

**Fostering a Human Rights Approach to Biodiversity
Conservation in Kenya**

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Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

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Abstract

This paper explores the linkages between human-rights approaches to conservation and biodiversity conservation. The author argues that environmental resources conservation measures should not only consider the needs of the communities who mainly rely on such resources but should also create opportunities for such communities to actively participate in such efforts through environmental democracy, especially in the case of biological diversity conservation.

1. Introduction

Biological diversity is a term used to refer to 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.¹ These resources play a huge role in not only facilitating environmental processes but also in provision of ecosystem resources for all living organisms, including human beings.² Arguably, if the world is to achieve the sustainable development goals, then the conservation of these resources must be treated with urgency and it also calls for the concerted efforts of all stakeholders and cooperation from all countries, at least at the international level. The world must address the human activities that have been contributing to the degradation of these resources.³

The need for this cooperation was born out of the fact that ‘the responsibility for biodiversity conservation has traditionally been seen as a function of government and, particularly, of its environment departments and conservation agencies, where Non-governmental organisations, local communities and other interest groups have supported this role by championing specific environmental issues and conversely, business and industry are typically regarded as competitors

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¹ Article 2, United Nations, Convention on Biological Diversity of 5 June 1992 (1760 U.N.T.S. 69).

² United Nations Development Programme. "The future we want: Biodiversity and ecosystems—driving sustainable development." (2012),1.

³ *Ibid.*

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

to environmental causes, needing land and resources for production’.⁴ However, it is now a non-contentious position that ‘biodiversity is considered to be an essential component for sustainable development and human well-being, which underpins the provision of food and water; mitigates and provides resilience to climate change; supports human health, and provides jobs in agriculture, fisheries, and forestry, among other sectors.’⁵ This, therefore, not only affirms the need for biodiversity conservation for sustainable development but also the need for participation of all persons and players, especially citizens through enhanced Environmental Democracy. Indeed, the Constitution of Kenya 2010 creates an opportunity for the participation of all citizens in environmental management and conservation by providing that ‘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’.⁶ While the wording of the above provision maybe debatable in creating a right to participate in environmental decision-making processes, the same can borrow credence from other provisions on the principles of public participation and it is a commendable step towards promoting Environmental Democracy in biodiversity conservation.

It is worth pointing out that globally, early environmental conservation and natural resource management initiatives concentrated on improving water and land management, by the 1980s, there had been a shift in country-level’s environmental focus to integrate biodiversity conservation into mainstream development processes, with an emphasis on production sector projects, national and sub-national policy and planning, institutional development, and disaster risk reduction.⁷

This paper discusses the linkages between Human Rights, Environmental Democracy and Biodiversity Conservation, some of the challenges affecting the environment with a bias on biodiversity conservation, and offers recommendations on effective conservation of biodiversity resources for a better future for both the human community and the environment, using rights-

⁴ Ginsburg, A., Stephens, A., Tau, M., Botts, E., & Holness, S., ‘Biodiversity Mainstreaming in South Africa’s Production Landscapes: Lessons and Achievements’ [2020] International Grassland Congress Proceedings <<https://uknowledge.uky.edu/igc/22/2-15/1>> accessed 24 July 2021.

⁵ United Nations, “Biodiversity at the Heart of Sustainable Development”, *Input to the 2018 High-level Political Forum on Sustainable Development (HLPF)*, Secretariat of the Convention on Biological Diversity (CBD), 27 April 2018, 1.

⁶ Article 69(2), Constitution of Kenya 2010.

⁷ United Nations Development Programme, ‘The Future We Want: Biodiversity and Ecosystems—Driving Sustainable Development.’ (Biodiversity and ecosystems global framework 2012–2020, 2012), 9-10.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

based approaches. It also discusses the place of Environmental Democracy as a tool for promoting active and meaningful participation of communities in the conservation efforts, in a bid to strike a balance between ecocentric and anthropocentric approaches in biodiversity conservation.

It has been argued that the key to sustainable development is achieving a balance between the exploitation of natural resources for economic development and conserving ecosystem services that are critical to everyone's wellbeing and livelihoods.⁸ This paper offers some recommendations on how countries, and Kenya in particular, can achieve sustainable development agenda through promoting Environmental Democracy and enhancing biodiversity conservation which is a prerequisite to not only healthy environment but also important for replenishing the ecosystem services which meet the basic human needs as captured in the United Nations 2030 Agenda for Sustainable Development Agenda.

2. Defining Environmental Democracy and Biodiversity Conservation: The Linkage

Environmental Democracy is an important component in realisation of environmental rights in that it seeks to ensure that environmental and natural resources management decisions take into consideration and equitably address the concerns of citizens in relation to those resources, through promoting free access to meaningful information on environmental quality and problems by affected people, to enable their meaningful participation in decision-making, and empowering them to seek enforcement of environmental laws or compensation for damages.⁹ Notably, the concept of Environmental Democracy is informed by the idea 'that an informed and legally empowered citizen is the most important aspect of environmental democratisation'.¹⁰ The concept of Environmental Democracy thus emerged to promote and ensure public engagement in governmental environmental decision-making.¹¹ Arguably, people have a right to obtain information upon request, and to be informed of planned projects, developments or other initiatives which will affect them, their environment or their natural resources through Free, Prior And

⁸ McCartney, M., Finlayson, M., de Silva, S., Amerasinghe, P., & Smakhtin, V., 'Sustainable Development and Ecosystem Services'. *Sustainable development and ecosystem services* (No. 612-2016-40661).

⁹ Peeters M, 'Judicial Enforcement of Environmental Democracy: Critical Analysis of Case Law on Access to Environmental Information in the European Union' (2020) 4 Chinese Journal of Environmental Law 13.

¹⁰ See Parola G, *Environmental Democracy at the Global Level: Rights and Duties for a New Citizenship* (Walter de Gruyter 2013), 50.

¹¹ Peeters M, 'Judicial Enforcement of Environmental Democracy: Critical Analysis of Case Law on Access to Environmental Information in the European Union' (2020) 4 Chinese Journal of Environmental Law 13, 14.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

Informed Consent (FPIC), under which duty bearers are expected to obtain the agreement for specific activities from an appropriate entity (rights holders), following a consultative process involving full disclosure of all relevant information, sufficiently in advance of the activities commencing, and without coercion or manipulation.¹² The principle of FPIC also extends to the use of indigenous knowledge and practices relating to the environment, and the sharing of any resulting benefits.¹³

The idea finds credence in Article 1 of the *Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters* and Principle 10 of the 1992 *Rio Declaration on Environment and Development* which provides that: “environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.”¹⁴

It has, however, been argued that while concepts of ecological and Environmental Democracy seek to reconcile two normative ideals: ensuring environmental sustainability while safeguarding democracy, these ideals are frequently conceived as being in conflict, as democracy is perceived as too slow and cumbersome to deliver the urgent large-scale collective action needed to tackle environmental problems.¹⁵ The perceived conflict is based on the assertion that, on the one hand, if citizens accord low priority to ecological values, efforts to strengthen environmental protection and sustainability through democratic processes may falter, and on the other hand, securing environmental values through authoritarian rule comes at a high democratic price.¹⁶

¹² BirdLife International, International B, ‘An Introduction to Conservation and Human Rights for BirdLife Partners’, 8.

¹³ *Ibid*,8.

¹⁴ Peeters M, ‘Judicial Enforcement of Environmental Democracy: A Critical Analysis of Case Law on Access to Environmental Information in the European Union’ (2020) 4 Chinese Journal of Environmental Law 13

¹⁵ Pickering J, Bäckstrand K and Schlosberg D, ‘Between Environmental and Ecological Democracy: Theory and Practice at the Democracy-Environment Nexus’ (2020) 22 Journal of Environmental Policy & Planning 1.

