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**POLICY GUIDELINES AND REGULATORY FRAMEWORKS
FOR THE CONSOLIDATED NATIONAL STRATEGY ON
CONSERVATION OF AQUATIC BIODIVERSITY AND
ENVIRONMENTAL MANAGEMENT IN THE REPUBLIC OF
KENYA**

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FORWARD

Transboundary freshwater basins are important to World's population supporting over 800 million people. The Lake Victoria basin that is shared between Kenya, Uganda and Tanzania and extending to Burundi & Rwanda is equally an important resource to the EAC. With a rapidly expanding population, and the poor state characteristic of transboundary water resources, there is urgent need to develop Policy Guidelines and Regulatory Frameworks for the consolidated National Strategy on conservation of aquatic biodiversity and environmental management if we are to continue delivering on food security but at the same time doing so in a manner that is sustainable and avoids damage to the environment and the wider biodiversity resources.

The Lake Victoria Region is blessed with an abundance of high-quality water resources that offer opportunities for socio-economic development but with declining resources, it is becoming a potential source of conflict among resource users. Transboundary management of water resources, therefore, requires coordination across different political, legal, institutional, and technical settings. The study assesses transboundary freshwater ecosystems in the Africa Region to identify critical aquatic environmental issues affecting biodiversity and presents a framework for management of transboundary freshwater aquatic ecosystems for conservation and joint action plans.

Recognizing the importance of Lake Victoria basin resources and the biodiversity and environmental management challenges, a study was conducted by AU-IBAR to generate a general overview of transboundary freshwater bodies in Africa to identify critical aquatic environmental issues affecting biodiversity. This follows on study conducted by a constituted task team from the Lake Victoria Region offered further impetus by reviewing relevant National Instruments to identify existing gaps among the broad range of key relevant Blue Economy line Ministries, Departments and Agencies i.e. water, petroleum (gas and oil), fisheries, aquaculture, wildlife, tourism among others. This aims at enhancing the Policy environment, Regulatory Framework and institutional capacities of AU Member States and Regional Economic Communities to sustainably utilize and conserve aquatic biodiversity and ecosystems.

This Policy Guidelines and Regulatory Frameworks for the consolidated National Strategy on conservation of aquatic biodiversity and environmental management identifies the critical transboundary issues in conservation of aquatic biodiversity and environmental management in Lake Vitoria, Challenges relating to the identified in conservation of aquatic biodiversity and proposes priority actions and Policy options for addressing the identified challenges. Transboundary freshwater basins are important to world's population supporting over 800 million people. The Lake Victoria basin that is shared between Kenya, Uganda and Tanzania and extending to Burundi & Rwanda is equally an important resource to the EAC. With a rapidly expanding population, and the poor state characteristic of transboundary water resources, there is urgent need to develop Policy Guidelines and Regulatory Frameworks for the consolidated National Strategy on conservation of aquatic biodiversity and environmental management if we are to continue delivering on food security but at the same time doing so in a manner that is sustainable and avoids damage to the environment and the wider biodiversity resources.

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The State Department for the Blue Economy and Fisheries appeals to all stakeholders to use the harmonized guidelines to ensure sustainable Conservation of Aquatic Biodiversity in in Lake Victoria and the Region.

Mr. Rodrick Kundu

Director Fisheries & Aquaculture Development

State Department for Blue Economy & Fisheries

TABLE OF CONTENTS

FORWARD	iii
ACRONYMS AND ABBREVIATIONS	vi
ACKNOWLEDGEMENT	vii
EXECUTIVE SUMMARY	viii
1.0 INTRODUCTION	1
1.1 BACKGROUND	1
1.2 SECTOR CHALLENGES	2
1.3 ROLE AND RATIONALE	3
1.4 METHODOLOGY AND APPROACH - DEVELOPMENT PROCESSES OF THE STRATEGY	3
2.0 SITUATIONAL ANALYSIS	4
2.1 REVIEW OF EXISTING STRATEGIES	4
2.2 ON MODERN TECHNOLOGY AND INNOVATIONS, THE FOLLOWING WAS NOTED AS THE CHALLENGES:	9
3.0 NATIONAL STRATEGIC MODEL FOR AQUATIC BIODIVERSITY CONSERVATION AND ENVIRONMENTAL MANAGEMENT IN SHARED FRESHWATER ECOSYSTEMS	13
3.1 VISION, MISSION AND CORE VALUES	13
3.2 KEY RESULT AREAS AND STRATEGIC OBJECTIVES	14
4.0 IMPLEMENTATION AND COORDINATION FRAMEWORK	20
5.0 IMPLEMENTATION MONITORING AND EVALUATION	24
5.1 MONITORING AND EVALUATION INSTITUTIONAL FRAMEWORK	24
5.2 MONITORING AND EVALUATION REPORTING	24
6.0 CONCLUSION	25
7.0 RECOMMENDATIONS	25
BIBLIOGRAPHY	26

ACRONYMS AND ABBREVIATIONS

AU	African Union
AU-IBAR	African Union Inter-African Bureau for Animal Resources
CoE	Centre of Excellence
EAC	East African Community
EIA	Environmental Impact Assessment
GDP	Gross Domestic Product
KPI	Key Performance Indicator
GIZ	German Agency for International Cooperation
GIZ-	German Agency for International Cooperation
IDA	International Development Association
IUCN	International Union for Conservation of Nature
IWRM	Integrated Water Resources Management
LCBC	Lake Chad Basin Commission
LVFO	Lake Victoria Fisheries Organization
LVBC	Lake Victoria Basin Commission
MCS	Monitoring Control and Surveillance
MDAs	Ministries Departments and Agencies
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
PESTEL	Political, Economic, Social, Technological, Environmental and Legal
RBOs	Regional Basin Organizations
RFBs	Regional Fisheries Bodies
SIDA	Swedish- International Development Cooperation Agency
SWOT	Strength Weaknesses Opportunities and Threats

ACKNOWLEDGEMENT

The State Department for the Blue Economy and Fisheries appreciates the co-ordination of Lake Victoria Fisheries Organization and the support from AU-IBAR through the project funded by the Swedish International Development Cooperation Agency (SIDA) for supporting the development of this Policy Guidelines and Regulatory Frameworks for the consolidated National Strategy on conservation of aquatic biodiversity and environmental management in Lake Victoria Region.

EXECUTIVE SUMMARY

Transboundary freshwater basin accounts for about 60% of Global freshwater flow and which affects more than 150 Countries, covers 46% of the World's land area and serves about 42% of the World's population. Of all the Continents, the African Continent has the largest number of transboundary basins and these support a population of over 800 million people. Poorly managed transboundary water supplies are projected to be potential sources of conflict and social strife among Countries. Their management is thought to be more complex than freshwater basins at the National level since the water management regime, priorities and cultures usually differ more between than within Countries. Transboundary management of water resources, therefore, require coordination across different political, legal, institutional, and technical settings. The study assesses transboundary freshwater ecosystems in the Africa Region to identify critical aquatic environmental issues affecting biodiversity and presents a framework for management of transboundary freshwater aquatic ecosystems for conservation and joint action plans.

Prior to development of this Policy Guideline, a study was commissioned by AU-IBAR to generate a general overview of transboundary freshwater bodies in Africa to identify critical aquatic environmental issues affecting biodiversity.

The study/consultancy, conducted by Dr. Ruby Asmah, Dayspring Consult Ltd, Accra, Ghana, was undertaken through literature search and stakeholder engagements with Regional Economic Communities (RECs), Regional Basin Organizations (RBOs), Regional Fisheries Bodies (RFBs), Biodiversity and Freshwater Basin Organizations. The study proposed Regional Protocols and Strategies for the conservation of aquatic biodiversity and joint action plans in identified shared freshwater ecosystems for Regional Protocols in aquatic biodiversity conservation and environment. Key environmental stressors identified from the survey results were Illegal, Unreported and Unregulated (IUU) fishing, changing climate, over-exploitation of freshwater resources, pollution from point and non-point sources, destruction of habitats, invasion of exotic species and emergence of diseases that affect freshwater biota especially fish among others.

This Policy Guidelines and Regulatory Frameworks for the consolidated National Strategy on conservation of aquatic biodiversity and environmental management was developed through constitution of a task team composed of 2 members namely Technical and Ground Facilitator from LVFO and LVFO Desk Officer from the Republic of Uganda, Kenya and United Republic of Tanzania backed by the AU IBAR Institutional Policy and Legal Expert. The team reviewed relevant National Instruments to identify existing gaps. The process was participatory through conduct of a Regional stakeholder consultative workshop, including group discussions with a broad range of key relevant Blue Economy line Ministries, Departments and Agencies i.e., water, petroleum (gas and oil), fisheries, aquaculture, wildlife, tourism among others.

