

Promoting Biodiversity Impact Assessment for Sustainable Development in Kenya

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Abstract

The paper critically discusses the role of Biodiversity Impact Assessment (BIA) in the attainment of Sustainable Development in Kenya. It conceptualizes BIA and analyses the governing legal framework at both the global and national level. The paper also discusses the progress towards embracing BIA in Kenya and highlights challenges towards this end. It further proposes interventions towards promoting BIA for Sustainable Development in Kenya.

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1.0 Introduction

Biological diversity has been defined as the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part which includes diversity within species, between species and of ecosystems¹. It has also been defined as the diversity of all living forms at different levels of complexity: genes, species, ecosystems and even landscapes and seascapes². Biodiversity is meant to encompass all of life's variation, expressed in genes, individuals, populations, species, communities and ecosystems³. Conservation of biodiversity is thus a critical in the quest towards Sustainable Development.

Biodiversity plays a huge role in not only environmental processes but also in provision of ecosystem resources for all living organisms, including human beings⁴. It has been described as the living fabric of our planet which underpins human wellbeing in both the present and in the future⁵. Biodiversity is key to the proper functioning of earth systems; and to the delivery of those ecosystem services that are crucial to human dignity and well-being including: the provision of potable water, food and fibers; soil fertility; maintenance of the 'genetic library of biodiversity' – an irreplaceable source of new innovations, pharmaceuticals and chemicals; and climate regulation – among others⁶. Conservation of biological diversity has emerged as one of the major global

¹ Convention on Biological Diversity, United Nations 1992, available at <https://www.cbd.int/doc/legal/cbd-en.pdf> (accessed on 12/10/2022)

² United Nations Educational, Scientific and Cultural Organization (UNESCO), 'UNESCO's commitment to Biodiversity' available at <https://en.unesco.org/themes/biodiversity> (accessed on 12/10/2022)

³ Matta, G., Bhadauriya, G., & Singh, V., "Biodiversity and Sustainable Development: A Review." Fecundity of fresh water prawn *Macrobrachium Assamense Penensularae* from Khoh River, India: 72.

⁴ Muigua. K., 'Conserving Biodiversity for a Better Future' available at <http://kmco.co.ke/wp-content/uploads/2021/06/Conserving-Biodiversity-for-a-Better-Future-Kariuki-Muigua-June-2021.pdf> (accessed on 12/10/2022)

⁵ United Nations Educational, Scientific and Cultural Organization (UNESCO), 'UNESCO's commitment to Biodiversity' Op Cit

⁶ 'Conserving Biodiversity for Life and Sustainable Development | United Nations Educational, Scientific and Cultural Organization' available at http://www.unesco.org/new/en/media/services/singleview/news/conserving_biodiversity_for_life_and_sustainable_development/ (accessed on 12/10/2022)

environmental concerns⁷. Biodiversity conservation is threatened by human activities which have the potential of affecting both the quality and quantity of natural habitats⁸. Biodiversity can both be greatly enhanced by human activities and adversely impacted by such activities due to unsustainable use or by more profound causes linked to human development models⁹. Thus, human activities such as infrastructural developments can affect and modify natural habitats conditions which in turn influence the distribution and abundance of animal and plant species¹⁰. These activities can result in rapid decline of biodiversity and in turn threaten both nature and human beings. Consequently, there is need for making biodiversity an integral part of economic and development strategy¹¹.

The paper seeks to critically discuss the concept of biodiversity impact assessment and its role in promoting Sustainable Development in Kenya. It discusses the legal framework for biodiversity impact assessment. The paper further discusses the extent to which biodiversity impact assessment has been embraced in Kenya and proposes interventions towards promoting biodiversity impact assessment for Sustainable Development in Kenya.

⁷ Geneletti. D., 'Biodiversity Impact Assessment of roads: an approach based on ecosystem rarity' *Environmental Impact Assessment Review* 23 (2003) 343-365

⁸ Ibid

⁹ Muigua. K., 'Conserving Biodiversity for a Better Future' Op Cit

¹⁰ Ibid

¹¹ Muigua. K., 'Tracing the Role of Biodiversity Conservation in Achieving Sustainable Development Goals' available at <http://kmco.co.ke/wp-content/uploads/2021/11/Tracing-the-Role-of-Biodiversity-Conservation-in-Achieving-Sustainable-Development-Goals-Kariuki-Muigua-November-2021.pdf> (accessed on 12/10/2022)