¹⁶ *Ibid*, 1.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

The Convention on Biological Diversity (CBD) Aichi Target 1 requires that “by 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably”.¹⁷

Notably, ecological democracy seeks environmentally sustainable ends through broad, active democratic participation.¹⁸ As a result, national political institutions constitute an important arena for biodiversity conservation.¹⁹ It has been observed that while the proximate drivers of biodiversity loss such as habitat loss, climate change, overexploitation, and invasive species are relatively well-mapped, one of the causes to those triggers is countries’ institutional set-ups and thus, the formal and informal rules shaping the decision-making and the implementation of biodiversity management are considered to be paramount.²⁰

The right to participation refers to the procedural right to have a say in the decisions that are made, where there exists a gradient in the level of participation in decision-making, from simple ‘consultation’ to active partnership of stakeholders in project conception, design, implementation, monitoring and evaluation; and from ‘limited’ participation to ‘full and effective participation’ of ‘all relevant stakeholders’ with special attention given to the most vulnerable groups, minorities and those sectors of society that are underrepresented.²¹ The participation of the people in biodiversity conservation is important considering that actions to conserve nature and natural resources are closely related to the rights of people to secure their livelihoods, enjoy healthy and productive environments and live with dignity and as a result, the pursuit of conservation goals can contribute positively to the realization of many fundamental human rights.²² There is thus, a need for States to continue establishing effective legal and institutional frameworks to protect biodiversity, and to conduct social and environmental assessments of projects and policies and to

¹⁷ Unit B, ‘Aichi Biodiversity Targets’ (18 September 2020) <<https://www.cbd.int/sp/targets/>> accessed 8 September 2021.

¹⁸ Takacs D, ‘Whose Voices Count in Biodiversity Conservation? Ecological Democracy in Biodiversity Offsetting, REDD+, and Rewilding’ (2020) 22 *Journal of Environmental Policy & Planning* 43.

¹⁹ Rydén O and others, ‘Linking Democracy and Biodiversity Conservation: Empirical Evidence and Research Gaps’ (2020) 49 *Ambio* 419.

²⁰ *Ibid*, 419.

²¹ BirdLife International, International B, ‘An Introduction to Conservation and Human Rights for BirdLife Partners’, 8.

²² Springer J, Campese J and Painter M, ‘Conservation and Human Rights: Key Issues and Contexts. Scoping Paper for the Conservation Initiative on Human Rights’ [2011] Unpublished report. Conservation Initiative on Human Rights Working Group, 5.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

facilitate public participation in conservation decisions.²³ Environmental Democracy is associated with on transparency, participation, and justice and as a result, it is considered to be more participatory and inclusive and provides opportunities for everyone, including those in the most marginalised positions to participate in decision-making.²⁴

2.1. Linking Environmental Democracy and Biodiversity Conservation

Notably, the close relationship between environmentalism and liberal democracy are now internationally recognised in a range of international declarations and agreements which include: principle 10 of the 1992 Rio Declaration which calls for access to environmental information, public participation in decision-making, and access to justice on environmental matters; in the *Aarhus Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters 1998*; in the *United Nations Environment Program's Bali Guidelines* (UNEP 2010) and the *Environmental Democracy Index* (DICE Database 2016), an online platform that tracks and compares the state performance according to a set of indicators based on access to environmental information, the right to participate in decision-making, and the right to seek enforcement of environmental laws and/or compensation and redress for environmental harm.²⁵

Several commentators have made attempts at linking democracy and biodiversity conservation. One such commentator argues that 'national political institutions constitute an important arena for biodiversity conservation' since 'the national management of biodiversity is part of decision-making in the political system, where variation in the political institutions (i.e. being more or less democratic) that structure the selection of decision-makers, and the processes of decision-making, should be expected to impact the success of biodiversity conservation across countries.'²⁶ The impact of political institutions on biodiversity conservation is pegged on the fact 'national

²³ See Bigard C, Pioch S and Thompson JD, 'The Inclusion of Biodiversity in Environmental Impact Assessment: Policy-Related Progress Limited by Gaps and Semantic Confusion' (2017) 200 *Journal of environmental management* 35.

²⁴ 'Will Democracy Save Us from the Biodiversity Crisis?' (*Demo Finland*, 27 November 2020) <<https://demofinland.org/en/will-democracy-save-us-from-the-biodiversity-crisis/>> accessed 9 September 2021.

²⁵ Eckersley R, 'Ecological Democracy and the Rise and Decline of Liberal Democracy: Looking Back, Looking Forward' (2020) 29 *Environmental Politics* 214.

²⁶ Rydén, O., Zizka, A., Jagers, S. C., Lindberg, S. I., & Antonelli, A., 'Linking Democracy and Biodiversity Conservation: Empirical Evidence and Research Gaps' (2020) 49 *Ambio* 419.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

governments are the main actors responsible for mapping and protecting their biodiversity, but countries differ in their capacity, willingness, and effectiveness to do so'.²⁷

It has rightly been pointed out that '*proponents of Environmental Democracy are friendly critics of liberal democracy who seek to work with, and revitalise, the norms and institutions of liberal democracy to bring about environmental change. They seek greater transparency and accountability of policymakers to publics, including neglected communities suffering environmental injustices. They seek to make the most of the civil and political rights that are protected in liberal democracies by fostering greater public awareness of ecological problems and their consequences, greater public engagement and participation in environmental policy- and rule-making in all branches of government, including the courts*'.²⁸

In the Kenyan case of *Mohamed Ali Baadi and others v Attorney General & 11 others* [2018] eKLR²⁹, a four-judge High Court bench pointed out the following in relation to the concept of Environmental Democracy:

109. In addition to the above, one of the issues implicated in this Petition is what is now generally recognized *minimum requirements for existence of Environmental Democracy, namely, 'the tripartite of the so-called access rights in environmental matters, namely, (a) access to information, (b) participation in decision-making, and (c) access to justice.'*^[53] *These three access rights have the common denominator that they empower individuals to have a meaningful voice in decisions that affect them and their development. The Constitution of Kenya and Environmental Law recognizes these three access rights.*

110. As pointed out later in this judgment, the above rights are also intertwined in that achievement and application of each impact on realization of the others. For instance, access to information ensures that all persons who choose to participate in environmental decision-making are equipped with the necessary, or at least, basic facts about quality of their environment and their legitimate expectation on the same.^[54]

111. Thus, violation of rights to a clean and healthy environment can easily lead to the violation of other rights in the Bill of Rights such as the right to life. Yet, the determination of violations or threats of violation of any rights in the Bill of Rights undoubtedly falls within the province of this Court.

112. It is also correct to state that Environmental Law has been described as Administrative Law in action,^[55] for the reason that environmental conflicts often depend

²⁷ Klein, J., Aronsson, H., Perrigo, A., Silvestro, D., Jagers, S. C., Lindberg, S. I., & Antonelli, A., 'Exploring the Impact of Political Regimes on Biodiversity' (2020) 98 V-Dem Working Paper.

²⁸ Eckersley R, 'Ecological Democracy and the Rise and Decline of Liberal Democracy: Looking Back, Looking Forward' (2020) 29 Environmental Politics 214.

²⁹ *Mohamed Ali Baadi and others v Attorney General & 11 others* [2018] eKLR, Petition 22 of 2012.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

on the exercise of administrative decision-making powers. Such powers, if not properly exercised can be challenged by way of a Constitutional petition which is also within the jurisdiction of this Court.

113. Where such failures occur, the citizens have a right to move to Court to seek appropriate reliefs such as prohibition, *mandamus*, *certiorari*, declaration of unconstitutionality, Judicial Review, or otherwise of the challenged decisions, damages or any other relief that the Court may deem just and appropriate.

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215. It may be tempting to ask why the law and indeed the Constitution generally imposes this duty of public participation yet the State is generally a government for and by the people. The people elect their representative and also participate in the appointment of most, if not all public officers nowadays. The answer is, however, not very far. Our democracy contains both representative as well as participatory elements which are not mutually exclusive but supportive of one another. The support is obtained even from that singular individual.

