

Revisiting the Place of Indigenous Knowledge in the Sustainable Development Agenda

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Abstract

For centuries, the African communities and especially in Kenya have always upheld and utilised their cultural knowledge on management and conservation of the environmental and natural resources. However, colonialism marked an era of western knowledge subjugating the indigenous knowledge, a practice that has continued to date. This has been made worse by the top-down or what is commonly referred to as command and control approach where the state organs have often taken the lead role in not only management of the environment and natural resources but also in utilising western and scientific knowledge at the expense of the indigenous knowledge. This paper explores the place of indigenous knowledge, in not only the management of environmental and natural resources but also in realisation of the sustainable development agenda. This is based on the need to ensure active and meaningful participation of communities through enhanced access to information and public participation.

1. Introduction

The term "indigenous knowledge" may generally refer to how members of a community perceive and understand their environment and resources, particularly the way they convert those resources through labour.¹ Indigenous groups offer alternative knowledge and perspectives based on their own locally developed practices of resource use.² In general, all traditional knowledge and resources are considered to be collective heritage of a community or ethnic group, even if the accumulation of knowledge is individual, because they are ancestral heritage, and are believed to come from God.³ Thus, Indigenous knowledge is the local knowledge that is unique

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¹ 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). Available at <http://www.fao.org/docrep/005/ac696e/ac696e09.htm> [Accessed on 14/7/2020].

² 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.

³ Swiderska, K., et. al., 'Protecting Community Rights over Traditional Knowledge: Implications of Customary Laws and Practices,' *Interim Report (2005-2006)*, November 2006, p. 13. Available at <http://pubs.iied.org/pdfs/G01253.pdf> [Accessed on 14/7/2020].

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to a culture or society.⁴ Indigenous knowledge is 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.⁵

The Sustainable Development Goals (SDGs)⁶ has several goals that seek to incorporate the knowledge vested in indigenous people in order to achieve its main agenda.

This paper offers some insights on debate relating to the place of indigenous knowledge in the sustainable development agenda as a means of promoting growth and development in Kenya.

2. Indigenous Knowledge as a Tool for Promoting Inclusive Growth and Development

Kenya has had a history of environmental injustice, where the colonialists used the law to appropriate all land and land-based resources from Africans and to vest them in the colonial masters.⁷ In addition, the law gave the colonial authorities powers to appropriate land held by indigenous people and allocate it to the settlers.⁸ The colonial authorities were, therefore, able to grant land rights to settlers in the highlands, while Africans were being driven and restricted to the native reserves. In the natives' reserves, there was overcrowding, soil erosion, and poor sanitation, amongst many other problems.⁹

The loss of control rights over natural resources also affected other resources including forests and water.¹⁰ The focus of forests management in reserved forests was production and protection and included collection of revenues, supervisory permits and licences, protection against illegal entry and use, reforestation and afforestation, research and extension.¹¹ Further, outside reserved

⁴ 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.

⁵ Ibid.

⁶ United Nations General Assembly, *Transforming our world: the 2030 Agenda for Sustainable Development*, Resolution adopted by the General Assembly on 25 September 2015 [without reference to a Main Committee (A/70/L.1)].

⁷ Ogendo, HWO, *Tenants of the Crown: Evolution of Agrarian Law & Institutions in Kenya*, (ACTS Press, Nairobi, 1991), p.54.

⁸ See generally the case of *Isaka Wainaina and Anor v Murito wa Indagara and others*, [1922-23] 9 E.A.L.R. 102.

⁹ See Ogendo, HWO, *Tenants of the Crown: Evolution of Agrarian Law & Institutions in Kenya*, (ACTS Press, Nairobi, 1991).

¹⁰ Mogaka, H., 'Economic Aspects of Community Involvement in Sustainable Forest Management in Eastern and Southern Africa,' *Issue 8 of Forest and social perspectives in conservation*, IUCN, 2001.p.74.

¹¹ Kigenyi, *et al*, 'Practice Before Policy: An Analysis of Policy and Institutional Changes Enabling Community Involvement in Forest Management in Eastern and Southern Africa,' *Issue 10 of Forest and social perspectives in conservation*, (IUCN, 2002), p. 9.

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forests, the focus by the government authorities was regulation and control of forest resources utilisation through legislation without considering the interests of the local communities or the existing traditional management systems.¹²

Thus, the colonial government effectively transferred the management of forests from the local communities to the government through exclusionist and protectionist legal frameworks, a move that was inherited by the independent governments of Kenya.¹³ It was only in the 1990s that there emerged a paradigm shift towards community-based forests management, although this was done with minimal commitment from the stakeholders.¹⁴ Arguably, this has been with little success due to the bureaucracy involved in requiring communities to apply for complicated licences and permits in order to participate in the same. Similarly, in relation to water resources, legal frameworks were enacted chief among which, was the Water Ordinance of 1929, vesting water resources on the Crown. This denied local communities the universal water rights that they had enjoyed in the pre-colonial period. It is noteworthy, that the problem of environmental injustice in Kenya has in fact continued into independent Kenya and often with ugly results, as has been documented in various Government reports.¹⁵

Environmental injustice continues to manifest itself in modern times. The recent conflicts such as those in Lamu County and in the pastoral counties are largely attributable to environmental injustices inflicted over the years.¹⁶ In some, there are feelings that land and other land-based resources were taken away from local communities, creating a feeling of disinheritance. In other areas, there are conflicts over access to resources such as forests among

¹² *Ibid.*

¹³ For instance, in 1985 the Government of the day effected a total ban on the shamba system, which was participatory in nature in that it allowed communities to settle in forests and engage in farming as they took care of the forests. Following the ban, the communities were resettled outside the gazette forest areas. This form of eviction has also been witnessed in such recent cases as the Endorois and the Ogiek cases.

¹⁴ Emerton, L., 'Mount Kenya: The Economics of Community Conservation,' *Evaluating Eden Series*, Discussion Paper No.4, p. 6.

¹⁵ See the *Report of the Judicial Commission Appointed to Inquire into Tribal Clashes in Kenya*, July 31, 1999 (Akiwumi Report, p. 59). The report found that some of the main causes of post-independence tribal clashes have been ambitions by some communities of recovering what they think they lost when the Europeans forcibly acquired their ancestral land; See also the *Kriegler and Waki Reports on 2007 Elections*, 2009, (Government Printer, Nairobi). The *Kriegler and Waki Reports* stated that the causes of the post-election clashes in the Rift Valley region covered by included conflict over land, cattle rustling, political differences and ecological reasons among others.

¹⁶ "They Just Want to Silence Us" (*Human Rights Watch*, 17 December 2018) <<https://www.hrw.org/report/2018/12/17/they-just-want-silence-us/abuses-against-environmental-activists-kenyas-coast>> accessed 17 July 2020; Rachel Berger, 'Conflict over Natural Resources among Pastoralists in Northern Kenya: A Look at Recent Initiatives in Conflict Resolution' (2003) 15 *Journal of International Development* 245.

