Mainstreaming Traditional Ecological Knowledge in Kenya for Sustainable Development

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Abstract

The sustainable development agenda calls for concerted efforts from all stakeholders in the conservation and protection of the environment. It also encourages an integrated approach in the application of scientific and traditional knowledge from communities in achieving the sustainable development goals. This paper argues that for Kenya to achieve these goals there is a need to incorporate and encourage active use and application of traditional ecological knowledge in environmental conservation in Kenya. This also calls for mainstreaming of this knowledge into policy, law and action plans in order to enhance its applicability.

1. Introduction

Africa has a rich and highly diverse array of natural resources. It also has traditional communities' knowledge and environmental governance practices that have been practised over centuries before the advent of colonialization.[1] This was a reflection of the cumulative body of knowledge and beliefs handed down through generations by cultural transmission and the relationship of the local people with their environment.[2] Traditional knowledge incorporates belief systems that play a fundamental role in a people's livelihood, maintaining their health, and protecting and replenishing the environment.[3]

From international law to domestic laws, there have been renewed efforts and calls for environmental conservation and conservation. There has also been a realisation of the critical role that traditional knowledge has played over the centuries especially among indigenous and local communities. This is especially pronounced within the sustainable development discourse. As early as 1970s and 80s, there were attempts at mainstreaming traditional environmental knowledge in policy, law and action plans as a way of promoting sustainable development. This was captured in the Brutland Commission Report, *Our Common Future*[4] which notes that 'the processes of development generally lead to the gradual integration of local communities into a larger social and economic framework. But some communities - so-called indigenous or tribal peoples - remain isolated because of such factors as physical barriers to communication or marked differences in social and cultural practices.[5] It goes on to state that the isolation of many such people has meant the preservation of a traditional way of life in close harmony with the natural environment. Their very survival has depended on their ecological awareness and adaptation. But their isolation has also meant that few of them have shared in national economic and social development; this may be reflected in their poor health, nutrition, and education.[6] In 2015,

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[1] African Regional Intellectual Property Organization,
available at *http://www.aripo.org/index.php/services/traditional-knowledge* [Accessed on 18/08/2019].

[2] Ibid.

[3] Ibid.

[4] WCED, *Our common future: Report of the World Commission on Environment and Development*, G. H. Brundtland, (Ed.). Oxford: Oxford University Press, 1987.

[5] Ibid, para. 70.

[6] Ibid, para. 71.

countries adopted the *2030 Agenda for Sustainable Development*[7] and its 17 Sustainable Development Goals.[8] The Sustainable Development Agenda envisages a development agenda that integrates the three dimensions of sustainable development (environmental, economic and social).[9]

One of the goals of this Agenda is to 'end hunger, achieve food security and improved nutrition and promote sustainable agriculture.[10] Notably, one of the envisaged ways of achieving this goal is to ensure that by 2020, member states will maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.[11]

Environment and natural resources play an important role in the lives of various communities. For instance, food security is notably related to sustainable environmental governance and management. Environmental sustainability is associated with reduced risk of widespread food insecurity.[12] Food security depends, *inter alia*, on sustainable management of natural resources and the environment since in many indigenous communities, natural resources are the principal sources of their staple food.[13] Traditional knowledge within indigenous communities thus plays an important role in the achievement of food security for these communities and others since they rely on their traditional ecological knowledge in management of these resources.[14]

Environmental sustainability comes with sound environmental decision-making. This is supposed to be an all-inclusive process that involves not only the formal decision-makers but also communities. These communities are a rich source of traditional knowledge that includes environmental knowledge. This paper focuses on traditional environmental knowledge and how the same can be fully incorporated and mainstreamed into environmental governance for sustainable development. 'Environmental mainstreaming' has been defined as the informed inclusion of relevant environmental concerns into the decisions of institutions that drive national, local and sectoral development policy, rules, plans, investment and action.[15] This paper thus looks at how traditional environmental knowledge can be mainstreamed not just in the agricultural sector but all areas that have an environmental aspect within them.