The consultation results agreed with the earlier study by AU IBAR on key environmental stressors as Illegal Unreported and Unregulated (IUU) fishing, changing climate, over-exploitation of freshwater resources, pollution from point and non-point sources, destruction of habitats, invasion of exotic species and emergence of diseases that affect freshwater biota especially fish among others. The study identified various legal and Policy documents with strategies for biodiversity conservation and environmental protection.

1.0 INTRODUCTION

1.1 BACKGROUND

Globally, transboundary freshwater basin accounts for about 60% of Global freshwater flow; affects more than 150 Countries; covers 46% of the World's land and serves about 42% of the World's population. Of all the Continents, the African Continent has the largest number of transboundary basins and these support a population of over 800 million people. Poorly managed transboundary resources can be a potential source of conflict and social strife among Countries and yet their management is thought to be more complex than freshwater basins at the National level since the water management regime, priorities and cultures usually differ more between than within Countries. Transboundary management of water resources, therefore, requires coordination across different political, legal, institutional, and technical settings.

Lake Victoria and its basin are highly valuable Regional and Internationally resource and is the 2nd largest Lake in the World & largest in Africa (68,800 km²), shared between Kenya, Tanzania, and Uganda with its catchment of 194,000 km² extending to Burundi & Rwanda. The Lake has at least 10 major Rivers, 7 large towns/cities along shore & 9 in basin. The Lake basin has great water uses mainly, agriculture, industry, domestic fishery, and hydropower generation among others.

Despite Lake Victoria basin harbouring a large and very productive fish stock that can generate high catches and good incomes on a sustainable basis, the fish stocks continue to decline mainly because the fishery is characterized by excessive fishing effort leading to depressed fish stocks hence low net incomes for the inhabitants of fishing communities. The existing transboundary fisheries management regime may be inducing detrimental competition for harvest resulting in overexploitation of the fish stocks, excessive fishing effort and fishing costs that depress the net incomes from the fishery and hence, combined with environmental degradation cannot promote sustainable conservation of the available aquatic resources.

Consequently, important aquatic resources are becoming increasingly susceptible to both natural and artificial environmental changes. Hence conservation strategies to protect and conserve aquatic life are necessary to maintain the balance of nature and support the availability of resources for future generations. The need to strengthen capacity of AU Member States and Regional institutions for protection and sustainable exploitation of living resources within their Exclusive Economic Zones (EEZs) is identified as priority in conservation of aquatic biodiversity to ensure sustainable contribution to food security, livelihoods, and wealth creation.

It is high time that effective action is taken to reduce biodiversity loss and ecosystem degradation, and long-term ecosystems functioning if the EAC community is to maintain a rich biodiversity with secured and contribution of biodiversity and other ecosystem services to the well-being and economic prosperity of the people guaranteed. To achieve this deliberate capacity building, knowledge management/sharing, sustainable funding and mainstreaming biodiversity across Government and society, and involvement of all stakeholders is very critical.

This Policy Guideline is in the context of the African Blue Economy Strategy (ABES) aimed at addressing some of the challenges and for the AU–Member States to sustainably harness the resources of aquatic ecosystems. The ABES envisioned an inclusive and sustainable Blue Economy that significantly contributes to Africa’s transformation and growth. The Strategy incorporates key critical vectors for promoting Blue Economic development of the Continent, including fisheries, aquaculture, and ecosystem biodiversity conservation; shipping, maritime safety and trade; climate change mitigation and environmental sustainability and ecotourism; sustainable energy and extractive mineral resources; governance, institutions and job creation. The objective of the ABES is to guide the development of an inclusive and sustainable Blue Economy that becomes a significant contributor to Continental transformation and growth, through advancing knowledge on marine and aquatic biotechnology, environmental sustainability, marine ecosystem utilization, conservation and carbon sequestration, the growth of an Africa-wide shipping industry, the development of Sea, River and Lake transport, the management of fishing activities on these water bodies, and the exploitation and beneficiation of deep Sea mineral and other marine resources.

The ABES is consolidated based on the following five thematic technical areas:

- a) Fisheries, aquaculture, conservation and sustainable aquatic ecosystems;
- b) Shipping/transportation, trade, ports, maritime security, safety and enforcement;
- c) Coastal and maritime tourism, climate change, resilience, marine ecosystem, environment, infrastructure;
- d) Sustainable energy and mineral resources and innovative industries; and,
- e) Policies, Institutional and governance, employment, job creation and poverty eradication, innovative financing.

Accordingly, AU IBAR with support from the Swedish International Development Cooperation Agency (SIDA), is implementing a 3–year project on “Conserving Aquatic Biodiversity in African Blue Economy” whose overall objective is to enhance the Policy environment, Regulatory frameworks and Institutional capacities of AU Member States and Regional Economic Communities to sustainably utilize and conserve aquatic biodiversity and ecosystems.

1.2 SECTOR CHALLENGES

World over, shared ecosystems face major threats, which include depletion of natural resources due to the rising population pressure, expansion in human activities, over-exploitation, unsustainable agricultural practices, over-fishing, pollution, rampant conversion, and destruction of wetlands ecosystems (Yeleeire, et al., 2018). Lake Victoria and its River basins, face major environmental challenges that are a threat to sustainability of freshwater resources and biodiversity conservation in East African Community. The challenges are related to changing climate (Climate variability and change affect catchment environment), over-exploitation of freshwater resources, water pollution, flow modification (water obstruction and reduced flows), destruction or degradation of habitats and invasion of exotic/alien species (animals and plants) and emergence of diseases that affect freshwater biota especially fish. It is already indicated that over 200 indigenous species are facing possible extinction due to overfishing, introduction of Nile perch and eutrophication.

Poorly managed transboundary water supplies are projected to be potential sources of conflict and social strife among Countries. Transboundary water management is likely to be more complex than that at the National level since the water management regime, priorities and cultures usually differ more between than within Countries. Transboundary management of water resources therefore requires coordination across different political, legal, institutional and technical settings (UNEP 2016).

1.3 ROLE AND RATIONALE

The above-named threats coupled with weak, sectoral based and co-ordination, if not well managed, may have significant negative ecological, environmental, and social impacts. This complicates management and development of these resources. Meeting the increasing demand will be further hampered by reduced water availability, due to unsustainable use, pollution, and climate change. People living in poverty, especially women and girls are disproportionately affected by water stress through reduced access to water and unstable energy and food prices. These pose a major threat to sustainability of aquatic ecosystems, biodiversity management, and conservation of aquatic resources and fair distribution of water resources in Africa.

1.4 METHODOLOGY AND APPROACH - DEVELOPMENT PROCESSES OF THE STRATEGY

This Policy Guideline and Regulatory Framework was developed starting with conducting of a comprehensive study commissioned by AU-IBAR that generated a general overview of transboundary freshwater bodies in Africa and identified critical aquatic environmental issues affecting biodiversity. The study was achieved through literature search and stakeholder engagements including Regional Economic Communities (RECs), Regional Basin Organizations (RBOs), Regional Fisheries Bodies (RFBs) and Biodiversity and Freshwater Basin Organizations.

To have a clear perspective of Lake Victoria, in-depth review of the AU IBAR study was done to help in developing a framework for management of transboundary freshwater aquatic ecosystems for conservation and joint action plans. As part of the process a collaborative arrangement between AU IBAR and LVFO was initiated, and constitution of a team done with 1 Technical facilitator and 1 ground facilitator from LVFO Secretariat and the LVFO Desk Officer from Kenya.

The main elements of the Terms of Reference included:

- a) Identification of relevant Ministries Department and Agencies (MDAs)) that have mandate on environmental management and aquatic biodiversity conservation, including fisheries, aquaculture, environment, water management and transport, coastal tourism development;
- b) Identification and sourcing for National Instruments relevant to aquatic biodiversity conservation and environment management;
- c) Conduct reviews of identified Instruments, identify gaps vis a visa the study report on Regional Frameworks on transboundary Protocols, joint management plans and strategy for aquatic biodiversity conservation;

- d) Developing Policy Guidelines and Regulatory Framework for a consolidated National strategy on conservation of aquatic biodiversity and environment management in line with the transboundary consultancy study report; and,
- e) Supporting the convening, participation of stakeholders and conduct of the Regional workshop including comprehensive reporting.

