unions, local governments or "local authorities, business and industry, scientific and technological communities, children and youth, women, farmer(s), aboriginal peoples and communities, are among the nine primary players of sustainable development that the United Nations has identified. According to Rio Agenda 21, the degree of commitment and sincere participation of all social groups and the general public in decision-making will determine how effectively sustainable development is implemented.²⁵

²¹ Ibid.

²² Kuhlman T and Farrington J, 'What Is Sustainability?' (2010) 2 Sustainability 3436; Chu EW and Karr JR, 'Environmental Impact: Concept, Consequences, Measurement' [2017] Reference Module in Life Sciences B978; Freedman B, 'Chapter 12 ~ Resources and Sustainable Development'

<https://ecampusontario.pressbooks.pub/environmentalscience/chapter/chapter-12-resources-and-sustainable-development/> accessed 19 April 2023.

²³ Nițoia P and Camară G, 'Roles of Actors in Promoting Sustainable Development' [2018] Present Environment and Sustainable Development 169.

²⁴ Pülzl H and Wydra D, 'The Evaluation of the Implementation of Sustainability Norms: An Exercise for Experts or Citizens?' (2011) 2 International Journal of Social Ecology and Sustainable Development (IJSESD) 31, 32.

²⁵ Rafika, K., Rym, K., Souad, S.B. and Youcef, L., "A public actor awareness for sustainable development." *Procedia-Social and Behavioral Sciences* 216 (2016): 151-162, p. 154.

CHAPTER TWO

Management Approaches Towards Sustainable Development

2.1. Introduction

This chapter highlights the various approaches that may be adopted towards realisation of the Sustainable Development Goals (SDGs), based on the different circumstances, the desired results and the stakeholders involved.

2.2. Nature-Based Solutions: Towards an Integrated Approach to Climate Change Mitigation and Biodiversity Conservation

Climate change mitigation measures and biodiversity conservation have often been treated as separate. However, the 27th Conference of the Parties (COP 27) for the first time, comprehensively created a platform for deliberations on tackling both as a step towards achieving sustainable development. This chapter highlights the outcomes of COP 27 which took place in November 2022 in Egypt, dubbed “African COP”. Notably, the main focus of this chapter as far as COP 27 is concerned was the encouragement of adoption of nature-based solutions to climate change and biodiversity loss. The author argues that there is a need for climate change mitigation efforts and biodiversity protection and conservation measures aimed at embracing the nature-based approaches and also create an opportunity for collaborative approaches in these between communities and government agencies.

The need for the UN Framework Convention on Climate Change (UNFCCC)¹ was informed by, *inter alia*: the understanding that, given the global nature of climate change, all nations must cooperate as widely as possible and take part in an effective and appropriate international response, in accordance with their respective capabilities, common but differentiating responsibilities, and social and economic circumstances; affirmation that in order to prevent negative effects on social and economic development, responses to climate change should be coordinated with it in an integrated manner, taking full account of developing countries' legitimate priority needs for the achievement of sustained economic growth and the eradication of poverty; and an

¹ UN General Assembly, *United Nations Framework Convention on Climate Change: resolution / adopted by the General Assembly*, 20 January 1994, A/RES/48/189.

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understanding that in order for developing nations to advance towards achieving sustainable social and economic development, their energy consumption will need to increase while taking into account the possibilities for achieving greater energy efficiency and for controlling greenhouse gas emissions in general, including through the application of new technologies on terms which are affordable to them.²

The ultimate goal of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a threshold should be reached in a time period that will allow ecosystems to adjust to climate change naturally, guarantee that food supply is not jeopardized, and permit sustainable economic growth.³

The Convention's top decision-making body is the Conference of the Parties (COP). At the COP, which reviews the implementation of the Convention and any other legal instruments that the COP adopts, all States that are Parties to the Convention are represented. The COP also makes decisions regarding institutional and administrative arrangements that are necessary to support the Convention's effective implementation.⁴

The inaugural COP conference took place in Berlin, Germany, in March 1995. The COP meets annually, unless the Parties decide differently, and unless a Party proposes to host the session, it meets in Bonn, the secretariat's home city.⁵ The issues of climate change and biodiversity are closely related. The

² Ibid, Preamble.

³ Ibid, Article 2.

⁴ 'Conference of the Parties (COP) | UNFCCC'

<<https://unfccc.int/process/bodies/supreme-bodies/conference-of-the-parties-cop>> accessed 10 January 2023.

⁵ Ibid.

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successful conservation, restoration, and management of biodiversity is essential to achieving the goals of the Paris Climate Agreement.⁶

The COP 27 took place in Sharm el-Sheikh, Egypt, held from November 6th to 20th November, 2022.⁷ With regard to a wide variety of climate change-related concerns, the Egyptian COP27 Presidency listed a number of subjects aimed at improving implementation and boosting ambition. Additionally, Egypt set aside a number of days that were specifically themed for in-depth debates, including those that took place during side events, panel discussions, round tables, and other interactive forms for consideration and dissemination to a larger audience. These included Finance Day, Agriculture and Adaptation Day, Water Day, Decarbonization Day, Science Day, Solution Day, Gender Day, Energy Day, Biodiversity Day, Youth and Future Generations Day, and ACE and Civil Society Day.⁸

Notably, adoption of nature-based approaches to climate change mitigation and biodiversity conservation took centre on this 'biodiversity day'. The term "nature-based solutions"(NbS) refers to a variety of methods used to solve social issues, such as habitat restoration, water resource management, disaster risk reduction, and green infrastructure. The foundation of nature-based solutions is the idea that when ecosystems are healthy and well-managed, they offer crucial advantages and services to people, such as lowering greenhouse gas emissions, securing safe water supplies, improving the quality of the air we breathe, or boosting food security.⁹

⁶ 'Biodiversity Day - COP27' (UNEP - UN Environment Programme) <<http://www.unep.org/events/conference/biodiversity-day-cop27>> accessed 13 February 2023.

⁷ 'Sharm El-Sheikh Climate Change Conference - November 2022 | UNFCCC' <<https://unfccc.int/cop27>> accessed 12 February 2023.

⁸ 'COP 27 | Climate-Diplomacy' <<https://climate-diplomacy.org/events/cop-27>> accessed 12 February 2023.

⁹ 'What Are Nature-Based Solutions and How Can They Help Us Address the Climate Crisis?' (World Wildlife Fund) <<https://www.worldwildlife.org/stories/what-are-nature-based-solutions-and-how-can-they-help-us-address-the-climate-crisis>> accessed 14 February 2023.

This chapter's main focus is on the outcomes of the discussions surrounding biodiversity and what the same portend for the future in enhancing biodiversity conservation and climate change mitigation as a step towards achieving sustainable development.

2.2.1. Biodiversity Protection and Conservation as a Tool for Achieving Sustainable Development

Environmental, social, and economic factors must all be balanced while pursuing sustainable development in order to protect natural resources (biodiversity, ecosystem services, and ecosystem function).¹⁰

The promise of providing humans with a means of subsistence in the present and the future while preserving the diversity of biological life contained in the planet's intricately woven natural eco-systems is captured by sustainable development on an idealistic level. The Sustainable Development Goals (SDGs), which were endorsed by the UN General Assembly in 2015, are a "collection of universal goals that tackle the pressing environmental, political, and economic issues facing our planet" (UNDP, 2020a).¹¹ The foundation for raising global standards of living and reducing the dangerous human-caused impacts of climate change is provided by the Sustainable Development Goals. SDG 13: Climate Action urges the incorporation of climate change mitigation strategies into development frameworks. More sustainable methods of exploiting the earth's natural resources are also urged by SDGs 14 and 15 on life below water and on land, respectively.¹²

Biodiversity is defined by the Convention on Biological Diversity as "the variability among living organisms from all sources, including, among others, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species,

¹⁰ Abdo, L., Kemp, A., Coupland, G., & Griffin, S., "Biodiversity offsets can be a valuable tool in achieving sustainable development: Developing a holistic model for biodiversity offsets that incorporates environmental, social and economic aspects of sustainable development." *Journal of Sustainable Development* 12, no. 5 (2019), 65.

¹¹ Cléménçon R "Is sustainable development bad for global biodiversity conservation?" *Global Sustainability* 4 (2021), 2.

¹² United Nations, 'Sustainability' (United Nations) <<https://www.un.org/en/academic-impact/sustainability>> accessed 14 February 2023.

and of ecosystems." It is the diversity of life on earth at all scales, from genes to globally dispersed populations of the same species; from groups of species coexisting in a limited environment to global ecosystems.¹³ It is crucial to recognise the value of biodiversity in supplying vital ecosystem services and life support systems, such as water yield, water purification, waste breakdown, flood control, storm and coastal protection, sedimentation processes, nutrient cycling, carbon storage, and climatic regulation, as well as the costs of replacing these services.¹⁴ This thus makes biodiversity conservation a crucial part of the journey towards achieving sustainable development goals.

2.2.2. COP 27 and Biodiversity: Towards an Integrated Approach in Climate Change Mitigation and Biodiversity Conservation Measures

As already pointed out, there was a biodiversity day set out during COP 27 on 16th November 2022, whose goal was to advance and institutionalize action towards valuing, conserving, restoring, and sustainably using biodiversity across terrestrial, freshwater, coastal, and marine ecosystems to lessen the effects of climate change and to use nature-based solutions to mitigate and adapt to climate change and build resilience for both people and nature.¹⁵ Notably, this was the first COP to dedicate a day to biodiversity.¹⁶

The goal of the biodiversity day was to draw attention to ecosystem- and nature-based solutions. It would also make it possible to talk about how climate change affects biodiversity and how to organise international efforts to address the problems of halting biodiversity loss and minimising the effects

¹³ United Nations, *1992 Convention on Biological Diversity*, 1760 UNTS 79, 31 ILM 818 (1992).

¹⁴ International Association for Impact Assessment, "Biodiversity in Impact Assessment", *Special Publication Series* No. 3, July 2005
< <https://www.patagoniaalliance.org/wp-content/uploads/2014/01/BIODIVERSITY-IN-IMPACT-ASSESSMENT.pdf>> accessed 14 February 2023.

¹⁵ 'Biodiversity Day - COP27' (UNEP - UN Environment Programme)
<<http://www.unep.org/events/conference/biodiversity-day-cop27>> accessed 13 February 2023.

¹⁶ 'COP27 Dispatch - November 16, 2022 | Newsletter | EESI'
<<https://www.eesi.org/newsletters/view/cop27-dispatch-november-16-2022>> accessed 14 February 2023.

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of pollution and climate change.¹⁷ Included in the discussions would be the effects of climate change on the oceans, endangered species, coral reefs, the sustainability of protected areas to provide ecosystem services to people, the effects of plastic waste on aquatic ecosystems and species, and ecosystem-based solutions and their relationship to climate change mitigation and adaptation.¹⁸

The Egyptian COP27 Presidency, the German Government, and the International Union for Conservation of Nature (IUCN) developed the ENACT (Enhancing Nature-based Solutions for an Accelerated Climate Transformation) initiative in recognition of the need for a more comprehensive global approach to NbS. This initiative's goal is to strengthen collaboration between already-existing NbS efforts and partnerships. Egypt and Germany are the co-chairs of ENACT, a voluntary alliance of state and non-state entities. The ENACT Secretariat, which will oversee the initiative's execution, will be housed at IUCN.¹⁹

As a beneficial outcome of ENACT, the secretariat will create an annual State of Nature-based Solutions report, which will be given to the COP Presidency prior to future UN Climate Change meetings. The study will offer the most thorough quantitative evaluation of the advancement made by state and non-state entities worldwide in putting NbS promises into practice.²⁰

The ENACT initiative aims to: enhance the protection from and resilience to climate impacts of at least 1 billion vulnerable people, including at least 500 million women and girls; secure up to 2.4 billion hectares of healthy natural and sustainable agricultural ecosystems, through protection of 45 million ha, sustainable management of 2 billion ha, and restoration of 350 million ha; and

¹⁷ 'COP27 Official-16 Nov, Biodiversity Day' <<http://example.com/index.htm>> accessed 14 February 2023.

¹⁸ Ibid.

¹⁹ 'Egyptian COP27 Presidency, Germany and IUCN Announce ENACT Initiative for Nature-Based Solutions' (IUCN) <<https://www.iucn.org/press-release/202211/egyptian-cop27-presidency-germany-and-iucn-announce-enact-initiative-nature>> accessed 14 February 2023.

²⁰ Ibid; 'ENACT Initiative' (IUCN) <<https://www.iucn.org/our-work/topic/nature-based-solutions-climate/our-work/enact-initiative>> accessed 14 February 2023.

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significantly increase global mitigation efforts through protecting, conserving and restoring carbon-rich terrestrial, freshwater and marine ecosystems.²¹

ENACT becomes important when you consider the connection between climate change and biodiversity loss. It has been observed that one of the primary causes of biodiversity loss is climate change, which also changes the ranges in which different species may survive and affects food webs as well as the intensity and frequency of threats like wildfires and droughts. Environmental dangers are made worse by ecosystem loss and degradation, which also diminishes ecosystems' capacity to absorb carbon from the atmosphere.²²

Consequently, it has been suggested that, when correctly used, Nature-based Solutions (NbS) can increase the resilience of ecosystems and the societies that depend on them. NbS can help communities adapt to climate hazards like sea level rise, more frequent and severe flooding, droughts, heatwaves, and wildfires while also providing significant biodiversity benefits in a way that protects and advances the rights and interests of historically marginalised and vulnerable groups.²³

It has been noted that the inclusion of the term NbS in the COP27 cover text was crucial because it gave Parties a policy lever to invest in scaling up NbS while also providing Parties with oversight to make sure that NbS adhere to

²¹ Ibid.

²² 'COP27 Official' <<http://example.com/index.htm>> accessed 14 February 2023.

²³ Ibid.

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the UNEA-5 definition²⁴, are not used for greenwashing²⁵, and are implemented sincerely. NbS must therefore promote biodiversity, protect human rights, be people-led, provide positive social effects locally, and be implemented in addition to, not in place of, significant reductions in greenhouse gas emissions.²⁶

The *Sharm el-Sheikh Implementation Plan*²⁷, in its preamble, underlines the crucial importance of protecting, conserving, restoring, and sustainably using nature and ecosystems for effective and sustainable climate action, as well as the urgent need to address the interconnected global crises of climate change and biodiversity loss in a comprehensive and synergetic manner.²⁸ In addition, the Plan stresses the significance of safeguarding, conserving, and restoring nature and ecosystems in order to meet the Paris Agreement temperature goal,

²⁴ The overall theme for UNEA-5 was “Strengthening Actions for Nature to Achieve the Sustainable Development Goals,” highlighting the pivotal role nature plays in our lives and in social, economic and environmental sustainable development. The UNEA-5 provided a platform for Member States to exchange sustainable development best practices. It sought to give nations a foundation to build on and catalyse impact on international environmental initiatives to save and restore the natural environment, which is essential to our economies and society.

See: ‘Fifth Session of the United Nations Environment Assembly | Environment Assembly’ <<https://www.unep.org/environmentassembly/unea5>> accessed 14 February 2023.

²⁵ See de Freitas Netto, S.V., Sobral, M.F.F., Ribeiro, A.R.B. and Soares, G.R.D.L., "Concepts and forms of greenwashing: A systematic review." *Environmental Sciences Europe* 32, no. 1 (2020): 1-12.

²⁶ ‘The Agile Initiative | From Global to Local: Lessons on Scaling up Nature-Based Solutions from COP27’ (*The Agile Initiative*) <<https://www.agile-initiative.ox.ac.uk/news/from-global-to-local-lessons-on-scaling-up-nature-based-solutions-from-cop27>> accessed 14 February 2023; see also ‘Nature-Based Solutions Initiative | Nature-Based Solutions Included in COP27 Cover Decision Text’ (*Nature-based Solutions Initiative*) <<https://www.naturebasedsolutionsinitiative.org/news/nature-based-solutions-included-cop27-cover-decision-text/>> accessed 14 February 2023.

²⁷ UNFCCC, *Sharm el-Sheikh Implementation Plan*, Sharm el-Sheikh Climate Change Conference - November 2022 Proceedings, Decision -/CP.27<https://unfccc.int/sites/default/files/resource/cop27_auv_2_cover%20decision.pdf> accessed 14 February 2023.

²⁸ *Ibid*, Preamble.

including through the protection of biodiversity, forests, and other terrestrial and marine ecosystems that act as sinks and reservoirs for greenhouse gases.²⁹ The Plan also encourages Parties to take into account ecosystem-based strategies or solutions based on nature, as appropriate, for their mitigation and adaptation actions while providing sufficient social and environmental safeguards, taking into mind United Nations Environment Assembly resolution 5/5.³⁰

An important component of the Plan is the loss and damage fund, which many people see as the pinnacle of the United Nations Climate Conference (COP 27) and the result of years of pressure from poor nations that are susceptible to climate change. The fund intends to donate funding to the countries that are most at risk from and affected by the consequences of climate change.³¹ The term "loss and damage" refers to the inescapable negative effects of climate change, such as increased sea levels, protracted heat waves, desertification, acidification of the oceans, and catastrophic occurrences like bushfires, extinction of species, and crop failures.³² It has been observed that Climate justice has entered a new era with the creation of the Loss and Damage Finance Fund. The cornerstone of a long delayed new fund has been set by governments in order to provide crucial assistance to disadvantaged nations and communities who are already suffering the effects of the escalating climate disaster.³³

It is now hoped that the African continent for example, which contributes the least to climate change yet is the most vulnerable to its impacts, will benefit from this fund immensely and have an opportunity to use their domestic

²⁹ Ibid, Para. 15.

³⁰ Ibid, para. 48.

³¹ Ibid, paras 22-25; see also 'What You Need to Know about the COP27 Loss and Damage Fund' (UNEP, 29 November 2022) <<http://www.unep.org/news-and-stories/story/what-you-need-know-about-cop27-loss-and-damage-fund>> accessed 14 February 2023.

³² 'What You Need to Know about the COP27 Loss and Damage Fund' (UNEP, 29 November 2022) <<http://www.unep.org/news-and-stories/story/what-you-need-know-about-cop27-loss-and-damage-fund>> accessed 14 February 2023.

³³ Harris T, 'Africa: COP27 Loss and Damage Finance Fund a Down Payment On Climate Justice.' *Greenpeace International* (Amsterdam, 22 November 2022) <<https://allafrica.com/stories/202211220519.html>> accessed 14 February 2023.

funds on other pressing socio-economic issues affecting their populace.³⁴ It is hoped that there will be goodwill in making this climate change funding mechanism a reality.

Kenya can take advantage of this fund when it becomes effective, to continue with the projects that were started and managed through the Adaptation Fund Programme in Kenya, implemented through National Environment Management Authority as the National Implementing Entity under Kyoto Protocol, and which proposed to develop and implement integrated adaptive mechanisms to increase community livelihood resilience to climate change as follows: Adoption of drought tolerant crops, and promotion of value chain approaches; Development of water harvesting assets/structures; Promotion of forestry and agro forestry ecosystem-based strategies to enhance food security and resilience to climate change as well as water and soil conservation; Promotion of pastoral ecosystem-based adaptations that will increase resilience through use of pasture conservation and emergency fodder bank, storage and supply of water to improve social life of the people in the district; Rehabilitation of mangrove ecosystem in the coastal area; Disaster risk reduction and preparedness through early warning system and flood control structures; and establishment of a knowledge management system for this programme, development of institution capacity, and raising awareness on Climate Change Adaptation.³⁵ Such funding can go a long way in not only enhancing climate change mitigation measures but also narrowing the gap between climate change mitigation measures and biodiversity conservation measures as the two should be treated as related even in their implementation. The outcome of COP 27 may thus be considered to be a step in the right direction towards adoption of an integrated approach in climate change

³⁴ 'What You Need to Know about the COP27 Loss and Damage Fund' (UNEP, 29 November 2022) <<http://www.unep.org/news-and-stories/story/what-you-need-know-about-cop27-loss-and-damage-fund>> accessed 14 February 2023; Zenda C, 'What Will the Loss and Damage Fund Mean for Africa's Most Vulnerable?' (FairPlanet) <<https://www.fairplanet.org/story/cop27-loss-and-damage-fund-for-africa/>> accessed 14 February 2023.

³⁵ 'National Environment Management Authority (NEMA) - Kenya Adaptation Fund Program' <https://www.nema.go.ke/index.php?option=com_content&view=article&id=262&Itemid=385> accessed 14 February 2023.

mitigation and biodiversity conservation measures. Including all stakeholders, including communities, women, youth and children, among others, in these measures is important not only because of the direct impact of climate change and biodiversity loss on their lives but also the fact that their daily activities have a direct impact on efforts towards reversing both. Especially with climate change issues and biodiversity-related decision-making processes, inclusive governance is necessary. The term "inclusive governance" refers to the process of allowing a broad spectrum of rights holders, knowledge holders, and stakeholders to participate in decision-making in order to capture differing values, strengthen capacity, and advance accountability, legitimacy, and just results.³⁶

This indeed rhymes well with the adoption of nature-based or ecosystem based approaches towards addressing climate change. Ecosystem-based adaptation frequently produces win-win results that safeguard vulnerable communities from extreme weather while also delivering a range of ecological advantages that are essential for human well-being, such clean water and food.³⁷ Ecosystem-based adaptation, which is basically a strategy for coping with change, can decrease greenhouse gas emissions caused by habitat loss and ecosystem degradation, which in turn helps to mitigate the effects of climate change.³⁸

2.2.3. Conclusion

In order to solve some of our society's most important problems, such as threats to water security, an increase in the likelihood of catastrophes, or climate change, a range of measures or policies known as "nature-based solutions" are used. These solutions entail conserving biodiversity, managing

³⁶ Visseren-Hamakers, I.J., Razzaque, J., McElwee, P., Turnhout, E., Kelemen, E., Rusch, G.M., Fernandez-Llamazares, A., Chan, I., Lim, M., Islar, M. and Gautam, A.P., 'Transformative Governance of Biodiversity: Insights for Sustainable Development' (2021) 53 *Current Opinion in Environmental Sustainability* 20 <<https://www.sciencedirect.com/science/article/pii/S1877343521000749>> accessed 14 February 2023.

³⁷ Environment UN, 'Ecosystem-Based Adaptation' (UNEP - UN Environment Programme, 4 June 2021) <<http://www.unep.org/explore-topics/climate-action/what-we-do/climate-adaptation/ecosystem-based-adaptation>> accessed 14 February 2023.

³⁸ Ibid.

ecosystems sustainably, and protecting and restoring ecosystems in ways that strengthen their resilience and capacity to solve those social concerns.³⁹

There is a need for accelerated adoption of nature-based approaches to climate change mitigation and biodiversity conservation as a step towards achieving socio-economic rights of communities and other related rights as envisaged under sustainable development goals. The proposed funding mechanisms under COP 27 should also be well utilised, once implemented, as a way of building resilient communities and ecosystems. This will go a long way in boosting efforts towards achievement of Sustainable Development Goals.

2.3. Health in All Policies Approach to Sustainability

An approach to public policy known as Health in All Policies (HiAP) tries to promote population health and health equity by systematically considering the health consequences of policies, pursuing synergies, and avoiding negative health impacts. In the context of urban policies to support public health interventions targeted at reaching SDG objectives, HiAP is essential for local decision-making processes. HiAPs largely rely on the utilisation of scientific data and assessment instruments like health impact assessments (HIAs). In order to inform the incorporation of health recommendations in urban policy, HIAs may incorporate city-level quantitative burden of illness evaluations, health economic analyses, and citizen and other stakeholders' engagement.⁴⁰

HiAP acknowledges that a variety of factors outside of healthcare and frequently outside the purview of conventional public health activities

³⁹ 'What Are Nature-Based Solutions and How Can They Help Us Address the Climate Crisis?' (*World Wildlife Fund*) <<https://www.worldwildlife.org/stories/what-are-nature-based-solutions-and-how-can-they-help-us-address-the-climate-crisis>> accessed 14 February 2023.

⁴⁰ Ramirez-Rubio, O., Daher, C., Fanjul, G., Gascon, M., Mueller, N., Pajín, L., Plasencia, A., Rojas-Rueda, D., Thondoo, M. and Nieuwenhuijsen, M.J., 'Urban Health: An Example of a "Health in All Policies" Approach in the Context of SDGs Implementation' (2019) 15 *Globalization and Health* 87.

contribute to health, and the strategy may also be successful in finding evidence gaps and promoting health equity.⁴¹

The World Health Organization notes that the Health in All Policies (HiAP) initiative acknowledges that population health is significantly influenced by policies that direct behaviours outside of the health sector, rather than only being a byproduct of health sector programmes. Health and health inequality might possibly be impacted by policy in every area of government. Using a HiAP strategy tries to address policies that have an impact on things like transportation, housing and urban planning, the environment, education, agriculture, finance, taxes, and economic development in order to make them more supportive of overall health and health equality.⁴²

The Pan American Health Organization (PAHO) notes that many of the social, environmental, and economic factors that influence health have causes other than the medical industry and government health policy. The influence on health must thus be taken into account across all industries and levels of administration. In addition, PAHO notes that the HiAP strategy emphasizes participation, sustainability, accountability, transparency, access to information, and cross-sectoral cooperation.⁴³

As a WHO member, Kenya has pledged to embrace HiAP, which is outlined in the country's health policy for the years 2014 to 2030.⁴⁴ The budgeting procedure and planning for the Sustainable Development Goals have reportedly been identified as possible windows of opportunity for the

⁴¹ 'Health in All Policies | AD for Policy and Strategy | CDC' (18 June 2019) <<https://www.cdc.gov/policy/hiap/index.html>> accessed 16 April 2023.

⁴² 'Promoting Health in All Policies and Intersectoral Action Capacities' <<https://www.who.int/activities/promoting-health-in-all-policies-and-intersectoral-action-capacities>> accessed 16 April 2023.

⁴³ User S and <https://www.facebook.com/pahowho>, 'PAHO/WHO | About Health in All Policies' (Pan American Health Organization / World Health Organization, 6 March 2014) <https://www3.paho.org/hq/index.php?option=com_content&view=article&id=9360:2014-about-health-all-policies&Itemid=0&lang=en#gsc.tab=0> accessed 16 April 2023.

⁴⁴ Mauti, J., Gautier, L., De Neve, J.W., Beiersmann, C., Tosun, J. and Jahn, A., 'Kenya's Health in All Policies Strategy: A Policy Analysis Using Kingdon's Multiple Streams' (2019) 17 Health Research Policy and Systems 15.

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mainstreaming of the HiAP approach in all sectors with health promotion as a clear goal.⁴⁵

As a method for tackling the many elements that affect health and equality, often known as the social determinants of health, which include educational attainment, housing, transport alternatives, and neighbourhood safety, APHA recommends a "health in all policies" approach.⁴⁶

Every government agency has a responsibility to play in creating a vibrant, just community. The concept underlying Health in All Policies is this. HiAP is fundamentally about bringing together government departments to establish shared objectives, make the most of available resources, coordinate efforts, and engage in large-scale, multifaceted solutions. Public organisations can employ this strategy in collaboration with the communities they serve to address their biggest social and environmental problems.⁴⁷ In order to reduce health disparities and achieve health equity, HiAP is an essential technique. Decision-makers may best serve their communities by applying a HiAP strategy across sectors and policy areas since no one government agency has complete control over the laws and policies that have an impact on the basic causes of inequality.⁴⁸

Designing a conceptual framework with the SDGs, urban and transportation planning, environmental exposures, behaviour, and health outcomes in mind is possible. The HiAP approach's potential to transfer knowledge into SDG implementation depends on a number of key factors, including data accessibility, consideration of equity concerns, strengthening communication between experts, decision-makers, and people, and participation of all significant stakeholders.⁴⁹

⁴⁵ Ibid.

⁴⁶ 'Health in All Policies' <<https://www.apha.org/topics-and-issues/health-in-all-policies>> accessed 16 April 2023.

⁴⁷ 'Health in All Policies | ChangeLab Solutions' <<https://www.changelabsolutions.org/health-all-policies>> accessed 16 April 2023.

⁴⁸ Ibid.

⁴⁹ Ramirez-Rubio, O., Daher, C., Fanjul, G., Gascon, M., Mueller, N., Pajín, L., Plasencia, A., Rojas-Rueda, D., Thondoo, M. and Nieuwenhuijsen, M.J., 'Urban Health:

2.4. Human Rights Based Approach to Sustainable Development

Since 1945, when the United Nations Charter was adopted, human rights have been a keystone of the organization's activities.⁵⁰ The Universal Declaration of Human Rights, issued by the UN General Assembly in 1948, states that the equal and inalienable rights of every human being serve as the cornerstone for freedom, justice, and peace in the world.⁵¹

Since the United Nations Environmental Agency suggested a new rights-based agenda for sustainable development in the report "Transforming Our World: The 2030 Agenda for Sustainable Development," (UN, 2015), a rights-based approach to environmental concerns has gained support.⁵²

A conceptual framework for the process of human development, the Human Rights-Based Approach (HRBA) is operationally focused on advancing and defending human rights while normatively basing itself on international human rights norms. It aims to address unfair power dynamics and discriminatory behaviours that inhibit development and frequently leave some groups of people behind. These issues are at the core of development issues, and it strives to analyse and address them.⁵³ The human rights-based strategy puts the spotlight on those who are the most disadvantaged, excluded, or subjected to discrimination. In order to make sure that interventions reach the most vulnerable sections of the community, it is frequently necessary to analyse gender norms, various types of discrimination, and power disparities.⁵⁴

An Example of a "Health in All Policies" Approach in the Context of SDGs Implementation' (2019) 15 *Globalization and Health* 87.

⁵⁰ 'UNSDG | Human Rights-Based Approach'

<<https://unsdg.un.org/2030-agenda/universal-values/human-rights-based-approach>, <https://unsdg.un.org/2030-agenda/universal-values/human-rights-based-approach>> accessed 19 April 2023.

⁵¹ 'The Human Rights-Based Approach' (*United Nations Population Fund*)

<<https://www.unfpa.org/human-rights-based-approach>> accessed 19 April 2023.

⁵² Choondassery Y, 'Rights-Based Approach: The Hub of Sustainable Development' (2017) 8 *Discourse and Communication for Sustainable Education* 17.

⁵³ 'UNSDG | Human Rights-Based Approach' <<https://unsdg.un.org/2030-agenda/universal-values/human-rights-based-approach>, <https://unsdg.un.org/2030-agenda/universal-values/human-rights-based-approach>> accessed 19 April 2023.

⁵⁴ 'The Human Rights-Based Approach' (*United Nations Population Fund*)

According to the HRBA, all civil, cultural, economic, political, and social rights as well as the right to development are based in a system of rights and associated duties created by international law. The HRBA mandates that the United Nations development cooperation adhere to the human rights principles of universality, indivisibility, equality, and non-discrimination, participation, and accountability, and place special emphasis on building the capacities of both "duty-bearers" to fulfil their duties and "rights-holders" to assert their rights.⁵⁵ A rights-based strategy helps duty-bearers become more capable of carrying out their responsibilities and motivates right holders to exercise their rights. Governments are required to respect, safeguard, and uphold all rights on three different levels. Respecting a right entails not interfering with how that right is used. To defend a right is to stop other parties from obstructing it from being exercised. In order to ensure that individuals may exercise their rights, laws, regulations, institutions, and procedures must be put in place. This includes allocating resources.⁵⁶

The Human Rights system and the SDGs complement each other in that the former ensures the binding stamp and, most importantly, monitoring and accountability mechanisms, while the latter also integrates "people, planet, prosperity, peace, and partnership" for the achievement of sustainable development.⁵⁷ Several of the SDGs' aims are changed from a goal or aspiration into immediate rights when examined through the prisms of current human rights legislation. In this regard, the implementation of the SDGs can be much more successful if it is influenced by a human rights-approach and takes into account the findings and suggestions of international

<<https://www.unfpa.org/human-rights-based-approach>> accessed 19 April 2023.

⁵⁵ 'UNSDG | Human Rights-Based Approach'

<<https://unsdg.un.org/2030-agenda/universal-values/human-rights-based-approach>,
<https://unsdg.un.org/2030-agenda/universal-values/human-rights-based-approach>> accessed 19 April 2023.

⁵⁶ 'The Human Rights-Based Approach' (United Nations Population Fund) <<https://www.unfpa.org/human-rights-based-approach>> accessed 19 April 2023.

⁵⁷ 'Intersessional Meeting on Human Rights and the 2030 Agenda (16 January 2019)' (OHCHR) < <https://www.ohchr.org/en/hr-bodies/hrc/intersessional-meeting2030-agenda> > accessed 19 April 2023.

and regional treaty-based bodies as well as National Human Rights Institutions (NHRIs).⁵⁸

In fact, local, regional, and international human rights organisations can be used to ensure that national policies and programmes for the implementation, monitoring, and reporting of the SDGs are based on a human rights-based approach. The various human rights mechanisms can provide useful and occasionally disaggregated data to feed decision-making and reporting processes, and the institutions overseeing human rights processes can be a useful bridge between governments and various vulnerable groups.⁵⁹

A human rights-based approach (HRBA) to development seeks to achieve outcomes that are relevant to human rights standards, such as the right to adequate housing, through the adoption of procedures that uphold the human rights principles of equality and non-discrimination, inclusion and participation, accountability, and the rule of law.⁶⁰ Indigenous peoples and local communities' ways of life and territorial boundaries are important components of the solution to our global crises, and they must be recognised and supported throughout the framework, including through the recognition of rights over lands, territories, and resources, in area-based policies, in customary sustainable use, in traditional knowledge, and in fully and effectively participating in decision-making processes.⁶¹

It has been argued that although the concepts of a rights-based approach to development are consistent with the 2030 Agenda in some areas, more work has to be done in the implementation, monitoring, and assessment of the SDGs

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ 'A Rights-Based Approach to Urban Development - Urban Jonsson, the Owls | UN-Habitat' <<https://unhabitat.org/a-rights-based-approach-to-urban-development-urban-jonsson-the-owls>> accessed 19 April 2023.

⁶¹ 'Implementing a Human Rights-Based Approach to Biodiversity Conservation - Paper 3 | FPP' <<https://www.forestpeoples.org/en/report/2022/implementing-human-rights-BA>> accessed 19 April 2023.

to guarantee that the full range of benefits offered by a rights-based approach may be realized.⁶²

According to the Swedish International Development Cooperation Agency, the following are key questions to ask when applying the HRBA:

- a) Participation: Do all relevant stakeholders engage actively, in a way which allows rights holders to contribute meaningfully and influence outcomes?
- b) Link to human rights obligations: How are relevant human rights standards and recommendations from international and regional human rights mechanisms identified and used in formulating objectives and to advance processes and outcomes?
- c) Accountability: Who are the duty bearers at different levels, and do they have sufficient capacity and interest to be accountable to rights holders? Are there mechanisms for participation and complaints in place for rights holders, civil society and other stakeholders to hold the duty bearers to account?
- d) Non-discrimination and equality: Are rights holders and the root causes of the non-realisation of their human rights identified and taken into account, particularly those most subject to discrimination and marginalisation?
- e) Empowerment and capacity development: How does the intervention contribute to the empowerment of rights holders to claim their rights, as well as capacity development of duty bearers to uphold their responsibilities, and of other relevant stakeholders to contribute to positive outcomes?
- f) Transparency: What measures are put in place to ensure that all stakeholders are able to access relevant information and knowledge regarding the intervention?

⁶² de Man A, 'The Sustainable Development Goals and the Rights-Based Approach to Development: Compatible or Missing the Point?' (2019) 19 African Human Rights Law Journal 445.

CHAPTER THREE

Private Actors and non-State Actors: Aligning Commercial Arbitration with Sustainable Development Agenda

3.1. Introduction

Conflict management and access to justice are considered to be an important element of sustainable development agenda. To this effect, the same are well captured in the United Nations 2030 Agenda for Sustainable Development Goals under Goal 16 which seeks to promote peaceful and inclusive societies, providing access to justice for all and building effective, accountable and inclusive institutions at all levels. Arbitration is one of the most popular methods of conflict management globally due to its close resemblance to litigation, without being encumbered by the challenges that affect litigation.

This chapter discusses how the concept of green arbitration can be promoted as a two pronged approach-achieving sustainable justice while promoting environmental sustainability. The author argues that this is a concept worth embracing in Kenya and internationally.

Since the 1980s, sustainable development has played a role in influencing local public policy. According to the World Commission on Environment and Development, sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."¹ Thus, the widespread adoption of public policy agendas, such as localizing the United Nations Sustainable Development Goals, and the thousands of local governments worldwide creating sustainability plans reflect the need for a collective effort to overcome the social, ecological, and economic difficulties inherent in achieving sustainability.²

¹ MacDonald, A., Clarke, A., Ordonez-Ponce, E., Chai, Z. and Andreasen, J., 'Sustainability Managers: The Job Roles and Competencies of Building Sustainable Cities and Communities' (2020) 43 Public Performance & Management Review 1413, p.2.

² Ibid, p. 39.

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The 2030 Agenda for Sustainable Development was adopted by the United Nations in 2015 and includes 17 Goals (SDGs).³ Conflict management and access to justice are considered to be an important element of sustainable development agenda.⁴ For human civilization to continue, peace and harmony are necessary. According to the United Nations (2016), SDG 16 demands for equal access to information and judicial services while creating inclusive, peaceful societies with access to justice.⁵

Arbitration is one of the most popular methods of conflict management especially by the commercial and business community globally due to its close resemblance to litigation, without being encumbered by the challenges that affect litigation.⁶ Arguably, commercial and business activities contribute a great deal to climate change and other ills that lead to environmental degradation.⁷

While the environmental effects of these economic activities are often mitigated through Corporate Social Responsibility (CSR) activities, these may not at times be sufficient in tackling the resultant increased rates of degradation. Indeed, many of the top scientists in the world believe that human-caused climate change is the "defining issue of our time." Many people now prefer to use the term "Climate Crisis" to emphasise how quickly and severely the world's climate is changing and how urgently we need to take

³ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development*, 21 October 2015, A/RES/70/1.

⁴ Muigua, D., 'Understanding the Place of Conflict Management in Sustainable Development Agenda' (27 September 2022) <<https://papers.ssrn.com/abstract=4371703>> accessed 31 March 2023.

⁵ Leal Filho, W., Tripathi, S.K., Andrade Guerra, J.B.S.O.D., Giné-Garriga, R., Orlovic Lovren, V. and Willats, J., 'Using the Sustainable Development Goals towards a Better Understanding of Sustainability Challenges' (2019) 26 *International Journal of Sustainable Development & World Ecology* 179.

⁶ Nevisandeh M, 'The Nature of Arbitration Agreement' (2016) 36 *Procedia Economics and Finance* 314.

⁷ 'Trade and the Environment - OECD' <<https://www.oecd.org/trade/topics/trade-and-the-environment/>> accessed 1 April 2023.

action to create a sustainable future.⁸ According to the Intergovernmental Panel on Climate Change (IPCC), global CO₂ emissions must decrease over the next ten years to around half of 2010 levels and achieve net zero by 2050. According to the IPCC, in order to keep global warming to 1.5 °C, all facets of society would need to undergo quick, significant, and unheard-of adjustments.⁹ In addition to climate change, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) of the United Nations found equally alarming results in its 2019 assessment report on biodiversity and ecosystem services.¹⁰

This chapter discusses how the concept of green arbitration can be a proactive approach by the business community, promoted as a two pronged approach-achieving sustainable justice for commercial and business community while promoting environmental sustainability.

3.2. The Concept of Green Arbitration in International Arbitrations

An effort to lessen the effect that international arbitrations have on the environment is called the Campaign for Greener Arbitrations. In order to dramatically reduce the carbon footprint of the arbitration community, international arbitrator Lucy Greenwood established the campaign in 2019.¹¹

A Steering Committee was formed by the Campaign for Greener Arbitrations in 2020 and is made up of individuals with an interest in the development of international arbitration, including practitioners, institutions, and legal service providers.¹² The creation of a Framework and a set of Protocols to encourage better environmental behaviour through a number of action items was one of

⁸ McGregor D, Whitaker S and Sritharan M, 'Indigenous Environmental Justice and Sustainability' (2020) 43 *Current Opinion in Environmental Sustainability* 35, p.35.

⁹ *Ibid*, p.35.

¹⁰ *Ibid*, p.35.

¹¹ 'Campaign for Greener Arbitrations' (*Campaign for Greener Arbitrations*, 19 March 2023) <<https://www.greenerarbitrations.com>> accessed 31 March 2023.

¹² 'Green Protocols' (*Campaign for Greener Arbitrations*) <<https://www.greenerarbitrations.com/green-protocols>> accessed 31 March 2023.

the Steering Committee's main goals. The Protocols provide useful advice for putting the Guiding Principles' principles into practice.¹³

3.3. International Framework for the Adoption of the Green Protocols

The Framework observes that the international arbitration community's activities have a sizable environmental legacy. A large-scale international arbitration was the subject of an initial research by the Campaign for Greener Arbitrations, and the results suggested that just under 20,000 trees could be needed to offset all of the carbon emissions generated by just one adjudication.¹⁴

According to the Campaign's research, practitioners can significantly reduce these carbon emissions by concentrating on just three areas: (i) adopting clean forms of energy, (ii) reducing long-haul travel, and (iii) reducing waste. For instance, by completely ceasing to use hard copy filings, practitioners could significantly reduce these carbon emissions. Everyone in the arbitration community has a stake in lowering the carbon footprint of our sector.¹⁵

The "Green Protocols" are a series of guidelines created by the Campaign for Greener Arbitrations to nudge other stakeholders towards adopting more environmentally friendly behaviours and cutting back on carbon emissions. This Framework offers recommendations for implementing the Green Protocols, which are the Green Protocol for Arbitral Proceedings, the Green Protocol for Law Firms, Chambers, and Legal Service Providers Working in Arbitration, the Green Protocol for Arbitrators, the Green Protocol for Arbitration Conferences, the Green Protocol for Arbitral Hearing Venues, and the Green Protocol for Arbitral Institutions.¹⁶

The Green Protocols provide practical ways to implement the Campaign for Greener Arbitrations' Guiding Principles, which asks the arbitration

¹³ Ibid.

¹⁴ 'Framework and Green Protocols' (*Campaign for Greener Arbitrations*) <<https://www.greenerarbitrations.com/green-protocols/complete-set>> accessed 31 March 2023.

¹⁵ Ibid.

¹⁶ Ibid.

community to commit to: Creating a workspace with a reduced environmental footprint, by looking for opportunities to reduce energy consumption and waste; Corresponding electronically, unless hard copy correspondence is expressly needed in the circumstances, while also being mindful that email has a carbon footprint; Encouraging the use of video-conferencing facilities as an alternative to travel (including for the purposes of conducting fact finding or interviews with witnesses); Avoiding printing, requesting the use of electronic rather than hard copies of documents and promoting the use of electronic bundles at hearings; Using, where possible, suppliers and service providers who are committed to reducing their environmental footprint (including for the purposes of arranging an arbitration hearing); Considering and/or suggesting, where appropriate, that witnesses or experts give evidence through video-conferencing facilities, rather than attend hearings in person; Avoiding unnecessary travel and using video-conferencing facilities as an alternative; and Considering and questioning the need to fly at all times and offsetting carbon emissions for any arbitration-related travel.¹⁷

Notably, this Framework and the Green Protocols are not binding and are not intended to displace applicable rules or derogate from the arbitration agreement, unless and to the extent the Parties so agree (either in the arbitration agreement or subsequently) or the Tribunal so orders. This Framework and the Green Protocols do not establish liability or a liability standard for legal or regulatory purposes.¹⁸

3.3.1. Green Protocol for Law Firms, Chambers and Legal Service Providers

The Green Protocol for Law Firms, Chambers, and Legal Service Providers Working in Arbitration ("Legal Advisors") contains suggested Sustainability Measures for minimising the impact of Legal Advisors and their employees on the environment, which can either be integrated into Legal Advisors' operations and/or adopted on a case-by-case basis by individuals at those

¹⁷ Ibid.

¹⁸ Ibid.

Legal Advisors or be adopted by Legal Advisors individually or in their entirety, as appropriate.¹⁹

Additionally, it has been suggested that, while all of the Sustainability Measures outlined in this Protocol will contribute to reducing the environmental impact of Legal Advisors' practices, special attention should be paid to those that encourage the use of clean energy as a primary energy source and the reduction of air travel, as these two actions will have the largest proportional impact on the overall decline in emissions related to Legal Advisors' practices.²⁰

3.3.2. Green Protocol for Arbitrators

The Green Protocol for Arbitrators offers suggested sustainability measures that can be adopted in part or whole, as necessary, by arbitrators to reduce their particular impact on the environment during arbitral proceedings.²¹

The Protocol proposes that arbitrators should make an effort to: Prefer electronic communications and letters over paper form when communicating with other Tribunal members, institutions, and Parties, unless it is absolutely essential; Use electronic tools to annotate papers, create and complete orders or awards, and prepare reports; Consider printing documents carefully, try to print just what is absolutely essential, and save electronic case files rather than hard copy files.²²

Arbitrators are also required to encourage Parties at the outset of the case to adopt Sustainability Measures, to reduce the environmental footprint of the arbitration, in particular Sustainability Measures aimed at reducing travel and paper waste.²³

¹⁹ 'Green Protocol for Law Firms, Chambers and Legal Service Providers' (*Campaign for Greener Arbitrations*) <<https://www.greenerarbitrations.com/green-protocols/law-firms-chambers-legal-service-providers>> accessed 31 March 2023.

²⁰ Ibid.

²¹ 'Green Protocol for Arbitrators.Pdf' (*Google Docs*) <https://drive.google.com/file/d/1A6JEh7470Sc3ppNxGc2R5BnDss3ahPDZ/view?usp=embed_facebook> accessed 31 March 2023.

²² Ibid.

²³ Ibid.

They are also to encourage sustainable hearing, improve the energy efficiency of their home or outside offices to reduce their environmental footprint, encourage recycling, travel responsibly, and also, however, give due consideration to offsetting any residual emissions caused by their conduct, including through travel.²⁴

3.3.3. Green Protocol for Arbitration Conferences

The proposed Sustainability Measures in this Green Protocol for Arbitration Conferences are intended to reduce the environmental impact of arbitration conferences.²⁵ This Green Protocol for Arbitration Conferences should be adopted by conference planners in advance of the event.²⁶ If possible, organisers should choose a location that has sustainability certifications or an environmental policy in place. If none of these features are present, organisers should work with venue facilitators to implement the greener solutions outlined below.²⁷ Organisers are also required to endeavour to conduct all conference planning meetings remotely via virtual platform.²⁸ Additionally, organisers must pledge to use digital registration and payment options for sponsors and attendees, reduce or stop using paper for mailings, send conference materials electronically to attendees or make them scannable with QR codes, stop using paper for handouts, and make an effort to limit the amount of other materials distributed.²⁹ Organisers are also required to endeavour to implement electronic platforms or QR codes for daily check-in at conferences.³⁰

Wherever possible, organisers must take into account employing clean or renewable energy sources. Additionally, or in any case, the organisers shall make every effort to use energy suppliers that support renewable energy

²⁴ Ibid.

²⁵ 'Green Protocol for Arbitration Conferences.Pdf' (Google Docs) <https://drive.google.com/file/d/1DwneSKq5KjaHOeXwqS4ejHzKwAXEA3G-/view?usp=embed_facebook> accessed 31 March 2023.

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid.

²⁹ Ibid.

³⁰ Ibid.

and/or have solid Environmental, Social, and Governance (ESG) credentials.³¹ Also, organisers must choose host locations that strive to lower their energy usage and environmental impact.³²

Organisers must also convey to conference sponsors their preference for using digital marketing materials and minimising the usage of printed materials whenever possible.³³ The protocol includes a non-exhaustive list of items that organisers should use as a guide to limit or eliminate the use of single-use and/or plastic items whenever possible and where it is deemed safe, with alternatives suggested as needed. Organisers should in addition make an effort to choose host venues that follow environmentally friendly disposal practices.³⁴

The organisers must make an effort to work with vendors who follow or aim to follow similar sustainability measures, such as the use of locally sourced materials, ecologically friendly products, and alternatives to single-use packaging. Caterers, printers, organisations that produce documents, couriers, cleaners, marketing and advertising experts, off-site event venues, and utilities providers are a few examples of these vendors.³⁵ Organisers are also to travel responsibly, obtain electronic feedback and offset carbon emissions.³⁶

3.3.4. The Green Protocol for Arbitral Hearing Venues

The recommended Sustainability Measures in this Green Protocol for Arbitral Hearing Venues are intended to reduce the environmental impact of arbitration facilities and hearing venues.³⁷ This Protocol, or any of its component elements, must be adopted by facilitators as standard operating procedure. Alternately, parties may ask that a venue comply with this Protocol

³¹ Ibid.

³² Ibid.

³³ Ibid.

³⁴ Ibid.

³⁵ Ibid.

³⁶ Ibid.

³⁷ 'Green Protocol for Arbitral Hearing Venues.Pdf' (Google Docs) <https://drive.google.com/file/d/1J2sLfRbT8aU5UCmxSl0_t58sy0SS2ToP/view?usp=embed_facebook> accessed 31 March 2023.

or any of its component sections before to and throughout the course of a certain matter.³⁸

Wherever possible, facilitators must think about employing clean or renewable energy sources. Additionally, or in any case, Facilitators must make an effort to use energy suppliers who support renewable energy and/or have solid ESG credentials.³⁹ To lessen their environmental impact, facilitators must work to cut energy use and increase the energy efficiency of their premises and equipment.⁴⁰ Where possible, communication and correspondence between Facilitators, Parties, and the Tribunal must be done online or through audio or video conferencing. The use of technology platforms and devices for evidence display during hearings is the responsibility of the Facilitators.⁴¹

Facilitators must also minimise use of printers and paper, encourage recycling, to eliminate or limit the use of single-use and / or plastic items, where possible and where deemed safe, partner with 'green' organisations and suppliers, travel responsibly, and offset carbon omissions.⁴²

3.3.5. The Green Protocol for Arbitral Institutions

The proposed Sustainability Measures in this Green Protocol for Arbitral Institutions are intended to reduce the environmental impact of Arbitral Institutions.⁴³ Arbitral Institutions are required to make a commitment to collaborating with their staff and leadership groups in order to assess current environmental policies and procedures and, if necessary, take into account and put into practice this Protocol's suggestions. Arbitral Institutions may also appoint "Green Ambassadors," whose responsibility it is to assist their organisation in creating policies and best practices based on the suggestions

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Ibid.

⁴³ 'Green Protocol for Arbitral Institutions (1). Pdf' (Google Docs) <https://drive.google.com/file/d/1YPcSgRzS2rHTJvYtPlltTL6jA0f7B6o/view?usp=embed_facebook> accessed 31 March 2023.

made in this Green Protocol. The impact of these rules and best practices should be frequently reported to high management via Green Ambassadors.⁴⁴

Arbitral Institutions are also to use clean or renewable energy sources wherever possible, improve the energy efficiency of facilities and equipment to reduce their environmental footprint, encourage the use of technology for the conduct of proceedings to minimise printing, the use of paper and travel where appropriate, minimise printing and use of paper, encourage recycling, eliminate or limit the use of single-use and/or plastic items, where possible and where deemed safe to do so, partner with “green” organisations, travel responsibly, incentivise their staff through schemes that encourage greener behaviours, consider allowing their staff a permitted amount of hours each year, where business/operational needs allow, to volunteer with organisations involved in sustainability initiatives, offset carbon emissions and when implementing this Protocol shall consider publicly reporting on targets and achievements, in order to track progress, promote accountability, and encourage other institutions to adopt Sustainability Measures which reporting may also include any costs savings resulting from the implementation of Sustainability Measures.⁴⁵

3.4. Green Arbitration: Aligning Arbitration with Sustainable Development Agenda

The foregoing section has outlined the measures and efforts that the international arbitration community seeks to employ in order to align arbitration practice with sustainable development goals of climate change mitigation through responsible and sustainable utilisation of resources. The proposed protocols hold the promise of aligning arbitration with the SDGs. The Sustainable Development Goals (SDGs), which were established by the United Nations (UN) in 2015, are largely acclaimed as a major accomplishment since they reflect a worldwide understanding of an all-encompassing

⁴⁴ Ibid.

⁴⁵ Ibid.

approach to deal with the social and environmental problems facing people throughout the world.⁴⁶

According to some arbitration specialists, using new "green" arbitration rules will cut arbitration costs for businesses and improve the environment.⁴⁷ The use of these protocols in arbitration processes will promote actions that not only save clients' money but also allow the firms to achieve their goal of going net zero.⁴⁸ A carbon offset is a reduction or removal of one metric tonne of carbon dioxide (CO₂) from the atmosphere that is used to compensate for emissions that occur elsewhere.⁴⁹ With the implementation of the protocols, arbitration practitioners are urged to interact online, use videoconferencing rather than face-to-face meetings wherever it is appropriate and viable, and work with electronic bundles rather than paper papers at hearings.⁵⁰

One method that businesses may reduce ESG risks is through proper contract management. The exceptional supply chain disruption caused by the Covid-19 epidemic has given businesses the chance to assess their current supply chains and try to integrate ESG principles into their contract portfolio. These ESG tenets may come from a company's own ESG objectives and policies or from governing legislation. When there are disparities in norms, rules, or degrees of openness across several nations throughout the supply chain, ESG contractual terms will be particularly important. Contractual arrangements

⁴⁶ Higgs, Kerry. "How sustainable are the SDGs?" (2020): 109-130, 109 <<https://anzsee.org.au/wp-content/uploads/2020/07/EESolutionsFutureRoyalDraftJuly2ndFINALEbook.pdf#page=109>> accessed 1 April 2023.

⁴⁷ "'Green' Protocols Can Cut Cost of Arbitration for Businesses' (Pinsent Masons, 30 March 2023) <<https://www.pinsentmasons.com/out-law/news/green-protocols-cost-of-arbitration>> accessed 1 April 2023.

⁴⁸ Ibid.

⁴⁹ 'Don't Forget Green Arbitration Protocols as in-Person Hearings Return' (Pinsent Masons, 30 March 2023) <<https://www.pinsentmasons.com/out-law/analysis/dont-forget-green-arbitration-protocols-as-in-person-hearings-return>> accessed 1 April 2023.

⁵⁰ "'Green' Protocols Can Cut Cost of Arbitration for Businesses' (Pinsent Masons, 30 March 2023) <<https://www.pinsentmasons.com/out-law/news/green-protocols-cost-of-arbitration>> accessed 1 April 2023.

mandating all counterparties to adhere to specified ESG-related requirements can be used to resolve jurisdiction-based differences.⁵¹

Courts have traditionally been the venue for most ESG disputes, but as ESG-related contract clauses have increased and ESG provisions have been incorporated into international investment treaties, commercial and investor state arbitration is anticipated to play a much larger role in ESG dispute resolution in the future.⁵² It has been suggested that if the international arbitration community is to stay relevant, it needs to address environmental concerns as they relate to international disputes and as they relate to each individual's practice.⁵³

It has been observed that almost 93% of the emissions that have been detected are associated with travel, notably air travel in business class, which, depending on the size and area of the seat, typically consumes two to three times as much energy as flying in economy class. Both the elimination of hard copy submissions and the reduction of one long-distance aircraft for each arbitration would significantly reduce carbon emissions.⁵⁴ It is crucial for arbitrators and other stakeholders to consider the actions they might take to lower the carbon emissions generated by the field of arbitration given the rising attention that businesses and clients are placing on Environmental, Social, and Corporate Governance (ESG) problems.⁵⁵

⁵¹ 'ESG Disputes in International Arbitration'

(<https://www.nortonrosefulbright.com/en/knowledge/publications/e01e3d5a/esg-disputes-in-international-arbitration>)

<<https://www.nortonrosefulbright.com/en/knowledge/publications/e01e3d5a/esg-disputes-in-international-arbitration>> accessed 1 April 2023.

⁵² Ibid.

⁵³ 'New Report: Green Technology Disputes at the SCC Arbitration Institute | Hem - Stockholms Handelskammars Skiljedomsinstitut'

<<https://sccarbitrationinstitute.se/en/new-report-green-technology-disputes-scc-arbitration-institute>> accessed 1 April 2023.

⁵⁴ 'The Green Pledge: No Talk, More Action' (*Kluwer Arbitration Blog*, 20 March 2020) <<https://arbitrationblog.kluwerarbitration.com/2020/03/20/the-green-pledge-no-talk-more-action/>> accessed 1 April 2023.