2. Traditional Environmental Knowledge: Relevance to the Environment and Natural Resources Management

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

[8] United Nations, "The Sustainable Development Agenda,"
available at https://www.un.org/sustainabledevelopment/development-agenda/ [Accessed on 18/08/2019].

[9] ibid.

[10] Goal 2, *Transforming our world: the 2030 Agenda for Sustainable Development.*

[11] Goal 2.5, *Transforming our world: the 2030 Agenda for Sustainable Development.*

[12] Pérez-Escamilla, R., "Food security and the 2015–2030 sustainable development goals: From human to planetary health: Perspectives and opinions," *Current developments in nutrition*, Vol.1, no. 7 (2017): e000513, p.4.

[13] The *Rome World Food Summit*, Commitment No. 3.

[14] Ibid.

[15] Dalal-Clayton, D. B., & Bass, S., *The challenges of environmental mainstreaming: Experience of integrating environment into development institutions and decisions*, No. 1. IIeD, 2009.

Traditional knowledge has been broadly defined as a cumulative, collective body of knowledge, experience, and values held by societies with a history of subsistence.[16] "Traditional knowledge" is also defined as any knowledge originating from a local or traditional community that is the result of intellectual activity and insight in a traditional context, including know-how, skills, innovations, practices and learning, where the knowledge is embodied in the traditional lifestyle of a community, or contained in the codified knowledge systems passed on from one generation to another.[17] The term is not to be limited to a specific technical field, and may include agricultural, environmental or medical knowledge, and knowledge associated with genetic resources.[18]

Traditional knowledge has also been defined as knowledge, know-how, skills and practices that are developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity.[19] 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.[20]

Traditional knowledge or traditional ecological knowledge is believed to represent experience acquired over thousands of years of direct human contact with the environment.[21] A growing recognition of the capabilities of ancient agriculturalists, water engineers and architects led to increased appreciation of ethnoscience, ancient and contemporary, which paved way for the acceptability of the validity of traditional knowledge in a variety of fields.[22] One of the fields that embraced the use of traditional knowledge is the environment.

The concept of Traditional Ecological Knowledge has been applied to several categories of information, which are distinguishable on substantive and epistemological grounds.[23] These may include: Factual/rational knowledge about the environment. This includes statements of fact about such matters as weather, ice, coastal waters, currents, animal behaviour, traveling conditions and the like; Factual knowledge about past and current use of the environment (e.g., patterns of land use and occupancy, or harvest levels); Culturally based value statements about how things should be, and what is fitting and proper to do, including moral or ethical statements about how to behave with respect to animals and the environment, and about human health and well-being in a holistic sense; and culturally based cosmology—the foundation of the knowledge system—by which information derived from observation, experience, and instruction is organized to provide explanations and guidance.[24]

Traditional ecological knowledge is also seen as bound up with "indigenous stewardship method," which is defined as the "ecologically sustainable use of natural resources within their capacity to sustain natural

[16] Ellis, S.C., "Meaningful consideration? A review of traditional knowledge in environmental decision making," *Arctic* (2005): 66-77, at p. 66.

[17] African Regional Intellectual Property Organization (ARIPO), *Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore*, Adopted by the Diplomatic Conference of ARIPO at Swakopmund (Namibia) on August 9, 2010.

[18] Ibid.

[19] World Intellectual Property Organisation, 'Traditional Knowledge,' available at *http://www.wipo.int/tk/en/tk/* [Accessed on 18/08/2019].

[20] 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 18/08/2019].

[21] Inglis, J., ed., *Traditional ecological knowledge: concepts and cases*, IDRC, 1993, at p. 1.

[22] Ibid, p.2.

[23] Usher, P.J., "Traditional ecological knowledge in environmental assessment and management," *Arctic*, 53, no. 2 (2000): 183-193, at p.186.