The National stakeholder consultations were also done in line with the MDAs including water, fisheries, aquaculture, fisheries, mining, shipping, tourism, and wildlife among others culminating into a Regional workshop held in Kampala Uganda to among others:

- a) To roll-out the joint Management Plans and Protocols and the Harmonized Regional Frameworks for conserving aquatic biodiversity for EAC;
- b) Enhancing awareness on the importance of Conserving of aquatic biodiversity in African Blue Economy, and;
- c) Enhance awareness among EAC, AU Member States on priority issues for conservation of aquatic biodiversity, climate Change Mitigation and Adaptation and environment management.

2.0 SITUATIONAL ANALYSIS

This section reviews the existing legal and institutional frameworks with relevance to biodiversity conservation and environmental management in the Lake Victoria. It evaluates the impacts, considers a SWOT, PESTELE and stakeholder analysis in terms of expectations and envisaged benefits.

2.1 REVIEW OF EXISTING STRATEGIES

2.1.1 EAST AFRICAN COMMUNITY LEVEL

There are several Policy Guidelines and Regulatory Frameworks on transboundary cooperation in environmental management and climate change mitigation and adaptation for conservation of aquatic biodiversity in the Lake basin and the EAC. The existing transboundary freshwater basin management Policies, initiatives and frameworks are intended to assist stakeholders and managers to implement Policies at the Regional, National, and transboundary level while addressing societal challenges and simultaneously providing human well-being and biodiversity benefits.

2.1.2 TREATY FOR THE ESTABLISHMENT OF THE EAST AFRICA COMMUNITY, 1999

This was established by the East African Community as the Regional intergovernmental organization of the Republics of Kenya, Uganda, the United Republic of Tanzania, Republic of Burundi, and Republic of Rwanda with its headquarters in Arusha, Tanzania. According to the Treaty for the Establishment of the East African Community (1999), it aims at widening and deepening co-operation among the Partner States and other Regional Economic Communities, political and social fields for their mutual benefit.

The objective of the Treaty is to ensure sustainability of natural resources of Member States and to promote the sustainable utilization of natural resources like wetlands, Lakes forests and other aquatic and terrestrial ecosystems (East African Community, 1999). The East African Court of Justice is established

under this Treaty as the judicial body of the community and is mandated with ensuring the adherence to Law in the interpretation and application of and compliance with the Treaty. The East Africa Community Treaty was signed on 30th November, 1999 in Arusha, Tanzania by the Heads of its five Member States – Burundi, Rwanda, Uganda, Kenya, and Tanzania – who are referred to in the Treaty as Partner States of the Community. The EAC has since grown to include South Sudan and DRC.

2.1.3 THE PROTOCOL ON ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

A report on the East African Community (2006), suggests that this Protocol was instituted to ensure cooperation among Partner States in the management of the environment and natural resources in their jurisdiction. The governance and management of transboundary resources are well defined in this Protocol. The Protocol is currently not in force and hence not a legally binding document pending ratification by all Partner States.

2.1.4 THE EAST AFRICAN COMMUNITY (EAC) REGIONAL ENVIRONMENT IMPACT ASSESSMENT GUIDELINES FOR SHARED ECOSYSTEMS

Guidelines from East African Community assessment, (2006) are for application of environmentally sound approaches in the management as well as ensuring the sustainability and biophysical integrity of shared ecosystems within the East African Region. These guidelines provide procedures for conducting transboundary environmental assessment in shared ecosystems in East Africa and the roles for the key stakeholders and players during the implementation of the Transboundary Environment Assessment process in the Partner States.

2.1.5 LAKE VICTORIA FISHERIES ORGANIZATION (LVFO)

The LVFO is a specialized East African Community Institution with contracting Parties being the Republics of Kenya, Tanzania, Burundi, and Uganda and established by a Convention in 1994 and registered by FAO as a Regional Fisheries Management Organization. Its main aim is to harmonize, develop and adopt conservation and management measures for the sustainable utilization of fisheries and aquaculture resources of Lake Victoria while optimizing the socio-economic benefits from the basin for the four Partner States (LVFO Convention 1994 Amended on 12th November, 1998 and on 29th January, 2016). The Convention states that LVFO guides, supports, and implements the building of the capacity of communities to participate in management and is making a real difference to their lives. The amendment of 2016 expanded the scope and mandate of the organization to cover all water bodies in EAC. The LVFO has developed harmonized guidelines, strategies and management plans for sustainable management and conservation of the fisheries resources including the LVFO Regional Plan of Action (RPOA) for the Management of Fishing Capacity in Lake Victoria whose purpose is to sustain the fisheries resource base for optimal economic growth, poverty reduction, food security, foreign exchange earnings, employment, gender equity and improved standards of living among fisheries dependent communities. The Parties to this Regional Plan of Action (RPOA) on the Management of Fishing Capacity on Lake Victoria are the Governments of the Republic of Kenya, the United Republic of Tanzania and the Republic of Uganda which are the Contracting Parties of the Lake Victoria Fisheries Organization (LVFO). Its implementation calls for commitment of all key stakeholders - especially, the BMUs; Local Authorities; fish traders, Industrial processors and exporters, fish factory supply agents; Civil Society and Central Government. All the stakeholders must work together to

achieve optimum fishing capacity corresponding to the sustainable fisheries resources.

2.1.6 LAKE VICTORIA BASIN COMMISSION (LVBC)

The LVBC is an institution of the EAC established through the Protocol for Sustainable Development of the Lake Victoria Basin (the “LVBC Protocol”), which was signed on 29th November, 2003 and ratified in December, 2004 and is responsible for coordinating the sustainable development agenda of the Lake Victoria Basin. Its broad functions are “to promote, facilitate and coordinate activities of different actors towards sustainable development and poverty eradication of the Lake Victoria Basin”. The Member States include; Kenya, Uganda, Tanzania, Rwanda and Burundi. Its main include Harmonization of Policies, Laws, Regulations and Standards; - Promotion of stakeholders’ participation in the sustainable development of natural resources; - Guidance on implementing sectoral projects and programs; - Promotion of capacity building and institutional development; - Promotion of security and safety on Lake Victoria; - Promotion of research and development; - Monitoring, evaluation and compliance with Policies and agreed upon actions; - Preparation and harmonization of the Member States’ negotiating positions against any other State on matters concerning the Lake Victoria Basin; - Receipt and consideration of reports from the Member States’ institutions on their activities relating to the management of the Basin under the LVBC Protocol; - Initiation and promotion of programs that target poverty eradication; and - Performance of any other functions that may be conferred upon the LVBC under the LVBC Protocol.

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The Parties to this Regional Plan of Action (RPOA) on the Management of Fishing Capacity on Lake Victoria are the Governments of the Republic of Kenya, the United Republic of Tanzania and the Republic of Uganda which are the Contracting Parties of the Lake Victoria Fisheries Organization (LVFO). Its implementation calls for commitment of all key stakeholders - especially, the BMUs; Local Authorities; fish traders, Industrial processors and exporters, fish factory supply agents; Civil Society and Central Government. All the stakeholders must work together to achieve optimum fishing capacity corresponding to the sustainable fisheries resources.

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2.1.2 REVIEW OF NATIONAL POLICY GUIDELINES AND REGULATORY FRAMEWORKS ON AQUATIC BIODIVERSITY CONSERVATION AND ENVIRONMENTAL MANAGEMENT

The following Policies were reviewed, key provisions synthesized with respect to conserving of aquatic biodiversity and environment in Lake Victoria:

- a) Fisheries Management and Development Act, 2016. (No. 35 of 2016;
- b) National Oceans and Fisheries Policy of 2008;
- c) Kenya Coast Guards Service Act, 2018;
- d) Maritime Zones Act Cap 371, 2012;

- e) Aquaculture Policy 2012;
- f) Draft National Blue Economy Strategy, 2023;
- g) Kenya mining Act, 2016,
- h) Marine Access Regulations, 2022;
- i) Draft guidelines for designation of ASM,
- j) Merchants shipping Act 2009 (Revised 2012);
- k) Climate change Act, No. 11 of 2016,
- l) Environment Management and Coordination Act, 1999;
- m) Land Act, 2012;
- n) Forest Conservation and management Act, 2016;
- o) Wildlife Conservation and Management Act, 2013;
- p) Tourism Act, 2011;
- q) Draft Wildlife Policy, 2011;
- r) Petroleum Act, 2019
- s) Report on Sessional Paper no. 1 of 2020 on Wildlife Policy; and,
- t) National Energy and Petroleum Policy, 2015.

