BLUE ECONOMY IN KENYA

A POLICY BOOK

Kenya Devolution Program

2

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LIST OF ABBREVIATIONS AND ACRONYMS

Act!	Act Change Transform
AIMS	African Integrated Maritime Strategy
AU	Africa Union
BMU	Beach Management Unit
CIDP	County Integrated Development Plan
COG	Council of County Governors
COK	Constitution of Kenya, 2010
COP	Conference of Parties
CRA	Commission on Revenue Allocation
DFID	Department for International Development
DRC	Democratic Republic of Congo
EAC	East African Community
EARH	East Africa Research Hub
IEA	International Energy Agency
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agriculture Organization
FCDO	Foreign, Commonwealth and Development Office
FCO	Foreign and Commonwealth Office
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GVA	Global Value Added
ICZM	Integrated Coastal Zone Management
IGAD	Intergovernmental Authority on Development
IGRTC	Intergovernmental Relations Technical Committee
IMO	International Maritime Organization
IMTA	Integrated Multi-Trophic Aquaculture
IRENA	International Renewable Energy Agency
IUU	Illegal, Unreported and Unregulated
IWRM	Integrated Water Resources Management
JKP	Jumuiya ya Kaunti za Pwani
KBEST	Kenya Blue Economy Skills Training
KMFRI	Kenya Marine and Fisheries Research Institute
KMA	Kenya Maritime Authority
KADP	Kenya Accountable Devolution Programme
KNBS	Kenya National Bureau of Statistics
LREB	Lake Region Economic Bloc
MDA	Ministries, Departments and Agencies
MEL	Monitoring, Evaluation and Learning
MSE	Medium Small Enterprises
MSME	Micro Small Medium Enterprise
Summit	National and County Government Coordinating Summit
NGO	Non-Governmental Organization
OECD	Organization for Economic Cooperation and Development

OPV	Offshore Patrol Vessel
P2P	Peer to Peer
PFRS	Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa
PSMA	Port State Measures Agreement
PwC	Price Waterhouse Coopers
SBEC	Global Sustainable Blue Economy Conference
SDG	Sustainable Development Goal
TVET	Technical and Vocational Education and Training
UN	United Nations
UNEA	United Nations Environment Assembly
UNECA	United Nations Economic Commission for Africa
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
UNESCO	UN Educational, Scientific and Cultural Organization
USAID/AHADI Harmonized	United States Agency for International Development/Agile and
	Assistance to Devolved Institutions
VMS	Vessel Monitoring System
WIO	Western Indian Ocean

CHAPTER ONE: INTRODUCTION

1.1 Background

Blue Economy denotes the sustainable utilisation and administration of oceanic resources to foster economic advancement while ensuring the preservation and health of marine ecosystems. This approach encompasses diverse sectors like fisheries, aquaculture, maritime transport, renewable energy, and tourism, with a central focus on striking a balance between economic advantages and environmental preservation. In the African context, blue economy encompasses sustainable use of aquatic and marine environments, including oceans, seas, coastlines, lakes, rivers, and subterranean water bodies. In Kenya, Blue Economy refers to a range of productive sectors, namely fisheries and aquaculture, maritime transport and services, tourism and recreation, desalination, sea-mineral extraction and processing, sustainable shipping ports, shipbuilding and repair, renewable energy, offshore oil and gas, biotechnology and bio-prospecting, blue data, education and training, science, research, technology and innovation, maritime safety and security (conservation and protection of blue ecosystems) and defence. This wide and multi-sectoral nature of the Blue Economy alludes to its complex nature, calling for a multi-sectoral support approach in its management and development. Hence, there is emphasis on cooperation and collaboration of many players at different levels, including, but not limited to ministries, departments, agencies (MDAs), county governments, the private sector, development partners, and the civil society.

At the core of the Blue Economy concept is the de-coupling of socio-economic development from environmental degradation. To achieve this, the Blue Economy approach is founded upon the assessment and incorporation of the real value of the natural (blue) capital into all aspects of economic activity (conceptualization, planning, infrastructure development, trade, travel, renewable resource exploitation, and energy production/consumption). We have attempted to introduce the definition and scope addressed in a variety of organizations that are involved in promoting Blue Economy. The United Nations Economic Commission for Africa (UNECA) Africa's Blue Economy published the "The Blue Economy Policy Handbook" in 2016, with the aim of raising the level of understanding of Blue Economy concept by all relevant stakeholders, including African island, coastal, and landlocked states in pursuit of structural transformation, sustainable economic growth, and enduring societal progress. The Blue Economy Concept in the African context covers both aquatic and marine spaces, including oceans, seas, coasts, lakes, rivers, and underground water. It encompasses a range of productive sectors, including fisheries, aquaculture, tourism, transport, shipbuilding, energy, bio-prospecting, and underwater mining and related activities. **Table 1** highlights some key Blue Economy services and sectors (blue sectors).

Table 1: Blue Economy Sectors

No.	Ecosystem Services	Blue Economy Sectors (Blue Sectors)
1.	Harvesting of living aquatic resources (seafood, plant marine organisms, and marine biotechnological products)	o Fishing (inland, coastal, and deep seas) o Aquaculture o Mari-culture o Pharmaceuticals, chemicals, cosmetics, o Genetic research

No.	Ecosystem Services	Blue Economy Sectors (Blue Sectors)
2.	Extraction of non-living resources and generation of new energy resources	o Deep-sea and seabed mining o Offshore oil and gas o Renewable energy o Marine salt harvesting o Coastal mining of sand, gravel, and other o Construction materials
3.	Commerce and trade in and around the ocean, lakes and rivers	o Maritime transport and services o Port infrastructure o Shipbuilding and repairs o River transport o Tourism and recreation
4.	Protection and conservation	o Coastal protection o Marine ecosystem protection o Water resource and catchment protection o Wetland protection o Spring protection
5.	Cultural and religious values	o Cultural and religious practices
6.	Knowledge and information	o Biophysical, socio-economic, and political research

Source: Adopted from Africa's Blue Economy: A policy handbook, UNECA[1]

Kenya is on a global platform to champion the Blue Economy interventions that lead to inclusive and sustainable growth. In 2018, Kenya hosted the Global Sustainable Blue Economy Conference (SBEC 2018) alongside Japan and Canada. The conference discussion was organised along thematic areas of accelerated economic growth, job creation and poverty alleviation, sustainability, climate change, and controlling pollution. SBEC 2018 resulted in the Nairobi Statement of Intent on Advancing a Sustainable Blue Economy, which contains a number of key political messages, including the need to promote action-oriented global strategies that place people and the Blue Economy resources at the centre of sustainable development, promote collaboration for sustainable partnerships and projects in the various sectors of the Blue Economy; strengthen science and research to generate and disseminate evidence-based knowledge and information as well as to inform policy and decision making and promote synergies within and between different levels of governments.

The national and county governments have since given the Blue Economy emphasis on the strategic priorities and as a driver in economic development, as evidenced in the Medium-Term Plan and County Integrated Development Plans (CIDPs) respectively. Further, the two levels of government and county governments have collaborated with the private sector and community and convened conferences that provide a platform to discuss topical issues in the Blue Economy and forge synergies in implementing the interventions. These forums include the Lake Region Economic Bloc (LREB) summits and Jumuiya ya Kaunti za Pwani (JKP) annual conferences themed on Blue Economy and Trade, given the central role of inland and ocean water body-related economic activities in the regions. This has culminated in increased awareness of the Blue Economy concept in those regions, as well as the government, private sector, community, and development partners' investment and collaborations aimed at sustainable and inclusive economic growth.

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[1] UNECA. (2021). *African Blue Economy policy handbook*. United Nations Economic Commission for Africa. https://repository.uneca.org/handle/10855/42796

Deliberate efforts have been made to operationalize legislation, policies, and institutions that support the Blue Economy. In order to operationalize the commitments from the various forums, the Government of Kenya, through Executive Order No. 1/2022 of 12th October 2022 on "Organisation of the Government of the Republic of Kenya," strengthened Blue Economy by establishing the State Department for the Blue Economy and Fisheries, among other functions, to coordinate the development of national oceans and Blue Economy strategies, policy, legal, regulatory, and overall institutional frameworks. This establishment was further cascaded to county governments with the current administrations establishing departments specifically for the Blue Economy. The fourth Medium Term Plan 2023-2027 has outlined the Blue Economy as one of the economic drivers to spur growth. The 3rd generation CIDPs outlined critical role of Blue Economy in facilitating economic growth.

1.2 Defining Blue Economy

The term "Blue Economy" is used to describe an ocean-based industry. The term "blue" is though often interpreted simply as the blue of the ocean. However, there are other terms, such as "ocean economy" or "marine economy," that have also been used to describe the ocean-based industry[2]. In 1994, a Belgian economist, Gunter Pauli coined the term, "Blue Economy" to mean "any economic activity that uses the ocean as an input or output" following a request from the United Nations which was at the time preparing for the third session of Conference of the Parties (COP3) which was to be held in Kyoto, Japan in 1997.

The idea of the "Blue Economy" was embraced at the Rio+20 United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil in June 2012. This conference addressed two key themes namely; the further development and refinement of the Institutional Framework for Sustainable Development, and the advancement of the "green economy" concept. The outcome of the meeting reaffirmed poverty eradication as its key challenge and focused on the green economy as a tool to achieve both poverty eradication and sustainable development[3]. The World Bank defined Blue Economy as "employment resulting from economic growth, improved livelihoods and healthy marine ecosystems through the sustainable use of marine resources" and defined the concept as promoting "economic growth, social inclusion, and the preservation of improved livelihoods as well as the environmental sustainability of marine and coastal areas."[4]

While green economy focuses on land-based natural resources, such as energy, agriculture, and forestry with the goal of ensuring that they are abundant and meet the needs of the population, Blue Economy focuses on ocean resources, such as fisheries, marine, and other coastal resources with the goal of caring for the ocean and its inhabitants. Tanaka, H. (2023)[5] posits that Blue

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[2]Tanaka, H. (2023). Definition and Evaluation Methodology of the Blue Economy: Focusing on the Difference from the Ocean/Marine Economy. Ocean Policy Research Institute. Sakanawa Peace Foundation. OPRI Perspectives No.26 (2023).
[3] Lesperance, J. (2016). The Blue Economy: Origin and Concept. 2016 Issue of Connections
[4] Tanaka, H. (2023). Definition and Evaluation Methodology of the Blue Economy: Focusing on the Difference from the Ocean/Marine Economy. Ocean Policy Research Institute. Sakanawa Peace Foundation. OPRI Perspectives No.26 (2023).
[5] Ibid.

Economy is a more oceanic concept of abundance implying that the ocean contains an unknown value to humanity that has yet to be measured, and the importance of the value that preservation of the marine environment will bring to humanity in the future. As green economy aims at reducing carbon emissions and pollution for preservation of biodiversity and ecosystems, sustainable Blue Economy on the other hand aims to restore, protect, and maintain diverse ecosystem. The Blue Economy, is thus an environmentally conscious economic model that aims for sustainable development and growth by focusing the green economy on the ocean[6].

The term "Blue Economy" has since been gaining traction in the world especially, among the various international agencies, the UN, EU, OECD and the World Bank, which have increasingly used it to explain the connection between sustainability, economics and the ocean. The Blue Economy initiative covers both aquatic and marine spaces including oceans, seas, coasts, lakes, rivers, and underground water. It encompasses a range of productive sectors, including fisheries, aquaculture, tourism, marine litter management, transport, shipbuilding, energy, bioprospecting and underwater mining and related activities largely advocated for by the small island economies.

> *"Ours is a blue planet because the oceans and seas that cover almost three quarters of the Earth's surface reflect blue light into space. That, in itself, shows the significance of the marine environment. It is the largest ecological area, or biome, on Earth. It is highly structured, diverse, and complex. It underpins the prosperity and wellbeing of billions of human beings. It is also very fragile,"*
> Tibor Navracsics, EU Commissioner for Education, Culture, Youth and Sport[7].

The 14th goal of Sustainable Development Goals (SDG) labelled, "Life Below Water" has categorically emphasized on conservation and sustainable use of the oceans, seas and marine resources for sustainable development, and demands international cooperation for the oceans to get back in balance[8]. The importance of the Blue Economy has transcended the reality of Small Island Developing States which initially advocated for it in contrast to green economy concept which they felt favored hinterland economies dominated by big countries. It has become a formidable agenda of global interest with debates around the role of the oceans and coastal environment for sustainable development being intensified by academics, policymakers, civil society, and non-state actors such as the Non-Governmental Organizations, as well as the private sector and other stakeholders[9]. The whole concept has further expanded to include other water bodies like lakes and riverine economies found in the hinterland[10].

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[6] Ibid.
[7] European Commission (2019). The EU Blue Economy Report. 2019. Publications Office of the European Union. Luxembourg.
[8] Blue Economy: Oceans as the next great economic frontier. UN Regional Information Centre for Western Europe. www.unric.org
[9] Voyer, M., Quirk, G., Farmery, A. K., Kajlich, L., & Warner, R. (2021). Launching a Blue Economy: crucial first steps in designing a contextually sensitive and coherent approach. Journal of Environmental Policy & Planning, 23(3), 345-362. https://doi.org/10.1080/1523908X.2020.1856054
[10] FCDO (2024). The Baseline Survey of Blue Economy of Kenya Inland Waters. The Kenya Devolution Project, Nairobi, Kenya

The East Asian Seas Congress (2012) defined the Blue Economy as: … a sustainable ocean-based economic model that is largely dependent on coastal and marine ecosystems and resources, but one that employs environmentally-sound and innovative infrastructure, technologies and practices, including institutional and financing arrangements, for meeting the goals of: (a) sustainable and inclusive development; (b) protecting the coasts and oceans, and reducing environmental risks and ecological scarcities; (c) addressing water, energy and food security; (d) protecting the health, livelihoods and welfare of the people in the coastal zone; and (e) fostering an ecosystem-based climate change mitigation and adaptation measures[11].

The Blue Economy is therefore the promotion of social and economic activities such as economic growth, social inclusion, and improved livelihoods and employment based on the environmental sustainability of marine and water body ecosystems. Put the other way, the core of the concept of Blue Economy lies in the decoupling of marine environmental degradation from socioeconomic growth[12]. In Kenya, it includes maritime transport, fishing, aquaculture, tourism, shipbuilding and repair, maritime education and training, marine cargo logistics, maritime law, safety and security, marine salvage, international shipping, transport, energy, bio-prospecting, offshore mining, marine bio technology, blue data, aqua-business, cargo consolidation, marine insurance, bunkering, ship handling, port agency, port related services, water sports, as well as marine and maritime governance sectors.

The Blue Economy in Kenya represents an integrated approach to managing and use of oceanic and inland water resources sustainably. This innovative approach lays emphasize on the importance of balancing ecological integrity with socio-economic development and is designed to enhance the livelihoods of local communities, stimulate comprehensive economic growth and create employment while simultaneously ensuring the health of vital ecosystems. The concept of Blue Economy dates back to the preparatory process for Rio+20 Nations Conference on Sustainable Development (UNCSD)[13] in 2012. Since then, international organizations, mainly World Bank and United Nations, prepared a handbook and guidance on Blue Economy[14] which is being used by the countries committed to promote and implement Blue Economy activities, projects and programmes.