[24] Ibid, at p. 186.

processes."[25] Proponents of traditional knowledge maintain that it can offer contributions to environmental decision making from a broader scope of environmental values, practices, and knowledge.[26]

The resilience of indigenous peoples and local communities, as sustained by their cultural systems which have adapted to local ecological niches over long timeframes, and the detailed and broad knowledge they have of adaptation, is affected negatively by the loss of land, ecosystem capacity, and alienation of culturally significant places, migration and losses in livelihoods.[27] They are thus interested parties when it comes to efforts towards achieving sustainable development and should thus be included.

Some communities' traditional ecological knowledge practices are perceived to promote dry land ecosystems management.[28] For instance, in Tanzania, pastoralists reduce risk of livestock mortality by seasonal movement of livestock to the productive and high rainfall areas.[29] This may however be criticized for negative effect on some environmental aspects.[30] Regarding wildlife in the rangelands, Maasai pastoralists do not consume wild meat and therefore do not aspire to kill wildlife that grazing close to their livestock. They allow wild animals, especially the ungulates to graze with their animals without any disturbances.[31] This knowledge is passed from generation to generation among the Maasai as part of preservation of their culture and ensuring sustainability of their livelihoods.[32]

There are also studies that have demonstrated that the belief system of the Giriama people, through their indigenous knowledge and management systems, demonstrated through indigenous nomenclature, taboos, proverbs and lived experience, has had a great contribution to the conservation of mangroves, fisheries, corals and coral reefs.[33]

These are just a few of the many examples that may be cited to demonstrate how Kenyan communities have for years utilised their traditional ecological knowledge in environmental and natural resources conservation.

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[25] Whyte, K.P., "On the role of traditional ecological knowledge as a collaborative concept: a philosophical study," *Ecological processes*, Vol.2, no. 1 (2013): 7, at p.3.

[26] Ellis, S.C., "Meaningful consideration? A review of traditional knowledge in environmental decision making," *Arctic* (2005): 66-77, at p. 67.

[27] Crawhall, N., 'Indigenous knowledge in adaptation: conflict prevention and resilience-building,' *Conflict-sensitive Adaptation: Use Human Rights to Build Social and Environmental Resilience, Brief 10.* (Indigenous Peoples of Africa Co-ordinating Committee and IUCN Commission on Environmental, Economic and Social Policy, 2014), p. 2. Available at *http://cmsdata.iucn.org/downloads/tecs_csa_10_indigenous_knowledge_in_adaptation_crawhall.pdf* [Accessed on 18/08/2019].

[28] Olekao, S. K., & Sangeda, A. Z., "Traditional ecological knowledge in management of dryland ecosystems among the Maasai pastoralists in Kiteto District," *Tanzania J Environ Res* 2 (2018); Olekao, S.K., "The role of traditional ecological knowledge in management of dryland ecosystems among the Maasai pastoralists in Kiteto District, Tanzania," PhD diss., Sokoine University of Agriculture, 2017. Available at http://www.suaire.suanet.ac.tz:8080/xmlui/bitstream/handle/123456789/2073/SAMWEL%20KORINJA%20OLEKAO.pdf?sequence=1&isAllowed=y [Accessed on 22/08/2019].

[29] Ibid, p.8.

[30] Ibid, p.9.

[31] Ibid, p.9. Ungulates are a group of large mammals that are distinguished from other animals by the presence of hooves. They are an extremely well-known and economically important group that includes animals such as horses, camels, cows, sheep, goats, deer, pigs, giraffes, hippos, rhinos and many more. (Basic Biology, available at https://basicbiology.net/animal/mammals/ungulate).

[32] Tian, X., "Day-to-day accumulation of indigenous ecological knowledge: A case study of pastoral Maasai children in southern Kenya," (2016). Available at https://pdfs.semanticscholar.org/c3ac/77c4808b83701fe24d46009ec27bea38769f.pdf [Accessed on 22/08/2019].