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forest communities for livelihood, while in others conflicts emerge due to competition over scarce natural resources and competing land uses.¹⁷

Economically, forests provide timber which is an important source of revenue and a major foreign exchange earner. Forests also serve as habitats and a source of livelihoods for indigenous peoples and forest dwellers.¹⁸ The Africa Forest Law Enforcement and Governance (AFLEG) Ministerial Declaration of 2003¹⁹ recognized the role of forests in its preamble noting that Africa's forest eco-systems are essential for the livelihoods of the African people; especially the poor and that forests play important social, economic and environmental functions.²⁰

Notably, while the laws acknowledge the existence of indigenous forests, the command and control approach to natural resource management and the associated sustainability and conservation measures do not differentiate indigenous forests from other types of forests in reality. All indigenous forests and woodlands are to be managed on a sustainable basis for purposes of water, soil and biodiversity conservation; riverine and shoreline protection; cultural use and heritage; recreation and tourism; sustainable production of wood and non-wood products; carbon sequestration and other environmental services; education and research purposes; and as habitats for wildlife in terrestrial forests and fisheries in mangrove forests.²¹ As a result, the law requires the Kenya Forest Service to consult with the forest conservation committee for the area where the indigenous forest is situated in preparing a forest management plan.²² Further, the Forests Board may enter into a joint management agreement for the management of any state indigenous forest or part thereof with any person, institution, government agency or forest association.²³ While such arrangements are important in promoting environmental justice since communities get to participate in management of indigenous forests,

¹⁷ 'FAO Working Paper 1' <<http://www.fao.org/3/X2102E/X2102E01.htm>> accessed 17 July 2020; Urmilla Bob and Salomé Bronkhorst, 'Environmental Conflicts: Key Issues and Management Implications' (2010) 10 African Journal on Conflict Resolution.

¹⁸ UNFF Memorandum, available at www.iucnael.org/en/.../doc.../849-unit-3-forest-game-background.html. > accessed 16 July 2020; See also UNEP, *Global Environment Outlook 5: Environment for the future we want*, (UNEP, 2012), pp.145-154.

¹⁹ Africa Forest Law Enforcement and Governance (AFLEG), Ministerial Conference 13-16 October, 2003; Ministerial Declaration, Yaoundé, Cameroon, October 16, 2003.

²⁰ Sec. 2, *Forest Conservation and Management Act*, No. 34 of 2016, Laws of Kenya.

²¹ Sec. 42 (1), *Forest Conservation and Management Act*, No. 34 of 2016.

²² *Ibid*, S. 42(2).

²³ *Ibid*, S. 44(3).

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there is little evidence of active involvement of these communities. If anything, they have been suffering eviction from the indigenous forests.²⁴

It has been argued that many, if not all of the planet's environmental problems and certainly its entire social and economic problems, have cultural activity and decisions – people and human actions – at their roots.²⁵ As such, solutions are likely to be also culturally-based, and the existing models of sustainable development forged from economic or environmental concern are unlikely to be successful without cultural considerations.²⁶ Culture in this context, has been defined as: the general process of intellectual, spiritual or aesthetic development; culture as a particular way of life, whether of people, period or group; and culture as works and intellectual artistic activity.²⁷ Notably, the generation, adaptation and use of indigenous knowledge are greatly influenced by the culture.²⁸ It has rightly been observed that despite the indigenous populations having suffered from invasion and oppression, and oftentimes they have seen their knowledge eclipsed by western knowledge, imposed on them through western institutions, indigenous populations have managed to survive for centuries adapting in many different

²⁴ 'Kenya: Indigenous Peoples Targeted as Forced Evictions Continue despite Government Promises' <<https://www.amnesty.org/en/latest/news/2018/08/kenya-indigenous-peoples-targeted-as-forced-evictions-continue-despite-government-promises/>> accessed 16 July 2020; 'Kenya: Indigenous Ogiek Face Eviction from Their Ancestral Forest... Again' (*Mongabay Environmental News*, 8 October 2018) <<https://news.mongabay.com/2018/10/kenya-indigenous-ogiek-face-eviction-from-their-ancestral-forest-again/>> accessed 16 July 2020; 'Families Torn Apart: Forced Eviction of Indigenous People in Embobut Forest, Kenya - Kenya' (*ReliefWeb*) <<https://reliefweb.int/report/kenya/families-torn-apart-forced-eviction-indigenous-people-embobut-forest-kenya-0>> accessed 16 July 2020; 'Imminent Forced Eviction by Kenya Threatens Indigenous Communities' Human Rights and Ancestral Forests - Kenya' (*ReliefWeb*) <<https://reliefweb.int/report/kenya/imminent-forced-eviction-kenya-threatens-indigenous-communities-human-rights-and>> accessed 16 July 2020; 'Kenya Defies Its Own Courts: Torching Homes and Forcefully Evicting the Sengwer from Their Ancestral Lands, Threatening Their Cultural Survival | Forest Peoples Programme' <<http://www.forestpeoples.org/topics/legal-human-rights/news/2014/01/kenya-defies-its-own-courts-torching-homes-and-forcefully-evi>> accessed 16 July 2020; 'Kenya's Sengwer People Demand Recognition of "Ancestral Land" | Voice of America - English' <<https://www.voanews.com/africa/kenyas-sengwer-people-demand-recognition-ancestral-land>> accessed 16 July 2020; Jacqueline M Klopp and Job Kipkosgei Sang, 'Maps, Power, and the Destruction of the Mau Forest in Kenya' (2011) 12 *Georgetown Journal of International Affairs* 125; 'Kenya Forest Service - Kenya Forest Service' <http://www.kenyaforestservice.org/index.php?option=com_content&view=article&catid=223&id=149&Itemid=98> accessed 16 July 2020.

²⁵ Dessein, J. et al (ed), 'Culture in, for and as Sustainable Development: Conclusions from the COST Action IS1007 Investigating Cultural Sustainability,' (University of Jyväskylä, Finland, 2015), p. 14. Available at <http://www.culturalsustainability.eu/conclusions.pdf> [Accessed on 17/7/2020].

²⁶ Ibid, p.14.

²⁷ Ibid, p. 21.

²⁸ SGJN Senanayake, 'Indigenous Knowledge as a Key to Sustainable Development' (2006) 2 *Journal of Agricultural Sciences–Sri Lanka*.

ways to adverse climate conditions and managing to create sustainable livelihood systems.²⁹ Indeed, their diverse forms of knowledge, deeply rooted in their relationships with the environment as well as in cultural cohesion, have allowed many of these communities to maintain a sustainable use and management of natural resources, to protect their environment and to enhance their resilience; their ability to observe, adapt and mitigate has helped many indigenous communities face new and complex circumstances that have often severely impacted their way of living and their territories.³⁰ It is therefore worth including indigenous knowledge and culture in any plans, programmes and policies aimed at realisation of sustainable development agenda.