1.3 Global Perspective and Sustainable Development Goals

According to the World Bank, oceans and seas cover more than 72% of the earth's surfaces and provide food, jobs, and recreation for a large portion of the world's population with significant drivers of global GDP[15]. The oceans provide transport for 80% of global trade.[16] The perspective of Blue Economy in the global arena emphasizes its potential to drive sustainable economic growth, social inclusion, and environmental preservation. As indicated previously, Blue Economy encompasses a wide range of activities such as fisheries, marine tourism, renewable energy, and

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[11] https://www.icriforum.org/meeting/east-asian-seas-eas-congress-2012 and quoted in Elbarvina (2016).

[12] Tanaka, H. 2023. Definition and Evaluation Methodology of the Blue Economy: Focusing on the Difference from the Ocean/Marine Economy. OPRI Research Perspectives No. 20 (2023). Ocean Policy Research Institute. Sasakawa Peace Foundation.

[13] United Nations (2012). *The future we want*: Outcome document of the United Nations Conference on Sustainable Development. https://www.uncsd2012.org/

[14] World Bank (2021). *The Blue Economy handbook: A practical guide to sustainable ocean development*. The World Bank. https://doi.org/10.1596/978-1-4648-1787-3

[15] World Bank Report, 2017

[16] United Nations Conference on Trade and Development Report 2012

marine biotechnology. From a global perspective, Blue Economy is envisaged to contribute to the following:

a) **Economic growth:** Where Blue Economy is seen as a major driver of economic growth globally. Blue Economy is estimated to contribute USD 3 trillion annually and is ranked 7th largest economic activity in the world[17].

b) **Sustainability:** Environmental sustainability is at the center of Blue Economy. This mainly involves balancing economic activities with marine ecosystems preservation

c) **Social inclusion:** Blue Economy aims at improving livelihoods and promoting social inclusion by creating jobs and supporting local communities.

d) **Global cooperation:** International collaboration is vital for the sustainable management of oceans and other transboundary aquatic ecosystems such as lakes, rivers, swamps and underground water. This encompasses sharing of knowledge, technology and best practices.

In the scope of the above potential areas of contribution at the global scale, there are two scenarios in which the first is the category of established ocean industries that have for ages defined activities around the coastline nations, and the second being the emerging oceans industries that continue to reshape the potential of the marine resources and ecosystems. **Table 2** presents examples of established and emerging ocean industries.

Table 2: Established and Emerging Ocean Industries

No.	Established Ocean Industries	Emerging Ocean Industries
1.	Seafood	Marine aquaculture
2.	Capture fisheries	Deep and ultra-deep-water oil and gas exploration
3.	Port activities	Off-shore wind energy
4.	Shipping	Ocean renewable energy
5.	Ship building and repairs	Marine and sea bed mining
6.	Seafaring	Maritime safety and surveillance
7.	Stevedoring	Marine biotechnology
8.	Marine coastal tourism	High-tech marine goods and services
9.	Shallow water oil and gas mining	
10.	Off-shore marine manufacturing	
11.	Marine-related construction and fabrication	
12.	Marine business services	
13.	Others	

Source: Organization Economic Cooperation and Development (2016). The Ocean Economy in 2030. OECD publishing, Paris. https://dx.org 10.1787/9789264251724-en

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[17] World Wildlife Fund (2022). *The ocean economy: A report on the contribution of the ocean to the global economy*. https://www.worldwildlife.org/publications/the-ocean-economy

Blue Economy is crucial in attaining the SDGs particularly those directly related to life below water, decent works and economic growth and climate change. **Table 3** highlights the relationship between SDGs and Blue Economy and demonstrates that all the goals (SDGs) have impact on the Blue Economy activities.

Table 3: Relationship between Sustainable Development Goals and Blue Economy

Sustainable Development Goal	Potential Positive of Proper Development of the Blue Economy
SDG 1: Poverty	- Improved livelihoods and employment - Invest in enterprises
SDG 2: Zero hunger	- Enhance sustainable food production - Improved food distribution
SDG 3: Good Health and Well-Being	- Improved water quality - Increased funding to health services - Improved occupational safety of seafarers
SDG 5: Gender Equality	- Increased equal rights to economic resources - Increased participation in decision making
SDG 6: Clean Water and Sanitation	- Increased funding for access to clean water and sanitation - Investments in nature-based water provision services
SDG 7: Affordable and Clean Energy	- Enhanced access to renewable energy - Improved knowledge base to build and maintain infrastructure
SDG 8: Decent Work and Economic Growth	- Job creation - Economic diversification within the coastal resources
SDG 11: Sustainable Cities and Communities	- Improved cycling, harvesting, and use of water - Cities have access to clean renewable energy
SDG 13: Climate Action	- Transition to low-carbon economies - Resilience to uncertain climate future
SDG 14: Life Below Water	- Enhanced health of aquatic and marine ecosystems - Increased stock abundance supporting sustainable fisheries

Sustainable Development Goal	Potential Positive of Proper Development of the Blue Economy
SDG 15: Life on Land	▪ Increased water security ▪ Enhanced sustainable transboundary water sharing
SDG 16: Peace, Justice and Strong Institutions	▪ Promote peaceful and inclusive societies for responsible use of marine resources devoid of conflicts, piracy and pollution ▪ Provide access to justice for all and build effective, accountable and inclusive institutions to support sustainability of marine ecosystems
SDG 17: Partnerships for the Goals	▪ Improved partnerships between public, private, and civil society actors ▪ Strengthened continental cooperation

Source: Adapted from The Ocean Economy: A report for the G20 (2017). Washington DC. Jointly published by the World Bank and United Nations, and Author (2025).

There are a number of international treaties and conventions supporting the sustainability of marine resources and conservation. **Table 4** details some of these treaties, policies and conventions which provide regulatory instruments for the management of resources within the Blue Economy.

Table 4: International Treaties, Policies and Conventions supporting Blue Economy Growth

No.	Treaties, Policies and Conventions	Mandate and Role
1.	United Nations Convention on the Law of the Sea (UNCLOS)[18]	Adopted in 1982, the treaty provides a legal framework for the use and conservation of ocean resources and biodiversity. It establishes rules for the management of maritime spaces, sustainable development of marine industries, and the protection of the marine environment.
2.	Convention on Biological Diversity, 1992 (CBD)[19]	The CBD aims to conserve biological diversity, promote sustainable use of its components, and ensure fair sharing of benefits arising from genetic resources. It recognizes the importance of marine biodiversity and supports initiatives for its sustainable management.
3.	2030 Agenda for Sustainable Development	Adopted by the United Nations in 2015, this agenda includes Goal 14 ("Life below Water"), which aims to conserve and sustainably use the oceans, seas, and marine resources. It emphasizes the need for sustainable fisheries, the protection of marine ecosystems, and the reduction of marine pollution.

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[18] United Nations. (1982). *United Nations Convention on the Law of the Sea*. https://www.un.org/depts/los/convention_agreements/convention_overview_convention.htm
[19] United Nations. *Convention on Biological Diversity*. 1992, https://www.cbd.int/convention/text/

No.	Treaties, Policies and Conventions	Mandate and Role
4.	Paris Agreement[20]	While primarily focused on climate change, the Paris Agreement acknowledges the impacts of climate change on ocean systems. It highlights the need for global efforts to mitigate these impacts, which is crucial for the sustainability of the Blue Economy.
5.	United Nations Fish Stocks Agreement (UNFSA)[21]	The agreement aims to ensure the long-term conservation and sustainable use of straddling and highly migratory fish stocks. It emphasizes cooperation among states to manage fish stocks effectively, which is vital for the Blue Economy.
6.	Convention on Wetlands of International Importance (Ramsar Convention)	The treaty focuses on the conservation and sustainable use of wetlands, which are crucial for biodiversity and play a significant role in the marine ecosystem.
7.	Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing	The treaty aims to combat illegal fishing practices, ensuring that marine resources are used sustainably and legally.
8.	Regional Fisheries Management Organizations	Various treaties establish RFMOs, which coordinate the management of fish stocks in specific regions, promoting sustainable fisheries practices and conservation efforts.
9.	Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona Convention)[22]	The agreement aims to reduce pollution in the Mediterranean Sea and protect its marine environment and coastal areas, aligning with Blue Economy principles.

These treaties and conventions reflect the global commitment to foster a Blue Economy that balances economic growth with the need to protect and preserve oceanic and inland water ecosystems globally.

1.4 Regional Perspectives on the Blue Economy

Africa's approach to Blue Economy aligns with the United Nations Sustainable Development Goals particularly, Goal 14 on life below water which focuses on conservation of oceans and other marine resources. Many African countries perceive Blue Economy as a pathway to attain these goals, and particularly in combating poverty (Goal 1) and ensuring sustainable economic growth (Goal 8). Directly or indirectly most of the sustainable development goals have a link to Blue Economy in Africa.

From an economic perspective, Blue Economy is seen as a catalyst for economic diversification and growth. This can be achieved through investment in sustainable fisheries, aquaculture, maritime

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[20] United Nations Framework Convention on Climate Change. (2015). *Paris Agreement*. https://unfccc.int/sites/default/files/english_paris_agreement.pdf
[21] United Nations. (1995). *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*.
[22] United Nations Environment Programme. (1976). *Convention for the protection of the Mediterranean Sea against pollution*. https://www.unep.org/resources/convention-protection-mediterranean-sea-against-pollution

transport and renewable energy like wind and solar energy[23]. African countries can harness oceans, lakes and rivers' blue resources for economic development. Furthermore, the development of Blue Economy sectors is expected to create jobs and improve livelihoods especially for coastal and riparian communities along inland waters hence alleviating poverty and improving of life.

The perspective on the Blue Economy in Africa therefore, gravitates around the continent's vast ocean, lakes, rivers, swamps and other water bodies that offer huge potential for sustainable development of ocean-based industries and resources. The perspectives are also within the challenges posed by environmental degradation and climate change outcomes. It is estimated that Blue Economy sectors contribute USD 300 billion annually and create close to 50 million jobs in Africa[24]. Geographically, Africa has the longest coastline of any continent in the world, measuring approximately 30,500 kilometers[25]. This extensive coastline is bordered by both the Atlantic and Indian oceans, along with the Mediterranean Sea to the north. Furthermore, Africa has vast inland water (blue) resources from its lakes and rivers boasting of hosting Lake Victoria which is the second largest fresh water lakes in the world as well as River Nile and Congo Rivers. These wide range of water bodies offer the continent a huge potential for harnessing almost all aspects of Blue Economy.

The diverse geography of Africa's coastline includes various landscapes such as sandy beaches, rocky cliffs, estuaries, and mangroves which support a wide range of marine and coastal ecosystems including the lakes and rivers with great scenic value and biodiversity. The long coastline and other inland marine ecosystems are crucial to the economic activities of many African nations particularly, in fisheries, tourism, and trade. Among the major potentials for the African Blue Economy resources are:

(i) **Marine biodiversity:** The continent is home to some of the world's most diverse marine ecosystems including coral reefs, mangroves and fisheries in her lakes and rivers. These diverse ecosystems provide vital resources for food security, livelihoods and economic growth.

(ii) **Fisheries:** The fisheries sector is important to many African coastal and inland communities, providing employment and nutrition. However, overfishing and illegal fishing practices threaten sustainability, making effective management essential for long-term viability and sustainability.

(iii) **Tourism Potential**: The coastal *fauna and flora*, lakes and river ecosystems and biodiversity of the continent offer significant opportunities for ecotourism, game and marine tourism. Sustainable tourism can contribute to local economies while promoting conservation.

Despite the huge potential for Blue Economy in Africa, harnessing its blue resources to create wealth, reduce poverty and enhance environmental conservation, faces a number of challenges namely:

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[23] World Bank. (2017). *The Blue Economy: A Catalyst for Sustainable Development*. Washington, DC: World Bank. Retrieved from World Bank Publications

[24] African Union (2019). *African Union Blue Economy strategy*. https://au.int/en/documents/african-union-blue-economy-strategy

[25] African Union (2019). *Africa's Blue Economy: A policy framework*. https://au.int/en/documents/africas-blue-economy-policy-framework

(i) *Environmental Degradation*: Mainly through pollution, overfishing, coastal degradation, and climate change. These pose significant threats to marine ecosystems. Addressing these challenges requires robust policies and regional cooperation;

(ii) *Incapacity*: Many African countries face challenges in terms of technical expertise, funding, and capacity for managing marine resources sustainably. There is a clear need for investment in research, technology, and skills development to build resilient Blue Economy sectors; and

(iii) *Climate Change vulnerabilities*: Given the vulnerability of blue resources to climate change, Africa's Blue Economy strategies should be designed to deliberately incorporate climate resilience measures, particularly for coastal and inland communities that are most at risk.

Overall, the continent views Blue Economy as a vital component for sustainable development, economic growth, and poverty reduction. By focusing on sustainable management of oceanic as well as inland water marine resources, African nations can work towards a Blue Economy that benefits both people and the planet. Collaborative efforts and strategic investments are essential to overcome challenges and fully realize the potential of the Blue Economy across the continent.

Kenya is actively engaged in regional initiatives in regard to issues of Blue Economy. The engagements are mainly in areas of regional cooperation and partnerships, sustainable fisheries management, and marine protected areas. The other areas of collaboration are in climate change adaptation, investment in marine research, Blue Economy policy framework, and engagement in international forums:

(i) Regional partnerships in Blue Economy is inevitable. Most of the blue resources (oceans, seas, lakes, rivers, underground water and swamps) transcend beyond one nation or country. For instance, in the Lake Victoria region, the lake, some rivers and even swamps are transboundary. Harnessing such shared blue resources require regional or international partnerships. Kenya collaborates in regional initiatives and framework such as the East African Community[26] and the Nile Basin Initiative to develop strategies, programs and policies for management of shared marine resources and addressing transboundary issues The Protocol for Sustainable Development of Lake Victoria Basin is a good example. Furthermore, Kenya partners through international aid and partnerships with international organizations to access technical assistance and financing for Blue Economy projects. These partnerships focus on research, capacity building and sustainable development practices. Kenya also collaborates with neighboring countries and regional bodies, such as the East African Community (EAC) and the Intergovernmental Authority on Development (IGAD) to undertake the Blue Economy activities in the region. These partnerships support sharing of resources, knowledge, and technologies related to marine, coastal and inland waters ecosystems.

(ii) Sustainable Fisheries Management. Kenya is working with regional partners to promote sustainable fisheries practices. This includes initiatives to combat illegal, unreported, and unregulated (IUU) fishing, which is a significant challenge in the region. Collaborative efforts

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[26] East African Community. (2003). *Protocol for Sustainable Development of Lake Victoria Basin*. Retrieved from https://www.eac.int

aim to enhance monitoring, control, and surveillance of fishing activities especially in the ocean and lakes ecosystems where illegal activities are prevalent.

(iii) Marine Protected Areas. Kenya has established several Marine Protected Areas commonly called MPAs to preserve biodiversity and promote sustainability. The country collaborates with neighboring countries to manage MPAs effectively, ensuring that fish populations are healthy and ecosystems are resilient. Within the East African Community this is executed within the framework of the convention establishing the Lake Victoria Fisheries Organization (LVFO).

(iv) Climate Change Adaptation
Aquatic ecosystems are most vulnerable to effects of climate change[27]. Regional initiatives have also focused on addressing the impacts of climate change on transboundary marine and inland waters ecosystems. Kenya participates in discussions and projects aimed at building resilience in coastal communities and other aquatic ecosystems through integrated coastal zone and inland waters management.