2.1.3 IDENTIFICATION OF NATIONAL PRIORITY ISSUES, CHALLENGES AND POLICY OPTIONS FOR ENHANCED CONSERVATION OF AQUATIC BIODIVERSITY AND ENVIRONMENT MANAGEMENT IN SHARED FRESHWATER ECOSYSTEMS

The National Policy issues, challenges and needed Policy options were elaborated under key result areas namely: Environmental sustainability, ecological, Regional cooperation, Agriculture development and human activities and modern technology and innovations.

Under Environmental sustainability the following were identified as areas of concern: pollution, habitat degradation, climate change, degraded water quality, flooding, poaching, medical waste, soil erosion, artisanal mining using mercury, petroleum, waste, transport, and shipment effects. Identified priority actions for addressing the identified challenges were highlighted as having environmental management plans, pollution control, climate change and mitigation and adaptation measure and having spatial plans for fresh water ecosystems. The Policy options and Regulatory Frameworks for harmonized strategies for environmental management and conservation biodiversity were given as enforcement of existing relevant environmental management and conservation Laws, harmonization of relevant environmental management. Conservation and coordination Laws, harmonizing and implementing Climate Change Acts, Policies, Strategies, development of relevant Policies documents on artisanal mining, artisanal maritime transport, artisanal fishing and aquaculture and having harmonized spatial plans.

The ecological transboundary issue was reported to have the following critical challenges: Over exploitation, Illegal Unreported and Unregulated fishing, destruction of ecological niche, introduction of alien or new species/genetic materials, diseases, conflicting ecological sustainability from various sectors and lack of coordinated research. Priority actions to address these challenges include; conducting Monitoring, Control and Surveillance, and enhancing coordinated research Policy options and Regulatory Frameworks for harmonized strategies for environmental management and conservation of biodiversity will include;

development and harmonization of existing Policies, Strategies, Laws and Regulations on MCS, enforcing ecological integrity measures and harmonizing and coordinating of research and dissemination of its findings.

The Regional cooperation transboundary issue was reported to have the following challenges: Nonaligned biodiversity Laws, political interests, conflicts, inadequate Laws, Policies & Institutional Frameworks, poor education, inadequate involvement of communities and Regional trade in flagged species. Priority actions to address the challenges include aligning relevant biodiversity conservation tools, sensitization and awareness creation (Countries, communities and institutions), Trade Frameworks, and implementing the Regional Blue Economy Strategy. Policy options to include development of harmonized Regional conservation tools, development of Regional Protocols on biodiversity conservation considering all sectors and devilment of Regional Blue Economy Strategies/Policies.

Agriculture development and human activities issue had the following challenges: Changes in land use, catchment degradation, unsustainable farming practices, climate change, pests and diseases, changes in land use or Sea use, population pressure on land and change in water management. Required Priority actions included spatial plans and harmonized and coordinated agricultural development and human settlement and working on land use Laws not conforming to other Laws that regards to biodiversity conservation. Policy option development of harmonized spatial plans.

2.2 ON MODERN TECHNOLOGY AND INNOVATIONS, THE FOLLOWING WAS NOTED AS THE CHALLENGES:

Improved technology without considering biodiversity, disregard of indigenous knowledge and conservation efforts thereof and lack of ICT Laws in biodiversity conservation and management. Priority actions include development of relevant Laws and institutions, incorporation of indigenous knowledge in management measures and development of relevant Laws and institutions. Policy options include; enactment and harmonization of ICT Laws regarding biodiversity conservation, involving indigenous efforts in Policies, Strategies, Frameworks and harmonizing implementation of the Policies, Laws, Strategies. ANALYSIS OF ISSUES IN AQUATIC BIODIVERSITY CONSERVATION AND ENVIRONMENTAL MANAGEMENT

2.2.1 STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS (SWOT) ANALYSIS

<p>Strength</p> <ul style="list-style-type: none"> a) Rich biodiversity- Kenya is home to a diverse range of flora and fauna, including over 1,000 bird species, 1,100 species of fish, and over 7,000 plant species, making it a unique and important area for biodiversity conservation; b) Strong legal framework - Kenya has a comprehensive set of Laws and Policies related to conservation and wildlife protection; c) Dedicated conservation organizations and MDAs; d) Supportive Government - The Kenyan Government has shown a commitment to biodiversity conservation, evidenced by the establishment of protected areas and the adoption of conservation Policies and Strategies. 	<p>Weaknesses:</p> <ul style="list-style-type: none"> a) Limited funding - Despite the Government's commitment to conservation, funding for biodiversity conservation is often limited, leading to a lack of resources and personnel to effectively manage protected areas and combat illegal wildlife trade. b) Human-wildlife conflict: In some areas of Kenya, there is a high incidence of human-wildlife conflict, as wildlife such as elephants and lions come into contact with local communities, leading to loss of life and property damage. c) Poaching and illegal wildlife trade: Poaching and illegal wildlife trade are ongoing problems in Kenya, fueled by demand for wildlife products such as ivory and rhino horn, and often involving local communities and organized crime groups. d) Limited public awareness: Many people in Kenya are not aware of the importance of biodiversity conservation or the role they can play in protecting wildlife and ecosystems.
<p>Opportunities</p> <ul style="list-style-type: none"> a) Ecotourism: Kenya's rich biodiversity and iconic wildlife make it a popular destination for ecotourism, providing opportunities for sustainable income generation and employment in rural areas. b) Community-based conservation: Engaging local communities in conservation efforts can help to address human-wildlife conflict and provide economic benefits through community-based ecotourism and other sustainable livelihoods. c) Innovative technologies: Advances in technology, such as drones and remote sensing, can help to improve monitoring and enforcement efforts, and provide new ways to engage the public in conservation efforts. d) Partnerships and collaborations: Partnerships and collaborations between Government, conservation organizations, and local communities can leverage resources and expertise to achieve shared conservation goals. 	<p>Threats</p> <ul style="list-style-type: none"> a) Climate change: Climate change is already affecting Kenya's ecosystems, leading to changes in precipitation patterns, increased temperatures, and more frequent droughts, which could have significant impacts on biodiversity. b) Habitat loss and fragmentation: Habitat loss and fragmentation are ongoing threats to biodiversity in Kenya, driven by human population growth, agricultural expansion, and infrastructure development. c) Invasive species: Invasive species, such as the water hyacinth and the prosopis tree, can outcompete native species and disrupt ecosystems, leading to declines in biodiversity. d) Political instability: Kenya has experienced periods of political instability, which can lead to a lack of funding and support for conservation efforts, and create opportunities for illegal wildlife trade and poaching.

2.2.2 POLITICAL, ECONOMIC, SOCIAL, TECHNOLOGICAL, ENVIRONMENTAL AND LEGAL (PESTEL) ANALYSIS

<p>Political</p> <ul style="list-style-type: none"> a) Kenya has a strong legal framework for biodiversity conservation; b) The Government has demonstrated a commitment to biodiversity conservation, evidenced by the establishment of protected areas and the adoption of conservation Policies and Strategies. c) Political instability can pose a threat to biodiversity conservation efforts, as it can lead to a lack of funding and support for conservation efforts. 	<p>Economic</p> <ul style="list-style-type: none"> a) Biodiversity conservation can provide economic benefits through ecotourism and sustainable use of natural resources, generating income and employment opportunities for local communities. b) The lack of funding for conservation efforts is a major economic challenge, which can lead to a lack of resources and personnel to effectively manage protected areas and combat illegal wildlife trade. c) Economic activities such as mining and agriculture can also pose threats to biodiversity, through habitat loss and fragmentation 	<p>Social</p> <ul style="list-style-type: none"> a) Human-wildlife conflict is a social challenge that can pose threats to biodiversity conservation efforts, as it can lead to loss of life and property damage, and create negative attitudes towards wildlife. b) Engaging local communities in conservation efforts through community-based conservation can help to address human-wildlife conflict and provide economic benefits through ecotourism and other sustainable livelihoods. c) Lack of public awareness about the importance of biodiversity conservation is a social challenge, which can lead to a lack of support for conservation efforts
<p>Technological</p> <ul style="list-style-type: none"> a) Advances in technology, such as drones and remote sensing, can help to improve monitoring and enforcement efforts, and provide new ways to engage the public in conservation efforts. b) However, the use of technology for illegal activities, such as poaching and illegal wildlife trade, is also a challenge. 	<p>Environmental</p> <ul style="list-style-type: none"> a) Climate change is a major environmental challenge that can pose threats to biodiversity conservation efforts, through changes in precipitation patterns, increased temperatures, and more frequent droughts, which can have significant impacts on biodiversity. b) Habitat loss and fragmentation due to human activities such as agriculture, logging and infrastructure development are also environmental challenges that can pose threats to biodiversity conservation. 	<p>Legal</p> <ul style="list-style-type: none"> a) Kenya has a strong legal framework for biodiversity conservation, including the Wildlife Conservation and Management Act and the Forest Conservation and Management Act. b) However, enforcement of these laws and regulations can be a challenge, as illegal wildlife trade and poaching continue to be major issues. c) In addition, the lack of clarity around land ownership and use can create legal challenges for biodiversity conservation efforts, as it can lead to conflicts over land use and management.