3. Place of Indigenous Knowledge in International and National Laws: The Framework

3.1 The International Law Framework

The *United Nations Declaration on the Rights of Indigenous Peoples*³¹ was adopted against a background of indigenous peoples having suffered from historic injustices as a result of, *inter alia*, their colonization and dispossession of their lands, territories and resources, thus preventing them from exercising, in particular, their right to development in accordance with their own needs and interests.³² It therefore came in to, *inter alia*, correct such situations through guaranteeing their right to self-determination.³³ In addition, it reaffirms the indigenous peoples' right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired; the right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired; and States should give legal

²⁹ Georgia Magni, 'Indigenous Knowledge and Implications for the Sustainable Development Agenda.' (2017) 52 European Journal of Education 437, p.3 < <https://unesdoc.unesco.org/ark:/48223/pf0000245623> > Accessed 17 July 2020.

³⁰ Ibid; See also Anders Breidlid, 'Culture, Indigenous Knowledge Systems and Sustainable Development: A Critical View of Education in an African Context' (2009) 29 International Journal of Educational Development 140.

³¹ 61/295, *United Nations Declaration on the Rights of Indigenous Peoples*, adopted by the General Assembly on Thursday, 13 September 2007.

³² Ibid, Preamble.

³³ Ibid, Art. 3.

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recognition and protection to these lands, territories and resources.³⁴ Such right includes their right to use their customs, traditions and land tenure systems of the indigenous peoples concerned especially in relation to their right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources.³⁵ States are therefore obligated to establish and implement assistance programmes for indigenous peoples for such conservation and protection, without discrimination.³⁶

The *Convention on Biological Diversity*³⁷ recognises the role of indigenous knowledge in in-situ conservation of biological diversity and requires contracting states to 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*.³⁸ The Convention further advocates for promotion of wider application of indigenous knowledge with the approval and involvement of the holders of such knowledge who should equitably share in the benefits which arise from the use of their knowledge.³⁹ Further, under article 10(c) of the Convention, each Contracting Party shall, as far as possible and as appropriate protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with *conservation or sustainable use requirements*.

The Convention is the only international treaty that specifically acknowledges the role of traditional knowledge, innovations, and practices in biodiversity conservation and sustainable development and the need to guarantee their protection, whether through intellectual property rights or other means.⁴⁰ In order to achieve the vision of the Convention and optimise the role of indigenous knowledge in sustainable development, there is need to ensure clarity with regards to ownership of traditional knowledge and traditionally used biological resources; a process and set

³⁴ Ibid, Art. 26.

³⁵ Ibid, Art. 29 (1).

³⁶ Ibid.

³⁷ United Nations, Convention on Biological Diversity of 5 June 1992, 1760 U.N.T.S. 69

³⁸ Convention on Biological Diversity, Article 8 (j).

³⁹ Ibid

⁴⁰ Dutfield, G., 'TRIPS-Related Aspects of Traditional Knowledge,' Case Western Reserve Journal of International Law, Vol. 33, Iss. 2, 2001, pp. 233-275 at pp. 261-261.

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of requirements governing free prior and informed consent and equitable sharing of benefits with respect to traditional knowledge and associated genetic resources.⁴¹

Principle 22 of the *1992 Rio Declaration on Environment and Development* acknowledges 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. In light of this, States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) asserts that ‘culture is who we are and what shapes our identity. No development can be sustainable without including culture.’⁴²

African States and other stakeholders, in the *Ngorongoro Declaration*⁴³ have acknowledged that Sustainable development can ensure that appropriate efforts are deployed to protect and conserve the cultural and natural resources of a region faced with the challenges of climate change, natural and human-made disasters, population growth, rapid urbanization, destruction of heritage, and environmental degradation for present and future generations.⁴⁴ As such, they declared that on the one hand, African heritage is central to preserving and promoting African cultures thereby uplifting identity and dignity for present and future generations in an increasingly globalized world, and on the other hand, heritage, including World Heritage properties, is a driver of sustainable development and critical for achieving regional socio-economic benefits, environmental protection, sustainable urbanization, social cohesion and peace.⁴⁵

⁴¹ Convention on Biological Diversity, ‘Presentation by Hamdallah Zedan Executive Secretary Convention on Biological Diversity to the WIPO Seminar on Intellectual Property and Development’ Geneva, Switzerland, 2-3 May 2005, available at http://www.world-intellectual-property-organization.com/edocs/mdocs/mdocs/en/isipd_05/isipd_05_www_103974.pdf (accessed on 10/09/2020)

⁴² United Nations Educational, Scientific and Cultural Organization (UNESCO), ‘Culture for Sustainable Development,’ available at <http://en.unesco.org/themes/culture-sustainable-development> [Accessed on 17/7/2020]

⁴³ The Ngorongoro Declaration on Safeguarding African World Heritage as a Driver of Sustainable Development, adopted in Ngorongoro, Tanzania on 4 June 2016.

⁴⁴ Ibid, p.2.

⁴⁵ Ibid, p. 3.

3.2 The National Policy and Legal Framework on Indigenous Knowledge

The Constitution of Kenya 2010 recognises culture as the foundation of the nation and as the cumulative civilization of the Kenyan people and nation.⁴⁶ In light of this, it obligates the State to, inter alia, promote all forms of national and cultural expression through literature, the arts, traditional celebrations, science, communication, information, mass media, publications, libraries and other cultural heritage; and recognise the role of science and indigenous technologies in the development of the nation.

The Constitution provides that the State shall protect and enhance indigenous knowledge of biodiversity of the communities.⁴⁷ The State is also obliged to encourage public participation in the management, protection and conservation of the environment.⁴⁸ In doing so, the State is also obligated to supply the relevant environmental information. Article 35(1) of the Constitution states that every citizen has the right of access to—(a) information held by the State; and (b) information held by another person and required for the exercise or protection of any right or fundamental freedom. *Access to Information Act, 2015*⁴⁹, which is intended to give effect to Article 35 of the Constitution; to confer on the Commission on Administrative Justice the oversight and enforcement functions and powers and for connected purposes. It classifies environmental information as part of the information that falls under information affecting public interest. Such environmental information is necessary to enable communities make informed decisions.⁵⁰ Thus decision-making processes should focus on the supply of the right information, incentives, resources and skills to citizens so that they can increase their resilience and adapt to climate change and other environmental changes.⁵¹

⁴⁶ Art. 11 (1), Constitution of Kenya, 2010.

⁴⁷ *Ibid*, Art. 69(1) (c).

⁴⁸ *Ibid*, Art. 69 (1) (d).

⁴⁹ Access to Information Act, No. 31 of 2016, Laws of Kenya.

⁵⁰ Carolina Zambrano-Barragán, 'Decision Making and Climate Change Uncertainty: Setting the Foundations for Informed and Consistent Strategic Decisions' (*World Resources Institute*, 27 June 2013) <<https://www.wri.org/our-work/project/world-resources-report/decision-making-and-climate-change-uncertainty-setting>> accessed 17 July 2020.

⁵¹ *Ibid*.

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Notably, sustainable development involves adoption of sustainable methods of managing conflicts and disputes.⁵² In settling land disputes, communities are encouraged to apply recognized local community initiatives consistent with the Constitution.⁵³ This will enhance community involvement in natural resource management thus enhancing their participation in achieving peace for sustainable livelihoods.⁵⁴

All these provisions encourage in one way or the other the participation of local communities in the management, use or ownership of natural resources and most importantly, using their indigenous knowledge as a knowledge reference point.