(v) Investment in Marine Research
Through research institutions such as Kenya Marine Fisheries Research Institute, the country has been involved in strengthening marine research partnership with the region especially in the ocean and inland waters. For instance, KEMFRI closely collaborates with local universities and research institutions as well as regional bodies such as Western Indian Ocean Marine Science Association (WIOMSA) to foster research on marine biodiversity and sustainable fisheries management. The research is particularly important for programming and informed decision making regarding sustainable marine resource management and conservation.

(vi) Blue Economy Policy Framework
Kenya has developed its own National Blue Economy Strategy, which aligns with regional and global frameworks, like the African Union's Agenda 2063 ("the Africa we want") as well as the United Nations' Sustainable Development Goals (SDGs). The strategy emphasizes on sustainable development through the effective management and use of aquatic resources.

(vii) Engagement in International Forums
Kenya actively participates in international forums that deals with Blue Economy matters such as the United Nation Ocean Conference. This conference, also known as "UN conference to support the implementation of sustainable development goal 14" was held in June 2017 in New York and focused on addressing various challenges that faced oceans and promoting collaborative efforts towards achieving sustainable development in marine environments. Kenya also participates in forums organized by the Western Indian Ocean Marine Science Association which aims at building and enhancing partnership and collaboration as well as share experiences on a broad spectrum of issues on marine ecosystems conservation and protection.

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[27] IPCC. (2019). Special Report on the Ocean and Cryosphere in Changing Climate. https://www.ipcc.ch/srocc

It suffices to say that through these regional collaborations and partnerships, Kenya aims at fostering a sustainable Blue Economy that benefits both her people and the environment. Continued partnership and commitment to sustainable best practices are certainly crucial for the long-term success of the initiatives and efforts.

1.5 Intergovernmental Relations

Kenya is a devolved democracy with two levels of governance; the national and county. The national and county governments work together in ensuring responsible utilization of marine and aquatic resources. Intergovernmental collaboration is embedded in the spirit of Constitution of Kenya 2010 (COK). The COK provides in Article 6 (2), that the two levels of government are distinct and interdependent with relations based on consultation and cooperation between the two levels of government. Article 189 further emphasizes on the cooperation between national and county governments and calls for each level to assist, support, consult and as appropriate, implement the legislation of the other level of government.

Kenya's cooperative devolution model envisages that county governments implement national policies, and legislation together with their customized policies and legislation. In this regard, inter-governmental collaboration and coordination is achieved by aligning county policies with national strategies to ensure cohesive management of aquatic based resources. The partnerships and collaboration are particularly important in leveraging the resources to support Blue Economy investments. Furthermore, the government works with the private sector, NGOs, research institutions, academia, faith-based organizations and community groups or associations in the implementation of programmes and projects in the blue sectors. This is important to ensure citizen participation and accountability. In line with the COK provisions on public participation[28], the county governments have engaged local communities in Blue Economy initiatives especially in sustainable practices and the protection of both oceanic and inland aquatic resources based on national Blue Economy strategies, policies and plans.

The management of blue economy resources under the devolved governance is a multi-faced process that involves various stakeholders in the Blue Economy space. The COK emphasizes on local participation, and accountability in resource management. The functions of counties are well articulated under the Fourth Schedule to the COK[29]. The schedule assigns the Blue Economy sectors to be performed by levels of government as either exclusively county functions, or concurrent where both levels are functionally mandated.

The national government has policies for the implementation of Blue Economy projects and programs including the National Blue Economy Strategy[30] that outlines the vision for sustainable management of marine and inland waters resources. Each of the 47 counties on the other hand, have the implementation mandate. Agencies like the Kenya Fisheries Service (KFS) and the National

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[28] COK articles 10(2)(a), 232(d) & Fourth Schedule Part II s.14

[29] **Republic of Kenya. (2010).** the Constitution of Kenya, 2010. Schedule 4: Distribution of Functions between the National and County Governments. National Council for Law Reporting. Retrieved from http://www.kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/The_Constitution_of_Kenya_2010.pdf

[30] **Government of Kenya. (2018).** National Blue Economy Strategy. Nairobi: Government Printer. Available at: https://www.environment.go.ke/images/blue_economy/National_Blue_Economy_Strategy_Kenya.pdf

Environment Management Authority (NEMA) work closely with the county governments to oversee blue resource management practices to ensure compliance with national standards.

The COK (2010) is emphatic of citizen engagements in all project and programs processes without exception. It is important to appreciate that citizen engagement is a pre-requisite in managing the Blue Economy resources where groups such as the local fishers, through their Beach Management Units, tourism operators, water users' association, forest users association and other relevant stakeholders are encouraged to participate in decision making process. Blue Economy programs and projects that promote sustainable fishing, aquaculture and marine conservation are implemented at the county level with clear focus on balancing economic activities for environmental sustainability. **Table 5** presents examples of Blue Economy key stakeholders in Kenya.

Table 5: Blue Economy Key Stakeholders in Kenya

Stakeholder Category	Brief Description of the Stakeholder
National Government Agencies (MDAs)	This includes various ministries and departments, such as the Ministry responsible for fisheries, aquaculture, and the blue economy and the Ministry responsible for environment and forestry which play crucial roles in policy formulation, resource management, and oversight in blue economy.
Country government	Each of the 47 counties and in particular those with coastline or freshwater resources is responsible for the resource management, policy implementation and citizen engagement.
Local Communities	These include fishers and aquaculture farmers who are the primary users of marine and freshwater blue resources. In this category are also communities living along the riparian zones who depends on blue economy resources for their livelihoods.
Non-Governmental Organization and Civil Society	The group mainly focus on environmental conservation, community development and sustainable resource management. The civil society also plays a key role in stop gapping between communities and governmental entities at both national and county government levels.
Private Sector	In the blue economy space, this is mainly composed private businesses in fisheries, aquaculture and related activities that contribute to economic development of blue economy. Other sectors include tour operators, maritime transport operators and logistics.
Research and academic institutions.	Research and innovations are critical in development of blue economy resources. Universities and research institutions involved in studies on marine ecosystems, fisheries sustainability and economic impacts provides crucial data for informing decision makers in the blue economy space.
Development Partners	This includes bilateral and multilateral development agencies engaged through partnerships with the government (national and county) to promote sustainable practices, enhance technology and infrastructure and capacity building.

Apart from policy formulation, most of the implementation of projects, programs and policies in Blue Economy are done at the county level. It is therefore crucial that counties are tasked with monitoring resource use and conducting research to inform management strategies, Furthermore, this helps greatly in understanding trends, impacts and necessary policy adjustments. The Lake Region Economic Bloc has an elaborated Monitoring, Evaluation and Learning (MEL) digital platform[31] that supports effective management of blue economy resources in the region within the framework of devolved governance system.

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[31] Kenya Devolution Program (2023): the Lake Region Economic Bloc's automated monitoring, evaluation, and learning (e-MEL) system.

1.6 Strategies and sector policies in support of Blue Economy at the continental level

Africa has been in the forefront of protection the oceans and other water body resources. The continent has had a number of strategies, policies, conventions and treaties aimed at strengthening the resolve of the continent in conserving her aquatic and marine resources. The study examines in summary some of the continental initiatives. A summary of the sector policies at continental level is presented in **Table 6.**

Table 6: sector policies at continental level

No.	Framework	Narrative
1.	**African Vision 2063**	The African Union (AU) was established in 1999 with the vision of "an integrated, prosperous, and peaceful Africa, driven by its own citizens and representing a dynamic force in the international arena." Agenda 2063 was launched in 2015. It is "a strategic framework for the socio-economic transformation of the continent over the next 50 years". It builds on and seeks to accelerate the implementation of past and existing continental initiatives for growth and sustainable development. African Union (AU) has integrated Blue Economy into its Agenda 2063 as part of its vision for prosperous Africa. Agenda 2063 encourages member countries to adopt policies that deliberately promote sustainable utilization of marine resources from the oceans and inland waters[32]. According to Agenda 2063, "The Africa we want", 2014, one of the agendas is a prosperous Africa based on inclusive growth and sustainable development. Africa's Blue Economy, which is three times the size of its landmass, shall be a major contributor to continental transformation and growth, advancing knowledge on marine and aquatic biotechnology, the growth of an Africa-wide shipping industry, the development of sea, river, and lake transport and fishing, and exploitation and beneficiation of deep-sea mineral and other resources. Given the huge investments needed to harness Blue Economy both oceanic and from inland waters, partnerships are crucial. Various continental initiatives such as the Western Indian Ocean collaboration among countries to address shared ocean challenges and promote sustainable use of marine resources.
2.	**Strategy for Rational Management of African Inland Fisheries**[33]	The strategy was developed to improve governance of small-scale fisheries sector in Africa for increased benefits to African populations and countries. It provides a structured guidance to fisheries governors, development assistance donor agencies, technical institutions, fish producers and traders, and other

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[32] African Union. (2015). *Agenda 2063: The Africa We Want*. Addis Ababa: African Union. Retrieved from African Union Agenda 2063

[33] AU-IBAR (2018). Strategy for Rational Management of African Inland Fisheries. AU-IBAR Reports.

No.	Framework	Narrative
		stakeholders involved in the sector through a prioritized prospectus of opportunities to facilitate reforms towards coherent national and regional policies that realize the full wealth-generating potential of Africa's inland fisheries and ensure sustainable social, environmental and profitable outcomes for Africa and its peoples.
3.	Africa Blue Economy Strategy[34]	The Strategy was developed to provide direction on the development of an inclusive and sustainable Blue Economy in Africa. This would be achieved by advancing knowledge on marine and aquatic biotechnology, environmental sustainability, the growth of an Africa-wide shipping industry, the development of sea, river and lake transport, the management of fishing activities on these aquatic spaces, and the exploitation and beneficiation of deep-sea mineral and other resources.
4.	African Integrated Maritime Strategy (2050 AIMS)[35]	The Strategy focuses on Africa's maritime challenges for sustainable development and competitiveness with the aim of fostering more wealth creation from Africa's oceans, seas and inland water ways. The strategy was intended to support the development of a vibrant maritime economy that realizes the full potential of sea-based activities in an environmentally sustainable manner. The strategy also covers inland water bodies.
5.	Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa (PFRS)	The framework guides African fisheries sector towards productivity, sustainability and profitability with options for enhanced regional collaborative management of shared resources. The PFRS enables governments to develop appropriate fisheries-exploitation arrangements and aquaculture development.
6.	African Charter on Maritime Security and Safety and Development in Africa (Lomé Charter)[36]	It refers to the security and safety of the Blue Economy by preventing and curbing national and transnational crime, especially terrorism, piracy and armed robbery against ships, as well as all forms of trafficking at sea. It also aims at protecting environment in general and particularly maritime environment in coastal and island states, as well as strengthening cooperation in the field. The Charter commits signatories to creating national, regional and continental institutions to promote maritime security and safety
7.	African Convention on the Conservation of Nature and Natural Resources	The contracting States undertook to adopt the measures necessary to ensure conservation, utilization and development of soil, water, flora and faunal resources in accordance with scientific principles and with due regard to the best interests of the people. The objectives of the Convention are to enhance environmental protection; foster the conservation and sustainable use of natural resources; and harmonize and coordinate policies in these fields

[34] AU-IBAR (2019). Africa Blue Economy Strategy, Nairobi, Kenya.
[35] Ibid.
[36] Ibid.

No.	Framework	Narrative
		with a view to achieving ecologically rational, economically sound and socially acceptable development policies and programmes.
8.	**Blue Economy for Resilient Africa Program**	This is a program supported by the World Bank in honour of a commitment made at the United Nations Framework Convention on Climate Change's annual Conference of the Parties (COP27). The Program focused on Africa's coastal countries to leverage the opportunities and manage the risks inherent in growing their budding blue economies.

CHAPTER TWO: NATIONAL BLUE ECONOMY INITIATIVES

2.1 Introduction

Kenya is approximately 582,650 sq. km in size. This comprises water bodies of 13,400 sq. km and land mass of 569,250 sq. km. The country has a coastline of about 600 km. long stretching from the border with Somalia down to Lungalunga border with Tanzania. Otherwise, it borders South Sudan to the North West, Ethiopia to the North, Somalia and Tanzania to the East and South respectively. Uganda is to the West and the Indian Ocean in the South East. The country has 6% of Lake Victoria which is only 4,100 sq.km of the total lake size of 68,000sq.km. The other countries sharing the lake are Tanzania at 51% and Uganda at 43%[37]. The other inland water bodies include L. Turkana, L. Nakuru, L. Jipe, L. Naivasha, L. Bogoria and L. Elmentaita among others all comprising a total of 9,300 sq.km.

Kenya's population was estimated at 51.5 million in 2023. Of the estimates, coastal population was 4.7 million and the lake shoreline counties of Kisumu, Siaya, Homa Bay, Busia and Migori with a total of 5.6 million[38]. These are the counties that are impacted directly by the ocean-based industries which are also referred to as Blue Economy industries.

Blue Economy in Kenya encompasses activities related to coasts, seas, and inland waters, including lakes and rivers. It focuses on the sustainable use of water resources for economic growth, improved livelihoods, and job creation while preserving the health of aquatic ecosystems[39]. This approach aligns with global and regional efforts to balance economic development with environmental protection through global SDGs, AU Agenda, EAC goals, the National Blue Economy Development strategies and the Kenya Vision 2030. Blue Economy in Kenya has undergone significant development over the years, shaped by the rich aquatic resources of lakes, rivers and wetlands.

From a Kenyan context therefore, Blue Economy refers to the sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of marine and coastal ecosystems. While the Kenyan definition of Blue Economy derive its narration from the world bank definition, this study tends to lean more on the definition derived from the 2018 Sustainable Blue Economy Conference in Nairobi as well as the African Union Vision 2063 themed the "Africa we Want". In this case therefore, Blue Economy in the Kenyan context covers aquatic ecosystem herewith referred as blue resources namely; oceans, seas, lake, rivers, dams, springs, wetlands and underground water. It entails sustainable socio-economic activities that take place on, in and around these blue resources and whose proceeds or income contribute to the Blue Economy basket. The contribution is envisaged to support economic growth or revenue generations, livelihood improvements and job creation. It is important to emphasize that these activities must be

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[37] Lake Victoria Basin Commission. (Year). *Lake Victoria Basin Strategic Plan (2022 -2027)*. [www.lvbcom.org]

[38] www.citypopulation.de accessed 2nd December, 2024

[39] United Nations. (2018). *Nairobi Sustainable Blue Economy Conference: Outcomes and Actions*. Nairobi: United Nations Environment Programme. Retrieved from UN Environment Programme

undertaken in such a way that the health of the aquatic ecosystems are maintained at all times. As a matter of fact, Blue Economy is a huge economy and currently ranked the 7th largest economy globally contributing USD 3 trillion annually while in Africa, Blue Economy contributes an estimated USD 300 billion annually and create 49 million jobs[40]. In Kenya, it has been estimated that Blue Economy contributes an estimated USD 1.39 billion to the GDP annually. It currently accounts for only 2.5% of the GDP. The sector actually remains largely unexploited especially the inland waters blue resources, with a maritime territory of 230 sq.km and a distance of 200 nautical miles offshore, the country's coast and marine tourism could make much larger contribution to the economy[41]. The unexplored potential if full developed can the GDP by an estimated 3.3 billion annually.

a) Geographical Context

From geographical context, there are three key aspects to note in as far as Blue Economy in Kenya is concerned namely;

(i) The coastline which is about 580km along the Indian Ocean features rich marine biodiversity including coral reefs, fisheries and mangrove ecosystems;

(ii) Economic zone situated within the West Indian Ocean region connecting Kenya to other maritime nations and global trade. This economic zone also commonly known as the Exclusive Economic Zone (EEZ) extends approximated 200 nautical miles (equivalent to 370 Km) from the baseline of the coast into the Indian Ocean with an area of 230,000 km². The EEZ gives Kenya special rights to explore and use marine resources including fish, minerals and energy which focuses on sustainable practices to preserve the marine ecosystem; and

(iii) Inland waters in which Kenya recognizes her immense potential include lakes, rivers, and dams in contributing to economic diversification, food security, tourism growth, trade facilitation, and renewable energy production. The utilization of these inland water resources presents a wealth of opportunities for various sectors such as sustainable fisheries practices and aquaculture in inland waters which play significant role in ensuring food security and support to local livelihoods. The other aspect is tourism supported by picturesque lakeshores that attract tourists from around the world thus providing revenue and employment opportunities. The other activities within the tourism sector are boating, fishing, and eco-tourism. The third activity is blue biotechnology involving research on marine organisms in Kenya's inland waters that holds significant potential for unlocking valuable resources for pharmaceuticals, biotechnology, and other applications. This aspect drives innovation and economic growth in the biotech industry. Ports and shipping present great economic opportunities along inland waterways as they enhance trade and connectivity between Kenya and neighboring countries that share inland lakes, such as Lake Victoria and Lake Turkana.

b) Blue Economy Approach and Goals

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[40] **United Nations Economic Commission for Africa (UNECA).** (2020). *The Blue Economy in Africa: Towards a Sustainable Future.* Available at: UNECA Website.
[41] Mulwa, R. u.d. An assessment of the status of Blue Economy Sectors in Kenya. University of Nairobi.