⁵⁵ 'The Campaign for Greener Arbitrations: Encouraging Sustainable Practices in International Arbitration | Jus Mundi Blog' (11 August 2021)

Chapter Three: Private Actors and non-State Actors: Aligning Commercial Arbitration with Sustainable Development Agenda

Arbitration practitioners should think about putting suitable Green Protocols provisions into practice. The Framework identifies a number of variables to take into account when determining whether a measure is appropriate, such as the relevant procedural rules, the relevant laws, the burden and costs of implementation, the accessibility and usefulness of electronic resources, the impact on diversity, the cultural expectations of the parties, and the availability of cybersecurity measures. Separately, people should think about making the broad tenets of the Green Pledge a commitment, as should law firms. Given the urgency of climate change, now is the moment for actions, not words, according to the slogan of the Campaign.⁵⁶

It is worth noting that adoption of green arbitration will not only contribute positively to climate change mitigation but will also potentially increase profitability by saving certain costs. This is because the Green Protocols primarily focus on three critical areas in which changes in the behavioural practices of arbitration practitioners could have the largest impact in substantially reducing our carbon emissions. Specifically, the community is encouraged to: (i) adopt clean forms of energy, (ii) reduce or eliminate long-haul travel and (iii) minimize waste, for example by eliminating hard copy filings altogether. Arbitration stakeholders who are committed to effectuate change should begin by reviewing the Protocol(s) which are most relevant to their practices.⁵⁷

This is a practice shift in future practice of arbitration that is worth embracing in both domestic and international arbitration across all countries as part of implementation of SDGs.

<https://blog.jusmundi.com/the-campaign-for-greener-arbitrations-encouraging-sustainable-practices-in-international-arbitration/> accessed 1 April 2023.

⁵⁶ 'The Campaign for Greener Arbitrations: Encouraging Sustainable Practices in International Arbitration | Jus Mundi Blog' (11 August 2021)

<https://blog.jusmundi.com/the-campaign-for-greener-arbitrations-encouraging-sustainable-practices-in-international-arbitration/> accessed 1 April 2023.

⁵⁷ 'The Campaign for Greener Arbitration's Green Protocols: Actions Not Words' (*Kluwer Arbitration Blog*, 22 April 2021)

<https://arbitrationblog.kluwerarbitration.com/2021/04/22/the-campaign-for-greener-arbitrations-green-protocols-actions-not-words/> accessed 1 April 2023.

3.5. Conclusion

This chapter has discussed green arbitration which is a concept worth embracing in Kenya and internationally. This is important considering that the key principles of the Green Pledge consist of: encouraging the use of electronic correspondence and electronic submissions; avoiding printing unnecessarily and promoting the use of electronic bundles at hearings; encouraging the use of videoconferencing facilities as an alternative to travel, where appropriate (including for the purpose of fact-finding interviews with witnesses and cross-examination of witnesses or experts); selecting suppliers and service providers that are committed to reducing their environmental impact; and avoiding unnecessary travel and offsetting carbon emissions for arbitration-related travel.⁵⁸ This is a huge step towards achieving sustainability in all aspects of the economy, and requires the concerted efforts of all stakeholders. Aligning arbitration with Sustainable Development is an ideal whose hour is now.

⁵⁸ 'The Campaign for Greener Arbitrations: Encouraging Sustainable Practices in International Arbitration | Jus Mundi Blog' (11 August 2021) <<https://blog.jusmundi.com/the-campaign-for-greener-arbitrations-encouraging-sustainable-practices-in-international-arbitration/>> accessed 1 April 2023.

CHAPTER FOUR

The Place of Communities in Achieving Sustainable Development Goals

4.1. Introduction

The actions of many players, including states as well as business, Non-Governmental Organisations (NGOs), and the public, are increasingly included in environmental governance, which was initially the purview of local and thereafter national governments.¹ Historically, states and/or governments have governed the environment in a largely top-down manner through regulation and the legal system. However, in the last two decades, non-state actors, such as businesses and communities, have become much more directly involved in governance, necessitating the use of alternative strategies that rely on market forces and/or networks of local actors.² Globalization has made it easier than ever to close the gap between societies and the condition of their environs. Therefore, it has become imperative that more effective environmental laws and legal frameworks be adopted globally in order to shift economic development and advancement along a path toward environmental sustainability.³

Although the Constitution of Kenya calls for communities and the State to work together, decision-making still appears to be mostly top-down, and communities are only given an opportunity to apply for resource user rights, with little to no consultations addressing management and governance issues.⁴

¹ Benson, D. and Jordan, A., "Environmental Governance." In *The International Encyclopedia of Geography*. Wiley, 2017.

² Ibid.

³ Anshu Singh, "Principles and Development of International Environmental Law", Pen Acclaims, Volume 10, May 2020, ISSN 2581-5504, pp.1-2. <<http://www.penacclaims.com/wp-content/uploads/2020/06/Anshu-Singh.pdf>> accessed 6 January 2023.

⁴ Sec. 29 & 47 Water Act, No. 43 of 2016, Laws of Kenya; Forest Conservation and Management Act, 2016 (No. 34 of 2016), sec. 48-52; See also Rouillé-Kielo G, 'Natural Resources Management in Kenya (Water and Forest): Centralised Policies, Between Exclusion and Participation of the Local Population' in Marie-Aude Fouéré, Christian Thibon and Marie-Emmanuelle Pommerolle (eds), *Kenya in Motion 2000-2020* (Africae 2021) <<http://books.openedition.org/africae/2515>> accessed 8 January 2023:

This chapter discusses what sustainability means to those closest to the natural resources and most affected by how they are managed; the communities.

4.2. Sustainable Development Goals through the Eyes of Communities: Adoption of Integrated Approaches to Environmental Governance

It has been observed that strong evidence exists for the unsettling relationship between environmental injustice, conflict, and transformation, which is most obviously evident in the numerous instances of environmental conflict detailed in the Environmental Justice Atlas⁵. These stories therefore offer persuasive evidence that environmental protection mobilisation is most usually started by local communities and indigenous peoples and frequently takes the shape of opposition to resource extraction methods that are viewed as being both unfair and unsustainable.⁶

It has been proposed that excellent governance is the key to achieving sustainable development on a global scale in a just and efficient way.⁷ Environmental legislation forms the platform for better environmental governance by fusing environmental requirements with the fundamental components of the rule of law. By relating it to basic rights and duties, it draws attention to environmental sustainability. It is a reflection of ethical standards of conduct and universal moral ideals, and it serves as the basis for environmental rights and duties.⁸

“The water and forest users’ associations “participate” in the management activities primarily as auxiliaries to the central government, in order to help achieve the objectives set on a national level, in particular that of a 10% tree cover up to 2022.”

⁵ EJOLT, ‘EJAtlas | Mapping Environmental Justice’ (*Environmental Justice Atlas*) <<https://ejatlas.org/>> accessed 31 March 2023.

⁶ Martin, A., Armijos, M.T., Coolsaet, B., Dawson, N., AS Edwards, G., Few, R., Gross-Camp, N., Rodriguez, I., Schroeder, H., GL Tebboth, M. and White, C.S., ‘Environmental Justice and Transformations to Sustainability’ (2020) 62 *Environment: Science and Policy for Sustainable Development* 19.

⁷ United Nations, *Introduction to Environmental Governance*, 2017. Available at <https://globalpact.informea.org/sites/default/files/documents/International%20Environmental%20Governance.pdf> [Accessed on 6/1/2023].

⁸ United Nations, “Environmental Rule of Law”, available at <https://www.unenvironment.org/explore-topics/environmental-rights-and-governance/what-we-do/promoting-environmental-rule-law-0> [Accessed on 6/1/2023].

Chapter Four: The Place of Communities in Achieving Sustainable Development Goals

Furthermore, it is argued that natural resources may serve as both an engine for Sustainable Development and a foundation for peace and justice if they are managed in a way that is fair, open, and consistent with the law.⁹ The realisation of social justice for Kenyans should, in theory, be the goal of environmental governance systems. When individuals have concerns outside their narrowly defined economic prosperity, legitimate environmental choices must take both distributive and procedural justice considerations into account.¹⁰

When decisions must be made at the expense of someone else's interests or ideals, procedural fairness can help explain such actions. Additionally, it can help the participating actors learn and change their values and motives. Therefore, governance solutions go beyond only defining entitlements; they also encourage involvement and make available dispute resolution to all parties concerned.¹¹

Poverty and rising social inequality are caused by environmental factors such as climate change, biodiversity loss, water shortages, air and water pollution, and soil degradation, among others.¹² Environmental governance must explicitly include a wider range of environmental actors, organisations, and institutions and become more adaptable, responsive, and inventive in order to deal with stresses like climate change, economic instability, and sociopolitical or ideological upheavals.¹³ In the processes of environmental decision-making and enforcement, there is a need for more cooperation between governmental and private-sector players.

⁹ Environment UN, 'Environmental Rule of Law' (UNEP - UN Environment Programme, 5 October 2017) <<http://www.unep.org/explore-topics/environmental-rights-and-governance/what-we-do/promoting-environmental-rule-law-0>> accessed 8 January 2023.

¹⁰ Paavola, J., "Institutions and environmental governance: A reconceptualization," *Ecological economics*, vol.63, no. 1 (2007): 93-103 at p.98.

¹¹ *Ibid.*, p. 97.

¹² United Nations, "Environmental Rule of Law", *op. cit.*

¹³ DeCaro, D. A., Chaffin, B. C., Schlager, E., Garmestani, A. S., & Ruhl, J. B., "Legal and Institutional Foundations of Adaptive Environmental Governance," *Ecology and Society: A Journal of Integrative Science for Resilience and Sustainability*, 22, no. 1 (2017): 1.

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The Kenyan Constitution offers a chance for communities to be empowered by transferring authority from the state to local institutions of decision-making as a means of enabling local communities to manage natural resources and environmental issues.¹⁴ Additionally, a structure that outlines the functions of different stakeholders must be put in place.

The formulation of laws and institutions must be based on the national values and principles of governance.¹⁵ The active engagement of the people and the people-centered approach to governance issues are the common threads throughout the majority of these values and principles. They serve as a reflection of the goals that should be pursued in the development, application, and interpretation of the law. Any outcome of such legislation that does not represent these ideals should be reconsidered, and the law itself should be examined to ensure that it is consistent with the Constitution.

A system of incentives as well as a framework of rights and information are also necessary for citizens acting as an additional resource for environmental policy.¹⁶ The rights to knowledge, participation, and access to justice for individuals and environmental groups are all included in this.¹⁷ Transparency regarding the environmental certifications of products in the market is also included. The desire to engage also assumes that environmental reporting in the media is at least somewhat truthful and problem-focused. Once again, there is an extensive demand for capacity building.¹⁸

Environmental customary laws and cultural norms should be incorporated into environmental governance issues in Kenya. A bottom-up approach to lawmaking is also desirable. A significant component of ensuring that these laws benefit communities in their interactions with environmental resources

¹⁴ See Chapter 11 of the Constitution on Devolved Government.

¹⁵ Art. 10(2), Constitution of Kenya 2010.

¹⁶ Wehn U and Almomani A, 'Incentives and Barriers for Participation in Community-Based Environmental Monitoring and Information Systems: A Critical Analysis and Integration of the Literature' (2019) 101 *Environmental Science & Policy* 341.

¹⁷ Ibid.

¹⁸ Jänicke, M., & Jörgens, H., "New approaches to environmental governance," *Environmental Governance in Global Perspective. New Approaches to Ecological and Political Modernisation*, Berlin: Freie Universität Berlin (2006): 167-209, at p.192.

and that their human rights are protected from any possible violations as a result of such laws is to guarantee that those communities have meaningful participation in those laws.

4.3. Conclusion

Communities can hold those who violate environmental rules accountable once they are given the capacity to do so, whether they be organisations or individuals. Getting the attention of a population that feels like it belongs is simpler than getting the attention of one that feels ignored by the state actors.¹⁹ Their traditional legal procedures and expertise on environmental problems may greatly improve Kenya's environmental governance, and they should be included into the country's official laws and other programmes aimed at achieving sustainable development.

¹⁹ United Nations Department of Economic and Social Affairs. "Creating an Inclusive Society: Practical Strategies to Promote Social Integration." (2008) <<https://www.un.org/esa/socdev/egms/docs/2009/Ghana/inclusive-society.pdf>> accessed 6 January 2023.

CHAPTER FIVE

Law and Sustainable Development: The Efficacy of Kenya's Environmental Management and Coordination Act 1999

5.1. Introduction

Kenya's Environmental Management and Coordination Act (EMCA)¹ came into force in 2000 as a framework law meant to provide for the establishment of an appropriate legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto. Notably, this Act does not repeal any of the sectoral laws but instead seeks to coordinate any actions meant to regulate access, use and conservation of these resources. While there are sectoral institutional frameworks under different laws, EMCA establishes the National Environment Management Authority (NEMA) as the lead agency in coordination of these conservation and protection measures. Implementation of the framework law as it is, has without a doubt come with its fair share of challenges, often resulting in conflicts among laws and the related institutions. This chapter discusses the efficacy of a framework law approach to environmental governance generally. It also discusses the implementation of EMCA as it is and the challenges that arise and through comparative approaches, offers viable reforms that may be considered in order to enhance its effectiveness in ensuring that Kenya achieves its goals in sustainable development agenda. The author generally argues that unless the identified challenges are addressed, Kenya's dream of becoming a model country in effective environmental governance for sustainability will remain a mirage. The author also argues that law alone is not enough to achieve this and thus proposes a hybrid approach that employs both legal and other compliance tools in enhancing environmental governance in the country.

Environmental governance refers to the laws, customs, guidelines, and institutions that influence how people interact with the environment.² Since

¹ Environmental Management and Coordination Act (EMCA), No. 8 of 1999, Laws of Kenya.

² Environment UN, 'Why Does Environmental Rights and Governance Matter?' (UNEP - UN Environment Programme, 4 September 2017) <<http://www.unep.org/explore->

environmental legislation is a cornerstone for environmental sustainability, it is crucial that its objectives be completely attained in light of intensifying environmental challenges.³

This chapter examines the effectiveness of EMCA, being the framework law on environmental governance in Kenya, in responding to the ever increasing environmental challenges in the country, and proffers some recommendations on what future amendments to the Act should consider.

5.2. Place of Law in Governance Matters

The relationship between law and governance has been conceptualised by certain scholars in broad terms. Law and governance have been successfully connected, according to some, in the manner listed below:⁴

Constitutions provide the framework for the legal and political institutions through which government takes place. They provide legal 'power-maps' for how power will be held and exercised; a legal framework for accountability, often enforceable by apex courts; a legalized text which embodies the underlying political settlement or elite-level pact from which any political community flows; rights and safeguards for individuals from abuses of power by political actors and institutions; Public institutions of governance are themselves also creatures of law, operating according to law and sometimes even having secondary law-making functions; Good governance depends on a legal platform of both criminal law and civil law, to create the environment – here law's key role is to provide background norms that

topics/environmental-governance/why-does-environmental-governance-matter> accessed 6 January 2023.

³ Norul Mohamed Rashid, 'Environmental Law' (United Nations and the Rule of Law) <<https://www.un.org/ruleoflaw/thematic-areas/land-property-environment/environmental-law/>> accessed 6 January 2023.

⁴ Bell, C., "Governance and Law: The Distinctive Context of Transitions from Conflict and its Consequences for Development Interventions," *Briefing Paper 4*, (The Political Settlements Programme Consortium, 2015), pp.1-2. Available at http://www.politicalsettlements.org/wp-content/uploads/2017/09/2015_BP_4_Bell_Governance-and-Law.pdf [Accessed on 6/1/2023].

enable horizontal interactions; International law increasingly impacts on, and increasingly even regulates governance at the state level. This regulation is diverse and multifarious, including- International legal regulation of political change processes (including peace settlements, coup d'état, or other forms of regime change), which attempts to ensure only 'democratic' regime change; International legal requirements for human rights to be protected at the domestic level; Human rights directly impact on the internal governance arrangements of states; International legal requirements for 'inclusion' both in change processes and in the terms of the new political settlement itself; A range of diverse international bodies shape domestic governance in what have been termed 'transnational global administrative spaces' which impact on domestic governance.

Article 10 of the Constitution of Kenya outlines the national values and principles of governance that inform application or interpretation of the Constitution, enacting, application or interpretation of any legislation, or making or execution of public policy.⁵ The law thus has a significant impact on governance issues since it not only establishes the necessary governance structures but also specifies how they should operate. Notably, both formal and informal legal systems are recognised under the Kenyan Constitution.⁶

5.3. Kenya's Legal and Institutional Framework for the Management and Governance of the Environment: Overview

While there are various sectoral laws which deal with management and governance of wildlife, water, forests and agriculture, among others, and all of which have a bearing on the environment, the main focus of this chapter is the 2010 Constitution of Kenya and EMCA.

a. The Constitution of Kenya 2010

The Constitution captures the obligations of the State in respect of the environment which include the duty to: ensure sustainable exploitation, utilisation, management and conservation of the environment and natural

⁵ Art. 10(1), Constitution of Kenya 2010.

⁶ Art. 2(4), Constitution of Kenya 2010.

resources⁷; encourage public participation in the management, protection and conservation of the environment; and establish systems of environmental impact assessment, environmental audit and monitoring of the environment, among others.⁸ Notably, every citizen has a constitutional duty to cooperate with State organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources.⁹

b. Environmental Management and Coordination Act 1999

The main framework law on environmental governance and management in Kenya is the Environmental Management and Coordination Act (EMCA)¹⁰. It is meant to provide for the establishment of an appropriate legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto.¹¹

The existing legal and institutional framework for environmental management is disjointed because different entities are responsible for different aspects of environmental law and policy. EMCA, which was enacted to improve management of Kenya's environmental resources, did little to eliminate the variety of regulatory frameworks in place for various environmental resources. Furthermore, the development of necessary legislation and rules to support the EMCA framework is still far from completion. A misleading impression of the adequacy of laws and institutions to address environmental challenges is created by this multiplicity. EMCA must be revised, and all related laws must be consolidated, so that it will be simpler to assess the efficacy of the legislation and institutions. Proper application of the law through the institutions outlined in this collection of laws still leaves many issues unsolved including

⁷ The Constitution interprets "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 energy (Art. 260).

⁸ Constitution of Kenya, Art. 69(1).

⁹ Constitution of Kenya, Art. 69(2).

¹⁰ Environmental Management and Coordination Act, No. 8 of 1999, Laws of Kenya.

¹¹ *Ibid*, Preamble.

overlapping of mandates. Reforms to Kenya's environmental governance policies and institutions are required to guarantee that environmental standards and laws are more strictly enforced.¹²

Part XII,¹³ section 125 of EMCA establishes the National Environment Tribunal (NET) which is charged with settling disputes that arises in matters provided for under the Act.¹⁴ However, its decision is not final and any dissatisfied party may appeal to superior courts, starting from Environment and Land Court.¹⁵ The role of NEMA in the safeguarding environment as established under EMCA was well summarized in the case of *Martin Osano Rabera & another v Municipal Council of Nakuru & 2 others* [2018] eKLR¹⁶ in the following words:

72. Nevertheless, NEMA is not just an investigator and a prosecutor. Its success cannot be measured in terms of successful investigations and prosecutions. It has a bigger mandate: to be the principal instrument of government and the people of Kenya in the implementation of all policies relating to the environment. Indeed, under section 9 (2), NEMA has mandatory obligations to among others co-ordinate with lead agencies to ensure the proper management and rational utilization of environmental resources on a sustainable yield basis for the improvement of the quality of human life in Kenya and to render advice and technical support, where possible, to entities engaged in natural resources management and environmental protection.

The policies, laws, and regulations in place in Kenya, some of which have already been mentioned, seem to indicate that the State should be in charge of setting policy in regard to sustainable resource management, particularly when it comes to decision-making, rather than working in partnership with local communities.

¹² Kenya Vision 2030, p. 104.

¹³ SS. 125-136, No. 8 of 1999.

¹⁴ S. 125, No. 8 of 1999.

¹⁵ Sec. 130, EMCA.

¹⁶ *Martin Osano Rabera & another v Municipal Council of Nakuru & 2 others* [2018] eKLR, Petition No. 53 of 2012.

5.4. Kenya's Environmental Management and Coordination Act 1999: Challenges and Prospects in Implementation

This section highlights some of the issues and challenges that arise in implementation of EMCA, based on the approaches adopted therein as well as the measures it prescribes.

i. Command and Control Approach

Although this chapter does not aim to minimize its importance in some cases, the command-and-control approach to environmental governance focuses primarily on achieving conservation objectives and addressing environmental degradation issues at the expense of also trying to ensure that these resources help achieve social justice for the people with regard to the use of environmental resources.¹⁷ The standards established by numerous legislation for institutional accountability, public participation, and consultations are sometimes taken for granted as mere formality. Social justice-related objectives seem to be put on the back bench.¹⁸

Where EMCA provides for consultations, the same are mainly meant to be between the state agencies charged with environmental governance as lead agencies with minimal or no input from affected communities.¹⁹ Thus, it is possible to have a scenario where the protectionist approaches adopted in most of these sectoral laws end up undermining efforts towards achieving Sustainable Development instead of boosting the same.

The command and control mechanism therefore involves the 'command' of the law and the legal authority of the State. Typically, it entails regulatory law,

¹⁷ Muigua, K., "Revisiting the Role of Law in Environmental Governance in Kenya." (2019) < <http://kmco.co.ke/wp-content/uploads/2019/06/Revisiting-the-Role-of-Law-in-Environmental-Governance-in-Kenya-Kariuki-Muigua-June-2019.pdf>> accessed 6 January 2023.

¹⁸ Ibid; Tyler, T.R., "Social justice: Outcome and procedure." *International journal of psychology* 35, no. 2 (2000): 117-125; Abebe, B.A. and Jones, K., "Social Equity Outcomes in Ethiopia."

¹⁹ See also the *Environmental (Impact Assessment and Audit) Regulations, 2003*, Legal Notice 101 of 2003, Regulation 17 which provides for public participation albeit inadequately.

backed by criminal sanctions.²⁰ It is based on potential coercion rather than voluntary goodwill and on penalties rather than positive incentives.²¹ The command and control mechanism is what has predominantly informed the development of Kenya's natural resources protection regime.²² Its fundamental component is the concentration of power for managing natural resources in the hands of the public authorities, with minimal responsibility being delegated to other authorities or communities and little involvement from local communities.²³

ii. Effectiveness of Command and Control Mechanisms

The criminality component of regulation is what makes command and control methods successful.²⁴ It establishes a form of societal control over the use of natural resources.

New categories of illegal acts and criminal legislation have been developed through command and control systems.²⁵ Under the penal law in Kenya, when a body corporate commits an offence it is its managers who are held culpable²⁶ but under environmental law, culpability is assigned to the body corporate in its capacity as such, together with its managers.²⁷ This is crucial to ensure huge

²⁰ Hutter, B.M., 'Socio-Legal Perspectives on Environmental Law: An Overview,' *op. cit.*, pp.3 & 5.

²¹ Davies J.C. & Mazurek, J., *Pollution Control in the United States: Evaluating the System*, *op. cit.* p.15.

²² Ochieng', B.O., 'Institutional Arrangements for Environmental Management in Kenya,' in Okidi C.O., et al, *Environmental Governance in Kenya: Implementing the Framework Law*, (East African Educational Publishers Ltd, 2008), p.200.

²³ Ochieng, B.O, 'Institutional Arrangements for Environmental Management in Kenya,' *op. cit.* p.200; cf. Ribot, J.C., 'Democratic Decentralization of Natural Resources: Institutionalizing Popular Participation,' *World Resources Institute*, 2002.

²⁴ Hutter, B.M., 'Socio-Legal Perspectives on Environmental Law: An Overview,' *op. cit.* pp. 3 & 5; cf. Ashworth, A., 'Conceptions of Over criminalization,' *Ohio State Journal of Criminal Law*, Vol. 5, 2008. pp. 407-425.

²⁵ See Bethell, E., 'Environmental Regulation: Effective or Defective? Assessing Whether Criminal Sanctions Provide Adequate Protection of the Environment,' *Plymouth Law Review*, 2009, p.1.

²⁶ S. 23, Penal Code (Cap 63), Laws of Kenya.

²⁷ S. 145(1), Act No. 8 of 1999.

enterprises, which are frequently responsible for pollutants that may have a harmful impact on natural resources, comply with the law.

Under command and control approaches, criminal law is used as a preventative tool by use of punitive sanction.²⁸ This is because from an economic perspective, criminal sanctions when effectively enforced raise the cost of certain conduct and therefore encourages compliance with laws.²⁹ The EMCA proposes further sanctions in addition to fines, including the seizure of used products and the termination of licences and licences.³⁰ Corporations will fear shutting down due to cancelled permits and losing their assets as these will directly impact their profits.

Another reason that makes command and control effective is that, environmental laws are regarded as protective of public good.³¹ Most environmental problems, pollution among them, must be solved by government action to avoid the tragedy of the commons.³² Activities of relatively powerful groups are regulated in favour of a less powerful majority.³³

²⁸ Mbote, P.K. 'The Use of Criminal Law in Enforcing Environmental Law' in Okidi, C.O., *et al*, *Environmental Governance in Kenya: Implementing the Framework Law* (East African Educational Publishers Ltd, 2008) 110, p.112.

²⁹ *Ibid*, p. 110.

³⁰ S.146, Act No. 8 of 1999.

³¹ Hutter, B.M., 'Socio-Legal Perspectives on Environmental Law: An Overview,' *op cit*, pp. 3 & 11.

³² Krier, J.E. 'The Pollution Problem and Legal Institutions: A Conceptual Overview' in Michael C. Blumm (ed), *Environmental Law* (Dartmouth Publishing Company Limited, 1992) 181, p.181; See also Hardin, G. 'The Tragedy of the Commons,' *Science*, New Series, Vol. 162, No. 3859 (Dec. 13, 1968), pp. 1243-1248, p. 1245.

³³ Hutter, B.M., 'Socio-Legal Perspectives on Environmental Law: An Overview,' *op cit*, pp. 3 & 11; See also generally Stewart, K. 'Avoiding the Tragedy of the Commons: Greening Governance through the Market or the Public Domain?' Available at http://www.yorku.ca/drache/talks/pdf/apd_stewartfin.pdf, [Accessed on 6/01/2023].

iii. Criticisms Against the Command and Control Approach

One persistent complaint is that regulatory bodies risk becoming "regulatory captured" by the people they are supposed to be protecting if they get overly intertwined with their interests and become less vigilant about upholding the law.³⁴ The apparent disparity in capabilities between regulatory bodies and the industry they are supposed to supervise also points to regulatory capture.³⁵ This means that occasionally private enterprises may have an advantage over public regulators because they have more resources, specialized staff, the ability to challenge the regulator more effectively on both technical and legal grounds, and a better understanding of the environmental problem, its scope, and potential technological solutions.³⁶

The incapacity of the agencies to carry out their missions is a problem as well due to a lack of staffing resources.³⁷ There are not enough employees at lead agencies, NEMA and the Kenya Wildlife Service to monitor and police any environmental impact. For example, lead agencies' inspectors have the discretion to decide what constitutes an offence and whether to refer a case for prosecution or not. Their interpretation of the law becomes quite important as it constitutes the bridge between the government's decision to intervene and protect the environment and the impact of the intervention upon both the environment and the regulated.³⁸ In such scenarios, incentive-based mechanisms become more useful.

³⁴ Ma, H., Shen, G. and Zou, J., "Does Excess Capacity Strengthen Firms' Dependence on the Polluting Path? Evidence from Chinese Iron and Steel Firms," *Evidence from Chinese Iron and Steel Firms*;

³⁵ *Ibid.*

³⁶ Hutter, B.M. "A Reader in Environmental Law", (Oxford University Press, 1999); See also Stallworthy, M, *Understanding: Environmental Law* (Sweet & Maxwell, 1st ed., 2008), pp. 79-81; See also Laura Tlaiye, L. & Biller, D, 'Successful Environmental Institutions: Lessons from Colombia and Curitiba, Brazil,' *LATEN Dissemination Note*, No.12, December, 1994, p. 5.

³⁷ See Amechi, E.P., "Poverty, Socio-Political Factors and Degradation of the Environment in Sub-Saharan Africa: The Need for a Holistic Approach to the Protection of the Environment and Realisation of the Right to Environment," *5/2 Law, Environment and Development Journal*, 2009, pp. 119-120.

³⁸ *Ibid.*

The fact that command and control systems use a deterrent/sanction approach presents another difficulty in terms of enforcement. In this paradigm, a penal type of enforcement gives prosecution a significant role because its primary goal is to prohibit specific acts. It is also accusatory and intended to apprehend criminals.³⁹ Standards tend to be less cost-effective, and standards must be regularly amended to be successful, which is not the case as legislation generally does not keep up with change. Additionally, fines for standards violations are typically too light, and enforcement is frequently ineffective.⁴⁰

Due to its simplistic understanding of issues and methods for controlling them, command and control mechanisms have also been criticized for being effective primarily in delivering short-term economic advantages as opposed to long-term benefits.⁴¹ The strategy is said to implicitly presume that the specific issue at hand is well-defined, well-bounded, straightforward, and typically linear in terms of cause and effect.⁴² When used in complicated real-world scenarios, it may not provide the intended and expected results, posing a serious ecological, social, and economic danger.⁴³ Effective natural resource management should promote long-term system viability instead of short-term benefit through command and control. This is based on knowledge of the key processes that structure and drive ecosystems and acceptance of both the

³⁹ Swaney, J.A., "Market versus Command and Control Environmental Policies," *Journal of Economic Issues*, Vol. 26, No. 2, Jun., 1992, pp. 623-633, p. 624.

⁴⁰ Sourced from http://www.unescap.org/drrpad/vc/orientation/M5_10.htm, [Accessed on 6/01/2023]; See also Bethell, E. 'Environmental Regulation: Effective or Defective? Assessing Whether Criminal Sanctions Provide Adequate Protection of the Environment,' *op cit*.

⁴¹ Holling C. S. & Meffe, G.K. "Command and Control and the Pathology of Natural Resource Management," *Conservation Biology*, Vol. 10, No. 2 (Apr., 1996), pp. 328-337, p. 329.

⁴² *Ibid*; See also generally Sposito, V.A & Faggian, R., 'Systemic Regional Development- A Systems Thinking Approach,' *Informationen zur Raumentwicklung Heft*, January, 2013. Available at http://www.researchgate.net/publication/268180957_Systemic_Regional_Development__A_Systems_Thinking_Approach [Accessed on 6/01/2023]

⁴³ *Ibid*.

natural ranges of ecosystem variation and the constraints of that variation for long-term success and sustainability.⁴⁴

Some economists and legal academics contend that excessive bureaucratic centralization and rigidity cause delays and time wasting thus impairing the effectiveness of command and control systems.⁴⁵ With little to no responsibility being delegated to local communities, a command and control strategy places the power for environmental management in the hands of public institutions⁴⁶ This leaves little room for participation of local communities.⁴⁷ In this way, a command and control approach may ignore local and other traditional knowledge relevant in natural resources management, which could be more cost effective and less time consuming.⁴⁸

Generally, events and behaviours that pose a risk of harm are governed by criminal law. To put it another way, a crime can be committed even if no physical injury was done. Due to the intricate technical nature of the activities that are under regulation, it may be challenging to identify the source of an offence even after harm has been done.⁴⁹ Under EMCA, any individual who has harmed the environment or who is still doing so may be subject to an environmental restoration order from the court.⁵⁰ It, therefore, seeks to regulate a situation where harm has not yet actually occurred.

⁴⁴ *Ibid*, p. 335; See also generally Simon A. Black, S. A., *et al*, "Using Better Management Thinking to Improve Conservation Effectiveness," *ISRN Biodiversity*, vol.2013, 2013.

⁴⁵ Mintz, J.A., 'Economic Reform of Environmental Protection: A Brief Commend on a Recent Debate' in Michael C. Blumm (ed), *Environmental Law* (Dartmouth Publishing Company Limited, 1992) 343, p. 345.

⁴⁶ Ochieng', B.O., 'Institutional Arrangements for Environmental Management in Kenya,' *op. cit*, p. 200.

⁴⁷ *Ibid*.

⁴⁸ See generally, Berkes, F., 'Alternatives to Conventional Management: Lessons from Small-Scale Fisheries,' *Environments*, Vol. 31, No.1, 2003.

⁴⁹ Hutter, B.M., 'Socio-Legal Perspectives on Environmental Law: An Overview,' *op. cit*, pp.3 & 6

⁵⁰ S. 111(1), Act No. 8 of 1999.

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Aside from that, geographical and chronological considerations make it challenging to assess environmental impact.⁵¹ The government agency evaluates the risk of each activity to determine if regulation is necessary, which is a labour- and resource-intensive process.⁵² Industries continuously add to the hundreds of pollutants and hazards already present.⁵³ EMCA, for example, has legislated on standards for water quality among others.⁵⁴ It only identifies poisons, toxic substances⁵⁵ and effluent⁵⁶ as water pollutants. There are several causes of water contamination, though, that NEMA has not yet identified or regulated. Regulators must balance environmental concerns with the economic implications of risk reduction when determining an acceptable level of risk once hazards have been assessed.⁵⁷

Mechanisms of command and control can also have unfavourable effects when they attempt to govern activities that are vital to a nation's economic development.⁵⁸ For example, one of the flagship projects under Vision 2030 is the development and creation of at least five small and medium enterprise industrial parks.⁵⁹ How useful will the law be as a regulatory tool, particularly

⁵¹ Hutter, B.M., 'Socio-Legal Perspectives on Environmental Law: An Overview,' *op cit*, pp.3 & 7; See also generally, Koomey, J. |& Krause, F., 'Introduction to Environmental Externality Costs,' available at <http://enduse.lbl.gov/Info/Externalities.pdf> [Accessed on 6/01/2023].

⁵² Babich, A., 'Understanding the New Era in Environmental Law,' *op cit* p.367; See also, Eskeland, G. S. & Jimenez, E., "Policy Instruments for Pollution Control in Developing Countries," *The World Bank Research Observer*, vol. 7(2) (July 1992), pp. 145-169.

⁵³ *Ibid*, p. 367.

⁵⁴ S. 71, EMCA.

⁵⁵ S. 72(1) EMCA.

⁵⁶ S. 73 EMCA.

⁵⁷ Babich, A., 'Understanding the New Era in Environmental Law,' *op. cit*, p. 370.

⁵⁸ See generally, 'Regulation.' Available at <http://www.treasury.govt.nz/publications/briefings/1990/big90-11.pdf> [Accessed on 6/1/2023]; See also Coglianese, C., 'Measuring Regulatory Performance: Evaluating the Impact of Regulation and Regulatory Policy,' *OECD Expert Paper No. 1*, August 2012.

Available at http://www.oecd.org/gov/regulatory-policy/1_coglianese%20web.pdf [Accessed on 6/01/2023].

⁵⁹ Republic of Kenya, *Kenya Vision 2030 Popular Version*, (Government of Kenya, 2007) p.14.

when it is attempting to control activities which may be regarded as central to the economy?⁶⁰ It may fail in this quest depending on what the government is seeking to achieve at any particular time.

Last but not least, the lack of self-enforcing nature of command and control methods is one of their main drawbacks. The legislation does not provide the regulated community's members with any incentives to keep an eye on one another and themselves.⁶¹ The regulated community's only duty under the command and control system is to obey orders from the government.⁶² An activity is legal to participate in if it is not prohibited by law or regulation. The public is therefore exposed to the danger that environmental risks have evaded regulatory oversight and scientific

iv. Application of Command and Control in Kenya

The command and control method has long been the basis for environmental regulation in Kenya. For instance, Part IX of the Environmental Management and Coordination Act⁶³ provides for environmental restoration orders, environmental conservation orders and environmental easements.⁶⁴ Additionally, the EMCA makes environmental degradation-related actions criminal and lays out consequences for breaking the law as a deterrence. The command and control system in Kenya has, however, often failed owing to the extremely low fines and lack of synchronization between sectoral legislation and the EMCA. Additionally, the EMCA allows for the employment of environmental inspectors to help with the Act's requirements being enforced.⁶⁵

⁶⁰ Hutter, B.M., 'Socio-Legal Perspectives on Environmental Law: An Overview,' *op cit*, pp. 3 & 6.

⁶¹ Babich, A., 'Understanding the New Era in Environmental Law,' *op. cit*, p.375; See 'Chapter xv. Regulatory And Economic Instruments For Solid Waste Management,' UNEP Division of Technology, Industry and Economics (DTIE), Available at <http://www.unep.org/ietc/Portals/136/SWM-Vol1-Part4.pdf> [Accessed on 6/01/2023].

⁶² *Ibid*; See also Aalders, M.V.C. & Ton Wilthagen, T., 'Moving beyond command-and-control: reflexivity in the regulation of occupational safety and health and the environment,' *UvA-DARE, the institutional repository of the University of Amsterdam (UvA)*, 1997. Available at <http://dare.uva.nl/document/2/27432> [Accessed on 6/01/2023].

⁶³ No. 8 of 1999, Laws of Kenya.

⁶⁴ Ss. 108-115, No. 8 of 1999.

⁶⁵ *Ibid*, S. 117.

Some sectoral laws in Kenya have gone as far as para-militarizing enforcement agencies in an attempt to enhance command and control such as a 'uniformed and disciplined' service under the Wildlife Conservation and Management Act, 2013⁶⁶ while Kenya Forest Service provides for 'uniformed and disciplined' enforcement officers.⁶⁷ Both Services are authorized to use fire arms to ensure compliance with the conservation standards provided for under the law.⁶⁸

For the purpose of regulating access to and use of natural resources, the EMCA and other sectoral legislation employ mechanisms including permits, registrations, and certifications. Such licenses and certifications have requirements that must be satisfied in order to avoid penalties like having the licence revoked.⁶⁹

v. Market-Based Approaches

Market-based methods make use of market-based instruments, which are described as laws that encourage environmental behaviour through market signals rather than through explicit orders.⁷⁰ The misuse, depletion, and unsustainable management of environmental assets have all been attributed in large part to the absence of a price on them.⁷¹

⁶⁶ Wildlife Conservation and Management Act, No. 47 of 2013, Laws of Kenya.

⁶⁷ Forest Conservation and Management Act (No. 34 of 2016), sec. 16.

⁶⁸ Forest Conservation and Management Act (No. 34 of 2016), sec. 63; *Wildlife Conservation and Management Act*, 2013, sec. 12.

⁶⁹ See *Waweru v Republic* (2007) AHRLR 149 (KeHC 2006).

⁷⁰ Stavins, R.N., 'Experience with Market-Based Environmental Policy Instruments.' *The Handbook of environmental Economics*, 2001, p 1. Available at http://www.hks.harvard.edu/fs/rstavins/Papers/Handbook_Chapter_on_MBI.pdf [Accessed on 6/1/2023].

⁷¹ See 'Protecting the Environment and Economic Growth: Trade-Off or Growth-Enhancing Structural Adjustment?' p.2. Available at http://ec.europa.eu/economy_finance/publications/publication7726_en.pdf [Accessed on 6/1/2023]; See also Rosegrant, M.W., *et al*, 'Water policy for efficient agricultural diversification: market-based Approaches,' *Food Policy*, 1995, Vol. 20, No. 3, pp. 203-223.

a. Application of Market-Based Approaches

By offering suitable legal and financial incentives that may be used to encourage the business community to incorporate environmental requirements into their planning and operational processes, the National Environment Action Plan under EMCA attempts to incorporate market-based approaches in environmental management.⁷²

b. Incentives

Market-based methods seem to advocate for the government to replace command and control systems with one that generates incentives to improve natural resource preservation in a more effective way.⁷³ Therefore, it is necessary to change natural resources regulations to include incentives.⁷⁴ People need strong incentives to reconsider and adjust their behaviour toward the environment if substantial changes are to be made that will stop the ecosystem from being destroyed completely.⁷⁵ Cooperative regulation, which prefers persuasion over punishment and rewards (incentives) over punishment, should be changed from coercive regulation in an effort to move away from command and control.⁷⁶ It is asserted that environmental responsibility actions adopted by individuals and organisations may benefit companies by minimising negative effects of industry prior to the implementation of restrictive laws.⁷⁷ EMCA provides for tax incentives, fiscal incentives, customs and excise waivers and tax rebates.⁷⁸

⁷² S. 38(c), No. 8 of 1999.

⁷³ Babich, A., 'Understanding the New Era in Environmental Law,' *op cit*, p.375; See also Porto, M. & Lobato, F., 'Mechanisms of Water Management: Command & Control and Social Mechanisms,' Parte 1 de 2. Available at <http://socinfo.eclac.org/samtac/noticias/documentosdetrabajo/7/23397/InBr01605.pdf> [Accessed on 6/1/2023].

⁷⁴ Mintz, J.A., 'Economic Reform of Environmental Protection: A Brief Commend on a Recent Debate,' *op cit*, p. 345.

⁷⁵ Babich, A., 'Understanding the New Era in Environmental Law,' *op cit*, p. 361; See also Bhat, S., *Natural Resources Conservation Law* (SAGE, Publications India, 2010).

⁷⁶ Braithwaite, J., "Rewards and Regulation," *Journal of Law and Society*, Vol. 29, No. 1, *New Directions in Regulatory Theory* (Mar., 2002), pp. 12-26, p. 13.

⁷⁷ Forsyth, T., "Environmental Responsibility and Business Regulation: The Case of Sustainable Tourism," *The Geographical Journal*, Vol. 163(3), Nov., 1997, pp. 270-280, p. 271.

⁷⁸ S. 57 EMCA.

Rewards in the form of incentives are given to business participants in an effort to persuade them to embrace environmental stewardship measures while avoiding or rejecting those that contribute to the environment's destruction.⁷⁹ Under EMCA, taxes and other financial incentives, disincentives, or levies can be suggested to the government to encourage or promote effective management of the environment and natural resources or to avoid or stop environmental deterioration.⁸⁰ Customs and excise waivers in relation to imported capital goods that avoid or significantly decrease environmental damage caused by an activity may be included in these taxes, fiscal incentives, disincentives, or fees.⁸¹ Tax breaks are also provided to businesses or organisations who put in place machinery and facilities for flood protection, waste recycling, water harvesting and conservation, pollution control, and employing alternative energy sources in place of fossil fuels.⁸² Tax disincentives to discourage harmful environmental conduct that results in the depletion of natural resources or that causes pollution are also covered under Section 57 (1).⁸³ Last but not least, it addresses user fees designed to make sure that individuals use natural resources pay fair value for doing so.⁸⁴ Thus, it may be concluded that financial incentives can be a key factor in ensuring that natural resources are utilized, managed, and protected in a way that is consistent with the Constitution.⁸⁵

c. Effectiveness of Incentive Based Mechanisms

As with every social regulation, the success of natural resources legislation depends more on voluntary compliance.⁸⁶ The overall degree of natural resource protection achieved via incentives is the same as that of command

⁷⁹ See 'The Cost Effectiveness and Environmental Effects of Incentive Systems: The U. S. Experience with Economic Incentives for Protecting the Environment,' 2001, available at [http://yosemite.epa.gov/ee/epa/eerm.nsf/vwAN/EE-0216B-04.pdf/\\$file/EE-0216B-04.pdf](http://yosemite.epa.gov/ee/epa/eerm.nsf/vwAN/EE-0216B-04.pdf/$file/EE-0216B-04.pdf) [Accessed on 6/1/2023].

⁸⁰ S. 57 (1), EMCA.

⁸¹ *Ibid*, S. 57 (2) (a).

⁸² EMCA, S. 57 (2) (b).

⁸³ *Ibid*, S. 57 (2) (c).

⁸⁴ *Ibid*, S. 57 (2) (d).

⁸⁵ Art. 69 (1) (a) of the Constitution of Kenya, 2010.

⁸⁶ Clarence, D. J & Mazurek, J., *Pollution Control in the United States: Evaluating the System*, (Resources for the Future, 1998) p.15.

and control methods, but the cost of this protection is distributed more effectively among industries.⁸⁷ Under EMCA, the National Environment Action Plan should include suitable legal and financial incentives that might be utilised to encourage the business community to include environmental standards in their planning and operating process.⁸⁸ This shifts responsibility for environmental protection from the government to business.⁸⁹

The private sector can benefit from incentives in a variety of ways. They inspire enterprises to develop innovative goods or manufacturing techniques to lessen environmental impact and promote flexibility in the usage of pollution control systems.⁹⁰ This encourages businesses to pursue cost-efficient solutions as well as increased research and development in an effort to find more effective and affordable damage mitigation methods.⁹¹

Since incentives may be utilised to give the government additional revenue streams, government agencies also profit from this.⁹² Incentives are also far less expensive than command and control expenses.⁹³ Because costs are absorbed by business, the government is not as financially burdened.⁹⁴ Additionally, since fewer law enforcement agents are needed, both the

⁸⁷ André, F., 'Firms and the Environment: Ethics or Incentives?' in Dăianu, D. & Vranceanu, R. (eds), *Ethical Boundaries of Capitalism: Corporate Social Responsibility Series* (Ashgate Publishing Ltd., 2005), p.209.

⁸⁸ S. 38(c).

⁸⁹ Clarence D. J & Mazurek, J., *Pollution Control in the United States: Evaluating the System, op cit*, p.15.

⁹⁰ Mintz, J.A., 'Economic Reform of Environmental Protection: A Brief Commend on a Recent Debate' in Michael C. Blumm (ed), *Environmental Law* (Dartmouth Publishing Company Limited, 1992) p.343-346.

⁹¹ André, F., 'Firms and the Environment: Ethics or Incentives?' *op cit*, p.209; S. 49(b), EMCA.

⁹² Mintz, J.A., 'Economic Reform of Environmental Protection: A Brief Commend on a Recent Debate' in Blumm, M.C., (ed), *Environmental Law* (Dartmouth Publishing Company Limited, 1992), p.343, p.346.

⁹³ André F., 'Firms and the Environment: Ethics or Incentives?' in, Dăianu, D. & Vranceanu, R. (eds), *op. cit*, p.210.

⁹⁴ Hutter, B.M., 'Socio-Legal Perspectives on Environmental Law: An Overview' in Hutter, B.M., (ed), *op. cit*, p. 23.

expense of maintaining the law and the government's pay budget are greatly lowered.

d. Critique of Incentive Based Mechanisms

Incentives do not work for every issue and thus they are not employed more frequently as a strategy for environmental conservation due to varying levels of pollution and needs.⁹⁵ In this case, a conventional command and control approach such as uniform standards may be the preferred policy.⁹⁶ In addition, using incentives successfully may be hampered by bureaucratic hurdles, such as the complexity of the necessary economic computations.⁹⁷ For instance, it's possible that the emissions involved may not be measured precisely because the measurement cannot be done with a trustworthy method.⁹⁸ In order to get around this issue, EMCA mandates that the Cabinet Secretary in charge of finances be the one to provide incentives.⁹⁹

The fact that environmentalists see the pollution issue more as a moral failing of business and governmental leaders than as a social by-product that can be effectively controlled via the application of incentives is another reason why incentives are not commonly employed.¹⁰⁰ Instead of incentives, ethics dominates the discussion. They are concerned that the amount of environmental protection would be reduced by the more flexible approach to pollution management that incentives suggest.¹⁰¹

⁹⁵ André F., 'Firms and the Environment: Ethics or Incentives?' in Dăianu, D. & Vranceanu, R. (eds), *op. cit.*, p.210.

⁹⁶ *Ibid*, p.210; See also 'Why Regulatory Governance Matters,' *CRC Policy Brief*, No. 2, 2004, p. 3.

⁹⁷ Hutter, B.M. 'Socio-Legal Perspectives on Environmental Law: An Overview,' in Hutter, B.M., (ed), *op cit*, p. 23.

⁹⁸*Ibid*, p.23.

⁹⁹ S. 57(1).

¹⁰⁰ André F., 'Firms and the Environment: Ethics or Incentives?' in Dăianu, D. & Vranceanu, R. (eds), *op cit* p.210; See also Stavins, R.N. & Whitehead, B.W., "The Greening of America's Taxes: Pollution Charges and Environmental Protection," CSIA Discussion Paper 92-03, (Kennedy School of Government, Harvard University, March, 1992).

¹⁰¹ *Ibid*, p.210.

iii. Efficiency of Systems of Environmental Impact Assessment, Environmental Audit and Monitoring of the Environment

Environmental Impact Assessment (EIA) may offer the chance for public scrutiny and involvement in decision-making, as well as introducing aspects of independence and impartiality. It may also help decision-makers make better-informed decisions when balancing environmental and developmental demands.¹⁰² Public engagement is also promoted under EIA because, when stakeholders have had a chance to voice their thoughts, they could be more willing to accept the decision made by the regulators since they have had a chance to do so.¹⁰³ EMCA also provides for Strategic Environmental Assessments¹⁰⁴; Environmental Impact Assessment¹⁰⁵; Environmental Audit¹⁰⁶; and Environmental Monitoring¹⁰⁷, all of which are meant to protect the environment from environmentally degrading human activities. Strategic Environmental Assessment (SEA) is defined as a formal and systematic process to analyse and address the environmental effects of policies, plans, programmes and other strategic initiatives before their final adoption.¹⁰⁸ EMCA requires all entities, including corporations, to undertake preparations for SEAs at their own expense and submit them to NEMA for approval.¹⁰⁹ The object of SEA is to enhance environmental protection and promote sustainable development through contributing to the integration of environmental considerations into the preparation and adoption of specified policies, plans and programmes.¹¹⁰ These exercises should just not only be a question of

¹⁰² Birnie, P. & Boyle, A., *“International Law and the Environment”*, (2nd ed. Oxford University Press, 2002), p.131-132; See also Muigua, K., ‘Environmental Impact Assessment (EIA) in Kenya,’ available at <http://www.kmco.co.ke/attachments/article/109/A%20Paper%20on%20Environmental%20Impact%20assessment.pdf> [Accessed on 6/1/2023].

¹⁰³ Ibid, p. 6.

¹⁰⁴ Ibid, sec. 57A.

¹⁰⁵ Ibid, sec. 58.

¹⁰⁶ Ibid, sec. 68.

¹⁰⁷ Ibid, sec. 69.

¹⁰⁸ EMCA, s. 2.

¹⁰⁹ EMCA, s. 57 A (3).

¹¹⁰ Environmental protection Agency, ‘Strategic Environmental Assessment,’ Available at <http://www.epa.ie/monitoringassessment/assessment/sea/#.Vi5tmGuJ2CA> [Accessed on 5/1/2023]; See also Muigua. K, ‘Legal Aspects of Strategic Environmental Assessment (SEA) and Environmental Management,’ available at

paperwork and formality.¹¹¹ The impacted communities should be given a chance to actively engage and provide input on the expected implications on the community's social, economic, and environmental elements.

The evolution of scientific knowledge, as well as numerous societal and political shifts, have all influenced how natural resource management has changed through time. Arguably, EIA procedures should not be different. They should be adoptive to the changing environmental conditions due to climate change and other factors adversely affecting the environment and biological resources. These processes should be expanded to include Biodiversity Impact Assessment especially where the EIA relates to a parcel of land or environmental resources that are rich in biological resources, such as those contemplated under section 42 of EMCA. The challenge for researchers, it has been suggested, is to shift their focus from discovery to the science of implementation, while managers and policy-makers must give up their socio-political norms and institutional frameworks in order to adopt new thinking

<http://kmco.co.ke/wp-content/uploads/2018/08/Legal-Aspects-of-SEA-and-Environmental-Management-3RD-December-2016.pdf> [Accessed on 5/1/2023].

¹¹¹ See generally, United Nations, *Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach*, (UNEP, 2004). Available at <http://www.unep.ch/etu/publications/textONUbr.pdf> [Accessed on 6/1/2023]; See also The World Bank, 'Strategic Environmental Assessment,' September 10, 2013. Available at <http://www.worldbank.org/en/topic/environment/brief/strategic-environmental-assessment> [Accessed on 6/1/2023]. The World Bank argues that policy makers in are subject to a number of political pressures that originate in vested interests. The weaker the institutional and governance framework in which sector reform is formulated and implemented, the greater the risk of regulatory capture. The World Bank observes that in situations such as these, the recommendations of environmental assessment are often of little relevance unless there are constituencies that support them, and with sufficient political power to make their voices heard in the policy process. While strong constituencies are important during the design of sector reform, they are even more important during implementation. It follows that effective environmental assessment in sector reform requires strong constituencies backing up recommendations, a system to hold policy makers accountable for their decisions, and institutions that can balance competing and, sometimes, conflicting interests. The World Bank thus affirms its recognition of the strategic environmental assessment (SEA) as a key means of integrating environmental and social considerations into policies, plans and programs, particularly in sector decision-making and reform.

and effectively utilise the wealth of potent new scientific tools for learning by doing.¹¹²

i. Effectiveness of Civil and Criminal Liability Regime under EMCA
EMCA outlines several measures for protection and conservation of the environmental subsectors including rivers, lakes, seas, wetlands, mountain areas, forests, biological resource and the ozone layer.¹¹³ These provisions bind both the state and individuals and their violation could result in commission of environmental offences set out under the Act.

ii. Civil Liability Regime

Environmental violations by companies are subject to civil responsibility in the form of restitution and damages intended to restore injured property or individuals as closely as possible to their pre-violation state.¹¹⁴ Civil remedies for environmental protection can be classified according to their intended function which could be preventive, compensatory, reparatory or natural restitution.¹¹⁵ In addition to these remedies, EMCA provides for environmental restoration orders, conservation orders, and easements as part of civil remedies for environmental breaches.¹¹⁶ Consequently, corporations in Kenya found liable for environmental breaches have been imposed with civil consequences.¹¹⁷

iii. Criminal Liability Regime

EMCA stipulates various environmental offences which including offences related to *inspection*, offences related to *Environmental Impact Assessment*,

¹¹² Keith, D., Martin, T., McDonald-Madden, E. and Walters, C., "Uncertainty and adaptive management for biodiversity conservation." (2011) <https://www.sciencedirect.com/science/article/abs/pii/S0006320710004933?via%3Dihub> accessed 6 January 2023.

¹¹³ Ibid, Part V.

¹¹⁴ Krstinić, D., Bingulac, N., & Dragojlović, J., "Criminal and civil liability for environmental damage," *Economics of Agriculture* 64, no. 3 (2017): 1161-1176.

¹¹⁵ Muigua, K, 'Strengthening the Environmental Liability Regime in Kenya for Sustainable Development' Op Cit.

¹¹⁶EMCA, Part IX (Sec. 108-116).

¹¹⁷ John Mutungu Waititu -vs- China Wuyi (Kenya) Co. Ltd, Environment and Land Court at Nyahururu, ELC Appeal No. 25 of 2017, (2018) eKLR.

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offences related to records and *standards and offences related to hazardous wastes* (emphasis added).¹¹⁸ The Act also prescribes penalties for these offences.¹¹⁹ The Act also empowers environmental inspectors appointed under the Act, subject to the Constitution and section 29 of the Office of the Director of Public Prosecution Act, *to institute and undertake criminal proceedings* against any person before a court of competent jurisdiction (other than a court martial) in respect of any *offence alleged to have been committed by that person under EMCA* (emphasis added).¹²⁰ Offences under EMCA relate among other things, failing to submit to inspection¹²¹, offences relating to Environmental Impact Assessment¹²²; offences relating to records¹²³; offences relating to standards¹²⁴; offences relating to hazardous waste¹²⁵; offences relating to pollution¹²⁶; and offences relating to restoration orders¹²⁷.

While it is easy to deal with civil cases, the challenge comes in with the criminal liability convictions. Since the amendment of the law that gave all power back to the Director of Public Prosecutions (DPP) instead of the delegated specially appointed prosecutors under EMCA and based in NEMA, it is increasingly becoming difficult to convict violators due to the challenge of appreciating the actual offences.¹²⁸ There may be a need to either revert this power back to NEMA's special prosecutors or ensure that the DPP's officers undergo special training periodically to ensure that they are well versed with EMCA and the offences therein.

¹¹⁸ EMCA, s. 137-146.

¹¹⁹ Ibid.

¹²⁰ EMCA, s. 118 (b).

¹²¹ Sec. 137, EMCA.

¹²² Sec. 138, EMCA.

¹²³ Sec. 139, EMCA.

¹²⁴ Sec. 140, EMCA.

¹²⁵ Sec. 141, EMCA.

¹²⁶ Sec. 142, EMCA.

¹²⁷ Sec. 143, EMCA.

¹²⁸ See Kevin Musau Mulei v Chief Magistrate's Court, Machakos & another; Syokimau Residents Association (Interested Party) [2021] eKLR.

5.5 Conclusion

We must take action in the face of environmental crises and rising inequality, which includes creating laws governing supply chains and extended producer responsibility, ensuring green public procurement, encouraging technical innovation to improve resource circularity, and implementing inclusive and respectful decision-making processes for both and local communities.¹²⁹

Some academics have argued that it is necessary to investigate the normative and institutional responses in international law to such environmental change by concentrating on two key issues: first, whether law can foresee, prevent, and adapt to environmental transformations; and second, whether international legal responses to social, economic, and technological innovation can adequately reflect the evolving needs of contemporary societies at national and international scales.¹³⁰ These topics require ongoing debate because they have an impact on both the implementation of the sustainable development agenda and the management of related environmental conflicts.

It is, therefore, important for EMCA and other environmental laws to respond to this approach through creating channels for participation of people through local solutions.¹³¹ There is a need to adopt environmental governance approaches that ensure that EMCA and other instruments effectively respond to and address Political, Economic, Social, Technological, Legal and Environmental factors that affect natural resources and environmental management. This thus calls for an integrated approach to governance geared towards achieving sustainable development agenda.