[33] Shilabukha, K., "Indigenous Knowledge and Management Systems for Marine Resources among the Giriama of North Coastal Kenya," PhD diss., University of Nairobi, 2015. Available at http://erepository.uonbi.ac.ke/bitstream/handle/11295/92635/Khamati_Indigenous%20knowledge%20and%20management%20systems%20for%20marine%20resources%20among%20the%20Giriama%20of%20north%20coastal%20Kenya.pdf?sequence=3&isAllowed=y [Accessed on 22/08/2019].

There are two recognised practical methods for encouraging the use of traditional knowledge in environmental decision-making. The first one includes those methods that are based on official recognition of traditional knowledge, followed the development of rules of procedure for the use of knowledge by institutions of authority. In this "top-down" approach, the structures of governance are constructed accommodate traditional knowledge, but the knowledge itself is not fostered or sought out.[34] The second category increases the capacity of indigenous people to bring traditional knowledge to bear on policies and procedures governance and regulation. This "bottom-up" approach is characterized by initiatives designed to encourage learning and transmission of traditional knowledge at community level, as well as developing the means communicate this knowledge within the structures processes of environmental governance.[35]

This paper envisages the mainstreaming of both approaches into environmental governance through full and meaningful implementation of the existing laws recognising traditional knowledge as well as the constitutional and statutory provisions aimed at empowering communities through encouraging participation and sharing and access to information by communities.

3. International and National Legal Framework on Traditional Environmental Knowledge

3.1 International Framework on Traditional Environmental Knowledge

Notably, at the international level, there has been a growing recognition that traditional knowledge and customary sustainable use underpin indigenous peoples' and local communities' resilience to change including climate change, as well as contribute directly to biological and cultural diversity, and global sustainable development. At the international level, Article 6 of the *Convention on Biological Diversity* provides that each Contracting Party should, in accordance with its particular conditions and capabilities: develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose *existing strategies, plans or programmes* which should reflect, inter alia, *the measures set out in the Convention relevant to the Contracting Party concerned*; and integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral *or cross-sectoral plans, programmes and policies* (emphasis added).

The *Convention on Biological Diversity* recognizes the importance of indigenous and local communities to the conservation and sustainable use of biological diversity. The key provisions are to be found in Article 8(j) which requires that the traditional knowledge of indigenous and local communities be respected, preserved and maintained; that the use of such knowledge should be promoted for wider application with the approval and involvement of the holders of such knowledge; and that they should equitably share in the benefits which arise from the use of their knowledge.[36]

Article 10(c) of the *Convention on Biological Diversity* further provides that 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

[34] Ellis, S.C., "Meaningful consideration? A review of traditional knowledge in environmental decision making," *Arctic* (2005): 66-77, at p.67.
[35] Ibid, p.67.
[36] United Nations, *Convention on Biological Diversity* of 5 June 1992, 1760 U.N.T.S. 69, Article 8.

requirements. This is the only international Convention that expressly recognises the role of traditional knowledge in environmental management and sustainable development agenda.

The *United Nations Declaration on the Rights of Indigenous Peoples*,[37] provides that indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts. They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions.[38] In conjunction with indigenous peoples, States are obligated to take effective measures to recognize and protect the exercise of these rights.[39]

The Food and Agriculture Organization of the United Nations (FAO) opines that the promotion and protection of traditional and local food and agricultural knowledge will require international, intercultural and interdisciplinary approaches, communication and cooperation.[40] Coordination of indigenous and local communities' sustainable use, conservation and management of food and agriculture within and across ecosystems, landscapes and seascapes will also require synergies that link food security, livelihood sustainability, poverty alleviation and food and agricultural productivity to rural development processes based on *in* and *ex situ* conservation of food and agricultural genetic resources.[41] Traditional environmental knowledge from these communities thus becomes relevant in achieving the foregoing.

3.2 National Legal Framework on Traditional Environmental Knowledge

The Constitution of Kenya provides that culture is the foundation of the nation and the cumulative civilization of the Kenyan people and nation.[42] Specifically, it obligates the State to, *inter alia*, recognise the *role of science and indigenous technologies in the development of the nation*, and, recognise and protect the ownership of indigenous seeds and plant varieties, their genetic and diverse characteristics and their use by the communities of Kenya (emphasis added).[43] Further, with respect to the environment, the State is obligated to protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities.[44] The State should not just protect the indigenous knowledge but should also actively promote the use of this knowledge for environmental protection and conservation for sustainable environment.