Sustainability of Blue Economy activities calls for an integrative and multifaceted approach that fosters a harmonious relationship between economic prosperity and environmental stewardship, ensuring that the benefits derived from the Blue Economy are not achieved at the expense of aquatic ecological health. Through effective policy interventions and stakeholder engagements, Kenya's Blue Economy initiatives will be able to create a sustainable future that supports both its people and the aquatic ecosystems. As such various initiatives, policies, and programs have been established to tap into this potential, with a focus on sustainable practices that balance economic growth with environmental sustainability. The primary goals of Kenya's Blue Economy are therefore to:

(i) **promote sustainable resource use**: Underpinning the Blue Economy is the commitment to the responsible and sustainable use of water resources. This entails implementing practices that minimize environmental impact on aquatic ecosystems while maximizing resource efficiency.

(ii) **improvement of local livelihoods**: A cornerstone of the Blue Economy is its focus on enhancing the quality of life for local populations. Through fostering opportunities within blue sectors such as fisheries, aquaculture, and ecotourism, the Blue Economy has great potential in job creation, income generation, and support to the economic resilience of communities depending on these resources for their livelihoods.

(iii) **enhance economic growth stimulation**: The Blue Economy serves as a catalyst for economic diversification and growth. By integrating various sectors including renewable energy, maritime transport, and tourism, this approach not only opens new avenues for investment but also strengthens existing industries. This comprehensive strategy promotes sustainable growth and economic development.

(iv) **promote ecosystem health maintenance**: Central to the Blue Economy is the recognition of the intrinsic link between economic activities and ecosystem health. By safeguarding aquatic ecosystems through conservation efforts, pollution control, and sustainable management practices, Kenya aims to maintain biodiversity and ensure the resilience of its natural resources for future generations.

2.2 National Strategies, Sector Policies, Projects and Programs in Blue Economy

Kenyan waters in the Indian Ocean cover a surface area of approximately 230,000 square kilometres bordering Somalia in the north, and Tanzania in the south with a coastline of about 640 kilometres. In addition, the main inland water bodies cover a surface area of approximately 10,700 square kilometres. Kenya has made concerted effort towards the development of ocean-based industries backed by robust strategies and policies. Kenya played an important role to establish a legal order of the seas and oceans; the United Nations Convention on the Law of the Sea, (UNCLOS) of 1982. The Convention facilitates international communications, promotes responsible uses of the seas and oceans, equitable and sustainable utilization of the resources and research. Kenya, as a Party to UNCLOS, has sovereign rights to explore, exploit, conserve, and manage the natural resources within the areas of her Exclusive Economic Zone and continental shelf. Kenya is also a signatory to the Sustainable Development Goals (SDGs) of 2015.

At the continental level, Kenya participates in the 2050 African Integrated Maritime Strategy (AIMS) which provides a broad framework for the protection and sustainable exploitation of African maritime domain for wealth creation. There is the Fisheries and Aquaculture Policy Framework and Strategy for African Union which provides a comprehensive framework for governance and exploration of Africa's fisheries and aquaculture resources in Africa. At the national level, there has also to be regulatory framework which is a pre-requisite to the future development of Blue Economy. A comprehensive and integrated regulatory framework for the management and development of Blue Economy is necessary. The counties on the other hand have attempted in a big way to enact pieces of legislation that are pro Blue Economy. It is therefore essential to strengthen governance with institutional frameworks around aquatic resources management.

National strategies, sector policies, projects and programs have therefore been developed to guide Kenya in exploiting the opportunities around Blue Economy space. **Table 7** gives some key policies, legislation, projects, and programs:

Table 7: Key Policies, Legislation, Projects, and Programmes

No.	Framework	Description
	Strategies	**Narrative**
1.	**Kenya Vision 2030**[42]:	Kenya's long-term development plan recognizes the significance of effective water resource management in achieving economic growth and environmental sustainability. Kenya Vision 2030 was launched in 2007. The Vision embraces Blue Economy as a driver for sustainable economic growth and poverty reduction[43].
2.	**Kenya Tuna Fisheries Development and Management Strategy 2013 -2018**	The National Tuna Management and Development strategy provides a roadmap for the sustainable development of the Kenya's tuna fisheries resources occurring in the Exclusive Economic Zone (EEZ) and ensuring an efficient tuna fisheries value chain. The overall goal of the strategy was to transit tuna fisheries from artisanal-based fisheries to modern commercially oriented coastal and oceanic fisheries and accelerate economic growth of the marine fisheries with direct positive impacts to employment, wealth creation, improved incomes and foreign exchange earnings. The objectives of the Strategy were the need for Kenya to transit from artisanal fisheries to modern commercially oriented coastal and oceanic fisheries; sustainable management and development of Kenya's Exclusive Economic Zone (EEZ) resources and surrounding high seas fisheries; the need to accelerate growth of marine fisheries and their value chains in order to provide direct employment, wealth creation, higher incomes, food, and foreign

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[42] **Government of Kenya.** (2008). *Kenya Vision 2030.* Nairobi: The National Economic and Social Council. Available at: Kenya Vision 2030.

[43] Government of Kenya. (2007). *Kenya Vision 2030: A globally competitive and prosperous Kenya*. Ministry of Devolution and Planning. Retrieved from https://www.vision2030.go.ke/

No.	Framework	Description
		exchange earnings; and the need for effective co-ordination of tuna fisheries management initiatives with regional entities including Regional Fisheries Management Organizations (RFMOs) and regional trade blocs[44]. The strategy addressed identified issues of unsustainable utilization of tuna resources; low economic benefits from tuna fisheries; inadequate tuna fisheries governance; and inadequate mainstreaming of HIV/AIDS and gender issues in the tuna industry.
3.	**National Blue Economy Taskforce**	Formed in 2018, this taskforce was established to promote a coordinated approach to Blue Economy development in Kenya. It proposed a comprehensive Blue Economy strategy that integrates various sectors.
4.	**Kenya National Blue Economy Strategy (2020)**[45]	This strategy outlines Kenya's vision for sustainable Blue Economy growth, emphasizing the management of marine and coastal resources, enhancing livelihoods, and mitigating climate change effects. It sets goals and actions across various sectors, including Sector Plan for Blue Economy (2018). State Department for Fisheries, Aquaculture and the Blue Economy Ministry of Agriculture, Livestock, Fisheries and Irrigation. Government of the Republic of Kenya Publication.ng fisheries, maritime transport, tourism, and energy.
5.	**National Blue Economy Strategy (2023-2027)**	Kenya is endowed with rich aquatic resources that hold substantial potential for economic development, environmental sustainability, and improved public health. To effectively utilize these resources, the government has developed a strategy aimed at harnessing the potential of the Blue Economy by integrating various water-related sectors. This integrative and multifaceted approach seeks to optimize the management of these resources in a manner that benefits both local communities and national interests. The primary objectives of this strategy are to promote sustainable practices, enhance public health, increase economic opportunities, and safeguard aquatic ecosystems. With a focus on sustainability, the initiative recognizes the intrinsic link between environmental health and economic vitality. Sustainable practices in water management ensure that aquatic resources can continue to provide essential services such as clean water, food security, and biodiversity conservation for future generations.
6.	**The Kenya Tourism Strategy 2021-2025**	The Kenya Tourism Strategy 2021-2025 outlines specific objectives and actions for various tourism products, reinforcing

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[44] Kenya Tuna Fisheries Development and Management Strategy 2013 -2018 p.2

[45] **Government of Kenya.** (2020). *Kenya National Blue Economy Strategy.* Nairobi: Ministry of Environment and Forestry. Available at: Kenya National Blue Economy Strategy.

No.	Framework	Description
		the need to improve infrastructure, and strengthen industry partnerships in support of Tourism and Cultural Heritage growth.
7.	**The Kenya Coast Transformation Strategy**	Coast Tourism Transformation Strategy recognizes the importance of the beach tourism product and the need for adequate planning for the Kenyan coast, particularly emphasizing the need of improving the tourist experience in this area.

No.	Policies & Laws	Narrative
1.	**The National Fisheries Policy (2014)**[46]:	This policy provides a framework for managing fishery resources sustainably, focusing on enhancing food security and livelihoods while ensuring conservation.
2.	**Coastal and Marine Tourism Policy**:	This policy aims to promote sustainable tourism practices in coastal regions, recognizing the importance of marine ecosystems.
3.	**Biodiversity Conservation Policies**	Various frameworks focus on conserving marine biodiversity, including the Wildlife Conservation and Management Act and the Kenya National Biodiversity Strategy and Action Plan.
4.	**The Fisheries Management and Development Act, 2016 (Revised Edition 2022) Chapter 378**	This is one of the most elaborate acts of Parliament, which aims to provide clear legal frame work for the fisheries sector in Kenya where issues of sustainable utilization of Blue Economy resources are gaining traction globally. The overall objective of the Act is to protect, manage, use and develop the aquatic resources in a manner which is consistent with ecologically sustainable development, to uplift the living standards of the fishing communities and to introduce fishing to traditionally non-fishing communities and to enhance food security. The Act vests legal jurisdiction and sovereign rights to Kenya over her fisheries resources in accordance with other enabling laws. It applies to (a) all Kenya fishery waters and areas over which Kenya exercises jurisdiction or sovereign rights; (b) fishing and fishing related activities, utilization of fish and genetic material derived from fish and any other activity falling within the scope of this Act; (c) persons, vessels, vehicles, aircraft, export facilities or other craft or place engaged in or otherwise connected with any activity falling within the scope of this Act; (d) persons (including non-citizens) and vessels (including foreign vessels) in and in relation to the Kenya fishery waters; (e) persons (including non-citizens) and vessels (including foreign vessels) in areas beyond national jurisdiction; and (f) all Kenya fishing vessels and all persons on them or dealing with them or having any relevant relationship to them or to persons on them, in and in relation to any area within or beyond national

[46] **Government of Kenya.** (2014). *National Fisheries Policy.* Nairobi: Ministry of Agriculture, Livestock and Fisheries. Available at: National Fisheries Policy.

No.	Framework	Description
		jurisdiction in so far as it does not conflict with the jurisdiction of another State. The Act establishes structures for the management of fisheries affairs in the country including The Kenya Fisheries Advisory Council, The Kenya Fisheries Service, and Fish Marketing Authority.
5.	**The Kenya Coast Guard Service Act 2018 (Rev. 2020)**	The Act establishes Kenya Coast Guard Service in order to enforce: maritime security and safety; pollution control; prevention of trafficking of the narcotic drugs, prohibited plants and psychotropic substances; and prevention of trafficking of illegal goods. It also enforces prevention of trafficking of illegal firearms and ammunitions; sanitation measures; and to prosecute maritime offenders. The Coast Guards are further mandated to enforce port and coastal security; undertake search and rescue in order to protect maritime resources including fisheries and archaeological or historical objects or sites. The law establishes management structure including the Council of the Kenya Coast Guard Service, Technical Committee of the Service, and office of the Director-General.
6.	**Environmental Management and Coordination Act (EMCA)**[47]	This act provides the legal framework for environmental protection and management in Kenya, including coastal and marine environments.
7.	**National Climate Change Action Plan (2018-2022)**[48]	This plan recognizes the significance of the Blue Economy in climate change mitigation and adaptation strategies.

	Programmes and Projects	**Narrative**
1.	**Partnerships and International Agreements**	Kenya is a member in regional and international initiatives such as the Eastern Africa Region's Framework for Marine and Coastal Governance, and the Nairobi Convention, which promotes sustainable development of the coastal and marine environment. There are also other ongoing initiatives Kenya is undertaking in specific areas aimed at promoting Blue Economy of which some of the programmes and projects include:
		a) **Investment in Aquaculture Development:** The government policy on aquaculture is to encourage the development of modern aquaculture systems to increase fish production, improve food security, and enhance income generation for local communities. This is aimed at addressing food and nutrition security. The investment in aquaculture development programme has been established to provide training and resources to small-scale producers by helping them adopt sustainable practices in aquaculture.

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[47] **Republic of Kenya.** (1999). *Environmental Management and Coordination Act, No. 8 of 1999.* Nairobi: Government Printer.

[48] **Government of Kenya.** (2018). *National Climate Change Action Plan 2018-2022.* Nairobi: Ministry of Environment and Forestry.

No.	Framework	Description
		b) Promotion of Ecotourism: The Government of Kenya is promoting ecotourism activities, including bird watching, fishing, and wildlife safaris, which generate income for local communities while promoting conservation of both terrestrial and aquatic ecosystems. Furthermore, the county governments are involved in eco-tourism related initiatives to ensure they benefit from sustainable management of their natural resources.
		c) Training and Capacity Building Programs
		This is done through vocational training which focus on skills development programs on sustainable fishing practices, aquaculture, and marine resource management to empower local communities by enhancing entrepreneur skills and undertaking activities towards promoting sustainability.
2.	**Sector Plan for Blue Economy (2018)**	This was one of the earliest national plans towards Kenya's effort to appreciating the significance of Blue Economy sector in the development agenda of the country. It was an outcome of the proposals contained in the Blue Economy Committee established in 2016 to advise the country on the utilization of the country's marine resources. The government had realized that the sector was one of the emerging economic frontiers that would significantly contribute to the country's economic growth and development as envisaged in the long-term development blue print, the Kenya Vision 2030. In recognition of the potential of the sector, during the preparation of the Third Medium Term Plan, 2018-2022, it was added as the eighth priority sector under the Economic Pillar[49].
		The Sector Plan for Blue Economy was a mapping strategy that identified several programs, projects and plans that were considered necessary for the utilization of the opportunities within the Blue Economy sector.
		The following programmes were proposed in the plan to be developed and implemented:
		a) **Development of Blue Economy Programme:** The programme had identified several plans and projects for implementation. Some of these were developing Blue Economy master plan; building the capacity of the sector; and promoting Kenya as a centre for agro-based Blue Economy. The other activities were proposed as sensitization of the youth on Blue Economy opportunities; restructuring Kenya National Shipping Line as a pre-eminent logistics and transportation hub in the eastern seaboard of the African continent; and strengthening of the beach management units. Establishment of the Kenya Coast Guard, and the transformation and revamping of Bandari College

[49] Sector Plan for Blue Economy (2018). State Department for Fisheries, Aquaculture and the Blue Economy Ministry of Agriculture, Livestock, Fisheries and Irrigation. Government of the Republic of Kenya Publication.