¹²⁹ Bansard, J. and Schroder, M., 'The Sustainable Use of Natural Resources: The Governance Challenge' (*International Institute for Sustainable Development*) < <https://www.iisd.org/system/files/2021-04/still-one-earth-natural-resources.pdf> > accessed 6 January 2023.

¹³⁰ Craik, Neil, Cameron Jefferies, Sara Seck, and Timothy Stephens. "Global Environmental Change and Innovation in International Law." *Articles, Book Chapters, & Popular Press*, January 1, 2018. https://digitalcommons.schulichlaw.dal.ca/scholarly_works/248. Accessed on 3 September 2022.

¹³¹ Smith, G. and Bastidas, E.P., *Conflict and Sustainability in a Changing Environment: Through the Eyes of Communities*. Anthem Press, 2017<<https://anthempress.com/conflict-and-sustainability-in-a-changing-environment-hb>> accessed 6 January 2023.

CHAPTER SIX

Diversifying Approaches to Environmental Conflicts Management: The Viability of Arbitration in management of Climate Change Related Conflicts in Kenya

6.1. Introduction

Climate change has affected many areas of the society ranging from environmental, economic, political and even social aspects. It has also brought about disputes and conflicts that have been associated with climate change, both directly and indirectly, as it is seen as a conflict multiplier. This chapter discusses the disputes related to climate change implications, and how the same can be addressed using arbitration as a dispute settlement mechanism. The author argues that arbitration has certain advantages over litigation which makes it more viable in addressing the disputes in question.

Climate change is considered to be one of the greatest challenges facing mankind in this century and beyond.¹ Climate change and conflict have been linked by some observers in both industrialized and poor countries, although the connection is deemed to be indirect.² Climate change's effects on poverty, mental health, food security, and migration further complicate the link between climate change and war.³ As a result, the goals of the Conference of Parties Twenty Sixth session (COP 26), held in Glasgow from 31 October to 13 November 2021 included to: secure global net zero by mid-century and keep 1.5 degrees within reach; adapt to protect communities and natural habitats; mobilise finance; and work together to deliver,⁴ where countries were expected to, *inter alia* accelerate action to tackle the climate crisis through

¹ See Dervis, K., "Devastating for the World's Poor Climate Change Threatens the Development Gains Already Achieved," *UN Chronicle Online Edition* <<https://www.unclearn.org/wp-content/uploads/library/undp30.pdf>> accessed 6 April 2022.

² 'Does Climate Change Cause Conflict?' (IGC, 2 June 2021) <<https://www.theigc.org/blog/does-climate-change-cause-conflict/>> accessed 6 April 2022.

³ Ibid.

⁴ 'COP26 Goals' (*UN Climate Change Conference (COP26) at the SEC – Glasgow 2021*) <<https://ukcop26.org/cop26-goals/>> accessed 5 April 2022.

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collaboration between governments, businesses and civil society.⁵ Achieving these will naturally require some adjustments by countries' leadership and other stakeholders. Arguably, climate change comes with a lot of conflicts and/or disputes that need sustainable means of handling them.⁶

Over the years, there has been an appreciation of the impact that climate may have in economic results, as well as rising public concern about climate change.⁷ The term "climate" refers to observations of climatic factors such as temperature, rainfall, and water availability, as well as climate indices that serve as proxy measures for these variables.⁸ While climatic circumstances do not generate conflict on their own, they can modify the environment under which particular social interactions take place, potentially altering the risk of conflict.⁹ The environmental principle of polluter pays, which holds that polluters should be held accountable for destroying the environment, justifies the concept of resolving climate change disputes through restorative dispute management approaches.¹⁰ It is, however, worth noting that despite the constitutional provisions that seek to promote the use of Alternative Dispute Resolution (ADR) Mechanisms in the country, Kenya's *Climate Change Act 2016*¹¹ is silent on the role of ADR in addressing climate change related

⁵ Ibid.

⁶ See Vally Koubi, 'Climate Change and Conflict' (2019) 22 Annual Review of Political Science 343 <<https://www.annualreviews.org/doi/10.1146/annurev-polisci-050317-070830>> accessed 11 April 2022.

⁷ Marshall Burke, Solomon M Hsiang and Edward Miguel, 'Climate and Conflict' (2015) 7 Annual Review of Economics 577, 578 <<https://www.annualreviews.org/doi/10.1146/annurev-economics-080614-115430>> accessed 27 March 2022.

⁸ Marshall Burke, Solomon M Hsiang and Edward Miguel, 'Climate and Conflict' (2015) 7 Annual Review of Economics 577, 578 <<https://www.annualreviews.org/doi/10.1146/annurev-economics-080614-115430>> accessed 27 March 2022.

⁹ Ibid, 579.

¹⁰ K. Segerson, *Environment*, in Encyclopedia of Energy, Natural Resource, and Environmental Economics Volume 3, 2013.

¹¹ Climate Change Act, No. 11 of 2016, Laws of Kenya.

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disputes and conflicts and only provides for the role of Environment and Land Court.¹²

This chapter critically discusses the nature of climate change related conflicts and disputes, and how arbitration, both domestic and international, can be used to address the disputes, in the context of achieving sustainability in Kenya. It is worth noting that the discussion leans more towards management of the disputes as against conflicts. The chapter, in justifying the use of arbitration, will discuss the differences between conflicts and disputes, and why the climate change related disputes are more suitable for arbitration than the conflicts.

6.2. Nature of Climate Change Related Conflicts and Disputes

Climate is described as a region's averaged temperature and precipitation patterns, as well as their range of fluctuation, across time.¹³ "Climate change" is defined by the UNFCCC as "a change in climate that is ascribed directly or indirectly to human activity that modifies the composition of the global atmosphere and is in addition to natural climate variability seen over comparable time periods."¹⁴ Kenya's *Climate Change Act 2016* defines "climate change" to mean 'a change in the climate system which is caused by significant changes in the concentration of greenhouse gases as a consequence of human activities and which is in addition to natural climate change that has been observed during a considerable period'.¹⁵ Climate change mitigation is one of the key environmental goals of the United Nations' 2030 Agenda for Sustainable Development Goals (SDGs)¹⁶, as encapsulated in Sustainable

¹² Ibid, section 23.

¹³ '15.1: Global Climate Change' (*Geosciences LibreTexts*, 26 December 2019) <[https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_\(Johnson_Affolter_Inkenbrandt_and_Mosher\)/15%3A_Global_Climate_Change/15.01%3A_Global_Climate_Change](https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_(Johnson_Affolter_Inkenbrandt_and_Mosher)/15%3A_Global_Climate_Change/15.01%3A_Global_Climate_Change)> accessed 20 March 2022.

¹⁴ Article 1(2), UN General Assembly, *United Nations Framework Convention on Climate Change: resolution / adopted by the General Assembly*, 20 January 1994, A/RES/48/189.

¹⁵ Section 2, *Climate Change Act*, No. 11 of 2016, laws of Kenya.

¹⁶ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development*, 21 October 2015, A/RES/70/1.

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Development Goal 13, which aims to help countries attain resilience and adaptability.¹⁷

There is no universally accepted definition of a climate change-related dispute.¹⁸ Some authors have observed 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 countries.¹⁹ 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 violence²⁰. Environmental conflicts and disputes can be divided into two categories: first, access to environmental resources as a source of livelihood and as a foundation for economic activity, and second, conflicts over what are known as "side effects" of economic activity, such as biodiversity loss and pollution.²¹

6.3. Approaches to Management of Disputes and Conflicts

There are numerous techniques for preventing conflicts, resolving conflicts, settling disputes, and transforming conflicts.²² The choice of mechanism

¹⁷ Ibid, SDG 13.

¹⁸ C. Mark Baker, Cara Dowling, Dylan McKimmie, Tamlyn Mills, Kevin O’Gorman, Holly Stebbing, Martin Valasek, “What are climate change and sustainability disputes? Key arbitration examples (Part 1 contractual disputes)”, in James Rogers, London; Cara Dowling, Vancouver (eds), *International arbitration report*, Norton Rose Fulbright – Issue 16 – June 2021, p. 40. < <https://www.nortonrosefulbright.com/-/media/files/nrf/nrfweb/publications/international-arbitration-report-issue-16.pdf?revision=40c8a703-6e1d-413c-8c7e-ac1201697383&revision=40c8a703-6e1d-413c-8c7e-ac1201697383>> accessed 30 March 2022.

¹⁹ Froese, Rebecca, and Janpeter Schilling, "The Nexus of Climate Change, Land Use, and Conflicts." (2019).

²⁰ 'Tackling the Intersecting Challenges of Climate Change, Fragility and Conflict' <<https://blogs.worldbank.org/dev4peace/tackling-intersecting-challenges-climate-change-fragility-and-conflict>> accessed 30 March 2022.

²¹ Arild Vatn, *Environmental Governance: Institutions, Policies and Actions* (Paperback edition, Edward Elgar Publishing 2016) 2.

²² Corissajoy, 'Settlement, Resolution, Management, and Transformation: An Explanation of Terms' (Beyond Intractability, 29 June 2016) <https://www.beyondintractability.org/essay/meaning_resolution> accessed 6 April 2022.

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chosen depends on whether one is dealing with conflicts or disputes, as both have different causes and underlying issues.²³

i. Conflicts

Conflicts are concerns of non-negotiable ideals. The parties share these wants and ideals. Needs or values are inherent in all human beings and are at the foundation of conflict, whereas interests and issues are surface-level and are not at the root of conflict.²⁴ They're limitless. Conflicts develop as a result of the conflicting parties' non-negotiable wants or values not being met. As a result, if all requirements are addressed, the outcome is non-zero-sum, resulting in integrative and innovative solutions rather than a zero-sum answer.²⁵

A conflict usually involves at least two parties that disagree over the allocation of material or symbolic resources or who believe their underlying cultural values and beliefs are irreconcilable. Conflicts may also arise as a result of society's social and political makeup and structure, according to some theories.²⁶ This supports the viewpoint that conflict must be addressed on two levels: psychologically to overcome 'blocks' to positive communication and ontologically to discover the 'true' causes of conflict.²⁷

Conflicts are usually resolved because they are about fundamental values, hence the term "conflict resolution." Resolution is the mutual development of a valid relationship in which each party's demands are met. It is the mutual

²³ See Muigua, K., *Resolving conflicts through mediation in Kenya*, Glenwood Publishers, Nairobi, 2nd Ed., 2017, Chapter Four.

²⁴ Bloomfield, D., "Towards Complementarity in Conflict Management: Resolution and Settlement in Northern Ireland", *Journal of Peace Research*, Vol.32, No. 2 (May, 1995), pp.152-153.

²⁵ Fetherston, A.B., "From Conflict Resolution to Transformative Peacebuilding: Reflections from Croatia", *Centre for Conflict Resolution-Department of Peace Studies: Working Paper 4* (April, 2000), pp. 2-4.

²⁶ See Serge, L, et al, "Conflict Management Processes for Land-related conflict", *A Consultancy Report by the Pacific Islands Forum Secretariat*, available at www.forumsec.org, [Accessed on 04/03/2023].

²⁷ Fetherston, A.B., "From Conflict Resolution to Transformative Peacebuilding: Reflections from Croatia", op.cit.

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construction of a conflict because conflict is dynamic, interactive, and ever-changing with different stages of escalation and de-escalation such as formation, escalation, crisis, and endurance, improvement and de-escalation, settlement or resolution, and finally reconstruction and reconciliation through political processes such as negotiation and mediation. As a result, conflict resolution is stated to probe into the roots or underlying causes of conflict and relationships, with the goal of resolving them completely.²⁸

ii. Disputes

When conflicts are not or cannot be adequately managed, disputes arise.²⁹ It's about an issue or a situation that interests you. Needs are not negotiable, divisible, or finite, while interests are. They aren't negotiable due to their intrinsic nature. They are not transferable or divisible. Needs are also inexhaustible, which means that the more security I have, the less security you have. When two or more persons or groups believe their rights, interests, or aims are incompatible, they communicate their perspective to the other person or group, which can lead to a dispute. Similarly, conflicts can arise from societal power imbalances, rights, or interests. These issues or interests can be discussed and even bargained over.³⁰

Because a dispute can be based on interests, rights, or power, the approaches to resolving it vary. Negotiation and mediation are the best ways to resolve an interest-based dispute. If the issue is about rights, the best response is litigation; if the issue is about power, the best response is the use of force, threats, and violence, such as that used by the police and the army. Understanding the roots or grounds of a dispute is critical because if it is not

²⁸ Cloke, K., "The Culture of Mediation: Settlement vs. Resolution", *The Conflict Resolution Information Source*, Version IV, December 2005.

²⁹ Fenn, P., "Introduction to Civil and Commercial Mediation", in Chartered Institute of Arbitrators, *Workbook on Mediation*, (CI Arb, London, 2002), pp.12-13.

³⁰ Fetherston, A.B., "From Conflict Resolution to Transformative Peacebuilding: Reflections from Croatia", op.cit; Mwangiru, M., *The Water's Edge: Mediation of Violent Electoral Conflict in Kenya*, op.cit, pp.36-38.

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addressed appropriately, the likelihood of escalatory responses grows, which can lead to violence and long-term societal fission.

It's worth noting that tensions tend to repeat in specific sorts of disputes, such as those concerning natural resource use and access. The recurrence of a disagreement over time could be a sign of a much deeper conflict in which people or organizations are involved.

In such circumstances, the responses used must take into account the greater context of the dispute's interests, rights, and power imbalances. As a result, answers must be tailored to the various levels of the conflict. Some solutions could be aimed at resolving the specific conflict, such as through adjudication processes like courts and arbitration.

Other intervention techniques might seek to address the dispute's underlying causes, which are frequently considerably broader. This can be done, for example, through political negotiations or mediation involving the entire community or perhaps a number of communities, with the goal of airing complaints and injustices seen by various groups in the region. Other intervention techniques might attempt to rebuild or restore the community's broken or damaged ties as a result of disagreements or conflicts.³¹

Interests or concerns are only surface-level; they do not address the conflict's basic or primary causes. As a result, conflicts can be resolved, thus the term "conflict resolution." A settlement, according to eminent conflict management specialists, is an agreement on the dispute's issue(s), which frequently entails a compromise. A settlement aims to appease the opposing party without addressing the dispute's root causes. As a result, adjudicatory, legal, or coercive processes like courts and arbitration can be used to settle disputes.

³¹ See Serge, L, et al, "Conflict Management Processes for Land-related conflict", *A Consultancy Report by the Pacific Islands Forum Secretariat*, op.cit.

When it comes to disputes about interests rather than values, coercive means such as litigation and arbitration are useful.³²

6.3.1. Arbitration Process and management of Disputes

Arbitration is a mechanism for settling disputes that usually occurs in private, pursuant to an agreement between two or more parties, under which the parties agree to be bound by the arbitrator's decision based on law, or, if so agreed, other considerations, following a full hearing and such decision is enforceable at law.³³ Arbitration restricts appeals against decisions, which benefits the arbitral process' efficiency, and the arbitrator's award is final and binding on the parties save in the most glaring instances of incompetent arbitrating.³⁴

As previously stated, adjudicatory, coercive, or legal procedures can be used to settle disputes, whereas non-legal, non-adjudicatory, or non-coercive approaches can be used to resolve conflicts. The key power- and rights-based mechanisms include litigation and arbitration. They're mechanisms for settling disputes. The parties in a disagreement have little or no autonomy, and the means for settling disputes are coercive. Legal tools like as courts, police, and the army, among others, are used to enforce a settlement.

Although the parties have considerable autonomy in choosing the venue and arbitrator in arbitration, one party will be offended when an award is made, despite the fact that the parties agree to be bound by the arbitrator's judgment at the outset. As a result, it becomes coercive because the parties must comply with the decision, diminishing its usefulness as a conflict resolution method but effective in settlement.³⁵

³² Mwangiru, M., *Conflict in Africa; Theory, Processes and Institutions of Management*, op. cit. pp. 109-114.

³³ Barnstein, R. *The Handbook of Arbitration Practice: General Principles (Part 2)* (Sweet & Maxwell, London, 1998), p. 313.

³⁴ Section 35-The Arbitration Act, 1995- Grounds of setting aside an arbitral award.

³⁵ Mwangiru, M., *The Water's Edge: Mediation of Violent Electoral Conflict in Kenya*, op.cit, pp.36-38.

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Arbitration is viewed as a viable alternative to state court litigation with the purpose of getting a legally binding and enforceable outcome from a panel of legal and industrial experts.³⁶ Arbitration has great attributes which include: parties can agree on an arbitrator to decide the subject; the arbitrator has experience in the field of dispute; anybody can represent a party in the dispute; adaptability; cost-effective; confidential; quick; and the outcome is binding. Thus, unlike court procedures, which are accessible to the public, commercial arbitration proceedings are private, thus parties that want to keep their trade secrets confidential may select commercial arbitration while still benefiting from the binding character of court verdicts.

6.4. Using Arbitration as a Tool for management of Climate Change Conflicts and Disputes: Challenges and Prospects

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 action; 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 disputes; dilution or revocation of responsive measures by states, giving rise to potential renewable energy treaty arbitrations; commercial contract enforcement –private sector is central to climate change mitigation, and there may be an increase commercial contracts relating to climate change mitigation and adaptation; coming into effect of the Paris Agreement, which may give rise to arbitration.³⁷

While discussing the role of arbitration in addressing climate change disputes, some commentators have highlighted the following disputes: 1. cases brought to either mandate or change climate-related policy or conduct; 2. cases brought to seek financial redress for damages associated with the effects of climate

³⁶ 'Arbitration in Africa | White & Case LLP'

<<https://www.whitecase.com/publications/insight/arbitration-africa>> accessed 4 April 2022.

³⁷ 'Resolving Climate Change Disputes through Arbitration' (Pinsent Masons) <<https://www.pinsentmasons.com/out-law/analysis/resolving-climate-change-disputes-through-arbitration>> accessed 7 April 2022.

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change; 3. contractual disputes arising out of the industry transitions which the energy sector and all major industries are currently undergoing; 4. contractual disputes resulting from climate-related weather events; 5. related disputes between foreign investors and host states; and 6. related disputes between states, and between other transnational actors, while observing that a key reason for selecting these categories is that the potential role for arbitration varies significantly depending on the category of dispute, with arbitration having a greater role (in practice and in potential) in categories 3 to 6.³⁸

Notably, Kenya's Environment and Land Court Act, 2011³⁹ provides for the jurisdiction of the Environment and Land Court as including power to hear and determine disputes relating to climate issues.⁴⁰ Also worth pointing out is the recognition of alternative means of dispute resolution and even affirming that where alternative dispute resolution mechanism is a condition precedent to any proceedings before the Court, the Court is mandated to stay proceedings until such condition is fulfilled.⁴¹ While it is to be acknowledged that the judges appointed to head environment and land courts are appointed on the basis of having relevant knowledge in the area, it must also be acknowledged that they may not always be well versed with all matters that

³⁸ C. Mark Baker, Cara Dowling, Dylan McKimmie, Tamlyn Mills, Kevin O'Gorman, Holly Stebbing, Martin Valasek, "What are climate change and sustainability disputes? Key arbitration examples (Part 1 contractual disputes)", in James Rogers, London; Cara Dowling, Vancouver (eds), *International arbitration report*, Norton Rose Fulbright – Issue 16 – June 2021, p. 41.

³⁹ Environment and Land Court Act, No. 19 of 2011, Laws of Kenya.

⁴⁰ Ibid, section 13(2)(a).

⁴¹ 20. *Alternative dispute resolution*

(1) *Nothing in this Act may be construed as precluding the Court from adopting and implementing, on its own motion, with the agreement of or at the request of the parties, any other appropriate means of alternative dispute resolution including conciliation, mediation and traditional dispute resolution mechanisms in accordance with Article 159(2) (c) of the Constitution.*

(2) *Where alternative dispute resolution mechanism is a condition precedent to any proceedings before the Court, the Court shall stay proceedings until such condition is fulfilled.*

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come before them. It is during such times, either on court's own motion, with the agreement of or at the request of the parties, that the court may consider any other appropriate means of alternative dispute resolution including arbitration especially in respect of technical issues relating to climate change disputes.

The provisions of *Climate Change Act 2016*⁴² acknowledge the role of courts in upholding rights relating to climate change and spells out the role of the court in the following words: "a person may, pursuant to Article 70 of the Constitution, apply to the Environment and Land Court, alleging that a person has acted in a manner that has or is likely to adversely affect efforts towards mitigation and adaptation to the effects of climate change".⁴³ In such applications, the court may make an order or give directions to: prevent, stop or discontinue an act or omission that is harmful to the environment; compel a public officer to take measures to prevent or discontinue an act or omission that is harmful to the environment; or provide compensation to a victim of a violation relating to climate change duties.⁴⁴

While this is a commendable step towards empowering local courts in discharging their mandate in promotion of sustainable development, parties may not always be both citizens of Kenya and where the violating party is a foreign investor, there may be need to invoke international commercial or investment arbitration. In addition, it must be noted that parties may invoke section 20 (2) of the Environment and Land Court Act 2011 which provides that '*where alternative dispute resolution mechanism is a condition precedent to any proceedings before the Court, the Court shall stay proceedings until such condition is fulfilled*'. Such parties may opt to have the dispute settled by expert arbitrators in the area of climate change disputes and only go back to court for declaratory rights and enforcement of the outcome(s).

⁴² Climate Change Act, No. 11 of 2016, Laws of Kenya.

⁴³ Section 23(1), Climate Change Act, 2016.

⁴⁴ Section 23(2), Climate Change Act, 2016.

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The advantages of arbitration highlighted above make it a viable alternative way of managing climate change related disputes as against litigation, while still ensuring that the outcome thereof can be enforced. Parties, even where they already filed a case before a court, may not always be willing to let out commercial secrets and may, therefore, wish to refer the matter to arbitration, court-annexed or otherwise.

The distinction between conflicts and disputes, as discussed above, is important in analyzing any disagreements that are attributable to climate change in a bid to decide the most viable mechanism of addressing them. Such analysis and management of disputes may require expertise in that particular area of law, namely environmental law and climate change. This is where arbitration becomes useful because, as already pointed out, parties in arbitration proceedings are allowed to pick the third party expert with the relevant experience and knowledge to help them settle the particular aspects of the dispute.

It has also been noted that local disputes over food and water supplies can spread to neighboring nations as people seek extra resources and safety, putting further strain on other countries' resources and perhaps escalating tensions.⁴⁵ In light of such possibilities, addressing such problems through local courts becomes impossible. However, in addition to the specialized expertise that is potentially available to parties through arbitration, there is also the advantage of the transnational nature of arbitration process unlike litigation, and the subsequent nature of ease of enforcement of arbitral awards across borders.

Article 14.1 of 1992 UNFCCC provides that 'in the case of a dispute between two or more Parties concerning the interpretation or application of the Convention, the Parties concerned should seek a settlement of the matter by discussion or any other peaceful measures of their own choice.' Article 14.2(b)

⁴⁵ UNESCO, 'Climate Change Raises Conflict Concerns' (UNESCO, 29 March 2018) <<https://en.unesco.org/courier/2018-2/climate-change-raises-conflict-concerns>> accessed 11 April 2022.

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envisages the use of arbitration in accordance with procedures to be adopted by the Conference of the Parties as soon as practicable, in an annex on arbitration. Article 19 of *Kyoto Protocol* also provides that “the provisions of Article 14 of the Convention on settlement of disputes shall apply mutatis mutandis to this Protocol”. Similarly, Article 24 of the *Paris Agreement*, a legally binding international treaty which entered into force on 4 November 2016, provides that “the provisions of Article 14 of the Convention on settlement of disputes shall apply mutatis mutandis to this Agreement”.

While legislators should make climate change policy, courts and arbitral tribunals also have a role to play, as climate change disputes are on the rise and will likely continue to do so in the future, and disagreements over the proper interpretation and application of climate change legislation may arise.⁴⁶ It has been observed that even where international dispute settlement mechanisms exist, they are deemed ineffective due to a lack of mandatory rules or enforcement procedures, so mechanisms like 'international adjudication are unlikely to provide effective relief, either in reducing emissions or compensating victims'.⁴⁷ Arbitration, on the other hand, has huge benefits over litigation in dealing with climate change disputes because arbitrators with the right mix of expertise can be picked, multiparty proceedings can be handled, and the New York Convention on the Enforcement of Arbitral Awards provides certainty pertaining award enforcement.⁴⁸ The Permanent Court of Arbitration (PCA) has been noted as a regular forum for dispute resolution under bilateral and multilateral treaties, contracts, and other instruments relating to natural resources and the environment, and provides specialized rules for arbitration and conciliation of

⁴⁶ 'Resolving Climate Change Disputes through Arbitration' (Pinsent Masons) <<https://www.pinsentmasons.com/out-law/analysis/resolving-climate-change-disputes-through-arbitration>> accessed 11 April 2022.

⁴⁷ 'LSE Law Review Blog' <<https://blog.lselawreview.com/2022/03/commercial-arbitration-fight-against-climate-change-role-actually-play>> accessed 11 April 2022.

⁴⁸ 'Resolving Climate Change Disputes through Arbitration' (Pinsent Masons) <<https://www.pinsentmasons.com/out-law/analysis/resolving-climate-change-disputes-through-arbitration>> accessed 11 April 2022.

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these disputes.⁴⁹ Notably, PCA already has in place the *PCA Optional Rules for Arbitration of Disputes Relating to the Environment and/or Natural Resources* (“Environmental Rules”), adopted in 2001⁵⁰, and the Rules are applicable where all parties have agreed in writing that a dispute that may arise or that has arisen between them shall be referred to arbitration under the Permanent Court of Arbitration Optional Rules for Arbitration of Disputes Relating to Natural Resources and/or the Environment.⁵¹

It is also worth noting that the PCA Environmental Rules provide for the establishment of a specialized list of arbitrators considered to have expertise in this area, establishment of a list of scientific and technical experts who may be appointed as expert witnesses pursuant to these Rules, and parties to a dispute are free to choose arbitrators, conciliators and expert witnesses from these Panels but with the understanding that the choice of arbitrators, conciliators or experts is not limited to the PCA Panels.⁵²

As a way of supporting and building capacity of States, States, international organizations, and private parties involved in the creation and administration of new, specialized environmental dispute settlement procedures can seek guidance and support from the PCA.⁵³ This is possible considering that the PCA is responsible for resolving disputes between States and non-State

⁴⁹ 'Environmental Dispute Resolution' (*Permanent Court of Arbitration*, 2022) <<https://pca-cpa.org/en/services/arbitration-services/environmental-dispute-resolution/>> accessed 11 April 2022.

⁵⁰ 'Environmental Dispute Resolution' (*PCA Optional Rules for Arbitration of Disputes Relating to the Environment and/or Natural Resources*, 2001) <https://docs.pca-cpa.org/2016/01/Optional-Rules-for-Arbitration-of-Disputes-Relating-to-the-Environment-and_or-Natural-Resources.pdf> accessed 11 April 2022.

⁵¹ Article 1 (1), *PCA Optional Rules for Arbitration of Disputes Relating to the Environment and/or Natural Resources*, 2001.

⁵² 'Panels of Arbitrators and Experts for Environmental Disputes' (*Permanent Court of Arbitration*, 2022) <<https://pca-cpa.org/en/about/structure/panels-of-arbitrators-and-experts-for-environmental-disputes/>> accessed 11 April 2022.

⁵³ 'Environmental Dispute Resolution' (*Permanent Court of Arbitration*, 2022) <<https://pca-cpa.org/en/services/arbitration-services/environmental-dispute-resolution/>> accessed 11 April 2022.

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players that arise through a variety of bilateral and multilateral investment treaties, contracts, and other instruments.⁵⁴

Just like PCA has special rules for arbitration of environmental and natural resource related disputes, there may be a need, going forward, for both domestic and international institutions (both courts and arbitral institutions) to build capacity in terms of expertise and legal framework in preparation for the climate change related disputes ranging from energy, finance and technology sectors, as follows: Energy - in particular, the transition away from fossil fuels to renewables, and the growth especially of the solar and wind sectors; Finance - carbon trading and green certificates; and Technology - the drive for efficient power grids, as well as low emission energy and data storage.⁵⁵ The other areas that may need special attention have already been identified by the International Chamber of Commerce Commission on Environment and Energy task force on “Arbitration of Climate Change Related Disputes” (the “Task Force”) in their 2019 Report titled *Report on Resolving Climate Change Related Disputes through Arbitration and ADR* (the “Report”)⁵⁶ where they observed that a number of specific features of international arbitration that may assist in resolving climate change related disputes going forward include utilization and optimization of: use of and recourse to appropriate scientific and other expertise; existing measures and procedures for expediting early resolution of disputes or providing urgent interim or conservatory relief; integration of climate change commitments and principles of international law, including arising out of the UNFCCC and Paris Agreement; enhanced transparency of proceedings; potential third-party participation, including through amicus curiae briefs; and costs, including

⁵⁴ Ibid.

⁵⁵ ‘Arbitrating climate change disputes | Actualités | DLA Piper Global Law Firm’ (DLA Piper) <<https://www.dlapiper.com/fr/france/insights/publications/2020/01/arbitrating-climate-change-disputes/>> accessed 11 April 2022.

⁵⁶ ‘ICC Arbitration and ADR Commission Report on Resolving Climate Change Related Disputes through Arbitration and ADR’ (ICC - International Chamber of Commerce) <<https://iccwbo.org/publication/icc-arbitration-and-adr-commission-report-on-resolving-climate-change-related-disputes-through-arbitration-and-adr/>> accessed 11 April 2022.

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advances and allocation of costs, to promote fair, transparent and appropriate conduct of climate change related disputes.⁵⁷

As already observed, Kenya's Climate Change Act, 2016 does not make reference to the use of ADR mechanisms, including arbitration in addressing disputes that arise therefrom. However, it makes reference to Environment and Land Court Act 2011 (ELC Act) which empowers Environment and Land Court to hear and determine disputes relating to climate issues. The ELC Act, however, gives these courts the power to resort to ADR mechanisms. There is a need for policy makers and other stakeholders to borrow a leaf from the PCA Environmental Rules and the recommendations from the 2019 ICC Task Force Report to consider coming up with special rules and panel of experts that may either address disputes requiring specialized knowledge such as those relating to climate change or those who may offer specialized guidance to courts while dealing with these disputes. Arbitral institutions such as Chartered Institute of Arbitrators and Nairobi Centre for International Arbitration, among others, should also be left behind in building specialized capacity along the same lines. Climate change related disputes are unlikely to go away in the near future and stakeholders should, therefore, prepare adequately.

6.5. Conclusion

This chapter offers a discussion on how state agencies and other stakeholders can invest in conflict management in environmental matters through engaging all the stakeholders as well as investing in research and multi-sectoral knowledge in order to appreciate and make use of this knowledge in identifying and addressing the conflicts. The author argues that unless there is continuous engagement with stakeholders and appreciation of the past, current, future and all the contemporary issues surrounding environmental conflicts, finding lasting solutions may not be possible. Addressing these conflicts effectively is a fundamental requirement for achieving sustainable development agenda.

⁵⁷ *Report on Resolving Climate Change Related Disputes through Arbitration and ADR*, p. 19.

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Climate change related disputes come with many implications across all sectors of economy from environmental, political, economic and even social, where they also come with disputes and conflicts. While different approaches to conflict management apply to conflicts and disputes due to the underlying and different issues therein, this chapter has focused on disputes relating to climate change. As already pointed out by various commentators, this chapter acknowledges that some of these disputes may be indirectly linked to climate change, which is seen as a multiplier of already existing causative factors. However, the settlement of these disputes may require specialized knowledge, may be of transnational nature and may require coercion in abiding by outcome. This chapter argues that these features may not be met through litigation, hence the need to explore arbitration, both domestic and international, in addressing the said disputes.

Arguably, putting in place measures meant to address the related 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 interrelated.⁵⁸ There is a need for local policy makers and conflict management institutions, including courts and arbitral institutions, to build capacity towards utilizing arbitration in management of climate change related disputes.

The future of Environmental Conflict Management is in clearly in our hands and requires different but effective approaches.

⁵⁸Grafakos, S., Pacteau, C., Delgado, M., Landauer, M., Lucon, O., and Driscoll, P. (2018), "Integrating mitigation and adaptation: Opportunities and challenges," In Rosenzweig, C., W. Solecki, P. Romero-Lankao, S. Mehrotra, S. Dhakal, and S. Ali Ibrahim (eds.), *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network*. Cambridge University Press, New York. 101–138, 102 < https://uccrn.ei.columbia.edu/sites/default/files/content/pubs/ARC3.2-PDF-Chapter-4-Mitigation-and-Adaptation-wecompress.com_.pdf> accessed 7 April 2022.

CHAPTER SEVEN

The Place of International Cooperation towards Achieving Sustainability

7.1. Introduction

This chapter discusses the place of international cooperation in efforts towards achieving sustainable development. In line with this, the chapter recognises that as was pointed out by Kenyan courts in the case of *Amina Said Abdalla & 2 others v County Government of Kilifi & 2 others* [2017] eKLR¹, that 'the Environmental Law is principally concerned with ensuring the sustainable utilization of natural resources according to a number of fundamental principles developed over the years through both municipal and international processes'.² At the international level, these principles include, *inter alia*, the international cooperation in management of natural resources and common but differentiated responsibilities.³

International collaboration is now required in the management of natural resources as more nations embrace globalization and the resulting struggle over resources, particularly those that are transboundary in nature, to spur economic growth. This is because some environmental issues, like climate change, that result from poor management of natural resources are themselves global in scope, necessitating the work and collaboration of all states to address them. This collaboration primarily involves bilateral, transnational, multilateral, and corporate sector relationships.³

7.2. International Cooperation in Management of Natural Resources

In international law, the obligation to collaborate is firmly established. "States must collaborate in a spirit of global partnership to conserve, maintain, and restore the health and integrity of the earth's environment," the Rio Declaration's Principle 7's opening sentence reads. According to Principle 14, States shall work together effectively to deter or prohibit the relocation and transfer of any activities or chemicals that seriously degrade the environment

¹ *Amina Said Abdalla & 2 others v County Government of Kilifi & 2 others* [2017] eKLR, ELC Case No. 283 OF 2016.

² *Ibid*, para. 17.

³ Nkonya, E.M., Cenacchi, N. and Ringler, C., International cooperation for sustainable land and water management, *SOLAW Background Thematic Report* - TR16.

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or are determined to be detrimental to human health. This Principle has not received much attention in Kenyan natural resources legislation. Nonetheless, EMCA acknowledges this Principle as one of the guiding principles for managing natural resources that are shared by one or more states.⁴

This idea is particularly important when it comes to cross-border trading across countries and regions. For instance, the United Nations Conference on Sustainable Development, also known as Rio+20, calls on nations to collaborate in developing well-designed and managed tourism in order to significantly contribute to the three pillars of sustainable development, with close ties to other sectors, and with the potential to create decent jobs and expand trade opportunities.⁵

The *2030 Agenda on SDGs* also affirms that international trade is an engine for inclusive economic growth and poverty reduction, and contributes to the promotion of sustainable development.⁶ As such, it seeks to continue to promote a universal, rules-based, open, transparent, predictable, inclusive, non-discriminatory and equitable multilateral trading system under the World Trade Organization, as well as meaningful trade liberalization. It also calls upon all members of the World Trade Organization to redouble their efforts to promptly conclude the negotiations on the Doha Development Agenda.⁷

Achieving food security, creating decent employment opportunities for the unemployed, fostering technology transfer⁸, ensuring national economic

⁴ EMCA, No. 8 of 1999, S. 3 (5) (c).

⁵ United Nations, *The Future We Want*, A/RES/66/288, Sixty-sixth session Agenda item 19, Resolution adopted by the General Assembly on 27 July 2012, para. 130. Art. 1.11 of the RIO+20 Report, requires State parties to strengthen international cooperation to address the persistent challenges related to sustainable development for all, in particular in developing countries.

⁶ 'Trading Into Sustainable Development: Trade, Market Access, and the Sustainable Development Goals' (2016) <https://unctad.org/system/files/official-document/ditctab2015d3_en.pdf> accessed 19 April 2023.

⁷ SDG 17.

⁸ Art. 7 of the Agreement on Trade-Related Aspects of Intellectual Property Rights states that: "The protection and enforcement of intellectual property should contribute to the promotion of technological innovation and to the transfer and dissemination of

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security, and supporting infrastructure development, not only for transporting goods to and from ports but also for the provision of basic services like health, education, water, sanitation, and energy, are all possible thanks to fair international trade.⁹ This is crucial for achieving SDG Goal 8, which aims to promote full and productive employment, sustained, inclusive, and sustainable economic growth, and decent work for everyone. Participating in international trade can increase the economic space required to generate new job opportunities, encourage resource efficiency, increase access to food, energy, and essential services, and enhance the managerial, entrepreneurial, and productive capabilities necessary for economic diversification, growth, and development.¹⁰

With international collaboration for the realisation of the sustainable development agenda, this may be accomplished successfully.¹¹ The SDG Goal 17—to strengthen implementation mechanisms and reenergize the international cooperation for sustainable development—also reflects this. This is intended, among other things, through enhancing domestic capacity for tax and other revenue collection, especially through international assistance to poor nations.¹² Goal 17.6, which aims to improve North-South, South-South, and triangular regional and international cooperation on and access to science, technology, and innovation as well as enhance knowledge

technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.”

⁹ Galmes G, ‘Trade as an enabler of sustainable development and poverty eradication,’ in United Nations, *The Road from Rio+20: Towards Sustainable Development Goals*, Issue 4, September 2014, p. 10.

UNCTAD/DITC/TED/2014/1<<https://www.tralac.org/images/docs/6328/ch-3-trade-as-an-enabler-of-sustainable-development.pdf>> [Accessed on 8/1/2019].

¹⁰ Muigua, K., *Nurturing Our Environment for Sustainable Development*, Glenwood Publishers, Nairobi – 2016), p. 244.

¹¹ Principle 5 of the *Rio Declaration* calls on all States and all people to cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world; See also World Commission on Environment and Development, *Our Common Future: Report of the World Commission on Environment and Development*, 1987, A/42/427.

¹² SDG Goal 17.1.

sharing on mutually agreed terms, includes improved coordination among existing mechanisms, particularly at the UN level, as well as through a global technology facilitation mechanism. This goal also promotes international cooperation. Enhancing international support for the implementation of efficient and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South, and triangular cooperation, is another important aspect of international cooperation for capacity building.¹³

Notably, the 2030 Agenda on Sustainable Development strongly advises against adopting and enforcing any unilateral economic, financial, or trade measures that are in violation of international law and the United Nations Charter and that would hinder the full realisation of economic and social development, especially in developing nations.¹⁴

7.3. Common but Differentiated Responsibilities

The idea of the "shared heritage of mankind" is claimed to have given rise to the idea of "common but differentiated responsibility," which is also a manifestation of general principles of justice in international law.¹⁵ Governments must work together in a spirit of international collaboration to preserve, protect, and restore the health and integrity of the earth's environment, according to Principle 7 of the Rio Declaration. It continues by stating that States have similar but distinct obligations in light of the various ways in which environmental deterioration throughout the world is caused.¹⁶ This idea is included in several international legal documents, such as the Rio Declaration and the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC). According to the UNFCCC, Parties must act "on the basis of equality and in accordance with their common

¹³ SDG Goal 17.9.

¹⁴ A/RES/70/1 - Transforming our world: the 2030 Agenda for Sustainable Development.

¹⁵ The Principle of Common but Differentiated Responsibilities: Origins and Scope, For the World Summit on Sustainable Development, 2002, Johannesburg, 26 August, *A Centre for International Sustainable Development Law (CISDL) Legal Brief*, p. 1.

¹⁶ Tokuç A, 'Rio Declaration on Environment and Development (UN)' in Samuel O Idowu and others (eds), *Encyclopedia of Corporate Social Responsibility* (Springer 2013) <https://doi.org/10.1007/978-3-642-28036-8_19> accessed 19 April 2023.

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but differentiated responsibilities and respective capabilities" in order to preserve the climate system.¹⁷

The member states that have polluted the most must shoulder the bulk of the burden for minimising the impacts of that pollution. In order to provide fairness to developing and Least Developed States, who have made smaller contributions to climate change and global warming, differentiated responsibility is particularly crucial. Depending on how much emissions each State produces, each has a different level of accountability. For instance, compared to a small developing State, large growing economies would have a greater need to manage and conserve the environment.¹⁸

The notion of "common but differentiated responsibility" is a means to take into consideration the diverse conditions, especially in regards to each state's role to the development of environmental issues and its capacity to avoid, minimise, or regulate them.¹⁹ The goal is to promote equity and participation for everyone.²⁰ This principle is crucial for achieving the Agenda 2030 Sustainable Development Goals (SDGs), which include, among other things, the notion of common but differentiated responsibilities outlined in principle 7 of the Rio Declaration on Environment and Development. SDG Goal 10(a) aims to, among other things, implement the principle of special and differentiated treatment for developing countries, particularly least developed countries, in conformity with World Trade Organization agreements in order to minimise inequality within and between nations.²¹

¹⁷ Art.3 of the UNFCCC.

¹⁸ 'Smallest Footprints, Largest Impacts: Least Developed Countries Need a Just Sustainable Transition | UNCTAD' <<https://unctad.org/topic/least-developed-countries/chart-october-2021>> accessed 19 April 2023.

¹⁹ Kurukulasuriya, L. and Robinson, N.A., "UNEP Training Manual on International Environmental Law." *Nairobi: United Nations Environment Programme* (2006).

²⁰ Ibid.

²¹ Hub ISK, 'Guest Article: Common But Differentiated Governance: Making the SDGs Work | SDG Knowledge Hub | IISD' <<http://sdg.iisd.org/commentary/guest-articles/common-but-differentiated-governance-making-the-sdgs-work/>> accessed 19 April 2023.

7.4. Embracing the High Seas Treaty: Enhancing Environmental Responsibility for Marine Protection

7.4.1. Introduction

This section is a commentary and highlights the contents of the proposed United Nations High Seas Treaty and discusses how the Treaty, when adopted can enhance environmental protection of the marine life in the open areas of international waters. The author also discusses the current international regulatory framework on management of marine resources and highlights the gaps especially in environmental conservation. The author argues that this Treaty is a step towards achieving Sustainable Development Goal 14 on conservation of marine resources that lie beyond national jurisdictions.

For a long time, there has been no universal legal instrument specifically aimed at protecting the high seas beyond the national jurisdictions as defined by the United Nations Convention on the Law of the Sea (UNCLOS). As a result, there has been a painful time of excessive exploitation, which has been carried out with utter impunity and with little regard for the health of the natural resources it harbours. It has been a case of humanity metaphorically shooting itself in the foot or seemingly not caring about future generations who will depend on a healthy ocean for their survival.²² Worldwide oceans make up about two-thirds of international waters. This implies that all nations have the freedom to fish, ship, and conduct research there. As a result, problems including climate change, overfishing, and shipping traffic pose a threat to the marine species that inhabits the vast bulk of the high seas.²³

States have since moved to correct this situation by coming up with a High Seas Treaty, aimed at conserving resources lying within these international waters. This section highlights some of the positive aspects of this Treaty and how the same can enhance environmental responsibilities of those seeking to explore these resources.

²² Owen-Burge C, 'Why the High Seas Treaty Is a Breakthrough for the Ocean and the Planet' (*Climate Champions*, 10 March 2023) <<https://climatechampions.unfccc.int/why-the-high-seas-treaty-is-a-breakthrough-for-the-ocean-and-the-planet/>> accessed 20 March 2023.

²³ 'What Is the UN High Seas Treaty and Why Is It Needed?' *BBC News* (5 March 2023) <<https://www.bbc.com/news/science-environment-64839763>> accessed 20 March 2023.

7.4.2. Marine Protection and Conservation: The Current Regulatory Framework

The Convention on the Law of the Sea (UNCLOS), which was developed under the supervision of the United Nations and ratified in 1982 by 117 States, is the international instrument most frequently linked to the law of the sea. UNCLOS came into force in 1994.²⁴ UNCLOS is a framework Convention that addresses a wide range of ocean-related issues. The treaty, which is divided into seventeen parts and nine appendices, outlines states' rights and responsibilities with regard to: (1) the territorial sea and contiguous zone; (2) straits used for international navigation; (3) archipelagic states; (4) the exclusive economic zone; (5) the continental shelf; (6) the high seas; (7) the regime of islands; (8) enclosed or semi- enclosed seas; (9) the right of access of landlocked states to and from the sea and freedom of transit.²⁵

It establishes guidelines for all uses of the oceans' resources and establishes a comprehensive regime of law and order throughout the world's oceans and seas. It encapsulates long-standing guidelines for using the oceans in one document while also introducing new legal frameworks and addressing fresh issues. The Convention also lays forth the groundwork for future advancements in particular spheres of maritime law.²⁶

The United Nations Convention on the Law of the Sea (UNCLOS) establishes guidelines for using the ocean and its resources, but it is silent on how governments should specifically, save for broad provisions, protect and sustainably utilise biodiversity found in the high seas. States are able to identify their jurisdictional waters and maritime zones by establishing a

²⁴ Hoagland Porter and others, 'Law of the Sea☆' in J Kirk Cochran, Henry J Bokuniewicz and Patricia L Yager (eds), *Encyclopedia of Ocean Sciences (Third Edition)* (Academic Press 2019) <<https://www.sciencedirect.com/science/article/pii/B9780124095489113442>> accessed 20 March 2023.

²⁵ 'The Legal and Institutional Framework Governing Ocean-Based Economic Sectors in Barbados' (2019) <https://unctad.org/system/files/official-document/ditctedinf2019d14_en.pdf> accessed 20 March 2023.

²⁶ 'United Nations Convention on the Law of the Sea' <<https://www.imo.org/en/ourwork/legal/pages/unitednationsconventiononthelawofthesea.aspx>> accessed 19 March 2023.

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coastal baseline; 200 nautical miles from the baseline are included in their Exclusive Economic Zone (EEZ). The resources present in the zone may only be utilised or conserved by States. The term "Areas Outside National Jurisdiction" refers to the portions of the ocean outside the Exclusive Economic Zone. The water column, also known as the High Seas, and the seabed, sometimes known as the Area, are further divisions of these regions according to the Law of the Sea.²⁷ Thus, currently there is no comprehensive set of rules to ensure their conservation and sustainable use.²⁸

Notably, UNCLOS provides that 'all States have the duty to take, or to cooperate with other States in taking, such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas'.²⁹ UNCLOS uses the term 'high seas' to mean 'all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State'.³⁰ It also states that 'the high seas are open to all States, whether coastal or land-locked. Freedom of the high seas is exercised under the conditions laid down by this Convention and by other rules of international law. It comprises, *inter alia*, both for coastal and land-locked States: (a) freedom of navigation; (b) freedom of overflight; (c) freedom to lay submarine cables and pipelines, subject to Part VI; (d) freedom to construct artificial islands and other installations permitted under international law, subject to Part VI; (e) freedom of fishing, subject to the conditions laid down in section 2; and (f) freedom of scientific research, subject to Parts VI and XIII'.³¹ These freedoms are to be exercised by all States with due regard for the interests of other States in their exercise of the freedom of the high seas, and also with due regard for the rights under this Convention with respect to activities in the Area.³²

²⁷ 'Biodiversity: UN Agreement for the Protection of the Ocean | Research Institute for Sustainability' <<https://www.rifs-potsdam.de/en/output/dossiers/ocean-treaty>> accessed 20 March 2023.

²⁸ *Ibid.*

²⁹ UNCLOS, Article 117.

³⁰ UNCLOS, Article 86.

³¹ UNCLOS, Article 87(1).

³² UNCLOS, Article 87(2).

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UNCLOS also states that 'States shall cooperate with each other in the conservation and management of living resources in the areas of the high seas. States whose nationals exploit identical living resources, or different living resources in the same area, are obligated to enter into negotiations with a view to taking the measures necessary for the conservation of the living resources concerned. They are to, as appropriate, cooperate to establish sub-regional or regional fisheries organizations to this end.'³³

Regarding conservation of the living resources of the high seas, UNCLOS provides that 'in determining the allowable catch and establishing other conservation measures for the living resources in the high seas, States shall: (a) take measures which are designed, on the best scientific evidence available to the States concerned, to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether sub-regional, regional or global; and (b) take into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened.'³⁴

As far as the principles governing the area are concerned, UNCLOS provides that 'necessary measures shall be taken in accordance with this Convention with respect to activities in the Area to ensure effective protection for the marine environment from harmful effects which may arise from such activities. To this end the International Seabed Authority shall adopt appropriate rules, regulations and procedures for inter alia: (a) the prevention, reduction and control of pollution and other hazards to the marine environment, including the coastline, and of interference with the ecological balance of the marine environment, particular attention being paid to the need for protection from harmful effects of such activities as drilling, dredging,

³³ UNCLOS, Article 118.

³⁴ UNCLOS, Article 119(1).

excavation, disposal of waste, construction and operation or maintenance of installations, pipelines and other devices related to such activities; and (b) the protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment.³⁵

UNCLOS outlines States' general obligation to protect and preserve the marine environment.³⁶

In order to move away from these generalized duties under UNCLOS and which mainly focuses on the jurisdictions of States, the High Seas Treaty is meant to come into force to define specific environmental duties relating to the high seas. The background to this new development is that UNCLOS is best understood as a framework providing a basic foundation for the international law of the oceans intended to be extended and elaborated upon through more specific international agreements and the evolving customs of States.³⁷

7.4.3. Draft Agreement Under the United Nations Convention On the Law of the Sea On the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (High Seas Treaty)

It has been noted that nearly two-thirds of the planet's surface is covered by water, and the oceans account for 95% of the planet's total habitat by volume. Only 39% of the ocean is subject to national jurisdiction, and only 1% of the high seas have ever been subject to any kind of protection protocol.³⁸ The High Seas Treaty, which ensures the protection and sustainable use of marine biodiversity in areas beyond of national authority, was approved by Member States of the United Nations after years of talks.³⁹

³⁵ UNCLOS, Article 145.

³⁶ UNCLOS, Article 192.

³⁷ Hoagland P, Jacoby J and Schumacher ME, 'Law Of The Sea' in John H Steele (ed), *Encyclopedia of Ocean Sciences* (Academic Press 2001) <<https://www.sciencedirect.com/science/article/pii/B012227430X004153>> accessed 20 March 2023.

³⁸ Owen-Burge C, 'Why the High Seas Treaty Is a Breakthrough for the Ocean and the Planet' (*Climate Champions*, 10 March 2023) <<https://climatechampions.unfccc.int/why-the-high-seas-treaty-is-a-breakthrough-for-the-ocean-and-the-planet/>> accessed 20 March 2023.

³⁹ *Ibid.*

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The UN General Assembly unanimously approved Resolution 72/249 on December 24, 2017 to call a conference of governments and launch formal negotiations for a new international legally binding instrument under the UN Convention on the Law of the Sea (UNCLOS) for the conservation and sustainable exploitation of marine biological diversity in areas outside of national jurisdiction.⁴⁰

The *Draft Agreement Under the United Nations Convention On the Law of the Sea On the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction*⁴¹ was informed by, *inter alia*: the relevant provisions of the United Nations Convention on the Law of the Sea, including the obligation to protect and preserve the marine environment; the need to respect the balance of rights, obligations and interests set out in the Convention; the need to address, in a coherent and cooperative manner, biodiversity loss and degradation of ecosystems of the ocean, due to, in particular, climate change impacts on marine ecosystems, such as warming and ocean deoxygenation, as well as ocean acidification, pollution, including plastic pollution, and unsustainable use; the need for the comprehensive global regime under the Convention to better address the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction; the importance of contributing to the realization of a just and equitable international economic order which takes into account the interests and needs of humankind as a whole and, in particular, the special interests and needs of developing States, whether coastal or landlocked; and recognizing also that support for developing States Parties through capacity-building and the development and transfer of marine technology which are essential

⁴⁰ 'Treaty Negotiations' (*High Seas Alliance*) <<https://www.highseasalliance.org/treaty-negotiations/>> accessed 20 March 2023.

⁴¹ United Nations, *Draft Agreement Under the United Nations Convention On the Law of the Sea On the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction*, Intergovernmental conference on an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction Resumed fifth session, New York, 20 February–3 March 2023 <https://www.un.org/bbnj/sites/www.un.org/bbnj/files/draft_agreement_advanced_unedited_for_posting_v1.pdf> accessed 20 March 2023.

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elements for the attainment of the objectives of the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.⁴²

The objective of the Draft Agreement is to ensure the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, for the present and in the long term, through effective implementation of the relevant provisions of the Convention and further international cooperation and coordination.⁴³

The proposed Agreement, shall be interpreted and applied in the context of and in a manner consistent with the Convention. Nothing in this Agreement shall prejudice the rights, jurisdiction and duties of States under the Convention, including in respect of the exclusive economic zone and the continental shelf within and beyond 200 nautical miles. In addition, it shall be interpreted and applied in a manner that does not undermine relevant legal instruments and frameworks and relevant global, regional, sub-regional and sectoral bodies and that promotes coherence and coordination with those instruments, frameworks and bodies.⁴⁴

In order to achieve the objectives of this Agreement, Parties shall be guided by the following principles and approaches: (a) The polluter-pays principle; (b) the principle of the common heritage of humankind which is set out in the Convention; (b) the freedom of marine scientific research, together with other freedoms of the high seas; (c) the principle of equity, and the fair and equitable sharing of benefits; (d) Precautionary principle or precautionary approach, as appropriate; (e) an ecosystem approach; (f) an integrated approach to ocean management; (g) an approach that builds ecosystems resilience, including to adverse effects of climate change and ocean acidification, and also maintains and restores ecosystem integrity, including the carbon cycling services that

⁴² Preamble, *Draft Agreement Under the United Nations Convention On the Law of the Sea On the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction*.

⁴³ Article 2, *Draft Agreement Under the United Nations Convention On the Law of the Sea On the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction*.

⁴⁴ Article 4.

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underpin the ocean's role in climate; (h) the use of the best available science and scientific information; (i) the use of relevant traditional knowledge of Indigenous Peoples and local communities, where available; (j) the respect, promotion and consideration of their respective obligations, as applicable, relating to the rights of Indigenous Peoples or of, as appropriate, local communities when taking action to address the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction; (k) the non-transfer, directly or indirectly, of damage or hazards from one area to another and the non-transformation of one type of pollution into another, in taking measures to prevent reduce, and control pollution of the marine environment; (l) full recognition of the special circumstances of small island developing States and of least developed countries; and (m) acknowledgement of the special interests and needs of landlocked developing countries.⁴⁵

Parties shall be required to cooperate under this Agreement for the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, including through strengthening and enhancing cooperation with and promoting cooperation among relevant legal instruments and frameworks and relevant global, regional, sub-regional and sectoral bodies in the achievement of the objective of this Agreement.⁴⁶

Notably, the proposed Agreement also seeks to ensure the fair and equitable sharing of benefits arising from activities with respect to marine genetic resources and digital sequence information on marine genetic resources of areas beyond national jurisdiction for the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.⁴⁷ It also calls for the building and development of the capacity of Parties, particularly developing States Parties, in particular the least developed countries, landlocked developing countries, geographically disadvantaged States, small island developing States, coastal African States, archipelagic States and developing middle-income countries, to carry out activities with respect to marine genetic resources and digital sequence information on marine genetic

⁴⁵ Article 5.

⁴⁶ Article 6(1).

⁴⁷ Article 7(a).

resources of areas beyond national jurisdiction.⁴⁸ It also seeks to promote the generation of knowledge, scientific understanding and technological innovation, including through the development and conduct of marine scientific research as fundamental contributions to the implementation of this Agreement.⁴⁹ In addition to the foregoing, the proposed Agreement seeks to promote the development and transfer of marine technology in accordance with this Agreement.⁵⁰

The provisions of this Agreement shall apply to activities with respect to marine genetic resources and digital sequence information on marine genetic resources of areas beyond national jurisdiction collected and generated after the entry into force of this Agreement for the respective Party. The application of the provisions of this Agreement shall extend to the utilization of marine genetic resources and digital sequence information on marine genetic resources of areas beyond national jurisdiction collected or generated before entry into force, unless a Party makes an exception in writing under article 63 when signing, ratifying, approving, accepting or acceding to this Agreement.⁵¹ Regarding environmental management, the Agreement seeks to ensure that States:(a) conserve and sustainably use areas requiring protection, including through the establishment of a comprehensive system of area-based management tools, with ecologically representative and well-connected networks of marine protected areas; (b) strengthen cooperation and coordination in the use of area-based management tools, including marine protected areas, among States, relevant legal instruments and frameworks and relevant global, regional, sub-regional and sectoral bodies; (c) protect, preserve, restore and maintain biodiversity and ecosystems, including with a view to enhancing their productivity and health, and strengthen resilience to stressors, including those related to climate change, ocean acidification and marine pollution; (d) support food security and other socioeconomic objectives, including the protection of cultural values; and (e) support developing States Parties, in particular the least developed countries, landlocked developing countries, geographically disadvantaged States, small

⁴⁸ Article 7(b).