216. We also have no doubt that our local jurisprudence deals at length with why the Constitution and statute law have imposed the obligation of public participation in most spheres of governance and generally we take the view that it would be contrary to a person's dignity (see Article 28) to be denied this constitutional and statutory right of public participation.

The foregoing excerpt cements the importance of fostering Environmental Democracy as a step towards achieving biodiversity conservation, and ultimately demonstrates the important role that [environmental] human rights can play in achieving biodiversity conservation.

The link between Environmental Democracy and biodiversity conservation has also been said to be important in poverty eradication and the preamble of the CBD indeed acknowledges that “economic and social development and poverty eradication are the first and overriding priorities of developing countries” (United Nations 1993).³⁰ While there are still contentions on the nature of the links between the biodiversity conservation and poverty alleviation, what is clear, however, is that if biodiversity and ecosystem services continue to be depleted, their potential to not only contribute to poverty alleviation but also act as a safety net for the poor especially in rural areas will be greatly affected.³¹

³⁰ Roe, Dilys, "Linking biodiversity conservation and poverty alleviation: a state of knowledge review." *CBD Technical Series* 55 (2010), 9 < <https://www.cabdirect.org/cabdirect/abstract/20103329917>> Accessed 30 July 2021.

³¹ Roe, Dilys, "Linking biodiversity conservation and poverty alleviation: a state of knowledge review." *CBD Technical Series* 55 (2010), 13,49; Adams WM and Hutton J, 'People, Parks and Poverty: Political Ecology and Biodiversity Conservation' (2007) 5 *Conservation and Society* 147; Suich H, Howe C and Mace G, 'Ecosystem Services and Poverty Alleviation: A Review of the Empirical Links' (2015) 12 *Ecosystem Services* 137; Adams W

3. A Human Rights Approach to Biodiversity Conservation

Due to the increasingly important role of the environment and its resources in the realization of international human rights, the connection between human rights and environmental law has received increasing attention at the international and regional legal frameworks.³²

As such, there has been an increased call for adoption of a rights-based approach to environmental conservation in order to strike a balance between environmental protection and realization of basic human rights.³³ Indeed, this seems to be the approach adopted in the drafting and implementation of sustainable development goals which seek to strike a balance among environmental conservation, economic development and human rights protection.³⁴ For instance, people participation in natural resources management is seen as an important step towards eradicating

and others, 'Biodiversity Conservation and the Eradication of Poverty' (2004) 306 *Science* (New York, N.Y.) 1146; Billé R, Lapeyre R and Pirard R, 'Biodiversity Conservation and Poverty Alleviation: A Way out of the Deadlock?' [2012] S.A.P.I.E.N.S. *Surveys and Perspectives Integrating Environment and Society* <<https://journals.openedition.org/sapiens/1452>> accessed 15 September 2021; Barrett CB, Travis AJ and Dasgupta P, 'On Biodiversity Conservation and Poverty Traps' (2011) 108 *Proceedings of the National Academy of Sciences of the United States of America* 13907.

³² Philippe Cullet, 'Definition of an Environmental Right in a Human Rights Context' (1995) 13 *Netherlands Quarterly of Human Rights* 25; Osmani SR, 'The Human Rights Approach to Poverty Reduction' [2010] *Freedom from Poverty as a Human Right* 85; Clark C, 'Does the Human Right to Water Address the Gendered Nature of Water Poverty' (2015) 24 *Hum. Rts. Defender* 31; Prior TL and Heinämäki L, 'The Rights and Role of Indigenous Women in Climate Change Regime' (2017) 8 *Arctic Review*.

³³ Thomas Greiber, Melinda Janki and Marcos A Orellana, *Conservation with Justice: A Rights-Based Approach* (IUCN 2009); Sébastien Jodoin, Annalisa Savaresi and Margaretha Wewerinke-Singh, 'Rights-Based Approaches to Climate Decision-Making' (2021) 52 *Current Opinion in Environmental Sustainability* 45; Tauli-Corpuz, V., Alcorn, J., Molnar, A., Healy, C., & Barrow, E., 'Cornered by PAs: Adopting Rights-Based Approaches to Enable Cost-Effective Conservation and Climate Action' (2020) 130 *World Development*; Willmann, R., Franz, N., Fuentevilla, C., McInerney, T. F., & Westlund, L., 'A Human Rights-Based Approach to Securing Small-Scale Fisheries: A Quest for Development as Freedom' [2017] *The small-scale fisheries guidelines* 15; Gina Zheng, 'Human Rights for Conservation: A Rights-Based Approach to Fisheries Governance' (2018) 43 *Alternative Law Journal* 55; Mohamed Behnassi, 'Mainstreaming a Rights-Based Approach in the Global Climate Regime', *Human and Environmental Security in the Era of Global Risks* (Springer 2019); Sébastien Jodoin, Kathryn Hansen and Caylee Hong, 'Displacement Due to Responses to Climate Change: The Role of a Rights-Based Approach', *Research handbook on climate change, migration and the law* (Edward Elgar Publishing 2017); Khondokar H Kabir, Andrea Knierim and Ataharul Chowdhury, 'No Forest, No Dispute: The Rights-Based Approach to Creating an Enabling Environment for Participatory Forest Management Based on a Case from Madhupur Sal Forest, Bangladesh' (2021) 64 *Journal of Environmental Planning and Management* 22; Oluwabunmi Lucy Niyi-Gafar, 'Adopting a Human Rights-Based Approach to Access to Water in Nigeria: Lessons from Selected Jurisdictions' (PhD Thesis, University of Pretoria 2017).

³⁴ Daniela García Villamil, 'Indigenous Self-Determination and the Human-Rights Based Approach to Sustainable Development: Potentials and Limitations' (2021); Annelie de Man, 'The Sustainable Development Goals and the Rights-Based Approach to Development: Compatible or Missing the Point' (2019) 19 *Afr. Hum. Rts. LJ* 445; Patrick Toussaint and Adrian Martinez Blanco, 'A Human Rights-Based Approach to Loss and Damage under the Climate Change Regime' (2020) 20 *Climate policy* 743; UN General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development*, 21 October 2015, A/RES/70/1.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

abject poverty, a sustainable development goal 1 (SDG 1), where some authors have argued that decentralised natural resource management is a potential way in which rural people can generate money and manage resources sustainably.³⁵ Poverty is a major contributing factor to insecurity and instability especially in the rural areas where communities mainly rely on scarce land based natural resources which are affected by climate change and population growth, among others. It has been observed that ‘rural poverty can be caused by a combination of: living and farming in unfavourable conditions (climate, soils, access to markets, small land holdings); lack of resource access rights, legal protection or recognition; lack of ecosystem services (provisioning, regulating, cultural/spiritual, regenerative); lack of income opportunities (on- or off-farm) in local economies; and lack of investment in the (few) opportunities that exist for market-based ventures.’³⁶

As a result, it has been observed that the adoption of rights-based approaches in development work – that is, approaches that are informed and guided by the framework of international human rights law, and the values that underpin it – has had a significant impact on the ways in which development agencies operate.³⁷ It is possible to have investments in the name of development that do not meet the needs or respect the human rights of poor or marginalised communities where these local communities can be affected both by the lack of consultation and participation and by the negative impact such projects have on the environment and their livelihoods.³⁸

A rights-based approach, it has been observed, encourages responsible actions mindful of the rights of others, and of obligations to help respect, protect and promote the enjoyment of those rights, also contribute to building a climate of transparency and accountability that enhances the opportunities for long-term conservation.³⁹

It is, therefore, arguable that while participation means that people are closely involved in the economic, social, cultural and political processes that affect their lives, it may mean complete and

³⁵ Dan Brockington, Jim Igoe and KAI Schmidt-Soltau, ‘Conservation, Human Rights, and Poverty Reduction’ (2006) 20 *Conservation Biology* 250.