The *Protection of Traditional Knowledge and Traditional Cultural Expressions Act, 2016*,⁵⁵ which seeks to provide a unified and comprehensive framework for the protection and promotion of traditional knowledge and traditional cultural expressions; and to give effect to Articles 11, 40(5) and 69 of the Constitution, recognises the intrinsic value of traditional cultures and traditional cultural expressions, including their social, cultural, economic, intellectual, commercial and educational value.⁵⁶ While the Act does not expressly mention the words ‘sustainable development’, it provides that equitable benefit sharing rights of the owners and holders of traditional knowledge or cultural expressions shall include the right to fair and equitable sharing of benefits arising from the commercial or industrial use of their knowledge, which right might extend to non-monetary benefits, such as *contributions to community development, depending on the material needs and cultural preferences expressed by the communities themselves* (emphasis added).⁵⁷ Notably, *2030 Agenda on Sustainable Development Goals* (SDGs) under Goal 16 which seeks to promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels, calls for states to ensure responsive, inclusive, participatory

⁵² See Kariuki Muigua, *Harnessing Traditional Knowledge for Environmental Conflict Management in Kenya* (2016) < <http://kmco.co.ke/wp-content/uploads/2018/08/TRADITIONAL-KNOWLEDGE-AND-CONFLICT-MANAGEMENT-29-SEPTEMBER-2016.pdf>> accessed 17 July 2020.

⁵³ *Constitution of Kenya, 2010*, Art.60 (1) (g) and Art.67 (2) (f).

⁵⁴ See Kariuki Muigua, ‘Mainstreaming Traditional Ecological Knowledge in Kenya for Sustainable Development’, 2020 *Journal of cmsd* Volume 4(1) < <http://journalofcmsd.net/wp-content/uploads/2020/03/Mainstreaming-Traditional-Ecological-Knowledge-in-Kenya-for-Sustainable-Development-Kariuki-Muigua-23rd-August-2019.pdf>> Accessed on 17 July 2020.

⁵⁵ *Protection of Traditional Knowledge and Traditional Cultural Expressions Act, No. 33 of 2016*, Laws of Kenya.

⁵⁶ *Ibid*, s. 2(d).

⁵⁷ *Ibid*, s. 24 (1)(2).

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and representative decision-making at all levels.⁵⁸ The SDGs also pledge to foster intercultural understanding, tolerance, mutual respect and an ethic of global citizenship and shared responsibility. They also acknowledge the natural and cultural diversity of the world and recognise that all cultures and civilizations can contribute to and are enablers of, sustainable development.⁵⁹ The provisions in the *Protection of Traditional Knowledge and Traditional Cultural Expressions Act, 2016* thus 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.

The *Environmental Management and Conservation Act (EMCA)*⁶⁰ is the overarching law on environmental matters in Kenya. It is a framework environmental law establishing legal and institutional mechanisms for the management of the environment. It provides for improved legal and administrative co-ordination of the diverse sectoral initiatives in order to improve the national capacity for the management of the environment. Section 44 of the Act, mandates the National Environment Management Authority (NEMA), in consultation with the relevant lead agencies, to develop, issue and implement regulations, procedures, guidelines and measures for the sustainable use of hill sides, hill tops, mountain areas and forests. It also requires the formulation of regulations, guidelines, procedures and measures aimed at controlling the harvesting of forests and any natural resources located in or on a hill side, hill top or mountain areas so as to protect water catchment areas, prevent soil erosion and regulate human settlement. Section 46(1) requires every County Environment Committee to specify the areas identified in accordance with section 45(1) as targets for afforestation or reforestation. A County Environment Committee is to take measures, through encouraging voluntary self-help activities in their respective local community, to plant trees or other vegetation in any areas specified under subsection (1) which are within the limits of its jurisdiction.⁶¹

⁵⁸ *2030 Agenda on Sustainable Development Goals*, Goal 16.7.

⁵⁹ *Ibid*, Vision, Para. 36.

⁶⁰ No. 8 of 1999, Laws of Kenya.

⁶¹ S. 46(2), No. 8 of 1999.

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It is noteworthy that such afforestation may be ordered to be carried out even in private land. Paragraph (3) thereof is to the effect that where the areas specified under subsection (1) are subject to leasehold or any other interest in land, including customary tenure, the holder of that interest shall implement measures required to be implemented by the District Environment Committee, including measures to plant trees and other vegetation in those areas.

Under section 48, the Director-General with the approval of the Director of Forestry, may enter into any contractual arrangement with a private owner of any land on such terms and conditions as may be mutually agreed for the purposes of registering such land as forest land. The powers of the Authority include the issuance of guidelines and prescribing measures for the sustainable use of hill tops, hill slides and mountainous areas.⁶² To promote environmental justice and community participation in environmental matters, section 48 (2) prohibits the Director-General from taking any action, in respect of any forest or mountain area, which is prejudicial to the traditional interests of the indigenous communities customarily resident within or around such forest or mountain area.

The general objectives of the *Environmental Management and Co-ordination (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulation, 2009*⁶³ (dealing with wetlands management) include, *inter alia*: to provide for the conservation and sustainable use of wetlands and their resources in Kenya; to promote the integration of sustainable use of resources in wetlands into the local and national management of natural resources for socio-economic development; to ensure the conservation of water catchments and the control of floods; to ensure the sustainable use of wetlands for ecological and aesthetic purposes for the common good of all citizens; to ensure the protection of wetlands as habitats for species of fauna and flora; provide a framework for public participation in the management of wetlands; to enhance education research and related activities; and to prevent and control pollution and siltation.

Regulation 5(1) thereof provides for the general principles that shall be observed in the management of all wetlands in Kenya including: Wetland resources to be utilized in a sustainable manner compatible with the continued presence of wetlands and their hydrological, ecological, social and economic functions and services; Environmental impact assessment and environmental audits as required under the Act to be mandatory for all activities likely to have an

⁶² S. 47(1), No. 8 of 1999.

⁶³ Legal Notice No. 19, Act No. 8 of 1999.

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adverse impact on the wetland; Special measures to promote respect for, 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; Sustainable use of wetlands to be integrated into the national and local land use plans to ensure sustainable use and management of the resources; principle of public participation in the management of wetlands; principle of international co-operation in the management of environmental resources shared by two or more states; the polluter-pays principle; the pre-cautionary principle; and public and private good.

These are some of the initiatives that highlight the existing relationship between community indigenous and cultural knowledge and sustainable development, thus affirming the fact that cultural issues cannot be wished away in the discussion and efforts towards achieving sustainable development in Kenya and the world over.