⁴⁹ Article 7 (c).

⁵⁰ Article 7(d).

⁵¹ Article 8.

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island developing States, coastal African States, archipelagic States and developing middle-income countries, taking into account the special circumstances of small island developing States, through capacity-building and the development and transfer of marine technology in developing, implementing, monitoring, managing and enforcing area-based management tools, including marine protected areas.⁵²

The Agreement also seeks to: (a) operationalize the provisions of the Convention on environmental impact assessment for areas beyond national jurisdiction by establishing processes, thresholds and other requirements for conducting and reporting assessments by Parties; (b) ensure that activities covered by this Part are assessed and conducted to prevent, mitigate and manage significant adverse impacts for the purpose of protecting and preserving the marine environment; (c) support the consideration of cumulative impacts and impacts in areas within national jurisdiction; (d) provide for strategic environmental assessments; (e) achieve a coherent environmental impact assessment framework for activities in areas beyond national jurisdiction; and (f) build and strengthen the capacity of Parties, particularly developing States Parties, in particular the least developed countries, landlocked developing countries, geographically disadvantaged States, small island developing States, coastal African States, archipelagic States and developing middle income countries, to prepare, conduct and evaluate environmental impact assessments and strategic environmental assessments in support of the objectives of this Agreement.⁵³

The Agreement also requires Parties to ensure that the potential impacts on the marine environment of planned activities under their jurisdiction or control, which take place in areas beyond national jurisdiction, are assessed as set out in this Part before they are authorized.⁵⁴ In addition, when a Party with jurisdiction or control over a planned activity that is to be conducted in marine areas within national jurisdiction determines that the activity may cause substantial pollution of or significant and harmful changes to the marine environment in areas beyond national jurisdiction, that Party shall ensure that

⁵² Article 14.

⁵³ Article 21.

⁵⁴ Article 22 (1).

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an environmental impact assessment of such activity is conducted in accordance with this Part or an environmental impact assessment is conducted under the Party's national process. A Party conducting such an assessment under its national process shall: (a) make relevant information available through the clearing-house mechanism, in a timely manner during the national process; (b) ensure that the activity is monitored in a manner consistent with the requirements of its national process; and (c) ensure that environmental impact assessment reports and any relevant monitoring reports are made available through the clearing-house mechanism as set out in this Agreement.⁵⁵

Beyond the provisions on environmental assessment under the Agreement, Parties are required to promote the use of environmental impact assessments and the adoption and implementation of the standards and/or guidelines developed under article 41 bis in relevant legal instruments and frameworks and relevant global, regional, sub regional and sectoral bodies of which they are members.⁵⁶

In addition to environmental assessments, Parties are also required to, by using the best available science and scientific information and, where available, the relevant traditional knowledge of Indigenous Peoples and local communities, keep under surveillance the impacts of any activities in areas beyond national jurisdiction which they permit or in which they engage in order to determine whether these activities are likely to pollute or have adverse impacts on the marine environment. In particular, each Party shall monitor the environmental and any associated impacts, such as economic, social, cultural and human health impacts, of an authorized activity under their jurisdiction or control in accordance with the conditions set out in the approval of the activity.⁵⁷

Parties are also required to produce and make monitoring reports public, including through the clearing-house mechanism and the Scientific and

⁵⁵ Article 22(2).

⁵⁶ Article 23.

⁵⁷ Article 39.

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Technical Body may consider and evaluate the monitoring reports.⁵⁸ Parties are also to ensure that the impacts of the authorized activity monitored pursuant to article 39 are reviewed.⁵⁹

Parties shall also be required under this agreement, individually or in cooperation with other Parties, to consider conducting strategic environmental assessments for plans and programmes relating to activities under their jurisdiction or control, to be conducted in areas beyond national jurisdiction, to assess the potential effects of that plan or programme, as well as alternatives, on the marine environment.⁶⁰

The Agreement also seeks to: (a) assist Parties, in particular developing States Parties, in implementing the provisions of this Agreement, to achieve its objectives; (b) enable inclusive, equitable and effective cooperation and participation in the activities undertaken under this Agreement; (c) develop the marine scientific and technological capacity, including with respect to research, of Parties, in particular developing States Parties, with regard to the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, including through access to marine technology by, and the transfer of marine technology to, developing States Parties; (d) increase, disseminate and share knowledge on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction; (e) more specifically, support developing States Parties, in particular the least developed countries, landlocked developing countries, geographically disadvantaged States, small island developing States, coastal African States, archipelagic States and developing middle-income countries, through capacity-building and the development and transfer of marine technology under this Agreement in achieving the objectives in relation to: (i) marine genetic resources, including the sharing of benefits, as reflected in article 7; (ii) measures such as area-based management tools, including marine protected areas, as reflected in article 14; (iii) environmental impact assessments, as reflected in article 21 bis.⁶¹

⁵⁸ Article 40.

⁵⁹ Article 41.

⁶⁰ Article 41 ter.

⁶¹ Article 42.

This Agreement, as highlighted has key provisions and tools that are meant to ensure conservation and sustainable use of marine resources in areas beyond national jurisdictions. It is also worth noting that it seeks to empower developing countries in not only conserving these resources but also exploiting them through capacity building.

7.4.4. High Seas Treaty: Enhancing Environmental Responsibility for Marine Protection

After more than a decade of discussions at the UN, formal negotiations to create a new treaty under the UN Convention on the Law of the Sea (UNCLOS) for the preservation and sustainable use of marine biodiversity in Areas Beyond the National Jurisdiction (ABNJ) began at the UN in September 2018. This is the first ocean-related global treaty process in more than 20 years, and the only one that is exclusively focused on safeguarding marine biodiversity in ABNJ.⁶²

Recognized as the governing document for the world's oceans, UNCLOS does not, however, contain the precise standards necessary to guarantee the successful execution of its broad commitments to safeguard the marine environment and its living resources.⁶³ Hopefully, the High Seas Treaty will seal this gap as it spells out specific obligations for States and those interacting with the high seas resources.

Although the oceans and seas are sometimes disregarded in climate negotiations, research demonstrates that they are a crucial component of any solution since they store the carbon that is responsible for climate change and offer significant advantages for climate adaptation. Action on land and at sea is required to preserve the ocean. This entails lessening the direct effects of humans on the ocean, cleaning up polluted rivers, restoring wetlands, and creating a circular economy where potential pollutants are used for as long as

⁶² 'Protecting Half the Planet: A New High Seas Biodiversity Treaty' (*High Seas Alliance*) <<https://www.highseasalliance.org/resources/protecting-half-the-planet-a-new-high-seas-biodiversity-treaty-in-2020/>> accessed 20 March 2023.

⁶³ 'Protecting Half the Planet: A New High Seas Biodiversity Treaty' (*High Seas Alliance*) <<https://www.highseasalliance.org/resources/protecting-half-the-planet-a-new-high-seas-biodiversity-treaty-in-2020/>> accessed 20 March 2023.

feasible before being appropriately disposed of at the end of their useful lives.⁶⁴

As seen in the previous section, the High Seas Treaty comes with key tools and provisions geared towards promoting conservation and sustainable utilisation of marine resources and environment in ABNJ. It also seeks to empower developing countries through capacity building to bolster their capacity in exploiting these resources, especially in this period when sustainable utilisation of the blue economy resources to promote national development has gained international momentum.⁶⁵

7.4.5. Conclusion

This chapter has critically discussed the current framework on marine resources governance and management and also compared it to the proposed High Seas Treaty which seeks to implement the UNCLOS provisions on protection and conservation of marine resources. Notably, the treaty goes beyond this by seeking to empower developing countries in their capacity to exploit the marine resources that lie within and beyond their territorial borders and high seas. It is hoped that the international community will fast track the formal adoption of this Treaty by fine tuning the few details remaining as it will go a long way in conservation of marine resources and environment as well as enhancing the capacity of developing countries in Africa to exploit their own marine resources for national development and socio-economic empowerment of their people.

⁶⁴ 'Why Protecting the Ocean and Wetlands Can Help Fight the Climate Crisis' (UNEP, 11 November 2022) <<http://www.unep.org/news-and-stories/story/why-protecting-ocean-and-wetlands-can-help-fight-climate-crisis>> accessed 20 March 2023.

⁶⁵https://www.un.org/bbnj/sites/www.un.org.bbnj/files/draft_agreement_advanced_unedited_for_posting_v1.pdf> accessed 20 March 2023.

CHAPTER EIGHT

Enforcing the Right to Clean and Healthy Environment through Polluter Pays principle for Sustainable Development

8.1. Introduction

This chapter makes a case for the enforcement of the right to clean and healthy environment in Kenya through the internationally recognised polluter pays principle as a foundation for realisation of Sustainable Development Goals (SDGs). The author argues that though this right has been legally recognised, placing the obligation to enforce it solely on the state agencies may delay the full realisation of this right for all persons. Effective enforcement of this principle is also important in reducing the economic cost of environmental restoration on the state agencies and acting as an incentive for inculcating a sense of environmental ethics through the precautionary principle.

The main goal of the environmental law is to ensure the sustainable use of natural resources in accordance with a set of fundamental principles that have been established through time via both local and global procedures. The use of land and resources derived from it should, in an ideal situation, abide by a number of rules. They include intergenerational equity, the precautionary principle, the polluter pays principle, and public engagement. They also include the principles of sustainability and prevention.¹ This chapter is mainly concerned with the polluter pays principle. The polluter pays principle was the main topic of debate during a symposium on environmental economics sponsored by the Organization for Economic Co-operation and Development in Paris in 1971. This was the first time the polluter pays notion had been brought up in a global setting. The polluter pays concept was formally recommended by the Organization for Economic Co-operation and Development to be the "Guiding Principle Concerning the International Economic Aspects of Environmental Policy" on May 26, 1972.²

¹ *Amina Said Abdalla & 2 others v County Government of Kilifi & 2 others* [2017] eKLR, ELC Civil Case 283 of 2016, para. 17.

² Nanodkar S, 'Polluter Pays Principle: Essential Element of Environmental Law and Policy' (2018) 1 Int'l JL Mgmt. & Human. 77.

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An important era in the evolution of Kenya's environmental policy was opened with the proclamation of the Constitution in 2010. There are complex provisions in the Constitution that have a big impact on sustainable development. They include the Bill of Rights' guarantee of the right to a clean, safe environment as well as environmental ethics. Land and the environment are the only topics covered in Chapter V of the Constitution. The right to water, food, and shelter are only a few of the many social and economic rights that the Constitution incorporates that are also of an environmental nature.³

The preamble of the Constitution states that "We, the People of Kenya... Respectful of the environment, which is our heritage, and determined to sustain it for the benefit of future generations..." This acknowledges the necessity for cautious handling of environmental issues. Clearly implying respect for sustainable development are these lines from the Constitution's preamble.⁴ Today's international environmental law encompasses the idea that whomever pollutes the environment and wastes natural resources is to blame for the harm done and must shoulder the cost. Every producer or consumer who harms a third party is subject to this kind of "social tax."⁵ It is certain that Article 42 of the Constitution, which declares that everyone has the right to a clean and healthy environment, contains a specific environmental right. This includes the rights to: (a) the environment being safeguarded for the benefit of current and future generations by legislative and other actions, including those envisioned in Article 69; and (b) the environment-related duties under Article 70 to be met.⁶

As per Article 69 of the Constitution of Kenya, all persons must work in collaboration with State agencies in upholding environmental rights for all.

³ *Mohamed Ali Baadi and others v Attorney General & 11 others* [2018] eKLR, Petition 22 of 2012, para. 272.

⁴ *Ibid*, para. 273.

⁵ 'The Polluter Pays, a Pillar Principle of Stockholm | Green Growth Knowledge Partnership' <<https://www.greengrowthknowledge.org/blog/polluter-pays-pillar-principle-stockholm>> accessed 22 February 2023.

⁶ *Mohamed Ali Baadi and others v Attorney General & 11 others* [2018] eKLR, Petition 22 of 2012, para. 274.

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This chapter makes a case for the enforcement of the right to clean and healthy environment in Kenya through effectively putting into practice the internationally recognised principle of polluter pays. The author argues that though this right has been legally recognised both domestically and internationally, placing the obligation to enforce it solely on the state agencies may delay the full realisation of this right for all persons. It thus explores how the polluter pays principle can be used to advance the realisation of the right to clean and healthy environment. This is in recognition of the fact that most developing countries have limited financial resources which are necessary in implementation of the right to clean and healthy environment and hence, the need for tapping into resources from the private sector and other persons who interact with the environment and subsequently cause harm to the environment.

8.2. The Right to Clean and Healthy Environment: Legal Foundation

Kenya's main environmental regulating statute is called the Environmental Management and Coordination Act (EMCA). The law contains general requirements (such as environmental management principles) that apply to all environmental sectors and all public and private acts that may have an impact on the environment. The Act defines the "environment" as follows:⁷

"environment" includes the physical factors of the surroundings of human beings including land, water, atmosphere, climate, sound, odour, taste, the biological factors of animals and plants and the social factor of aesthetics and includes both the natural and the built environment.

This definition goes beyond purely ecological concerns. It expressly takes into account components of the environment that go beyond the biophysical ones, such as the relationships between people, the natural environment, and the socioeconomic and cultural foundations of such relationships.⁸ A person who asserts that their rights to a clean and healthy environment have been violated has standing under Article 70 of the Constitution. This means that "the

⁷ *Mohamed Ali Baadi and others v Attorney General & 11 others* [2018] eKLR, Petition 22 of 2012, para. 275.

⁸ *Ibid*, para. 276.

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environmental right is sufficiently extensive and all-encompassing to provide 'everyone' with the prospect of seeking legal remedy in the event that any of many conceivable components relating to the right or guarantee derived therefrom is breached. It is undeniable that Kenya's constitution protects environmental preservation.⁹

The State is subject to environmental commitments under Article 69 of the Constitution. The duty to guarantee sustainable exploitation, utilisation, management, and conservation of the environment and natural resources is one of the duties imposed on the State. The State must also make sure that the benefits are distributed fairly. Encouragement of public involvement in environmental management, preservation, and protection is also necessary. Lastly, the State must prevent using processes and engaging in activities that might threaten the environment.¹⁰

Article 42 states; *"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".

The Constitution confers standing upon a person who alleges that a right to a clean and healthy environment has been violated. It provides: -

70. (1) If a person alleges that a right to a clean and healthy environment recognized and protected under Article 42 has been, is being or is likely to be, denied, violated, infringed or threatened, the person may apply to a Court for

⁹ Ibid, para. 277.

¹⁰ *Mohamed Ali Baadi and others v Attorney General & 11 others* [2018] eKLR, Petition 22 of 2012, para. 278.

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redress in addition to any other legal remedies that are available in respect to the same matter.

(2) On application under clause (1), the Court may make any order, or give any directions, it considers appropriate –

(a) to prevent, stop or discontinue any act or omission that is harmful to the environment;

(b) to compel any public officer to take measures to prevent or discontinue any act or omission that is harmful to the environment; or

(c) to provide compensation for any victim of a violation of the right to a clean and healthy environment.

(3) For the purposes of this Article, an applicant does not have to demonstrate that any person has incurred loss or suffered injury.

Section 13 of the Environment and Land Court Act outlines the jurisdiction of the court, stating that it has both original and appellate jurisdictions to hear and resolve all environmental and land-related disputes in accordance with Article 162(2)(b) of the Constitution, the provisions of this Act, and any other Kenyan laws that may be applicable. Subsection (2) provides that in exercise of its jurisdiction under Article 162(2)(b) of the Constitution, the Court shall have power to hear and determine disputes relating to environmental planning and protection, climate issues, land use planning, title, tenure, boundaries, rates, rents, valuations, mining, minerals and other natural resources; relating to compulsory acquisition of land; relating to land administration and management; relating to public, private and community land and contracts, choses in action or other instruments granting any enforceable interests in land; and any other dispute relating to environment and land.

The ELC also has powers to hear and determine applications for redress of a denial, violation or infringement of, or threat to, rights or fundamental freedom relating to a clean and healthy environment under Articles 42, 69 and 70 of the Constitution.

Regionally and internationally, there are legal instruments that also recognise the right to clean and healthy environment.

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Article 12(2)(b) of the *International Covenant on Economic, Social and Cultural Rights (ICESR)*¹¹ is to the effect that 'The steps to be taken by the States Parties to the present Covenant to achieve the full realization of this right (the right of everyone to the enjoyment of the highest attainable standard of physical and mental health) shall include those necessary for: the improvement of all aspects of environmental and industrial hygiene.

Article 24 of the *African Charter on Humans and People's Rights (ACHPR)*¹² states that 'All peoples shall have the right to a general satisfactory environment favourable to their development'.

Article 24(1) of the *Convention on the Rights of the Child*¹³ is to the effect that 'States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health. States Parties shall strive to ensure that no child is deprived of his or her right of access to such health care services'. Article 24 (2) requires that 'States Parties shall pursue full implementation of this right and, in particular, shall take appropriate measures, *inter alia*:(c) to combat disease and malnutrition, including within the framework of primary health care through, *inter alia*, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking-water, taking into consideration the dangers and risks of environmental pollution; (e) to ensure that all segments of society, in particular parents and children, are informed, have access to education and are supported in the use of basic knowledge of child health and nutrition, the advantages of breastfeeding, *hygiene and environmental sanitation* and the prevention of accidents (emphasis added).

¹¹ UN General Assembly, *International Covenant on Economic, Social and Cultural Rights*, 16 December 1966, United Nations, Treaty Series, vol. 993, p. 3.

¹² Organization of African Unity (OAU), *African Charter on Human and Peoples' Rights* ("*Banjul Charter*"), 27 June 1981, CAB/LEG/67/3 rev. 5, 21 I.L.M. 58 (1982).

¹³ UN Commission on Human Rights, *Convention on the Rights of the Child.*, 7 March 1990, E/CN.4/RES/1990/74.

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The *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*¹⁴ under Article 4(2) (c) states that ‘each Party shall take the appropriate measures to: ensure that persons involved in the management of hazardous wastes or other wastes within it take such steps as are necessary to prevent pollution due to hazardous wastes and other wastes arising from such management and, if such pollution occurs, to minimize the consequences thereof for human health and the environment’. Article 4(4) also requires that ‘Each Party shall take appropriate legal, administrative and other measures to implement and enforce the provisions of this Convention, including measures to prevent and punish conduct in contravention of the Convention’.

Article 25 (1) of the *Universal Declaration on Human Rights*¹⁵ states that ‘everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control’.

Principle 1 of the 1992 *Rio Declaration on the Environment and Development*¹⁶ states that “Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature”.

It is worth pointing out that most of these international legal instruments captured the right to clean and healthy environment in a very generic manner and was mostly to be implied. However, in 2022, the United Nations General Assembly (UNGA) adopted a resolution declaring a clean, healthy &

¹⁴ United Nations, *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, Basel, 22 March 1989, United Nations, Treaty Series, vol. 1673, p. 57.

¹⁵ UN General Assembly, *Universal Declaration of Human Rights*, 10 December 1948, 217 A (III).

¹⁶ UN General Assembly, *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992. Volume 1, Resolutions adopted by the Conference: corrigendum*, A/CONF.151/26/Rev.1(Vol.I)/Corr.1.

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sustainable environment as a human right.¹⁷ The General Assembly noted that the right to a clean, healthy and sustainable environment is related to other rights and existing international law.¹⁸ It also affirmed that the promotion of the human right to a clean, healthy and sustainable environment requires the full implementation of the multilateral environmental agreements under the principles of international environmental law.¹⁹ Finally, the UNGA called upon States, international organizations, business enterprises and other relevant stakeholders to adopt policies, to enhance international cooperation, strengthen capacity-building and continue to share good practices in order to scale up efforts to ensure a clean, healthy and sustainable environment for all.²⁰ It has been noted that some scientists believe that the "triple planetary catastrophe" of human-caused climate change, widespread biodiversity loss, and unchecked pollution currently threatens to cross the planetary boundaries necessary to live securely on Earth. These dangers, as well as air pollution, polluted water, pollution from plastics, and chemical pollutants, can jeopardise the right to life, dignity, and health. Advocates urged that the U.N. should establish a right to a clean, healthy, and sustainable environment as a result.²¹ Notwithstanding eight nations' abstentions – Belarus, Cambodia, China, Ethiopia, Iran, Kyrgyzstan, Russia, and Syria – the resolution on the

¹⁷ United Nations General Assembly, *The Human Right to a Clean, Healthy and Sustainable Environment: resolution / adopted by the General Assembly, UN. General Assembly (76th sess.: 2021-2022)*; 'In Historic Move, UN Declares Healthy Environment a Human Right' (UNEP, 28 July 2022) <<http://www.unep.org/news-and-stories/story/historic-move-un-declares-healthy-environment-human-right>> accessed 22 February 2023; 'UN General Assembly Declares Access to Clean and Healthy Environment a Universal Human Right | UN News' (28 July 2022) <<https://news.un.org/en/story/2022/07/1123482>> accessed 22 February 2023.

¹⁸ United Nations General Assembly, *The Human Right to a Clean, Healthy and Sustainable Environment: resolution / adopted by the General Assembly, UN. General Assembly (76th sess.: 2021-2022)*, para. 2.

¹⁹ *Ibid*, para. 3.

²⁰ *Ibid*, para. 4.

²¹ 'The UN Just Declared a New Human Right' (*World Economic Forum*, 9 August 2022) <<https://www.weforum.org/agenda/2022/08/the-un-just-declared-a-universal-human-right-to-a-healthy-sustainable-environment-here-s-where-resolutions-like-this-can-lead/>> accessed 22 February 2023.

right to a clean, healthy, and sustainable environment was accepted unanimously.²²

For the 193 UN Member States, the resolution has no official force. Advocates, however, are optimistic that it will have a domino effect, pushing nations to codify the right to a healthy environment in national constitutions and regional accords and incentivizing governments to put such laws into action. Advocates claim it would offer environmental activists greater tools to fight against laws and initiatives that harm the environment.²³

8.3. The Polluter Pays Principle: The Scope

The Polluter Pays Principle is part of the customary law and general principles relating to the environment. Before the Organization for Economic Co-operation and Development (OECD) formally recognised it as a fundamental tenet of environmental law in 1972, the notion of polluter pays already existed.²⁴ According to OECD, the so-called "Polluter-Pays Principle" should be applied when determining how to distribute the costs of pollution prevention and control measures in order to promote the wise use of finite environmental resources and prevent distortions in global commerce and investment. According to this concept, the cost of implementing the aforementioned actions determined upon by public authorities to guarantee that the environment is in an acceptable state should be borne by the polluter. In other words, the price of goods and services that contribute to pollution through production and/or consumption should reflect the cost of these actions. Subsidies that would significantly distort global commerce and investment should not be used in conjunction with such policies.²⁵

²² Ibid.

²³ 'In Historic Move, UN Declares Healthy Environment a Human Right' (UNEP, 28 July 2022) <<http://www.unep.org/news-and-stories/story/historic-move-un-declares-healthy-environment-human-right>> accessed 22 February 2023.

²⁴ Nanodkar S, 'Polluter Pays Principle: Essential Element of Environmental Law and Policy' (2018) 1 Int'l JL Mgmt. & Human. 77; Misra S and Nanda H, 'A Complete Perusal of Polluter Pays Principle "Incorporation and Application in India"' (2020) 14 *Indian Journal of Forensic Medicine & Toxicology* 419.

²⁵ OECD, *Recommendation of the Council on Guiding Principles concerning International Economic Aspects of Environmental Policies*, OECD/LEGAL/0102 (OECD 1972).

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The polluter pays concept is a foundational economic tenet that requires the incorporation of environmental costs into decision-making for economic and other development plans, programmes, and initiatives that are likely to have an impact on the environment. Hence, the idea is a mechanism to distribute the costs of pollution. It has received a lot of attention in international law and is now recognised as one of the fundamental concepts of that body of law.²⁶

By including the cost of waste disposal into the price of the product, the "polluter pays" principle, also known as "Extended Polluter Responsibility" (EPR), aims to transfer the burden of dealing with pollutants from governments to the organisations that produce them. In order to reduce waste and increase opportunities for reuse and recycling, manufacturers will be encouraged to enhance the waste management profile of their businesses.²⁷

The *Rio Declaration* passed 27 principles to guide the protection of the environment for the present and future generations. *Inter alia*, principle 8 and 18 states thus; *Principle 8: To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.*" The duty is explained in principle 13 which provides thus; "States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction".

According to the EMCA, the "polluter-pays concept" states that the person found guilty of polluting under the Act or any other relevant legislation should pay or bear the expense of restoring any aspect of the environment that has been harmed by pollution. The polluter should essentially pay the costs

²⁶ Elvis-Imo G, 'An Analysis of The Polluter Pays Principle In Nigeria' (2017) 1 *Ajayi Crowther University Law Journal* <<https://aculj.acu.edu.ng/index.php/lj/article/view/4>> accessed 22 February 2023.

²⁷ *Ibid*, p. 3.

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associated with preventing pollution or covering any harm it does. This is what the "polluter pays" idea says.²⁸

In the case of *Michael Kibui & 2 others (suing on their own behalf as well as on behalf of the inhabitants of Mwamba Village of Uasin Gishu County) v Impresa Construzioni Giuseppe Maltauro SPA & 2 others* [2019] eKLR, Constitutional Petition 1 of 2012, the Court stated as follows:

64. *On the issue, as to who is liable to pay, this court is called upon to apply environmental law principles under Kenyan Law jurisprudence. Environmental law is principally concerned with ensuring sustainable utilization of natural resources according to a number of fundamental principles developed over the years through both domestic and international processes. Ideally, the utilization of land and land-based resources should adhere to the principles of sustainability, intergeneration equity, prevention, precautionary, polluter pays and public participation.*

65. *The principle of polluter pays entails that a person involved in any polluting activity should be responsible for the costs of preventing or dealing with any pollution caused by that activity instead of passing them to somebody else. The polluter should bear the expenses of carrying out pollution prevention and control measures to ensure that the environment is in an acceptable state. In international law, the principle is embedded in the Rio Declaration on Environment and Development (1992) which reads at principle 16 as national authorities should endeavor to promote the internalization of environmental costs and the use of economic instruments taking into account that the polluter should, in principle bear the costs of pollution with due regard to the public interests and without distorting international trade and investment. In this case, the 1st respondent is held liable as he is the polluter.*

²⁸ *Kenya Association of Manufacturers & 3 others v Cabinet secretary, Ministry of Environment and Natural Resources & 3 others* [2018] eKLR, Petition 32 & 35 of 2017 & Judicial Review Application 30 of 2017 (Consolidated), para. 150.

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In the Kenyan case of *Dobs Entertainment Limited v National Environment Management Authority* [2021] eKLR, Tribunal Appeal 016 of 2019, the National Environment Tribunal quoted a Ugandan case as follows:

33. In the Supreme Court of Uganda, at Kampala Constitutional Appeal No. 05 Of 2011 Amooti Godfrey Nyakaana and National Environment Management Authority & Attorney General, Advocates Coalition for Development & Environment Alert Vs Greenwatch, Uganda Wildlife Authority Quoting the Environmental Action Network & Attorney General –Vs- Salvatori Abuki Supreme Court Const. App. No. 1/98,

“The principle applicable is that in determining the Constitutionality of legislation, its purpose and effect must be taken into consideration. Both purpose and effect are relevant in determining Constitutionality of either an unconstitutional purpose or unconstitutional effect animated by an object the legislation intends to achieve. This object is realized through the impact produced by the operation and application of the legislation. Purpose and effect respectively, the sense of the legislation’s object and ultimate impact are clearly linked if not indivisible. Intended and actual effect has been looked up for guidance in assessing the legislation’s object and thus its validity. See THE QUEEN –Vs- BIG DRUG MARK LTD 1996 CLR 332.”

The Petitioner is not challenging the Constitutionality of these restrictions. In my view, it is these restrictions which gave the first respondent power to carry out inspection on the petitioner’s property to ascertain whether the activities he was carrying out on the land was in conformity with the provisions of the section – hence the service of the Restoration Order. The restoration order is like a charge sheet that commences the prosecution of a person who is charged with a criminal offence. Normally a Police Officer does not give a hearing to a suspect before charging him or her. The purpose of the Act is to give the first Respondent power to deal with and protect the environment for the benefit of all including the Petitioner. The impugned sections in my view have in built mechanisms for fair hearing as enshrined in Article 28.”

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In the same case the court went on and stated that; “The Petitioner failed to show that the safeguards contained in the impugned sections are insufficient to accord him or anyone else a fair hearing. I have not been persuaded that the Petitioner’s proprietary rights were infringed by the acts of the first respondent. What was taken away from him was misuse of the land and this was done to protect the environment.” The Court discussed the concept of sustainable development as it has evolved in international law and adopted the definition contained in the report of the World Commission On Environment and Development (the “Brundtland Report). That Report defined “Sustainable Development” as “Development that meets the needs of the present without compromising the ability of the future generations to meet their own needs.” The Court stated thus: -

“We have no hesitation in holding that “sustainable Development” as a balancing concept between ecology and development has been accepted as part of the customary international law though its salient features have yet to be finalized by the international law jurists.....

We are, however, of the view that “The Precautionary Principle” and “The Polluter Pays Principle” are essential features of “Sustainable Development.” The “Precautionary Principle” – in the context of municipal law – means:

(i) The Environmental measures – by the State Government and the Statutory authorities must anticipate, prevent, and attack the causes of environmental degradation.

(ii) Where there are threats of serious and irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

(iii) The “Onus of proof” is on the actor or the developer/industrialist to show that his action is environmentally benign.”

34. In the same case, on “the Polluter Pays Principle” the court had this to say: -

“The “Polluter Pays Principle” as interpreted by this Court means that the absolute liability for harm to the environment extends not only to

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compensate the victims of pollution but also the cost of restoring the environmental degradation. Remediation of the damaged environment is part of the process of "sustainable Development" and as such the Polluter is liable to pay the cost to the individual sufferers as well as the cost of reversing the damaged ecology."

According to the OECD, there are four aspects that must be considered in the enforcement of the polluter-pays principle, which are: First, is the issue of identifying the polluter. This is crucial to the allocation of costs and making the polluter take responsibility for his pollution, as stipulated by the OECD definition given above; It is necessary to ascertain the extent of damage done to the environment and establish the extent of the polluter's liability so that precise monetary value can be attached to the degradation; Pollution caused must be identifiable. This is necessary to prove that the polluter is responsible for that resulting pollution; and, there must be a damage that must be compensated. The damage caused must be real and identifiable as compensable under a compensatory regime provided by the relevant laws.²⁹

8.4. Enforcing the Right to Clean and Healthy Environment in Kenya Through the Polluter Pays principle for Sustainable Development

Section 3(3) of the Environmental Management and Coordination Act 1999, gives any party who alleges that his right to a clean and healthy environment has been or is likely to be violated to apply to the Environment and Land court for redress.

According to Article 70 of the Constitution, anybody who believes that their right to a clean environment is being denied, violated, threatened, or infringed upon in violation of Article 42 may seek recourse from the court. Kenyans have recourse to the courts under the Constitution even when there are merely implied violations.³⁰

²⁹ Elvis-Imo G, "An analysis of the polluter pays principle in Nigeria," *Ajayi Crowther University Law Journal* 1, no. 1 (2017), pp. 4-5.

³⁰ *KM & 9 others v Attorney General & 7 others* [2020] eKLR, *Petition 1 of 2016*, para. 134.

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In *Waweru v. Republic* (2006) eKLR, the applicants – property owners – were accused of violating the Public Health Act's regulations by dumping raw sewage into a public water source. The court agreed with the petitioners, but it then began to consider how the applicants' conduct would affect sustainable development and environmental management on its own. The court determined that Section 71 of the Kenyan Constitution contains the right to life, which also includes the right to a clean and healthy environment.³¹

In the LAPSSET case, also known as the case of *Mohamed Ali Baadi and others vs. A.G. & 11 others* (2018) eKLR, the project proponent agreed to pay Kshs. 1,760,424,000 in monetary compensation to the individuals who were impacted. The petitioners and the other residents of Lamu Island were to be consulted regarding how the LAPSSET project might affect their culture as a district indigenous community and how to mitigate any negative effects on culture. Because this project was still in progress, the court ordered the project proponent to include a demonstrably specific consultation plan.³²

The Court in *KM & 9 others v Attorney General & 7 others [2020] eKLR, Petition 1 of 2016*, cited *Rylands Vs Fletcher (1861-73) ALL ER REPI* case on strict liability as follows:

165. Further the rule of strict liability on the owner of land for damage caused by the escape of substances to his neighbour's land set in the Case of *Rylands Vs Fletcher (1861-73) ALL ER REPI* is in favour of the petitioners' case. The court held thus, "We think that the true rule of law is that the person who, for his own purposes, brings on his land, and collects and keeps there anything likely to do mischief if it escapes, must keep it at his own peril, and, if he does not do so, he is prima facie answerable for all the damage which is the natural consequence of its escape. He can excuse himself by showing that the escape was owing to the plaintiff's own default, or, perhaps that the escape was a consequence of vis major, or the act of God; but as nothing of this sort exists here, it is unnecessary to inquire what excuse would be sufficient.

³¹ *KM & 9 others v Attorney General & 7 others [2020] eKLR, Petition 1 of 2016, para. 163.*

³² *KM & 9 others v Attorney General & 7 others [2020] eKLR, Petition 1 of 2016, para. 164.*

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The general rule, as above stated, seems on principle just. The person whose grass or corn is eaten down by the escaped cattle of his neighbour, or whose mine is flooded by the water from his neighbour's reservoir, or whose cellar is invaded by the filth of his neighbour's privy, or whose habitation is made unhealthy by the fumes and noisome vapours of his reasonable and just that the neighbour who has brought something on his own property but which he knows will be mischievous if it gets on his neighbour's, should be obliged to make good the damage which ensues if he does not succeed in confining it to his own property. But for his act in bringing it there no mischief would have accrued, and it seems just that he should at his peril keep it there, so that no mischief may accrue, or answer for the natural and anticipated consequences."

"If it does escape and cause damage, he is responsible, however careful he may have taken to prevent the damage. In considering whether a defendant is liable to a plaintiff for the damage which the plaintiff may have sustained, the question in general is not whether the defendant has acted with due care and caution, but whether his acts have occasioned the damage."

166. The Supreme Court of India in *M C Mehta Vs Union of India (1987) 1 SCC 395* introduced the concept of absolute liability where the defendant is engaged in industrial activities resulting in pollution. The court stated thus,

"The enterprise must be held to be under an obligation to provide that the hazardous or inherently dangerous activity in which it is engaged must be conducted with the highest standards of safety and if any harm results on account of such activity, the enterprise must be absolutely liable to compensate for such harm and it should be no answer to the enterprise to say that it had taken all reasonable care and that the harm occurred without any negligence on its part. Since the persons harmed on account of the hazardous or inherently dangerous activity carried on by the

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enterprise would not be in a position to isolate the process of operation from the hazardous preparation of the substance of any other related element that caused the harm, the enterprise must be held strictly liable for causing such harm as part of the social cost of carrying on the hazardous or inherently dangerous activity. If the enterprise is permitted to carry on a hazardous or inherently dangerous activity for its profit, the law must presume that such permission is conditional on the enterprise absorbing the cost of any accident arising on account of such hazardous or inherently dangerous activity as an appropriate item for its overheads. Such hazardous or inherently dangerous activity for private profit can be tolerated on condition that the enterprise engaged in such hazardous or inherently dangerous activity indemnifies all those who suffer on account of carrying on such hazardous or inherently dangerous activity regardless of whether it is carried out carefully or not ... we would therefore hold that where an enterprise is engaged in a hazardous or inherently dangerous activity, resulting for example in escape of toxic gas, the enterprise is strictly and absolutely liable to compensate all those who are affected by the accident and such liability is not subject to any of the exceptions which operate vis-à-vis the tortious principle of strict liability under the rule in Rylands Vs. Fletcher (1986) LR 3 HL 330, (1861 - 73)."

In the case of *National Environment Management Authority & 3 others v Maraba Lwatingu Residents Association & 505 others* [2020] eKLR³³, the Environment and Land Court at Kakamega, while making a determination on whether orders for costs and restoration of the environment issued by the National Environment Tribunal were inordinately too high, harsh and punitive for a public project funded by donors, made the following observation:

In this case it is the 2nd appellant who undertook the project and the Tribunal used its discretion judiciously in this matter. In the case of

³³ *National Environment Management Authority & 3 others v Maraba Lwatingu Residents Association & 505 others* [2020] eKLR, Environment and Land Appeal 5 of 2019.

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Michael Kibui & 2 others (suing on their own behalf as well as on behalf of the inhabitants of Mwamba Village of Uasin Gishu County) v Impresa Construzioni Giuseppe Maltauro SPA & 2 others (2019) eKLR the court held that;

“The principle of polluter pays entails that a person involved in any polluting activity should be responsible for the costs of preventing or dealing with any pollution caused by that activity instead of passing them to somebody else. The polluter should bear the expenses of carrying out pollution prevention and control measures to ensure that the environment is in an acceptable state. In international law, the principle is embedded in the Rio Declaration on Environment and Development (1992) which reads at principle 16 as national authorities should endeavor to promote the internalization of environmental costs and the use of economic instruments taking into account the that the polluter should, in principle bear the costs of pollution with due regard to the public interests and without distorting international trade and investment. In this case, the 1st respondent is held liable as he is the polluter.

Similarly, in the case of *Mohamed Ali Baadi and others v Attorney General & 11 others*[2018] eKLR³⁴, the case underscored the importance of public participation as follows:

227. The involvement of the public in environmental decision and policy making must be regarded as important for various reasons. First, the utilization of the views gathered from the public in governmental decision-making on environmental issues results in better implementation of the goals of environmental protection and sustainable development. This is because the resultant decisions raise an expanded knowledge base on the nature of environmental problems that are to be met by the decision. The decisions help to enrich and cross-fertilize environmental rights.

³⁴ Mohamed Ali Baadi and others v Attorney General & 11 others [2018] eKLR, Petition 22 of 2012.

228. Secondly, developing environmental laws and policies is a very resource-intensive area. Hence, the public input comes in handy, especially in developing countries, in supplementing scarce government resources for developing laws and policies. In addition, at the implementation stage, public vigilance is critical for monitoring, inspection and enforcement of environmental laws and policies by identifying and raising with appropriate authorities, environmental threats and violations.

229. Thirdly, public participation can help identify and address environmental problems at an early stage. This helps to save reaction-time, energy and the scarce financial resources, at least in the long run. In addition, it improves the reactive and, often, adversarial nature of government action which operates by promising solutions to environmental problems mostly *post-facto*, and only following an actual complaint by a citizen.

254. The importance of being informed of basic facts about the quality of their environment is, therefore, well established in different international conventions. Increasing access to environmental information also allows for competing interests to be balanced. Access to information permits all relevant factors to be taken into account as part of decision making process. Environmental information is a self-standing regulatory instrument and serves to inform the public of environments risks. Citizens must not only have access to information but must also be entitled to participate in decision-making and have access to justice in environmental matters. Only this way will they be able to assert their right to live in a safe environment, and fulfil their duty to protect, and improve the environment for the benefit of future generations. In addition to enhancing the quality and implementation of decisions, improved access to information and public participation contributes to public awareness of environmental issues and provides more opportunities for the public to express their concerns to relevant authorities.

256. In addition, if rights are to be effective, the public must have a way of seeking justice when those rights are accidentally, or deliberately, denied. For purposes of enforcement of environmental

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rights, Article 70 of the Constitution provides a framework to meet this need. It highlights rights of a citizen to move to Court citing violation of rights to clean and healthy environment. For a citizen to exercise these rights, access to environmental information is a necessity.

Under EMCA, any individual who has harmed the environment or who is still doing so may be subject to an environmental restoration order from the court.³⁵

EMCA stipulates various environmental offences which including offences related to *inspection*, offences related to *Environmental Impact Assessment*, offences related to records and *standards and offences related to hazardous wastes* (emphasis added).³⁶ The Act also prescribes penalties for these offences.³⁷ Offences under EMCA relate among other things, failing to submit to inspection³⁸, offences relating to Environmental Impact Assessment³⁹; offences relating to records⁴⁰; offences relating to standards⁴¹; offences relating to hazardous waste⁴²; offences relating to pollution⁴³; and offences relating to restoration orders⁴⁴.

The effectiveness of the polluter pays principle is also captured under Section 108 of EMCA which provides for restoration orders to be issued by the National Environment Management Authority (NEMA) to violators under the Act. Notably, the command and control mechanism involves the 'command' of the law and the legal authority of the State. This entails regulatory law, backed by criminal sanctions.⁴⁵ It is based on potential coercion rather than

³⁵ S. 111(1), Act No. 8 of 1999.

³⁶ EMCA, s. 137-146.

³⁷ *Ibid.*

³⁸ Sec. 137, EMCA.

³⁹ Sec. 138, EMCA.

⁴⁰ Sec. 139, EMCA.

⁴¹ Sec. 140, EMCA.

⁴² Sec. 141, EMCA.

⁴³ Sec. 142, EMCA.

⁴⁴ Sec. 143, EMCA.

⁴⁵ *Hutter, B.M., 'Socio-Legal Perspectives on Environmental Law: An Overview,' op. cit., pp.3 & 5.*

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voluntary goodwill and on penalties rather than positive incentives.⁴⁶ The command and control mechanism is what has predominantly informed the development of Kenya's natural resources protection regime.⁴⁷

The criminality component of regulation is what makes command and control methods successful.⁴⁸ It establishes a form of societal control over the use of natural resources. Under command and control approaches, criminal law is used as a preventative tool by use of punitive sanction.⁴⁹ This is because from an economic perspective, criminal sanctions when effectively enforced raise the cost of certain conduct and therefore encourages compliance with laws.⁵⁰ The EMCA proposes further sanctions in addition to fines, including the seizure of used products and the cancellation of licences.⁵¹

The nexus between sustainable development and the right to clean and healthy environment, as well as the place of the polluter pays principle in enhancing this connection, was captured in the case of *John Muthui & 19 others v County Government of Kitui & 7 others [2020] eKLR*⁵² in the following excerpt:

83. Indeed, Section 18 of the Environment and Land Court Act and Section 3(5) of the Environmental Management and Co-ordination Act provides that this court should be guided by the principle of *intergenerational equity* while resolving environmental disputes. Section

⁴⁶ Davies J.C. & Mazurek, J., *Pollution Control in the United States: Evaluating the System*, *op. cit.*, p.15.

⁴⁷ Ochieng', B.O., 'Institutional Arrangements for Environmental Management in Kenya,' in Okidi C.O., et al, *Environmental Governance in Kenya: Implementing the Framework Law*, (East African Educational Publishers Ltd, 2008), p.200.

⁴⁸ Hutter, B.M., 'Socio-Legal Perspectives on Environmental Law: An Overview,' *op. cit.*, pp. 3 & 5; cf. Ashworth, A., 'Conceptions of Over criminalization,' *Ohio State Journal of Criminal Law*, Vol. 5, 2008. pp. 407-425.

⁴⁹ Mbote, P.K. 'The Use of Criminal Law in Enforcing Environmental Law' in Okidi, C.O., et al, *Environmental Governance in Kenya: Implementing the Framework Law* (East African Educational Publishers Ltd, 2008) 110, p.112.

⁵⁰ *Ibid*, p. 110.

⁵¹ S.146, Act No. 8 of 1999.

⁵² *John Muthui & 19 others v County Government of Kitui & 7 others [2020] eKLR*, ELC. Petition No. E06 of 2020.

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2 of the Environmental Management and Co-ordination Act defines *intergenerational equity* as follows:

“intergenerational equity” means that the present generation should ensure that in exercising its rights to beneficial use of the environment the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.”

84. The quality of life for the future generation depends on our decisions today. The need for change in human development for them to lead happy lives has been debated for decades. The sustainability discourse started in the 1970s, and the 1992 UN Conference on the Environment and Development recognized intergenerational equity as central for policymaking that safeguards the future - this principle is now found in the constitutions of many countries, including Kenya.

85. Indeed, the World Commission on Environment and Development noted as follows: *“We borrow environmental capital from future generations with no intention or prospect of repaying.... We act as we do because we can get away with it: future generations do not vote; they have no political or financial power; they cannot challenge our decisions.”*

86. Some countries, most notably Israel and Hungary, have created their own guardian or commissioner for future generations, independent voices for the long term that act as temporal checks and balances. Based on the human right to a healthy environment (*Hungary*) and on a basic law concerning sustainable development (*Israel*), the Commissioners in each country have unrestrained access to the information behind policymaking; respond to citizens’ concerns; and publicly expose the long-term implications of current decisions.

105. The right to a clean and healthy environment is bestowed on every person, and has been considered by the courts and eminent authors to be essential for the existence of mankind. In *Adrian Kamotho Njenga vs. Council of Governors & 3 others* [2020] eKLR, it was held that:

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“18. Article 42 of the Constitution guarantees every person the right to a clean and healthy environment and to have the environment protected for the benefit of present and future generations through the measures prescribed by Article 69. The right extends to having the obligations relating to the environment under Article 70 fulfilled.

19. Unlike the other rights in the bill of rights which are guaranteed for enjoyment by individuals during their lifetime, the right to a clean and healthy environment is an entitlement of present and future generations and is to be enjoyed by every person with the obligation to conserve and protect the environment. The right has three components; the right itself, the right to have unrestricted access to the courts to seek redress where a person alleges the right to a clean and healthy environment has been infringed or is threatened; and the right to have the court make any order or give any directions it considers appropriate to either prevent or discontinue the act harmful to the environment, or compel any public officer to take measures to prevent or discontinue the act that is harmful to the environment or award compensation to any victim of a violation of the right to a clean and healthy environment.”

107. This position was elaborately considered in the case of *Martin Osano Rabera & Another vs. Municipal Council of Nakuru & 2 others* [2018] eKLR where the court adopted the decision in *Communication No.155/96: The Social and Economic Rights Action Centre and the Centre for Economic and Social Rights vs. Nigeria* where the African Commission on Human and People’s Rights stated as follows:

“These rights recognize the importance of a clean and safe environment that is closely linked to economic and social rights in so far as the environment affects the quality of life and safety of the individual. As has been rightly observed by Alexander Kiss, “an environment degraded by pollution and defaced by the destruction of all beauty and variety is as contrary to satisfactory living conditions and the development as the breakdown of the fundamental ecologic equilibria is harmful to physical and moral health.”

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The right to general satisfactory environment, as guaranteed under article 24 of the Africa Charter or the right to healthy environment, as it is widely known therefore imposes clear obligations upon a government. It requires the State to take reasonable measures to prevent pollution and ecological degradation, to promote conservation, and to secure an ecologically sustainable development and use of natural resources."

123. *Sustainable Development* is one of the national values and principles of governance in the Constitution that bind all State organs, State officers, public officers and all persons. In its report, *Our Common Future*, the *Brundtland Commission* defined Sustainable as *development that meets the needs of the present without compromising the ability of future generations to meet their own needs'*.

124. Under Section 2 of the Environmental and Management Co-ordination Act, sustainable development is defined as follows:

"sustainable development" means development that meets the needs of the present generation without compromising the ability of future generations to meet their needs by maintaining the carrying capacity of the supporting ecosystems."

125. In the *Case Concerning the Gabcikovo-Nagymaros Project, (Hungary v Slovakia)*, 1997 WL 1168556 (ICJ), it was held as follows:

"Throughout the ages, mankind has, for economic and other reasons, constantly interfered with nature. In the past this was often done without consideration of the effects upon the environment. Owing to new scientific insights and to a growing awareness of the risks for mankind - for present and future generations - of pursuit of such interventions at an unconsidered and unabated pace, new norms and standards have been developed [and] set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities, but also when continuing with activities begun in the past. This need to

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reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development. For the purposes of the present case, this means that the Parties together should look afresh at the effects on the environment of the operation of the Gabčíkovo power plant. In particular, they must find a satisfactory solution for the volume of water to be released into the old bed of the Danube and into the side-arms on both sides of the river."

126. Essentially, sustainable development seeks to address *intra-generational equity*, that is equity among the present generation and *inter-generational equity*, that is equity between generations. As opined in *Gabčíkovo* case (*supra*), sustainable development reaffirms the need for both development and environmental protection, and neither can be neglected at the expense of the other.

127. The four (4) recurring elements that comprise the concept of 'sustainable development' is the need to preserve natural resources for the benefit of future generations (*the principle of intergenerational equity*); exploiting natural resources in a manner which is 'sustainable', 'prudent', 'rational', 'wise' or 'appropriate' (*the principle of sustainable use*); the 'equitable' use of natural resources, and the need to ensure that environmental considerations are integrated into economic and other development plans, programmes and projects, (*the principle of integration*).

128. The principle of sustainable development seeks to limit environmental damage arising from anthropogenic activities and lessen the depletion of natural resources and pollution of the environment (See Cullet P., *Differential Treatment in International Environmental Law and its Contribution to the Evolution of International Law* (Aldershot: Ashgate, 2003) pp 8-9).

129. Sustainable development is a principle with a normative value, demanding a balance between development and environmental protection, and as a principle of reconciliation in the context of conflicting human rights, that is the right to development and the right to protecting the environment.

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In the case of *Martin Osano Rabera & another v Municipal Council of Nakuru & 2 others* [2018] eKLR⁵³, the Court stated as follows:

48. I have considered the petition, the evidence both in support and opposition to it and the submissions. That a clean and healthy environment is a fundamental prerequisite for life is not a matter that needs belabouring. It is for this reason that the drafters of the Constitution of Kenya, 2010 saw it fit to provide for the right to a clean and healthy environment at Article 42 within the Bill of Rights. Needless to state, Kenyans voted overwhelmingly in favour of the draft, thus giving their seal of approval to its provisions. Article 42 states as follows:

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.

49. A duty to have the environment protected for the benefit of present and future generations is imposed on both the State and every person under Article 69 which among others requires the state to ensure sustainable exploitation, utilisation, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits; to establish systems of environmental impact assessment, environmental audit and monitoring of the environment and to eliminate processes and activities that are likely to endanger the environment. Under the same article, every person has a duty to cooperate with State organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources. In short, the obligation to ensure a clean and healthy environment imposed on everybody – from

⁵³ *Martin Osano Rabera & another v Municipal Council of Nakuru & 2 others* [2018] eKLR, Petition No. 53 of 2012.

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the state to all persons be they natural, juridical, association or other group of persons whether incorporated or not.

50. So as to further safeguard environmental rights and to facilitate access to court for purposes of enforcing the right secured by Article 42, Article 70 of the constitution provides that if a person alleges that a right to a clean and healthy environment recognised and protected under Article 42 has been, is being or is likely to be, denied, violated, infringed or threatened, the person may apply to court for redress in addition to any other legal remedies that are available in respect to the same matter and that he does not have to demonstrate that any person has incurred loss or suffered injury.

51. Provisions similar to those at Article 42 are found at Section 3 of the Environmental Management and Co-ordination Act, 1999 (EMCA). Under Section 3 (3) of EMCA, if a person alleges that the right to a clean and healthy environment has been, is being or is likely to be denied, violated, infringed or threatened, in relation to him, then without prejudice to any other action with respect to the same matter which is lawfully available, that person may on his behalf or on behalf of a group or class of persons, members of an association or in the public interest may apply to this court and this court may make such orders, among others, to prevent, stop or discontinue any act or omission deleterious to the environment; to compel the persons responsible for the environmental degradation to restore the degraded environment as far as practicable to its immediate condition prior to the damage; and to provide compensation for any victim of pollution and the cost of beneficial uses lost as a result of an act of pollution and other connected losses.

52. I have outlined all these provisions to underscore the importance placed by the constitution and statute law on protection of the right to a clean and healthy environment and conservation of the environment generally.

It is thus recommended that the country and courts actively enforces the polluter-pays principle as a way to not only restore the environmental areas

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that have been degraded but also as an incentive to curb environmental degradation.

8.5. Conclusion

While the Rio Declaration which in Principle 16 embodies the polluter pays principle, does not impose any obligation on states to enforce those principles, Kenya, under section 3 (5) of EMCA and other various laws have incorporated this principle as part of the guiding principles that must be considered in enforcement of environmental law in Kenya. What is now required is for the Courts to strictly enforce it and hold more violators of environmental law culpable in order to enforce positive change towards environmental protection and conservation. Making violators bear the cost of environmental restoration will go a long way in not only guaranteeing the right to clean environment but also in achieving sustainable development.

CHAPTER NINE

Combating Climate Change in Kenya for Sustainable Development

9.1. Introduction

Climate change is considered one of the major global challenges that countries have to contend with in their efforts towards achievement of the sustainable development agenda. Climate change affects not only national and global economy but also has a direct effect on the livelihoods of communities. It is for this reason that there have been global calls on governments and all other stakeholders to put in place climate change mitigation measures and ensure that their economies become resilient. Indeed, climate change is one of the main environmental goals under the United Nation's 2030 Agenda for Sustainable Development Goals as captured under Sustainable Development Goal 13 meant to help countries achieve resilience and build adaptive capacity. However, due to their development activities and approaches, both developed and developing countries have not managed to curb climate change. It is also acknowledged that due to their differing economies and unique challenges, developing countries have far much been affected by climate change compared to the developed countries. Kenya is no exception especially considering that its economy is considered to be agricultural based and much of its rural population is still highly dependent on agriculture and environment to meet their livelihood needs. This has resulted in environmental degradation due to pollution and indiscriminate use of available environmental and natural resources. This chapter adds to the existing literature in this area on how the country can successfully combat climate change in its bid to achieve sustainable development. The major argument is that for the country to combat climate change, there is a need for an integrated approach that meaningfully involves all the stakeholders. The Government alone cannot possibly achieve this task. Climate change mitigation is an important step towards achieving sustainability in the country, without which the realisation of both the country's Vision 2030 and the United Nation's 2030 Agenda for Sustainable Development will remain a mirage.

Climate change remains one of the main global challenges that has affected both developed and developing countries in their efforts towards achievement

of the sustainable development agenda although it is arguable that the developing countries have been affected in greater ways.¹ This is because, since the environment remains the main source of raw materials for national development and a source of livelihoods for many communities especially those living within the rural settings, and climate change affects the ability of the environment to supply these needs, climate change has a direct effect on the livelihoods of communities as well as countries' ability to achieve growth and development. The year 2020 indeed proved how harsh climate change can be and Corona Virus Disease (COVID-19) did not make things any better. It has been observed that from wildfires in California and locust attacks in Ethiopia and Kenya to job losses caused by pandemic lockdowns across the world, climate change and COVID-19 disrupted food production and tipped millions more people into hunger in 2020.² In addition, Oxfam has estimated that more than 50 million people in East and Central Africa require emergency food aid – and those numbers are set to rise as the region braces for a harsh drought linked to the La Nina climate pattern, as well as more locust swarms.³ Indeed, commentators have expressed their fears that the situation could worsen from the current year 2021 as both the coronavirus crisis and wild weather exacerbate fragile conditions linked to conflicts and poverty in many parts of the globe, with the head of the U.N. World Food Program (WFP) warning that “even before COVID-19 hit, 135 million people were marching towards the brink of starvation; this could double to 270 million within a few short months”.⁴

¹ 'Unprecedented Impacts of Climate Change Disproportionately Burdening Developing Countries, Delegate Stresses, as Second Committee Concludes General Debate | Meetings Coverage and Press Releases'

<<https://www.un.org/press/en/2019/gaef3516.doc.htm>> accessed 23 January 2021; 'Untitled' <<https://unfccc.int/news/impacts-of-climate-change-on-sustainable-development-goals-highlighted-at-high-level-political-forum>> accessed 23 January 2021.

² 'COVID-19 Caused Food Insecurity to Soar, But Climate Change Will Be Much Worse – Homeland Security Today' <<https://www.hstoday.us/subject-matter-areas/emergency-preparedness/covid-19-caused-food-insecurity-to-soar-but-climate-change-will-be-much-worse/>> accessed 17 January 2021.

³ Ibid.

⁴ Ibid; 'WFP Chief Warns of Hunger Pandemic as COVID-19 Spreads (Statement to UN Security Council) | World Food Programme'

<<https://www.wfp.org/news/wfp-chief-warns-hunger-pandemic-covid-19-spreads-statement-un-security-council>> accessed 17 January 2021.