2.0 Biological Impact Assessment

Biodiversity Impact Assessment (BIA) is subset of Environmental Impact Assessment (EIA)¹². EIA is a tool for integrating environmental and social concerns in decision making processes¹³. Environmental impact assessment (EIA) is the process of identifying potential environmental effects of proposed development and the required mitigation measures¹⁴. EIA has also been defined as a procedure for evaluating the likely impact of a proposed activity on the environment¹⁵. Its object is to provide decision-makers with information about the possible effects of a project before authorizing it to proceed¹⁶. EIA is one of the most widely used planning tools today, but its ability to promote biodiversity conservation is largely unexplored¹⁷.

Biological Impact Assessment (BIA) is a method of integrating biodiversity issues into the early stages of planning processes¹⁸. It is designed to support and achieve the objectives of the Convention on Biological Diversity by enabling proponents to identify and achieve ways of integrating the conservation, sustainable use and equitable sharing of biological resources¹⁹. BIA aims at developing and applying strategies for performing the analysis of the impact of intended projects within the EIA framework²⁰. It entails identifying, measuring, quantifying, valuing and internalizing the unintended impacts (on biodiversity) of development interventions²¹. It has been argued that BIA is not a

¹² Bagri. A & Vorhies. F., 'Biodiversity Impact Assessment' available at <https://www.cbd.int/impact/case-studies/cs-impact-iucn-bia-bagri-vorhies-1997-en.pdf> (accessed on 12/10/2022)

¹³ Ibid

¹⁴ Mandelik. Y et al., 'Planning for Biodiversity: the Role of Ecological Impact Assessment' available at https://www.researchgate.net/publication/227495149_Planning_for_Biodiversity_the_Role_of_Ecological_Impact_Assessment (accessed on 12/10/2022)

¹⁵ Muigua. K., 'Environmental Impact Assessment (EIA) in Kenya' available at <http://kmco.co.ke/wp-content/uploads/2018/08/A-Paper-on-Environmental-impact-assessment.pdf> (accessed on 12/10/2022)

¹⁶ Ibid

¹⁷ Mandelik. Y et al., 'Planning for Biodiversity: the Role of Ecological Impact Assessment' Op Cit

¹⁸ Bagri. A & Vorhies. F., 'Biodiversity Impact Assessment' Op Cit

¹⁹ Ibid

²⁰ Geneletti. D., 'Biodiversity Impact Assessment of roads: an approach based on ecosystem rarity' Op Cit

²¹ Wale. E & Yalew. A., 'On biodiversity impact assessment: the rationale, conceptual challenges and implications for future EIA' available at

<https://www.tandfonline.com/doi/pdf/10.3152/146155110X492326> (accessed on 12/10/2022)

standalone process but an integral part of EIA with specific attention on biodiversity impacts²².

BIA can be implemented within the EIA framework by ensuring that the impacts on biodiversity are considered. A thorough treatment of the effects of development on biodiversity is to be included in the process of EIA as recommended by the Convention on Biological Diversity²³. It has the potential to enhance the conservation of biodiversity while also serving other important economic and social objectives. Results from the BIA process can inform decisions for integrating biodiversity concerns into development policy processes²⁴.

3.0 Legal Framework on Biodiversity Impact Assessment

3.1 Convention on Biological Diversity

The Convention on Biological diversity aims to promote the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources²⁵. The Convention contains salient provisions aimed at promoting at biodiversity impact assessment towards conservation and sustainable use of biological diversity. It advocates for the integration of conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies²⁶. It further advocates the integration of consideration on the conservation and sustainable use of biological resources into national decision-making²⁷. Thus, decisions such as infrastructural developments should

²² *ibid*

²³ Geneletti. D., 'Biodiversity Impact Assessment of roads: an approach based on ecosystem rarity' Op Cit

²⁴ Wale. E & Yalew. A., 'On biodiversity impact assessment: the rationale, conceptual challenges and implications for future EIA' Op Cit

²⁵ Convention on Biological Diversity, United Nations 1992, Article 1 available at <https://www.cbd.int/doc/legal/cbd-en.pdf> (accessed on 12/10/2022)

²⁶ *Ibid*, article 6 (b)

²⁷ *Ibid*, article 10 (a)

take into account the conservation and sustainable use of biological resources in accordance with the Convention on Biological Diversity.