³⁶ Meine van Noordwijk, ‘Integrated Natural Resource Management as Pathway to Poverty Reduction: Innovating Practices, Institutions and Policies’ (2019) 172 *Agricultural Systems* 60, 61.

³⁷ ‘Rights-Based Approaches’ (GSDRC) <<https://gsdrc.org/topic-guides/human-rights/rights-based-approaches/>> accessed 22 July 2021.

³⁸ ‘Business & Human Rights | Protection International’ <<https://www.protectioninternational.org/en/our-work/what/business-human-rights>> accessed 24 July 2021.

³⁹ Springer J, Campese J and Painter M, ‘Conservation and Human Rights: Key Issues and Contexts. Scoping Paper for the Conservation Initiative on Human Rights’ [2011] Unpublished report. Conservation Initiative on Human Rights Working Group, 6.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

direct control over these processes, or, partial or indirect; the most important thing being that people have constant access to decision-making and power.⁴⁰

Article 21(1) of the *United Nations Universal Declaration of Human Rights*⁴¹ guarantees that everyone has the right to take part in the government of his country, directly or through freely chosen representatives. Article 22 thereof also guarantees that everyone, as a member of society, has the right to social security and is entitled to realization, through national effort and international co-operation and in accordance with the organization and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality. Notably, measures for the conservation of biodiversity and the sustainable use of ecosystems very often require changes in the way natural resources are managed, affecting how, when, how much and by whom natural resources, ecosystem services and biodiversity are used. Based on the links between human rights and the environment, steps taken to conserve biodiversity can affect peoples' rights in positive ways.⁴²

Under the Constitution of Kenya 2010, the devolved system of governance was meant to, *inter alia*, promote democratic and accountable exercise of power, and foster national unity by recognising diversity; give powers of self-governance to the people and enhance the participation of the people in the exercise of the powers of the State and in making decisions affecting them; recognise the right of communities to manage their own affairs and to further their development; facilitate the decentralisation of State organs, their functions and services, from the capital of Kenya, Nairobi; and enhance checks and balances and the separation of powers.⁴³ While devolution has achieved commendable steps towards attaining equality and equity within the rural Kenya⁴⁴, the poverty levels and social, political and economic inequalities in the country are still high.⁴⁵ Rampant corruption and misallocation of political and economic resources in Kenya and especially at the county levels of governance may be some of the main factors that may be

⁴⁰ "UNDP. 1993. *Human Development Report 1993*, 21. <http://www.hdr.undp.org/en/reports/global/hdr1993>."

⁴¹ UN General Assembly, *Universal Declaration of Human Rights*, 10 December 1948, 217 A (III).

⁴² BirdLife International, 'An Introduction to Conservation and Human Rights for BirdLife Partners', 13.

⁴³ George Nyabuga, 'Devolved Power: A Critical Interrogation of the Place, Roles and Obligations of the Media at the Grassroots in Kenya' (2017) 42 *Africa Development / Afrique et Développement* 105, 107.

⁴⁴ Michelle D'Arcy, 'Kenya Illustrates Both the Promise as Well as the Pitfalls of Devolution' (*The Conversation*) <<http://theconversation.com/kenya-illustrates-both-the-promise-as-well-as-the-pitfalls-of-devolution-96729>> accessed 8 May 2021.

⁴⁵ Brendon J Cannon and Jacob Haji Ali, 'Devolution in Kenya Four Years On: A Review of Implementation and Effects in Mandera County' (2018) 8 *African Conflict and Peacebuilding Review* 1.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

contributing to the slow pace of poverty alleviation despite the proximity of the rural areas to the devolved governance.⁴⁶

There is need for stakeholders to go back to the drawing board on why devolution was introduced by the drafters of the Constitution while also ensuring that the national values and principles of governance are applied and upheld at both levels of governance, and these include: a) patriotism, national unity, sharing and devolution of power, the rule of law, democracy and participation of the people; (b) human dignity, equity, social justice, inclusiveness, equality, human rights, non-discrimination and protection of the marginalised; (c) good governance, integrity, transparency and accountability; and (d) sustainable development.⁴⁷ This is especially important considering that integration of human rights into conservation matters also introduces new elements to conservation practice, particularly related to: grounding in defined standards, especially based on international human rights frameworks, and relationships of accountability between “rights-holders” and “duty bearers”.⁴⁸ Devolution can go a long way in encouraging Environmental Democracy and the realisation of Article 69 of the Constitution of Kenya 2010, which not only spells out the obligations of the State as a “duty-bearer”⁴⁹ but also those of citizens as both “rights-holders” and “duty bearers”.⁵⁰ Notably, human rights entail both rights and obligations, with States (duty bearers) assuming obligations and duties under international law to respect, to protect and to fulfill human rights (of rights holders), and at the individual level while we are entitled our human rights, we (and organisations) should also respect the human rights of others.⁵¹ Refraining from engaging in anthropogenic activities that adversely biological diversity is part of exercising this responsibility as such activities would negatively affect nature’s ability to meet the needs of other human beings, both current and in future.

⁴⁶ Brendon J Cannon and Jacob Haji Ali, ‘Devolution in Kenya Four Years On: A Review of Implementation and Effects in Mandera County’ (2018) 8 African Conflict and Peacebuilding Review 1; George Nyabuga, ‘Devolved Power: A Critical Interrogation of the Place, Roles and Obligations of the Media at the Grassroots in Kenya’ (2017) 42 Africa Development / Afrique et Développement 105.

⁴⁷ Article 10, Constitution of Kenya 2010.

⁴⁸ Springer J, Campese J and Painter M, ‘Conservation and Human Rights: Key Issues and Contexts. Scoping Paper for the Conservation Initiative on Human Rights’ [2011] Unpublished report. Conservation Initiative on Human Rights Working Group, 7.

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

⁵⁰ Article 69 (2), Constitution of Kenya, 2010.

⁵¹ BirdLife International, "An introduction to conservation and human rights for BirdLife Partners." (2011), 2.

4. Fostering A Human Rights Approach to Biological Diversity Conservation in Kenya

Conservation of biodiversity and natural resources can help create environments that provide sustainable supplies of the goods and services necessary for healthy, fulfilled and dignified lives – helping to fulfil people’s right to development and to life and livelihood.⁵² This section offers some recommendations on some viable rights-based approaches that can foster countries’ efforts to achieve the twin goals of biodiversity conservation and promotion of human rights.

4.1. Enhancing Environmental Education in School Curricula for Environmental Awareness and Environmental Ethics

Agenda 21 recognises the role of education in achieving sustainable livelihoods and thus calls for “re-orientation” of all education toward sustainability.⁵³ It states that both formal education and non-formal education are indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns as well as achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making.⁵⁴

Environmental education has been defined as a process that allows individuals to explore environmental issues, engage in problem solving, and take action to improve the environment. As a result, individuals develop a deeper understanding of environmental issues and have the skills to make informed and responsible decisions.⁵⁵ Students are expected to be equipped with the following: awareness and sensitivity to the environment and environmental challenges; knowledge and understanding of the environment and environmental challenges; attitudes of concern for the environment and motivation to improve or maintain environmental quality; skills to identify and help resolve environmental challenges; and participation in activities that lead to the resolution of environmental challenges.⁵⁶ Notably, while environmental information is important, environmental education is more than that as it goes beyond the citizens’ right to giving their opinion to incorporate: increased public awareness and knowledge of environmental issues;

⁵² BirdLife International, ‘An Introduction to Conservation and Human Rights for BirdLife Partners’, 2.

⁵³ Chapter 36, Agenda 21.

⁵⁴ *Ibid*, para. 36.3.

⁵⁵ OA US EPA, ‘What Is Environmental Education?’ (*US EPA*, 13 December 2012) <<https://www.epa.gov/education/what-environmental-education>> accessed 3 June 2021.