2.2.3 STAKEHOLDER ANALYSIS

Stakeholder	Expectation	Benefit
<p>Ministry of Mining, Blue Economy & Maritime Affairs (State Department for Blue Economy & Fisheries, State Department for Shipping & Maritime Affairs and State Department for Mining</p>	<ul style="list-style-type: none"> a) Conservation, management and development of fisheries and other aquatic resources to enhance the livelihood of communities dependent on fishing; b) Increased and sustainable fish production and utilization by properly managing the Ocean and other Kenya Fishery waters; c) Operational Kenya Coast Guard Service providing for its functions, discipline, organization and administration; d) Provision for prospecting, mining, processing, refining, treatment, transport and any dealings in minerals; e) Fisheries and Aquaculture Policy development, review; harmonization, sensitization and adoption and governance. 	<ul style="list-style-type: none"> a) Support funding requests b) Extension services c) Enabling environment for Policy, plans and strategy formulation to guide the sector d) Improved stakeholder coordination and implementation e) Improved information dissemination and sharing

Ministry of Environment, Climate Change & Forestry / State Department for Environment & Climate Change	<ul style="list-style-type: none"> a) Enhanced response to climate change; to provide for mechanism and measures to achieve low carbon climate development; b) Appropriate legal and institutional framework for the management of the environment; c) Sustainable administration and management of land and land-based resources; d) Development and sustainable management, including conservation and rational utilization of all forest resources for the socio-economic development of the Country 	<ul style="list-style-type: none"> a) Support funding requests b) Extension services c) Policy formulation to guide the sector d) Coordinated framework for information gathering, documentation, reporting and sharing
Ministry of Tourism, Wildlife & State/Department for Wildlife and Heritage and state department for tourism	<ul style="list-style-type: none"> a) Conserving, in perpetuity, Kenya's rich diversity of species, habitats and ecosystems for the well-being and benefit of its people and the Global community; b) Development, management, marketing and regulation of sustainable tourism and tourism-related activities and services. 	<ul style="list-style-type: none"> a) Support funding requests b) Extension services c) Policy formulation to guide the sector d) Enabling environment for sustainable environment and tourism
Ministry of Energy & Petroleum State Department for Petroleum	<ul style="list-style-type: none"> a) Development in the upstream petroleum industry in Kenya. b) Development and management of sustainable water medium-based petroleum transport corridors 	<ul style="list-style-type: none"> a) Support funding requests b) Extension services c) Policy and other frameworks formulation to guide the sector
The National Treasury and Economic Planning	<ul style="list-style-type: none"> a) Contribution to GDP and socio-economic development b) Prudent management of resources 	<ul style="list-style-type: none"> a) Resource mobilization, adequate and timely funding and budget approval b) Public Financial Policy Guidelines c) Enhanced resource utilization and accountability
Research institutions, Universities (International and National), and tertiary training institutions	<ul style="list-style-type: none"> a) Access to freshwater and joint research b) Collaboration in training, research programmes and projects (including student attachment and internships). c) Coordinated and collaborative documentation, sharing and dissemination of research findings, innovations and technology transfer d) Development of integrated Regional aquatic research and educational and training centers 	<ul style="list-style-type: none"> a) Capacity building in dam aquaculture b) Collaboration in program development and implementation c) Production of skilled and competent graduates and human resource capital d) Joint proposal development for research and investment in dam aquaculture
Law enforcement and Regulatory Agencies and administration of justice	<ul style="list-style-type: none"> a) Cooperation and compliance with relevant Laws and Regulations b) Coordination and administration of justice 	<ul style="list-style-type: none"> c) Provision of quality, safety and security
County and local Governments	<ul style="list-style-type: none"> a) Sustainable use of resources b) Improved livelihoods of communities c) Food and nutrition security d) Support and co-operation on conservation e) Dissemination of output to the communities 	<ul style="list-style-type: none"> a) Support funding requests b) Policy formulation to guide the sector at the County/local level c) Provision of funds for commissioned research to address specific needs d) Sharing of county Policies, plans and programmes about the use of freshwater resources e) Issuance of permits and other relevant documents

Development partners and financial institutions	<ul style="list-style-type: none"> a) Prudent management of funds and other resources b) Transparency and accountability c) Timely provision of required products, information and reports d) Generation of data and information to support informed management of dams 	<ul style="list-style-type: none"> a) Technical support, capacity development, funding of research and conservation and management projects b) Cooperation in research on freshwater systems c) Resource mobilization d) International lobbying e) Data and information exchange
Local and International, Non-Governmental Organizations; International and Regional Fisheries & Aquaculture bodies	<ul style="list-style-type: none"> a) Support the implementation of Local, Regional and International Organizations initiatives b) Supporting harmonized implementation of Regional projects beyond National boundaries/transboundary projects 	<ul style="list-style-type: none"> c) Mobilization of resources d) Community mobilization and sensitization e) Advocacy, networking and lobbying f) Joint operations on transboundary projects

3.0 NATIONAL STRATEGIC MODEL FOR AQUATIC BIODIVERSITY CONSERVATION AND ENVIRONMENTAL MANAGEMENT IN SHARED FRESHWATER ECOSYSTEMS

3.1 VISION, MISSION AND CORE VALUES

3.1.1 VISION:

A sustainable freshwater biodiversity for Blue Economy development in the Lake Victoria Region

3.1.2 MISSION:

To facilitate conservation of freshwater biodiversity for accelerated Blue Economy in Lake Victoria Region.

3.1.3 GUIDING PRINCIPLES /CORE VALUES

Effective implementation of the Blue Economy Strategies will be guided by the following principles:

- a) **Circular economy** -The adoption of a circular model of production and consumption, which consists of sharing, reusing, repairing, renovating and recycling existing products and materials as long as possible so that they maintain their value, is inherent to biodiversity conservation in line with the Blue Economy Strategy. This is to rethink not only the utilization at the end of the life product and the recycling of production tools, but also their method of conception such as to integrate the future potential utilization of the materials used during the production stage (namely by taking into consideration the dismantling of tools). Thus, a substantive work must be done across all the sectors that form part of the BE so as to apply the principle of circular economy to all the productive sectors (it must also be inter-sectoral in order to widen the scope of recycling possibilities);
- b) **Environmental** - Climate change and climate variability have already an impact on the aquatic systems and the state of biodiversity conservation in the Lake Victoria basin. EAC Partner States must therefore, ensure building the resilience of the blue ecosystems and reducing the vulnerability of communities to change and to climate variability so as to safeguard the future of food security and of livelihood. Moreover, sound ecosystems, being crucially important for the survival of living aquatic resources, the production of mining, oil, gas and energy in deep water, should be developed according to the existing

- rigorous principle of precaution;
- c) Good Governance - Implemented to serve all categories of stakeholders both the public, private, women, youth and other non-state actors in the enhancement of biodiversity conservation and environmental management in the Lake Victoria basin;
 - d) Equity and equality in resource access- Beneficiary targeting should be based on the principles of equity and fairness. Biodiversity conservation approaches will include the active participation of women, youth, orphans, disabled and any other vulnerable groups. There will be equitable benefits sharing, opportunity for representation and decision-making processes in a non-discriminatory manner;
 - e) Cooperation and Partnerships - The private sector shall be seen as complementary to the public sector in terms of enhancement of biodiversity conservation and environmental management in the Lake Victoria basin;
 - f) Inclusivity and Participation - The Policy Guideline and Regulatory Framework will be implemented to serve all categories of stakeholders in the sub-sector. The provision of services will be carried out in a well-coordinated manner that ensures public, private and other non-state actors' involvement in the enhancement of the sector in a way that does not preclude anyone who abides by this Policy and related regulations;
 - g) Precautionary approach - Fisheries and aquaculture management shall be premised on scientific evidence as it applies to the Ugandan context and the lack thereof should never be premise for failure to act in face of risk of serious or irreversible harm to fish stocks and or habitats;
 - h) Polluter pays principle - Those who benefit from or use natural resources as fishers, fish farmers, miners, extractors etc., must contribute to the cost of managing the resource which will be levied as user charges by appointed authorities in line MDAs; and,
 - i) Opportunity cost- Opportunity cost is the foregone benefit of options not chosen. If opportunity costs are neglected in decisions about public Policy, there is a high risk that the best options are overlooked.