No.	Framework	Description
		as a centre of excellence to provide high quality skills for the Blue Economy sector have been the outcome of the program.
		b) Fisheries and Maritime Infrastructure Development Programme: This programme envisaged construction of ports in Mombasa, Kilifi, Lamu and Shimoni which was to provide up to 12,000 jobs and injecting approximately KES.20 billion into the GDP of the country. It included the construction of several fishing and fishery infrastructure such as markets, jetties, inspection facilities and processing plants in various port towns.
		c) Exploitation of Living Resources under Blue Economy Programme: The activities involve development of fishing facilities; establishing national fishing fleet for exclusive economic zone (EEZ); and capacity building of artisanal fishers. The other projects cover developing Lake Turkana Fisheries Management Plan; and developing value addition programmes for the seaweed and upscaling sea weed farming. The programme also sought to develop Lake Victoria fisheries; develop the landing sites; and strengthen Aquaculture Association of Kenya, and Wavuvi Cooperatives Society as well as monitor and assess fish stocks among other activities.
		d) Aquaculture Business Development Programme: this was intended to improve production, productivity, food security and nutrition of small-scale farmers. It was to support aquaculture value chain with series of public private producer partnerships. It was to support stocking, and restocking of lakes, rivers and dams. It was to identify, map and delineate and protect critical habitats.
		e) Kenya Marine Fisheries and Socio-Economic Development Project (KEMFSED)[50]: The purpose of the program was to develop fishery information system; operationalize fisheries management plans for priority fisheries; and establish Shimoni. The initiative focuses on Blue Economy of the ocean but has some elements that support inland Blue Economy. The sustainable management of fisheries is crucial for the economic and environmental health of coastal communities in Kenya. To address the pressing challenges facing this sector, the Kenyan government has partnered with the World Bank to initiate a project aimed at establishing a sustainable fisheries sector. This collaboration represents a significant step towards enhancing the resilience and prosperity of fisheries while ensuring the long-term sustainability of aquatic resources. Some of the key aspects of this project include:

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[50] **Government of Kenya.** (2019). *Marine Fisheries and Socio-Economic Development Project (KEMFSED) Project Document.* Nairobi: Ministry of Agriculture, Livestock, Fisheries and Cooperatives.

No.	Framework	Description
		(i) **Sustainable Management** by implementing science-based practices to manage fish stocks, promoting responsible fishing techniques, and establishing stronger regulatory frameworks to combat overfishing and illegal fishing. **(ii)** **Infrastructure Enhancement** by improving facilities at fish landing sites for better handling, storage, and distribution of fish, which increases the quality and value of the catch and benefits local fishermen by improving market access. **(iii)** **Socio-Economic Improvement** by providing training and support for alternative livelihoods, strengthening cooperative organizations, and implementing social safety net programs to enhance community resilience and economic stability. In overall the KEMFSED aims at ensuring the long-term sustainability of aquatic resources, boost local economies, and improve the socio-economic conditions of fishing communities in Kenya.
		f) Aquaculture Technology and Development and Innovation Transfer Programme: Components of the programme included development of training facility at Sagana; implementation of national fish breeding programme in Sagana, Kiganjo, Ngomeni and Kabonyo (Kisumu); as well as youth aquaculture programme. Under the programme, there was the establishment of International Nile Perch research Centre at Kabonyo; and Marine Aquaculture Research Centre. The other project was the Marine Aquaculture Hatchery to facilitate diversification of aquaculture species among other projects.
		g) Monitoring, Control and Surveillance Programme: This programme was aimed at monitoring, controlling, and keeping surveillance along the EEZ and other inland water bodies; conducting frame surveys in Lake Turkana, Lake Victoria, and marine waters. It was to undertake quarterly Catch Assessment Surveys in Tana River, Turkwell Dam, marine waters, Lake Victoria, Lake Baringo, Lake Naivasha, Lake Jipe and Lake Chala.
		h) Development of Fish Quality Laboratories Programme: Construction, accreditation and operationalization of three fish quality laboratories in Nairobi, Mombasa and Kisumu.
		i) Rehabilitation of Fish Landing Sites in Lake Victoria Programme: Rehabilitation of fish landing sites was to include; Sori (Migori County), Nyandiwa (Homa Bay), Mulukhoba (Busia), Wichlum (Siaya), Lwanda Kotieno (Siaya) and Ogal (Kisumu).

No.	Framework	Description
		j) Ecosystem Restoration and Conservation Programs The Government of Kenya has embarked on numerous projects aimed at restoring degraded wetlands and riparian ecosystems to enhance resilience against climate change impacts. The initiatives are focusing on conserving biodiversity which in turn is crucial in maintaining the health of aquatic ecosystems to support sustainable fisheries and tourism.
		k) Training and Capacity Building Programs These programs involve vocational training for skill development on sustainable fishing practices, aquaculture, and marine resource management to empower local communities. They also culminate in enhancing entrepreneurial skills and knowledge in undertaking activities that promote sustainability.
	The sector plan was very detailed with some far-reaching developmental projects. The projects were in ship building and repairs, container manufacture and repair industry. The other activities were maritime cluster enterprises development, marine risk and disaster management, research and development of the Blue Economy. The plan also provided for cooperation and implementation of regional/international frameworks and standards. Successful implementation of these programs and projects requires substantive resources and may call for development partner involvement and support.	
xvii)	**Hydropower and Renewable Energy Projects**	The projects involved the development of small-scale hydropower installations commonly referred to as micro-hydro. These installations use rivers for energy generation especially for rural electrification which in turn enhances access to energy and supports economic development in remote and hard to reach areas. Similarly, the government has initiated a number of projects by investing in geothermal energy to provide sustainable renewable energy sources to reduce dependence on the fossil fuels. Important to note that Kenya's geothermal program is way ahead of other countries in Africa.

Even though some projects had initially stalled, Kenya has relatively revamped her Blue Economy sector. It has for example, procured an Offshore Patrol Vessel (OPV Doria) for surveillance of deep-sea fishing and two patrol boats; one for Lake Victoria and another for Lake Turkana. The country has acquired an Offshore Research Vessel (R.V. Mtafiti); reflagged four foreign deep sea fishing vessels (with the Kenyan flag); established Monitoring, Control and Surveillance (MCS) centre in Mombasa; and installed a Vessel Monitoring System (VMS).

Considering the strategies, policies, projects and programmes, laws and regulatory frameworks discussed, Blue Economy in Kenya is the new economic frontier as it presents a significant opportunity for the country to leverage its marine resources (both oceanic and inland) for sustainable development. It also calls for careful management and collaboration to overcome environmental and economic sustainability challenges envisaged in the increased activities around Blue Economy

space. Even as Blue Economy offers huge resources for socio-economy development, there are several challenges namely: overfishing which threatens fish stocks and the livelihood of communities that are dependent on marine resources; marine pollution caused by careless management of solid waste such as plastics and agricultural runoff; and climate change causing rising water levels in most aquatic ecosystems coupled with unprecedented warming of water bodies especially oceans with devastating effect on coastal and other water body habitats. In addressing these challenges, the country can fully harness the opportunities and benefits from its vast Blue Economy resources with the aim of enhancing economic growth.

2.3 Developmental Contributions of Blue Economy

The importance of Blue Economy can be deduced from its contribution to the global economy. For example, global value added (GVA) in the ocean economy is estimated to grow to more than USD. 3trillion in 2030 (in constant 2010 USD.) according to the Organization of European Cooperation and Development (OECD)[51]. Maritime and coastal tourism, and ecotourism including the cruise industry, is expected to take the largest share (26%), followed by offshore oil and gas exploration and production with 22% and port activities with 16%. It is estimated that a majority of generated GVA in the ocean industries will be from industrial capture fisheries sector and maritime and coastal tourism industry. More than half of the ocean-based industries are projected to see their value-added rise more quickly than that of the global economy. Almost all of these industries would see employment growth outpace that in the world economy as a whole.

It is estimated that Kenya's Blue Economy contributes an estimated USD.1.39 billion to the GDP annually. It currently accounts for only 2.5% of the GDP. The sector remains largely unexploited. With a maritime territory of 230,000 square km. and a distance of 200 nautical miles offshore, Kenya's coastal and marine tourism could make a much larger contribution to the economy[52]. The unexplored potential if fully developed is expected to grow GDP by USD. 3.3billion annually[53]. The long-term fish production in Kenya could increase through the development of an industrial fishing fleet which will require registration of fishing vessels under the Kenyan flag and the implementation of the Port State Measures Agreement. The Agreement on Port State Measures[54] (PSMA) is an international agreement that specifically aims to deter illegal, unreported and unregulated (IUU) fishing. It is the first legally binding agreement targeting the deterrence of IUU which accounts for an estimate of USD. 23.5 billion worth of seafood. It lays down a minimum set of standard measures for Parties to apply when foreign vessels seek entry into their ports or while they are in their ports. It was done in 2005 and approved by the FAO Conference at its Thirty-sixth Session on 22 November 2009, the Agreement entered into force in June 2016, thirty days after the date of deposit of the 25th instrument of adherence. If Kenya can implement the Agreement, the country could gain immensely from its marine resources.

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[51] www.oecd-ilibrary.org/docserver Ocean Industries to 2030. Accessed 1st December, 2024

[52] Mulwa, R. u.d. An assessment of the status of Blue Economy Sectors in Kenya. University of Nairobi.

[53] Kenya's Blue Economy by Numbers. Rediscovering the Road to Prosperity. A Report of the Blue Economy Committee (2016). Republic of Kenya (USD.1 equiv. to Kes.129 @ current exchange rate)

[54] www.fao.org/port-state-measures/background

Conserving and improving the health of the ocean and other water bodies in the country can contribute to the economy by improving the well-being of the nation especially the population that live within a radius of 150 km around the water bodies. The Indian Ocean, Lake Victoria and other water bodies are indisputably national and county assets that also infuse cultural heritage of the shoreline communities. Ocean economy including fishing, transport, renewable energy (tidal, wave, and ocean thermal energy) and tourism among others, has defined age-long communal cultural heritage and economic livelihood.

> "A sustainable ocean economy is obviously important for the traditional ocean sectors, such as fisheries and shipping. But its value goes well beyond the lives of people whose income comes directly from the sea. Because of the interconnectedness of the global economy, what happens in the ocean affects not only fishers in Fiji but also farmers in Zimbabwe, whose imported tools may have travelled to Africa in a container ship and whose air quality and climate are affected by what happens in the ocean."[55]

The contribution of Blue Economy or ocean-based industries can be tapped from the capture and aquaculture sources, maritime activities and renewable and tourism activities. Within the shoreline of the ocean, lakes and rivers, there are immense economic activities for both local communities and the nation as a whole. Riparian ecosystem of Lake Victoria and other lakes across Kenya greatly contribute to socio-economic development of the local communities and adjacent neighbourhoods. Lake Victoria for example, benefits the whole of the Lake Region Economic Bloc comprising fourteen counties with Kisumu as the epicentre of economic activities. Otherwise, the Lake basin economy is principally an agricultural zone and a high level of subsistence fishing (including exports of fish). Agriculture employs up to 75% of the region's labour force. The main agricultural enterprises, most of which are small-scale, include maize, rice, sugarcane, coffee, tea, horticulture, dairy, ranching and forestry. The most important commercial agricultural activities are the rice irrigation schemes covering 2400 hectares of land and the sugarcane plantations. Kericho, Uasin Gishu and Trans Nzoia counties are areas of intensive agricultural production for maize, tea wheat and dairy[56].

 The lake provides economic opportunities in fishing, fish value addition like filleting, and fish cage culture. Lacustrine tourism has huge potential. The lake offers unique recreation opportunities like sport fishing for the Nile perch, windsurfing in the expansive open waters, boat racing, and getaway holidays in many of its exotic islands[57]. The other activities include agriculture, forestry, power generation, and industry. Maritime transportation activities that have been ignited by the revamping of the lakeshore by establishing shipyard and coast guard stationing have further augmented economic contribution of the Blue Economy sector around Lake Victoria. Part of the oil shipment to Uganda is done through Lake Victoria.

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[55]. Stuchtey, M.R., Adrien V., Merkl, A., & Bucher, M. Ocean Solutions That Benefit People, Nature and the Economy. High Level Panel for a Sustainable Ocean Economy. 10 G Street NE Suite 800 Washington, DC 20002, USA +1 (202) 729-7600 oceanpanel.org n.d.

[56] 2006 Springer Berlin, Heidelberg. Economic Development. https://doi.org Accessed 13th January, 2025

[57] Nyamweya, C.S., et. al. (2022). Lake Victoria's bounty: A case for riparian countries' blue economic investment. Frontiers in Environmental Science. Fresh water Science in Africa. Vol.10

In the coastal marine activities, Kenya has projected increase in fish production by enhancing fisheries infrastructure for processing and value addition. The development of designated fishing ports in Shimoni, Kilifi and Lamu are underway. The construction of jetties has also been proposed for the enhancement of the land-sea access in several beach landing sites along the Kenyan coast. The improvement of beach landing sites with ice making machines are some of the initiatives aimed at ensuring maximum returns from the maritime resources through high quality products and reduced post-harvest losses.

The coastal community socio-economic development agenda have been driven by the suitability of the Kenyan coast for mariculture development including the production of seaweeds, at a community level, in the South coast. In 2019, there were about 27,000 people who were engaged in fishing and related activities, including over 13,400 small-scale fishers who depend on the marine fisheries for their livelihood and income. Mariculture, which is the cultivation of aquatic animals and plants in marine and estuarine (brackish) waters, and mainly undertaken by women was introduced to address the widespread poverty and livelihood needs of coastal communities and bring about development in the rural coastal areas.[58] Seaweed farming in Kwale County and mud crab (Scylla serrata) farming at Dabaso and Che Shale in Kilifi County are classic cases of successful mariculture initiatives that provide livelihood and income to the local communities especially the women.

There is also a potential for deep water cage culture that has yet to be exploited as well as the use of salt pans for *Artemia* (brine shrimp) production. Investment in this sector is essential and an approach that is similar to the Economic Stimulus Programme for Aquaculture which catapulted the development and uptake of aquaculture fisheries across the country. Investment is intended to involve short and long-term support for equipment, hatchery development, quality seed production, feed production, capacity building and value addition and processing. This subsector has been estimated to create up to 40,000 jobs in the long term. However, the potential can only be realized if the production is supported by a vibrant value addition sector with incentives that provide for duty free fishing equipment, cold storage and fish processing plant for increased fish processing capacity.

The impact of the contribution of Blue Economy to the country's development can be attributed to the following key areas:

a) Economic Growth: Blue Economy is projected to contribute significantly to the country's GDP. Initiatives with the coastal and the inland water marine sectors such as fisheries, tourism, hospitality, maritime trade and transport and irrigated agriculture have greatly contributed to economic performance. In the overall Blue Economy contributes approximately 1.5 to 4% of the country's GDP depending on seasonal fishing yields and tourism trends[59].