⁵⁶ *Ibid*.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

building up critical thinking capacity; enhanced individuals' problem-solving and decision-making skills; and it does not advocate a particular viewpoint.⁵⁷ Environmental education is thus important for creating awareness and understanding about environmental issues which eventually leads to responsible individual and group actions.⁵⁸ As far as the role of education in achieving sustainable development is concerned, education is considered to play an important role in ensuring that human beings acquire knowledge, skills, attitudes, and values necessary to shape a sustainable future.⁵⁹ Continued enhanced and effective environmental education in Kenyan school curricula is important if Kenyans are to appreciate from their formative years the need to protect and conserve their environment and biodiversity in particular, as a prerequisite for achieving sustainable development.⁶⁰

4.2. Entrenching Rights-Based Approaches in Conservation Laws on Biological Diversity Conservation

Rights-based approaches to conservation have been defined to mean “integrating rights norms, standards, and principles into policy, planning, implementation, and outcomes assessment to help ensure that conservation practice respects rights in all cases, and supports their further realisation where possible”.⁶¹

Conservation of ecosystem goods and services is considered important for upholding economic, social and cultural rights, such as the rights to health, an adequate standard of living, freedom from hunger and cultural freedom.⁶² The discussion on human rights approaches to conservation is usually informed by the procedural rights, such as to participate in decision making, acquire

⁵⁷ OA US EPA, ‘What Is Environmental Education?’ (*US EPA*, 13 December 2012) <<https://www.epa.gov/education/what-environmental-education>> accessed 3 June 2021.

⁵⁸ Beatus Mwendwa, ‘Learning for Sustainable Development: Integrating Environmental Education in the Curriculum of Ordinary Secondary Schools in Tanzania.’ [2017] *Journal of Sustainability Education*.

⁵⁹ *Ibid.*

⁶⁰ AM Karugu, ‘Aspects of Environmental Education in Kenya’s Preschool Curriculum’ <<https://ir-library.ku.ac.ke/handle/123456789/8020>> accessed 3 June 2021; see also Unger, Suanne, “Environmental education in Kenya: the need for a community-based biology curriculum in the secondary schools.” (1993) *Graduate Student Theses, Dissertations, & Professional Papers*. 7615 <<https://scholarworks.umt.edu/viewcontent.cgi?article=8650&context=etd>> accessed 3 June 2021; Matthias Winfried Kleespies and Paul Wilhelm Dierkes, ‘Impact of Biological Education and Gender on Students’ Connection to Nature and Relational Values’ (2020) 15 *PLOS ONE* e0242004.

⁶¹ ‘Rights-Based Approaches to Conservation’ (*IUCN*, 14 December 2015) <<https://www.iucn.org/theme/governance-and-rights/about/our-work/governance-and-rights-based-approaches/rights-based-approaches-conservation>> accessed 4 June 2021.

⁶² Campese, J., Sunderland, T., Greiber, T. and Oviedo, G. (eds.), *Rights-based approaches: Exploring issues and opportunities for conservation*. (CIFOR and IUCN. Bogor, Indonesia, 2009), p.1.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

information and access justice; and the substantive rights, such as to life, personal security, health, an adequate standard of living, education, freedom to practice culture and freedom from all forms of discrimination, amongst others.⁶³

Notably, many international human rights instruments and multilateral environmental agreements now recognise rights to participation in environmental decision making, the importance of the environment for sustainable development and substantive rights to a clean and healthy environment.⁶⁴ Furthermore, at the national level, many national constitutions, including Kenya's, explicitly recognise rights to a clean or healthy environment and acknowledge the need for environmental protection and conservation as a prerequisite for the fulfillment of other social and economic rights. For instance, the Constitution of Kenya provides that:

- 19. (1) The Bill of Rights is an integral part of Kenya's democratic state and is the framework for social, economic and cultural policies.*
(2) The purpose of recognising and protecting human rights and fundamental freedoms is to preserve the dignity of individuals and communities and to promote social justice and the realisation of the potential of all human beings.

At the international law level, CBD Decision XII/7 2, encourages Parties to give gender due consideration in their national biodiversity strategies and action plans and to integrate gender into the development of national indicators.⁶⁵ Adopting a rights-based approach to biodiversity conservation can go a long way in enhancing the rights of both men and women. These rights include both procedural and substantive rights.⁶⁶ Procedural rights relate to access to the processes by which people can assert their rights where procedural rights are important in themselves, and also help ensure the realization of substantive rights, including by informing rights-holders and duty-bearers about their respective rights and responsibilities, and giving rights-holders space to make effective claims in systems of mutual accountability.⁶⁷ The relevant procedural rights

⁶³ *Ibid*, p. 2.

⁶⁴ *Ibid*, p. 5.

⁶⁵ CBD Decision XII/7, para.2.

⁶⁶ UN Environment, 'What Are Environmental Rights?' (*UNEP - UN Environment Programme*, 2 March 2018) <<http://www.unep.org/explore-topics/environmental-rights-and-governance/what-we-do/advancing-environmental-rights/what>> accessed 7 June 2021.

⁶⁷ Jenny Springer, Jessica Campese and M Painter, 'Conservation and Human Rights: Key Issues and Contexts. Scoping Paper for the Conservation Initiative on Human Rights' [2011] Unpublished report. Conservation Initiative on Human Rights Working Group, 16-17.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

conservation include: Right to information⁶⁸; Right to participation⁶⁹; and the right to access to justice (including redress)⁷⁰.

On the other hand, substantive rights are defined as rights to the “substance” of human wellbeing (such as rights to life, housing, water and a healthy environment) and contextually include:⁷¹ Right to life;⁷² Right to health;⁷³ Right to an adequate standard of living, including food;⁷⁴ Right to water;⁷⁵ Right to development;⁷⁶ Right to practice one’s culture;⁷⁷ Right to work;⁷⁸ Right to property;⁷⁹ and the peoples’ right to self-determination, use of natural wealth and resources, and not to be deprived of means of subsistence.⁸⁰

As already pointed out, biodiversity and generally ecosystem services are important in fulfilment of the foregoing substantive rights and hence, any efforts towards conservation of biodiversity

⁶⁸ See Article 10 of the Constitution on national values and principles of governance; Article 33 on freedom of expression; Article 35 on access to information; Article 69 on State obligations in respect of the State; *Access to Information Act*, No. 31 of 2016, Laws of Kenya.

⁶⁹ See Article 10 of the Constitution on national values and principles of governance; Article 33 on freedom of expression; Article 69;

⁷⁰ Article 10 of the Constitution on national values and principles of governance; Article 21 on implementation of rights and fundamental freedoms; Article 22 on enforcement of Bill of rights; Article 23 on authority of Courts to uphold and enforce the Bill of Rights; Article 27 on equality and freedom from discrimination; Article 48 on access to justice; Article 70 on enforcement of environmental rights; and Article 159 on judicial authority.

⁷¹ Jenny Springer, Jessica Campese and M Painter, ‘Conservation and Human Rights: Key Issues and Contexts. Scoping Paper for the Conservation Initiative on Human Rights’ [2011] Unpublished report. Conservation Initiative on Human Rights Working Group.

⁷² See Article 26 of the Constitution of Kenya 2010 on right to life; see also the case of *Peter K. Waweru v Republic* [2006] eKLR12 where the Court relied on, inter alia, case law from India to equate right to life to the right to clean and healthy environment.

⁷³ See Article 42 of the Constitution of Kenya on right to clean and healthy environment; see also Article 43(1) (a) on the economic and social rights which include the right- to the highest attainable standard of health, which includes the right to health care services, including reproductive health care.

⁷⁴ See Article 43(1) (b) (c) on the economic and social rights which include the right- (b) to accessible and adequate housing, and to reasonable standards of sanitation; and (c) to be free from hunger, and to have adequate food of acceptable quality.