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Climate change thus remains a challenge to many because, as the United Nations Environment Programme observes, climate change is increasing the frequency and intensity of extreme weather events such as heat waves, droughts, floods and tropical cyclones, aggravating water management problems, reducing agricultural production and food security, increasing health risks, damaging critical infrastructure and interrupting the provision of basic services such as water and sanitation, education, energy and transport.⁵

It is for this reason that there have been global calls on governments and all other stakeholders to put in place climate change mitigation measures and ensure that their economies become resilient. Climate change is one of the main environmental goals under the United Nations' 2030 Agenda for Sustainable Development Goals⁶ (SDGs) as captured under Sustainable Development Goal 13 meant to help countries achieve resilience and build adaptive capacity. SDG Goal 13 calls on countries to take urgent action to combat climate change and its impacts.⁷ SDG Goal 13 targets require countries to: strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries;⁸ integrate climate change measures into national policies, strategies and planning;⁹ improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning;¹⁰ 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;¹¹ and promote mechanisms for raising capacity for effective climate change-related planning and management in

⁵ Environment UN, 'GOAL 13: Climate Action' (UNEP - UN Environment Programme, 2 October 2017) <<http://www.unenvironment.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-13>> accessed 17 January 2021.

⁶ UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development*, 21 October 2015, A/RES/70/1.

⁷ Sustainable Development Goal 13.

⁸ Target 13.1, SDG Goal 13.

⁹ Target 13.2, SDG Goal 13.

¹⁰ Target 13.3, SDG Goal 13.

¹¹ Target 13.a, SDG Goal 13.

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least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities¹². Notably, the 2030 Agenda acknowledges that the United Nations Framework Convention on Climate Change is the primary international intergovernmental forum for negotiating the global response to climate change.¹³

The above goals and targets are commendable and are meant to help countries come up with climate change mitigation and adaptation mechanisms to combat the challenge of climate change. However, due to their development activities and approaches, both developed and developing countries have not managed to combat climate change. Indeed, it has been observed that despite the growing amount of climate change concern, mitigation efforts, legislation, and international agreements that have reduced emissions in some places, the continued economic growth of the less developed world has increased global greenhouse gases emission, with the time between 2000 and 2010 experiencing the largest increases since 1970.¹⁴ According to scientific reports, the Earth's mean surface temperature in 2020 was 1.25°C above the global average between 1850 and 1900, largely attributable to greenhouse gases from human activities.¹⁵ It has also been reported that human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C and global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate.¹⁶

¹² Target 13.b, SDG Goal 13.

¹³ See DGS Goal 13 (asterisk).

¹⁴ '15.5: Anthropogenic Causes of Climate Change' (*Geosciences LibreTexts*, 4 November 2019)

<[https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_\(Johnson_Affolter_Inkenbrandt_and_Mosher\)/15%3A_Global_Climate_Change/15.05%3A_Anthropogenic_Causes_of_Climate_Change](https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_(Johnson_Affolter_Inkenbrandt_and_Mosher)/15%3A_Global_Climate_Change/15.05%3A_Anthropogenic_Causes_of_Climate_Change)> accessed 17 January 2021.

¹⁵ Wilby R, 'Climate Change: What Would 4°C of Global Warming Feel Like?' (*The Conversation*) <<http://theconversation.com/climate-change-what-would-4-c-of-global-warming-feel-like-152625>> accessed 17 January 2021.

¹⁶ 'Summary for Policymakers – Global Warming of 1.5 °C' <<https://www.ipcc.ch/sr15/chapter/spm/>> accessed 17 January 2021.

It must also be acknowledged that due to their differing economies and unique challenges, developing countries have far more been affected by climate change compared to the developed countries.¹⁷ Kenya is no exception especially considering that its economy is considered to be agricultural based and much of its rural population is still highly dependent on agriculture and environment to meet their livelihood needs.¹⁸ This has resulted in environmental degradation due to pollution and indiscriminate use of available environmental and natural resources.¹⁹ This chapter adds to the existing literature in this area on how the country can successfully combat climate change in its bid to achieve sustainable development. It is imperative that countries combat climate change urgently considering that it is estimated that without action, by 2050, 68% of humanity may live in urban areas and populations in the tropics will be most exposed to extreme humid heat.²⁰ The World has been struggling with COVID-19 pandemic since March 2020 and the negative effect on economies and livelihoods has been enormous. Despite this, some commentators have argued that climate change could be more devastating than Covid-19.²¹

¹⁷ 'Unprecedented Impacts of Climate Change Disproportionately Burdening Developing Countries, Delegate Stresses, as Second Committee Concludes General Debate | Meetings Coverage and Press Releases' <<https://www.un.org/press/en/2019/gaef3516.doc.htm>> accessed 23 January 2021.

¹⁸ Alila, Patrick O., and Rosemary Atieno. "Agricultural policy in Kenya: Issues and processes." *Nairobi: Institute of Development Studies* (2006); Faling, Marijn. "Framing agriculture and climate in Kenyan policies: A longitudinal perspective." *Environmental Science & Policy* 106 (2020): 228-239; Faling, Marijn, and Robbert Biesbroek. "Cross-boundary policy entrepreneurship for climate-smart agriculture in Kenya." *Policy Sciences* 52, no. 4 (2019): 525-547; Haradhan Kumar Mohajan, 'Food and Nutrition Scenario of Kenya' (2014) 2 *American Journal of Food and Nutrition* 28.

¹⁹ Abioye O Fayiga, Mabel O Ipinmoroti and Tait Chirenje, 'Environmental Pollution in Africa' (2018) 20 *Environment, Development and Sustainability* 41.; '(PDF) Environmental Degradation: Causes, Impacts and Mitigation' (*ResearchGate*) <https://www.researchgate.net/publication/279201881_Environmental_Degradation_Causes_Impacts_and_Mitigation> accessed 23 January 2021.

²⁰ Wilby R, 'Climate Change: What Would 4°C of Global Warming Feel Like?' (*The Conversation*) <<http://theconversation.com/climate-change-what-would-4-c-of-global-warming-feel-like-152625>> accessed 17 January 2021.

²¹ Clifford C, 'Bill Gates: Climate Change Could Be More Devastating than Covid-19 Pandemic—This Is What the US Must Do to Prepare' (*CNBC*, 8 January 2021) <<https://www.cnn.com/2021/01/08/bill-gates-climate-change-could-be-worse-than-covid-19.html>> accessed 17 January 2021.

9.2. Climate Change: Definition and Causes

Climate is defined as the temperature and precipitation patterns and range of variability averaged over the long-term for a particular region.²² On the other hand, climate change has been defined as 'a long-term shift in the average weather conditions of a region, such as its typical temperature, rainfall, and windiness'.²³ The *United Nations Framework Convention on Climate Change*²⁴(UNFCCC) defines "climate change" to mean 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 periods.²⁵

It has been pointed out that while prehistoric changes in climate have been very slow since climate changes typically occur slowly over many millions of years, the climate changes observed today are rapid and largely human-caused.²⁶

According to the available scientific data, anthropogenic climate change, or, human-caused climate change is believed to be causing rapid changes to the climate, which will cause severe environmental damage.²⁷ This is mainly attributed to anthropogenic greenhouse gases emissions, mostly carbon dioxide (CO₂), from fossil fuel combustion and industrial processes and the following economic sectors: electricity and heat production; agriculture,

²² '15.1: Global Climate Change' (*Geosciences LibreTexts*, 26 December 2019) <[https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_\(Johnson_Affolter_Inkenbrandt_and_Mosher\)/15%3A_Global_Climate_Change/15.01%3A_Global_Climate_Change](https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_(Johnson_Affolter_Inkenbrandt_and_Mosher)/15%3A_Global_Climate_Change/15.01%3A_Global_Climate_Change)> accessed 17 January 2021.

²³ Canada E and CC, 'Climate Change Concepts' (*aem*, 26 September 2018) <<https://www.canada.ca/en/environment-climate-change/services/climate-change/canadian-centre-climate-services/basics/concepts.html>> accessed 17 January 2021.

²⁴ UN General Assembly, *United Nations Framework Convention on Climate Change: resolution / adopted by the General Assembly*, 20 January 1994, A/RES/48/189.

²⁵ *Ibid*, Article 1(2).

²⁶ '15.5: Anthropogenic Causes of Climate Change' (*Geosciences LibreTexts*, 4 November 2019)

<[https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_\(Johnson_Affolter_Inkenbrandt_and_Mosher\)/15%3A_Global_Climate_Change/15.05%3A_Anthropogenic_Causes_of_Climate_Change](https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_(Johnson_Affolter_Inkenbrandt_and_Mosher)/15%3A_Global_Climate_Change/15.05%3A_Anthropogenic_Causes_of_Climate_Change)> accessed 17 January 2021.

²⁷*Ibid*.

forestry, and land use; industry; transportation including automobiles; other energy production; and buildings.²⁸

9.3. The Legal Framework on Climate Change Mitigation and Adaptation

Climate change mitigation has been defined as a human-mediated reduction of the anthropogenic forcing of the climate system that includes strategies to reduce GHG sources and emissions and enhancing GHG sinks.²⁹ At the global scene, there exist a number of related environmental legal instruments, plans and programmes aimed at combating climate change.

9.3.1. International Legal Framework on Climate Change Mitigation and Adaptation

i. Montreal Protocol on Substances that Deplete the Ozone Layer

The *Montreal Protocol on Substances that Deplete the Ozone Layer* was signed in 1987 and entered into force in 1989 as a global agreement to protect the Earth's ozone layer by phasing out the chemicals that deplete it, a plan that includes both the production and consumption of ozone-depleting substances.³⁰ The Protocol is believed to have successfully met its objectives thus far as it continues to safeguard the ozone layer today.³¹

²⁸ '15.5: Anthropogenic Causes of Climate Change' (*Geosciences LibreTexts*, 4 November 2019)

<[https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_\(Johnson_Affolter_Inkenbrandt_and_Mosher\)/15%3A_Global_Climate_Change/15.05%3A_Anthropogenic_Causes_of_Climate_Change](https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_(Johnson_Affolter_Inkenbrandt_and_Mosher)/15%3A_Global_Climate_Change/15.05%3A_Anthropogenic_Causes_of_Climate_Change)> accessed 17 January 2021; 'How We Know Today's Climate Change Is Not Natural' (*State of the Planet*, 4 April 2017) <<https://blogs.ei.columbia.edu/2017/04/04/how-we-know-climate-change-is-not-natural/>> accessed 17 January 2021; 'The Science of Carbon Dioxide and Climate' (*State of the Planet*, 10 March 2017) <<https://blogs.ei.columbia.edu/2017/03/10/the-science-of-carbon-dioxide-and-climate/>> accessed 17 January 2021.

²⁹ Rinku Singh and GS Singh, 'Traditional Agriculture: A Climate-Smart Approach for Sustainable Food Production' (2017) 2 *Energy, Ecology and Environment* 296.

³⁰ 'The Montreal Protocol on Substances That Deplete the Ozone Layer | Ozone Secretariat' <<https://ozone.unep.org/treaties/montreal-protocol/montreal-protocol-substances-deplete-ozone-layer>> accessed 21 January 2021.

³¹ *Ibid.*

ii. Vienna Convention for the Protection of the Ozone Layer

The Vienna Convention for the Protection of the Ozone Layer was the first convention of any kind to be signed by every country involved, taking effect in 1988 and reaching universal ratification in 2009.³² The Vienna Convention obligates the Parties 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.³³

iii. The Kyoto Protocol

The Kyoto Protocol was adopted on 11 December 1997 and entered into force on 16 February 2005, currently with 192 Parties.³⁴ The Kyoto protocol was the first agreement between nations to mandate country-by-country reductions in greenhouse-gas emissions. Kyoto emerged from the UN Framework Convention on Climate Change (UNFCCC), which was signed by nearly all nations at the 1992 Earth Summit.³⁵ The Kyoto Protocol operationalizes the United Nations Framework Convention on Climate Change by committing industrialized countries and economies in transition to limit and reduce greenhouse gases (GHG) emissions in accordance with agreed individual targets,³⁶ whereas the Convention itself only asks those countries to adopt policies and measures on mitigation and to report periodically.³⁷ Notably, the Kyoto Protocol only binds developed countries, and places a heavier burden on them under the principle of “common but differentiated responsibility and respective capabilities”, because it recognizes that they are largely responsible for the current high levels of GHG emissions in the atmosphere.³⁸ While industrialized nations pledged to cut their yearly

³² ‘The Vienna Convention for the Protection of the Ozone Layer | Ozone Secretariat’ <<https://ozone.unep.org/treaties/vienna-convention>> accessed 21 January 2021.

³³ Vienna Convention for the Protection of the Ozone Layer, Article 2(1).

³⁴ ‘Untitled’ <https://unfccc.int/kyoto_protocol> accessed 21 January 2021.

³⁵ Extract from The Rough Guide to Climate Change, ‘What Is the Kyoto Protocol and Has It Made Any Difference?’ (*the Guardian*, 11 March 2011) <<http://www.theguardian.com/environment/2011/mar/11/kyoto-protocol>> accessed 21 January 2021.

³⁶ ‘Untitled’ <https://unfccc.int/kyoto_protocol> accessed 21 January 2021.

³⁷ *Ibid.*

³⁸ *Ibid.*

emissions of carbon, as measured in six greenhouse gases, by varying amounts, averaging 5.2%, by 2012 as compared to 1990, some almost achieved these targets while others like China and United States exceeded the targets by producing more carbon to the point of cancelling the progress made by all other states.³⁹ In addition, some countries such as India and China were never in the list of the original 37 developed countries bound by the Protocol yet China and India together account for approximately 35% of total carbon emissions, as of 2020, while the developed nations of the UK, France, and Germany combined, only account for 4% of the world's carbon emissions.⁴⁰ The Kyoto Protocol was essentially replaced by the Paris Climate Accord in 2015.⁴¹

iv. Doha Amendment to the Kyoto Protocol

Parties to the Kyoto Protocol adopted an amendment to the Kyoto Protocol by decision 1/CMP.8 in accordance with Articles 20 and 21 of the Kyoto Protocol, at the eighth session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) held in Doha, Qatar, on 8 December 2012.⁴² As of 28 October 2020, 147 Parties had deposited their instrument of acceptance, therefore, the threshold for entry into force of the Doha Amendment had been met.⁴³

The Doha Amendment refers to the changes made to the Kyoto Protocol in 2012, after the First Commitment Period of the Kyoto Protocol concluded. The Amendment added new emission reduction targets for Second Commitment Period (2012-2020) for participating countries.⁴⁴

³⁹ Extract from The Rough Guide to Climate Change, 'What Is the Kyoto Protocol and Has It Made Any Difference?' (*the Guardian*, 11 March 2011) <<http://www.theguardian.com/environment/2011/mar/11/kyoto-protocol>> accessed 21 January 2021.

⁴⁰ 'Kyoto Protocol - Overview, Components, Current State' (*Corporate Finance Institute*) <<https://corporatefinanceinstitute.com/resources/knowledge/other/kyoto-protocol/>> accessed 21 January 2021.

⁴¹ Ibid.

⁴² 'Untitled' <<https://unfccc.int/process/the-kyoto-protocol/the-doha-amendment>> accessed 21 January 2021.

⁴³ Ibid.

⁴⁴ 'Doha Amendment to the Kyoto Protocol (2012)' (*Cop23*)

v. Paris Climate Accord, 2015

The Paris Agreement is a legally binding international treaty on climate change, adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016.⁴⁵ Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.⁴⁶ Unlike the Kyoto Protocol, the Paris Agreement is a landmark in the multilateral climate change process because, for the first time, a binding agreement brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects.⁴⁷

The 26th UN Climate Change Conference of the Parties (COP26) will be held in Glasgow from 1st to 12th November 2021.⁴⁸ The COP26 summit is expected to bring parties together to accelerate action towards the goals of the Paris Agreement and the UN Framework Convention on Climate Change.⁴⁹

vi. United Nations Convention to Combat Desertification

The objective of the *United Nations Convention to Combat Desertification*⁵⁰ is to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas.⁵¹ This is to be achieved through long-term integrated strategies that focus simultaneously, in affected areas, on improved productivity of land, and the rehabilitation,

<<https://cop23.com.fj/knowledge/doha-amendment-kyoto-protocol-2012/>> accessed 21 January 2021.

⁴⁵ 'Untitled'

<<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>> accessed 21 January 2021.

⁴⁶ Ibid.

⁴⁷ Ibid.

⁴⁸ 'UN Climate Change Conference (COP26) at the SEC – Glasgow 2021' (*UN Climate Change Conference (COP26) at the SEC – Glasgow 2021*) <<https://ukcop26.org/>> accessed 17 January 2021.

⁴⁹ Ibid.

⁵⁰ United Nations Convention to Combat Desertification (1994).

⁵¹ Article 2(1).

conservation and sustainable management of land and water resources, leading to improved living conditions, in particular at the community level.⁵²

vii. Agenda 21

Agenda 21 is a comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment.⁵³

viii. United Nations Framework Convention on Climate Change (UNFCCC)

The *United Nations Framework Convention on Climate Change*⁵⁴ was passed to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere, at a level that would prevent dangerous anthropogenic interference with the climate system. 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 manner.⁵⁵

In their actions to achieve the objective of the Convention and to implement its provisions, the Parties are to be guided, *inter alia*, by the following principles: the Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof;⁵⁶ the specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties,

⁵² Article 2(2).

⁵³ 'Agenda 21: Sustainable Development Knowledge Platform' <<https://sustainabledevelopment.un.org/outcomedocuments/agenda21>> accessed 21 January 2021.

⁵⁴ UN General Assembly, *United Nations Framework Convention on Climate Change: resolution / adopted by the General Assembly*, 20 January 1994, A/RES/48/189.

⁵⁵ *Ibid*, Article 2.

⁵⁶ *United Nations Framework Convention on Climate Change*, Article 3(1).

that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration;⁵⁷ the Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties;⁵⁸ the Parties have a right to, and should, promote sustainable development. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change;⁵⁹ the Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing country Parties, thus enabling them better to address the problems of climate change. Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.⁶⁰

ix. Intergovernmental Panel on Climate Change (IPCC)

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body established in 1988 for assessing the science related to climate change.⁶¹ The Intergovernmental Panel on Climate Change (IPCC) collects, reviews, and summarizes the best information on climate change and its

⁵⁷ *United Nations Framework Convention on Climate Change*, Article 3(2).

⁵⁸ *United Nations Framework Convention on Climate Change*, Article 3(3).

⁵⁹ *Ibid*, Article 3(4).

⁶⁰ *Ibid*, Article 3(5).

⁶¹ 'IPCC – Intergovernmental Panel on Climate Change' <<https://www.ipcc.ch/>> accessed 21 January 2021.

impacts, and puts forward possible solutions.⁶² IPCC often discharges its work through scientific reports, summarizing current and relevant findings in the field and written for policymakers and scientists, but they are available to everyone.⁶³

9.3.2. Kenya's Legal Framework on Climate Change Mitigation

a. Environmental Management and Co-ordination Act, 1999

The *Environmental Management and Co-ordination Act, 1999*⁶⁴(EMCA) mandates the Cabinet Secretary in charge of environmental matters in consultation with the National Environment Management Authority, to undertake or commission other persons to undertake national studies and give due recognition to developments in scientific knowledge relating to substances, activities and practices that deplete the ozone layer to the detriment of public health and the environment.⁶⁵ The Cabinet Secretary in consultation with the Authority, is then required to issue guidelines and institute programmes concerning the: elimination of substances that deplete the stratospheric ozone layer; controlling of activities and practices likely to lead to the degradation of the ozone layer and the stratosphere; reduction and minimization of risks to human health created by the degradation of the ozone layer and the stratosphere; and formulate strategies, prepare and evaluate programmes for phasing out ozone depleting substances.⁶⁶ The Act also mandates the Cabinet Secretary, in consultation with relevant lead agencies, to issue guidelines and prescribe measures on climate change.⁶⁷

EMCA also provides for fiscal incentives that are designed to promote climate change mitigation. It empowers the Cabinet Secretary responsible for Finance, on the recommendation of the National Council of Public benefit organizations, to propose to Government tax and other fiscal incentives,

⁶² 'The Intergovernmental Panel on Climate Change' (MIT Climate Portal) <<https://climate.mit.edu/explainers/intergovernmental-panel-climate-change>> accessed 21 January 2021.

⁶³ Ibid.

⁶⁴ Environmental Management and Co-ordination Act, No. 8 of 1999, Laws of Kenya.

⁶⁵ Ibid, sec. 56(1).

⁶⁶ Ibid, sec. 56(2).

⁶⁷ Ibid, sec. 56A.

disincentives or fees to induce or promote the proper management of the environment and natural resources or the prevention or abatement of environmental degradation.⁶⁸ The tax and fiscal incentives, disincentives or fees may include: customs and excise waiver in respect of imported capital goods which prevent or substantially reduce environmental degradation caused by an undertaking; tax rebates to industries or other establishments that invest in plants, equipment and machinery for pollution control, recycling of wastes, water harvesting and conservation, prevention of floods and for using other energy resources as substitutes for hydrocarbons; tax disincentives to deter bad environmental behaviour that leads to depletion of environmental resources or that cause pollution; or user fees to ensure that those who use environmental resources pay proper value for the utilization of such resources.⁶⁹ EMCA also provides for Strategic Environmental Assessments⁷⁰; Environmental Impact Assessment⁷¹; Environmental Audit⁷²; and Environmental Monitoring⁷³, all of which are meant to protect the environment from environmentally degrading human activities.

b. Climate Change Action Plan 2018–2022

The Climate Change Action Plan 2018–2022⁷⁴ aims to further Kenya’s development goals by providing mechanisms and measures that achieve low carbon climate resilient development. NCCAP 2018-2022 builds on the first action plan (2013-2017), sets out actions to implement the Climate Change Act (2016), and provides a framework for Kenya to deliver on its Nationally Determined Contribution (NDC) to the Paris Agreement.⁷⁵

⁶⁸Environmental Management and Co-ordination Act, sec. 57(1).

⁶⁹ Ibid, sec. 57(2).

⁷⁰ Ibid, sec. 57A.

⁷¹ Ibid, sec. 58.

⁷² Ibid, sec. 68.

⁷³ Ibid, sec. 69.

⁷⁴ Government of the Republic of Kenya (2018). *National Climate Change Action Plan 2018-2022*. Ministry of Environment and Forestry, Nairobi.

⁷⁵ National Climate Change Action Plan: 2018-2022, p.4.

c. Climate Change Act, 2016

The Climate Change Act 2016⁷⁶ was enacted to provide 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.⁷⁷ The Act is to be applied for the development, management, implementation and regulation of mechanisms to enhance climate change resilience and low carbon development for the sustainable development of Kenya.⁷⁸

9.3.2.1 Climate Change Mitigation in Kenya: Challenges and Prospects

Africa is classified as one of the continents highly vulnerable to climate change due to several reasons: high poverty level, high dependence on rain-fed agriculture, poor management of natural resources, capacity/technology limitations, weak infrastructure, and less efficient governance/institutional setup.⁷⁹ Arguably, Kenya's challenges as far as combating climate change is concerned are not any different from the ones identified above.

Climate change impacts and the associated socio-economic losses on Kenya have been exacerbated by the country's high dependence on climate sensitive natural resources.⁸⁰ The main climate hazards include droughts and floods which cause economic losses estimated at 3% of the country's Gross Domestic Product (GDP) while Kenya's total greenhouse gas (GHG) emissions are relatively low, out of which 75% are from the land use, land-use change and forestry and agriculture sectors.⁸¹ Kenya's Vision 2030 which seeks to convert the country into a newly industrialized middle income country by 2030 is expected to increase emissions from the energy sector.⁸²

⁷⁶ Climate Change Act, No. 11 of 2016, Laws of Kenya.

⁷⁷ Ibid, Preamble.

⁷⁸ Ibid, sec. 3(1).

⁷⁹ Kimaro, Didas N., Alfred N. Gichu, Hezron Mogaka, Brian E. Isabirye, and Kifle Woldearegay. "Climate Change Mitigation and Adaptation in ECA/SADC/COMESA region: Opportunities and Challenges." <https://www.researchgate.net/publication/346628199_Climate_Change_Mitigation_and_Adaptation_in_ECASADCCOMESA_region_Opportunities_and_Challenges> accessed 17 January 2021.

⁸⁰ GoK, I. N. D. C. "Kenya's Intended Nationally Determined Contribution." (2015).

⁸¹ Ibid.

⁸² Ibid.

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Kenya's agricultural sector has been greatly affected by climate change and has also seen growth in use of farming chemicals. The growing population in Kenya coupled with dwindling rainfall and shrinking land parcels have all led to the adoption of modern commercial approaches to agricultural production to achieve food security which has coincidentally greatly contributed to environmental degradation and climate change.⁸³

As opposed to the highly commercialized agricultural practices, indigenous agriculture systems are believed to be diverse, adaptable, nature friendly and productive through such approaches as mixed cropping which not only decreases the risk of crop failure, pest and disease but also diversifies the food supply and the higher vegetation diversity in the form of crops and trees escalates the conversion of CO₂ to organic form, thus reducing global warming.⁸⁴

Kenya submitted its Intended Nationally Determined Contribution (INDC) in 2015 as part of its obligations as a signatory and party to the United Nations Framework Convention on Climate Change (UNFCCC).⁸⁵ Their implementation is to begin in this year 2021. Some of the challenges identified are related to technical capacity and financial resource gaps.⁸⁶ Kenya's updated Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC) submitted on 28th December 2020 sets out two important developments from its first NDC, which was submitted in December 2016. As compared to the first NDC target of 30% GHG emission reduction, the updated NDC commits to lower GHG

⁸³ Kioko, John, and Moses M. Okello. "Land use cover and environmental changes in a semi-arid rangeland, Southern Kenya." *Journal of Geography and Regional Planning* 3, no. 11 (2010): 322-326.

⁸⁴ Rinku Singh and GS Singh, 'Traditional Agriculture: A Climate-Smart Approach for Sustainable Food Production' (2017) 2 *Energy, Ecology and Environment* 296.

⁸⁵ SusWatch Kenya, 'Nationally Determined Contributions (NDCs) Implementation: The Kenyan Scenario,' *Policy Brief*, December 2019, 1
<https://www.inforse.org/africa/pdfs/PolicyBrief_Kenya_CS0_view_on_NDCs_Dec_2019.pdf> accessed 17 January 2021.

⁸⁶ Ibid.

emissions by 32% by 2030 relative to the business as usual (BAU) scenario.⁸⁷ In addition, while the first NDC was fully conditional to international support, the updated NDC intends to mobilize domestic resources to meet 13% of the estimated USD 62 Billion NDC implementation costs.⁸⁸

9.4. Combating Climate Change for Sustainable Development: Way Forward

9.4.1 International Cooperation on Climate Change Mitigation

The World Food Programme has in the recent past observed that the coronavirus crisis has shown how faster international action and better cooperation in areas like science and technology could help tackle the problem (food shortage and climate change).⁸⁹ There is a need for Kenya to work closely with other countries and stakeholders at the global level to combat climate change.

The Paris Agreement provides a framework for financial, technical and capacity building support to those countries that need it.⁹⁰ The Paris Agreement reaffirms that developed countries should take the lead in providing financial assistance to countries that are less endowed and more vulnerable, while for the first time also encouraging voluntary contributions by other Parties, as climate finance is needed for mitigation and adaptation.⁹¹ The Paris Agreement also encourages technology development and transfer for both improving resilience to climate change and reducing GHG emissions, by establishing a technology framework to provide

⁸⁷ 'NDC Update Kenya: Enhanced Reduction Target' (*Changing Transport*, 13 January 2021) <<https://www.changing-transport.org/ndc-update-kenya-enhanced-reduction-target/>> accessed 21 January 2021.

⁸⁸ Ibid.

⁸⁹ 'COVID-19 Caused Food Insecurity to Soar, But Climate Change Will Be Much Worse - Homeland Security Today' <<https://www.hstoday.us/subject-matter-areas/emergency-preparedness/covid-19-caused-food-insecurity-to-soar-but-climate-change-will-be-much-worse/>> accessed 17 January 2021.

⁹⁰ 'Untitled' <<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>> accessed 21 January 2021.

⁹¹ Ibid; see also UN General Assembly, *United Nations Framework Convention on Climate Change*, Article 11.

overarching guidance to the well-functioning Technology Mechanism.⁹² Also, in recognition of the fact that not all developing countries have sufficient capacities to deal with many of the challenges brought by climate change, 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.⁹³

Kenya's Government should also continually work closely with the UNEP in design and execution of climate change mitigation plans. UNEP assists countries all over the world in their efforts to create National Adaptation Plans (NAPs), which process seeks to identify medium- and long-term adaptation needs, informed by the latest climate science.⁹⁴ NAPs are meant to: reduce vulnerability to the impacts of climate change by building adaptive capacity and resilience; and integrate adaptation into new and existing policies and programmes, especially development strategies.⁹⁵

9.4.2 Integrated Approach to Reduction of Greenhouse Gases Emission

It has been argued that the Paris Agreement's goal of staying under 2° Celsius and aiming for 1.5°C global warming, as compared to pre-industrial average global temperature, scientifically translates to limiting emissions of greenhouse gases within a finite global carbon budget.⁹⁶

As already pointed out, greenhouse gas emissions account for the largest causes of anthropogenic climate change. It has been reported that globally, the economic slowdown during the coronavirus pandemic was expected to slash emissions by 4-7% in 2020, bringing them close to where global emissions were

⁹² Ibid.

⁹³ Ibid; 'Untitled' <<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement/key-aspects-of-the-paris-agreement>> accessed 21 January 2021.

⁹⁴ UN Environment, 'National Adaptation Plans' (UNEP - UN Environment Programme, 14 September 2017) <<http://www.unenvironment.org/explore-topics/climate-change/what-we-do/climate-adaptation/national-adaptation-plans>> accessed 21 January 2021.

⁹⁵ Ibid.

⁹⁶ 'Nature-Based Solutions for Better Climate Resilience: The Need to Scale up Ambition and Action | NDC Partnership' <<https://ndcpartnership.org/nature-based-solutions-better-climate-resilience-need-scale-ambition-and-action>> accessed 21 January 2021.

in 2010.⁹⁷ However, concentrations of greenhouse gases are still rising rapidly in the atmosphere.⁹⁸ Cutting down greenhouse gas emissions can potentially reduce the impacts and costs associated with climate change.⁹⁹

With the outbreak of COVID-19 pandemic, major cities around the world have reported an increase in the numbers of people cycling and walking in public spaces.¹⁰⁰ Cities such as Bogota, Berlin, Vancouver, New York, Paris and Berlin are reported to have expanded bike lanes and public paths to accommodate the extra cycling traffic, with Australia's New South Wales government also encouraging councils to follow suit.¹⁰¹ The result has been a decline in global daily emissions, with the fall in road traffic being the main driver of the global emissions decline.¹⁰² It is estimated that daily global CO₂ emissions decreased by -17% by early April 2020 compared with the mean 2019 levels, just under half from changes in surface transport.¹⁰³

The National and County Governments in Kenya could learn from these global trends and encourage more people to embrace cycling to and from work especially around major towns and the cities in Kenya by creating room for bike lanes and public paths as well as improving security in public places and enhancing road safety. This can potentially improve the country's chances of achieving climate mitigation due to the reduced daily emissions from traffic.

⁹⁷ Raymond C and Matthews T, 'Global Warming Now Pushing Heat into Territory Humans Cannot Tolerate' (*The Conversation*) <<http://theconversation.com/global-warming-now-pushing-heat-into-territory-humans-cannot-tolerate-138343>> accessed 17 January 2021.

⁹⁸ Ibid.

⁹⁹ UN Environment, 'Adaptation Gap Report 2020' (*UNEP - UN Environment Programme*, 9 January 2021) <<http://www.unenvironment.org/resources/adaptation-gap-report-2020>> accessed 20 January 2021; 'How to Boost Resilience to Climate Change - Adaptation Gap Report 2020 - YouTube' <<https://www.youtube.com/watch?v=KhZ16QPv2c&feature=youtu.be>> accessed 20 January 2021.

¹⁰⁰ Quéré CL and others, 'Coronavirus Is a "sliding Doors" Moment. What We Do Now Could Change Earth's Trajectory' (*The Conversation*) <<http://theconversation.com/coronavirus-is-a-sliding-doors-moment-what-we-do-now-could-change-earths-trajectory-137838>> accessed 17 January 2021.

¹⁰¹ Ibid.

¹⁰² Ibid.

¹⁰³ Le Quéré C and others, 'Temporary Reduction in Daily Global CO₂ Emissions during the COVID-19 Forced Confinement' (2020) 10 *Nature Climate Change* 647.

It has been suggested that encouraging cycling and working from home to continue beyond the current pandemic is likely to help countries in meeting their climate goals.¹⁰⁴

There is also a need for the country to embrace vehicle technology that emits less greenhouse gases such as electric vehicles and trains. While this will certainly require massive amount of investments and time, the investment will be worth it in the long run as far as reduction of greenhouse gas emissions is concerned.

The country has however shown some intended positive steps towards this. Notably, the transport sector makes up the biggest share of petroleum consumption in Kenya; as such about 67% of Kenya's energy-related CO₂ emissions and 11.3% of Kenya's total GHG emissions in 2015 came from transport-related activities (GHG inventory report, 2019).¹⁰⁵ Kenya thus seeks to implement low carbon and efficient transportation systems in its December 2020 updated NDC. These are: Upscaling the construction of roads to systematically harvest water and reduce flooding; Enhancing institutional capacities on climate proofing vulnerable road infrastructure through vulnerability assessments; and Promoting use of appropriate designs and building materials to enhance resilience of at least 4500 km of roads to climate risks.¹⁰⁶ Key actions for the transport sector include: Developing an affordable, safe and efficient public transport system, including a Bus Rapid Transit System in Nairobi and non-motorized transport facilities; Reducing fuel consumption and fuel overhead costs, including electrification of the Standard Gauge Railway; Encouraging low-carbon technologies in the aviation and maritime sectors; Climate proofing transport infrastructure; Encouraging technologies such as development of electric modes of transport and research on renewable energy for powering different modes of transport; Creating awareness on issues such as fuel economy and electric mobility options;

¹⁰⁴Quéré CL and others, 'Coronavirus Is a "sliding Doors" Moment. What We Do Now Could Change Earth's Trajectory' (*The Conversation*).

¹⁰⁵'NDC Update Kenya: Enhanced Reduction Target' (*Changing Transport*, 13 January 2021) <<https://www.changing-transport.org/ndc-update-kenya-enhanced-reduction-target/>> accessed 21 January 2021.

¹⁰⁶ Ibid.

Putting enabling policies and regulations in place to facilitate implementation of the mitigation and adaptation actions.¹⁰⁷

There is also a need for the country to continually invest in renewable sources of energy such as solar, wind power, biogas, among others.¹⁰⁸ The reduction of GHG emissions can also be done through, inter alia, involving the communities in nature-based solutions to reduce the emissions gap such as improved land use and management which may include low-emissions agriculture, agro-forestry, and ecosystem conservation and restoration all of which could achieve this task if properly implemented.¹⁰⁹ Nature-based solutions combine climate change mitigation, adaptation, disaster risk reduction, biodiversity conservation, and sustainable resource management.¹¹⁰

Reducing Emissions from Deforestation and Forest Degradation (REDD) is a mechanism that has been under negotiation by the United Nations Framework Convention on Climate Change (UNFCCC) since 2005, with the objective of mitigating climate change through reducing net emissions of greenhouse gases through enhanced forest management, mostly in the developing countries.¹¹¹ Forests play an important role in reducing GHG emissions. The Constitution of Kenya 2010 obligates the State to ensure that the country achieves a land surface tree cover of at least 10 per cent.¹¹² It has been observed

¹⁰⁷ Ibid.

¹⁰⁸ Muigua, K., Exploring Alternative Sources of Energy in Kenya, *Journal of Conflict Management and Sustainable Development*, Volume 5, No 2, (October, 2020); Muigua, K., Towards Energy Justice in Kenya, February 2020, available at <http://kmco.co.ke/wp-content/uploads/2020/01/Towards-Energy-Justice-in-Kenya.pdf>; Muigua, K., Access to Energy as a Constitutional Right in Kenya, available at <http://www.kmco.co.ke/attachments/article/118/Access%20to%20Energy%20as%20a%20Constitutional%20Right%20in%20Kenya-%20NOVEMBER%202013.pdf>.

¹⁰⁹ 'Nature-Based Solutions for Better Climate Resilience: The Need to Scale up Ambition and Action | NDC Partnership' <<https://ndcpartnership.org/nature-based-solutions-better-climate-resilience-need-scale-ambition-and-action>> accessed 21 January 2021.

¹¹⁰ Ibid.

¹¹¹ Kimaro, Didas N., Alfred N. Gichu, Hezron Mogaka, Brian E. Isabirye, and Kifle Woldearegay. "Climate Change Mitigation and Adaptation in ECA/SADC/COMESA region: Opportunities and Challenges," 4.

¹¹² Article 69 (1), Constitution of Kenya 2010.

that past attempts to increase forest cover and address the problem of deforestation and forest degradation in the country have not been very successful due to a number of reasons: increasing demand for land for agriculture, settlement and other developments, high energy demand and inadequate funding to support investments in the forestry sector.¹¹³In order to overcome these challenges, Kenya's participation in REDD+ is premised on the conviction that the process holds great potential in supporting: realization of vision 2030 objectives of increasing forest cover to a minimum of 10%; access to international climate finance to support investments in the forestry sector; Government efforts in designing policies and measures to protect and improve its remaining forest resources in ways that improve local livelihoods and conserve biodiversity; realization of the National Climate Change Response Strategy (NCCRS) goals; and contribution to global climate change mitigation and adaptation efforts.¹¹⁴

These efforts coupled with lifestyle changes and investments in cleaner technologies can potentially reduce greenhouse gases emission in Kenya thus enabling the country to meet and even exceed its global country targets.

9.4.3 Inclusion of Communities in Climate Change Impact Reduction and Early Warning Systems

The United Nations describes early warning system as an adaptive measure for climate change, using integrated communication systems to help communities prepare for hazardous climate-related events.¹¹⁵

Such systems are meant to saves lives and jobs, land and infrastructures and supports long-term sustainability, as well as assisting public officials and administrators in their planning, saving money in the long run and protecting economies.¹¹⁶

¹¹³Kimaro, Didas N., Alfred N. Gichu, Hezron Mogaka, Brian E. Isabirye, and Kifle Woldearegay. "Climate Change Mitigation and Adaptation in ECA/SADC/COMESA region: Opportunities and Challenges," 16.

¹¹⁴ Ibid.

¹¹⁵ United Nations, 'Early Warning Systems' (*United Nations*) <<https://www.un.org/en/climatechange/climate-solutions/early-warning-systems>> accessed 20 January 2021.

¹¹⁶ Ibid.

The United Nation, working in diverse partnerships, has been putting in place a number of innovative early warning systems initiatives in vulnerable areas around the world, such as the Strengthening Climate Information and Early Warning Systems (SCIEWS) project, which is a comprehensive programme operating across Africa, Asia and the Pacific, meant to ensure preparedness and rapid response to natural disasters, using a model that integrates the components of risk knowledge, monitoring and predicting, dissemination of information and response to warnings.¹¹⁷

Such systems should actively and meaningfully involve local communities, because as it has been observed, indigenous people are good observers of changes in weather and climate and acclimatize through several adaptive and mitigation strategies.¹¹⁸

9.4.4 Environmental Education and Creating Awareness on Climate Change Mitigation and Resilience

It has been argued that it is critically important to be aware of the geologic context of climate change processes if we are to understand the anthropogenic (human-caused) climate change because, firstly, this awareness increases the understanding of how and why our activities are causing present-day climate change, and secondly, it allows us to distinguish between natural and anthropogenic processes in the climate record in the past.¹¹⁹

Resilience has been defined as the ability to deal with shocks and stress without crossing tipping points and applies to human and environmental systems, from individual households to financial systems, ecosystems, and the biosphere as a whole. Resilience also includes the capacity to adapt to the change, that is, to deal with change without crossing a threshold, and the

¹¹⁷ Ibid.

¹¹⁸ Rinku Singh and GS Singh, 'Traditional Agriculture: A Climate-Smart Approach for Sustainable Food Production' (2017) 2 Energy, Ecology and Environment 296.

¹¹⁹ '15.1: Global Climate Change' (*Geosciences LibreTexts*, 26 December 2019) <[https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_\(Johnson_Affolter_Inkenbrandt_and_Mosher\)/15%3A_Global_Climate_Change/15.01%3A_Global_Climate_Change](https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_(Johnson_Affolter_Inkenbrandt_and_Mosher)/15%3A_Global_Climate_Change/15.01%3A_Global_Climate_Change)> accessed 17 January 2021.

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ability to transform in situations of crises – essentially, the capacity to rebuild livelihoods or functioning ecosystems after crossing a tipping point.¹²⁰

For mitigation planning, the primary goal is to reduce current and future direct and indirect GHG emissions, particularly from energy production, land use, waste, industry, the built environment infrastructure, and transportation.¹²¹ The primary goal of adaptation is to adjust the built, social, and eco-logical environment to minimize the negative impacts of both slow-onset and extreme events caused by climate change, such as sea-level rise, floods, droughts, storms, and heat waves.¹²²

Arguably, conservation, restoration, and the management of ecosystems play a crucial role in climate change mitigation (for instance, through land use forms that maintain carbon stocks, carbon sequestration and the reduction of greenhouse gas emissions), which practices can be important for climate change adaptation, buffering societies from the impacts of climate change and reducing disaster risk.¹²³

There is a need for government bodies in charge of various but relevant sectors to work closely with communities as a way of creating awareness on how their day to day activities are likely to affect the environment and the climatic conditions in general. Dissemination of environmental knowledge as well as

¹²⁰ 'Nature-Based Solutions for Better Climate Resilience: The Need to Scale up Ambition and Action | NDC Partnership' <<https://ndcpartnership.org/nature-based-solutions-better-climate-resilience-need-scale-ambition-and-action>> accessed 21 January 2021.

¹²¹Grafakos, S., Pacteau, C., Delgado, M., Landauer, M., Lucon, O., and Driscoll, P. (2018). Integrating mitigation and adaptation: Opportunities and challenges. In Rosenzweig, C., W. Solecki, P. Romero-Lankao, S. Mehrotra, S. Dhakal, and S. Ali Ibrahim (eds.), *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network*. Cambridge University Press. New York. 101–138, 103 < https://uccrn.ei.columbia.edu/sites/default/files/content/pubs/ARC3.2-PDF-Chapter-4-Mitigation-and-Adaptation-wecompress.com_.pdf> accessed 17 January 2021.

¹²² Ibid.

¹²³ 'Nature-Based Solutions for Better Climate Resilience: The Need to Scale up Ambition and Action | NDC Partnership' <<https://ndcpartnership.org/nature-based-solutions-better-climate-resilience-need-scale-ambition-and-action>> accessed 21 January 2021.

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creating opportunities for collaborative approaches to combating climate change can go a long way in not only mitigation and adaptation measures but also creating resilient economies and livelihoods. Arguably, in many decision-making processes, perceptions matter more than facts because how we feel about a risk (subjective perceptions of risk) influences what we pay attention to in complicated situations and how we approach and solve problems. Failure to acknowledge this may create and widen the gap between what experts perceive as risk and what the public perceives as risk.¹²⁴

Climate change knowledge should also be incorporated into the primary, secondary and all tertiary level curricula in order to inculcate a sense of environmental ethics in all people from an early age and to ensure that the knowledge acquired will go a long way in combating climate change.

These efforts should be guided by, inter alia, Article 6 of UNFCCC which states that: in carrying out their commitments under Article 4, paragraph 1 (i), the Parties shall: Promote and facilitate at the national and, as appropriate, sub-regional and regional levels, and in accordance with national laws and regulations, and within their respective capacities: (i) the development and implementation of educational and public awareness programmes on climate change and its effects; (ii) public access to information on climate change and its effects; (iii) public participation in addressing climate change and its effects and developing adequate responses; and (iv) training of scientific, technical and managerial personnel; Cooperate in and promote, at the international level, and, where appropriate, using existing bodies: (i) the development and exchange of educational and public awareness material on climate change and its effects; and (ii) the development and implementation of education and training programmes, including the strengthening of national institutions and

¹²⁴Grafakos, S., Pacteau, C., Delgado, M., Landauer, M., Lucon, O., and Driscoll, P. (2018). Integrating mitigation and adaptation: Opportunities and challenges. In Rosenzweig, C., W. Solecki, P. Romero-Lankao, S. Mehrotra, S. Dhakal, and S. Ali Ibrahim (eds.), *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network*. Cambridge University Press. New York. 101–138, 133.

the exchange or secondment of personnel to train experts in this field, in particular for developing countries.¹²⁵

9.4.5 Integrating Traditional Knowledge with Mainstream Scientific Knowledge for Climate Mitigation and Adaptation

The Organisation for Economic Co-operation and Development (OECD), countries can use technological change to address climate change without compromising economic growth through ensuring that their climate and innovation policies provide the right incentives for the development and diffusion of “climate-friendly” technologies.¹²⁶ OECD recommends that this can be achieved through, inter alia: providing predictable and long-term policy signals in order to give potential innovators and adopters of climate-friendly technologies the confidence to undertake the necessary investments; using flexible policy measures to give potential innovators incentives to identify the best way to meet climate objectives, and to avoid locking-in technologies that may become inefficient in future; putting a price on Green House Gas (GHG) emissions, for example through taxes or tradable permits, in order to provide incentives across all stages of the innovation cycle; providing an appropriate mix and sequencing of complementary policy measures in order to overcome barriers to development and diffusion of breakthrough technologies; balancing the benefits of technology-neutral policies with the need to direct technological change toward climate-saving trajectories, by diversifying the portfolio of technologies for which support is provided and identifying general purpose technologies with environmental benefits; since the sources of innovation are widely-dispersed, supporting research and development in a broad portfolio of complementary fields, and not just energy, “climate-friendly” or 'environmental' Research and development (R&D); ensuring that international policy efforts maximize the potential for sharing of knowledge and technologies of mutual benefit, for example through international research-sharing agreements; and supporting international

¹²⁵ UN General Assembly, *United Nations Framework Convention on Climate Change*, Article 6.

¹²⁶ OECD, 'Promoting Technological Innovation to Address Climate Change,' (November 2011), 1 <<http://www.oecd.org/env/cc/49076220.pdf>> accessed 17 January 2021.

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technology-oriented agreements as an important complement to other international efforts (e.g. emissions-based agreements).¹²⁷

Kenya should review and align her science and technological innovation policies to the above recommendations from the OECD in order to ensure their maximum effectiveness in promoting innovation as a tool for combating climate change in the country. Indeed, the starting point should be the Constitution of Kenya. The Constitution of Kenya 2010 obligates the State to, *inter alia*: promote science and 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.¹²⁸

EMCA calls for integration of traditional knowledge for the conservation of biological diversity with mainstream scientific knowledge in conservation of conservation of biological resources *in situ*.¹²⁹ Investments in incentivized mitigation programmes, especially in agriculture and forestry, can offer mitigation benefits, increased productivity, improved livelihoods, biodiversity conservation and increased resilience to climate change.¹³⁰

The *Science, Technology and Innovation Act, 2013*¹³¹ was enacted to facilitate the promotion, co-ordination and regulation of the progress of science, technology and innovation of the country; to assign priority to the development of science, technology and innovation; to entrench science, technology and innovation into the national production system and for connected purposes.¹³² The Act acknowledges that reference to “innovation” under the Act includes ‘indigenous or traditional knowledge by community of beneficial properties of land, natural resources, including plant and animal resources and the environment’, where “traditional knowledge” means the wisdom developed

¹²⁷ Ibid, 1.

¹²⁸ Article 11(2), Constitution of Kenya, 2010.

¹²⁹ EMCA, sec. 51(f).

¹³⁰ Kimaro, Didas N., Alfred N. Gichu, Hezron Mogaka, Brian E. Isabirye, and Kifle Woldearegay. "Climate Change Mitigation and Adaptation in ECA/SADC/COMESA region: Opportunities and Challenges," 4.

¹³¹ Science, Technology and Innovation Act, No. 28 of 2013, Laws of Kenya.

¹³² Ibid, Preamble.

over generations of holistic traditional scientific utilization of the lands, natural resources, and environment.¹³³

The Act establishes the National Commission for Science, Technology and Innovation (NACOSTI)¹³⁴ whose objective is to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.¹³⁵ The Government, through NACOSTI should work closely with all learning institutions as well as stakeholders in the informal sector to not only tap into the innovations but to also identify the challenges

¹³³ Ibid, sec. 2; see also *Protection of Traditional Knowledge and Cultural Expressions Act*, No. 33 of 2016, Laws of Kenya.

¹³⁴ Ibid, sec. 3.

¹³⁵ Ibid. sec. 4. The functions of the Commission as set out under section 6 thereof are to: develop, in consultation with stakeholders, the priorities in scientific, technological and innovation activities in Kenya in relation to the economic and social policies of the Government, and the country's international commitments; lead inter-agency efforts to implement sound policies and budgets, working in collaboration with the county governments, and organisations involved in science and technology and innovation within Kenya and outside Kenya; advise the national and county governments on the science, technology and innovation policy, including general planning and assessment of the necessary financial resources; liaise with the National Innovation Agency and the National Research Fund to ensure funding and implementation of prioritized research programmes; ensure co-ordination and co-operation between the various agencies involved in science, technology and innovation; accredit research institutes and approve all Scientific research in Kenya; assure relevance and quality of science, technology and innovation programmes in research institutes; advise on science education and innovation at both basic and advanced levels; in consultation with the National Research Fund Trustees, sponsor national scientific and academic conferences it considers appropriate; advise the Government on policies and any issue relating to scientific research systems; promote increased awareness, knowledge and information of research system; co-ordinate, monitor and evaluate, as appropriate, activities relating to scientific research and technology development; promote and encourage private sector involvement in scientific research and innovation and development; annually, review the progress in scientific research systems and submit a report of its findings and recommendations to the Cabinet Secretary; promote the adoption and application of scientific and technological knowledge and information necessary in attaining national development goals; develop and enforce codes, guidelines and regulations in accordance with the policy determined under this Act for the governance, management and maintenance of standards and quality in research systems; and undertake, or cause to be undertaken, regular inspections, monitoring and evaluation of research institutions to ensure compliance with set standards and guidelines.

that are affecting the growth and development of this sector. Science and technological innovation should be encouraged through adequate funding as well as fiscal incentives and ensuring that there is a ready market for the same. If the Government can work with the locals, they will not only promote the development of science but will also create an opportunity to utilize the local innovations and ideas especially in environmental areas to combat climate change. NACOSTI should also closely work with the Kenya Institute for Public Policy Research and Analysis whose main functions include: identifying and undertaking independent and objective programmes of research and analysis, including macroeconomic, inter-disciplinary and sectoral studies on topics affecting public policy in areas such as human resource development, social welfare, environment and natural resources, agriculture and rural development, trade and industry, public finance, money and finance, macroeconomic and microeconomic modelling.¹³⁶ While coming up with approaches for reducing the country's climate risk and exposure to the main types of climate hazard, their design, implementation and management may and should indeed draw on local and traditional, as well as expert knowledge. Arguably, nature-based solutions - locally appropriate actions that address societal challenges, such as climate change, and provide human well-being and biodiversity benefits by protecting, sustainably managing and restoring natural or modified ecosystems - must become a priority when the government is coming up with solutions to the climate change challenges, with youth, women, indigenous peoples and local communities being key stakeholders.¹³⁷ It has rightly been pointed out that traditional knowledge is holistic in nature due to its multitude applications in diverse fields such as agriculture, climate, soils, hydrology, plants, animals, forests and human health.¹³⁸

¹³⁶ Kenya Institute for Public Policy Research and Analysis Act, No. 15 of 2006, Laws of Kenya, sec. 6(b).

¹³⁷ UN Environment, 'Adaptation Gap Report 2020' (UNEP - UN Environment Programme, 9 January 2021) <<http://www.unenvironment.org/resources/adaptation-gap-report-2020>> accessed 20 January 2021.

¹³⁸ Rinku Singh and GS Singh, 'Traditional Agriculture: A Climate-Smart Approach for Sustainable Food Production' (2017) 2 Energy, Ecology and Environment 296.

The above listed recommendations by the OECD should provide cue when it comes to creating a conducive policy and legal environment for science and innovation.

9.4.6 Diversification of Economic Activities for Poverty Eradication and Climate Change Mitigation and Adaptation

The World Bank observed in December 2020 that, considering that “the pandemic and global recession may cause over 1.4% of the world’s population to fall into extreme poverty, in order to reverse this serious setback to development progress and poverty reduction, countries will need to prepare for a different economy post-COVID, by allowing capital, labour, skills, and innovation to move into new businesses and sectors.”¹³⁹

A chief scientist at the U.N. Food and Agriculture Organization (FAO) was recorded in 2020 affirming that farmers and poor urban residents have so far borne the brunt of the COVID-19 pandemic, meaning inequality between and within countries could deepen further in 2021.¹⁴⁰ This was mainly attributed to the fact that cut off from markets and with a plunge in customer demand, farmers struggled to sell their produce while informal workers in urban areas, living hand to mouth, found themselves jobless as lockdowns were imposed.¹⁴¹ While the United Nations Sustainable Development Goals set to end hunger by 2030, the World Bank has observed that the COVID-19 pandemic is estimated to have pushed an additional 88 million to 115 million people into extreme poverty in the year 2020, with the total rising to as many as 150 million by 2021, depending on the severity of the economic contraction.¹⁴²

¹³⁹ ‘COVID-19 to Add as Many as 150 Million Extreme Poor by 2021’ (World Bank) <<https://www.worldbank.org/en/news/press-release/2020/10/07/covid-19-to-add-as-many-as-150-million-extreme-poor-by-2021>> accessed 17 January 2021.

¹⁴⁰ ‘COVID-19 Caused Food Insecurity to Soar, But Climate Change Will Be Much Worse - Homeland Security Today’ <<https://www.hstoday.us/subject-matter-areas/emergency-preparedness/covid-19-caused-food-insecurity-to-soar-but-climate-change-will-be-much-worse/>> accessed 17 January 2021.

¹⁴¹ Ibid.

¹⁴² ‘COVID-19 to Add as Many as 150 Million Extreme Poor by 2021’ (World Bank) <<https://www.worldbank.org/en/news/press-release/2020/10/07/covid-19-to-add-as-many-as-150-million-extreme-poor-by-2021>> accessed 17 January 2021.

There is a need for countries, including Kenya, to create a conducive environment that will allow their citizens to invest and explore new and emerging sectors such as information technology, science and technology, among others. This should target both urban and rural dwellers. This is because the World Bank has estimated that with the effects of COVID-19 expected to continue, increasing numbers of urban dwellers are expected to fall into extreme poverty, which has traditionally affected people in rural areas.¹⁴³

9.4.7 Embracing Climate Resilient Agricultural Production Methods for Climate Change Mitigation and Poverty Reduction

It has rightly been pointed out that sustainable food production poses one of the major challenges of the twenty-first century in the era of global environmental problems such as climate change, increasing population and natural resource degradation including soil degradation and biodiversity loss, with climate change being among the greatest threats to agricultural systems.¹⁴⁴

The adverse effect of agriculture on the environment and climate change (contributors of global warming through a share of about 10–12% increase in total anthropogenic GHG emission) has largely been attributed to the Green Revolution which though multiplied agricultural production several folds jeopardized the ecological integrity of agro ecosystems by intensive use of fossil fuels, natural resources, agrochemicals and machinery and subsequently threatened the age-old traditional agricultural practices.¹⁴⁵

Arguably, achieving the goals of eradicating hunger and poverty by 2030 while addressing the climate change impacts need a climate-smart approach in agriculture, an approach based on the objectives of sustainably enhancing food production, climate adaptation and resilience and reduction in GHGs emission.¹⁴⁶

¹⁴³Ibid.

¹⁴⁴ Rinku Singh and GS Singh, 'Traditional Agriculture: A Climate-Smart Approach for Sustainable Food Production' (2017) 2 Energy, Ecology and Environment 296.

¹⁴⁵ Ibid.

¹⁴⁶ Ibid.

Arguably, the negative impacts of climate change on production, incomes and well-being can be avoided or ameliorated through adaptation, which includes changes in agricultural practices as well as broader measures such as improved weather and early warning systems and risk management approaches.¹⁴⁷ Climate smart agriculture is described as an approach that provides a conceptual basis for assessing the effectiveness of agricultural practice change to support food security under climate change, with particular attention to sustainable land management.¹⁴⁸

It has also been suggested that traditional practices like agro forestry, intercropping, crop rotation, cover cropping, traditional organic composting and integrated crop-animal farming all have potentials for enhancing crop productivity and mitigating climate change considering that indigenous farmers and local people perceive climate change in their own ways and prepare for it through various adaptation practices.¹⁴⁹

The Government and other stakeholders should work closely with farmers to identify and explore the available opportunities for farmers to engage in sustainable farming practices, informed by both science and indigenous knowledge.

9.5 Conclusion

It has been observed that responding to climate change, reducing rural poverty and achieving global food and nutrition security are three urgent and interlinked problems facing the global community today.¹⁵⁰ The biggest threat to the 2030 Agenda is climate change, where the Sustainable Development Goals, from poverty eradication and ending hunger to conserving biodiversity

¹⁴⁷ McCarthy, N., Brubaker, J. 2014, *Climate-Smart Agriculture and resource tenure in Sub-Saharan Africa: a conceptual framework*, Rome, FAO, 6.