4. Tapping into Indigenous Knowledge as a Means to an end: Place of Indigenous Knowledge in the Sustainable Development Agenda

The 2030 Agenda for Sustainable Development Goals captures the states' pledge to foster intercultural understanding, tolerance, mutual respect and an ethic of global citizenship and shared responsibility, and their acknowledgement of the natural and cultural diversity of the world and recognition that all cultures and civilizations can contribute to, and are crucial enablers of, sustainable development.⁶⁴

4.1 Environmental Justice and Access to Information

As already pointed out, in order to contribute to the protection of the right of every person to live in an environment adequate to his or her health and well-being, there is need to guarantee the rights of access to information, public participation in decision-making, and access to justice in

⁶⁴ United Nations, *Transforming our world: the 2030 Agenda for Sustainable Development*, A/RES/70/1, Resolution adopted by the General Assembly on 25 September 2015, para. 36.

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environmental matters.⁶⁵ The Constitution guarantees the right of access to information held by the State, any other person and required for the exercise or protection of any right or fundamental freedom.⁶⁶ It also obligates the State to publish and publicise any important information affecting the nation.⁶⁷ Guaranteeing access to relevant information, is imperative in facilitating access to environmental justice and enabling the communities to give prior, informed consent in relation to exploitation of natural resources. With regard to informed consent, ‘informed’ has been defined to mean that all information relating to the activity is provided to indigenous peoples and that the information is objective, accurate and presented in a manner or form that is understandable to indigenous peoples.⁶⁸ Relevant information includes: the nature, size, pace, duration, reversibility and scope of any proposed project; the reason(s) or purpose of the project; the location of areas that will be affected; a preliminary assessment of the possible economic, social, cultural and environmental impacts, including potential risks and benefits; personnel likely to be involved in the implementation of the project; and procedures that the project may entail.⁶⁹ This informed consent cannot therefore be given without first ensuring that the concerned communities have access to relevant information. In *Friends of Lake Turkana Trust v Attorney General & 2 others*,⁷⁰ the court was of the view that access to environmental information was a prerequisite to effective public participation in decision making and monitoring governmental and public sector activities on the environment.

The Court, in *Friends of Lake Turkana Trust* case, also observed that Article 69(1) (d) of the Constitution of Kenya 2010, placed an obligation on the state to encourage public participation in the management, protection and conservation of the environment. Public participation would only be possible where the public had access to information and was facilitated in terms of their reception of different views. Such community-based forums and Barazas can effectively facilitate this. Such public meetings should, as a matter of practice, be conducted in a manner that would ensure full and meaningful participation of all the concerned communities. Well

⁶⁵ Art.1 of the 1998 Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, UN Doc. ECE/CEP/43. Adopted at the 4th UNECE Ministerial Conference, Aarhus, 25 June, 1998, UN Doc. ECE/CEP/43.

⁶⁶ Art. 35(1).

⁶⁷ Art. 35(2).

⁶⁸ FAO, ‘Respecting free, prior and informed consent: Practical guidance for governments, companies, NGOs, indigenous peoples and local communities in relation to land acquisition,’ *Governance of Tenure Technical Guide* No. 3, Rome, 2014, p.5.

⁶⁹ *Ibid.*

⁷⁰ ELC Suit No 825 of 2012.

conducted, these are viable forums through which access to environmental information can be realized and consequently enhance access to environmental justice.

4.2 Environmental Justice and Public Participation

Meaningful involvement of people in environmental matters requires effective access to decision making processes for all, and the ability in all communities to make informed decisions and take positive actions to produce environmental justice for themselves.⁷¹ The *Vienna Declaration and Programme of Action*⁷² states that all peoples have the right of self-determination.⁷³ By virtue of that right, they freely determine their political status, and freely pursue their economic, social and cultural development. This calls for free prior and informed consent from the affected communities in relation to exploitation of natural resources in their areas.

Free, prior and informed consent is a collective right of indigenous peoples to make decisions through their own freely chosen representatives and customary or other institutions and to give or withhold their consent prior to the approval by government, industry or other outside party of any project that may affect the lands, territories and resources that they customarily own, occupy or otherwise use.⁷⁴ It is, thus, not a stand-alone right but an expression of a wider set of human rights protections that secure indigenous peoples' rights to control their lives, livelihoods, lands and other rights and freedoms and which needs to be respected alongside other rights, including rights relating to self-governance, participation, representation, culture, identity, property and, crucially, lands and territories.⁷⁵ The Guidelines call for consultation and participation which entails engaging with and seeking the support of those who, having legitimate tenure rights,

⁷¹ US Office of Legacy Management, 'Environmental Justice' *What Is Environmental Justice?* Available at <http://energy.gov/lm/services/environmental-justice/what-environmental-justice>[Accessed on 12/7/2020].

⁷² UN General Assembly, *Vienna Declaration and Programme of Action*, 12 July 1993, A/CONF.157/23.

⁷³ Proclamation 1.2.

⁷⁴ FAO, 'Respecting free, prior and informed consent: 'Practical guidance for governments, companies, NGOs, indigenous peoples and local communities in relation to land acquisition, *op cit*, p.4.

⁷⁵ *Ibid*.

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could be affected by decisions, prior to decisions being taken, and responding to their contributions; taking into consideration existing power imbalances between different parties and ensuring active, free, effective, meaningful and informed participation of individuals and groups in associated decision-making processes.⁷⁶

The Constitution of Kenya provides that the objects of devolved government are, *inter alia*, to promote democratic and accountable exercise of power; to foster national unity by recognising diversity; to give powers of self-governance to the people and enhance their participation in the exercise of the powers of the State and in making decisions affecting them; to recognise the right of communities to manage their own affairs and to further their development; to protect and promote the interests and rights of minorities and marginalised communities; to promote social and economic development and the provision of proximate, easily accessible services throughout Kenya; to ensure equitable sharing of national and local resources throughout Kenya; and to facilitate the decentralisation of State organs, their functions and services, from the capital of Kenya.⁷⁷

The Constitution provides for participation of persons with disabilities,⁷⁸ youth,⁷⁹ minorities and marginalized groups,⁸⁰ and older members of society,⁸¹ in governance and all other spheres of life. The foregoing provisions are important especially in relation to the provisions of the *County Governments Act*,⁸² which are to the effect that citizen participation in county governments shall be based upon the principles of, *inter alia*, timely access to information, data, documents, and other information relevant or related to policy formulation and implementation; reasonable access to the process of formulating and implementing policies, laws, and regulations; protection and promotion of the interest and rights of minorities, marginalized groups and communities; legal standing to interested or affected persons, organizations, and where pertinent, communities, to appeal from or, review decisions, or redress grievances, with particular emphasis on persons and traditionally marginalized communities, including women, the youth, and disadvantaged communities; reasonable balance in the roles and obligations of county governments and non-state actors in decision-making processes; promotion of public-private

⁷⁶ *Ibid*, p. 4.

⁷⁷ Art. 174, Constitution of Kenya 2010.

⁷⁸ Art. 54.

⁷⁹ Art. 55.

⁸⁰ Art. 56.

⁸¹ Art. 57.

⁸² No. 17 of 2012, Laws of Kenya.