Article 14 in particular calls for the adoption of impact assessment as a tool of minimizing adverse impacts of projects on biological diversity. It calls for the introduction of appropriate procedures requiring environmental impact assessment of proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate allow for public participation in such procedures²⁸. The provision further calls for arrangements to ensure that the environmental consequences of programmes and policies that are likely to have significant adverse impacts on biological diversity are duly taken into account in the implementation of projects²⁹. The Convention on Biological Diversity creates the legal basis for Biodiversity Impact Assessment at the global level.

3.2 COP 8 Decision VIII/28, Impact Assessment: Voluntary Guidelines on Biodiversity Inclusive Impact Assessment

The Guidelines stipulate whether, when, and how to consider biodiversity in both project and strategic level impact assessments and are also an elaboration and refinement of guidelines previously adopted by the CBD (Decision VI/7-A), the Ramsar Convention on Wetlands (Resolution VIII.9) and the Convention on Migratory Species (Resolution 7.2)³⁰. The Guidelines call for the Conduct of Cultural, Environmental and Social Impact Assessments regarding Developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by indigenous and local Communities³¹. Parties are required to apply the voluntary

²⁸ Ibid, article 14 (1) (a)

²⁹ Ibid, article 14 (1) (b)

³⁰ Biodiversity in Impact Assessment, Background Document to CBD Decision VIII/28: Voluntary Guidelines on Biodiversity-Inclusive Impact Assessment | NBSAP Forum' available at <http://www.nbsapforum.net/knowledge-base/resource/biodiversity-impact-assessment-background-document-cbd-decision-viii28-0> (accessed on 13/10/2022)

³¹ COP 8 Decision VIII/28, Impact Assessment: Voluntary Guidelines on Biodiversity-Inclusive Impact Assessment, Paragraph 1

guidelines on biodiversity-inclusive environmental impact assessment as appropriate in the context of their implementation of the Convention on Biological Diversity³².

3.3 Constitution of Kenya, 2010

The Constitution of Kenya, 2010 certain obligations by the state in respect of the environment and natural resources³³. It outlines a number of cross-sectoral biodiversity concerns set out under the CBD including issues of benefit sharing, traditional knowledge, elimination of activities harmful to biodiversity and the role of the community in conservation and sustainable use of biodiversity³⁴. The Constitution outlines a favourable legislative protection of biodiversity as envisaged in Chapter Five on Land and the Environment, where there is the emphasis on sustainable use of land and other natural resources, including biodiversity as a key principle³⁵. The state is obligated to establish systems of environmental impact assessment, environmental audit and monitoring of the environment³⁶. Protection and conservation of biodiversity should be a key consideration towards this end.

3.4 Environmental Management and Co-Ordination Act

The Environmental Management and Co-Ordination Act (EMCA) advocates for the sustainable management and utilization of biodiversity in Kenya³⁷. Towards this end, the Act requires measures to be taken towards integrating the conservation and sustainable utilisation in relation to biological diversity in existing government activities and activities by private persons³⁸. Thus, projects undertaken by both the state and private persons should integrate the conservation and sustainable use of biological diversity.

³² Ibid, Paragraph 5

³³ Constitution of Kenya, 2010, Article 69

³⁴ Ibid, article 69 (1)

³⁵ Muigua. K., 'Conserving Biodiversity for a Better Future' Op Cit

³⁶ Ibid, S 69 (1) (f)

³⁷ Environmental Management and Co-Ordination Act, No. 8 of 1999, S 53 (2) (g)

³⁸ Ibid, S 50 (d)

EMCA sets out the requirement for Environmental Impact Assessment (EIA) for all policies, plans and programmes to be undertaken³⁹. The Act requires project proponents to undertake EIA in relation to intended projects and submit such assessments to the National Environment Management Authority (NEMA) for approval⁴⁰. To this extent, the Act requires a proponent to undertake a full environmental impact assessment study and submit an environmental impact assessment study report to the Authority prior to being issued with any licence by the Authority which authorizes such project to be undertaken⁴¹. NEMA may only issue an EIA licence upon being satisfied that the intended project will adhere to sustainable development and sound environmental management⁴². EMCA creates the legal framework for Biodiversity Impact Assessment in Kenya. It sets out the process of Environmental Impact Assessment which should take into account the conservation and sustainable utilization of biodiversity among other requirements⁴³.