⁷⁵ See Article 43(1) (d) on the economic and social rights which include the right- o clean and safe water in adequate quantities.

⁷⁶ See Article 10 of the Constitution on national values and principles of governance; see also Article 27 on the equality and freedom from discrimination; Part 3 of the constitution on the specific application of rights relating to persons with disabilities, youth, minorities and marginalised groups, older members of society and specifically in reference to their right to participate in national development affairs.

⁷⁷ See Article 11 of the Constitution of Kenya; Article 32 on freedom of conscience, religion, belief and opinion; and Article 44 on language and culture.

⁷⁸ See Article 41 of the Constitution of Kenya on labour relations; Employment Act, 2007, Cap 226; Employment and Labour Relations Court Act, No. 20 of 2011; Labour Relations Act, 2007.

⁷⁹ See Article 40 of the Constitution on protection of property rights.

⁸⁰ See United Nations. Declaration on the Rights of Indigenous Peoples, 2007; *International Covenant on Civil and Political Rights*, 16 December 1966, United Nations, Treaty Series, vol. 999, p. 171; *International Covenant on Economic, Social and Cultural Rights*, 16 December 1966, United Nations, Treaty Series, vol. 993, p. 3; *Charter of the United Nations*, 24 October 1945, 1 UNTS XVI.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

should bear this in mind not only for the sake of fulfilling human rights but also to ensure that the benefiting group of persons have the incentive to participate in conservation measures as envisaged under Article 69(2) of the Constitution of Kenya.⁸¹ This is also in line with the Aichi targets of the Convention on Biological Diversity (CBD) which calls upon States to ensure that biodiversity resources are “effectively and equitably managed”, where equity or justice is conceptualized in three areas of concern: (i) distribution of costs and benefits from conservation; (ii) procedure referring to participation in decision making; (iii) recognition of social and cultural difference.⁸²

Thus, building strategies for the protection of ecosystem services into conservation and land-use planning is essentially the promotion of human survival, and not merely a luxury task.⁸³ The *Natural Resources (Benefit Sharing) Bill, 2018* is meant to establish a system of benefit sharing in resource exploitation between resource exploiters, the national government, county governments and local communities; and for connected purposes.⁸⁴ The legislation is to apply to: sunlight; water resources; forests, biodiversity and genetic resources; wildlife resources; industrial fishing; and wind.⁸⁵ Its application is to be guided by the following principles: transparency and inclusivity; revenue maximization and adequacy; efficiency and equity; accountability and participation of the people; rule of law and respect for human rights of the people; and sustainable natural resources management.⁸⁶ Once enacted, this legislation has the potential to entrench a rights-based approach to natural resources management in Kenya.

4.3. Effective Pest Control for Biodiversity Conservation

Pests have a negative effect not only on agricultural production but also on biodiversity conservation. It has been observed that the damage caused by pest organisms is one of the most important factors in the reduced productivity of any crop plant species, losses can occur in the field

⁸¹ 69. Obligations in respect of the environment:

(2) 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;

see also Emily Woodhouse and J Terrence McCabe, ‘Well-Being and Conservation: Diversity and Change in Visions of a Good Life among the Maasai of Northern Tanzania’ (2018) 23 *Ecology and Society*.

⁸² Emily Woodhouse and J Terrence McCabe, ‘Well-Being and Conservation: Diversity and Change in Visions of a Good Life among the Maasai of Northern Tanzania’ (2018) 23 *Ecology and Society*, 52.

⁸³ Wenny, D.G., Devault, T.L., Johnson, M.D., Kelly, D., Sekercioglu, C.H., Tomback, D.F. and Whelan, C.J., ‘The Need to Quantify Ecosystem Services Provided by Birds’ (2011) 128 *The Auk* 1.

⁸⁴ Preamble, *Natural Resources (Benefit Sharing) Bill, 2018*.

⁸⁵ *Ibid*, clause 3.

⁸⁶ *Ibid*, clause 4.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

(pre-harvest) and during storage (post-harvest).⁸⁷ However, accurate estimates of agricultural losses caused by insects are difficult to obtain because the damage caused by these organisms depends on a number of factors related to environmental conditions, the plant species being cultivated, the socioeconomic conditions of farmers, and the level of technology used.⁸⁸ It is important to address the problem of pests if food security and biodiversity conservation are to be achieved. Pest control is part of the ecosystem services that improve and sustain human life.⁸⁹

One of the possible and effective approaches in pest control for biodiversity conservation is the integrated pest control. Integrated Pest Management (IPM) is an ecosystem approach to crop production and protection that combines different management strategies and practices to grow healthy crops and minimize the use of pesticides.⁹⁰ IPM has been developed as a way to control pests without relying solely on pesticides.

FAO promotes IPM as the preferred approach to crop protection and regards it as a pillar of both sustainable intensification of crop production and pesticide risk reduction.⁹¹ FAO defines Integrated Pest Management to mean *‘the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment. IPM emphasizes the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms.’*⁹²

The *Protection of Traditional Knowledge and Cultural Expressions Act, 2016*⁹³ was enacted to *provide a framework for the protection and promotion of traditional knowledge and cultural expressions; to give effect to Articles 11, 40 and 69(L) (c) of the Constitution; and for connected purposes.* The Act defines "traditional knowledge" to include *any knowledge contained in the*

⁸⁷ Oliveira, C. M., A. M. Auad, S. M. Mendes, and M. R. Frizzas, "Crop Losses and The Economic Impact of Insect Pests on Brazilian Agriculture," *Crop Protection* 56 (2014), pp. 50-54, p.51.

⁸⁸ *Ibid.*

⁸⁹ Philpott Stacy M., Biodiversity and Pest Control Services. In: Levin S.A. (ed.), *Encyclopedia of Biodiversity*, second edition, Waltham, MA: Academic Press, 2013, Volume 1, pp. 373-385.

⁹⁰ FAO, ‘AGP - Integrated Pest Management,’ available at <http://www.fao.org/agriculture/crops/core-themes/theme/pests/ipm/en/>.

⁹¹ *Ibid.*

⁹² ‘Plant Production and Protection Division: Integrated Pest Management’ <<http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/ipm/en/>> accessed 7 June 2021.

⁹³ Protection of Traditional Knowledge and Cultural Expressions Act, No. 33 of 2016, Laws of Kenya.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

*codified knowledge systems passed on from one generation to another including agricultural, environmental or medical knowledge, knowledge associated with genetic resources or other components of biological diversity, and know-how of traditional architecture, construction technologies, designs, marks and indications.*⁹⁴

Similarly, Aichi Target 18 envisages that by 2020, *the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.*⁹⁵

CBD Decision XIII/15 calls for Parties to encourage businesses involved in the development, manufacturing and sale of pesticides to develop and revise risk assessments of products, applying the precautionary approach and be fully transparent in releasing the results of all toxicity studies.⁹⁶

The *Plan of Action on Pollinators* includes suggestions to identify and promote possible improvements in the policy environment, including consideration of how existing or new certification schemes might contribute to the conservation and sustainable use of pollinator diversity.⁹⁷

CBC Decision XIII/3 and CBD Decision X/32⁹⁸ called for Parties to make use of voluntary sustainability standards and/or of voluntary certification schemes, and promote their further development for sustainably produced goods and services.⁹⁹

Farmers should be encouraged to use the least harmful approaches to pest control, including applying indigenous methods of pest control.¹⁰⁰

⁹⁴ Protection of Traditional Knowledge and Cultural Expressions Act, s.2.

⁹⁵ ‘Target 18 – Traditional Knowledge and Customary Sustainable Use – Local Biodiversity Outlooks’ <<https://localbiodiversityoutlooks.net/targets/target-18-traditional-knowledge-and-customary-sustainable-use/>> accessed 7 June 2021.

⁹⁶ CBD Decision XIII/15, para. 6.