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partnerships; and recognition and promotion of the reciprocal roles of non-state actors' participation and governmental facilitation and oversight.⁸³

These provisions have an implication on natural resources management. It means that the devolved governments must not purport to make unilateral decisions especially with regard to the management of natural resources. They must recognise the centrality of people in natural resources management, since these resources have an impact on the economic, social, cultural and even spiritual lives of the diverse communities in Kenya. As such, they must ensure their active participation in coming up with legislative and policy measures to govern their management and utilisation for the benefit of all. They must also be alive to the fact that any negative impact on the environment directly affects these communities and ultimately has an adverse effect on the sustainable development agenda.

The Constitution of Kenya requires Parliament to conduct its business in an open manner, and its sittings and those of its committees to be open to the public; and to facilitate public participation and involvement in the legislative and other business of Parliament and its committees.⁸⁴ The proposed law, *The Natural Resources (Benefit Sharing) Bill*, 2018, also seeks to have established by each affected local community a Local Benefit Sharing Forum comprising of five persons elected by the residents of the local community.⁸⁵ Every affected local community is also to enter into a local community benefit sharing agreement with the respective county benefit sharing committee.⁸⁶ Such local community benefit sharing agreement is to include non-monetary benefits that may accrue to the local community and the contribution of the affected organization in realizing the same.⁸⁷

It is, therefore, imperative that such communities be involved in the whole process to enable them air their views on the same and where such negative effects are inevitable due to the nature of exploitation of the natural resources, their appreciation of such impact is the ultimate key to winning social acceptance of these projects.⁸⁸ Indeed, participation will bring the most benefit

⁸³ *Ibid*, S. 87.

⁸⁴ Art. 118(1) (a).

⁸⁵ Clause 31 (1).

⁸⁶ Clause 32 (1).

⁸⁷ Clause 32(2).

⁸⁸ S. 115 of the *County Governments Act*, 2012, provides that Public participation in the county planning processes shall be mandatory and be facilitated through— mechanisms provided for in Part VIII of this Act; and provision to the public of clear and unambiguous information on any matter under consideration in the planning process, including—clear strategic environmental assessments; clear environmental impact assessment reports; expected development outcomes; and development options and their cost implications.

when the process is seen as fair, and processes are seen as more fair, if those who are affected have an opportunity to participate in a meaningful way and their opinions are taken seriously.⁸⁹

Indicators of procedural justice have been identified as: presence of local environmental groups, public participation or consultation on local developments and initiatives, access to information, and responsiveness by public bodies.⁹⁰

Indeed, those affected by environmental problems must be included in the process of remedying those problems; that all citizens have a duty to engage in activism; and that in a democracy it is the people, not the government, that are ultimately responsible for fair use of the environment.⁹¹

Active and meaningful public participation, therefore, through such means as suggested in the indicators of procedural justice are important in enhancing community participation in realisation of the sustainable development agenda.

4.3 Benefit Sharing Arrangements

Benefit-sharing is a way of integrating the economic, social and environmental considerations in the management of natural resources.⁹² In order to protect community and individual interests over land-based resources, and facilitate benefit sharing, the *National Land Policy*, 2009, recommends that the Government should: establish legal frameworks to recognise community and private rights over renewable and non-renewable land-based natural resources and incorporate procedures for access to and sustainable use of these resources by communities and private entities; devise and implement participatory mechanisms for compensation for- loss of land and damage occasioned by wild animals; put in place legislative and administrative mechanisms for determining and sharing of benefits emanating from land based natural resources by communities and individuals where applicable; make benefit-sharing mandatory where land based resources of communities and individuals are managed by national authorities for

⁸⁹ Amerasinghe, M., *et al*, 'Enabling Environmental Justice: Assessment of Participatory Tools. Cambridge, MA: Massachusetts Institute of Technology, 2008, p.3.

Available at <http://web.mit.edu/jcarmin/www/carmin/EnablingEJ.pdf> [Accessed on > accessed 17 July 2020].

⁹⁰ Todd, H., & Zografos, C., Justice for the Environment: Developing a Set of Indicators of Environmental Justice for Scotland, *Environmental Values*, 14(4), 483-501.

⁹¹ Frechette, K.S., 'Environmental Justice: Creating Equality, Reclaiming Democracy,' OUP USA, 2005. Available at <http://philpapers.org/rec/SHREJC> Accessed on > accessed 17 July 2020.

⁹² Government of Kenya, *Sessional Paper No. 3 of 2009 on National Land Policy*, p. 23, (Government Printer, Nairobi).

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posterity; and ensure the management and utilization of land-based natural resources involves all stakeholders.⁹³

The proposed law, *Natural Resources (Benefit Sharing) Bill, 2018*⁹⁴ seeks to establish a system of benefit sharing in resource exploitation between resource exploiters, the national government, county governments and local communities; to establish the Natural Resources Benefits Sharing Authority; and for connected purposes. The Bill, if passed into law, is to apply with respect to the exploitation of petroleum, natural gas, minerals, forest resources, water resources, wildlife resources and fishery resources.⁹⁵ Notably, the Bill provides for the guiding principles in benefit sharing which include: transparency and inclusivity; revenue maximization and adequacy; efficiency and equity; accountability and participation of the people; and rule of law and respect for human rights of the people.⁹⁶

The proposed law also proposes the establishment of a Benefit Sharing Authority,⁹⁷ with the mandate to, *inter alia*, coordinate the preparation of benefit sharing agreements between local communities and affected organizations; review, and, determine the royalties payable; identify counties that require to enter into benefit sharing agreement for the commercial exploitation of natural resources within the counties; oversee the administration of funds set aside for community projects identified or determined under any benefit sharing agreement; monitor the implementation of any benefit sharing agreement entered into between a county and an affected organization; conduct research regarding the exploitation and development of natural resources and benefit sharing in Kenya; make recommendations to the national government and county governments on the better exploitation of natural resources in Kenya; determine appeals arising out of conflicts regarding the preparation and implementation of county benefit sharing agreements; and advise the national government on policy and the enactment of legislation relating to benefit sharing in resource exploitation.⁹⁸

The Bill also seeks to establish in each county with natural resources, a County Benefit Sharing Committee.⁹⁹ Benefit sharing could effectively be used to promote environmental justice among

⁹³ *Ibid*, p. 23.

⁹⁴ Kenya Gazette Supplement No.130 (Senate Bills No.31).

⁹⁵ Clause3.

⁹⁶ Clause4.

⁹⁷ Clause5.

⁹⁸ Clause6 (1).

⁹⁹ Clause28. The functions of the said Committees will include to: negotiate with an affected organization on behalf of the County Government prior to entering into a county benefit sharing agreement; monitor the implementation of

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communities and enhance the relationship between the government and communities, as well as among communities which in turn enhances peace in the country. A satisfied people are likely to support and even contribute in efforts towards the sustainable development agenda and are also more likely to adopt sustainable methods of production.