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[58] Mulwa, R. u.d. An assessment of the status of Blue Economy Sectors in Kenya. University of Nairobi.
[59] Government of Kenya. (2018). *Kenya National Blue Economy Strategy*. Ministry of Environment and Forestry. Retrieved from http://www.environment.go.ke/az

b) Job creation: The blue sectors are expected to create thousands of jobs directly and indirectly through sector value chains. According to national Blue Economy strategy by the Kenya Maritime Authority[60], it is estimated that Blue Economy sectors could generate up to 52,000 jobs.

c) Sustainable Fisheries: Sustainable management of marine and other aquatic resources helps to ensure food and nutrition security for coastal as well as inland water communities that depend on the blue resources. Furthermore, by focusing on sustainable fishing practices, the sector can improve the incomes for the fishing communities while at the same time preserving fish stocks for the future generations.

d) Tourism Development: Blue Economy fosters the growth of ecological tourism by both domestic and international tourists. Kenya's coastal regions and inland water basins harbor pristine and beautiful touristic sceneries. The growth of tourism normally attracts other investments in areas of infrastructure, hospitality facilities, transport and logistics, financial services among others which further catalyze development of local economies.

e) Maritime Trade and Transport: Improvement of maritime transport sector enhances intra and inter trade capacities for both goods and services. Ports like Kisumu, Mombasa, and Lamu are important for national and regional trade. They facilitate imports and export trade within the EAC region and beyond. A robust maritime sector connects Kenya with global markets hence promoting economic activities and creating more inter- and intra-trading opportunities.

f) Environmental Protection and Ecosystem Restoration: Blue Economy puts lots of emphasis on sustainable use of the water resources (blue resources) and the protection of oceanic and inland waters marine ecosystems including coral reefs, mangroves, wetlands and estuaries which are important for both aquatic and terrestrial biodiversity. It is a fact that healthy marine and other aquatic ecosystems are crucial in modulation of climate change risks and enhancement of resilience[61] which in turn protect coastal and riparian communities from adverse effect of climate risks such as fluctuating lake and sea levels and extreme weather events like flooding.

g) Research and Innovation: Investment in marine research and innovation is key in ensuring sustainable practices in regard to aquaculture, biotechnology, blue carbon markets and renewable energy[62]. Research and innovation require participation of both research institutions and the institutions of higher learning together with public and private sectors to promote knowledge and develop sustainable technologies useful to the blue sectors. The rapid growth of aquaculture witnessed in the Lake region for instance presents opportunities for food production and job creation. This will help alleviate pressure on wild fish stocks and provide new sources of income to the riparian communities.

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[60] Government of Kenya. (2021). Kenya Maritime Blue Economy Strategy. Nairobi: Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works.
[61] UNFCCC. (2019). "Katowice Climate Package: Report on the Ocean and Climate Change."
[62] Kenya Marine and Fisheries Research Institute (KMFRI). (2019). Kenya's Blue Economy Strategy: An Overview. Nairobi: KMFRI.

h) Policy Development and Governance: The current focus on Blue Economy has led to improved governance frameworks for marine, riparian and coastal resource management. There has been improved transparency, stakeholder participation and adoption of sustainable practices by all the relevant actors (state and non-state). It is also evident that intergovernmental collaboration has enhanced capacity among county governments, improving their ability to manage and regulate aquatic and marine resources effectively and more sustainably.

2.4 Potential Social Transformation

Social transformation has been defined as fundamental change in the way that societies are organized and resources are distributed[63]. It means macro-level fundamental change in the deep structures and organisation of society, affecting all dimensions of social life. The transformation may be political, economic, technological, or social including demographic and cultural dimensions. These are the elements that constitute a social realm with the ability to capture and realize big change in its universal aspects while cognizant of its concrete manifestations. Historically, communities along the coastal and other waterbody environs have sustained their livelihoods through Blue Economy activities much as the term "Blue Economy" had not been coined or invented and used to denote economies within and around the water bodies. The age-long survival of these shoreline communities was naturally blue! These communities sustainably depended on tourism (water sport, historical sites, beach), fisheries, and coastline crops (coconut, cashew nuts, seaweed, mangoes among others) for a sizeable part of their gross domestic production. This was even more pronounced in the cases of island and other coastal developing economies. In these countries, innovation and growth in the coastal, marine and maritime sectors are major source of food, energy, transport, among other goods and services. Social transformation attributed to Blue Economy in Kenya are significant and multifaceted impacting livelihoods, gender relations, community cohesion and environmental stewardship.

Due to population growth leading to over utilization of marine and other water resources including overfishing and pollution, innovations and transformation will continue to be the solution for long term sustainability. Social transformation being witnessed by the new impetus caused by the invention of the term Blue Economy will continue to manifest itself in how new economic approaches, technologies, cultural behaviour change and incremental demographic numbers will play out. For example, the emphasis on Blue Economy and resource utilization will transform the society through growth and spread of industrial capitalism which is capable of leading to overutilization of marine resources and increased pollution of marine ecosystem including marine litter. Secondly, the issue of transformation through technological applications is poised to change traditional approaches to marine resource exploitation that were undertaken with a lot cultural commitment and order for fear of spiritual backlash. The cultural practices ensured marine ecosystem protection. Third, overpopulation in terms of demographic ballooning has had the effect of overcrowding along the coastal economies especially through urbanization. Lastly, social transformation has the effect of being manifested in individualization and consumerism practices that were not common to the social fabrics of the coastal communities.

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[63] Haas, H. de, Fransen, S., Natter, K., Schewel, K., & Vezzoli, S. (2020). Social transformation. Universiteit Leiden. The Netherlands. https://hdl.handle.net/1887/3147204 Accessed 29th January, 2025

The inevitable social transformation which is a human constant portend the evidence that coastal economies and other water body environ communities will not be able to continue practicing the traditional approaches to marine life and natural protection of marine ecosystems. This is why for food security to be sustained in the event of depleting of capture fisheries in the coastal economies, aquaculture and cage farming activities should grow rapidly to serve as a major source of food. Seaweed farming which has great potential in transforming economic well-being of the communities due to its high returns must be encouraged and supported. Tourism, and particularly coastal nature-based, also provides an important pathway towards the sustainable development of marine and coastal ecosystems.

Some of the significant social transformation already recorded that are attributable to Blue Economy include:

a) Improved livelihoods and income generation

Blue Economy has contributed to social transformation that positively impacted communities' livelihoods and the overall socio-economic wellbeing. The application of sustainable fisheries, aquaculture and marine tourism have provided income generating opportunities for blue resources dependent communities (coastal, riparian, riverine and watershed). As fish stocks become more sustainably managed and aquaculture practices improved, households' benefits from fishery increased. Furthermore, the expansion of Blue Economy initiatives has created direct and indirect employment opportunities.

b) Community empowerment and capacity building

Training programs that are related to Blue Economy sectors have empowered both the coastal and riparian zone communities and in particular women and youth[64]. The impact of such capacity building initiatives has a net effect of enhancing their skill, enable them to actively participate more in the local economies. Furthermore, community participation in decision making processes that relate to marine and aquatic ecosystems conservation and management fosters a sense of ownership and empowerment among the communities for sustainable practices and better resource stewardship.

c) Gender Equity and Women's Empowerment

Evidently, Blue Economy recognizes the role of women in fisheries and tourism and even in other blue sectors such as transport and infrastructure development that were traditionally male dominated. Initiatives that are geared towards empowering women through training and access to resources bolster their participation in economic activities. The engagements have the potential to improving their status within families and communities. In most cases such programs are aimed at supporting woman led fisheries, ecological and cultural tourism and other economic ventures contributing to economic independence and in the long run enhancing their role in community development.

d) Environmental Awareness and Stewardship

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[64] Kenya Marine and Fisheries Research Institute (KMFRI). (2017). Community Participation in Marine Resource Management: A Focus on Women and Youth. Nairobi: KMFRI.

The main focus for sustainable practices in Blue Economy is raising community awareness on the significance of marine and aquatic ecosystem conservation. This can lead to greater community involvement in the protection of sensitive ecosystems and in particular mangroves, coastal reefs and fish breeding estuaries. Education and advocacy related sustainable practices indeed encourages communities to adopt resource management techniques and practices that prioritize long term ecological health and resilient[65].

e) Conflict Resolution and Resource Management

Just like any other blue resource, marine and aquatic resources are prone to conflict. However, by promoting sustainable fishing practices and responsible marine resource management, Blue Economy helps to mitigate conflicts that arise from activities such as overfishing, resource degradation and depletion. A well-structured collaborative governance framework involving stakeholders often lead to harmonious co-management of resources. It ensures that initiatives that are aimed at equitable resource management improves relationships among different user groups for peaceful co-existence and shared benefits[66].

f) Health, Food and Nutrition Improvements

Blue initiatives such as fisheries, aquaculture and mariculture contribute to food and nutrition security and hence providing local communities with reliable access to fish and other aquatic resources with vital source of protein and other essential nutrients. Some Blue Economy projects such as Go Blue included health education and advocacy component that focused on nutrition and sanitation with and overall positive impact on improved public health in coastal communities.

g) Infrastructure Development

The rapid growth of Blue Economy has led to investment in infrastructure such as better maritime transports facilities e.g. the water bus that plies between Kisumu and Homa Bay, Kisumu port infrastructure development including the jetties, fish landing sites and a number of tourism and hospitality amenities dotted along the lake front and the coastline. Improved infrastructure has a direct impact on access to markets and services for the local population. The net effect of this is increased economic activities which then lead to improved well-being of communities.

2.5 Industries Contributing towards Blue Economy in Terms of Economic Growth, Livelihood Improvement and Job Creation in Kenya

Industries that utilize blue resources are expected to operate within the principle of sustainable development. Most importantly however, industries under the blue sectors must strive to contribute to three key areas namely economic development, livelihood improvement and job creation and strictly adhere to the protection of aquatic ecosystems which are the mainstay of Blue Economy. In Kenya, Blue Economy is supported by a diversity of blue sector industries that contribute to the three key parameters (outcomes) of that Blue Economy is expected to contribute to, namely; enhanced economic growth, improved livelihoods and employment creation. By focusing on

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[65] Go Blue Project. (2020). "Community Engagement in Sustainable Practices: Promoting Ecological Health and Resilience**.''** Nairobi: Go Blue Project.

[66] Forum for Climate Change Development (FCDC). (2017). "Resource Conflicts in Kenya: An Overview of Challenges and Solutions**."** Nairobi: FCDC.

sustainable practices and inclusive development, these blue sectors have ensured long term viability of marine and aquatic resources and bolstered coastal and riparian communities. The following paragraphs provide examples of some sectoral performance.

a) Tourism

The ocean economy approximately account for 4% of Kenya's national total GDP with coastal tourism being the largest contributor to the ocean economy, accounting for about 65% of Blue Economy contribution followed by marine tourism at around 28%[67]. Kenya Vision 2030 under the Economic Pillar targets a robust tourism sector offering a high-end, diverse, and distinctive visitor experience[68]. The coastal tourism which is a Blue Economy activity encompasses tourism, recreation, and entertainment-oriented activities such as swimming, snorkelling, diving, beaches, recreational fishing, various water sports, cruises, sports competitions, recreational and sailing boats. The country has put in place a number of strategies to achieve the vision in this sector. For example, there has been efforts to attract premium hotel brands into the tourism and hospitality market in Kenya. The brands already attracted include; Radisson Blu, J.W. Marriot, Kempinski, Grand Hyatt, and Sheraton. There has also been creation of high value niche tourism products including water-based tourism, eco-sports, cultural, bird watching and mountaineering among other unique products. The promotion of meetings, incentives, conventions and exhibitions have continued to position Kenya as a meetings' destination. Earnings from tourism has been showing upward trend from the COVID 19 period. For example, in 2023, Kenya earned KES.351billion compared to KES.268billion in 2022 translating to 32% growth in performance. In 2019, the earnings were KES. 296billion[69].

Although data of tourism contribution from the inland waters is scanty, marine and coastal tourism is a significant contributor to the National GDP mainly arising from international and domestic tourists. It is notable that marine and coastal tourism contribute approximately 10% of the national GDP with the blue sector contributing substantial revenue. The tourism activities that appeal to high-end tourists are in the water sports and recreation industry, the activities like diving, snorkeling and boat rentals contribute to local economies by attracting both local and foreign tourists who spend money on such experiences and services. Local entrepreneurs especially the youth do benefit from establishing businesses related to marine recreation ranging from tour guiding to equipment rentals. This industry has great potential for growth with creation of additional employment opportunities for tour guides, instructors and service personnel. It is therefore evident that tourism industry provides numerous jobs from direct employment in hotels and tour operations to indirect jobs in transport, handcrafts and food services.

b) Fisheries and Aquaculture

From time immemorial, traditional fishermen have dominated the fishing scene in Kenya with few commercial/industrial vessels targeting mainly shallow water shrimps, deep water shrimps and lobsters mainly concentrating in the coastal region along Indian Ocean. However, in recent times,

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[67] Ibid.

[68] University of Nairobi Maritime Centre (2023). An Assessment of the Status of Blue Economy Sectors in Kenya. Sector Report on Coastal, Marine and Inland Tourism to UNEP-NC.

[69] Diana, E. The Standard, Tourism rebounds to Sh.352.56 surpassing pre-covid numbers. March 30, 2024.

efforts have been on towards developing industrial fleet. Consequently, in 2023 Kenya had five active long liners and two pot vessels fishing in the Economic Exclusive Zone (EEZ). The artisanal fishery accounts for the larger part of the inland and marine water catches in the country, even though our EEZ, which is predominately exploited by commercial fishery, is less exploited compared to the nearshore fishery[70]. According to 2023 fishery statistics, the industry directly supported approximately 65,000 people as fishermen and 70,000 fish farmers, with 149,000 stocked fish ponds. The sector supported about 1.5 million people directly and indirectly working as fishers, traders, processors, suppliers, and merchants of fishing accessories, employees and their dependents. Besides being a rich source of protein, especially for riparian communities[71].

The fishing and aquaculture sector on the other hand, grew from KES. 34.9billion in 2016 to KES. 48.82 billion in 2019.[72] The performance in the sector has been on upward trend since 2019 recording earnings valued at KES. 43.6million (2020), KES.45.2million (2021), KES.48.7million (2022) and KES.47million in 2023. **Table 8** presents performance statistics of the fishery sector with exception of capture fisheries.

Table 8: Aquaculture, Mariculture, Cage Culture and Marine Performance in KES.'000

YEAR	INLAND	MARINE	TOTAL
2019	5,857,245	4,477,575	10,334,820
2020	7,228,781	4,835,711	12,064,492
2021	8,444,853	5,491,800	13,936,653
2022	8.738,117	8,709,580	17,447,697
2023	9,974,155	8,309,753	18,283,908

Source: Fisheries Statistical Bulletin, 2023

The table indicates that there has been sustained increment in the earnings from the aquaculture, mariculture, cage culture and marine fisheries during the five years, 2019 to 2023. **Table 9** however depicts the inferred value of capture fisheries as the figures were not easily available from literature.

Table 9: Value of Capture Fisheries by inference in KES.'Billion

Year	Column 1: Overall Totals per year (Capture, Aquaculture, Mariculture, Cage & Marine)	Column 2: Aquaculture, Mariculture, Cage Culture and Marine	Inferred Value of Capture Fisheries (Column 1 minus Column 2)
2019	48.82	10.33	38.49
2020	43.60	12.06	31.54
2021	45.20	13.94	31.94
2022	48.70	17.45	31.25
2023	47,00	18.28	28.72

[70]Kenya Fisheries Service (2023). Fisheries Statistical Bulletin. Republic of Kenya.
[71] Ibid.
[72] Kenya National Bureau of Statistics, 2020. Government of Kenya publication.