¹⁴⁸ Ibid, 6.

¹⁴⁹ Rinku Singh and GS Singh, 'Traditional Agriculture: A Climate-Smart Approach for Sustainable Food Production' (2017) 2 *Energy, Ecology and Environment* 296.

¹⁵⁰ McCarthy, N., Brubaker, J. 2014, *Climate-Smart Agriculture and resource tenure in Sub-Saharan Africa: a conceptual framework*, Rome, FAO, 6 <https://www.researchgate.net/publication/279912013_Climate_Smart_Agriculture_and_Resource_Tenure_in_sub-Saharan_Africa_A_Conceptual_Framework>accessed 17 January 2021.

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and peace, will be unattainable if climate change is not urgently addressed.¹⁵¹ Before the outbreak of Corona Virus pandemic, SDG Goal 13 aimed to mobilize US\$100 billion annually by 2020 to address the needs of developing countries to both adapt to climate change and invest in low-carbon development.¹⁵² However, as things stand currently, countries also have to contend with the Covid-19 pandemic, further complicating the situation.

This chapter has put across the argument is that for the country to combat climate change, there is a need for an integrated approach that meaningfully involves all the stakeholders. While it has been acknowledged that efforts to mitigate climate change require political action¹⁵³, Governments alone cannot possibly achieve this task. Climate change mitigation is an important step towards achieving sustainability in the country, without which the realisation of both the country's Vision 2030 and the United Nation's 2030 Agenda for Sustainable Development will remain a mirage. There is a need to adopt mitigation and adaptation approaches to address climate change. While mitigation and adaptation policies have different goals and opportunities for implementation, many drivers of mitigation and adaptation are common, and solutions can be interrelated.¹⁵⁴

¹⁵¹ 'Aligning SDG and Climate Action' (*Sustainable Goals*, 18 June 2019) <<https://www.sustainablegoals.org.uk/aligning-sdg-and-climate-action/>> accessed 21 January 2021.

¹⁵² 'Goal 13: Climate Action' (*UNDP*) <<https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-13-climate-action.html>> accessed 21 January 2021.

¹⁵³ '15.5: Anthropogenic Causes of Climate Change' (*Geosciences LibreTexts*, 4 November 2019)

<[https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_\(Johnson_Affolter_Inkenbrandt_and_Mosher\)/15%3A_Global_Climate_Change/15.05%3A_Anthropogenic_Causes_of_Climate_Change](https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_(Johnson_Affolter_Inkenbrandt_and_Mosher)/15%3A_Global_Climate_Change/15.05%3A_Anthropogenic_Causes_of_Climate_Change)> accessed 17 January 2021.

¹⁵⁴ Grafakos, S., Pacteau, C., Delgado, M., Landauer, M., Lucon, O., and Driscoll, P. (2018). Integrating mitigation and adaptation: Opportunities and challenges. In Rosenzweig, C., W. Solecki, P. Romero-Lankao, S. Mehrotra, S. Dhakal, and S. Ali Ibrahim (eds.), *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network*. Cambridge University Press. New York. 101–138, 102 <https://uccrn.ei.columbia.edu/sites/default/files/content/pubs/ARC3.2-PDF-Chapter-4-Mitigation-and-Adaptation-wecompress.com_.pdf> accessed 17 January 2021.

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According to the *IPCC Fifth Assessment Report*:¹⁵⁵

“[T]he more human activities disrupt the climate, the greater the risks of severe, pervasive and irreversible impacts for people and ecosystems... [W]e have the means to limit climate change and its risks, with many solutions that allow for continued economic and human development. However, stabilizing temperature increase to below 2°C relative to pre-industrial levels will require an urgent and fundamental departure from business as usual.”

Combating climate for Sustainable Development in Kenya is indeed a goal that is achievable.

¹⁵⁵ ‘The Intergovernmental Panel on Climate Change’ (MIT Climate Portal) <<https://climate.mit.edu/explainers/intergovernmental-panel-climate-change>> accessed 21 January 2021.

CHAPTER TEN

Sustainable Forests Management for Current and Future Generations

10.1. Introduction

This chapter critically discusses how taking care of forests can positively contribute to climate change mitigation as part of achieving sustainable development for a better tomorrow. Arguably, continued deterioration of forest areas and the ever growing threat of climate change is likely to affect human life, thus creating the need for combating both. The author argues that taking care of forests is not only important in climate change mitigation but also a key step towards conservation of the rich biodiversity to be found in forest areas and preserving source of livelihood for the people.

It has rightly been pointed out that in particular, the rural poor, young people, and women, investing in forests and forestry is an investment in people and their means of subsistence. An estimated 1.6 billion people, including more than 2,000 indigenous groups, rely on forests for their survival. As the habitat for more than 80% of the terrestrial species of animals, plants, and insects, forests are the most biologically diverse ecosystems on land. In addition, they give communities that depend on the forest shelter, employment, and security.¹ The future supply of ecosystem services by forests, such as carbon storage, wood production, animal habitats, and hydrological cycle management, will be significantly impacted by how they adapt to climatic variability.² Due to climate change, there are more severe droughts happening more frequently in various parts of the world. Forest function and structure are changed by droughts.³

¹ 'Forests | Department of Economic and Social Affairs' <<https://sdgs.un.org/topics/forests#publications>> accessed 15 March 2023.

² Zhang, T., Niinemets, Ü., Sheffield, J. and Lichstein, J.W., "Shifts in tree functional composition amplify the response of forest biomass to climate." *Nature* 556, no. 7699 (2018): 99-102, at p. 99.

³ Bennett, A.C., McDowell, N.G., Allen, C.D. and Anderson-Teixeira, K.J., 'Larger Trees Suffer Most during Drought in Forests Worldwide' (2015) 1 *Nature Plants* 15139 <<https://www.nature.com/articles/nplants2015139>> accessed 17 March 2023.

This chapter critically discusses the relationship between climate change and forests and offers recommendations on how climate change mitigation can be promoted through enhanced sustainable forests management.

10.2. Climate Change and the Forests: The Link

Kenya's Climate Change Act 2016⁴ was enacted to provide 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. The Act defines "climate change" to mean a change in the climate system which is caused by significant changes in the concentration of greenhouse gases as a consequence of human activities and which is in addition to natural climate change that has been observed during a considerable period.⁵

Being a major source of terrestrial biodiversity and a net sink for atmospheric carbon, forests play a crucial role in maintaining the health of global ecosystems. Many ecological services that trees offer, along with others, may be vulnerable to both short-term climatic fluctuation and climate change.⁶

The United Nations 2030 Agenda for Sustainable Development Goals under Goal 15 seeks 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'.⁷ Natural catastrophes, such as floods, droughts, landslides, and other catastrophic occurrences, are far less likely to occur when there are more forests. Forests help to maintain the air's balance of oxygen, carbon dioxide, and humidity on a global scale, as

⁴ Climate Change Act, No. 11 of 2016, Laws of Kenya.

⁵ Sec. 2, Climate Change Act, 2016.

⁶ Zhang, T., Niinemets, Ü., Sheffield, J. and Lichstein, J.W., "Shifts in tree functional composition amplify the response of forest biomass to climate." *Nature* 556, no. 7699 (2018): 99-102.

⁷ 'Goal 15: Protect, Restore and Promote Sustainable Use of Terrestrial Ecosystems, Sustainably Manage Forests, Combat Desertification, and Halt and Reverse Land Degradation and Halt Biodiversity Loss – SDG Indicators' <<https://unstats.un.org/sdgs/report/2016/goal-15/>> accessed 6 March 2023.

well as to safeguard watersheds that provide 75% of the world's freshwater. This is achieved through sequestering carbon from the atmosphere.⁸

10.3. Combating Climate Change: Saving Our Forests for Today and Tomorrow

This section offers some viable recommendations that can greatly contribute to sustainable management of forests as a step towards climate change mitigation.

10.3.1. Enhancement of Public-Private Collaborations in Forests Conservation and Climate Change Mitigation

Notably, the Forest Conservation and Management Act 2016 provides that the Kenya Forest Service may, whenever circumstances make it necessary or appropriate to do so, invite the private sector to participate in the sustainable management of forests under their jurisdiction. For this, the Service may issue authorisations for forestry activities in form of – a permit; a timber licence; a special use licence; a contract; a joint management agreement; or a concession agreement.⁹ It is worth exploring these collaborations as a way of enhancing sustainable forest management and conservation, where public-private partnerships are here defined as: “collaborative arrangements in which actors from two or more spheres of society (state, market, and/or civil) are involved in a non-hierarchical process, and through which these actors strive for a sustainability goal”.¹⁰

It has been argued that these collaborations can enhance all the three aspects of sustainability, albeit at different levels. Outcomes of such collaborations can thus be divided broadly into three types: social, ecological and economic. This is in line with the understanding that the concept of sustainable development has evolved over the years:

⁸ ‘Forests | Department of Economic and Social Affairs’
<<https://sdgs.un.org/topics/forests#publications>> accessed 14 March 2023.

⁹ Sec. 56(1) (2), Forest Conservation and Management Act 2016.

¹⁰ Bjärstig T, ‘Does Collaboration Lead to Sustainability? A Study of Public-Private Partnerships in the Swedish Mountains’ (2017) 9 Sustainability 1685.

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- a. Social aspect: Respecting human rights and providing equal opportunity for everyone in society is a key component of sustainability. With an emphasis on reducing poverty, it necessitates an equal distribution of resources. There is a focus on local communities, including preserving and enhancing their life support systems, acknowledging and respecting other cultures, and averting all forms of exploitation. Hence, social outcomes comprise social capital, trust, increased equity, and raised living standards.¹¹
 - b. "Ecological outcome" refers to the management and conservation of resources, particularly those that are finite or vital to maintaining life. Action must be taken to reduce pollution of the air, land, and water as well as to protect biological variety and the world's natural heritage. Natural resource conditions such as water quality, fish populations, biodiversity, improving green infrastructure, stopping soil erosion, etc. are examples of ecological outcomes.¹²
3. Economic success entails fostering wealth at all societal levels and addressing the cost-effectiveness of every economic activity. It is crucially about the capacity of businesses and activities to continue operating over the long term. Economic effects include the capacity of small businesses to compete locally, advancements in technology and efficiency, job prospects, and funding sources.¹³

The net effect of all these outcomes may be better living standards with alternative sources of income, which means reduced pressure on forests as well as more free land for reforestation. This will positively contribute to climate change mitigation through healthier forests as well as alleviation of poverty, which is key objective of Sustainable Development Goals. As has been correctly noted, it is crucial to recognise how intertwined the three sustainability dimensions are and how they may coexist peacefully or conflict.

¹¹ Ibid, p. 3; Banik D, 'Legal Empowerment as a Conceptual and Operational Tool in Poverty Eradication' (2009) 1 Hague Journal on the Rule of Law 117.

¹² Bjärstig T, 'Does Collaboration Lead to Sustainability? A Study of Public-Private Partnerships in the Swedish Mountains' (2017) 9 Sustainability 1685, p. 3.

¹³ Ibid, p. 3; see also Shuman M, *The Local Economy Solution: How Innovative, Self-Financing "Pollinator" Enterprises Can Grow Jobs and Prosperity* (Chelsea Green Publishing 2015); 'Macroeconomic Policy and Poverty Reduction' <<https://www.imf.org/external/pubs/ft/exrp/macropol/eng/>> accessed 18 March 2023.

As such, achieving sustainable development requires finding a balance between these three sustainability aspects.¹⁴

10.3.2 Investments in Alternative Sources of Energy

Africa has a significant chance to fill the gap in the demand for renewable energy and it has been argued that falling clean technology costs offer new hope for the continent's future. In order to meet Africa's energy and climate targets, energy investment must more than double this decade along with a significant rise in adaptation. In the past two decades, Africa received just 2% of investments in sustainable energy. A \$25 billion yearly investment, or around 1% of current global energy investment, is needed to ensure that all Africans have access to modern energy.¹⁵

Food and Agriculture Organisation (FAO) rightly points out that before petroleum became widely accessible during the past 100 years, wood was historically the most significant source of energy for humans. Wood still serves as the primary source of energy for heating and cooking in many of the world's poorest nations.¹⁶ As previously said, forests offer a variety of functions, including the preservation of biodiversity and the mitigation of climate change, while also producing both timber and non-timber forest products.¹⁷ There is need for more investments alternative sources of renewable energy, away from forests, if significant progress is to be realized in restoration of forest areas especially in the rural areas of developing countries like Kenya. Investments in renewable energy sources and more efficient energy use, particularly in transportation and industrial operations, are primarily driven

¹⁴ Bjärstig T, 'Does Collaboration Lead to Sustainability? A Study of Public-Private Partnerships in the Swedish Mountains' (2017) 9 Sustainability 1685, p. 3.

¹⁵ 'Climate Change Puts Energy Security at Risk' (10 October 2022) <<https://public.wmo.int/en/media/press-release/climate-change-puts-energy-security-risk>> accessed 18 March 2023.

¹⁶ Broadhead J and Killmann W, *Forests and Energy: Key Issues* (Food & Agriculture Org 2008) < <https://www.fao.org/forestry/13707-0e576ecd14f96f198d96c03149a6db0c0.pdf>> accessed 18 March 2023.

¹⁷ Gondo PC, 'Financing of Sustainable Forest Management in Africa: An Overview of the Current Situation and Experiences' [2010] Southern Alliance for indigenous resources (SAFIRE), p. 12 < https://www.un.org/esa/forests/wp-content/uploads/2014/12/Africa_case_study.pdf> accessed 18 March 2023.

by climate change, rising fossil fuel prices, and the concern about the security of the energy supply.¹⁸

During the next eight years, the amount of power produced from sustainable energy sources must double in order to prevent a rise in global temperatures. According to a new multi-agency 2022 report¹⁹ from the World Meteorological Organization, if we don't act, there's a chance that climate change, more severe weather, and water stress may threaten our energy security and even threaten renewable energy sources.²⁰ According to WMO Secretary-General, Prof Petteri Taalas, Three-quarters of all greenhouse gas emissions worldwide are produced by the energy industry. If we are to survive in the twenty-first century, switching to renewable energy sources like solar, wind, and hydropower is essential. So is increasing energy efficiency. The objective is net zero by 2050. But we will not get there until we double the amount of low-emission power available in the following eight years.²¹

Reduced deforestation and health hazards linked with the usage of firewood are two benefits of diversifying energy sources. The use of renewable energy may also help to achieve SDG Goal 4 on education since it spares women and children from having to spend time gathering firewood, time that might be better spent on other useful activities and education.²²

10.3.3 Enhanced Implementation of the National Tree Planting Week

Notably, the Constitution of Kenya 2010 outlines one of the environmental obligations of the State as working to achieve and maintain a tree cover of at least ten per cent of the land area of Kenya.²³ It is perhaps out of this constitutional requirement that the Forest Conservation and Management Act

¹⁸ Broadhead J and Killmann W, *Forests and Energy: Key Issues* (Food & Agriculture Org 2008), p.1.

¹⁹ Organization (WMO) WM and World Meteorological Organization (WMO), *2022 State of Climate Services: Energy (WMO-No. 1301)* (WMO 2022).

²⁰ 'Climate Change Puts Energy Security at Risk' (10 October 2022) <<https://public.wmo.int/en/media/press-release/climate-change-puts-energy-security-risk>> accessed 18 March 2023.

²¹ Ibid.

²² Organization (WMO) WM and World Meteorological Organization (WMO), *2022 State of Climate Services: Energy (WMO-No. 1301)* (WMO 2022), p.44.

²³ Article 69 (1) (b), Constitution of Kenya 2010.

2016 provides that the Cabinet Secretary shall plan and execute programmes necessary for observing the national tree-planting week and the International Day of Forests.²⁴ The national tree-planting day in Kenya is observed in April or May. The activities are not bound to a certain day but are confined throughout the lengthy rains season in April -May.²⁵

It is imperative that the State, through the relevant departments takes up this duty seriously and also enhance free supply of the relevant seedlings as a way of encouraging the general public to not only participate but also make it their way of everyday life to plant trees in public places as well as their own private parcels of land. This will go a long way in realisation of Kenya's President's call for reforestation of the country.²⁶

10.3.4 Tax and fiscal incentives

The Forest Conservation and Management Act 2016 empowers the Cabinet Secretary for the National Treasury, on the recommendation by the Cabinet Secretary, propose tax and other fiscal incentives to increase investments in forest land use and forest resource utilization in order to promote forest conservation and management, and to prevent or abate forest degradation.²⁷ The tax and fiscal incentives, may include – (a) customs and excise waiver in

²⁴ Sec. 55, Forest Conservation and Management Act 2016.

²⁵ Macharia DA, 'National Tree Planting Day' (*Mazingira Safi*, 8 May 2014) <<https://www.mazingirasafi.com/national-tree-planting-day/>> accessed 18 March 2023.

²⁶ 'President Uhuru Sets an Ambitious 30% Target for Forest Cover by 2050 during the Launch of Kenya's Tree Growing Fund and Campaign | United Nations Development Programme' (UNDP) <https://www.undp.org/kenya/press-releases/president-uhuru-sets-ambitious-30-target-forest-cover-2050-during-launch-kenya%E2%80%99s-tree-growing-fund-and-campaign> accessed 18 March 2023; GROUP NK-NM, 'NTV Kenya: President Ruto Launches Tree Restoration Program to Combat Climate Change' (*NTV Kenya*) <<https://ntokenya.co.ke/climate-change/president-ruto-launches-tree-restoration-program-to-combat-climate-change/>> accessed 18 March 2023; 'Kenya to Plant 5 Billion Trees in 5 Years - Ruto' (20 October 2022) <<https://www.pd.co.ke/news/kenya-to-plant-5-billion-trees-in-5-years-ruto-154665/>> accessed 18 March 2023; 'Plant 300 Trees and Get Certificate, Kenyans Told' (21 October 2022) <<https://www.pd.co.ke/news/plant-300-trees-and-get-certificate-154782/>> accessed 18 March 2023; 'First Lady Rachel Ruto Embarks on Reforestation Crusade - Kenya News Agency' (17 November 2022) <<https://www.kenyanews.go.ke/first-lady-rachel-ruto-embarks-on-reforestation-crusade/>> accessed 18 March 2023.

²⁷ Sec. 54(1), Forest Conservation and Management Act 2016.

respect of imported capital goods or tax rebates to forest industries and other establishments investing in plants, equipment and machinery for improved resource utilization and for using other energy resources as substitutes for hydrocarbons; (b) exemption from payment of all or part of the land rates and such other charges as may be levied in respect of the land on which a private forest is established; and (c) income and other tax deductions to landowners in exchange for the establishment of a forest conservation easement.

These incentives can greatly contribute to sustainable forest management in Kenya, if efficiently implemented.

10.3.5 Tapping into Indigenous Knowledge

The Climate Change Act 2016 provides that 'In formulating the National Climate Change Action Plan, the Cabinet Secretary shall be informed by, *inter alia*, indigenous knowledge related to climate change adaptation and mitigation'.²⁸ Similarly, the role of indigenous knowledge was recognised by the Court in the case of *Joseph Letuya & 21 others v Attorney General & 5 others* [2014] eKLR²⁹ where the Court stated as follows:

Quite apart from the special consideration that needs to be given to the Ogiek community as a minority and indigenous group when allocating forest land that this court has enunciated on in the foregoing, this court also recognizes the unique and central role of indigenous forest dwellers in the management of forests. This role is recognized by various international and national laws. The Convention on Biological Diversity which Kenya has ratified and which is now part of Kenyan law by virtue of Article 2(6) of the Constitution recognizes the importance of traditional knowledge, innovations and practices of indigenous and local communities for the conservation and sustainable use of biodiversity and that such traditional knowledge should be respected, preserved and promoted. Article 8 (j) of the Convention places an obligation on State Parties in this respect to:

²⁸ Sec. 13(5)(g), climate Change Act 2016.

²⁹ *Joseph Letuya & 21 others v Attorney General & 5 others* [2014] eKLR, Elc Civil Suit 821 of 2012 (Os).

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“Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.”

This court is also guided in this respect by several multilateral environmental agreements which now shape the strategies and approaches by governments in relation to the environment and development, including forest policy. These include the Rio Declaration on Environment and Development and Agenda 21 which are widely accepted sources of international customary environmental law. Principle 22 of the Rio Declaration on Environment and Development provides that indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States are encouraged to recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development. Chapter 26 of Agenda 21 is likewise dedicated to strengthening the role of indigenous communities in sustainable development.

The Forest Conservation and Management Act, 2016³⁰ also highlights this by providing that some of the principles of this Act shall be: public participation and community involvement in the management of forests; and protection of indigenous knowledge and intellectual property rights of forests resources.³¹ On the relationship between forests and climate change mitigation, the Forest Conservation and Management Act, 2016 provides that ‘all indigenous forests and woodlands shall be managed on a sustainable basis for purposes of, *inter alia*: conservation of water, soil and biodiversity; and carbon sequestration and

³⁰ Forest Conservation and Management Act, No. 34 of 2016, Laws of Kenya.

³¹ Sec. 4 (a) (e), Forest Conservation and Management Act 2016.

other environmental services.³² There is a need to tap into and incorporate this knowledge in enhancing sustainable forests management in the country.

10.3.6 Diversified Financing for Sustainable Forest Management

As per part III (sections 23-29) of the Forest Conservation and Management Act, 2016, majority of the forests conservation activities in Kenya are to be funded by the government of Kenya. Naturally, this comes with its limitations due to inadequate resources and calls for diversification of funding mechanisms for these activities.

It has been argued that due to the numerous benefits and purposes of trees and forests, as well as the numerous stakeholders and actors who can and do influence forest management and management decisions, sustainable forest management should not be the exclusive domain of the government but rather of society at large. As a result, new strategies, institutional frameworks, and funding sources are required to make this a reality.³³ Aside from that, the new funding systems that are needed must take into consideration the financial requirements of various players as well as the various management objectives, taking into account the unique characteristics of various forest ecosystems and the socioeconomic circumstances of every nation.³⁴ By providing revenue, employment, food security, and shelter where it is most desperately needed, sustainable forest management may support economic growth. Sustainable forest management is all about finding a means to strike a balance between human requirements and concerns about the long-term viability of forest resources.³⁵

³² Sec. 42(1), Forest Conservation and Management Act 2016.

³³ Gondo, P.C., 'Financing of Sustainable Forest Management in Africa: An Overview of the Current Situation and Experiences' 2010 <<https://www.semanticscholar.org/paper/FINANCING-OF-SUSTAINABLE-FOREST-MANAGEMENT-IN-AN-OF-Gondo/c63f5beca0178f60763046d3c0779ef6caf2a21f>> accessed 18 March 2023, p.61.

³⁴ Gondo, P.C., 'Financing of Sustainable Forest Management in Africa: An Overview of the Current Situation and Experiences' 2010, p. 61.

³⁵ United Nations Forum on Forests, 'Enabling Sustainable Forest Management: Strategies for equitable development, for forests, for people' <https://www.un.org/esa/forests/wp-content/uploads/2015/06/Enabling_SFM_highlights.pdf> accessed 18 March 2023.

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Commentators have also noted that the continent's current systems for financing forests are still insufficient to create the conditions needed to stop deforestation and forest degradation processes, encourage rehabilitation and afforestation/reforestation, and increase the areas of forest under sustainable management.³⁶ It has been suggested that in order to provide the institutional framework for effective forest governance and sustainable forest management and to foster the crucial local community engagement, partnerships between a number of actors are required. The rationale behind this is that by pooling the resources, expertise, knowledge, and political influence of players operating at various scales, the parties would be able to do more together than they could alone.³⁷

Enhanced coordination at the national level would include integrating tools like national forest finance policies and information sharing, which might be handled through suitable arrangements spearheaded by governments. Also, the government should develop the necessary capacities to fully use the increasingly complex and diverse external and internal financial mechanisms for forests.³⁸

³⁶ Gondo, P.C., 'Financing of Sustainable Forest Management in Africa: An Overview of the Current Situation and Experiences' 2010, p. 61.

³⁷ Ros-Tonen, M.A., Van Andel, T., Morsello, C., Otsuki, K., Rosendo, S. and Scholz, I., 'Forest-Related Partnerships in Brazilian Amazonia: There Is More to Sustainable Forest Management than Reduced Impact Logging' (2008) 256 *Forest Ecology and Management* 1482.

³⁸ Gondo, P.C., 'Financing of Sustainable Forest Management in Africa: An Overview of the Current Situation and Experiences' 2010, p. 61; see also Besacier, C., Garrett, L., Iweins, M. and Shames, S. 2021. Local financing mechanisms for forest and landscape restoration - A review of local level investment mechanisms. *Forestry Working Paper No. 21*. Rome, FAO. <https://doi.org/10.4060/cb3760en>; cf. Kamara Y, 'Existing and Potential Forest Financing Mechanisms for Smallholders and Community Forestry in West Africa' [2011] *Initiatives Conseil International*. Burkina Faso: Food and Agriculture Organization of the United Nations; Gomez-Echeverri L, 'National Climate Funds', *Handbook of International Climate Finance* (Edward Elgar Publishing 2022); 'Developing the International Financing Facility for Forests (IFFFor) | Profor' <<https://www.profor.info/knowledge/developing-international-financing-facility-forests-ifffor>> accessed 18 March 2023.

10.3. Conclusion

It has rightly been pointed out that woodlands and forests contribute significantly to the global carbon cycle and, as a result, to the acceleration or slowing of global climate change.³⁹ This is because around 50% of the world's terrestrial organic carbon stores are found in forests, while 80% of all terrestrial biomass is found in forests. More over two thirds of the world's terrestrial net primary output comes from forests. So, slowing down forest loss and re-establishing forest cover in deforested regions might help lessen the effects of climate change.⁴⁰

For climate change to be mitigated, fossil fuel use must be reduced, and for that, global carbon emissions must peak by 2025 and reach net zero by 2050. Sadly, the speed of carbon emissions continues to be inconsistent with the objectives of the Paris agreement (IPCC, 2021).⁴¹ According to studies conducted in a few emerging nations, the security of agriculture, water, and energy is at systemic risk due to the effects of climatic unpredictability and change, expanding economies, and rising urbanization. For disadvantaged rural communities, agricultural output is a significant source of employment. From small-scale subsistence farming to large-scale export-oriented agriculture, water availability is essential for agricultural output. In addition, the capacity for producing electricity, the control of peak supply and demand, and the safety of dams are all seriously impacted by climate change and unpredictability (including both deficiencies and surpluses in rainfall).⁴² Arguably, forests not only contribute in climate change mitigation but also in some areas act as sources of rivers, which are evidently important for agriculture and generation of hydropower. This thus calls for concerted efforts towards forests conservation and restoration not only for climate change mitigation but also to secure the future of both current and future generations.

³⁹ Shvidenko A and Gonzalez P, 'Chapter 21: Forest and Woodland Systems', p.587.

⁴⁰ Ibid.

⁴¹ Cevik S, 'Climate Change and Energy Security: The Dilemma or Opportunity of the Century?' 2022 IMF Working Paper, WP/22/174

< https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4224062 > accessed 18 March 2023.

⁴² 'Enhancing Adaptive Capacity of Andean Communities through Climate Services (ENANDES) (Chile, Colombia, Peru) - Adaptation Fund' <<https://www.adaptation-fund.org/project/chile-colombia-peru-enhancing-adaptive-capacity-andean-communities-climate-services-enandes/>> accessed 18 March 2023.

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This should be done alongside employment of measures that reduce pressure on these forests, as discussed in this chapter.

CHAPTER ELEVEN

Environmental Impact Assessment: Place of Biodiversity Impact Assessment

11.1. Introduction

This chapter argues that in the most sensitive ecological areas, environmental impact assessments should include biodiversity impact assessment as the most effective tool in safeguarding the biological diversity that may be found within these areas and also enhancing their conservation. The author argues that the ordinary EIA may not successfully reflect the real effect of the particular project, policy or programme on the biological diversity.

The *1992 Convention on Biological Diversity*¹ defines “biological diversity” to mean the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems.² Every living creature, from people to things we know little about like bacteria, fungi, and invertebrates, is included in biodiversity, not only the species we regard to be uncommon, vulnerable, or endangered.³ The majority of our daily activities depend on biodiversity. There are a variety of practical and fundamental reasons why we cherish biodiversity. Thus, we appreciate biodiversity both for what it offers to us and for its intrinsic worth.⁴

It is for this reason that human activities ought to take into consideration conservation and protection of biodiversity. One of the ways that this may be achieved is through environmental impact assessment exercises during approval of various projects. Environmental Impact Assessment is globally considered as an important tool for environmental regulation and

¹ United Nations, *1992 Convention on Biological Diversity*, 1760 UNTS 79, 31 ILM 818 (1992). Adopted in Rio de Janeiro, Brazil on 5 June 1992.

² Ibid, Article 2.

³ ‘What Is Biodiversity? Why Is It Important?’ | AMNH’ (*American Museum of Natural History*) <<https://www.amnh.org/research/center-for-biodiversity-conservation/what-is-biodiversity>> accessed 7 November 2022.

⁴ Ibid.

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management. Impact assessments are performed to determine how particular projects, policies, and programmes will shape the environment.⁵ The Environmental Impact Assessment (EIA), according to UNEP, is a tool used to determine the environmental, social, and economic effects of a project before making a decision. It seeks to anticipate environmental effects early in the project planning and design process, identify strategies for minimising negative effects, adapt projects to the local environment, and give predictions and options to decision-makers. It is arguably the most widely used environmental tool globally when determining the potential impact of a project on the environment.⁶

This chapter is informed by the argument that EIA processes and conservation measures as currently carried out in Kenya do not adequately put into account the biodiversity impact assessment aspect of environmental assessments. Biodiversity assessment has been defined as identification and classification of the species, habitats, and communities found in a certain area or region. The main objective is to provide the information needed to determine if management is necessary to protect biological diversity. Assessments also contain information and data that may be applied to scientific research endeavours.⁷

The author argues that with the growing population and development activities, the increasing conversion of biodiversity rich areas into settlement areas to take care of the population and economic needs of the country requires the country to embrace biodiversity impact assessment exercises as part of the conservation efforts and race towards achieving sustainable development agenda.

⁵ Unit B, 'What Is Impact Assessment?' (27 April 2010)
<<https://www.cbd.int/impact/whatis.shtml>> accessed 7 November 2022.

⁶ Ibid.

⁷ Henderson, A., Comiskey, J., Dallmeier, F. and Alonso, A., "Framework for Assessment and Monitoring of Biodiversity." *Encyclopedia of Biodiversity Online Update 1* (2007)

<https://repository.si.edu/bitstream/handle/10088/20985/nzp_Dallmeier_et_al_2013_Framework_for_Assess_and_Monit_of_Bd_022813.pdf> accessed 7 November 2022.

11.2. Environmental Impact Assessment in Kenya: Legal and Institutional Framework

Environmental Impact Assessment (EIA) in Kenya is provided for under the 2010 Constitution of Kenya as well as EMCA 1999 and related regulations. International environmental regulatory framework also shapes the domestic framework.

a) The Constitution of Kenya 2010

Article 10(1) states that the national values and principles of governance in this Article bind all State organs, State officers, public officers and all persons whenever any of them – applies or interprets this Constitution; enacts, applies or interprets any law; or makes or implements public policy decisions.⁸ These national values and principles include, *inter alia*: good governance, integrity, transparency and accountability; and sustainable development.⁹

The Constitution outlines the principles of land policy in Kenya and states that land in Kenya shall be held, used and managed in a manner that is equitable, efficient, productive and sustainable, and in accordance with the principles of, *inter alia* – sustainable and productive management of land resources; and sound conservation and protection of ecologically sensitive areas.¹⁰

Article 69 of the Constitution 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 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

⁸ Article 10 (1), Constitution of Kenya 2010.

⁹ Article 10 (2), Constitution of Kenya 2010.

¹⁰ Article 60 (1), Constitution of Kenya 2010.

likely to endanger the environment; and utilise the environment and natural resources for the benefit of the people of Kenya.¹¹

Notably, Article 260 of the Constitution defines “natural resources” to mean the physical non-human factors and components, whether renewable or non-renewable, including, *inter alia*-forests, biodiversity and genetic resources.¹²

b) Environmental Management Coordination Act, 1999

The *Environmental Management Coordination Act (EMCA)*¹³ 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. Conservation of wildlife, management of forests and water resources, as well as worker health and safety, are additional requirements relating to environmental concerns.

Section 42 (1) of EMCA states that no person shall, without the prior written approval of the Authority given after an environmental impact assessment, in relation to a river, lake, sea or wetland in Kenya, carry out any of the following activities: erect, reconstruct, place, alter, extend, remove or demolish any structure or part of any structure in, or under the river, lake, sea or wetland; excavate, drill, tunnel or disturb the river, lake, sea or wetland; introduce any animal, whether alien or indigenous, dead or alive, in any river, lake, sea or wetland; introduce or plant any part of a plant specimen, whether alien or indigenous, dead or alive, in any river, lake, sea or wetland; deposit any substance in a lake, river or wetland or in, on or under its bed, if that substance would or is likely to have adverse environmental effects on the river, lake, sea or wetland; direct or block any river, lake, sea or wetland from its natural and normal course; drain any lake, river, sea or wetland; or any other matter prescribed by the Cabinet Secretary on the advice of the Authority.¹⁴

¹¹ Article 69 (1), Constitution of Kenya 2010.

¹² Article 260, Constitution of Kenya 2010.

¹³ Environmental Management Coordination Act, No. 8 of 1999, Laws of Kenya.

¹⁴ S. 42(1), EMCA.

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Section 58 of EMCA provides for EIA and states that ‘notwithstanding any approval, permit or license granted under this Act or any other law in force in Kenya, any person, being a proponent of a project, should before for financing, commencing, proceeding with, carrying out, executing or conducting or causing to be financed, commenced, proceeded with, carried out, executed or conducted by another person any undertaking specified in the Second Schedule to this Act, submit a project report to the Authority, in the prescribed form, giving the prescribed information and which shall be accompanied by the prescribed fee.¹⁵ EMCA defines “environmental impact assessment” to mean a systematic examination conducted to determine whether or not a programme, activity or project will have any adverse impacts on the environment.¹⁶

The contents of the reports from environmental impact assessment are provided for the *Environmental (Impact Assessment and Audit) Regulations, 2003*¹⁷. However, it is worth noting that CBD COP 6 Decision VI/7 recognises that although legislation and practice vary around the world, the fundamental components of an environmental impact assessment would necessarily involve the following stages: Screening to determine which projects or developments require a full or partial impact assessment study; Scoping to identify which potential impacts are relevant to assess, and to derive terms of reference for the impact assessment; Impact assessment to predict and identify the likely environmental impacts of a proposed project or development taking into account inter-related consequences of the project proposal, and the socio-economic impacts; Identifying mitigation measures (including not proceeding with the development, finding alternative designs or sites which avoid the impacts, incorporating safeguards in the design of the project, or providing compensation for adverse impacts); Deciding whether to approve the project or not; and monitoring and evaluating the development activities, predicted impacts and proposed mitigation measures to ensure that unpredicted

¹⁵ S. 58(1), EMCA.

¹⁶ S. 2, EMCA.

¹⁷ Environmental (Impact Assessment and Audit) Regulations, 2003, Legal Notice No. 101 of 2003, Laws of Kenya.

impacts or failed mitigation measures are identified and addressed in a timely fashion.¹⁸

As far as protection of environmentally significant areas is concerned, EMCA provides that the Cabinet Secretary may, in consultation with the relevant lead agencies and in accordance with the Constitution, the Convention on Biological Diversity and other treaties, by notice in the Gazette, declare any area of land, sea, lake, forests or river to be a protected natural environment for the purpose of promoting and preserving specific ecological processes, natural environment systems, natural beauty or species of indigenous wildlife or the preservation of biological diversity in general.¹⁹

EMCA defines “biological diversity” to mean the variability among living organisms from all sources including, terrestrial ecosystems, aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, among species and of ecosystems.²⁰ It also defines “biological resources” to include genetic resources organisms or parts thereof, populations, or any other biotic component or ecosystems with actual or potential use or value for humanity.²¹

Section 50 of EMCA deals with conservation of biological diversity where it provides that the Cabinet Secretary should, on the advice of the Authority, prescribe measures necessary to ensure the conservation of biological diversity in Kenya and in this respect the Authority should: identify, prepare and maintain an inventory of biological diversity of Kenya; determine which components of biological diversity are endangered, rare or threatened with extinction; identify potential threats to biological diversity and devise measures to remove or arrest their effects; undertake measures intended to integrate the conservation and sustainable utilisation ethic in relation to biological diversity in existing government activities and activities by private

¹⁸ Unit B, ‘COP Decision’ <<https://www.cbd.int/decision/cop/?id=7181>> accessed 9 November 2022.

¹⁹ S. 54(1), EMCA, 1999.

²⁰ S. 2, EMCA, 1999.

²¹ *Ibid.*

persons; specify national strategies, plans and government programmes for conservation and sustainable use of biological diversity; protect indigenous property rights of local communities in respect of biological diversity; and measure the value of unexploited natural resources in terms of watershed protection, influences on climate, cultural and aesthetic value, as well as actual and potential genetic value thereof.²²

The Act envisages both *in situ* and *ex situ* conservation of biological resources.²³ In terms of *in situ* approach to conservation of biological resources, the Act provides that the Cabinet Secretary should, on the recommendation of the Authority, prescribe measures adequate to ensure the conservation of biological resources in situ and in this regard shall issue guidelines for, *inter alia*, land use methods that are compatible with conservation of biological diversity.

It is against the foregoing provisions that NEMA came up with regulations on conservation of biological diversity in 2006²⁴ as per section 147 of the Act.²⁵

²² S. 50, EMCA.

²³ S. 51 & 52, EMCA.

²⁴ Environmental Management and Co-ordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006.

²⁵ 147. Power to make regulations

(1) The Cabinet Secretary may, on the recommendation of the Authority and upon consultation with the relevant lead agencies, make regulations prescribing for matters that are required or permitted by this Act to be prescribed or are necessary or convenient to be prescribed for giving full effect to the provisions of this Act.

(2) Regulations made under subsection (2) may –

(a) make provisions for the issue, amendment and revocation of any licence;

(b) provide for the charging of fees and levying of charges;

(c) adopt wholly or in part or with modifications any rules, standards, guidelines, regulations, by laws, codes, instructions, specifications, or administrative procedures prescribed by any lead agency either in force at the time of prescription or publication or as amended from time to time.

c) EMCA (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006

The *Environmental Management and Co-ordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006*²⁶ are to apply to: (a) the exchange of genetic resources, their derivative products, or the intangible components associated with them, carried out by members of any local Kenyan community amongst themselves and for their own consumption; access to genetic resources derived from plant breeders in accordance with the Seeds and Plant Varieties Act (Cap. 326); human genetic resources; and approved research activities intended for educational purposes within recognized Kenyan academic and research institutions, which are governed by relevant intellectual property laws.²⁷

The Regulations also state that a person shall not engage in any activity that may – have an adverse impact on any ecosystem; lead to the introduction of any exotic species; lead to unsustainable use of natural resources, without an Environmental Impact Assessment Licence issued by the Authority under the Act.²⁸

d) Environmental (Impact Assessment and Audit) Regulations, 2003

The Environmental (Impact Assessment and Audit) Regulations, 2003²⁹ are to apply to all policies, plans, programmes, projects and activities specified in Part IV, Part V and the Second Schedule of the Act.³⁰

Regulation 7 (2) thereof provides that the project report submitted under sub regulation 7(1) shall specify – the nature of the project; the location of the project including – (i) proof of land ownership, where applicable; (ii) any environmentally sensitive area to be affected; (iii) availability of supportive

²⁶ Environmental Management and Co-ordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, Legal Notice No. 160 of 2006, Laws of Kenya.

²⁷ Regulation 3, LN No. 160 of 2006, laws of Kenya.

²⁸ Ibid, regulation 4.

²⁹ Environmental (Impact Assessment and Audit) Regulations, Legal Notice No. 101 of 2003, Laws of Kenya.

³⁰ Regulation 3, LN No. 101 of 2003.

environmental management infrastructure; and (iv) conformity to land use plan or zonation plan; and potential environmental impacts of the project and the mitigation measures to be taken during and after implementation of the project. On the other hand, comprehensive project report prepared pursuant to a recommendation under regulation 7 (3) (a), must specify – the nature of the project; the location of the project including – (i) proof of land ownership; (ii) the Global Positioning System coordinates; and (iii) the physical area that may be affected by the project's activities; the activities that shall be undertaken during the project construction, operation and decommissioning phases; a description of the international, national and county environmental legislative and regulatory frameworks on the environment and socio-economic matters; the preliminary design of the project; the materials to be used, products and by-products, including waste to be generated by the project and the methods of their disposal; the potential environmental impacts of the project and the mitigation measures to be taken during and after implementation of the project; an analysis of available alternatives including an alternative (i) project site; (ii) design; (iii) technologies; and (iv) processes, and the reasons for preferring the proposed site, design, technologies and processes; an action plan for the prevention and management of possible accidents during the project cycle; a plan to ensure the health and safety of the workers and neighbouring communities; the economic and socio-cultural impacts to the local community and the nation in general; a plan to ensure the relocation or resettlement of persons affected by the project; a strategic communication plan to ensure inclusive participation during the study and provide a summary of issues discussed at the public participation forum; an environmental management plan; integration of climate change vulnerability assessment, relevant adaptation and mitigation actions; the project cost; and any other information the Authority may require.³¹

As for environmental impact assessment study reports, they must incorporate, *inter alia*, information on – the proposed location of the project; a concise description of the national environmental legislative and regulatory framework, baseline information and any other relevant information related

³¹ Regulation 7 (4), LN No. 101 of 2003

to the project; the objectives of the project; the technology, procedures and processes to be used, in the implementation of the project; the materials to be used in the construction and implementation of the project; the products, by-products and waste generated by the project; a description of the potentially affected environment; the environmental effects of the project including the social and cultural effects and the direct, indirect, cumulative, irreversible, short-term and long-term effects anticipated; alternative technologies and processes available and reasons for preferring the chosen technology and processes; analysis of alternatives including project site, design and technologies and reasons for preferring the proposed site, design and technologies; an environmental management plan proposing the measures for eliminating, minimizing or mitigating adverse impacts on the environment; including the cost, time frame and responsibility to implement the measures; provision of an action plan for the prevention and management of foreseeable accidents and hazardous activities in the course of carrying out activities or major industrial and other development projects; the measures to prevent health hazards and to ensure security in the working environment for the employees and for the management of emergencies; an identification of gaps in knowledge and uncertainties which were encountered in compiling the information; an economic and social analysis of the project; an indication of whether the environment of any other state is likely to be affected and the available alternatives and mitigating measures; and such other matters as the Authority may require.³²

In all the above reports, Second Schedule thereof outlines the issues that may, among others, be considered in the making of environmental impact assessments. These issues include, *inter alia*, ecological Considerations such as biological diversity including— effect of proposal on number, diversity, breeding habits, etc. of wild animals and vegetation; gene pool of domesticated plants and animals e.g. monoculture as opposed to wild types. Thus, while biodiversity is mentioned as one of the considerations that may be made during EIA, biological diversity assessment is not substantively provided for.

³² Regulation 18 (1), LN No. 101 of 2003, Laws of Kenya.

e. Convention on Biological Diversity 1992

The 1992 *Convention on Biological Diversity*³³ is the international legal framework for the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits resulting from the use of genetic resources, including through appropriate access to genetic resources and through appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.³⁴ The CBD offers a powerful worldwide platform for using impact assessment methods to conserve biodiversity. It expressly demands that projects, programmes, and policy choices address biodiversity through impact assessment procedures (Article 14).

Parties must conduct Environmental Impact Assessments (EIAs) for projects that might have a detrimental impact on biodiversity under the Convention on Biological Diversity (CBD). The CBD calls for impact assessments to take biodiversity into account, but it also gives room for a more proactive approach, allowing for the identification of potential for both effect mitigation and biodiversity enhancement.³⁵

11.3. Biodiversity Conservation: Challenges and Prospects

One of the main worldwide environmental challenges today is the preservation of biological diversity (biodiversity). Therefore, as suggested by the Convention on Biological Diversity, a detailed examination of the consequences of developments on biodiversity has to be included in the process of Environmental Impact Assessment (EIA): Each Contracting Party is required to "implement suitable processes requiring environmental impact

³³ United Nations, *1992 Convention on Biological Diversity*, 1760 UNTS 79, 31 ILM 818 (1992). Adopted in Rio de Janeiro, Brazil on 5 June 1992.

³⁴ *Ibid*, Article 1.

³⁵ Brooke, C., 'Biodiversity and Impact Assessment,' *prepared for the conference on Impact Assessment in a Developing World Manchester, England, Oct 1998*, RSPB/BirdLife International < <https://www.cbd.int/impact/case-studies/cs-impact-bia-brooke-1998-en.pdf>> accessed 9 November 2022.

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assessment of any proposed projects that are expected to have considerable detrimental impact on biological diversity."³⁶

Ecological impact assessments concentrate on both the advantages of biodiversity obtained through ecosystem services as well as the spatially constrained biophysical environment and biodiversity as composition, structure, and important activities. It deals with the distribution of space in complicated circumstances marked by ambiguity and opposing actor values. The entire proposal of a project, plan, or programme, its goals, alternate options and their acceptability from the perspective of biodiversity, and knowledge of the biodiversity and ecosystem services it provides are shaped in the process of ecological impact assessment, which is a part of environmental impact assessment (EIA) and strategic environmental assessment (SEA).³⁷

It has been pointed out that despite the fact that 80% of Kenya's population depends on its biological resources for survival, insufficient management of these resources results in a broad range of biological resources. In addition, there is little knowledge of the non-consumptive values of resources, little access to biodiversity data and information, and poor adoption rates for new technologies, including biotechnology.³⁸

According to *Kenya State of Environment Report 2019-2021*³⁹, a 2021 publication of the National Environment Management Authority (NEMA) Kenya,

³⁶ Davide Geneletti, 'Biodiversity Impact Assessment of Roads: An Approach Based on Ecosystem Rarity' (2003) 23 *Environmental Impact Assessment Review* 343, 344 <<https://linkinghub.elsevier.com/retrieve/pii/S0195925502000999>> accessed 8 November 2022.

³⁷ Söderman, T., "Biodiversity and ecosystem services in impact assessment: from components to services," (2012), p. 3 < <https://core.ac.uk/download/pdf/14924073.pdf>> accessed 8 November 2022.

³⁸ Mwenda, A. and Kibutu, T.N., "Implications of the New Constitution on Environmental Management in Kenya' (2012)." *Law, Environment and Development Journal* 8: 76-78.

³⁹ National Environment Management Authority, *Kenya State of Environment Report 2019-2021*, 2021, ISBN: 978-9966-1987-0-9

currently, it is thought that the nation is home to over 260 species of reptiles, over 250 small mammals, several big animals, over 7,004 kinds of plants, over 25,000 types of invertebrates, over 769 species of fish, and around 1,100 species of birds. The nation's national parks, national reserves, and conservancies are among the places where the biodiversity of the nation is most abundant. In lands used for communal settlement, biodiversity may also be found outside of protected areas.⁴⁰

Kenya's conservation efforts are threatened by climate unpredictability, wildlife crime, urban sprawl, and rapid population increase.⁴¹ It is crucial to analyse how each biophysical change can affect biodiversity by determining whether the change has an impact on one of the following aspects of biodiversity: composition, structure, or key processes. This will help us determine impacts on biodiversity for the ecosystems that are influenced.⁴²

11.4. Entrenching Biodiversity Impact Assessment in Kenya as a Tool for Enhancing Sustainable Development

The objective of an environmental impact assessment (EIA) is to provide decision-makers a sense of the anticipated environmental effects of activities that might modify the environment and, if required, to enable for adjustments to be made to these actions to lessen any negative effects.⁴³ Arguably, ecological repercussions have frequently received less attention in impact assessments.⁴⁴ EIAs have traditionally concentrated on impacts on protected

<https://www.nema.go.ke/images/Docs/EIA_1920-1929/NEMA%20SoE%202019-2021.pdf> accessed 7 November 2022.

⁴⁰ Ibid, p. xviii.

⁴¹ 'Environment | Kenya | U.S. Agency for International Development' (24 May 2022) <<https://www.usaid.gov/kenya/environment>> accessed 8 November 2022.

⁴² Slootweg, R., "Biodiversity assessment framework: making biodiversity part of corporate social responsibility." *Impact Assessment and Project Appraisal* 23, no. 1 (2005): 37-46.

⁴³ Ritter, C.D., McCrate, G., Nilsson, R.H., Fearnside, P.M., Palme, U. and Antonelli, A., 'Environmental Impact Assessment in Brazilian Amazonia: Challenges and Prospects to Assess Biodiversity' (2017) 206 *Biological Conservation* 161.

⁴⁴ Brooke, C., 'Biodiversity and Impact Assessment,' prepared for the conference on *Impact Assessment in a Developing World Manchester, England, Oct 1998*, RSPB/BirdLife International < <https://www.cbd.int/impact/case-studies/cs-impact-bia-brooke-1998-en.pdf>> accessed 9 November 2022.

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species and ecosystems. Other elements of biodiversity, such as diversity across species and ecosystems, changes through time, species abundance and distribution, and the functional components of biodiversity, have received less attention.⁴⁵

The Conference of the Parties (COP) agreed to establish recommendations for including biodiversity-related problems in environmental impact assessment laws, procedures, and strategic environmental assessment in COP 6 Decision VI/7.⁴⁶ The COP guidelines for incorporating biodiversity-related issues into environmental-impact-assessment legislation or processes and in strategic impact assessment are meant to provide general advice on incorporation of biodiversity considerations into new or existing environmental impact assessment procedures, noting that existing procedures take biodiversity into consideration in different ways.⁴⁷ The framework will need to be improved in order to address how biodiversity may be included into the latter phases of the environmental impact assessment procedure, such as impact assessment, mitigation, evaluation, and monitoring, as well as strategic environmental assessment.⁴⁸ However, depending on their institutional and legal frameworks, individual nations may modify the phases in the approach to suit their needs and wants.⁴⁹

Therefore, conducting a biodiversity impact assessment necessitates a more thorough research and analysis of potential effects on an ecological unit and the species and populations that make up its ecosystem. According to the CBD, biodiversity refers to variety at the levels of species (both within and between species) and ecosystems. Therefore, ecological impacts might be viewed as a subset of biodiversity impacts, which focus on the broader interactions between animals and their habitats at the species, community, and ecosystem

⁴⁵ Ibid.

⁴⁶ Unit B, 'Case Studies - Impact Assessment' <<https://www.cbd.int/programmes/cross-cutting/impact/search.aspx>> accessed 9 November 2022.

⁴⁷ Unit B, 'COP Decision' <<https://www.cbd.int/decision/cop/?id=7181>> accessed 9 November 2022.

⁴⁸ Ibid.

⁴⁹ Ibid.

levels.⁵⁰ Because of the challenges that other disciplines, including social impact assessment, have had when attempting to "go it alone," biodiversity impact assessment should thus be viewed as a component of current impact assessment systems rather than being marketed as a distinct entity. The term "biodiversity impact assessment" might be used to bring these concerns to the attention of the impact assessment community because the biodiversity agenda has some momentum.⁵¹

In contrast to the conventional EIA strategy of mitigating consequences, this provides a focus on the more advantageous features of biodiversity, looking at the ecosystem perspective, dealing with fragmentation difficulties, and so forth. In addition to protecting endangered species and their ecosystems, biodiversity also entails improving damaged landscapes, halting species extinctions, and establishing new habitats.⁵²

11.4.1 Biodiversity Monitoring

As a result of a wide range of internal and external stimuli, biodiversity is by its very nature a dynamic component of ecosystems, changing in composition, structure, and functional qualities. The term "monitoring" refers to the systematic and targeted observation and assessment of current changes in biodiversity in its different forms (genes, species, structures, functions, and ecosystems), often within a specific context defined by, for example, a research topic or a management aim.⁵³ There are several purposes for biodiversity monitoring. Feedback on the effectiveness of conservation efforts is provided by observing protected species' population numbers in their protected zones. An early warning system for farmers or medical services can benefit from tracking the spread of hazardous invasive species or contagious organisms. Population management systems may be optimized thanks to monitoring

⁵⁰ Brooke, C., 'Biodiversity and Impact Assessment,' *prepared for the conference on Impact Assessment in a Developing World Manchester, England, Oct 1998*, RSPB/BirdLife International, p.3.

⁵¹ *Ibid.*, p.3.

⁵² *Ibid.*, p.3.

⁵³ Juergens, N. "Monitoring of biodiversity." *Biodiversity: Structure and Function-Volume I 1* (2009): 229.

systems at gaming farms. These are but a few instances of the numerous uses available.⁵⁴

11.4.2 Adaptive Management of Biodiversity Resources

Adaptive management is a process for putting management into practice while learning which management activities are most successful at accomplishing certain objectives.⁵⁵ In other words, adaptive management is a methodical strategy for enhancing resource management by taking lessons from management results.⁵⁶

The evolution of scientific knowledge, as well as numerous societal and political shifts, have all influenced how natural resource management has changed through time. Management's typical objective is to guarantee the continuity of one or more system-of-interest properties. This is sometimes seen as a necessity for managers to either work to maintain system stability or to preserve certain system linkages and components while permitting or promoting system change. A comprehension of resilience is especially important when taking into account the dynamics of management and system change.⁵⁷

Arguably, EIA procedures should not be different. They should be adoptive to the changing environmental conditions due to climate change and other factors adversely affecting the environment and biological resources. These processes should be expanded to include biodiversity impact assessment especially where the EIA relates to a parcel of land that is rich in biological

⁵⁴ Ibid.

⁵⁵ Department of Planning and Environment, 'Adaptive Management' (NSW Environment and Heritage) <<http://www.environment.nsw.gov.au/research-and-publications/our-science-and-research/our-work/adaptive-management>> accessed 8 November 2022.

⁵⁶ 'Adaptive Management' (Conservation in a Changing Climate) <<https://climatechange.lta.org/get-started/adapt/adaptive-management/>> accessed 8 November 2022.

⁵⁷ Allen, C.R. and Garmestani, A.S., "Adaptive Management." *Adaptive Management of Social-Ecological Systems* (2015): 1, p. 2 <<http://ndl.ethernet.edu.et/bitstream/123456789/67461/1/Craig%20R.%20Allen.pdf>> accessed 8 November 2022.

resources, such as those contemplated under section 42 of EMCA. It has been suggested that in order to take advantage of the role of science and innovation in enhancing biodiversity conservation measures, the challenge for researchers is to change their emphasis from discovery to the science of implementation, while managers and policy-makers must abandon their socio-political norms and institutional frameworks in order to adopt new thinking and effectively use the wealth of potent new scientific tools for learning by doing.⁵⁸ For instance, it has been documented that wetlands are losing their biodiversity more quickly than any other ecosystem and thus, data on species status and risks are necessary to properly manage and conserve the biodiversity of wetlands.⁵⁹ Thus, biological diversity monitoring offers recommendations for managing biological variety in terms of productivity and conservation. Monitoring analyses changes across time and place and evaluates the state of biological variety at one or more ecological levels.⁶⁰

11.5 UN Biodiversity Conference (CBD COP-15): What is in it for the Developing Countries?

11.5.1 Introduction

This section highlights the outcomes of the decisions made by the UN Biodiversity Conference (Fifteenth meeting of the Conference of the Parties (COP-15) to the Convention on Biological Diversity (CBD) held between 7th to 19th December 2022 in Montreal, Canada and offers a perspective on how these decisions may affect developing countries especially in Africa, as far as biodiversity resources use and conservation efforts are concerned.

⁵⁸ Keith, D., Martin, T., McDonald-Madden, E. and Walters, C., "Uncertainty and adaptive management for biodiversity conservation." (2011) <https://www.sciencedirect.com/science/article/abs/pii/S0006320710004933?via%3Dihub> accessed 8 November 2022.

⁵⁹ Stephenson PJ, Ntiamoa-Baidu Y and Simaika JP, 'The Use of Traditional and Modern Tools for Monitoring Wetlands Biodiversity in Africa: Challenges and Opportunities' (2020) 8 *Frontiers in Environmental Science* <<https://www.frontiersin.org/articles/10.3389/fenvs.2020.00061>> accessed 9 November 2022.

⁶⁰ Niemelä J, 'Biodiversity Monitoring for Decision-Making' (2000) 37 *Niemelä, J. 2000. Biodiversity monitoring for decision-making. Annales Zoologici Fennici* 37: 307-317.