⁹⁷ CBD Decision VI/5, Annex II, Element 3, capacity-building, para. 3.2.

⁹⁸ CBD Decision X/32, para. 2(i).

⁹⁹ CBD Decision XIII/3, para. 17(h).

¹⁰⁰ D Grzywacz and others, ‘The Use of Indigenous Ecological Resources for Pest Control in Africa’ (2014) 6 Food Security 71; ‘Cultural Methods of Pest, Primarily Insect, Control’ <<https://eap.mcgill.ca/publications/eap58.htm>> accessed 6 June 2021.

4.4. Biodiversity Mainstreaming for Food and Nutrition Security

The Constitution of Kenya guarantees the right of every person to be free from hunger and thirst: Every person has the right— (c) to be free from hunger, and to have adequate food of acceptable quality; (d) to clean and safe water in adequate quantities.¹⁰¹ Conservation of biodiversity for securing food and nutrition security in Kenya thus becomes an important step towards guaranteeing human rights of all.

Biodiversity for food and agriculture includes the variability among living organisms contributing to food and agriculture, including also the forestry and fisheries sectors.¹⁰² The sustainable use of genetic resources for food and agriculture will be the foundation for many of the adaptation strategies required in food and agriculture. Arguably, in order to adapt to climate change, plants and animals important for food security will need to adjust to abiotic changes such as heat, drought, floods and salinity.¹⁰³

Genetic resources are generally seen as the living material that local communities, breeders and researchers use to adapt to changing socio-economic needs and ecological challenges. Maintaining and using a wide basket of genetic diversity at a time of climate change is considered an essential insurance policy for the food and agriculture sectors.¹⁰⁴ Crop genetic diversity is considered a source of continuing advances in yield, pest resistance and quality improvement, and it is widely accepted that greater varietal and species diversity would enable agricultural systems to maintain productivity over a wide range of conditions.¹⁰⁵ It has been argued that maintaining and enhancing the diversity of crop genetic resources is of increasing importance to ensure the resilience of food crop production particularly in light of climate change challenges.¹⁰⁶ One of the ways of promoting food security in the face of climate change is adoption of climate smart agriculture. FAO defines Climate-Smart Agriculture (CSA) as an approach that helps to guide actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a

¹⁰¹ Article 43, Constitution of Kenya 2010.

¹⁰² FAO, 'Climate Change and Biodiversity for Food and Agriculture,' Technical Background Document From The Expert Consultation Held on 13 to 14 February 2008, p.1. Available at http://www.fao.org/uploads/media/FAO_2008a_climate_change_and_biodiversity_02.pdf

¹⁰³ *Ibid.*

¹⁰⁴ *Ibid.*, p.3.

¹⁰⁵ Carpenter, Janet E., "Impact of GM crops on biodiversity," *GM crops* 2, no. 1 (2011): 7-23, p.7.

¹⁰⁶ *Ibid.*, P.7.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

changing climate.¹⁰⁷ CSA aims to tackle three main objectives: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing greenhouse gas emissions, where possible. CSA is an approach for developing agricultural strategies to secure sustainable food security under climate change. CSA provides the means to help stakeholders from local to national and international levels identify agricultural strategies suitable to their local conditions.¹⁰⁸

Pollinators are part of the food production chain and must therefore be taken care of. Experts have warned that climate change will profoundly impact insects, including their physiology (how they live and reproduce), their behaviour and physical features, as well as relationships with other species (like host plants and natural enemies).¹⁰⁹ As a result, immense shifts are predicted in population dynamics, abundance and geographical spread of insects. In turn, these alterations will have positive and negative outcomes for people, livestock and crops, in terms of vulnerability to insect-transmitted diseases, and availability of essential services provided by insects such as pollination and pest regulation.¹¹⁰ Thus, this must form part of the wider debate in the quest for food and nutrition security.

4.5. Place of Indigenous Knowledge in Biodiversity Conservation

The rights of Indigenous Peoples are considered to be of special relevance to conservation for two main reasons: The first is that priority sites for biodiversity conservation frequently overlap with the territories of Indigenous Peoples. This is often because of Indigenous Peoples' custodianship of those lands which has meant that they have retained their value for biodiversity; and secondly, Indigenous Peoples very often have a close relationship to the land and to nature and, therefore, conservation has the potential to affect that relationship – both positively and negatively.¹¹¹

It has rightly been observed that the livelihoods of indigenous peoples, custodians of the world's forests since time immemorial, were eroded as colonial powers claimed de jure control over their ancestral lands, where the continuation of European land regimes in Africa and Asia meant that

¹⁰⁷ 'Climate-Smart Agriculture | Food and Agriculture Organization of the United Nations' <<http://www.fao.org/climate-smart-agriculture/en/>> accessed 7 June 2021.

¹⁰⁸ FAO, "Climate-Smart Agriculture," available at <http://www.fao.org/climate-smart-agriculture/en/>

¹⁰⁹ 'Insects and Climate Change | Icipe - International Centre of Insect Physiology and Ecology' <<http://www.icipe.org/news/insects-and-climate-change>> accessed 7 June 2021.

¹¹⁰ International Centre of Insect Physiology and Ecology (*icipe*), 'Insects and Climate Change,' available at <http://www.icipe.org/news/insects-and-climate-change> Accessed on 6/06/2021.

¹¹¹ BirdLife International, International B, 'An Introduction to Conservation and Human Rights for BirdLife Partners', 9.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

the withdrawal of colonial powers did not bring about a return to customary land tenure.¹¹² This is despite the acknowledgement that the rights of indigenous peoples' are often particularly relevant for conservation and sustainable use of natural resources, due to the frequent overlap of high-biodiversity areas and indigenous lands, and the vulnerability of natural resource-dependent customary livelihoods to changes in access or use.¹¹³ In addition, indigenous peoples' traditional ecological knowledge, traditional systems of control, use and management of lands and resources, and traditional institutions for self-governance also contribute substantially to conservation.¹¹⁴

While across sub-Saharan Africa, natural resources remain central to rural people's livelihoods with local norms and customs shaping people's everyday forms of resource use, the commercial uses of natural resources often remain highly centralized, conditioned by government policies of the colonial and post-colonial eras.¹¹⁵

Notably, the term "indigenous knowledge" is generally used refer to how members of a community perceive and understand their environment and resources, particularly the way they convert those resources through labour.¹¹⁶ Indigenous groups should be included in reforestation and forest management plans as they can potentially offer alternative knowledge and perspectives based on their own locally developed practices of resource use.¹¹⁷ Indigenous knowledge is the local knowledge that is unique to a culture or society,¹¹⁸ seen as the social capital of the poor since it is their main asset to invest in the struggle for survival, to produce food, to provide for shelter and to achieve control of their own lives.¹¹⁹ The SDGs recognises the importance of this body of knowledge as it has several goals that seek to incorporate the knowledge vested in indigenous

¹¹² Domínguez L and Luoma C, 'Decolonising Conservation Policy: How Colonial Land and Conservation Ideologies Persist and Perpetuate Indigenous Injustices at the Expense of the Environment' (2020) 9 Land 65, 65.

¹¹³ Jenny Springer and Jessica Campese with Michael Painter, "Conservation and Human Rights: Key Issues and Contexts," *Scoping Paper for the Conservation Initiative on Human Rights*, October 2011, 19.

¹¹⁴ *Ibid.*, 19.

¹¹⁵ Roe D, Nelson F and Sandbrook C, *Community Management of Natural Resources in Africa: Impacts, Experiences and Future Directions* (IIED 2009).

¹¹⁶ Castro, A.P. & Ettenger, K., 'Indigenous Knowledge And Conflict Management: Exploring Local Perspectives And Mechanisms For Dealing With Community Forestry Disputes,' *Paper Prepared for the United Nations Food and Agriculture Organization, Community Forestry Unit, for the Global Electronic Conference on "Addressing Natural Resource Conflicts Through Community Forestry,"* (FAO, January-April 1996) <http://www.fao.org/docrep/005/ac696e/ac696e09.htm> >Accessed on 20 August 2021.