The table shows that from 2020 to 2023 and probably beyond, there seem to be flattening trend in the earnings from capture fisheries with an indication of decline taking into consideration of the performance of 2023 at KES.28.72billion.

c) Renewable Energy

Renewable energy has been statutorily defined by the International Renewable Energy Agency (IRENA) as "renewable energy includes all forms of energy produced from renewable sources in a sustainable manner, including bioenergy, geothermal energy, hydropower, ocean energy, solar energy and wind energy." The International Energy Agency (IEA) however, defines renewable energy resources as those "derived from natural processes" and "replenished at a faster rate than they are consumed"[73]. The IEA definition of renewable energy includes the following sources: "electricity and heat derived from solar, wind, ocean, hydropower, biomass, geothermal resources, and biofuels and hydrogen derived from renewable resources". Kenya on the other hand, defines renewable energy as "non-fossil energy generated from natural non-depleting resources including but not limited to solar energy, wind energy, biomass energy, biological waste energy, hydro energy, geothermal energy and ocean and tidal energy"[74].

The composition of energy in Kenya is estimated at 80 % fossil fuels, 18 % renewable energy and 2 % coal. However, electricity generation has been predominantly driven by renewable energy, contributing 80 % of the total supply, with an estimated annual growth of 3.1 %. Over 85 % of the total population utilizes wood biomass, with 86 % in rural areas and 21 % in urban areas[75]. Arid and Semi-Arid lands make a total of 70% Kenyan landmass with great potential for renewable energy especially solar and wind. The power sector has witnessed steady growth over the last two decades due to an aggressive electrification program. Abundant renewable energy resources with a mix consisting of wind, solar, geothermal, and hydro being approximately 90% of Kenya's installed capacity has been the reason for the growth. While the national electricity access currently stands at 84%, having grown from 32% in 2013, the aim is to achieve universal access by the year 2030[76].

Both oceanic and inland waters blue resources have huge potentials for generating renewable energy. The development of renewable energy from these resources associated with the ocean and inland waters such as wind and solar farms can contribute to energy independence and sustainability at both national and subnational levels. Investment in renewable energy at all levels of government with lower energy costs for communities in the coastal and inland basins and therefore improving the socio-economic condition of the population in these regions. By harnessing renewable energy, the sectors will create jobs in construction, maintenance and operation of on shore and offshore

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[73] IEA 2002, OECD, IEA and Eurostat, 2005

[74] Energy Act, 2019

[75] Rotich, I.K., Chepkirui, H. & Musyimi, P.K. (2024). Renewable Energy Status and Uptake in Kenya. Energy status *Reviews Science Direct, Elsvier. Vol.54.*

[76] International Trade Administration (2024). Energy-Electrical Power Systems. Kenya – Country Commercial Gude. US Government publication

facilities. A case study summarized in **Box 1** on Demark serves as a good example for the potential that renewable energy portends.[77]

Box 1: Case Study – Renewable Energy in Denmark

Over the past 40 years, Denmark has integrated 7 GW of wind and PV solar capacity into the electric grid. The fresh numbers from 2022 show that the country's electricity needs are now covered by 60% renewables. In just 8 years from now, that figure will quadruple. There are certainly some lessons to learn from Denmark regarding the potential that harnessing of renewable energy has in contributing to Blue Economy. The success in Denmark's development of renewable energy can be attribute to strong focus on sustainability which has made significant progress in developing renewable energy sources, particularly in the offshore wind sector. Here are some learning points from Denmark's renewable energy initiatives in contributing to sustainable Blue Economy: Offshore Wind Power. Denmark has strategically utilized its offshore wind resources to generate a substantial amount of renewable energy. The country has been a pioneer in offshore wind farm development, with the world's first offshore wind farm, Vindeby Offshore Wind Farm, installed in 1991. The country has continued to expand its offshore wind capacity and has several large-scale wind farms operating in its territorial waters; Energy Self-Sufficiency: Denmark's offshore wind farms have played a crucial role in achieving energy self-sufficiency. The country has set ambitious renewable energy targets and aims to be completely independent of fossil fuels by 2050. Renewable energy, including offshore wind, has enabled Denmark to reduce its reliance on imported energy sources and enhance energy security; Job Creation and Economic Growth: The development of the offshore wind industry has contributed significantly to job creation and economic growth in Denmark. The sector has created thousands of jobs in areas such as wind turbine manufacturing, installation, operation, and maintenance. Danish companies involved in the offshore wind supply chain have gained expertise and become global leaders, exporting wind energy technologies and services worldwide; Environmental Benefits: Offshore wind power has helped Denmark reduce greenhouse gas emissions and combat climate change. By shifting away from fossil fuels, Denmark has significantly reduced its carbon footprint and improved air quality. Offshore wind farms also provide additional environmental benefits by acting as artificial reefs, enhancing marine biodiversity and promoting fish habitats; Export of Expertise: Denmark's success in offshore wind has positioned the country as a global leader in renewable energy expertise. Danish companies have capitalized on their experience and knowledge to export wind energy technologies and consultancy services to other countries. This export of expertise has not only supported Denmark's economy but Denmark has only capitalized on one source of renewable energy – wind. In the lake region the sources of renewable energy are many include solar, wind, biomass, geothermal of course over 4000Km² of open surface water.

Kenya's installed electricity capacity as of 2023 stood at 3,321MW, a significant growth from 1,800MW in 2014, but still low for a country with a population of over 50 million. The policy is to increase power demand and supply and lower the cost of electricity by injecting cheaper renewable energy sources while reducing reliance on the more expensive heavy fuel oil plants. The target is to achieve generation capacity of 5,000MW by the year 2030 with the bulk of it coming from clean energy sources[78].

The performance in terms of licensed captive power capacities in the renewable energy generation in the country is presented in **Table 10.** Captive power capacity is the capacity of a self-producer to generate electricity exceeding 1MW, within their facility which is then used and managed by the auto-producer for their own energy consumption. This performance indicator is used here to demonstrate the growth of renewable energy in the country.

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[77] Blue Economy Capacity Needs assessment report. Kenya Devolution Program (2023). PricewaterhouseCoppers, Nairobi, Kenya.
[78] Ibid.

Table 10: Licensed Captive Power Capacities in The Renewable Energy

Renewable Energy Type	2019	2020	2021	2022	2023
Solar	35	35	35	46.3	88.2
Biomass	1.5	1.5	2.9	2.9	19.5
Biogass	2.6	2.6	2.8	2.8	0.2
Biothermal	-	-	-	2.1	0.0
Geothermal	3.7	3.7	3.7	3.7	3.7
Hydropower	26	26	28.3	32.4	30.2
Thermal	18.5	18.5	46.1	53.9	42.9
Total	**87.3**	**87.3**	**118.8**	**144.1**	**184.7**

Source: Economic Survey, 2024 p.246

As more awareness over climate change grows, the Table indicates that there is steady growth in the production of renewable energy. Wind energy is particularly a key growth area with a potential of 3,000MW. The Lake Turkana Wind Power Plant for example is the single largest wind power generation plant in Africa supplying 310MW to the grid. The performance from 2019 has from 87.3MW to 184.7MW in 2023.

d) Marine Litter

Pollution both soft and hard waste has continued to degrade the environment hence creating unhealthy business environment. Marine litter is any solid material either manufactured, processed, or synthetic disposed within the marine or water body ecosystem. Hard waste such as plastic substances have ended up in the oceans thus threatening water lives such as fish and fishery products which are significant trading goods. Marine litter is such a big a problem to the oceans, with some scientists warning that, by 2050, the quantity of plastics in the oceans will outweigh fish! There are multilateral environmental agreements that respond to global ecological environment issues. The issues include loss of biological diversity, adverse impacts of Climate Change, depletion of the ozone layer, hazardous waste, organic pollutants, marine pollution, trade in endangered species, destruction of wetlands among others. In the case of marine pollution, marine litter is the main pollutant composed of plastic, paper, metal, textile, glass and rubber. Plastics have been ranked the largest, most harmful and most persistent fraction of marine litter, accounting for at least 85% of total marine waste according to United Nations Environmental Program[79].

There are several international, regional and national agreements, programs and projects that address this threatening environmental problem. A few examples may bring out the status of marine litter in the marine ecosystem and the business opportunity the sector has.

(i) **International Maritime Organization (IMO)**: IMO has recognized the importance of preventing pollution by garbage, including plastics, from ships since the adoption of MARPOL Annex V. It has also recognized the importance of preventing the dumping of various types of waste, including plastics, into the sea through the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Convention or LC) and its

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[79] UNEP. Plastic Pollution and Marine Litter. https://wesr.unep.org Accessed 5th February 2025

1996 Protocol (London Protocol or LP). The organization has also committed to working closely with a number of partners to address the issue of marine plastic litter. IMO recognized the ongoing problem of marine plastic pollution required further consideration, in pursuance of the target of Sustainable Development Goal 14 to prevent and significantly reduce marine pollution of all kinds by 2025. In recognition of the urgency to address marine plastic litter from ships, IMO adopted the Action Plan to Address Marine Plastic Litter from Ships (resolution MEPC.310(73))[80].

(ii) **UNEP-Regional Sea Program, UNEP-Regional Sea Program:** This is an action-oriented regional programme that implements region-specific activities, bringing together stakeholders including governments, scientific communities, civil societies, indigenous people, local communities and the youth to "address the accelerating degradation of the world's oceans and coastal areas through a "shared seas" approach".

(iii) **The Global Partnership on Plastic Pollution and Marine Litter (GPML) Digital Platform**: This is a multi-stakeholder, knowledge sharing and networking tool which aims to facilitate action on plastic pollution and marine litter reduction and prevention. It empowers governments, private sector, civil societies, scientific communities and non-governmental organizations to address problems of plastic pollution.

(iv) **The National Marine Litter Management Action Plan 2021 – 2030[81]:** Marine ecosystems are estimated to contribute USD 2.5 trillion to the global economy. The Western Indian Ocean (WIO) region is valued at USD 333.8 billion with Kenya's share being more than USD 4.4 billion. However, marine ecosystems are globally under pressure from various triggers, amongst them, coastal pollution particularly marine litter pollution leading to losses of up to USD 940 billion from the tourism revenue and decline in fisheries. In the WIO region, UNEP-GEF WIO-LaB Project and WIO Trans-boundary Diagnostic Analysis identified marine litter among the main pollutants requiring urgent action.

Investments in marine litter concentrate on prevention of plastic and other debris from destroying marine ecosystems. The investments may be in form of non-profit activities like funding projects in waste management infrastructure, education campaigns, and research on innovative solutions, as well as supporting community-driven clean-ups. Main supporters in this could be such organizations like the World Bank, UNEP, and national governments leading the efforts. Investment areas may be on recycling plants, improving waste collection systems, promoting sustainable product design, and developing new technologies to capture and remove marine litter. For example, investment in technologies for production of biodegradable alternatives to plastics is an opportunity. Currently, there are no information on companies operating marine litter business hence, the sector is virgin and within the category of blue ocean industries as it has no competition.

e) **Maritime Transport and Shipping**

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[80] International Maritime Authority. IMO Strategy to address Marine Plastic Litter from Ships. www.imo.org/mediaCentre/HpotTopics Accessed 6th February 2025
[81] National Environmental Management Authority

The maritime transport industry is centered on ports like Mombasa, Lamu and Kisumu and is important for both inter and intra trade. Maritime transport facilitates imports and exports of goods and therefore contributing to the overall economy. Imports from Mombasa port for instances in 2021 handled imports valued at approximately USD 6.6 billion[82]. Jobs related to shipping, logistics and port operations support local economies and provide many employment opportunities. The port of Mombasa directly employs close to 20,000 people who undertake various roles such as dockworkers, custom officers, logistics personnel and administrative staff. The ripple effect of this is boosting of economic activities in the coastal region hence improved livelihood.

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[82] Kenya National Bureau of Statistics (KNBS). (2022). "Economic Survey 2022." Nairobi: Kenya National Bureau of Statistics.

CHAPTER THREE: COUNTY AND INTER-GOVERNMENTAL BLUE ECONOMY INITIATIVES

3.1 Introduction

The approach of Kenya to the Blue Economy at both county and national levels emphasizes on sustainability and community engagement. By leveraging its rich marine resources in the ocean and its inland lakes and rivers, through targeted strategies and collaboration, Kenya aims to enhance its economic standing while preserving her aquatic ecosystems for future generations. Blue Economy in Kenya represents a sustainable approach to the management of marine resources in order to promote economic growth, creating employment and improving livelihoods. In Kenya, the blue resources is composed of the ocean (the EEZ and coastline), inland water lakes (Lakes Victoria, Turkana, Nakuru, Naivasha, Baringo, Bogoria, Elemeitaita among others), rivers (Nzoia, Yala, Sondu, Miriu, Nyando, Athi, Turkwell, Tana among other), swamps (Yala, Sio and Malakisi) and underground water (largely not surveyed). These blue resources contribute to the livelihoods, boosting tourism, supporting irrigated farming and conserving terrestrial and aquatic (marine) biodiversity.

3.2 Intergovernmental collaboration around Blue Economy

The Ocean-based industries are spread across the six counties of Jumuiya za Kaunti Za Pwani namely; Mombasa, Kwale, Kilifi, Tana River, Lamu, and Taita Taveta as well as the neighbouring countries of Tanzania and Somalia. Along the lake region, trade is largely with the fourteen (14) counties of the Lake Region Economic Bloc (LREB) and the bordering countries of Tanzania, Uganda and to some extent Rwanda, Burundi and Democratic Republic of Congo (DRC). The other water bodies also trade within the bordering counties and countries such as South Sudan and Ethiopia.