To facilitate more equitable distribution of accruing benefits among local, often subsistence, and indigenous peoples, there are those who advocate for approaches incorporating community based natural resource management (CBNRM) and other approaches that protect the interests of the local people. The CBNRM approach is built upon three assumptions: management responsibility over the local natural resources that is devolved to community level will encourage communities to use these resources up to sustainable levels; the “community” represents the interests of all its members; and communities are keen to accept management responsibility because they see the (long-term) economic benefits of sustainable utilisation, and they are willing to invest time and resources in natural resource management.¹⁰⁰

4.4 Payment for ecosystem services

One aspect of biodiversity conservation that has not been tapped by Kenyans is payment for ecosystem services. Ecosystem services refer to the value people get from ecosystems. Examples are the value of ecosystems in freshwater purification, pollination, clean air, flood control, soil stability, water conservation and climate regulation.¹⁰¹ The value of ecosystem

projects required to be undertaken in the county pursuant to a benefit sharing agreement; determine the amount of money to be allocated to each local community from sums devolved under this Act; convene public forums to facilitate public participation with regard to proposed county benefit sharing agreements prior to execution by the county government; convene public forums for the purpose of facilitating public participation with regard to community projects proposed to be undertaken using monies that accrue to a county government pursuant to this Act; and make recommendations to the county government on projects to be funded using monies which accrue to the county government pursuant to this Act.(Clause 29).

¹⁰⁰ Shackelton, S. & Campbell, B. (eds), ‘Empowering Communities to Manage Natural Resources: Case Studies from Southern Africa,’ Center for International Forestry Research, March 2000, p. 10.

Available at http://www.cifor.org/publications/pdf_files/Books/Empowering.pdf > accessed 17 July 2020.

¹⁰¹ Hunter, David, James Salzman, and Durwood Zaelke. *International environmental law and policy*. Vol. 516. New York: Foundation Press, 2007, p. 916.

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services is estimated at more than one third of the total value of the world's economy.¹⁰² The primary reason that ecosystem services are taken for granted is that they are deemed to be free.¹⁰³ An example of payment for ecosystem services includes the residents of Nairobi paying a certain amount of money to the communities surrounding Aberdare National Park because most of the water used in Nairobi comes from the Aberdares. This will encourage the Aberdare community to continue conserving the resources as such conservation benefits them. However, in Kenya, the value of ecosystem services rarely enters policy debates or public discussions.¹⁰⁴

4.5 Use of Community-Based Natural Resource Management (CNRM)

This is the involvement of community members and local institutions in the management of natural resources for their economic growth and development. It involves devolution of power and authority from the State to local levels. This legitimises indigenous resource uses and rights and includes traditional values and ecological knowledge in modern resource management.¹⁰⁵ The Constitution provides that the state shall protect and enhance indigenous knowledge of biodiversity of the communities.¹⁰⁶ The use of indigenous knowledge in biodiversity conservation encourages community participation and benefits from conservation and ultimately leads to reduction in human-wildlife conflict.¹⁰⁷ The Wildlife Conservation and Management Act, 2013¹⁰⁸ (WCMA) provides for CBNRM through the recognition of community conservancies and sanctuaries.¹⁰⁹

¹⁰² *Ibid*; Losey, J.E. & Vaughan, M., 'The Economic Value of Ecological Services Provided by Insects,' *BioScience*, Vol. 56, No. 4, April 2006, pp. 311-323; Costanza, R., 'The value of the world's ecosystem services and natural capital,' *Nature*, Vol. 387, 15 May 1997, pp. 253-260.

¹⁰³ Hunter, David, James Salzman, and Durwood Zaelke. *International environmental law and policy*. Vol. 516. New York: Foundation Press, 2007, p. 916; Salzman, J., 'Valuing Ecosystem Services,' *Ecology Law Quarterly*, Vol. 24, Iss. 4, September 1997, pp.887-904.

¹⁰⁴ *Ibid*.

¹⁰⁵ Kellert, S.R., *et al*, 'Community Natural Resource Management: Promise, Rhetoric and Reality,' *Society and Natural Resources: An International Journal*, Vol.13, No.8, 2000, p.706.

¹⁰⁶ Art. 69(1) (c).

¹⁰⁷ Warren, M., 'Indigenous Knowledge, Biodiversity Conservation and Development' in Bennunet, L.A., *al.*, (eds), *Conservation of Biodiversity in Africa: Local Initiatives and Institutional Roles* (Centre for Biodiversity, National Museums of Kenya, 1995) 93, p.96.

¹⁰⁸ Wildlife Conservation and Management Act, No. 47 of 2013, Laws of Kenya.

¹⁰⁹ *Ibid*, sec. 39 & 40.

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Another opportunity under CBNRM approach is the use of incentives to encourage participation in wildlife management. Command and control approaches to wildlife management have failed to curb loss of wildlife. If private land owners and communities are given incentives to keep wildlife on their land, then they will perceive wildlife as an economic good and protect it in the same manner they protect their private property. The WCMA now provides for incentives for wildlife management.¹¹⁰ Economic incentives such as tax exemptions and waiver of stamp duties on land relating to wildlife would go a long way in encouraging Kenyans to conserve wildlife as an alternative land use method. These incentives may also be used in management of other resources such as forests, using indigenous community knowledge especially for those communities who have traditionally relied on such forests for their livelihoods.

4.6 Dissemination of Information and Environmental Education to Communities

Agenda 21 provides that Governments at the appropriate level, with the support of the relevant international and regional organizations, should, *inter alia*: promote a multidisciplinary and cross-sectoral approach in training and the dissemination of knowledge to local people on a wide range of issues which include various resources management.¹¹¹ Further, Agenda 21 states that Coastal States should promote and facilitate the organization of education and training in integrated coastal and marine management and sustainable development for scientists, technologists, managers (including community-based managers) and users, leaders, indigenous peoples, fisherfolk, women and youth, among others. Management and development, as well as environmental protection concerns and local planning issues, should be incorporated in educational curricula and public awareness campaigns, with due regard to traditional ecological knowledge and socio-cultural values.¹¹² This is useful in promoting sustainable and inclusive sustainable resources management through empowering the local people to participate meaningfully in the same.

It is worth pointing out that while indigenous knowledge is relevant to the sustainable development agenda, information dissemination and environmental education for the

¹¹⁰ S. 70.

¹¹¹ Clause 13.22.

¹¹² Clause 17.15.

communities will make them appreciate how their knowledge and experiences can fit into the sustainable development agenda for not only environmental conservation but also for betterment of their lives.