3.2 KEY RESULT AREAS AND STRATEGIC OBJECTIVES

3.2.1 KEY RESULT AREAS

The key result areas include: Enhanced environmental sustainability; infrastructural and human capacity development; and enabling environment for biodiversity conservation

3.2.2 STRATEGIC GOALS AND ACTIONS

The overall goal of the proposed Policy Guidelines and Regulatory Frameworks for the consolidated National Strategy on conservation of aquatic biodiversity and environmental management is to ensure long term protection of biodiversity in in Lake Victoria specifically to preserve the diversity of aquatic species, sustain utilization of species and ecosystems and maintain life supporting systems and critical ecological processes.

The following are considered as the specific strategic goals

- a) Sustainable fisheries and aquaculture development;
- b) Sustainable mining and mineral processing;
- c) Disaster risk reduction and management;

- d) Waste pollution control and management;
- e) Conservation of aquatic wildlife habitats and corridors;
- f) Sustainable tourism initiatives within the freshwater systems;
- g) Improved Infrastructure for Blue Economy Resources;
- h) Improved human and institutional capacity;
- i) Enabling environment for Blue Economy coordination;
- j) Enabling environment for fisheries and aquaculture activities;
- k) Increased sustainable investment in Blue Economy;
- l) Compliance and regulation of freshwater biodiversity systems; and,
- m) Strengthening environmental governance.

3.2.3 PROPOSED MANAGEMENT STRATEGIES FOR CONSERVATION OF AQUATIC BIODIVERSITY

Key Result area	Strategic Objectives	Priority Actions	Outcomes/Deliverable	Targets
Enhanced environmental sustainability	Sustainable fisheries and aquaculture development	<ul style="list-style-type: none"> a) Habitat and ecosystem restoration b) Conservation of fisheries and aquaculture resources c) Strengthened Monitoring Control and Surveillance (MCS) to control IUU and other maritime crimes d) Management of fisheries and aquaculture resources e) Promotion of waste reduction initiatives in fisheries and aquaculture value chain f) Development and implementation of certification schemes for trade in aquatic species, g) Coordinated environmental research and governance 	<p>Sustained fisheries and aquaculture with improved benefits to communities</p> <p>Improved environmental conditions and biodiversity indices</p>	<p>At least 50% established partnership practicing good environmental governance.</p> <p>At least 100% of point sources of pollution in the lake's catchment releasing effluents within acceptable limits.</p> <p>At least 50% of the lake catchment land area under improved land use and management practices</p> <p>At least 5 critical species with certified schemes and streamlined trade</p> <p>Two spatial plans</p>
	Sustainable mining and mineral processing	<ul style="list-style-type: none"> a) Control of mining effluents b) Management of heavy metals discharges and acid mine drainage c) Rehabilitation plans for mined sites/quarries d) Management of mine tailings e) Control and management of sand, sediment and gravel mining in the Lake and Rivers 	Sustained mining through harmonized mining practices and relevant mining Acts and laws reviewed to manage artisanal mining	<p>At least 4 of relevant Laws/Regulations reviewed to control artisanal mining.</p> <p>At least 80% of mining activities in the catchment under controlled management.</p>
	Disaster risk reduction and management	<ul style="list-style-type: none"> a) Development of disaster risk management plan b) Hazard risk mapping c) Incident management d) Prompt management of oil spill emergencies, e) Develop and maintain high level preparedness, Environmental remediation and rehabilitation) 	<p>Risks in fishing, mining and other resource uses identified and mapped.</p> <p>Disaster management plans developed and implemented.</p>	At least 5 risk areas identified and disasters plans mapped and managed.

Key Result area	Strategic Objectives	Priority Actions	Outcomes/Deliverable	Targets
	Waste pollution control and management	a) Enforcement of regulations on waste management b) Establishment of proper waste management infrastructure, especially for domestic, industrial and transit waste c) Put in place measures to address plastic waste management d) Continuous monitoring and compliance e) Continuous stakeholder engagements	Waste pollution managed and controlled through: - waste management plans developed in accordance to sector specific areas Waste management plans implemented Stakeholder partnership on waste management established.	At least 70 % of waste in the catchment managed and controlled. Initiatives to reduce waste flow to the Lake. At least 10 Systems and methods for enhanced and coordinated stakeholder partnership on waste control and management.
	Conservation of aquatic wildlife habitats and corridors	a) Identification and mapping of wildlife corridors b) Regular monitoring and data collection on the keystone species c) Development and implementation of a co-management plan for free-ranging wildlife d) Community engagements and participations in dealing with human-wildlife conflicts cases e) Promotion of the conservation of riparian and wetland areas	Wildlife corridors Mapped and identified <ul style="list-style-type: none"> • Key stone species monitored and data collected • Free ranging wildlife management plan developed and implemented • Communities engaged and sensitized on handling/dealing with human-wildlife conflicts • Conservation of Riparian and wetland areas promoted 	At least 10 wildlife corridors identified and mapped At least 60% of key stone species monitored and data collected At least 2 free ranging wildlife management plans developed and implemented At least 40% of communities engaged and sensitized on handling/dealing with human-wildlife conflicts At least 10 riparian wetlands conserved
	Sustainable tourism initiatives within the freshwater systems	a) Development of tourism carrying capacity b) Mapping of emerging tourist sites; c) Promotion of non-consumptive utilization of freshwater resources such as recreational fisheries and parks	<ul style="list-style-type: none"> • Tourism carrying capacity developed • Emerging tourist sites mapped • non-consumptive utilization of freshwater resources such as recreational fisheries and parks promoted 	At least 30% of carrying capacity of tourism potential developed At least 50 % of the existing recreational areas mapped

Key Result area	Strategic Objectives	Priority Actions	Outcomes/Deliverable	Targets
Infrastructural and human capacity development	Improved Infrastructure for Blue Economy resources utilization	<ul style="list-style-type: none"> a) Development of access roads, jetties, ports and landing sites b) Designation of paths, navigation routes and landing sites of boats and ship c) Promote climate-smart ship-building and repairs initiatives d) Controlled Blue Economy infrastructure development e) Provision of disaster, hazards and safety infrastructure, f) Development of alternative technologies for artisanal gold-mercury free processing 	<ul style="list-style-type: none"> • Established infrastructure to support Blue Economy • Blue Economy utilization developed harmonized and coordinated. • Climate smart interventions promoted • Alternative sustainable artisanal mining and processing technologies developed • disaster, hazards and safety infrastructure developed 	<p>Five Infrastructural needs assessment studies in Blue Economy MDAS</p> <p>At least 10 key infrastructures established in 5 Blue Economy MDAS</p> <p>At least 20% increase in investments in the Blue Economy sector for biodiversity conservation</p>
	Improved human and institutional capacity	<ul style="list-style-type: none"> a) Undertake training and capacity needs assessment b) Building capacity for Blue Economy resource users c) Training on best management practices (BMPs) for Blue Economy resource users d) Continuous professional development e) Development of information education and communication (IEC) materials (e.g., manuals, protocols, modules and guidelines etc.), f) Support and enhancement of institutional capacity 	<ul style="list-style-type: none"> • Enhanced and improved human and institutional capacity in the Blue Economy as regards aquatic biodiversity conservation 	<p>At least 50 technical teams equipped with technical skills developed</p> <p>At least 500 communities members sensitized in good biodiversity conservation and environmental protection practices</p> <p>At least 200 communities equipped with equipment/ tools/material to support biodiversity conservation and environmental No. of training materials developed</p> <p>At least 5 best management practices (BMPs) and innovations developed</p> <p>Training needs assessments reports undertaken in at least 10 MDAs</p>