Notably, one of the national values and principles of governance as outlined under Article 10 of the Constitution is sustainable development. The principles of sustainable development as captured in

[37] 61/295. *United Nations Declaration on the Rights of Indigenous Peoples.*

[38] *United Nations Declaration on the Rights of Indigenous Peoples,* Art. 31(1).

[39] Ibid, Art. 31(2).

[40] Food and Agriculture Organization of the United Nations (FAO), *FAO and traditional knowledge: the linkages with sustainability, food security and climate change Impacts*, 2009, p.9.

[41] Ibid.

[42] Art. 11(1), Constitution of Kenya 2010.

[43] Ibid, Art. 11(2) (b) & (3) (b).

[44] Art. 69(1) (c), Constitution of Kenya.

EMCA[45] include: the principle of public participation in the development of policies, plans and processes for the management of the environment; *the cultural and social principle traditionally applied by any community in Kenya for the management of the environment or natural resources in so far as the same are relevant and are not repugnant to justice and morality or inconsistent with any written law* (emphasis added); the principle of international co-operation in the management of environmental resources shared by two or more states; the principles of intergenerational and intragenerational equity; the polluter-pays principle; and the pre-cautionary principle. This is a clear indication of the central role that traditional environment knowledge should play in realisation of the sustainable development agenda.

The *Protection of Traditional Knowledge and Traditional Cultural Expressions Act, 2016,*[46] was enacted 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. One of the main purposes of the Act is to recognize the intrinsic value of traditional cultures and traditional cultural expressions, including their social, cultural, economic, intellectual, commercial and educational value.[47] The Act defines "traditional knowledge" as any knowledge originating from an individual, local or traditional community that is the result of intellectual activity and insight in a traditional context, including know-how, skills, innovations, practices and learning, embodied in the traditional lifestyle of a community, or contained in the codified knowledge systems passed on from one generation to another and includes agricultural, *environmental* or *medical knowledge, and knowledge associated with genetic resources or other components of biological diversity* (emphasis added), and know-how of traditional architecture, construction technologies, designs, marks and indications.[48]

While the enactment of this Act marked a milestone in recognition of traditional knowledge, there has been little in terms of evidence of its implementation especially in environmental management and governance matters.

4. Kenya's Environmental Laws: Challenges and Prospects

As already highlighted in the previous section, formal recognition of traditional knowledge has existed in Kenya's laws for some time.[49] However, this has not marked an increase or even efforts to promote any meaningful or active utilisation of the knowledge held by communities for management of environmental problems in the country. There has been what mostly seems like promoting use of formal and western knowledge at the expense of the traditional one. As a result, communities feel sidelined as they are neither involved in decision-making and management practices and are also expected to respond to the government's directives without any inclusion. This has especially been exemplified by the government efforts at conservation and management of forests and the associated resources. A case in point is the Mau forest issue where the Government of Kenya has been carrying out evictions on families that are accused of encroaching on the Mau forest, the largest of the country's five watersheds. The government

[45] EMCA, S. 3(5).

[46] *Protection of Traditional Knowledge and Traditional Cultural Expressions Act, 2016,* No. 33 of 2016, (Government Printer, Nairobi, 2016).

[47] Ibid, s. 2(d).

[48] *Protection of Traditional Knowledge and Traditional Cultural Expressions Act, 2016,* s. 4.