The Conference of the Parties (COP), which oversees the Convention on Biological Diversity, makes decisions that enhance implementation of the Convention during its recurrent sessions.⁶¹ The Conference of the Parties had its regular meetings yearly from 1994 to 1996. Since then, these meetings have been conducted less regularly, and as of 2000, they will now be held every two years due to a change in the norms of procedure.⁶² The fifteenth Conference of the Parties (COP 15) met in two locations: Kunming, China, and Montreal, Canada. Phase one was conducted virtually from October 11 to October 15, 2021, and it featured a High-Level Segment on October 12 and 13. Phase two took place in Montreal, Canada, from December 7 and December 19, 2022.⁶³ This section highlights the major outcomes of these events and their implications on developing countries.

11.5.2. UN Biodiversity Conference (Fifteenth meeting of the Conference of the Parties (COP-15) to the Convention on Biological Diversity (CBD): Outcomes

i. Adoption of the Monitoring Framework for the Kunming-Montreal Global Biodiversity Framework

The Kunming-Montreal Global Biodiversity Framework⁶⁴, which supersedes the Convention on Biological Diversity's (CBD) Strategic Plan for Biodiversity 2011-2020 and its Aichi Objectives, was agreed by CBD Parties on December 19, 2022, after four years of development talks. The agreement was reached during the second session of the fifteenth Conference of Parties (COP-15), which was held in Montréal, Canada, from December 7-19, 2022, and was presided over by the People's Republic of China.⁶⁵

⁶¹ Unit B, 'Conference of the Parties (COP)' <<https://www.cbd.int/cop/>> accessed 16 February 2023.

⁶² Ibid.

⁶³ Ibid.

⁶⁴ Agenda item 9A, 15/4, Kunming-Montreal Global Biodiversity Framework, CBD/COP/DEC/15/4, 19 December 2022.

⁶⁵ 'A New Global Biodiversity Framework: Kunming-Montreal Global Biodiversity Framework - DCCEEW'

<<https://www.dcceew.gov.au/environment/biodiversity/international/un-convention-biological-diversity/global-biodiversity-framework>> accessed 20 February 2023.

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The framework consists of four global 2050 objectives and twenty-three global 2030 targets, which are divided into four major categories to correspond to the goals. This comprises techniques and solutions for mainstreaming and implementation, biodiversity protection and restoration, the value of nature to humans, access and benefit sharing, and benefits sharing.⁶⁶

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment Report of Biodiversity and Ecosystem Services, the fifth edition of the Global Biodiversity Outlook, and many other scientific publications provide ample evidence that, despite ongoing efforts, biodiversity is deteriorating globally at rates unprecedented in human history. The Kunming-Montreal Global Biodiversity Framework aims to respond to these documents.⁶⁷

The Kunming-Montreal Global Biodiversity Framework outlines an ambitious plan to implement widespread action to transform our societies' relationship with biodiversity by 2030, in line with the 2030 Agenda for Sustainable Development and its Sustainable Development Goals. It builds on the Strategic Plan for Biodiversity 2011–2020, its achievements, gaps, and lessons learned, as well as the experience and achievements of other pertinent multilateral environmental agreements.⁶⁸

The Kunming-Montreal Global Biodiversity Framework aims to catalyse, enable, and galvanise urgent and transformative action by Governments, subnational and local authorities, with the involvement of all of society, to halt and reverse biodiversity loss and to achieve the outcomes it sets out in its Vision, Mission, Goals, and Targets. This will help to further the three goals of the Convention on Biological Diversity and its Protocols. The balanced execution of all three of the Convention's objectives is its main goal.⁶⁹

⁶⁶ Ibid.

⁶⁷ Agenda item 9A, 15/4, Kunming-Montreal Global Biodiversity Framework, CBD/COP/DEC/15/4, 19 December 2022, Annex, Para. 2.

⁶⁸ Ibid, para. 3.

⁶⁹ Agenda item 9A, 15/4, Kunming-Montreal Global Biodiversity Framework, CBD/COP/DEC/15/4, 19 December 2022, Annex, Para. 4.

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The framework, which is action- and results-oriented, aims to direct and promote, at all levels, the revision, development, updating, and implementation of policies, goals, targets, and national biodiversity strategies and action plans. It also makes it easier to monitor and review progress at all levels in a more accountable and transparent way.⁷⁰

While respecting their mandates, the framework encourages coherence, complementarity, and cooperation among parties to the Convention on Biological Diversity and its Protocols, other conventions related to biodiversity, and other pertinent multilateral agreements and international institutions. It also provides opportunities for collaboration and partnerships among various actors to improve the framework's implementation.⁷¹

The Kunming-Montreal Global Biodiversity Framework, including its Vision, Mission, Goals and Targets, is to be understood, acted upon, implemented, reported and evaluated, consistent with the following: contribution and rights of indigenous peoples and local communities; different value systems; whole-of-government and whole-of-society approach; national circumstances, priorities and capabilities; collective effort towards the targets; right to development; human rights-based approach; gender; fulfilment of the three objectives of the convention and its protocols and their balanced implementation; consistency with international agreements or instruments; principles of the Rio Declaration; science and innovation; ecosystem approach; inter-generational equity; formal and informal education; access to financial resources; cooperation and synergies; and biodiversity and health.⁷²

A step towards achieving the goals of the 2030 Agenda for Sustainable Development is the Kunming-Montreal global biodiversity framework. In order to provide the circumstances essential for realizing the goals and targets of the framework, progress towards the Sustainable Development Goals and the attainment of sustainable development in all of its three dimensions – environmental, social, and economic – are required. Recognizing the

⁷⁰ Ibid, para. 5.

⁷¹ Ibid, para. 6.

⁷² Ibid, paras.7-25.

significant connections between biological and cultural diversity, it will place biodiversity, its conservation, the sustainable use of its components, and the fair and equitable sharing of the benefits resulting from the utilisation of genetic resources at the centre of the sustainable development agenda.⁷³

ii. Informing the scientific and technical evidence base for the Kunming-Montreal Global Biodiversity Framework

The Conference of the Parties welcomed the Global Assessment Report on Biodiversity and Ecosystem Services issued by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services⁷⁴ and the related regional and thematic assessments.⁷⁵ The COP also commended the Intergovernmental Panel on Climate Change's (IPCC) special reports on the effects of global warming of 1.5°C above pre-industrial levels and associated global greenhouse gas emission pathways, as well as on the ocean and cryosphere in a changing climate, climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems.⁷⁶

In addition, COP took note of the following: the fifth edition of the Global Biodiversity Outlook, including its summary for policymakers, as well as the second edition of the Local Biodiversity Outlooks and the 2020 Plant Conservation Report; the general conclusions from the fifth edition of the Global Biodiversity Outlook; and the lessons learned from the implementation

⁷³ Agenda item 9A, 15/4, Kunming-Montreal Global Biodiversity Framework, CBD/COP/DEC/15/4, 19 December 2022, Annex, Para. 26.

⁷⁴ Secretariat, 'Global Assessment Report on Biodiversity and Ecosystem Services | IPBES Secretariat' (17 May 2019) <<https://ipbes.net/node/35274>> accessed 16 February 2023.

The general objective of the assessment is to evaluate the state of biodiversity and ecosystem services, their trends, their effects on human well-being, and the efficacy of available interventions, including the Strategic Plan and its Aichi Biodiversity Targets. The process for evaluating and renewing the Strategic Plan for Biodiversity and its Aichi Biodiversity Targets is predicted to benefit from this deliverable.

⁷⁵ Decision Adopted by The Conference of the Parties to The Convention On Biological Diversity, CBD/COP/DEC/15/2, 19 December 2022, para. 1.

⁷⁶ *Ibid*, para. 2.

of the Strategic Plan for Biodiversity 2011–2020⁷⁷ identified in the fifth edition of the Global Biodiversity Outlook.⁷⁸

The COP also urged Parties, and invited other Governments, local, and subnational governments, as well as pertinent organisations, to use the reports and to take actions to widely disseminate their findings, including by translating the reports into local languages and by creating other suitable communication products for various stakeholders, as well as to use the reports when putting the Kunming-Montreal Global Biodiversity Framework into practice.⁷⁹

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services' Global Assessment identified a number of factors that contribute to biodiversity loss, including climate change and land degradation. The COP urged Parties to address these factors urgently in order to address biodiversity loss in a coordinated manner.⁸⁰

iii. Review of progress in the implementation of the Convention and the Strategic Plan for Biodiversity 2011-2020 and the achievement of the Aichi Biodiversity Targets

A revised and updated Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets, for the years 2011 to 2020 was adopted by the Conference of the Parties at its tenth meeting, which took place from October 18 to October 29, 2010, in Nagoya, Aichi Prefecture, Japan. This decision is known as decision X/2. This Plan offered a comprehensive framework for biodiversity management and policy development for the whole United Nations organisation as well as the treaties that dealt with biodiversity.⁸¹

⁷⁷ Unit B, 'Strategic Plan for Biodiversity 2011-2020, Including Aichi Biodiversity Targets' (21 January 2020) <<https://www.cbd.int/sp/>> accessed 17 February 2023.

⁷⁸ Decision Adopted by The Conference of the Parties to The Convention On Biological Diversity, CBD/COP/DEC/15/2, 19 December 2022, paras.3,5&6.

⁷⁹ Ibid, para. 7.

⁸⁰ Ibid, para. 8.

⁸¹ Unit B, 'Strategic Plan for Biodiversity 2011-2020, Including Aichi Biodiversity Targets' (21 January 2020) <<https://www.cbd.int/sp/>> accessed 17 February 2023.

Parties concurred that it would take two years to convert this broad international framework into revised and updated national biodiversity policies and action plans.

iv. Biodiversity and health

Regarding the relationship between biodiversity and health, the COP 15 encouraged Parties and their subnational and local governments, and invited other Governments, in accordance with national circumstances and priorities, where appropriate, and relevant stakeholders: (a) to take steps towards a long-term and inclusive recovery from the COVID-19 pandemic that support biodiversity preservation and sustainable usage, hence reducing the danger of zoonotic illnesses in the future, while also taking the One Health⁸² concept into consideration, among other holistic methods;⁸³ (b) to assist the implementation of the Kunming-Montreal Global Biodiversity Framework by further integrating the One Health approach – among other holistic approaches – into their national biodiversity policies and action plans, as well as national health programmes, if necessary;⁸⁴ (c) to further support capacity-building and development for mainstreaming biodiversity and health linkages into the implementation of the Kunming-Montreal Global Biodiversity Framework;⁸⁵ and (d) to strengthen compliance with international and national provisions on access and benefit-sharing, in order to enhance the fair and equitable sharing of benefits arising from the utilization of genetic resources, as well as the fair and equitable sharing of benefits arising from the use of digital sequence information on genetic resources, in the relevant health sectors.⁸⁶

⁸² One Health is an integrated, unifying strategy with the goal of optimising the wellbeing of humans, animals, and ecosystems in a sustainable manner. It acknowledges the interconnectedness and interdependence of human health, that of domestic and wild animals, plants, and the larger environment (including ecosystems) < ‘One Health’ <<https://www.who.int/health-topics/one-health>> accessed 17 February 2023.

⁸³ 15/29. Biodiversity and health, CBD/COP/DEC/15/29, 19 December 2022, para. 1(a).

⁸⁴ Ibid, para. 1(b).

⁸⁵ Ibid, para. 1(c).

⁸⁶ Ibid 1(d).

COP 15 also invited the Quadripartite for One Health, the One Health High-Level Expert Panel, and other relevant expert groups and initiatives:⁸⁷ (a) to consider in their work the connections between health and biodiversity, the need for the One Health approach, among other holistic approaches, in accordance with decisions XIII/6 and 14/4, as well as equity and solidarity, and social determinants of health and socioeconomic inequalities between developing and developed countries;⁸⁸ (b) to contribute with guidance, interdisciplinary education and training, to the implementation of health-related elements and the application of the One Health approach, among other holistic approaches, in the Kunming-Montreal Global Biodiversity Framework;⁸⁹ (c) To contribute to the development of, and reporting on, health-related indicators of the monitoring framework for the Kunming-Montreal Global Biodiversity Framework;⁹⁰ and (d) to collaborate with the Executive Secretary in providing Parties with capacity-building, technology transfer, and resource mobilization opportunities for mainstreaming biodiversity and health linkages.⁹¹

The COP 15 further invited the Global Environment Facility, in accordance with its mandate, as appropriate, to consider providing technical and financial support for mainstreaming biodiversity and health linkages.⁹² It also invited Parties, other Governments, and all relevant donors and funding organizations in a position to do so, to consider providing technical support and mobilizing resources for mainstreaming biodiversity and health linkages.⁹³

COP 15 further requested the Executive Secretary, subject to the availability of resources, in consultation with the Bureau of the Subsidiary Body on Scientific, Technical and Technological Advice, and in collaboration with the World Health Organization and the Quadripartite for One Health, to complete the

⁸⁷ 15/29. Biodiversity and health, CBD/COP/DEC/15/29, 19 December 2022, para. 2.

⁸⁸ *Ibid*, 2(a).

⁸⁹ *Ibid* (2(b)).

⁹⁰ *Ibid* 2(c).

⁹¹ *Ibid*, 2(d).

⁹² *Ibid*, para. 3.

⁹³ *Ibid*, para. 4.

work pursuant to decision 14/4, paragraph 13 (b) and (c) on targeted messages and a draft global action plan, drawing on the deliberations of the resumed session of the twenty-fourth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice, as follows: (a) to produce an updated version of the draft global action plan and targeted messages based on the inputs received from Parties, other Governments, indigenous peoples and local communities, women, youth, and other relevant stakeholders, recognizing the issues of equity, including through the fair and equitable sharing of benefits arising from the utilization of genetic resources as well as the fair and equitable sharing of benefits arising from the use of digital sequence information on genetic resources and traditional knowledge associated with genetic resources; (b) to invite Parties, other Governments, indigenous peoples and local communities, women, youth, and other relevant stakeholders to review the updated version of the draft global action plan; (c) to make the outcomes of this work available for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a future meeting, with a view to making recommendations to the Conference of the Parties at its sixteenth meeting.⁹⁴

v. Biodiversity and climate change

In respect of biodiversity and climate, the Conference of the Parties requested Parties, and invited other Governments and international organizations, to submit their views and information on biodiversity and climate change.⁹⁵ The COP also requested the Executive Secretary to compile these views and information and to make the compilation available to the Subsidiary Body on Scientific, Technical and Technological Advice.⁹⁶

It also requested the Subsidiary Body on Scientific, Technical and Technological Advice to further review the item on biodiversity and climate change on the basis of views and information from Parties, other Governments and international organizations, as referred to in paragraph 1 above, as well as

⁹⁴ Ibid, para. 5.

⁹⁵ Agenda item 23, 15/30. Biodiversity and climate change, CBD/COP/DEC/15/30, 19 December 2022, para. 1.

⁹⁶ Ibid, para. 2.

relevant scientific and technical information on biodiversity and climate change, at its meeting to be held prior to the sixteenth meeting of the Conference of the Parties.⁹⁷

These decisions were reached based on the decisions VII/15, IX/16, X/33, XI/19, XII/20, XIII/4, and 14/5, and, in particular, the critical role of biodiversity and ecosystem functions and services for climate change adaptation, mitigation and disaster risk reduction.⁹⁸

vi. Recommendations from the United Nations Permanent Forum on Indigenous Issues to the Convention on Biological Diversity

The Conference of the Parties, took note of the recommendations emanating from the seventeenth and eighteenth sessions of the United Nations Permanent Forum on Indigenous Issues, and requests the Executive Secretary to continue to inform the Permanent Forum of developments of mutual interest.⁹⁹ It also welcomed the invitations of the Forum to the Secretariat of the Convention on Biological Diversity to contribute to: (a) a study on the contributions of indigenous peoples to the management of ecosystems and the protection of biodiversity; (b) a set of actions and commitments in relation to conservation and human rights in the context of the Kunming-Montreal Global Biodiversity Framework; and (c) a comparative legal study that analyses the rights of indigenous peoples and the emerging rights of local communities.¹⁰⁰

Thirdly, the COP decided to take the results of these activities under consideration in the development of its new programme of work on Article 8(j) and other provisions of the Convention related to indigenous peoples and local communities from the perspective of the relevance of the knowledge innovations and practices of indigenous peoples and local communities

⁹⁷ Ibid, para. 3.

⁹⁸ Agenda item 23, 15/30. Biodiversity and climate change, CBD/COP/DEC/15/30, 19 December 2022, preamble.

⁹⁹ Agenda item 10C, 15/21. Recommendations from the United Nations Permanent Forum on Indigenous Issues to the Convention on Biological Diversity, CBD/COP/DEC/15/21, 19 December 2022, para. 1.

¹⁰⁰ Ibid, para. 2.

relevant to the conservation and sustainable use of biodiversity, particularly in the Kunming-Montreal Global Biodiversity Framework.¹⁰¹

Finally, the COP requested the Executive Secretary, subject to the availability of resources, to contribute to the above-mentioned activities, to provide information to the Forum about these and other relevant activities of the Convention, and to carry out commitments to indigenous peoples, in accordance with the Secretary General's system-wide action plan for ensuring a coherent approach to achieving the ends of the United Nations Declaration on the Rights of Indigenous Peoples.¹⁰²

vii. Programme of work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

As far as the Programme of work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services is concerned, the Conference of Parties welcomed the rolling work programme of the Platform up to 2030, adopted by the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services in its decision IPBES-7/1, noting with appreciation that the request of the Conference of the Parties set out in decision 14/36 has been met, and that work under the six objectives, including the assessments set out in the work programme, is expected to contribute to and be essential for the implementation of the Kunming-Montreal Global Biodiversity Framework.¹⁰³ The COP also welcomed the ground-breaking efforts of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services to advance the inclusion of indigenous and local knowledge and diverse knowledge systems in all its assessments and other functions through the implementation of its approach to recognizing and working with indigenous and local knowledge in the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services set out in annex II to decision IPBES-5/1, as well as its engagement with self-organized

¹⁰¹ Ibid, para. 3.

¹⁰² Ibid, para. 4.

¹⁰³ Agenda item 15A, 15/19. Programme of work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, CBD/COP/DEC/15/19, 19 December 2022, para. 1.

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networks and organizations of indigenous peoples and local communities and stakeholders through the implementation of its stakeholder engagement strategy set out in annex II to decision IPBES-3/4, and invites the Intergovernmental Science- Policy Platform on Biodiversity and Ecosystem Services to continue to strengthen these efforts in the implementation of the relevant objectives of the 2030 work programme.¹⁰⁴

The COP further welcomed the fact that the rolling work programme up to 2030 of the Platform includes objectives related to each of the four functions of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, as well as strengthening communication and engagement of Governments and stakeholders and improvement of the effectiveness of the Platform, implemented in a manner whereby the objectives are mutually supportive.¹⁰⁵

It also welcomed the approval by the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, at its eighth session, to undertake thematic assessments on the interlinkages among biodiversity, water, food and health (“the nexus assessment”), and on the underlying causes of biodiversity loss and the determinants of transformative change and options for achieving the 2050 vision (“the transformative change assessment”), and, at its ninth session, to undertake a methodological assessment of the impact and dependence of business on biodiversity and nature’s contributions to people (“the business and biodiversity assessment”), as outlined in the respective scoping reports, as well as the important scientific contribution of these assessments for the implementation of the Kunming-Montreal Global Biodiversity Framework.¹⁰⁶

The COP 15 also invited Parties and relevant organizations to participate in the assessments referred to in paragraph 4 above, through the formal review

¹⁰⁴ Agenda item 15A, 15/19. Programme of work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, CBD/COP/DEC/15/19, 19 December 2022, para. 2.

¹⁰⁵ Ibid, para. 3.

¹⁰⁶ Ibid, para. 4.

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processes.¹⁰⁷ It also welcomed the approval by the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, at its ninth session, of the summaries for policymakers of the Methodological Assessment Report on the Diverse Values and Valuation of Nature, and of the Thematic Assessment of the Sustainable Use of Wild Species, and the acceptance of the chapters of the respective assessments including their executive summaries, and takes note of the progress made in the preparation of the thematic assessment of invasive alien species and their control.¹⁰⁸

The COP 15 also requested the Subsidiary Body on Scientific, Technical and Technological Advice to consider the findings of the assessments referred to in paragraph 6 above, and to provide recommendations relating to the implementation of the Convention and, in particular, of the Kunming-Montreal Global Biodiversity Framework, for consideration by the Conference of the Parties at its sixteenth meeting.¹⁰⁹

The COP 15 also took note of the report of the expert workshop convened by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services on biodiversity and pandemics, and notes its relevance for the work of the Convention, including the Kunming-Montreal Global Biodiversity Framework, as well as to the work carried out under the Convention on the interlinkages between biodiversity and health.¹¹⁰

It also welcomed the cooperation between the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and the Intergovernmental Panel on Climate Change; took note of the report of the co-sponsored workshop on biodiversity and climate change, noting the conclusions therein; and encouraged the two bodies to continue and further

¹⁰⁷ Agenda item 15A, 15/19. Programme of work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, *CBD/COP/DEC/15/19*, 19 December 2022, para. 5.

¹⁰⁸ *Ibid*, para. 6.

¹⁰⁹ *Ibid*, para.7.

¹¹⁰ *Ibid*, para. 8.

strengthen their collaboration in a transparent and participatory manner, with a view to increasing coherence while avoiding duplication of work.¹¹¹

Furthermore, it invited Parties to coordinate their work with the national focal points for the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and the Intergovernmental Panel on Climate Change in relation to assessments on biodiversity and climate change.¹¹² COP 15 further noted that the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, at its tenth session, will consider requests, inputs and suggestions received in time for consideration at that session, including for a second global assessment of biodiversity and ecosystem services and for an assessment on ecological connectivity, as well as potential additional fast track assessments.¹¹³

It also invited the Platform to consider the requests contained in the annex to the present decision.¹¹⁴ COP 15 also requested the Executive Secretary to regularly and systematically assess and report to the Subsidiary Body on Scientific, Technical and Technological Advice on how to consider deliverables from all functions and processes of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services for the implementation of the Convention, including a forward schedule and regular agenda item in meetings of the Subsidiary Body.¹¹⁵

¹¹¹ Ibid, para. 9.

¹¹² Agenda item 15A, 15/19. Programme of work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, CBD/COP/DEC/15/19, 19 December 2022, para.10.

¹¹³ Ibid, para. 11.

¹¹⁴ Ibid, para. 12.

Annex:

Requests From The Convention On Biological Diversity For Consideration By The Plenary Of The Intergovernmental Science-Policy Platform On Biodiversity And Ecosystem Services At Its Tenth Session- Request from the Convention on Biological Diversity regarding a second global assessment on biodiversity and ecosystem services.

¹¹⁵ Agenda item 15A, 15/19. Programme of work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, CBD/COP/DEC/15/19, 19 December 2022, para. 13.

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The COP also requested the Executive Secretary to identify views from Parties on how the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services could, within its defined functions of producing further assessments, building capacity, strengthening knowledge and supporting policy, contribute to the review and monitoring process of the Kunming-Montreal Global Biodiversity Framework.¹¹⁶

Furthermore, it invited the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services to contribute to the work of the Ad Hoc Technical Expert Group on Indicators for the Kunming-Montreal Global Biodiversity Framework.¹¹⁷

The COP 15 also encouraged all Parties and other Governments, as well as subnational governments, to carry out national or subnational assessments, with the full engagement of indigenous peoples and local communities, women, youth, civil society, academia and business, adapting the process of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services to the local contexts, so that these national or subnational assessments can be used as potential input to the rolling work programme of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and for the implementation of the Kunming-Montreal Global Biodiversity Framework, and urges Parties, and invites other Governments and organizations in a position to do so, to provide technical assistance, capacity-building and financial support, as appropriate.¹¹⁸

viii. Long-Term Strategic Approach to Mainstreaming Biodiversity Within and Across Sectors

The Conference of the Parties, in the preamble to this decision, recalled Article 6 (b) of the Convention, which requires Parties to integrate, as far as possible and as appropriate, the conservation and sustainable use of biological

¹¹⁶ Ibid, para. 14.

¹¹⁷ Agenda item 15A, 15/19. Programme of work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, CBD/COP/DEC/15/19, 19 December 2022, para. 16.

¹¹⁸ Ibid, para. 17.

diversity into relevant sectoral or cross- sectoral plans, programmes and policies; reiterated the critical importance of mainstreaming biodiversity across government and society in order to achieve the objectives of the Convention, and the urgent need to mainstream biodiversity in line with the Kunming-Montreal Global Biodiversity Framework; and emphasized the importance of intensified mainstreaming action to achieve the transformational change needed in order to attain the 2050 vision, while acknowledging the specific challenges faced by developing countries in supporting mainstreaming policies and the need for adequate means of implementation and enhanced international cooperation.¹¹⁹

It went on to welcome the work of the Informal Advisory Group on Mainstreaming of Biodiversity, as reflected in the progress report of the Executive Secretary to the Subsidiary Body on Implementation at its third meeting as well as the new submissions as compiled in documents CBD/COP/15/INF/10, 11 and 12.¹²⁰ The COP 15 also requested Parties, and invited other Governments, international organizations and relevant stakeholders to submit their views on the draft long-term approach and associated action plan, and to identify ways forward to support implementation of the Kunming-Montreal Global Biodiversity Framework.¹²¹ Furthermore, it requested the Executive Secretary to organize an open-ended online forum through the clearing-house mechanism, to facilitate further views on the reports and outcomes as mentioned in paragraphs 1 and 2 above, and to compile these views in a report, including on an interim process, for consideration by the Subsidiary Body on Implementation at its fourth meeting.¹²²

¹¹⁹ Agenda item 16A, 15/17. Long-term strategic approach to mainstreaming biodiversity within and across sectors, CDB/COP/DEC/15/17, 19 December 2022, Preamble.

¹²⁰ Agenda item 16A, 15/17. Long-term strategic approach to mainstreaming biodiversity within and across sectors, CDB/COP/DEC/15/17, 19 December 2022, para. 1.

¹²¹ *Ibid*, para. 2.

¹²² *Ibid*, para. 3.

ix. Development of a new programme of work and institutional arrangements on Article 8(j) and other provisions of the Convention related to indigenous peoples and local communities

The Conference of the Parties, decided to develop a new programme of work on Article 8(j) and other provisions of the Convention related to indigenous peoples and local communities aligned with the Kunming-Montreal Global Biodiversity Framework, with the full and effective participation of indigenous peoples and local communities, on the basis of annexes I and II5 to the present decision.¹²³ It also decided to keep under review the programme of work on Article 8(j) and related provisions, as needed, and to reprioritize elements and tasks in order to ensure a programme of work supportive of a human rights approach and coherent with the priorities of the Kunming-Montreal Global Biodiversity Framework, and one which takes into account developments in other relevant international forums and organizations.¹²⁴

The COP 15 also encouraged Parties, according to national legislation and international obligations, to increase efforts to facilitate the full and effective participation of indigenous peoples and local communities as on-the-ground partners in the implementation of the Convention, including by recognizing, supporting and valuing their customary laws, collective actions, cosmocentric worldviews and diverse values, including the efforts of indigenous peoples and local communities to protect and conserve lands and waters that they traditionally occupy or use towards the goals of the Convention, and engaging them, as appropriate, in the preparation of national reports, in the revision and implementation of national biodiversity strategies and action plans, and in the process for implementing the Kunming-Montreal Global Biodiversity Framework.¹²⁵

¹²³ Agenda item 10A, 15/10. Development of a new programme of work and institutional arrangements on Article 8(j) and other provisions of the Convention related to indigenous peoples and local communities, CBD/COP/DEC/15/10, 19 December 2022, para. 1.

¹²⁴ Ibid, para. 2.

¹²⁵ Agenda item 10A, 15/10. Development of a new programme of work and institutional arrangements of Article 8(j) and other provisions of the Convention related to indigenous peoples and local communities, CBD/COP/DEC/15/10, 19 December 2022, para. 3.

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It also requested Parties and other Governments to report on the implementation of the current programme of work on Article 8(j) and related provisions, and once adopted, of the new programme of work on Article 8(j) and other provisions of the Convention related to indigenous peoples and local communities, as well as on the application of the various voluntary guidelines and standards developed under the aegis of the Ad Hoc Open-ended Inter-sessional Working Group on Article 8(j) and Related Provisions and adopted by the Conference of the Parties, as appropriate, through national reports, and to relevant subsidiary bodies, in order to determine progress made.¹²⁶

It further invited Parties, as per decision X/40 B, paragraph 7, to consider designating national focal points for Article 8(j) and related provisions in support of existing national focal points, to facilitate and disseminate culturally appropriate communications with indigenous peoples and local community organizations, and to promote the effective development and implementation of the programme of work on Article 8(j) and related provisions.¹²⁷

COP 15 also requested the Executive Secretary, subject to the availability of resources, to strengthen and support the network of national focal points for Article 8(j) and related provisions, as well as of the national focal points to the Convention on Biological Diversity, enabling them to play a key role at the national level in such areas as (a) national and subnational arrangements for the full and effective participation of indigenous peoples and local communities, (b) national arrangements for the protection, preservation and promotion of traditional knowledge and customary sustainable use, with the free, prior and informed consent of the holders of that knowledge, (c) facilitating the input of indigenous peoples and local communities into the drafting of national reports, and (d) promoting capacity-building and

¹²⁶ Ibid, para. 4.

¹²⁷ Ibid, para. 5.

development for indigenous peoples and local communities at the national and local levels, on issues related to the Convention.¹²⁸

The COP also requested the Executive Secretary to convene an ad hoc technical expert group on indigenous peoples and local communities, and the Kunming-Montreal Global Biodiversity Framework, subject to availability of financial resources, which should meet prior to the twelfth meeting of the Ad Hoc Open-ended Inter-sessional Working Group on Article 8(j) and Related Provisions, with terms of reference as contained in annex III to the present decision, to provide advice on the further elaboration of the new programme of work on, and the possible institutional arrangements for, Article 8(j) and other provisions of the Convention related to indigenous peoples and local communities, including the future *modus operandi* for the implementation of Article 8(j), considering the possible establishment of a subsidiary body, continuing the working group, or other arrangements.¹²⁹

x. Capacity-Building and Development and Technical and Scientific Cooperation

The Conference of the Parties recognised that many Parties, in particular developing country Parties, might not yet have the necessary capacities to fully implement the Kunming-Montreal global biodiversity framework and related decisions taken by the Conference of the Parties at its fifteenth meeting, and further highlighted the need for enhanced cooperation to address these capacity gaps.¹³⁰ In addition, it took that the Kunming-Montreal global biodiversity framework and related decisions are to be implemented in accordance with national priorities and capabilities, and also took into account the specific needs of developing country Parties, in particular the least developed countries and small island developing states, and countries with economies in transition, also taking into consideration the special situation of

¹²⁸ Agenda item 10A, 15/10. Development of a new programme of work and institutional arrangements on Article 8(j) and other provisions of the Convention related to indigenous peoples and local communities, CBD/COP/DEC/15/10, 19 December 2022, para. 6.

¹²⁹ *Ibid*, para. 7.

¹³⁰ Agenda item 13A, 15/8. Capacity-building and development and technical and scientific cooperation, CBD/COP/DEC/15/8, 19 December 2022, Preamble.

those that are most environmentally vulnerable, such as those with arid and semi-arid zones, coastal and mountainous areas, as well as indigenous peoples and local communities, women and youth.¹³¹

The COP 15 thus adopted the long-term strategic framework for capacity-building and development to support priorities determined by Parties in their national biodiversity strategies and action plans for the implementation of the Kunming-Montreal global biodiversity framework, contained in annex I to the present decision.¹³²

It also urged Parties and invited other Governments, indigenous peoples and local communities, women and youth, the capacity-building task force of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, relevant organizations and other stakeholders, to use the long-term strategic framework for capacity-building and development referred to in paragraph 1 above, as a flexible framework in the design, implementation, monitoring and evaluation of their capacity-building and development initiatives and programmes supporting the achievement of the vision, mission, goals and targets of the Kunming-Montreal global biodiversity framework.¹³³ COP 15 also urged Parties and invited other Governments to identify and prioritize capacity-building and development needs, in partnership with indigenous peoples and local communities, and with the participation of women and youth and other relevant stakeholders, to integrate capacity-building and development components in their national biodiversity strategies and action plans while updating them in line with the Kunming-Montreal global biodiversity framework, and/or develop dedicated biodiversity capacity-building and development action plans, and programmes, as appropriate.¹³⁴

¹³¹ Agenda item 13A, 15/8. Capacity-building and development and technical and scientific cooperation, CBD/COP/DEC/15/8, 19 December 2022, Preamble.

¹³² Ibid, para. 1.

¹³³ Ibid, para. 4.

¹³⁴ Ibid, para. 9.

Notably, it also invited universities and other academic institutions to develop and integrate into their curricula specialized and transdisciplinary academic courses and programmes and/or expand and strengthen existing ones, generate and share new knowledge, and implement continuing education programmes to support the Kunming-Montreal global biodiversity framework with the full and effective participation of indigenous peoples and local communities, women and youth.¹³⁵

COP 15 also urged Parties and invited other Governments and relevant organizations to recognize the important role of, and promote science, technology, innovation and other knowledge systems in supporting the implementation of the goals and targets of the Kunming-Montreal global biodiversity framework towards achieving the 2050 Vision of “living in harmony with nature”.¹³⁶

In order to support the priorities established by Parties in their national biodiversity strategies and action plans for the implementation of the Kunming-Montreal global biodiversity framework, the long-term strategic framework for capacity-building and development is intended to serve as a roadmap for the capacity-building and development efforts of government and non-government actors, including indigenous peoples and local communities.¹³⁷ By promoting coherence, efficiency, and effectiveness of capacity-building and development efforts at all levels through strategic, coordinated, and harmonized approaches, it seeks to catalyse institutionalized capacity-building and development interventions that are robust, coordinated, and delivered in a holistic and complementary manner.¹³⁸

According to this strategic framework, capacity is defined as "the ability of people, organisations, and societies as a whole to achieve the biodiversity-related goals and action targets," and capacity-building and development is

¹³⁵ Agenda item 13A, 15/8. Capacity-building and development and technical and scientific cooperation, CBD/COP/DEC/15/8, 19 December 2022, Para. 12.

¹³⁶ *Ibid*, para. 17.

¹³⁷ Annex 1, para. 1, Agenda item 13A, 15/8. Capacity-building and development and technical and scientific cooperation, CBD/COP/DEC/15/8, 19 December 2022.

¹³⁸ *Ibid*.

understood as "the process by which people, organisations, and society as a whole unleash, strengthen, create, adapt, and maintain capacity over time to achieve positive biodiversity results." The enabling environment, the organisational level, and the person level are all taken into consideration when discussing capacity-building and growth.¹³⁹

xi. Resource mobilization

Using Article 20 of the Convention as the basis for providing and mobilizing resources from all Sources, the Conference of the Parties emphasized the importance of urgently increasing the mobilization of financial resources from all sources, domestic and international, public and private, with a view to closing the biodiversity financing gap and making adequate and predictable resources available in a timely manner for the effective implementation of the Kunming-Montreal Global Biodiversity Framework.¹⁴⁰

The COP thus, among other things, acknowledged the pledges made to finance the implementation of the global biodiversity framework, recognized that further efforts are needed, and encouraged developed country Parties, other donors, and financial institutions to facilitate efficient access to these resources through multilateral and bilateral channels.¹⁴¹

Furthermore, it recognised efforts by other relevant instruments and institutions to integrate biodiversity in their financing and programming decisions and further encourages them to align their financing with the goals and targets of the global biodiversity framework.¹⁴² It also recognised the ongoing need of developing countries for other means of implementation, including technical and financial support and capacity-building, including to undertake domestic action to mobilize resources and monitor and report thereon.¹⁴³

¹³⁹ Annex 1, para. 3.

¹⁴⁰ Agenda item 12A, 15/7. Resource mobilization, CBD/COP/DEC/15/7, 19 December 2022, Preamble.

¹⁴¹ Ibid, para. 6.

¹⁴² Ibid, para. 9.

¹⁴³ Ibid, para. 10.

It further encouraged Parties and invites other Governments, organizations, the private sector and other major stakeholder groups to take the strategy for resource mobilization into consideration as a flexible framework guiding implementation of the targets of the Kunming-Montreal Global Biodiversity Framework related to resource mobilization, in accordance with national circumstances.¹⁴⁴

11.5.3 Implications of the COP 15 Outcomes on the Developing Countries: Challenges and Prospects

The COP15 Agreement has received criticism for its watered-down ambitions, weak language, and stagnation in important areas such as reducing extinction of plants and animals, protecting intact ecosystems, and combating unsustainable production and consumption. Nevertheless, it reflects successes in paving the way for resource mobilization and monitoring frameworks.¹⁴⁵

States agreed to a deal known as "30 by 30," which became an often contested goal throughout discussions, to protect 30% of land, inland water, coastal, and marine resources by 2030. While local and indigenous people worked hard over the last two years to ensure that their lands and rights were acknowledged and protected in the objectives, many NGOs also regarded 30 by 30 as a lifeline for species languishing in the midst of the biodiversity catastrophe. Today, 17% of the planet's land area is protected, more than double the Aichi objectives' aims, and more than triple the 10% target for marine conservation.¹⁴⁶

Despite fierce opposition from developed nations, developing nations steadfastly defended the fundamental idea of Common But Differentiated Responsibilities (CBDR) when addressing the connected issue of "Biodiversity

¹⁴⁴ Ibid, para. 13.

¹⁴⁵ 'Nations Adopt Kunming-Montreal Global Biodiversity Framework' (*Mongabay Environmental News*, 20 December 2022) <<https://news.mongabay.com/2022/12/nations-adopt-kunming-montreal-global-biodiversity-framework/>> accessed 20 February 2023.

¹⁴⁶ Ibid.

and Climate Change" at the UN Convention on Biological Diversity's fifteenth Conference of the Parties (COP15).¹⁴⁷

Very diverse perspectives between developed and developing nations caused the impasse over whether or not to keep the CBDR concept, which was in square brackets (not agreed/unresolved) throughout the progress of the negotiation texts. The former refused to acknowledge it as a Fundamental tenet. The latter emphasised that it is a general idea that is incorporated in Principle 7 of the 1992 Rio Declaration on Environment and Development and, as a result, pertains to the CBD. Moreover, it was noted that Article 20 explicitly references it (on financial resources).¹⁴⁸

A long-running contentious issue, in addition to the CBDR principle, was the use of the contentious term "nature-based solutions" (NbS) throughout the negotiating texts, not just for the biodiversity and climate change agenda item but also for other agenda items, such as the Kunming-Montreal Global Biodiversity Framework. Most poor nations disagreed with this idea, arguing that NbS has not yet been approved by the CBD and instead preferring to refer to the previously approved strategy of "Ecosystem-Based Approaches" (EBAs). Yet, poor nations finally made significant compromises in order to secure an agreement on keeping "nature-based solutions and/or ecosystem-based methods" in the name of "compromise" and moving forward with adoption of a decision on the agenda item. It is now acceptable to use this formulation.¹⁴⁹

The CBDR principle, which was referred to in Paragraph 8 of the conference room paper on the biodiversity and climate change agenda item (CRP.12),

¹⁴⁷ 'CBD COP15: Developing Countries Defend Principle of Common but Differentiated Responsibilities' <<https://www.twn.my/title2/biotk/2023/btk230101.htm>> accessed 20 February 2023.

¹⁴⁸ 'CBD COP15: Developing Countries Defend Principle of Common but Differentiated Responsibilities' <<https://www.twn.my/title2/biotk/2023/btk230101.htm>> accessed 20 February 2023.

¹⁴⁹ 'CBD COP15: Developing Countries Defend Principle of Common but Differentiated Responsibilities' <<https://www.twn.my/title2/biotk/2023/btk230101.htm>> accessed 20 February 2023.

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which stated that global strategies adopted to address biodiversity and climate change must take into account common but differentiated responsibilities and respect, was not reciprocated by developed countries despite developing countries exercising the most flexibility on the NbS issue. A proposed decision wording was being considered for approval together with the CRP.12 document.¹⁵⁰

Notably, the Framework urges countries to set biodiversity objectives and to submit, at least every five years, updates on their progress in the form of national biodiversity plans, even though it is not legally obligatory (violations of the Framework do not have stringent legal repercussions). These strategies will resemble "nationally defined contributions," which are the papers created by countries in accordance with the Paris Agreement outlining their climate change objectives. Although there is no immediate need for states to report on biodiversity, they will still be required to closely monitor any changes in biodiversity and make sure that their domestic policies are in line with the Framework's goals.¹⁵¹

In addition to the Paris Climate Accord, this agreement offers a solid framework for global biodiversity action, laying the groundwork for a resilient, climate-neutral, and nature-friendly society by 2050.¹⁵² Contrary to COP27, poor nations were unable to accomplish their goal of creating a separate fund supported by wealthier nations. To assist poor nations, who are frequently the most biodiversity-rich, in achieving the global goals set forth by the new framework, the African group, in particular, argued for the creation of a "Global Biodiversity Fund" that is separate from climate finance and development aid. African nations and other developing nations demanded that rich nations mobilise \$100 billion annually for biodiversity. Instead, the final language establishes a target of \$200 billion per year from all sources,

¹⁵⁰ Ibid.

¹⁵¹ Harper KR Claudia, 'COP15: Outcome of Global Biodiversity Summit' (*Passle*, 22 December 2022) <<https://sustainablefutures.linklaters.com/post/102i42g/cop15-outcome-of-global-biodiversity-summit>> accessed 20 February 2023.

¹⁵² 'Historic Outcome at COP15 - a Chance to Keep Our Planet Livable for Generations to Come! | EEAS Website' <https://www.eeas.europa.eu/eeas/historic-outcome-cop15-chance-keep-our-planet-livable-generations-come_en> accessed 20 February 2023.

including the public and commercial sectors, by 2030. According to the document, rich nations must provide at least \$30 billion annually by 2030 and \$20 billion annually by 2025. (including official development assistance).¹⁵³

One thing that is clear from the outcomes of the UN Biodiversity COP 15 is that some good progress was made in supporting developing world efforts in biodiversity conservation, some funding mechanisms were established and the recognition of the role of indigenous communities in biodiversity conservation have a better chance now thanks to these outcomes. It is important that African countries keep pursuing the ambitious targets set out in COP 15 because, as it has been pointed out, biodiversity conservation and climate change mitigation all play a major role in achievement of socio-economic rights of citizens as envisaged under the 2030 Agenda or Sustainable Development Goals. Each country should adopt these outcomes based on their own unique domestic needs as well as available resources.

11.5.4. Conclusion

It has been suggested that programs for Biodiversity Monitoring and Assessment (BMAP) offer a way to gather and present scientific data for use in managing natural resources. Establishing the objectives is the first step in creating the BMAP programme. The types of species and habitats that should be taken into account as part of the programme are then frequently determined by doing a baseline biological assessment. Following completion of the assessment, trends in biodiversity will be shown in the environment by tracking the chosen indicators and utilising science to offer answers. The results of monitoring operations reveal concerns that call for management methods, such as the need to safeguard vulnerable or endangered species or eradicate invasive non-native species.¹⁵⁴ Monitoring is a crucial part of an

¹⁵³ Gita Briel, 'Trade-related Outcomes From the UN Biodiversity Conference (COP15),' 23 Dec 2022 <https://www.tralac.org/blog/article/15852-trade-related-outcomes-from-the-un-biodiversity-conference-cop15.html> accessed 20 February 2023.

¹⁵⁴ Henderson, A., Comiskey, J., Dallmeier, F. and Alonso, A., "Framework for Assessment and Monitoring of Biodiversity." *Encyclopedia of Biodiversity Online Update 1* (2007), p. 545.

effective adaptive management programme since it is used to evaluate the progress achieved toward achieving management objectives.¹⁵⁵

If the Sustainable Development Goal 15 of the 2030 Agenda for Sustainable Development which is devoted 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*” is to be achieved, then biodiversity assessments must become part of environmental management approaches in the country. It is only through such assessments that the true status and impact on biodiversity can be established. It is important that given that a legislative requirement for an environmental impact assessment based on environmental considerations does not ensure that biological diversity will be taken into account, it should be taken into account to include biodiversity criteria in either current or future screening criteria. This is especially important where EIA processes are to be carried out in ecologically sensitive areas. It has thus been suggested that there is a need to solve the two key issues that biodiversity conservation poses for impact assessment, namely: First, current impact assessment techniques must be enhanced to address biodiversity impacts; second, they need to be broadened to give additional positive advantages for biodiversity.¹⁵⁶ If these goals for biodiversity and impact assessment are to be accomplished, changes must be made at all levels of impact assessment, including legal requirements, standards, training, and impact assessment practice.¹⁵⁷

The primary objective of COP 15 was for countries to come to an agreement on a post-2020 global biodiversity framework with goals and initiatives to combat nature and biodiversity loss. The Kunming-Montreal Global Biodiversity Framework (the "Framework") and 23 objectives to be accomplished by 2030 were both officially endorsed by the states during

¹⁵⁵ Ibid, p. 545.

¹⁵⁶ Brooke, C., ‘Biodiversity and Impact Assessment,’ prepared for the conference on *Impact Assessment in a Developing World* Manchester, England, Oct 1998, RSPB/BirdLife International, p.4.

¹⁵⁷ Ibid, p. 6.

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COP15.¹⁵⁸ These outcomes portend hope for the reversal of biodiversity loss across the world and form a good basis for governments to work closely with other stakeholders, including communities, in conservation efforts. COP 15 laid a lot of emphasis on the role of communities in conservation efforts, and governments should pursue this further in order to achieve biodiversity conservation, and using the envisaged funding mechanisms, empower these communities as a way of combating poverty, as this will enhance fight against environmental degradation due to diversified sources of livelihoods.

¹⁵⁸ Harper KR Claudia, 'COP15: Outcome of Global Biodiversity Summit' (*Passle*, 22 December 2022) <<https://sustainablefutures.linklaters.com/post/102i42g/cop15-outcome-of-global-biodiversity-summit>> accessed 20 February 2023; 'COP15: Nations Adopt Four Goals, 23 Targets for 2030 In Landmark UN Biodiversity Agreement' (*Convention on Biological Diversity*) <<https://www.cbd.int/article/cop15-cbd-press-release-final-19dec2022>> accessed 20 February 2023.

CHAPTER TWELVE

Science and Technology for Sustainability: Transitioning from Fossil Fuel-Based Transport to Clean Energy Vehicles in Africa

12.1. Introduction

Sustainable Development Goal 7 captures the commitments of nations in moving the world towards cleaner energy technologies. One of the greatest threats to this transition, however, is the transport sector especially in Africa which contributes a lot to air pollution as it still relies heavily on fossil fuel which contribute heavily to greenhouse gas emissions. This chapter argues that if Africa is to keep up with the rest of the world in this transition, then it is the high time that it invested in electric vehicles in order to address the challenge of fossil fuel pollution sources.

According to the current trends, the global number of light-duty cars will roughly double by midcentury, owing to increased prosperity, and demand for freight transportation (road, rail, sea, and air) as well as passenger aviation will also increase.¹ It has been argued that the transport sector has the potential to create an enabling environment for Africa's economic progress.² The downside to this is that in Africa, road transport emissions will continue to rise significantly as governments attempt to improve their road infrastructure networks for commercial activity, meeting the demands of a growing population and a growing middle class.³ According to studies, mortality rates from outdoor air pollution in Africa have climbed by 57 percent over the last three decades, with pollution from motor vehicles accounting for at least 85 percent of the continent's vehicle fleet, some of which are antiquated and utilise outdated technologies.⁴

¹ Creutzig, F., Jochem, P., Edelenbosch, O.Y., Mattauch, L., van Vuuren, D.P., McCollum, D. and Minx, J., 'Transport: A Roadblock to Climate Change Mitigation?' *Science* 350, no. 6263 (2015): 911-912, at 911.

² 'Transforming Africa's Transport Sector with the Implementation of Intended Nationally Determined Contributions' 1

<<https://repository.uneca.org/handle/10855/23728>> accessed 2 February 2022.

³ Ibid, 2.

⁴ Ayetor, G. K., Innocent Mbonigaba, M. N. Sackey, and P. Y. Andoh. "Vehicle regulations in Africa: Impact on used vehicle import and new vehicle sales." *Transportation Research Interdisciplinary Perspectives* 10 (2021): 100384.

Notably, the Paris Agreement urges countries to increase their mitigation ambition in their Nationally Determined Contributions (NDCs) by reviewing and assessing their ambition and developing long-term low-carbon development policies.⁵

Climate change mitigation requires a shift in production and consumption patterns in order to embrace more sustainable ways.⁶ Notably, transportation is one of the main sectors that plays a critical role in attaining poverty eradication and sustainable development goals, as it is closely linked to and influences the development of other sectors of the economy.⁷ It is against this background that this chapter discusses the challenges and prospects of Africa moving towards adopting low or no emissions transport infrastructure.

12.2. Fossil Fuel-Based Transport and Climate Change: The Connection

SDG 7 states that increased use of fossil fuels without actions to mitigate greenhouse gases will have global climate change implications. Energy efficiency and increased use of renewables contribute to climate change mitigation and disaster risk reduction.⁸

Vehicle emissions are a major source of tiny particles and nitrogen oxides, both of which contribute to urban air pollution, and cars account for 25% of all energy-related greenhouse gas emissions globally.⁹ Poor fuel quality, an aging vehicle fleet, and a lack of mandatory roadworthy emission tests are all

⁵ 'Road Transport • The Road towards Low Carbon Mobility' <<https://www.climatechance.org/en/card/road-towards-low-carbon-mobility/>> accessed 2 February 2022.

⁶ Weijnen MP, Lukszo Z and Farahani S, 'Shaping an Inclusive Energy Transition' (Springer Nature, 2021).

⁷ "United Nations. Economic Commission for Africa.; United Nations. Economic and Social Council (2009-08). Africa review report on transport: a summary. UN. ECA Committee on Food Security and Sustainable Development (CFSSD)/Regional Implementation Meeting (RIM) for CSD-18 (6th session: 2009, Oct. 27-30: Addis Ababa, Ethiopia).

⁸ Environment UN, 'GOAL 7: Affordable and Clean Energy' (UNEP - UN Environment Programme, 2 October 2017) <<http://www.unep.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-7>> accessed 3 February 2022.

⁹ 'Used Vehicles Get a Second Life in Africa – but at What Cost?' (UNEP, 26 October 2020) <<http://www.unep.org/news-and-stories/story/used-vehicles-get-second-life-africa-what-cost>> accessed 3 February 2022.

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contributing to Africa's rising greenhouse gas emissions, which are expanding at a rate of 7% per year.¹⁰

The global road transport carbon emissions have increased since 2000 as a result of a complex combination of human behavior, economic growth, public policy, and transportation legislation.¹¹ In many African cities and most African countries, the transportation sector is the leading source of urban air pollution and energy-related greenhouse gas emissions.¹² Millions of secondhand cars, vans, and minibuses transported from Europe, the United States, and Japan to low- and middle-income nations are hampering efforts to mitigate climate change, according to a UNEP report released in 2020. They pollute the air and are frequently engaged in car accidents. Many are of poor quality and would fail roadworthiness tests in exporting countries.¹³

Globally, the transportation industry is anticipated to be responsible for roughly 23% of total energy-related carbon dioxide emissions, with the sector developing at a faster rate than most others with emissions expected to double by 2050.¹⁴ Most African countries rely on used and old automobiles that are mainly outdated in technology, harming the environment significantly, especially when using contaminated fuel.¹⁵ Electric vehicles, on the other hand, are rapidly growing in popularity among the countries that export the

¹⁰ Ayetor GK and others, 'Investigating the State of Road Vehicle Emissions in Africa: A Case Study of Ghana and Rwanda' (2021) 11 *Transportation Research Interdisciplinary Perspectives* 100409.

¹¹ 'Road Transport • The Road towards Low Carbon Mobility' <<https://www.climate-change.org/en/card/road-towards-low-carbon-mobility/>> accessed 2 February 2022.

¹² 'African Countries Move toward Cleaner Car Imports' (*Climate & Clean Air Coalition*) <<https://www.ccacoalition.org/en/news/african-countries-move-toward-cleaner-car-imports>> accessed 2 February 2022.

¹³ Environment UN, 'Global Trade in Used Vehicles Report' (*UNEP - UN Environment Programme*, 23 October 2020) <<http://www.unep.org/resources/report/global-trade-used-vehicles-report>> accessed 2 February 2022.

¹⁴ Creutzig, F., Jochem, P., Edelenbosch, O.Y., Mattauch, L., van Vuuren, D.P., McCollum, D. and Minx, J., 'Transport: A Roadblock to Climate Change Mitigation?' *Science* 350, no. 6263 (2015): 911-912.

¹⁵ Ayetor G and others, 'Vehicle Regulations in Africa: Impact on Used Vehicle Import and New Vehicle Sales' (2021) 10 *Transportation Research Interdisciplinary Perspectives* 100384.

most used automobiles.¹⁶ For example, Europe, which primarily exports cars to West and North Africa, has announced internal combustion engine phase-out targets, and a stronger electrification push is expected across Europe to meet its net zero 2050 goal and stronger new 2030 carbon target, while Japan, the largest exporter of used cars to Mozambique and other right-hand-drive countries in Eastern and Southern Africa, has set a 2035 phase-out date for internal combustion engine cars.¹⁷

While countries across Africa, South Asia, and Latin America are now aware of the consequences of used vehicles and are erecting import barriers to contain them, an outright ban on used vehicle import is not possible in many African countries due to growing consumer demand for cheap used cars, making it difficult for governments to prohibit the import of old cars or impose improved emissions standards even after adopting cleaner fuels.¹⁸ Addressing carbon emissions from the transport industry through adoption of cleaner technologies is one of the steps towards tackling climate change.

12.3. Transport Sector in Kenya

According to studies, Kenya's transportation sector contributes for 8.3% of the country's total GDP.¹⁹ Because of Kenya's role as a trans-shipment hub for goods moving on to landlocked countries in East and Central Africa, with the Port of Mombasa serving as a critical landing point for goods, and links to the Northern Corridor that runs west across the country to the neighboring markets of Uganda, Rwanda, Burundi, and the Democratic Republic of Congo, transportation and logistics are at the heart of Kenya's economic narrative.²⁰

¹⁶ 'Africa's Bumpy Road to an Electric Vehicle Future' (E3G, 6 January 2021) <<https://www.e3g.org/news/africa-s-bumpy-road-to-an-electric-vehicle-future/>> accessed 2 February 2022.

¹⁷ Ibid.

¹⁸ 'Consumer Demand Doesn't Let Countries Ban Import of Cheap Used Cars' <<https://www.downtoearth.org.in/news/governance/consumer-demand-doesn-t-let-countries-ban-import-of-cheap-used-cars-62135>> accessed 2 February 2022.

¹⁹ 'Transport in Kenya's Nationally Determined Contribution' (Changing Transport) 1 <<https://changing-transport.org/publication/transport-in-kenyas-nationally-determined-contribution/>> accessed 26 January 2022.

²⁰ 'Transport' (Oxford Business Group, 21 May 2017) <<https://oxfordbusinessgroup.com/kenya-2017/transport>> accessed 26 January 2022.

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Furthermore, the road sub-sector accounts for over 80% of passenger traffic and 76 percent of freight, with Kenya's road network estimated to be 160,886 kilometers long, of which 61,945 kilometers are classified, and used by over 740,000 vehicles with a 6% annual traffic growth rate.²¹

The downside is that Kenya's transportation sector is the country's largest consumer of petroleum products and thus a major contributor to GHG emissions, accounting for roughly 67 percent of Kenya's energy-related CO₂ emissions and 11.3 percent of total GHG emissions in 2015 for fuel consumption in civil aviation, road transport, and rail.²² This may have a negative impact on Kenya's contribution to the Paris Agreement's goal of keeping global warming well below 2 degrees Celsius compared to pre-industrial times.²³ Kenya is ranked among the African countries with the highest numbers of imported cars as shown below, as at 2019.

²¹ Christopher Onyango, 'Kenya's Transport Sector: Measuring Its Value Chains and Exploiting Its Potential, Mr. Christopher Onyango, KIPPRA' (2019) 4 <https://unctad.org/system/files/non-official-document/aldc2019_kenya_servicestrade_Onyango_KIPPRA_en.pdf> accessed 26 January 2022.

²² 'Transport in Kenya's Nationally Determined Contribution' (Changing Transport) 4 <<https://changing-transport.org/publication/transport-in-kenyas-nationally-determined-contribution/>> accessed 26 January 2022.

²³ Ibid.