4.7 Community Participation in Climate Change Mitigation

The Bali Principles also affirm the fact that the impacts of climate change are disproportionately felt by small island states, women, youth, coastal peoples, local communities, indigenous peoples, fisherfolk, poor people and the elderly. Also noteworthy is the assertion that the local communities, affected people and indigenous peoples have been kept out of the global processes to address climate change. The Principles also acknowledge that unsustainable production and consumption practices are at the root of this and other global environmental problems. The impacts of climate change also threaten food sovereignty and the security of livelihoods of natural resource-based local economies. They can also threaten the health of communities around the world-especially those who are vulnerable and marginalized, in particular children and elderly people. More importantly, the *Bali Principles* acknowledge in the preamble that combating climate change must entail profound shifts from unsustainable production, consumption and lifestyles, with industrialized countries taking the lead.¹¹³

¹¹³ Though non-binding, the *Bali Principles* give some recommendations that can boost efforts to achieve sustainable development. These include, inter alia: the need to reduce with an aim to eliminate the production of greenhouse gases and associated local pollutants; the rights of indigenous peoples and affected communities to represent and speak for themselves; Governments' responsibility for addressing climate change in a manner that is both democratically accountable to their people and in accordance with the principle of common but differentiated responsibilities; fossil fuel and extractive industries be held strictly liable for all past and current life-cycle impacts relating to the production of greenhouse gases and associated local pollutants; clean, renewable, locally controlled and low-impact energy resources in the interest of a sustainable planet for all living things; the right of all people, including the poor, women, rural and indigenous peoples, to have access to affordable and sustainable energy; the need for solutions to climate change that do not externalize costs to the environment and communities, and are in line with the principles of a just transition; the need for socio-economic models that safeguard the fundamental rights to clean air, land, water, food and healthy ecosystems; the rights of communities dependent on natural resources for their livelihood and cultures to own and manage the same in a sustainable manner, and avoiding the commodification of nature and its resources; recognition of the right to self-determination of Indigenous Peoples, and their right to control their lands, including sub-surface land, territories and resources and the right to the protection against any action or conduct that may result in the destruction or degradation of their territories and cultural way of life; the right of indigenous peoples and local communities to participate effectively at every level of decision-making, including needs assessment, planning, implementation, enforcement and evaluation, the strict enforcement of principles of prior informed consent, and the right to say "No"; the need for solutions that address women's rights; the right of youth as equal partners in the movement to address climate change and its associated impacts; education of present and future generations, emphasising on climate, energy, social and environmental issues, while basing itself on real life experiences and an appreciation of diverse cultural perspectives; the need for we, as individuals and communities, to make personal and consumer choices to consume as little of Mother Earth's resources, conserve our need for energy; and make the conscious decision to challenge and reprioritize our lifestyles,

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It has rightly been argued that forest and landscape restoration is about more than just trees. It goes beyond afforestation, reforestation, and ecological restoration to improve both human livelihoods and ecological integrity. Key characteristics include the following: Local stakeholders are actively engaged in decision making, collaboration, and implementation; whole landscapes are restored, not just individual sites, so that trade-offs among conflicting interests can be made and minimized within a wider context; landscapes are restored and managed to provide for an agreed, balanced combination of ecosystem services and goods, not only for increased forest cover; a wide range of restoration strategies are considered, from managed natural regeneration to tree planting; and continuous monitoring, learning, and adaptation are central.¹¹⁴

Further, a restored landscape can accommodate a mosaic of land uses such as agriculture, protected reserves, ecological corridors, regenerating forests, well-managed plantations, agroforestry systems, and riparian plantings to protect waterways. Restoration must complement and enhance food production and not cause natural forests to be converted into plantations.¹¹⁵ Communities can and should therefore be encouraged to utilise their indigenous knowledge and technologies in combating climate change. It has been suggested that inclusive innovations enhance the social and economic well-being of disenfranchised society members and the participatory element in innovative systems development.¹¹⁶ This is because the redistribution of resources is combined by the active participation of the marginalized poor applying participatory processes in relation to problem, conflict solution and related strategies.¹¹⁷ Communities should therefore not be left out in climate change mitigation measures as they may have some contribution to make.

4.8 Incorporation of Indigenous Knowledge in Food Production Methods

re-thinking our ethics with relation to the environment and the Mother Earth; while utilizing clean, renewable, low impact energy; and ensuring the health of the natural world for present and future generations; and the rights of unborn generations to natural resources, a stable climate and a healthy planet.

¹¹⁴ World Resources Institute, 'Atlas of Forest and Landscape Restoration Opportunities,' available at <http://www.wri.org/resources/maps/atlas-forest-and-landscape-restoration-opportunities> > accessed 17 July 2020.

¹¹⁵ Ibid.

¹¹⁶ Jussi S Jauhiainen and Lauri Hooli, 'Indigenous Knowledge and Developing Countries' Innovation Systems: The Case of Namibia' (2017) 1 International Journal of Innovation Studies 89.

¹¹⁷ Ibid.

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SDG Goal 2 seeks to end hunger, achieve food security and improved nutrition and promote sustainable agriculture.¹¹⁸ In order to achieve this, the SDGs Agenda aims at ensuring that by 2030, state parties will double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.¹¹⁹

Food security depends, *inter alia*, on sustainable management of fish, forests, and wildlife since in many indigenous communities; these resources are the principal sources of protein in the diet.¹²⁰ It also highlights the fact that the traditional knowledge within indigenous communities also plays an important role in the achievement of food security for these communities and others.¹²¹

It has been argued that the interaction and cooperation between different actors facilitate learning and knowledge creation in specific socioeconomic contexts in which innovation and development processes are embedded.¹²² In addition, the impact of the context is reciprocal: it influences the capacity of individuals, institutions, sectors, regions, and countries to develop, apply, and diffuse innovations while these innovations change the context.¹²³

As already pointed, the Constitution also obligates the State to recognise the role of science and indigenous technologies in the development of the nation.¹²⁴ These rights are important, not only for the individual citizens, but also for the country in adopting scientific knowledge especially local for eliminating unsustainable and harmful practices that adversely affect realisation right to clean and healthy environment for all.

It has been observed that indigenous knowledge may get lost due to the intrusion of foreign technologies and development concepts aimed at short-term gains or solutions to problems

¹¹⁸ UNGA, *Transforming our world: the 2030 Agenda for Sustainable Development*, Resolution adopted by the General Assembly on 25 September 2015 [without reference to a Main Committee (A/70/L.1)], Goal 2.

¹¹⁹ *Ibid*, SDG Goal 2.3.

¹²⁰ The Rome World Food Summit Commitment No. 3.

¹²¹ *Ibid*.

¹²² Jussi S Jauhiainen and Lauri Hooli, 'Indigenous Knowledge and Developing Countries' Innovation Systems: The Case of Namibia' (2017) 1 International Journal of Innovation Studies 89.

¹²³ *Ibid*.

¹²⁴ Art. 11(2) (b).

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without being capable of sustaining them.¹²⁵ Thus, even as the stakeholders in the ministry of agriculture gear towards adoption of improved methods of crop and animal production such as Genetically Modified technologies, there is a need to involve communities in coming up with adoptive methods, which may include indigenous knowledge and technologies available and utilised by certain communities in certain regions.

5. Conclusion

The Constitution further creates obligations on 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; 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; eliminate processes and activities that are likely to endanger the environment; and utilize the environment and natural resources for the benefit of the people of Kenya.¹²⁶

Indigenous knowledge offers a viable platform for exchange of ideas between the state organs and communities in their efforts towards realisation of the sustainable development agenda.

¹²⁵ SGJN Senanayake, 'Indigenous Knowledge as a Key to Sustainable Development' (2006) 2 Journal of Agricultural Sciences–Sri Lanka.

¹²⁶ Constitution of Kenya 2010, Art. 69(1).

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