[49] Muigua, K., *Nurturing Our Environment for Sustainable Development,* Glenwood Publishers, Nairobi, 2016; Muigua, K., *Harnessing Traditional Knowledge for Environmental Conflict Management in Kenya*, available at http://www.kmco.co.ke/attachments/article/175/TRADITIONAL%20KNOWLEDGE%20AND%20CONFLICT%20MANAGEMENT-25%20April%202016.pdf [Accessed on 19/08/2019].

in its latest efforts is planning to force an estimated 10,000 people to move elsewhere.[50] These people have been accused of illegal logging and clearing of forests for settlement and farming.[51] The Government has even indicated that any person holding any title documents to any part of the forest would be evicted without any form of compensation from the Government as they are deemed to have illegally encroached on government land.[52] These evictions have not been well received in some quarters, with some terming the exercise as politically motivated.[53] For instance, an argument has been advanced to the effect that the Mau Forest Complex has about 22 blocks with 21 blocks having been gazetted as national government forest land and already under the management of Kenya Forest Service. On the other hand, block no. 22 is neither gazetted as national government forest land nor is it under the management of the Kenya Forest Service. Instead, the block was set aside as resettlement land held in trust by the County Government of Narok.[54] According to this view, the people to be affected are on the said block 22 and thus, the evictions should not be going on as they are politically motivated. The communities are also divided, with a section of the Kalenjin community opposing the evictions while part of the Maasai community supports the exercise.

In the case of *Joseph Letuya & 21 others v Attorney General & 5 others [2014] eKLR*[55]*,* the Court observed that: "quite apart from the special consideration that needs to be given to the Ogiek community as a minority and indigenous group when allocating forest land that this court has enunciated on in the foregoing, this court also recognizes the unique and central role of indigenous forest dwellers in the management of forests. This role is recognized by various international and national laws. The *Convention on Biological Diversity* which Kenya has ratified and which is now part of Kenyan law by virtue of Article 2(6) of the Constitution recognizes the importance of traditional knowledge, innovations and practices of indigenous and local communities for the conservation and sustainable use of biodiversity and that such traditional knowledge should be respected, preserved and promoted."[56]

The Maasai peaceful co-existence with wildlife is however not without challenges especially when environmental co-management is practised. It has been observed that although Maasai knowledge is evoked in conservation planning proposals, Maasai participation as knowledgeable actors in conservation activities on their lands remains extremely limited.[57] This is compared to situations throughout the world where environmental co-management is said to be taking place between scientists and local communities.[58] Some argue that the lack of success at `integrating' local knowledge with scientific resource management is the result of reluctance by scientific and state agencies to relinquish power and devolve decision-making and knowledge-creation processes to local people.[59]

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[50] Soi, C., "Kenya to evict thousands to protect Mau forest," *Al Jazeera News,* 14 March 2019. Available at https://www.aljazeera.com/news/2019/03/kenya-evict-thousands-protect-mau-forest-190314165702863.html [Accessed on 22/08/2019].

[51] Ibid.

[52] Murage, G., "CS Tobiko to order second phase of Mau evictions," *The Star*, 16 July 2019. Available at https://www.the-star.co.ke/news/2019-07-16-cs-tobiko-to-order-second-phase-of-mau-evictions/ [Accessed on 22/08/2019].

[53] Vidija, P., "Rift Valley MPs turn wrath on Tobiko over Mau evictions," *The Star,* 29 July 2018. Available at https://www.the-star.co.ke/news/2018-07-29-rift-valley-mps-turn-wrath-on-tobiko-over-mau-evictions/ [Accessed on 22/08/2019]. Per Hon. Isaac Ruto, former Governor of Bomet County.

[54] Kenya Citizen TV, *Newsnight*, Published on Aug 20, 2019. Available at https://www.youtube.com/watch?v=yKChcQ-PqPg [Accessed on 22/08/2019].

[55] ELC Civil Suit No. 821 of 2012 (OS).

[56] See also *Treaty Making and Ratification Act*, No. 45 of *2012.*

[57] Goldman, M., "Tracking wildebeest, locating knowledge: Maasai and conservation biology understandings of wildebeest behavior in Northern Tanzania," *Environment and Planning D: Society and space* 25, no. 2 (2007): 307-331, at p.308.

[58] Ibid.

[59] Ibid.