¹¹⁷ Berkes, F., et. al., 'Rediscovery of Traditional Ecological Knowledge as Adaptive Management,' *Ecological Applications*, Vol. 10, No. 5., October 2000, pp. 1251-1262 at p. 1251.

¹¹⁸ SGJN Senanayake, 'Indigenous Knowledge as a Key to Sustainable Development' (2006) 2 Journal of Agricultural Sciences–Sri

Lanka<https://www.researchgate.net/publication/265197993_Indigenous_knowledge_as_a_key_to_sustainable_development> accessed 16 July 2020.

¹¹⁹ *Ibid.*

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

people in order to achieve its main agenda. Indigenous knowledge has been hailed as capable of solving local problems, as it offers a resource to help grow more and better food, adds to maintain healthy lifestyles, and it provides opportunities to share wealth and prevent conflicts.¹²⁰ For instance, some commentators have observed that: with regard to agro-ecology, indigenous people practised mixed farming where organic manure in the form of plant remains, cow dung and urine, and chicken droppings was applied to gardens to improve soil fertility as they are good sources of organic fertilizer which tended to promote organic farming; the use of nitrogen fixing pulses in mixed cropping, growing of plants of different patterns, maturity and duration assisted significantly in stabilizing soil fertility and prevention of soil erosion; in addition, the practice was an effective way, biologically, of managing pests and diseases; it also conserved biodiversity of animal and biannual crops and plants while reducing labour costs; in addition, trees were planted in gardens to provide shade for the plants, to act as wind breaks, and also to demarcate people's farmlands and homes; and as such, reviving organic agriculture would help conserve water, mitigate climate change and ensure sustained biodiversity.¹²¹

Some of the main ways through which indigenous knowledge may be used in promoting biodiversity conservation include but not limited to: trees which were traditionally regarded as housing spirits or sacred were not be felled without performing rituals, thus achieving a protective effect on trees such as *mugumo* tree (*Ficus natalensis/Ficus thonningii*) among the Gikuyu community of Kenya;¹²² animals in a particular habitat may be regarded as sacred and are therefore protected from hunting; sacred groves or forests are pieces of land set aside for spiritual purposes, as shrines; traditional farming practices are champions in sustainable land and water management as they involve land rotation and shifting cultivation allowing the land for more than 10 years to restore its natural fertility; all over sub-Saharan Africa indigenous plants are used in preventing

¹²⁰ Hens L, 'Indigenous Knowledge and Biodiversity Conservation and Management in Ghana' (2006) 20 Journal of Human Ecology 21, 22.

¹²¹ Gathogo J, 'Environmental Management and African Indigenous Resources: Echoes from Mutira Mission, Kenya (1912-2012)' (2013) 39 Studia Historiae Ecclesiasticae 33, at 37.

¹²² Gathogo J, 'Environmental Management and African Indigenous Resources: Echoes from Mutira Mission, Kenya (1912-2012)' (2013) 39 Studia Historiae Ecclesiasticae 33; Karangi M, 'Revisiting the Roots of Gikūyū Culture through the Sacred Mūgumo Tree' (2008) 20 Journal of African Cultural Studies 117; Karangi MM, *The Sacred Mugumo Tree: Revisiting the Roots of Gikuyu Cosmology and Worship: A Case Study of the Gicugu Gikuyu of Kirinyaga District in Kenya* (University of London, School of Oriental and African Studies (United Kingdom) 2005).

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

and curing diseases in plants, animals and humans thus guaranteeing their protection and conservation.¹²³

Arguably, while there is a need for deeper research to demonstrate to what extent indigenous knowledge rules are able to realize targets of sustainable use and the questions on effectiveness and efficiency of community based approaches to biodiversity conservation and management arise, in theory, when biodiversity can be maintained and monitored through customary laws, this is preferable over maintenance through codified law.¹²⁴ Notwithstanding this, the provisions in the *Protection of Traditional Knowledge and Traditional Cultural Expressions Act, 2016* offer a rare opportunity for the state to realize the vision of the 2030 SDGs by incorporating Kenyan communities' indigenous knowledge in the roadmap to the achievement of the sustainable development agenda. By including these communities and their knowledge, any development policies aimed to benefit these communities will be more likely to not only respond to their cultural needs and preferences but will also enable them meaningfully participate.

Some commentators rightly argue that, despite any gaps in knowledge in the place of indigenous knowledge in biodiversity conservation for realisation of SDGs, the following indigenous and other traditional communities' rights should be respected, in relation to the lands, territories, waters, coastal seas and other resources which they traditionally own or otherwise occupy or use, and which fall within protected areas, subject to agreements with the agencies in charge of national protected area systems, and in the context of agreed management regulations and plans: rights with regard to sustainable, traditional use of their lands and resources; rights to participate in management; rights to participate in decision-making; rights to participate in determining priorities and strategies for the development or use of their lands; rights to use their own traditional institutions and authorities to co-manage their lands and resources; rights to require that States obtain the free and informed consent of the respective communities, prior to the approval of any project affecting their lands and resources; rights to improve the quality of their lives, and to benefit directly and equitably from the conservation and ecologically sustainable use of natural resources; collective rights to maintain and enjoy their cultural and intellectual heritage, and the knowledge

¹²³ Hens L, 'Indigenous Knowledge and Biodiversity Conservation and Management in Ghana' (2006) 20 *Journal of Human Ecology* 21, 24; Brown, C., Tacio, H. D., & Ishikawa, M. (eds), *In Search of Excellence: Exemplary Forest Management in Asia and the Pacific* (FAO, Regional Office for Asia and the Pacific 2005).

¹²⁴ Hens L, 'Indigenous Knowledge and Biodiversity Conservation and Management in Ghana' (2006) 20 *Journal of Human Ecology* 21, 28.

Fostering a Human Rights Approach to Biodiversity Conservation in Kenya

related to biodiversity and natural resource management; and rights not to be removed from the zones they have traditionally occupied within protected areas.¹²⁵ Some, however, argue that protected areas and community agriculture can indeed co-exist. As the number of crop species and varieties declines, local nitrogen-fixing bacteria, mycorrhizae, predators, pollinators, seed dispersers and other species that co-evolved over centuries with traditional agricultural systems die out.¹²⁶ In addition, the use of fertilizers, pesticides and high-yielding varieties to maximize production and profits over the short term exacerbates this loss of biodiversity. Arguably, diversity of crop species and the diversity of varieties within a species have traditionally strengthened the resilience of agriculture, and Protected areas can contribute to this effort through maintaining wild relatives of crops. As such, the agricultural community should be seen as part of a larger and more comprehensive ecosystem which provides both goods and services from nature through a well-managed protected system. Fostering this positive relationship between agriculture and protected areas may however require broader adoption of the new approaches.¹²⁷

5. Conclusion

This paper has made recommendations on some of the rights-based approaches that Kenya, and indeed any other country keen on enhancing its biodiversity conservation efforts, can adopt. The recommendations are notably cross-cutting, ranging from economic, social, environmental and political measures, all bound by the fact that they focus on human rights and public participation in conservation efforts. It is hoped that exploring these recommendations within the context of rights-based approaches to conservation will go a long way in achieving biodiversity conservation, as a prerequisite for realisation of SDGs.

¹²⁵ BirdLife International, International B, ‘An Introduction to Conservation and Human Rights for BirdLife Partners’, 10.

¹²⁶ McNeely JA, ‘The Role of Protected Areas for Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture’, *DSE/ATSAF/IPGRI Workshop in situ Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture in Developing Countries, Bonn (Germany), 2-4 May 1995* (IPGRI 1996).

¹²⁷ Ibid.

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