3.5 The Environmental (Impact Assessment and Audit) Regulations, 2003

The regulations govern the process of Environmental Impact Assessment and Environmental Audit as envisaged under EMCA⁴⁴. The regulations require an EIA to be concluded and approved for all projects likely to have a negative effect on the environment or for those projects requiring an EIA under the Act⁴⁵. In carrying out an EIA, the regulations require a project proponent to take into account the protection and conservation of biodiversity⁴⁶. Thus, in preparing a project report under the regulations, a project proponent is required to state the potential impacts of the project on biodiversity

³⁹ Ibid, Part VI

⁴⁰ EMCA, S 57 A (3)

⁴¹ Ibid, S 58 (2)

⁴² Ibid, S 63

⁴³ Ibid, S 53 (2) (g)

⁴⁴ The Environmental (Impact Assessment and Audit) Regulations, 2003, Legal Notice No. 101

⁴⁵ Ibid, regulation 4 (1)

⁴⁶ Ibid, regulation 42 (2) (b)

and the mitigation measures to be taken during and after implementation of the project⁴⁷. The regulations further require a proponent to undertake an EIA study and submit to NEMA an EIA study report for approval⁴⁸. The EIA study report should contain information on several factors including the environmental effects of the project and an Environmental Management Plan (EMP) proposing the measures for eliminating, minimizing or mitigating adverse impacts of the project on the environment⁴⁹. Protection and conservation of biodiversity is a key consideration in conducting an EIA study and developing an EIA study report under the regulations⁵⁰.

4.0 Embracing Biodiversity Impact Assessment in Kenya

Biodiversity Impact Assessment has the potential of promoting the protection and conservation of biodiversity⁵¹. Conservation of biodiversity is important in the attainment of Sustainable Development, the proper functioning of earth systems; and to the delivery of those ecosystem services that are crucial to human dignity and well-being including: the provision of food and water⁵². The legal framework in Kenya envisages Biodiversity Impact Assessment within the framework of Environmental Impact Assessment.

There has been progress towards promoting Biodiversity Impact Assessment in infrastructural projects such as the Standard Gauge Railway (SGR). The EIA study report concerning the development of the SGR acknowledged the impact of the project on biodiversity especially wildlife in the Tsavo ecosystem⁵³. Consequently, during

⁴⁷ Ibid, regulation 7 (1) (f)

⁴⁸ Ibid, Part IV

⁴⁹ Ibid, regulation 18 (1) (k)

⁵⁰ Ibid, regulation 42 (2) (b)

⁵¹ United Nations Educational, Scientific and Cultural Organization (UNESCO)., 'UNESCO's commitment to Biodiversity' Op Cit

⁵² Ibid

⁵³ 'Environmental and Social Impact Assessment Study Report for the Mombasa-Nairobi Standard Gauge Railway Project', available at <https://africog.org/wp-content/uploads/2017/06/SGR-EAS-Impact-report.pdf> (accessed on 13/10/2022)

implementation of the project mitigation measures were put in place through animal crossing points to ensure East-West wildlife movement and avoid loss of wildlife biodiversity through collision⁵⁴. Further, there have been attempts towards conservation of bird species during implementation of wind energy projects. It has been pointed out that areas with high potential for wind power are also key habitats and migratory routes for birds and bats, among other biodiversity⁵⁵. Thus, there is need to apply caution when implementing such projects in order to prevent negative impacts on biodiversity. Mitigation measures that have been adopted towards this end include avoidance of sensitive areas, minimization of impacts, restoration of impacted biodiversity and offsetting to ensure net biodiversity gain⁵⁶.

However, despite this progress, there still a major national challenge on how to maintain Sustainable Development without damaging the environment⁵⁷. Challenges such as land degradation, environmental pollution and loss of biodiversity are still evident during and after implementation of projects⁵⁸. Infrastructural developments have the potential of negatively affecting biodiversity through loss of plant species and impacting natural habitats for wildlife⁵⁹. These factors in turn influence the distribution and abundance of animal and plant species⁶⁰. There is need to embrace Biodiversity Impact Assessment in order to ensure that conservation of biodiversity is a key consideration during and after implementation of projects in order to foster Sustainable Development.