In addition to the foregoing, while the Constitution recognises customary law as part of Kenyan law, the same is subjected to written law.[60]

The element of traditional knowledge includes moral and ethical statements about the environment and about the relationships between humans, animals, and the environment; the "right way" to do things.[61] Customary law thus contains important environmental norms and ethics on how to manage the environment. Despite this, customary law and traditional ecological norms have suffered the problem of general acceptance by the law enforcing authorities including those charged with coming up environmental policies, plans and programmes. While some instances seem to support and recognise the use of traditional knowledge, there has not been consistency. There is a need to mainstream traditional environmental knowledge for environmental management and governance in Kenya.

5. Mainstreaming Traditional Ecological Knowledge in Kenya's Environmental Governance Framework

Traditional knowledge may contribute to improved development strategies in several ways such as by helping identify cost-effective and sustainable mechanisms for poverty alleviation that are locally manageable and locally meaningful; by a better understanding of the complexities of sustainable development in its ecological and social diversity, and helping to identify innovative pathways to sustainable human developmental that enhance local communities and their environment.[62]

The *1994 Draft Declaration on Human Rights and Environment* describes the procedural rights, such as the right to participation, necessary for realization of the substantive rights.[63] Article 1 of the *Aarhus Convention* states that "in order to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and wellbeing, each Party should guarantee the rights of access to information, public participation in decision-making and access to justice in environmental matters in accordance with the provisions of this Convention."[64] It is believed that environmental procedural rights such as the access to information, public participation and access to justice may be one of the ways and means to a realistic way for attaining the sustainable development.[65] Recognition and active utilisation of communities' traditional environmental knowledge can create a viable channel for communities to appreciate government's efforts in effective environmental governance through promoting sustainable use of the environment and its resources.

Traditional knowledge, coupled with other forms of knowledge can enhance predicting and preventing the potential environmental impacts of development, as well as informing wise land-use and resource management especially within the local community setups.[66] Proponents of traditional knowledge

[60] Art. 2(4) of the Constitution provides that any law, including customary law, that is inconsistent with this Constitution is void to the extent of the inconsistency, and any act or omission in contravention of this Constitution is invalid.

[61] Mackenzie Valley Environmental Impact Review Board, *Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment*, July 2005, p. 6. Available at *http://www.reviewboard.ca/upload/ref_library/1247177561_MVReviewBoard_Traditional_Knowledge_Guidelines.pdf* [Accessed on 19/08/2019].

[62] African Regional Intellectual Property Organization, *op cit.*

[63] Part 3 (Principles 15-24).

[64] Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, UN Doc. Sales No. E/F/R.98.II.E.27.

[65] Mohammad, N., 'Environmental Rights for Administering Clean and Healthy Environment towards Sustainable Development in Malaysia: A Case Study,' *International Journal of Business and Management*, Vol. 9, No. 8; 2014, pp. 191-198 at p.192.

[66] Ellis, S.C., Meaningful Consideration? A Review of Traditional Knowledge in Environmental Decision Making,' *Arctic*, Vol. 58, No. 1 (March 2005), p. 66–77 at p. 67.

maintain that it can offer contributions to environmental decision making from a broader scope of environmental values, practices, and knowledge.[67]

Traditional knowledge can be used at the local level by communities as the basis for making decisions pertaining to food security, human and animal health, education, natural resource management and other vital activities.[68] Exploring the community's knowledge and knowledge of people dealing with agriculture, is crucial to determine their norms, values, and belief in regards to their activities, particularly in the area of water and land management.[69] The way people develop such knowledge by understanding their environment through observation and experiences determines the specific group of people's knowledge.