Key Result area	Strategic Objectives	Priority Actions	Outcomes/Deliverable	Targets
Enabling environment for freshwater biodiversity conservation	Enabling environment for Blue Economy coordination	<ul style="list-style-type: none"> a) Revision and strengthening of the National Blue Economy implementation platform b) Creation of the linkage and coordination with East African Community to share plans and experiences c) Develop data sharing and protocols to boost blue growth, d) Organize International and Regional comparative learning and exchange visits 	Coordinated Blue Economy engagements. Established platforms for the management of the Blue Economy.	<p>At least 3 types of ecological Integrity of Ecosystems improved in MDAs.</p> <p>At least 50 freshwater biodiversity ecosystems sites conserved sustainably.</p>
	Enabling environment for fisheries and aquaculture activities	<ul style="list-style-type: none"> a) Provision of adequate and relevant extension services. b) Participatory action-oriented research and result dissemination and sharing c) Strengthening data collection and information management for decision making- d) Resource mobilization to support biodiversity conservation 	Increased investments in both research and development of the Blue Economy.	<p>Provision of adequate and relevant extension services in 10 MDAs.</p> <p>At least participatory action-oriented research conducted in 3 research institutions and result dissemination and shared to 100 communities</p> <p>Strengthened data collection and information for management decision making in 10 MDAs</p> <p>Resource mobilized to support biodiversity conservation in 10 MDAs</p>
	Increased sustainable investment in Blue Economy	<ul style="list-style-type: none"> a) Subsidizing production cost of Blue Economy inputs b) Formation of responsible Blue Economy cooperatives and Small Medium Enterprises (SMEs) c) Promotion of access to affordable credit through functional cooperatives d) Establishment of aggregation systems - linking producers to market opportunities e) Establishment of facility sharing arrangements e.g., cooling and collection. f) Enhancement of corporate social responsibility/investment (CSR/I) in Blue Economy initiatives 	Increase investments in the Blue Economy for improved livelihoods.	<p>Subsidized production cost of Blue Economy inputs in 4 critical MDAs</p> <p>At least 50% of the Blue Economy sectors with cooperatives and Small Medium Enterprises (SMEs)</p> <p>At least 40% of the production sectors accessing affordable credit through functional cooperatives</p> <p>At least 100 communities with established aggregation systems - linking producers to market opportunities</p> <p>At least 150 communities having cooling and collection centers</p> <p>Enhanced corporate social responsibility/investment (CSR/I) in 10 Blue Economy MDAs</p>

Key Result area	Strategic Objectives	Priority Actions	Outcomes/Deliverable	Targets
	Compliance and regulation of freshwater biodiversity systems	<ul style="list-style-type: none"> a) Strengthen Environmental licensing for new development interventions/ installations (e.g., cost of EIA, EA, and licensing) b) Development and establishment of navigation compliance mechanisms c) Creating Environmental Management Plan for regular environmental monitoring, impact identification and mitigation d) Commitment to ratify and implement the Minamata Convention on reduction/ elimination of mercury use in artisanal gold mining e) Management of water quality for environmental integrity f) Setting up an appropriate waste management and pollution prevention strategy g) Occupational health, hygiene and safety policy, h) Pre-feasibility and feasibility studies on Environmental aspect 	Compliance and Regulation of freshwater biodiversity systems strengthened	Strengthened initiatives on compliance and regulation of freshwater biodiversity systems in 10 MDAs
	Strengthening environmental governance	<ul style="list-style-type: none"> a) Harmonization of Policies, Regulations and legislations at both National and local levels b) Domestication and operationalization of International commitments c) Enforcement of International commitments d) Regional platforms for participatory engagements, e) Lobbying and advocacy 	<p>Enhanced and well-coordinated environmental governance.</p> <p>Harmonized strategies developed.</p>	<p>Harmonized policies, regulations and legislations at both National and local levels in 10 MDAs</p> <p>International commitments domesticated and operationalized in 10 MDAs</p> <p>Enforcement of International commitments in 10 MDAs</p> <p>Regional platforms for participatory engagements, Lobbying and advocacy in 10 MDAs</p>

4.0 IMPLEMENTATION AND COORDINATION FRAMEWORK

This section illustrates the proposed institutional and Regulatory Framework including capacity needs within the implementing institutions. The financial resources to implement the actions and risk analysis are required but will be detailed later.

The second step is political buy in that is critical to the implementation of the relevant National Instruments for aquatic biodiversity conservation and environmental management. Capacity building will be needed to strength institutions and participation in freshwater management strategies for biodiversity conservation instituting management Instruments. Institutional strengthening may include; development and implementation of educational and training in basin-based prioritized programs and actions. Some of the training programs may include; environmental sampling, monitoring and management procedures, climate change modelling, introduction of relevant data collection tools and technologies, Policy formulation, among others by identified specialized AU Centers of Excellence (CoE) or other well-resourced institutions.

Participation may involve engaging all stakeholders, starting at the Regional, to National (focal institutions) subnational, basin level and finally to local communities, to manage and protect freshwater ecosystems. In addition, there would be a need to encourage a Regional approach towards capacity-building, starting with existing partnerships and creating new ones as deemed appropriate; ensuring effective engage of private sector and other stakeholder groups involved in aquatic biodiversity conservation. In effect good communication and networking among National and Regional institutions.

A third consideration in building capacity for freshwater management strategy for biodiversity conservation is to institute management Instruments such as monitoring programmes, financial incentives (through programs like carbon sequestration) and measures to protect and restore ecosystems tool. Data is important in establishing trends in climate change, biodiversity water quality, etc. The African Union through funding agencies would have to equip National institutions, Regional bodies, working together with the AU Centres of Excellence with relevant scientific tools and monitoring equipment to facilitate long term joint aquatic environmental data collection. Data collection could be enhanced further using remote sensing and geographical information systems. An African institution with relevant capacity could be identified and given additional support to obtain data at the Continental level and create databases for easy access by relevant National and Regional institutions.

The following the key stakeholder MDAs in the Lake Victoria basin and EAC that have mandate on environmental management and aquatic biodiversity conservation, including fisheries, aquaculture, environment, water management and transport, coastal tourism development. The following were identified as key MDAs involved in biodiversity conservation: Ministry of Mining Blue Economy and Fisheries, Ministry of Environment, Climate Change and Forestry, Ministry of Tourism, Wildlife and Heritage, Ministry of Water, Sanitation and Irrigation, Ministry of Energy and Petroleum, State Department for Environment and Climate Change, State Department for Blue Economy and Fisheries, State Department for Wildlife, State Department for Tourism, State Department for Water and Irrigation, State Department for Mining, State Department for Petroleum and Oil, National Environmental Management Authority, Kenya Water

Towers Agency, Kenya Wildlife Service, Kenya Fisheries Service, Kenya Forest Service, Kenya Coast Guard Service, Water Resource Authority, Kenya Marine and Fisheries Research Institute, Lake Basin Development Authority, Water Resource Authority and Kenya Marine and Fisheries Research Institute, Lake Basin Development Authority and Kenya Maritime Authority.

The role of Government, private sector and non-state actor and Regional bodies in biodiversity conservation and environmental protection is as in Table below:

SN	Role of Government (MDAs)	Role of Private sector	Non-state actors	Regional bodies
1	Manage biodiversity, conduct research and long-term monitoring initiatives in transboundary Lakes	Supporting management mandates	Promote International relations	Strengthen monitoring, data collection and information management on aquatic resources
2	Mainstream biodiversity into all levels of education and promote Lake biodiversity related exhibitions	Promote biodiversity related exhibitions	Promote participatory fishery management	Mobilizing resources for conservation and management of transboundary Lakes
3	Institutionalize and develop methodology and tools for economic valuation of lakes biodiversity and payment for ecosystem services	Promote sustainable aquaculture technologies	Promote eco-friendly production and consumption methods	Assess and control land and sea-based sources of pollution
4	Sensitize private sector to pay for Lake biodiversity and other ecosystem services	Strengthen measures against illegal fishing	Assess and control land and sea-based sources of pollution	Promote and implement monitoring, conservation and recovery
5	Strengthen the enforcement of biodiversity related legislation	Promote eco-friendly production and consumption methods	Promote and implement monitoring, conservation and recovery	Promote programmes for endangered and threatened species
6	Strengthen measures against illegal fishing	Promote control pollution in aquatic and terrestrial ecosystems	Promote the establishment of National Red data Book (NRB) for flora and fauna and make it accessible to users	Promote use of traditional knowledge that enhance biodiversity conservation
7	Review and implement appropriate Policies, strategies and plans including Invasive Alien Species (IAS)	Conduct inventory of IAS	Promote programmes for endangered and threatened species	Conduct inventory of IAS
8	Review and enforce legislation to conserve aquatic resources	Assess and control land and sea-based sources of pollution	Promote use of traditional knowledge that enhance biodiversity conservation	Promote Regional cooperation on management of trans-boundary water resources
9	Strengthen institutional and human capacity and awareness in management of aquatic resources	Promote and implement monitoring, conservation and recovery	Strengthen and scale-up Community-Based Natural Resources Management best practices	Promote Regional cooperation on management of institutional and human capacity and awareness in management of trans-boundary aquatic resources