⁵⁴ Ibid

⁵⁵ The East African Natural History Society., 'Strategic Environmental Assessment (SEA) for Wind Energy and Biodiversity in Kenya' available at <https://naturekenya.org/2019/04/03/strategic-environmental-assessment-sea-for-wind-energy-and-biodiversity-in-kenya/> (accessed on 13/10/2022)

⁵⁶ Ibid

⁵⁷ Environmental and Social Impact Assessment Study Report for the Mombasa-Nairobi Standard Gauge Railway Project' Op Cit

⁵⁸ Ibid

⁵⁹ Muigua. K., 'Conserving Biodiversity for a Better Future' Op Cit

⁶⁰ Ibid

5.0 Way Forward

It has been argued that the concerns of biodiversity are often overshadowed and ignored in most EIA frameworks at the expense of economic and social concerns⁶¹. However, biodiversity is an important component of the environment and needs to be taken into account in the EIA process. Biodiversity conservation is thus an important tool of environmental management and Sustainable Development⁶².

In promoting Biodiversity Impact Assessment, there is need to identify the part of biodiversity likely to be impacted. This could be biological resources in general, crop/animal genetic resources or the diversity of the respective resources⁶³. The magnitude of the impact on biodiversity is also a key consideration in promoting BIA⁶⁴. Through this, it is possible to design effective mitigation measures to promote the conservation of biodiversity. An effective BIA framework should also take into account scoping and the need for baseline studies in order to determine the distribution, rarity, conservation status, and location of plant and animal species in a particular area⁶⁵. This is important in implementing projects in ways that promote the conservation of biodiversity.

The process of BIA should ideally entail identification of biodiversity issues associated with each phase of a project; the laws and regulations governing biodiversity concerns; predicting impacts of intended projects on biodiversity in a particular area and identifying the value of biodiversity likely to be impacted during and after implantation of projects⁶⁶. Further, the process should identify appropriate mitigation measures to

⁶¹ Wale. E & Yalew. A., 'On biodiversity impact assessment: the rationale, conceptual challenges and implications for future EIA' Op Cit

⁶² Ibid

⁶³ Ibid

⁶⁴ Slloweg. R., 'Biodiversity assessment framework: making biodiversity part of corporate social responsibility' *Impact Assessment and Project Appraisal*, Volume 23, Issue 1

⁶⁵ Ibid

⁶⁶ S. Atkinson et al., 'Treatment of Biodiversity Impacts in a Sample of US environmental Impact statements. *Impact Assessment and Project Appraisal*, 18, 271–282

address negative impacts on biodiversity and propose monitoring and evaluation measures to ensure implementation of the mitigation measures suggested. Through this framework, it is possible to embrace biodiversity concerns in the EIA framework.

Despite the fact that most development projects have adverse impacts on biodiversity, these are often ignored in the EIA process⁶⁷. There is need to integrate biodiversity concerns in the EIA process by ensuring biodiversity impacts of development projects are identified, quantified and valued and necessary mitigation measures adopted⁶⁸. Biodiversity concerns should be integrated early into the EIA process since the success of BIA relies on its ability to affect changes in the early stages of implementation of projects⁶⁹.

6.0 Conclusion

Conservation of biological diversity has emerged as one of the major global environmental concerns⁷⁰. Human activities such as infrastructural developments can affect and modify natural habitats conditions which in turn influence the distribution and abundance of animal and plant species⁷¹. Consequently, biodiversity concerns need to be taken into account in the EIA process in order to ensure that mitigation measures are adopted towards conservation of biodiversity. Biodiversity requires attention in EIA because development projects/programmes are resulting in unprecedented rates of biodiversity loss⁷². However, in most instances biodiversity concerns are ignored in the EIA framework⁷³. The concept of Biodiversity Impact Assessment (BIA) has emerged in order to ensure that biodiversity concerns are taken into account in the EIA process as

⁶⁷ Wale. E & Yalew. A., 'On biodiversity impact assessment: the rationale, conceptual challenges and implications for future EIA' Op Cit

⁶⁸ Ibid

⁶⁹ Bagri. A & Vorhies. F., 'Biodiversity Impact Assessment' Op Cit

⁷⁰ Geneletti. D., 'Biodiversity Impact Assessment of roads: an approach based on ecosystem rarity' Op Cit

⁷¹ Muigua. K., 'Conserving Biodiversity for a Better Future' Op Cit

⁷² Wale. E & Yalew. A., 'On biodiversity impact assessment: the rationale, conceptual challenges and implications for future EIA' Op Cit

⁷³ Ibid

envisaged under the Convention on Biological Diversity⁷⁴. There is need to embrace and promote BIA for Sustainable Development in Kenya.

⁷⁴ Convention on Biological Diversity, Article 10

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