Incorporating provisions recognising traditional environmental knowledge in national environmental laws is commendable but just marks the first step towards mainstreaming such knowledge into effective environmental governance. There is need for actively and meaningfully involving communities in utilising traditional environmental knowledge to practice sustainable production methods. There is need to cultivate a culture of respect for environment by all. Environmental ethics and consciousness can go a long way in promoting participatory approaches to conservation and management of environment and its resources. Dissemination of information and knowledge in meaningful forms can also enhance participation in decision-making and enhance appreciation of the best ways of protecting and conserving the environment.[70] The objects of the devolution of government are, inter alia— to 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; to recognise the right of communities to manage their own affairs and to further their development; and to protect and promote the interests and rights of minorities and marginalised communities.[71] Encouraging and mainstreaming the use of traditional environmental knowledge by communities can go a long way in facilitating participation.

Fostering use of traditional knowledge in conservation and production to active and meaningful participation in decision-making can enable the citizenry appreciate that achieving the sustainable development agenda is not just a State's responsibility but one that requires cooperation between the State actors and the individuals, as envisaged under Article 69(2) of the Constitution.[72] There is need to empower communities so as to actualise these constitutional provisions. Where they do not perceive a danger to their livelihoods, these communities are likely to embrace development projects and are also not likely to turn to unconventional ways of protecting their livelihoods.[73]

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[67] Ibid at p. 67.

[68] Gorjestani, N., 'Indigenous Knowledge for Development: Opportunities and Challenges,' in Twarog, S. & Kapoor, P. (eds), 'Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions,' (United Nations Conference on Trade and Development, 2004), UNCTAD/DITC/TED/10, pp. 265-272 at p. 265. Available at *http://unctad.org/en/docs/ditcted10_en.pdf* [Accessed on 19/8/2019].

[69] Retnowati, A., et al, 'Environmental Ethics in Local Knowledge Responding to Climate Change: An Understanding of Seasonal Traditional Calendar *Pranoto Mongso* and Its Phenology in Karst Area of Gunung Kidul, Yogyakarta, Indonesia,' *Procedia Environmental Sciences*, Vol. 20, 2014, pp. 785 – 794 at p. 787.

[70] Muigua, K., *Nurturing Our Environment for Sustainable Development,* Glenwood Publishers, Nairobi, 2016.

[71] Art. 174.

[72] Article 69(2) of the Constitution provides 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.

[73] Muigua, K., *Nurturing Our Environment for Sustainable Development,* Glenwood Publishers, Nairobi – 2016.

6. Conclusion

One way of protecting and enhancing the use of traditional environmental knowledge in environmental management, while ensuring meaningful inclusion and participation of local communities, is integrating it into the environmental governance framework as this will help achieve sustainable development as contemplated in the sustainable development agenda. Combining western scientific knowledge which forms the bulk of *formal laws, policies and programmes with traditional environmental knowledge for the purpose of improving natural resources and environmental management is important for inclusive and participatory approaches to environmental management* (emphasis added). With the communities empowered through recognition and utilisation of traditional environmental knowledge in environmental management, then it is possible to hold to account those who flout environmental laws and agreed norms, be they entities or individuals. It is easier to engage a community that feels a sense of belonging than one that feels sidelined by the state actors.

There is a need to create conducive environment for promoting mutual respect for both formal and informal sources of knowledge. The implication would be that environmental scientists and policy professionals, indigenous and non-indigenous, should focus more on creating long term processes that allow for the implications of different approaches to knowledge in relation to stewardship and management priorities to be responsibly thought through.[74] Diverse forms of knowledge including traditional environmental knowledge should be utilised in a bid to address environmental problems in Kenya. The sustainable development agenda calls for an integrated approach to natural resources governance and management to ensure that all groups and stakeholders are brought on board. Traditional environmental knowledge should thus be mainstreamed into the national environmental laws, polices, plans and other efforts geared towards achieving the sustainable development agenda. This will improve cooperative environmental and natural resources stewardship and management between indigenous and non-indigenous institutions.[75]

Mainstreaming Traditional Ecological Knowledge in Kenya is a critical step that needs to be taken to enable the country achieve the sustainable development goals.

[74] Whyte, K.P., "On the role of traditional ecological knowledge as a collaborative concept: a philosophical study." *Ecological processes*, Vol.2, no. 1 (2013): 7, p. 2.

[75] Ibid,p. 3.

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