SN	Role of Government (MDAs)	Role of Private sector	Non-state actors	Regional bodies
10	Strengthen monitoring, data collection and information management on aquatic resources	Contribute in the establishment of a National Red data Book (NRB) for flora and fauna and make it accessible to users	Promote and support effective land use planning and freshwater spatial planning Strengthen preventive measures against wild fires	Promote Regional central point for data collection and information management on aquatic resources
11	Promote research and dissemination of research findings on freshwater aquatic resources	Promote programmes for endangered and threatened species	Assisting in building positive political and societal initiatives in biodiversity conservation and foster innovative and experimental governance arrangements.	Coordinate and promote centrally dissemination of research findings on freshwater aquatic resources
12	Promote sustainable agricultural technologies and practices	Promote use of traditional knowledge that enhance biodiversity conservation	Monitoring and reporting of status of biodiversity in freshwater bodies	Promote Regional harmonised sustainable agricultural technologies and practices
13	Promote the use of appropriate liquid waste Management technologies	Strengthen and scale-up Community-Based Natural Resources Management best practices	Promote biodiversity related exhibitions	Promote best Regional frameworks and guidelines for liquid waste Management technologies
14	Conduct inventory of IAS	Promote and support effective land use planning and freshwater spatial planning Strengthen preventive measures against wild fires	Promote and strengthen information sharing and dissemination platforms	Integration of Regional inventory and related frameworks for conducting unified and harmonised process related to IAS
15	Strengthen institutional and human capacity on issues related to pollution management	Promote and encourage the effective stakeholder participation in the stewardship of the biodiversity.	Engagement of communities and providing areas for extension and liaison	Championing harmonised capacity development in pollution management in trans-boundary aquatic resources
16	Enhance protection and conservation of water catchment areas	Support implementation of protection and conservation initiatives through championing of good resource utilization strategies	Provide community involvement and participation in protection and conservation of water catchment areas	Develop Regional procedures, protocols and guidelines on conservation and trade on aquatic species
17	Assess and control land-based sources of pollution	Support sensitization and mobilization of communities on environmental sustainability	Promote environmental justice through participation in community mobilization and sensitization interventions	Promote Regional interventions on aquatic biodiversity conservation
18	Establish a National Red data Book (NRB) for flora and fauna and make it accessible to users	Support and invest in opportunities and create conducive environment for establishment and development of NRB	Involvement and participation in data point sources and providing red data for the National Red data book	Coordinate the collation and gathering of trans-boundary data book and other related information for living aquatic resources

The Private sectors are also key players in management initiatives and it is important that their utilization of any form of resources are sustainably used. NGOs, civil societies and sympathizers need to ensure that the states implement available Policies and Agreements i.e. they can be 'watch dogs in ensuring that communities are not exploited. Resource management needs to be devolved such that, the communities involved do not just participate but also benefit from all initiatives. There are two main Regional bodies relevant to biodiversity and environmental management namely LVFO and LVBC and coordinated by EAC Secretariat.

Most of the transboundary freshwater basin organizations, in the various countries serve as focal points for the Regional organizations and managed the water resource at the National level. Activities undertaken by the organizations in relation to biodiversity conservation include fisheries Policy and management, coordination, development and management of projects at the sub-basin level, fish stock assessments, developing fisheries and aquaculture strategies, water use rights and coordination of activities at the transboundary level.

Others are implementation of programs and project activities in accordance with provisions of the Conventions and perform functions determined by the Management Committee and Conference of Ministers. They also coordinate the management and development of fisheries and aquaculture control, promote sustainable utilization of aquatic resources, extension of fishing techniques and technologies while ensuring transboundary Agreements are developed and followed to guide sustainable utilization of resources between and among neighboring Countries.

5.0 IMPLEMENTATION MONITORING AND EVALUATION

5.1 MONITORING AND EVALUATION INSTITUTIONAL FRAMEWORK

Various National Ministries, Departments, Agencies and counties will adopt harmonised institutional M&E reporting framework using the current existing institutional reporting model as provided for by the State Department for Economic Planning. The framework will be used to enhance understanding and reporting of the aquatic biodiversity conservation programme goals and objectives to be achieved by each and every MDAs. It will institutionally define relationships between factors key to implementation and promotes and take into consideration internal and external challenges that could affect the aquatic biodiversity conservation implementation interventions and success. The framework basically works through pragmatic strategies, objectives and planned activities and whether they are the most appropriate ones to implement by each MDAs as planned.

In order to enhance M&E institutional framework, MDAs will identify program goals and objectives; define indicators, define data collection methods and timelines, identify M&E roles and responsibilities, create an analysis plan and reporting templates and plan for dissemination and r National and Regional reporting. The framework will allow MDAs to do process monitoring, beneficiary monitoring, compliance monitoring, financial monitoring, result monitoring, initiation and planning. Coordination of these will be done by the state department responsible for development, management and conservation of aquatic biodiversity resources including resources fisheries and aquaculture resources.

The line MDAs will have M&E reporting framework that allows gathering information from the grassroots to National central M&E unit through accountable reporting channels from respective institutions. Each institution will establish desk office for reporting purposes. The information gathered will then be shared structurally to the National desk office domiciled within the state department for Blue Economy and fisheries.

5.2 MONITORING AND EVALUATION REPORTING

Reporting is an important part of Monitoring and evaluation of the progress of a programme and or a project. It will provide the link between data collected and analysis on the one hand and the data use on the other. The report will present information to different stakeholders namely the MDAs, local/county Government, National Government, and Regional bodies. This Policy guideline will be disseminated in a format that is easy to use (Popular version). M&E reporting will use tools such as key performance indicators (KPIs), MDAs dash boards, check lists and M&E plans. Both Aquatic biodiversity conservation quantitative and qualitative data will be reported. The type of tool used for gathering information and reporting will depend on type of information needed, resources available and specific monitoring goals and objectives.

The M&E reporting will be done in real time, daily, weekly, monthly, quarterly, bi-annually, and annually depending on the level of the institution doing and getting the report as planned.

M&E reporting will basically involve choosing the key performance indicators (KPIs), the KPIs will also be defined, measurement of the baselines and setting the targets, identification, and allocation of responsibilities and where the results will be reported and having a well-structured template for filling the information being reported.

The final M&E reports will be presented in a National and Regional forum for validation and adoption. The Regional reporting and information sharing will follow the LVFO M&E reporting format.

6.0 CONCLUSION

Although the process to have this Policy Guideline was participatory, the solution to conservation requires dedicated research, science, technology innovation and data for making right Policy decisions. There is need to review, update and harmonize Policies and Laws to suit the current situation within the Region to speak to each other. National Border Stakeholder consultation are needed to streamline biodiversity conservation and environmental management measures. All MDAs and non-state actors need to establish platforms Nationally and Regionally for dissemination and understanding of biodiversity conservation and environment management. Global and National Instruments relevant to aquatic biodiversity conservation should be domesticated and popularized so that they are understood by the resource users.

7.0 RECOMMENDATIONS

- a. There is need to come up with a Regional Spatial Plan for Lake Victoria as a result of increased population characterized by increased uncoordinated/unplanned development within the catchment and basin around Lake Victoria, and the effects of unprecedented climate change variability and its effect on the livelihood of humanity;
- b. There is need to benchmark the good Policy and practice on marine litter / plastic and for adoption in the strategies for biodiversity conservation and environmental management;
- c. The solution to conservation lies with research, science and technology innovation which calls for processing large volumes of data and information and the need to have a depository of data and information improving capacities for research;
- d. The need to review, update and harmonize Policies and Laws to the current situation within the Region to speak to each other for better biodiversity conservation and environmental management;
- e. The need to work together with all MDAs and non-state actors in established platforms Nationally and Regionally for dissemination and understanding biodiversity conservation and environmental management;
- f. The need to domesticate Global Instruments relevant to aquatic biodiversity conservation so that they are understood by the resource users involved in biodiversity conservation and environmental management; and,
- g. The need to involve Rwanda and Burundi considering the Lake Victoria extends to those Countries and biodiversity conservation and environmental management is a transboundary matter.

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