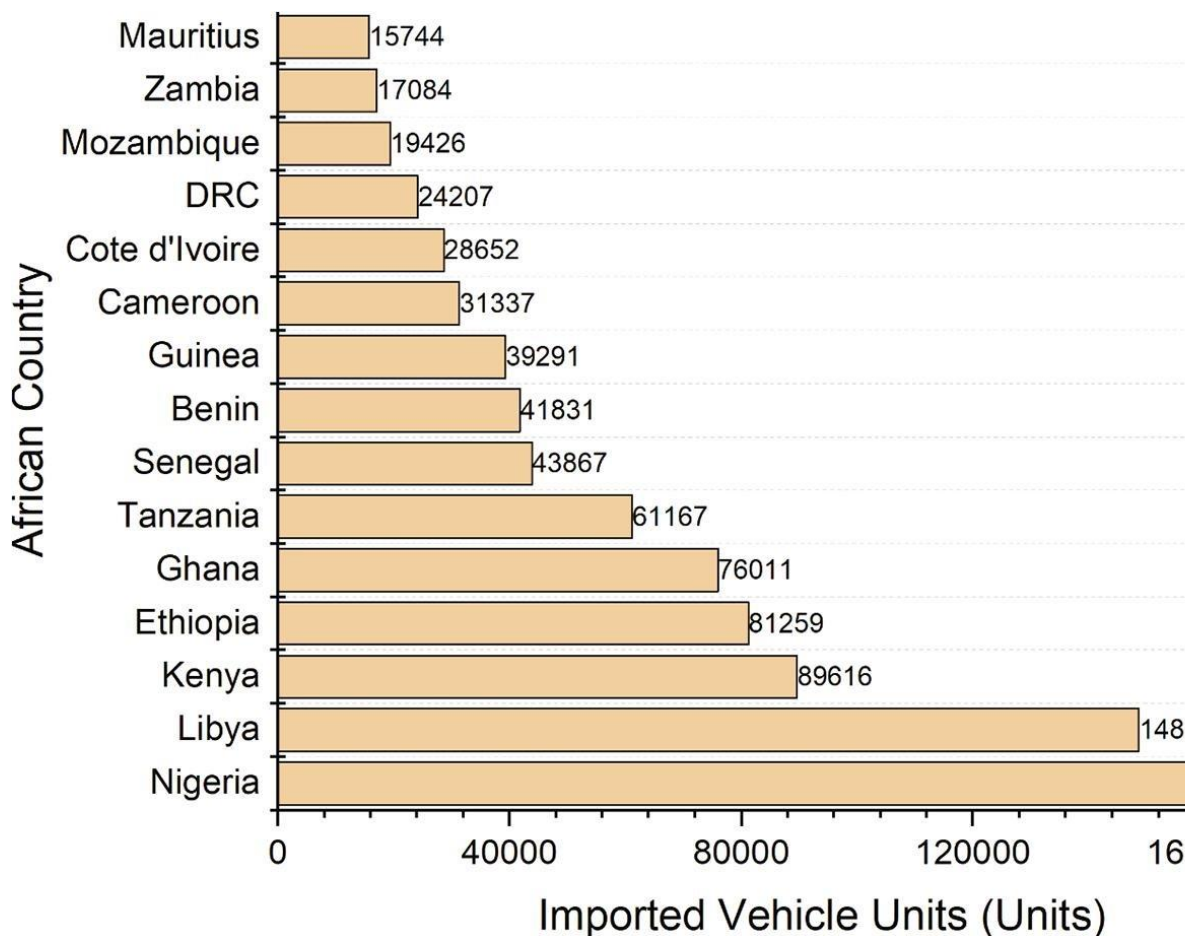


Fig. 1. Number of used vehicle units imported to some African countries in 2019.²⁴

Kenya's system, thus, requires a transition to more sustainable forms more than ever.

²⁴ Ayetor GK and others, 'Vehicle Regulations in Africa: Impact on Used Vehicle Import and New Vehicle Sales' (2021) 10 Transportation Research Interdisciplinary Perspectives 100384. <https://ars.els-cdn.com/content/image/1-s2.0-S2590198221000919-gr5_lrg.jpg> accessed 27 January 2022.

12.4. Development of Clean Energy Vehicle Technologies: Challenges and Prospects

With the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, which entered into force on January 1, 2019, the world took an important step toward drastically reducing the production and consumption of powerful greenhouse gasses known as Hydrofluorocarbons (HFCs) and limiting global warming.²⁵

Only four African countries – Egypt, Morocco, South Africa, and Sudan – have banned the import of old vehicles, with another 25 imposing age limitations ranging from 15 to three years.²⁶ Several countries are combining age restrictions with tax measures to raise the cost of importing older vehicles, such as Kenya, which, in addition to limiting the age to eight years, has levied an added tax on older vehicles, raising the whole cost.²⁷

The used car market has also hampered the development of a dependable manufacturing industry, with African governments failing to persuade manufacturers to invest in assembly plants, owing to a lack of suppliers, distributors, and component makers, as well as a lack of new vehicle demand.²⁸

SDG 9 calls for construction of new greener infrastructures, retrofitting or reconfiguring existing infrastructure systems and exploiting the potential of smart technologies which can greatly contribute to the reduction of

²⁵ 'World Takes a Stand against Powerful Greenhouse Gases with Implementation of Kigali Amendment' (UN Environment, 3 January 2019) <<http://www.unep.org/news-and-stories/press-release/world-takes-stand-against-powerful-greenhouse-gases-implementation>> accessed 27 January 2022.

²⁶ 'Consumer Demand Doesn't Let Countries Ban Import of Cheap Used Cars' <<https://www.downtoearth.org.in/news/governance/consumer-demand-doesn-t-let-countries-ban-import-of-cheap-used-cars-62135>> accessed 2 February 2022.

²⁷ Ibid.

²⁸ Alison, 'Are Africa's Used Car Import Bans Effective?' (*Global Fleet*, 22 June 2021) <<https://www.globalfleet.com/en/safety-environment/africa-middle-east/analysis/are-africas-used-car-import-bans-effective>> accessed 2 February 2022.

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environmental impacts and disaster risks as well as the construction of resilience and the increase of efficiency in the use of natural resources.²⁹

Target 9.a thereof seeks to facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States. Equally, SDG 17 envisages that stronger partnerships will contribute to environmental protection and sustainable development by mobilizing resources, sharing knowledge, promoting the creation and transfer of environmentally sound technologies, and building capacity. Countries can build on this to move towards cleaner energy and sustainable transport system.

12.5. Transitioning from Fossil Fuel-Based Transport to Clean Energy Vehicles in Africa

Reduced emissions in the transportation sector will almost certainly necessitate a move to low-emission vehicles and fuels, with governments taking praiseworthy steps to minimize emissions in the transportation sector through law.³⁰

Energy is regarded as Africa's key to development and the foundation for industrialization, with the expansion of renewables going beyond providing reliable energy and climate protection to promoting economic development, which will benefit and create new jobs and opportunities for entire industries, and reliable, sustainable energy will promote the provision of important basic socioeconomic services.³¹

²⁹ Environment UN, 'GOAL 9: Industry, Innovation and Infrastructure' (UNEP - UN Environment Programme, 2 October 2017) <<http://www.unep.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-9>> accessed 3 February 2022.

³⁰ Ayetor GK and others, 'Vehicle Regulations in Africa: Impact on Used Vehicle Import and New Vehicle Sales' (2021) 10 Transportation Research Interdisciplinary Perspectives 100384.

³¹ 'The Renewable Energy Transition in Africa: Powering Access, Resilience and Prosperity | Africa Energy Portal' 3 <<https://africa-energy-portal.org/reports/renewable-energy-transition-africa-powering-access-resilience-and-prosperity>> accessed 14 January 2022.

It has been argued that while a 100 percent renewable economy would provide a long-term answer to climate change, energy security, sustainability, and pollution, converting the current transportation infrastructure appears to be one of the more difficult components of such a sustainable transition.³²

While countries are working on adopting use of electric cars, importing countries, on the other hand, require regional coordination on age limits, fiscal measures, pollution rules, and fuel quality. They also need emissions, roadworthiness, and safety inspections, as well as a standardized methodology for vehicle registration and verification. To avoid dieselization, fuel efficiency efforts must be matched with increased emissions restrictions. Several countries that are building their own manufacturing and assembly capacities and enacting restrictive import restrictions must set pollution and safety regulations, as well as quality control for domestic production.³³

a) Government's Tax Incentives on Electric Cars

The competition between used and new vehicles is primarily driven by price, and African countries' strategies to close the price gap have included banning the importation of used vehicles and encouraging the establishment of vehicle assembly plants by providing tax breaks and rebates to original equipment manufacturers, resulting in lower new vehicle costs.³⁴

If Kenya and Africa in general is to ensure that their citizens embrace zero emissions vehicles, then they must work towards creating tax incentives on the cost of the vehicles. Rwanda's efforts are commendable, as the government approved an electric mobility adaptation strategy in April 2021, with the goal

³² Antonio García-Olivares, Jordi Solé and Oleg Osychenko, 'Transportation in a 100% Renewable Energy System' (2018) 158 *Energy Conversion and Management* 266 <<https://www.sciencedirect.com/science/article/pii/S0196890417312050>> accessed 27 January 2022.

³³ 'Consumer Demand Doesn't Let Countries Ban Import of Cheap Used Cars' <<https://www.downtoearth.org.in/news/governance/consumer-demand-doesn-t-let-countries-ban-import-of-cheap-used-cars-62135>> accessed 2 February 2022.

³⁴ Ayetor GK and others, 'Vehicle Regulations in Africa: Impact on Used Vehicle Import and New Vehicle Sales' (2021) 10 *Transportation Research Interdisciplinary Perspectives* 100384.

of increasing electric vehicles and motorcycles. The strategy includes a number of incentives for electric vehicles, plug-in hybrid electric vehicles, and hybrid electric vehicles.³⁵ In order to lower the cost of ownership and maintenance of electric vehicles, the Rwandan cabinet approved a strategy that exempted electric vehicles, spare parts, batteries, and charging station equipment from import and excise duties, as well as a zero-rated Value Added Tax on electric vehicles, spare parts, batteries, and charging station equipment from the ordinary vehicle import taxes of 25% import duty, 18% VAT, and 5% to 15% excise duty.³⁶

While Kenya has made some similar efforts, the rate is so slow and the impact so small that it was previously reported that the Kenyan government aims to increase the uptake of electric vehicles in the country over the next five years, with a goal of having 5% of all registered vehicles in Kenya be electric by 2025, and all new public buildings must have charging stations.³⁷ This is a very low rate of progress considering that it was estimated that as at 2019 the electric vehicle industry in Kenya was still young with only 300 electric vehicles in the country.³⁸

African countries thus need to invest more in encouraging production and uptake of electric vehicles to enable them eventually get rid of internal combustion engine vehicles.

b) Adopting and Implementing Vehicles Standards in Africa

It has been observed that the different enforcement and testing regimes of world vehicle standards have made it difficult for Africa to adopt a unified vehicle standard, despite the fact that a unified vehicle standard has become even more necessary with the introduction of the African Continental Free

³⁵ 'Rwanda Unveils New Incentives to Drive Electric Vehicle Uptake' (The New Times | Rwanda, 16 April 2021) <<https://www.newtimes.co.rw/news/rwanda-unveils-new-incentives-drive-electric-vehicle-uptake>> accessed 26 January 2022.

³⁶ Ibid.

³⁷ 'Electric Vehicles to Make up 5% of Registered Vehicles in Kenya by 2025 - Kenyan Wallstreet' (28 October 2020) <<https://kenyanwallstreet.com/electric-vehicles-to-make-up-5-of-registered-vehicles-in-kenya-by-2025/>> accessed 26 January 2022.

³⁸ Ibid.

Trade Area (AfCFTA), which should facilitate free vehicle trade across the continent.³⁹ At the moment, African countries are at various stages of adopting vehicle standards, with the African Organization for Standardization (ARSO) kicking off the development of a regulatory framework for the continent's automotive sector, with the only roadblocks being poor fuel quality, low consumer purchasing power, and a lack of data on used vehicle import.⁴⁰ There is also hope as Kenya banned used automobile imports older than eight years old in 2015, Tanzania charges an extra excise duty on used vehicles eight years old or older (counted from the year of production), and the entire East African Community began to apply standardized depreciation rates to these imports.⁴¹ There is a continuous need for African countries to explore frameworks such as AfCFTA to move the continent towards achieving verifiable vehicle standards.

c) Public-Private Partnerships for Funding, Research and Development and Operation of Electric Vehicles Infrastructure

Notably, worldwide vehicle legislation depends entirely on technology to reduce harmful emissions.⁴² It has been correctly stated that the public and private sectors must collaborate openly, and state transportation agencies must remember their true purpose, which is to efficiently and effectively connect a region in a way that is inclusive of all parties who will be reliant on transportation infrastructure.⁴³ In other countries, such as the United States, the Department of Energy (DOE) collaborates with public and private sector

³⁹ Ayetor GK and others, 'Vehicle Regulations in Africa: Impact on Used Vehicle Import and New Vehicle Sales' (2021) 10 Transportation Research Interdisciplinary Perspectives 100384.

⁴⁰ Ibid.

⁴¹ 'African Countries Move toward Cleaner Car Imports' (*Climate & Clean Air Coalition*) <<https://www.ccacoalition.org/en/news/african-countries-move-toward-cleaner-car-imports>> accessed 2 February 2022.

⁴² Ayetor GK and others, 'Vehicle Regulations in Africa: Impact on Used Vehicle Import and New Vehicle Sales' (2021) 10 Transportation Research Interdisciplinary Perspectives 100384.

⁴³ Callaway M, 'Transport in Kenya: Creating a More Efficient Network through Public-Private Partnerships', 7.

partners to study, develop, and deploy technologies that improve the performance of electric vehicles.⁴⁴

Notably, the construction and operation of a suitable electric vehicle charging infrastructure are prerequisites for the development and sustained operation of electric vehicles, as well as being important strategic measures for promoting a revolution in energy consumption and green development and as such, in order to promote the development of electric vehicles, it may be useful to offer these services to mobilize initiatives by the government and market, where the government may play a leading role in infrastructure construction according to the public-private partnership (PPP) model, to share risks and achieve a win-win situation if the public and private sectors engage in clear communication and reach agreements about how social capital can be guided to participate actively in the provision of public goods and services.⁴⁵ Such collaborations are important if the continent is to achieve its dream of transitioning to electric vehicles.

12.6. Conclusion

Africa is considered the last frontier in the automotive industry, and it is expected to be the last to transition from fossil fuels to electric vehicles. As a result, it is critical that clean mobility become a priority immediately.⁴⁶ Because of high rates of urbanization and economic growth, the continent is experiencing an unprecedented rate of motorization, and as a result, most countries in the region are unable to plan and provide adequate transportation infrastructure and services, as well as take advantage of technological advancements seen in other regions to improve energy efficiency and reduce

⁴⁴ 'Alternative Fuels Data Center: Electric Vehicle Research and Development' <https://afdc.energy.gov/fuels/electricity_research.html> accessed 26 January 2022.

⁴⁵ Tong Yang and others, 'Innovative Application of the Public-Private Partnership Model to the Electric Vehicle Charging Infrastructure in China' (2016) 8 Sustainability 738, 738 <<https://www.mdpi.com/2071-1050/8/8/738>> accessed 27 January 2022.

⁴⁶ Ayetor GK and others, 'Investigating the State of Road Vehicle Emissions in Africa: A Case Study of Ghana and Rwanda' (2021) 11 Transportation Research Interdisciplinary Perspectives 100409.

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vehicle emissions.⁴⁷ In the fields of environment and transportation, there is a need for governments, the private sector, civil society, and development to collaborate, as this will allow the continent to develop a set of measures to move to cleaner mobility, based on good practices and case studies from within and outside the region.⁴⁸ Notably, SDG 17 provides that achieving the ambitious targets of the 2030 Agenda requires a revitalized and enhanced global partnership that brings together Governments, civil society, the private sector, the United Nations system and other actors, mobilizing all available resources.⁴⁹

With global automobile markets rapidly shifting due to a mix of technological advancements, rapidly falling costs, and technological advancements, the African continent may have an opportunity to adopt electric mobility as a more sustainable means of transportation.⁵⁰ Through targeted regulatory reforms, strategic international cooperation and public-private partnerships, Africa is capable of investing and achieving the global dream of transitioning to hybrid and electric vehicles and modes of transport as part of the larger agenda of achieving sustainability in all sectors of economy and combating climate change.

⁴⁷ 'Africa Clean Mobility Week' (UNEP - UN Environment Programme) <<http://www.unep.org/events/conference/africa-clean-mobility-week>> accessed 2 February 2022.

⁴⁸ Ibid.

⁴⁹ Environment UN, 'GOAL 17: Partnerships for the Goals' (UNEP - UN Environment Programme, 2 October 2017) <<http://www.unep.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-17>> accessed 3 February 2022.

⁵⁰ 'Africa's Bumpy Road to an Electric Vehicle Future' (E3G, 6 January 2021) <<https://www.e3g.org/news/africa-s-bumpy-road-to-an-electric-vehicle-future/>> accessed 2 February 2022.

CHAPTER THIRTEEN

Human Health and Sustainability: Addressing Noise Pollution for a Clean and Healthy Environment in Kenya

13.1. Introduction

This chapter discusses the general and specific effects of noise pollution on human health as the basis for addressing noise pollution in Kenya, in line with the constitutional and statutory guarantees on creating a clean and healthy environment for all persons. The author argues that noise pollution is a direct violation of this right and consequently offers recommendations on how the problem can be addressed. The chapter generally discusses the legal and institutional framework on noise regulation, with a view to identifying the key players and stakeholders in tackling the vice. The author argues that unless this problem is effectively addressed, realisation of a clean and healthy environment for the Kenyan people will remain a mirage.

Any sound that bothers, irritates, or potentially harm a person's ear is considered noise. Other definitions of noise include undesired, undesirable, and unpleasant sound.¹ Environmental noise, as defined by the World Health Organization (WHO), is all noise, except noise from places of employment. Any unwelcome sound or group of noises that annoys people or could be harmful to their health is considered noise.² EMCA defines “noise” as any undesirable sound that is intrinsically objectionable or that may cause adverse effects on human health or the environment.³ Notably, EMCA also defines “pollutant” as including any substance whether liquid, solid or gaseous which—(a) may directly or indirectly alter the quality of any element of the receiving environment; (b) is hazardous or potentially hazardous to human health or the environment; and includes objectionable odours, radio-activity,

¹ Hadzi-Nikolova, M., Mirakovski, D., Ristova, E. and Stefanovska Ceravolo, L., ‘Modeling and Mapping of Urban Noise Pollution with SoundPLAN Software’ (2012) 6 International Journal for Science, Technics and Innovations for the Industry MTM (Machines, Tecnologies, Materials) 38, p.38.

² ‘Definition of Environmental Noise’ (*Gouvernement du Québec*)
<<https://www.quebec.ca/en/health/advice-and-prevention/health-and-environment/the-effects-of-environmental-noise-on-health/definition-environmental-noise>> accessed 25 March 2023.

³ EMCA, Sec. 2.

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noise, temperature change or physical, chemical or biological change to any segment or element of the environment.⁴

Environmental noise pollution still poses a serious risk to people's health and quality of life on a global scale. Urbanization, along with the accompanying rise in mobility and industrialization, has led to an amplification of noise in densely populated areas, increasing noise exposure. In a city, as the population grows, so does industrial activity to suit the demands of the populace. Hence, noise levels rise.⁵

This chapter discusses the general and specific effects of noise pollution on human health as the basis for addressing noise pollution in Kenya, in line with the constitutional and statutory guarantees on creating a clean and healthy environment for all persons. The author argues that noise pollution is a direct violation of this right and consequently offers recommendations on how the problem can be addressed. The chapter generally discusses the legal and institutional framework on noise regulation, with a view to identifying the key players and stakeholders in tackling the vice. The author argues that unless this problem is effectively addressed, realisation of a clean and healthy environment for the Kenyan people will remain a mirage. Kenyans have for a while suffered the menace of noise pollution especially after the promulgation of the 2010 Constitution, where there has been conflicting jurisprudence on which level of the Government between national and county governments is mandated to address noise pollution and other nuisances that affect the right to clean and healthy environment as far as far noise pollution is concerned.⁶

⁴ EMCA, Sec. 2.

⁵ Wawa EA and Mulaku GC, 'Noise Pollution Mapping Using GIS in Nairobi, Kenya' (2015) 7 *Journal of Geographic Information System* 486, p. 487.

⁶ <https://www.the-star.co.ke/authors/maureen-kinyanjui>, 'Sakaja Thanks Ruto for Support in Curbing "noise Pollution Menace" in City' (*The Star*) <<https://www.the-star.co.ke/news/2022-12-12-sakaja-thanks-ruto-for-support-in-curbing-noise-menace-in-city/>> accessed 24 March 2023; Okoth B, 'Loud Music in Kenya Neighbourhoods Illegal Regardless Nature of Your Business' (*The Standard*) <<https://www.standardmedia.co.ke/article/2001458024/loud-music-in-neighbourhood-illegal-regardless-nature-of-your-business>> accessed 24 March 2023; February 16 2020 S, 'You Have a Right to a Quiet Environment' (*Business Daily*, 19 September 2020) <<https://www.businessdailyafrica.com/bd/lifestyle/personal-finance/you-have-a-right-to-a->

13.2. Links Between Noise and Human Health

Building sites or traffic on the roads, trains, and in the air are significant sources of environmental noise exposure. Other sources of noise exposure include wind turbines and leisure activities like playing loud music or other audio content or participating in e-sports (video and computer game competitions). In addition to increasing the risk of ischemic heart disease (IHD), hypertension, sleep disturbance, hearing impairment, tinnitus⁷, and cognitive impairment, research shows that excessive noise can be annoying. There is also mounting evidence that excessive noise can have negative effects on mental health and birth outcomes.⁸

quiet-environment-2280534> accessed 24 March 2023; Okafor C, 'Night Clubs in Kenya Face Closure and WhatsApp Groups Could Help Save Them' (*Business Insider Africa*, 55:25 100AD) <<https://africa.businessinsider.com/local/markets/night-clubs-in-kenya-face-closure-and-whatsapp-groups-could-help-save-them/rsv3phk>> accessed 24 March 2023; 'Kisumu Bans Church Crusades over Noise Pollution – Kenya News Agency' (4 November 2022) <<https://www.kenyanews.go.ke/kisumu-bans-church-crusades-over-noise-pollution/>> accessed 24 March 2023; Chepkwony J, 'Churches on the Spot over Noise Pollution, Court Order Them to Cease or Be Prosecuted' (*The Standard*) <<https://www.standardmedia.co.ke/coast/article/2001459278/churches-on-the-spot-over-noise-pollution-court-order-them-to-cease-or-be-prosecuted>> accessed 24 March 2023; WAKWELO V, 'Kileleshwa Bar Operators, Patrons Arrested after Alai's Noise Pollution Complaint» Capital News' (*Capital News*, 2 October 2022) <<https://www.capitalfm.co.ke/news/2022/10/kileleshwa-bar-operators-patrons-arrested-after-alais-noise-pollution-complaint/>> accessed 24 March 2023;

⁷ When a person has tinnitus, their ears or head may hiss, ring, or buzz. These sounds do not originate from an outside source; instead, a person hears them. High noise levels, such as those produced by loud music, can cause tinnitus. Tinnitus may also be brought on by loud or abrupt noises, such as an explosion or gunshot. Hearing loss frequently coexists with the hearing issue of tinnitus. It might be merely passing or permanent. A person's emotional, cognitive, psychological, or physical state is constantly disturbed by debilitating tinnitus.

Around 3% of debilitating tinnitus is caused by environmental noise exposure, primarily noise from leisure activities. <'Effects on Physical Health - The Effects of Environmental Noise on Health' (*Gouvernement du Québec*) <<https://www.quebec.ca/en/health/advice-and-prevention/health-and-environment/the-effects-of-environmental-noise-on-health/effects-of-environmental-noise-on-physical-health>> accessed 25 March 2023.

⁸ 'Guidance on Environmental Noise' <<https://www.who.int/tools/compendium-on-health-and-environment/environmental-noise>> accessed 24 March 2023; 'Compendium of WHO and Other UN Guidance on Health and Environment'

Decibels are used to measure noise level (dB). Decibel levels increase as noise levels do. To accommodate human hearing, decibels can be changed. Decibels (dBA) is the unit of measurement for noise level. As a person is exposed to different levels of noise, different impacts result. Hearing loss can occur after years of being exposed to loud noises (75 dBA for eight hours each day). The body can react to lower noise levels as well; for example, a 40 dBA outdoor noise can be enough to keep someone awake.⁹

Noise's psychosocial effects on people include annoyance, which is the discomfort and disturbance that the person exposed to the noise experiences, as well as consequences on learning.¹⁰

13.3. Noise Regulation in Kenya: Legal and Institutional Framework

According to the International Covenant on Economic, Social, and Cultural Rights, every person has the right to the best possible level of physical and mental health, and State Parties are required to recognise this right. The actions that must be done by the States Parties to the current Covenant in order to fully realise this right must include those required for: the advancement of all facets of industrial and environmental hygiene.¹¹

<<https://www.who.int/publications-detail-redirect/WHO-HEP-ECH-EHD-22.01>> accessed 25 March 2023.

⁹ 'Noise Measurement - The Effects of Environmental Noise on Health' (*Gouvernement du Québec*)

<<https://www.quebec.ca/en/health/advice-and-prevention/health-and-environment/the-effects-of-environmental-noise-on-health/noise-measurement>> accessed 25 March 2023.

¹⁰ 'Psychosocial Effects - The Effects of Environmental Noise on Health' (*Gouvernement du Québec*)

<<https://www.quebec.ca/en/health/advice-and-prevention/health-and-environment/the-effects-of-environmental-noise-on-health/psychosocial-effects-of-environmental-noise>> accessed 25 March 2023.

¹¹ United Nations, *International Covenant on Economic, Social and Cultural Rights*, Adopted and opened for signature, ratification and accession by General Assembly resolution 2200A (XXI) of 16 December 1966, entry into force 3 January 1976, in accordance with article 27, Article 12 (1)(2)(b).

i. Constitution of Kenya 2010

Article 42 (a) of the 2010 Constitution¹² guarantees 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 measures.”

Article 70 (1) of the Constitution provides: “If a person alleges that a right to a clean and healthy environment recognised and protected under Article 42 has been, is being or is likely to be, denied, violated, infringed or threatened, the person may apply to a court for redress in addition to any other legal remedies that are available in respect to the same matter.”

It is also worth pointing out that the Fourth Schedule [Articles 185(2), 186(1) And 187(2) to the Constitution provides for the distribution of functions between the national government and the county governments. The functions and powers of the county governments include, *inter alia*: control of air pollution, noise pollution, other public nuisances and outdoor advertising. The implication of this is that the duty of noise pollution control moved from National Environment Management Authority (NEMA) which is a national government arm, to the county governments. NEMA is just required to play an oversight role in this area, as per the Act. This is on the understanding that county governments are the lead agency in noise pollution control.¹³ EMCA defines “lead agency” to mean any Government ministry, department, parastatal, state corporation or local authority, in which any law vests functions of control or management or any element of the environment or natural resources.¹⁴

ii. Environmental Management and Co-ordination Act, 1999

The Environmental Management and Co-ordination Act, 1999¹⁵ (EMCA) was enacted to provide for the establishment of an appropriate legal and

¹² Constitution of Kenya 2010 (Government Printer, Nairobi, 2010).

¹³ EMCA, sec. 12.

¹⁴ EMCA, sec. 2.

¹⁵ Environmental Management and Co-ordination Act, No.8 of 1999, Laws of Kenya.

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institutional framework for the management of the environment and for matters connected therewith and incidental thereto.¹⁶

Section 101 of EMCA gives the Cabinet Secretary the power to set standards for noise and, on the recommendation of the Authority: recommend minimum standards for emissions of noise and vibration pollution into the environment as are necessary to preserve and maintain public health and the environment; determine criteria and procedures for the measurement of noise and vibration pollution into the environment; determine criteria and procedures for the measurement of sub-sonic vibrations; determine standards for the emission of sub-sonic vibrations which are likely to have a significant impact on the environment; issue guidelines for the minimization of sub-sonic vibrations, referred to in paragraph (d) from existing and future sources; determine noise level and noise emission standards applicable to construction sites, plants, machinery, motor vehicles, aircraft including sonic bonus, industrial and commercial activities; determine measures necessary to ensure the abatement and control of noise from sources referred to in paragraph (f); and issue guidelines for the abatement of unreasonable noise and vibration pollution emitted into the environment from any source.¹⁷

Section 102 thereof prohibits noise in excess of established standards by providing that subject to the provisions of the Civil Aviation Act (Cap. 394), any person who emits noise in excess of the noise emission standards established under this Part commits an offence. However, exceptions exist in relation to noise levels.¹⁸

EMCA offers the broad rules and criteria to be followed in the management and conservation of several environmental issues. Hence, it is intended to be put into practice by the adoption of sector-specific laws that should concentrate on the various facets of the environment.

¹⁶ Ibid, Preamble.

¹⁷ EMCA, sec. 101.

¹⁸ EMCA, sec. 103.

In order to align the Act with the Constitution, EMCA was amended in 2015 by the *Environmental Management and Co-ordination (Amendment) Act* (No 5 of 2015). While EMCA contains provisions on almost all the aspects of the environment, it is worth pointing out that the procedural aspects of the regulation of these aspects heavily depends on regulations and other laws that expound on the EMCA provisions.

iii. *Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulation, 2009, Legal Notice No. 61 of 2009*

The *Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulation, 2009*¹⁹ defines “noise” to mean any undesirable sound that is intrinsically objectionable or that may cause adverse effects on human health or the environment. These Regulations prohibit any person from making or causing to be made any loud, unreasonable, unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment.²⁰ However, there are some exemptions to these prohibitions.²¹

In the case of *Pastor James Jessie Gitahi and 202 others vs Attorney General*²², the court recognized one of the components of a clean and healthy environment to be the prevention of noise and vibration pollution. Despite the Regulations, noise pollution is however still a major problem in the country because of lack of enforcement of the Regulations and possibly the public’s ignorance on the levels of noise that may be considered as air pollution.

iv. *National Environment Management Authority (NEMA)*

In order to implement all environmental policies and to exert general oversight and coordination over all environmental issues, the National Environment Management Authority (NEMA) was established as the main government

¹⁹ *Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009, Legal Notice No. 61 of 2009, Laws of Kenya.*

²⁰ *Ibid*, Regulation 3 (1).

²¹ Regulation 7.

²² *Pastor James Jessie Gitahi and 202 others vs Attorney General*, [2013] eKLR, petition No. 683 of 2009.

vehicle under EMCA. NEMA has the authority to create rules, specify requirements and guidelines, and issue directives for the management and preservation of the environment and natural resources in conjunction with the lead agencies. Environmental restoration orders, conservation orders, and easements are just a few of the mechanisms the Act uses to protect the environment. It also calls for environmental impact assessments, audits, and monitoring.²³

Notably, NEMA can delegate its functions under EMCA to any lead agency, being the oversight authority, and where it carries out a delegated duty, it can recover costs from the relevant body for any of such functions.²⁴

v. County Laws

Some counties have already embraced their role under the Constitution to control noise pollution, such as the Nairobi City County Government which has since enacted the Nairobi City County Public Nuisance Act 2021.²⁵

a. Nairobi City County Public Nuisance Act 2021

Notably, Section 20 thereof provides that: “a person shall not in any street or in any shop, business premises or any other place adjoining any street to which the public are admitted, play, operate, cause or allow to be played or operated, any musical instrument, wireless, gramophone, amplifier or similar instrument thereby making, causing or authorising noise to be made which is loud and continuous, or repeated as to constitute a nuisance to the occupants or dwellers of any premises in the neighbourhood or to passersby on the street.”

There is a need for other county governments to follow suit and put in place laws and regulations aimed at addressing noise pollution within their counties.

²³ See EMCA, Part Vi – Integrated Environmental Impact Assessment; Part Vii – Environmental Audit and Monitoring.

²⁴ Sec. 12, EMCA.

²⁵ ‘The Nairobi City County Public Nuisance Act 2021 Signed into Law. | Nairobi City County’ (20 August 2021) <<https://nairobi.go.ke/nairobi-city-county-public-nuisance-act-2021-signed-law/>> accessed 25 March 2023.

13.4. Getting it Right: Streamlining Noise Regulation Framework in Kenya

This section offers some viable recommendations on how to address the noise pollution in the country.

13.4.1 Institutional Streamlining and Effective Enforcement of Laws and Regulations on Noise Pollution

As a way of curbing noise pollution, the World Health Organisation (WHO) urges countries to enact and enforce legislation/regulations/policies for limiting sound levels and exposure in entertainment venues and events such as clubs, bars, fitness centres, concerts.²⁶ WHO also advises that such legislation should focus on: limiting sounds to 100 dB(A) averaged over 15 minutes; conducting regular sound monitoring to ensure and document compliance; optimizing venue acoustics and sound system design to ascertain optimal listening conditions for all audience members in the venue/event; create quiet zones allowing audience members to rest; ensuring provision of hearing protection (earplugs); and ensuring provision of training on noise reduction strategies and information about noise.²⁷

It is worth pointing that there is still a lot of confusion on who between NEMA and the county governments should substantively deal with the noise pollution menace. This may, therefore, call for some updates and/or amendments to EMCA to capture and clarify the constitutional position on this issue.

Meanwhile, while under the Constitution of Kenya 2010, the national government, has the role of protecting the environment and natural resources,²⁸ and county governments have a role in pollution control²⁹ and implementation of specific national government policies on natural resources and environmental conservation including soil and water conservation and

²⁶ 'Compendium of WHO and Other UN Guidance on Health and Environment' <<https://www.who.int/publications-detail-redirect/WHO-HEP-ECH-EHD-22.01>> accessed 25 March 2023, p. 152.

²⁷ Ibid, p. 152.

²⁸ Fourth Schedule, S. 22.

²⁹ S. 3 of Part II.

forestry,³⁰ the counties should work closely with the national government and other stakeholders in discharging some of these duties considering that they may traverse various counties and may require some major steps from both national and county levels of government.

13.4.2. Use of Appropriate Technology for Noise Mapping

One of the most effective methods for identifying the crucial locations in urban, suburban, and rural areas is noise monitoring under various traffic and environmental conditions.³¹

The level of noise in a given area at a given moment is depicted cartographically as a noise map. Aside from general evaluation, noise maps are also used to assess the impact of new roads and highways within metropolitan areas as well as the noise levels during various phases of any development project. As a result, noise maps are a valuable strategic tool for planning metropolitan areas and making environmental management decisions.³²

The idea that it is crucial to gauge the amount of noise coming from particular sources and communicate that information to those who are nearby the source of the noise is well-founded. This will enable the public to understand the noise levels to which they are exposed and to create mechanisms for reducing the noise to acceptable levels.³³ One of the suggested ways of doing this is Geographic Information System (GIS). A geographic information system (GIS) is a computer-based system that makes it possible to input, manage, analyse, produce, and disseminate geographically referenced, land-related data and information at all scales. Auditory circumstances are well-presented spatially on noise maps. GIS helps in creating a spatial decision support system that can be applied in the decision-making process and offers effective tools for

³⁰ Fourth Schedule, S. 10.

³¹ Alam, P., Ahmad, K., Afsar, S.S. and Akhtar, N., 'Noise Monitoring, Mapping, and Modelling Studies—a Review' (2020) 21 *Journal of Ecological Engineering*, p.82.

³² Manojkumar N, Basha K and Srimuruganandam B, 'Assessment, Prediction and Mapping of Noise Levels in Vellore City, India' (2019) 6 *Noise Mapping* 38, p.40.

³³ Wawa EA and Mulaku GC, 'Noise Pollution Mapping Using GIS in Nairobi, Kenya' (2015) 7 *Journal of Geographic Information System* 486, pp. 486-87.

visualising noise propagation. As a result, such analysis and management procedures might leverage noise maps created in GIS.³⁴ GIS offers a potent set of tools for storing and retrieving, processing, and displaying spatial data from the real world for a specific set of uses.³⁵

In order to create a graphic depiction of the distribution of sound levels over a certain location for a specific time period, noise mapping entails measuring sound levels at predetermined sites and using the generated data. Assessing compliance with permissible noise levels, putting in place noise reduction measures, and tracking the effects of such actions can all be done using noise maps.³⁶

Some authors have praised SoundPLAN Software, a software package offering a wide variety of noise and air pollution evaluation modules, developed by SoundPLAN International LLC and Braunstein + Berndt GmbH. It is perhaps the world's top environmental forecast programme and is used by more than 5,000 users, including governments, consultants, and researchers in more than 40 nations.³⁷

It is suggested that the government of Kenya and/or County Governments should invest in such tools in order to enhance noise mapping in the country.

13.4.3. Need for Integration of Health in Urban and Territorial Planning

As already pointed, there are various sources of noise especially in urban areas. As a result, there is a need for urban and city planners to take these sources of noise into consideration. Target 3.9 of Sustainable Development

³⁴ Ibid, p. 487.

³⁵ Hadzi-Nikolova, M., Mirakovski, D., Ristova, E. and Stefanovska Ceravolo, L., 'Modeling and Mapping of Urban Noise Pollution with SoundPLAN Software' (2012) 6 International Journal for Science, Technics and Innovations for the Industry MTM (Machines, Tecnologies, Materials) 38, p.38.

³⁶ Wawa EA and Mulaku GC, 'Noise Pollution Mapping Using GIS in Nairobi, Kenya' (2015) 7 Journal of Geographic Information System 486, p. 488.

³⁷ Hadzi-Nikolova, M., Mirakovski, D., Ristova, E. and Stefanovska Ceravolo, L., 'Modeling and Mapping of Urban Noise Pollution with SoundPLAN Software' (2012) 6 International Journal for Science, Technics and Innovations for the Industry MTM (Machines, Tecnologies, Materials) 38, p.38.

Chapter Thirteen: Human Health and Sustainability: Addressing Noise Pollution for a Clean and Healthy Environment in Kenya

Goal (SDG) 3 urges countries to ensure that by 2030, they substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.³⁸ This is closely related to SDG 11 which provides that countries should ensure that they make cities and human settlements inclusive, safe, resilient and sustainable.³⁹ Target 11.a seeks to support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning. In addition, Target 11.b seeks to ensure that by 2020, countries substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.⁴⁰

The Physical and Land Use Planning Act, 2019⁴¹ provides that one of the things that should be considered in the contents of local physical and land use development plans is aspects of housing, unemployment, traffic congestion, pollution, land tenure, lack of services, terrain, soils.⁴²

13.4. Conclusion

As discussed in this chapter, noise pollution has various adverse effects on human health and thus poses a risk to the realisation of Article 42 of the Constitution of Kenya on the right to clean and healthy environment for all. As a result, it is important that all stakeholders join hands in addressing the menace for the sake of all, and promoting public health. It is not the time to point fingers and watch as the general populace suffers; both levels of government should respond to the cry for help from their citizens and address the problem of noise pollution.

³⁸ 'Goal 3 | Department of Economic and Social Affairs' <<https://sdgs.un.org/goals/goal3>> accessed 25 March 2023.

³⁹ 'Goal 11 | Department of Economic and Social Affairs' <<https://sdgs.un.org/goals/goal11>> accessed 25 March 2023.

⁴⁰ Ibid.

⁴¹ Physical and Land Use Planning Act, No. 13 of 2019, Laws of Kenya.

⁴² Ibid, sec.48; Second Schedule.

CHAPTER FOURTEEN

Concluding Remarks

Unquestionably, the human rights approach is at the core of the 2030 Agenda for Sustainable Development. In order for the world to continue to serve the requirements of the present and future generations, everyone has a responsibility to prevent it from degrading, especially via sustainable production and consumption, the management of its natural resources, and urgent action on climate change. Sustainable development must take into account the relationship between human rights and environmental protection. Sustainable development is contingent upon upholding peoples' rights to a secure environment where they can thrive.¹

The Sustainable Development Goals (SDGs) also envisions a world where democracy, good governance, and the rule of law are essential for sustainable development, which includes inclusive and sustained economic growth, social development, environmental protection, and the eradication of poverty and hunger.² In this sense, "steering"—which comprises both procedures and institutions—is referred to as "governance" since it entails a certain amount of power. Process refers to how choices are made on priorities, how disagreements are handled, if at all, and how coordination of people's actions with regard to resource usage is made simpler. The structural part, on the other hand, deals with the organisation and 'management' of these operations.³

Addressing conflict of whatever nature is part of the social aspects of sustainability that must be put into consideration if sustainable development agenda is to be achieved. Thus, the sustainable development agenda advocates for an integrated approach to tackling environmental management challenges

¹ Choondassery Y, 'Rights-Based Approach: The Hub of Sustainable Development' (2017) 8 *Discourse and Communication for Sustainable Education*.

² United Nations, *Transforming Our World: The 2030 Agenda for Sustainable Development* | Department of Economic and Social Affairs' <<https://sdgs.un.org/2030agenda>> accessed 1 April 2023.

³ Vatn, Arild, *Environmental governance: institutions, policies and actions*, Edward Elgar Publishing, 2015, p. 133.

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as well as social problems affecting the society.⁴ The Organisation for Economic Co-operation and Development(OECD) calls for an integrated approach to the implementation of sustainable development and argues that many SDGs are interconnected with each other; an integrated approach implies managing trade-offs and maximising synergies across targets.⁵ The fundamental action principle of Sustainable Development is integrated decision-making, which is the process of taking environmental, social, and economic goals and issues into consideration when making decisions.⁶

Sustainable Development's environmental component must be considered in its economic, social, and governance facets. This is due to the fact that fostering sustainable economic growth depends on environmental protection, as the natural environment supports economic activity both directly and indirectly through ecosystem services like carbon sequestration, water purification, managing flood risks, and nutrient cycling.⁷

The SDGs are global, multifaceted, and ambitious, and it is arguable that in order to fulfil them, we need an integrated framework that encourages a growth path that protects the environment and whose benefits are shared by everyone, not just by the fortunate few.⁸ Thus, the idea of Sustainable Development forces us to reconsider how we interact with the world and how

⁴ See Hussein Abaza and Andrea Baranzini, *Implementing Sustainable Development: Integrated Assessment and Participatory Decision-Making Processes* (Edward Elgar Publishing 2002).

⁵ Rizza Ambra, 'An Integrated Approach to the Sustainable Development Goals' (*Assembly of European Regions*, 4 March 2019) <<https://aer.eu/integrated-approach-sdgs/>> accessed 1 April 2023.

⁶ Dernbach, J.C. and Mintz, J.A., "Environmental laws and sustainability: an introduction. *Sustainability*, 3 (3), 531-540." (2011), 532.

⁷ *UN Environment*, 'GOAL 8: Decent Work and Economic Growth' (UNEP - UN Environment Programme, 2 June 2021) <<http://www.unep.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-8>> accessed 1 April 2023.

⁸ Ramos, G., "The Sustainable Development Goals: A duty and an opportunity." (2016): 17-21, in Love, P. (ed.), *Debate the Issues: New Approaches to Economic Challenges*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264264687-3-en>. 1 April 2023.

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we anticipate that governments would implement policies that promote that worldview.⁹

Corporations, through following Environment Social and Governance (ESG) frameworks or guidelines, can also play a huge role in promoting sustainability within the localities that they operate in and the country at large. ESG Reporting should be encouraged and used as a tool of promoting sustainability within the companies, communities and country. Under this, organisations make it part of their operational procedures to report publicly on their economic, environmental, and/or social impacts, and hence its contributions – positive or negative – towards the goal of Sustainable Development.¹⁰ As the business community seeks to invest in various sectors, there is a need for them to take into account ESG requirements under SDGs. The law (government) and other policy makers should work towards supporting businesses in their efforts to transition to more sustainable business models, through using various legal, policy and other effective incentives. The law should move towards ensuring that non-financial reporting on ESG becomes the standard mode of operation for ease of enforcing such principles as “the polluter pays principle”, among others. This is especially important as it has been pointed out that ‘previous literature, which attempted to investigate the link between sustainability and investment performance, found that a critical barrier to ESG integration is that investors lack reliable and non-manipulated information’, at least in other jurisdictions, practices which may also take place in Kenya.¹¹ While it may not be disputed that institutional investors vary in their approaches to integrating ESG factors

⁹ Ibid.

¹⁰ ‘(10) Global ESG Disclosure Regulations: From Awareness to Practice towards Sustainability | LinkedIn’ <<https://www.linkedin.com/pulse/global-esg-disclosure-regulations-from-awareness-dr-mahendra/>> accessed 1 April 2023; Boffo R and Patalano R, ‘ESG Investing: Practices, Progress and Challenges’ [2020] Editions OCDE, Paris; ‘What ESG Reporting Is and How to Do It | A MovingWorlds Guide’ (MovingWorlds.org) <<https://movingworlds.org/esg-reporting-guide>> accessed 1 April 2023; PricewaterhouseCoopers, ‘ESG Reporting and Preparation of a Sustainability Report’ (PwC, 26 January 2021) <<https://www.pwc.com/sk/en/environmental-social-and-corporate-governance-esg/esg-reporting.html>> accessed 1 April 2023.

¹¹ Roy, P.P., Rao, S., Marshall, A.P. and Thapa, C., ‘Mandatory Corporate Social Responsibility and Foreign Institutional Investor Preferences’ (2020).

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into their investment decisions, the end game should at least show some tangible and verifiable positive results.¹²

It has also been suggested that businesses and companies should embrace technology and innovation in engineering and product development as well as with regard to management structures and entrepreneurship, which will arguably continue to be crucial to overall sustainability strategy. Doing more with less may be a challenge that technology may help solve since it can reduce the strict ecological limitations while also relieving political and economic pressures (thereby allowing space and opportunity for more sustainability solutions from all quarters).¹³

There is a need to adopt innovative governance approaches which integrate economic, social development and sustainable development principles at multiple levels of social organization in addressing the serious challenges facing our globe and achievement of the 2030 Agenda on Sustainable Development Goals.¹⁴

The HRBA places the most marginalised and discriminated among those who are living in multidimensional poverty and oppression at the centre of development cooperation. The strategy identifies the individuals and institutions in charge of upholding, defending, and enforcing those human rights with the goal of empowering people who are oppressed and living in poverty to take action to escape their circumstances.¹⁵ This is because the HRBA always includes the following provisions: empowerment of women, men, girls, boys, and non-binary people living in poverty and oppression –

¹² OECD, *OECD Business and Finance Outlook 2020: Sustainable and Resilient Finance* (OECD 2020) <https://www.oecd-ilibrary.org/finance-and-investment/oecd-business-and-finance-outlook-2020_eb61fd29-en> accessed 1 April 2023.

¹³ Clune WH and Zehnder AJB, 'The Three Pillars of Sustainability Framework: Approaches for Laws and Governance' (2018) 9 *Journal of Environmental Protection* 211.

¹⁴ Kramer, J.M. and Johnson, C.D., "Sustainable Development and Social Development: Necessary Partners for the Future." *Sustainable Development* (1996), p.89.

¹⁵ Cybercom, 'Human Rights Based Approach' (*Sida*) <<https://www.sida.se/en/partners/methods-materials/human-rights-based-approach>> accessed 19 April 2023.

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the rights holders – with, for instance, hope, assertiveness, knowledge, skills, tools, networks, communication channels, and access to justice to enable them

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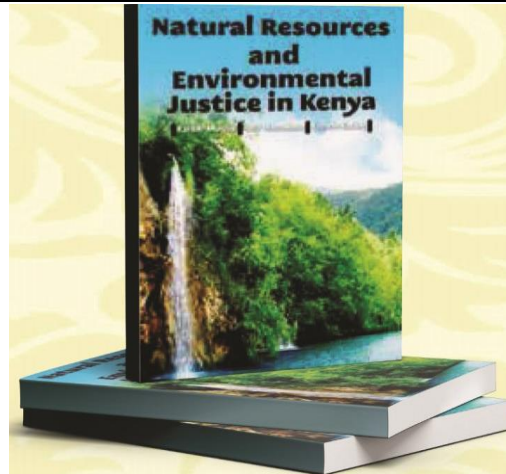
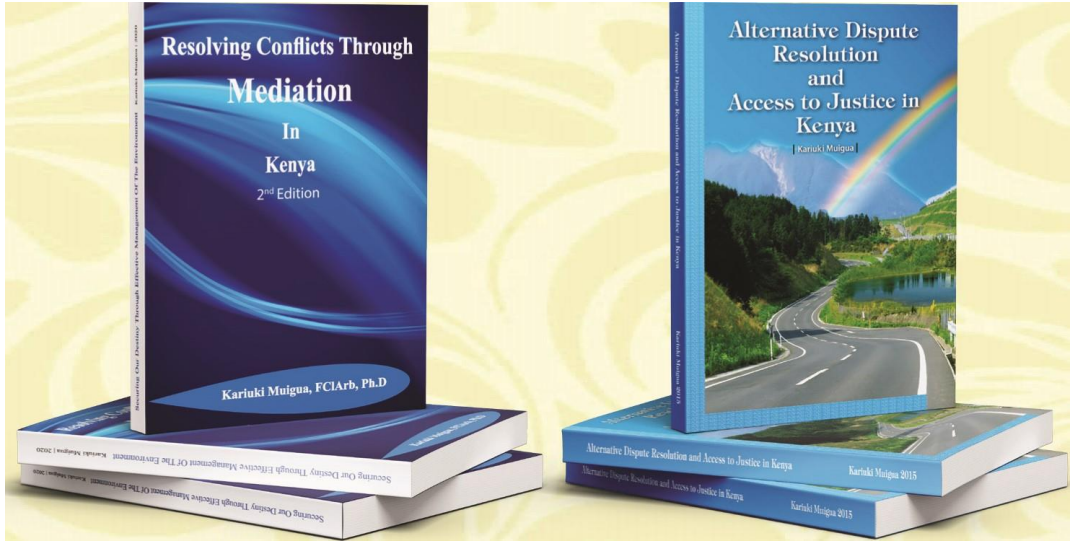
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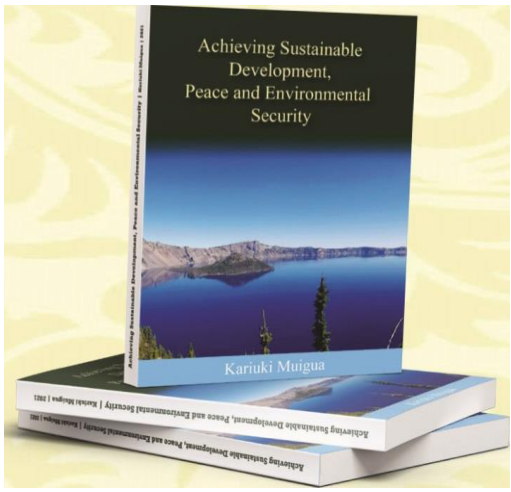
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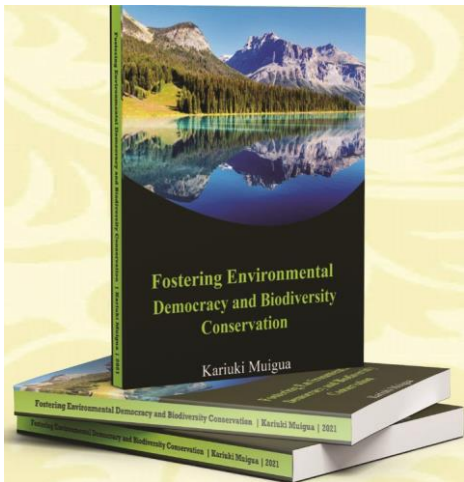
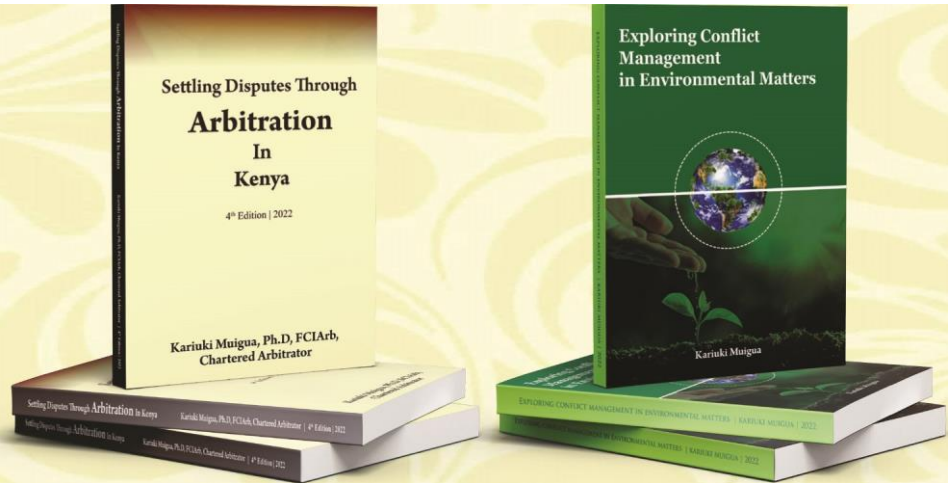
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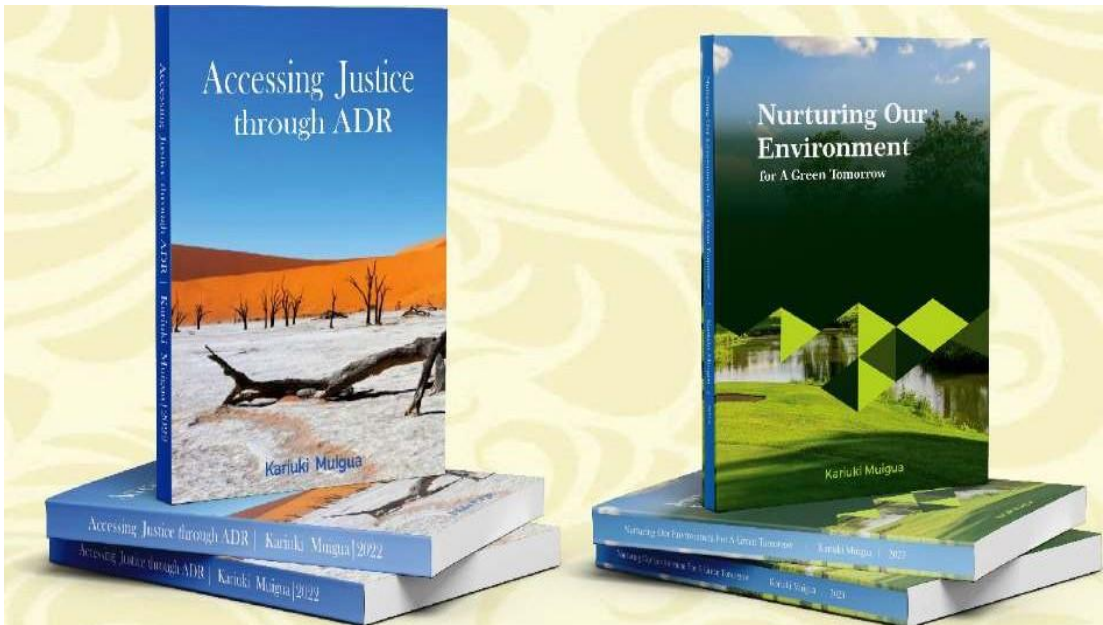
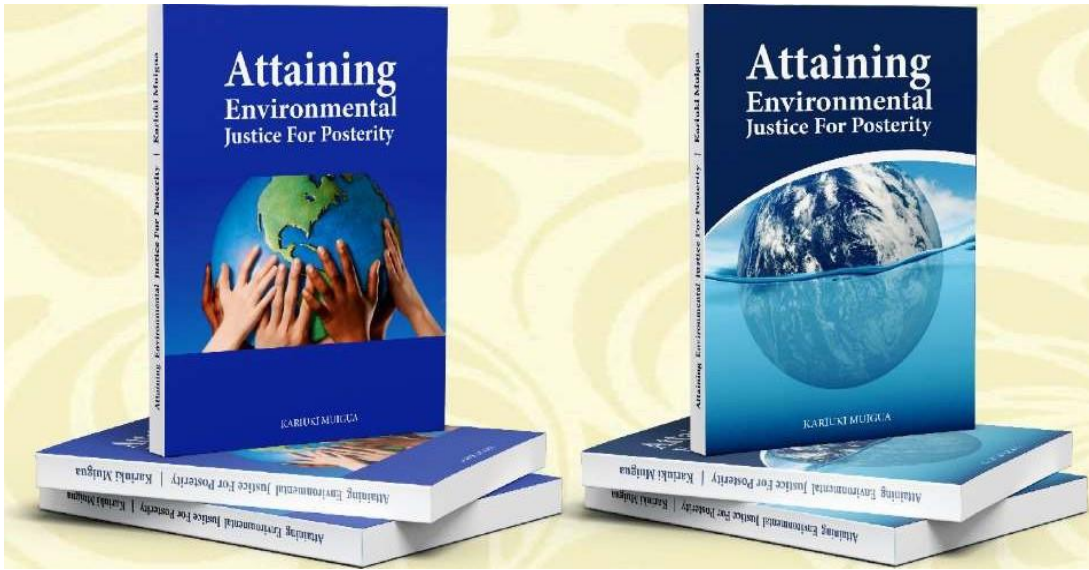
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Realizing True Sustainable Development is a book that discusses Sustainable Development and reflects on the roles that various actors have to play if true sustainable development is to be attained.

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Realizing True Sustainable Development is an ideal whose time is now.

Author's Bio-data

Dr. Kariuki Muigua a holder 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.

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