Intergovernmental collaboration in the Blue Economy space in Kenya is central to sustainable development and effective resource management This helps to collectively address challenges caused by climate change, overfishing and pollution which are cross-cutting. There are imperatives that are critical to enhancing collaboration and cooperation in implementing Blue Economy programmes and projects:

a) **Institutional Relationships** in the case of Kenya is coordinated by the Intergovernmental Relations Technical Committee (IGRTC). This is the body that is responsible for the day-to-day administration of the National and County Government Coordinating Summit (Summit). The Summit provides a forum for consultation and cooperation between the two levels of government; monitors the implementation of national and county development plans and coordinates and harmonizes the development of county and national policies. The Summit also among other functions, evaluates the performance of national or county governments with a view to taking any necessary corrective action. IGRTC as the secretariat to the Summit therefore facilitates dialogue between various government levels for harmonious implementation of activities and functions of the Summit. The other coordinating entity in the intergovernmental collaboration is the Ministry for the time being responsible for fisheries and Blue Economy[83]. This ministry plays a pivotal role in

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[83] Republic of Kenya. (2020). *Executive Order No. 1 of 2020: Establishment of the Ministry of Fisheries, Blue Economy and Maritime Affairs*. Retrieved from https://www.president.go.ke

formulation of national policies and strategies in consultation with county governments on implementation of Blue Economy activities, programmes and projects in line with the County Integrated Development Plans.

b) **County Government Collaboration**: The riparian counties of Busia, Siaya, Kisumu, Homa bay and Migori as well as the coastal counties of Mombasa, Kilifi, Kwale and Lamu have developed county specific Blue Economy policies that align to the focus of national strategies. These policies focus on promoting sustainable fisheries, ecotourism, ecosystem conservation, maritime transport, renewable energy and infrastructure development. In addition, these county governments have established committees and task forces to oversee Blue Economy activities and projects with inclusion of local community inputs. For instance, the Lake Region Economic Bloc counties, through a memorandum signed with national government agencies especially research institutions, and academia; and private sector players have established a committee called the multi-agency technical committee (MATC) that coordinates implementation and implementation of a joint action plan on Blue Economy[84].

c) **Citizen Engagement**: To facilitate an all-inclusive decision making, intergovernmental collaboration includes engaging the citizens in decision making processes, in this case regarding aquatic resource management. This fosters ownership and sustainability while at the same time ensuring the voices of the local stakeholders are heard and taken into account. Additionally, both the county and national governments continuously invest in training and capacity building for extension staff and the local communities for promotion of sustainable Blue Economy activities and projects. Development partners have been instrumental in achieving these capacity building initiatives as they work with local institutions. This is often done in collaboration with local institutions.

d) **Public Private Partnerships**: Although this concept has not been exploited fully in bridging the financial resource gap in many Blue Economy initiatives, collaboration between government entities and the private sector players is critical for leveraging financial resources required for implementing Blue Economy projects. The potential partnership with the coastal and riparian counties could take the form of joint ventures on sustainable aquaculture, eco – tourism infrastructure and facility development among other Blue Economy sectors.

e) **Cross-sector collaboration** – Blue Economy entails economic activities that take place in, around and on water and undertaken by various blue sectors. As such, due to the intersects with multiple sectors in Blue Economy such as agriculture (in particular irrigation), tourism and renewable energy, collaboration is pre-requisite to the implementation of various activities, projects and programmes in such sectors. This inter-governmental collaboration fosters cross-sectoral policy integration to ensure a holistic approach to resource management. A classic example is the

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[84]Details are provided in Chapter Four on development partner programmes in Blue Economy (Kenya Devolution Program).

collaborative framework for sustainable development of Blue Economy currently in operation at the Lake Region Economic Bloc's counties[85] as presented in **Box 2**.

> **Box 2: Collaborative Framework for Blue Economy Sustainable Development in LREB**
>
> The Kenya Devolution Programme (KDP) working closely with the Kenya Maritime Authority (KMA) embarked on a long journey of mobilizing various actors in the region who had a stake in the development of Blue Economy. Ultimately, a Memorandum of Collaboration (MOC) aimed at facilitating cooperation and partnership in sustainable management and development of Blue Economy in the lake region was signed in 2016 by over 40 entities comprising of MDAs, counties (within the Lake Region Economic Bloc), universities, research institutions, regional bodies and private sector players. The heads of the entities thereafter established an institutional framework comprising of an Executive Committee (Ex-Com) which played an oversight role and comprised the chief executive officers of the entities and a technical committee (Tech-Com) known as Multi-Agency Technical Committee (MATC to coordinate implementation of the MOC. The first task of the MATC was to develop a 5-year action plan referred to as the Multi-Agency Action Plan (MAP) to facilitate the realization of the aspirations of the MOC. With the support from the KDP, implementation of the MAP kicked off. The entry point was the work stream of the KDP implemented by PricewaterhouseCoopers (PwC). The technical assistance focused on supporting the MATC in building their capacity on Blue Economy, refining the MAP. This effectively rooted Blue Economy into the counties' development plans. It is important to note that the Collaborative Framework for the Lake Victoria Region is premised on the MOC whose parties are conscious of the existing need for collaboration between their respective organizations for the purpose of synergy in matters of enhancing, promoting and ensuring coordinated growth and vibrancy of the region's Blue Economy activities. As such, the parties to the MOC voluntarily expressed their desire to work together in partnership in areas of infrastructure, transport, tourism, cultural and aquatic sports, fisheries and aquaculture, governance and legislation, standardization, trade and investment, environmental and natural resource management, research and development and in areas addressing climate change and resilience investment initiatives.

f) Joint monitoring of Blue Economy activities, projects and programmes is critical in ensuring sustainable Blue Economy management and development. Intergovernmental collaboration includes establishment of a joint mechanisms of monitoring Blue Economy activities and projects, assessing their impacts of the projects and policies and ensuring compliance with sustainable standards. Efforts by the Government at all levels (sub-national and national) collaborates to sharing data and best practices in blue resources including marine resources management which enhances decision making and policy formulation. Through the support of the KDP, a digital Monitoring, Evaluation and Learning systems has been developed for the LREB counties and in being implemented by a number of agencies. The system is jointly hosted at the Kenya Maritime Authority and the Lake Region Economic Bloc Secretariat.

3.3 County Specific Strategies, Sector Policies and Plans on Blue Economy Projects and Programmes

Fisheries policies developed at the national level guide counties in managing their fisheries resources sustainably in order to protect fish stocks and promote the livelihoods of fishing communities. Apart from the national approaches to the Blue Economy, various counties with coastal shoreline and other water bodies have developed strategies and sector policies on Blue Economy. The individual counties have therefore, their own fisheries management policies that align with the national guidelines to ensure sustainable harvesting and conservation of the aquatic and marine resources. These initiatives are aimed at promoting sustainable management of marine and other aquatic resources in specific counties for economic development and environmental

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[85] Unlocking Blue Economy potentials in Lake Victoria Region: "A Collaborative Framework for Cooperation and Partnership". A publication of the ACT! (2024)

preservation. Some of the key county Blue Economy strategies and sector policies are detailed in the following paragraphs:

a) **Tourism Development Strategies**

County governments are developing tourism policies that integrate Blue Economy. The strategies promote ecological tourism and marine tourism ensuring that tourism development is environmentally sustainable while providing the much-needed economic benefits to the local communities. For instance, the Mombasa County Tourism Master Plan emphasizes on coastal tourism development that focuses on sustainable practices and community involvement in tourism activities.

b) **Climate Change Adaptation Strategies**

Water and its resources are the main facilitator and enabler of Blue Economy sectors. However, aquatic (water) ecosystems are most vulnerable to climate change impacts[86]. As such many of the coastal and riparian counties are integrating climate change considerations into their Blue Economy strategy and policies. The climate change strategies focus on enhancing resilience among communities in those zones, protecting ecosystems and adapting to changing environmental conditions.

c) **Public Private Partnership Frameworks**

Blue Economy activities, projects and programs are capital intensive hence require huge investments that neither the communities nor county governments can afford. It is therefore important that county governments leverage on the private sector resources to invest in the Blue Economy projects. Counties should thus be encouraged to engage private sector players through public-private partnership arrangements in the implementation of Blue Economy projects.

d) **Capacity Building and Community Participation Initiatives**

There are efforts in counties in the implementation of programs to train local communities on sustainable practices in fisheries and ecotourism sectors. The training includes workshops, peer to peer workshops, training sessions and participatory programs aimed at empowering communities and the general public to manage their resources sustainably.

e) **Environmental Conservation Initiatives**

Policies aimed at protection of oceanic and inland waters marine ecosystems such as mangrove, coral reefs and riparian and riverine zone restoration, wetlands restoration initiatives are often included in the county development plans for implementation. These initiatives are vital for maintaining biodiversity as well as ensuring long term sustainability of marine and other aquatic resources.

f) **Coastal and Lake Basin County Development Plans and Initiatives**

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[86] UNFCCC. (2019). "The United Nations Climate Change Report: Special Report on Climate Change and Oceans and the Cryosphere." Geneva: United Nations Framework Convention on Climate Change.

The coastal counties under the umbrella of the JKP comprising Mombasa, Kilifi, Kwale, Lamu, Tana River and Taita Taveta have developed comprehensive development plans that have incorporated Blue Economy initiatives. This is also applicable to counties within the LREB and in particular the riparian counties of Busia, Siaya, Kisumu, Homa Bay and Migori, which have also incorporated activities, projects and programs in Blue Economy in both their annual development plans as well as their County Integrated Development Plan (CIDP). These plans have addressed blue sectors such as fisheries, tourism, aquaculture, agriculture, environment and natural resource management and maritime transport with an emphasis on sustainability and community participation.

The "Go Blue" Initiative[87] was launched in March 2021 as a pivotal program focusing on the sustainable utilization of Kenya's marine and inland water resources. It emphasizes creating environmentally friendly job opportunities, especially for women and youth. The initiative aimed at generating over 3,000 jobs in the six coastal counties (JKP). The programme focused on sectors such as small-scale fishing, waste recycling, and tourism.

The LREB Blue Economy initiatives are primarily focused on improving fisheries and transport infrastructure, enhancing market access for fishers, and supporting sustainable fishing practices to reduce post-harvest losses. LREB is a bloc representing 14 counties around the Lake Victoria and its Kenyan-side riverine tributaries of Nzoia, Sio, Yala, Nyando, Kibos, Sondu-Miriu, Kuja, Migori, Riara and Mawa. The ecological zone of the basin has communities sharing analogical cultures dating back to historical human migration and trading routes. The bloc has created a pool that harnesses the abundant natural resources, strengths and addresses any challenge that could hinder the development initiatives on the sustainable use of shared resources within the Lake Victoria basin.

g) **County Blue Economy Policies**

Counties, especially those in the coastal and lake region zones are actively developing and implementing strategies and policies that support Blue Economy initiatives. Importantly, these efforts align with the national priorities to enhance the sustainable management of marine resources, contributing to economic development, environmental conservation, and community resilience. In this regard, a number of counties have developed specific Blue Economy policies to provide a regulatory and policy framework for sustainable utilization and development of marine, and lake blue resources. Some of these policies include:

(i) **Kilifi County Blue Economy Policy[88]:** The policy focuses on sustainable fisheries management, aquaculture, marine tourism development and protection of marine ecosystems;

(ii) **Lamu County Blue Economy Strategy[89]:** The strategy outlines the approaches to enhance sustainable fishing practices, promote ecotourism and develop marine infrastructure;

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[87] **European Union.** (2020). *Go Blue: A Project Supporting Sustainable Blue Economy in Africa and its Islands.*
[88] Kilifi County Government. (2020). Kilifi County Blue Economy Policy. Kilifi: Kilifi County Government.
[89] Lamu County Government. (2021). Lamu County Blue Economy Strategy**.** Lamu: Lamu County Government.

(iii) **Mombasa County Marine Fisheries Policy:** The policy promotes fishing practices, protecting marine biodiversity as well as encouraging development of aquaculture to support local communities.

(iv) **Kwale County Blue Economy Strategy:** The strategy aims at leveraging marine resources for economic growth while ensuring environmental sustainability and focuses on blue sectors such as ecotourism, fishing and marine conservation;

(v) **Homa Bay County CIDP[90]:** The county prides herself as the Blue Economy champion and has a fully-fledged Blue Economy department under a CECM. The plan prioritizes the f blue sectors of fisheries and aquaculture, irrigated agriculture, maritime transport, infrastructure and lake front development; and

(vi) **Kisumu County CIDP[91]:** Like the sister riparian county of Homa bay, Kisumu County has the Blue Economy hub. The plan focuses on blue sectors such as fisheries and aquaculture, eco and cultural tourism, infrastructure development especially port and jetty, maritime transport, hospitality and lake front development. The plan emphasizes on sustainable fisheries management and community involvement in decision making.

h) Integrated Coastal Zone Management

Many coastal counties are adopting Integrated Coastal Zone Management (ICZM) approach. ICZM frameworks[92] help coordinate the management and development of the coastal resources. The Lake Basin riparian counties have also adopted the Integrated Water Resources Management (IWRM) framework in coordination and management of water resources related initiatives. Both frameworks have integrated environmental conservation and protection components with socio-economic development in order to ensure that communities and other players in the blue space needs are balanced with sustainability.

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[90] Homa Bay County Government. (2018). Homa Bay County Integrated Development Plan 2018-2022**.** Homa Bay: Homa Bay County Government.

[91] Kisumu County Government. (2018). Kisumu County Integrated Development Plan 2018-2022**.** Kisumu: Kisumu County Government.

[92] Kenya Coastal Development Project. (2014). Integrated Coastal Zone Management: A Guide for Coastal Communities in Kenya. Nairobi: Kenya Coastal Development Project.

CHAPTER FOUR: DEVELOPMENT PARTNER PROGRAMMES IN THE BLUE ECONOMY

4.1 Introduction

At the core of the Blue Economy concept is the de-coupling of socio-economic development from environmental degradation. To achieve this, the Blue Economy approach is founded upon the assessment and incorporation of the real value of the natural (blue) capital into all aspects of economic activity[93]. Kenya began referencing the Blue Economy in the Medium-Term Plan III of 2018 – 2022 of the Kenya Vision 2030. MTP I (2008 - 2012) and MTP II (2013 - 2017) did have elements of the Blue Economy covered in the plans but not under a consolidated stand-alone sector. Aspects of the Blue Economy sector in MTP I included maritime and inland water transport with a focus on modernization of the Mombasa port; development of landing sites for small boats and canoes; development of satellite ports along the Indian Ocean coastline; establishment of the Coast Guard; revitalizing inland waterways and port infrastructure in the Lake region making Kisumu a hub to link with other key port towns on Lake Victoria; fish production and regulations to operationalize maritime laws.

MTP II built on the MTP I elements with emphasis on a framework on integrated maritime policy and consolidating the agricultural reforms. Plan to establish Kenya Coast Guard Service was advanced with intention of enforcing maritime law on security, safety, and protection of maritime resources within Kenya's territorial waters. Fisheries development under the Ministry for Agriculture, Livestock and Fisheries was prioritized with focus on value addition and employment creation. MTP II did achieve some important milestones especially having restocked 11 rivers and 3 lakes with 4.8 million fingerlings, adopted the Fisheries and Aquaculture Policy Framework and strategy for the AU (2014); established fish quality control laboratories and a residue monitoring plan that enhanced fish export approvals to the EU amongst others.

MTP III on the other hand listed Blue Economy as a priority sector with the sector actors recognizing the need to develop infrastructure to enhance exploitation of the Blue Economy that was seen as a sector with vast opportunities. The plan included a carry-over from the MTP II period. At the same time the sector players noted the inadequate relevant skills coupled with a lack of adequate policy, legal and institutional framework for coastline security and management. The sector plan initiated the development of a Blue Economy Master Plan aimed at strengthening beach management units, restructuring the Kenya National Shipping Line, transforming the Bandari

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[93] Data collection survey on the Blue Economy in the Republic of Kenya: Japan International Cooperation Agency (JICA). 2018.

College into a centre of excellence in maritime affairs, and construction of a raft of fish ports, fish markets, fish processing plants and cold storage.

4.2. Global Development Partnerships in the Blue Economy

In 2012, the Africa Union formulated and launched the Africa Integrated Maritime Strategy (AIMS 2050) following a resolution of the Assembly just before development of the MTP III. The AIMS notes that: *"...In developing this 2050 Africa's Integrated Maritime (AIM) Strategy, it is recognized that the AMD has vast potential for wealth creation. So also, is the realization that AU Member States have common maritime challenges and opportunities, and indeed, significant responsibilities for generating the desirable political will for implementing the strategy...."*[94]. The United Nations Environment Programme (UNEP) Finance Initiative[95] hosts the Sustainable Blue Economy Finance Principles. This is a global framework developed in 2018 co-signed by the World Bank, the European Commission, the World-Wide Fund for Nature, the World Resources Institute, and the European Investment Bank. The principles are designed to guide banks, insurers, and investors in financing a sustainable Blue Economy in alignment with Sustainable Development Goal 14 (Life below Water). Taken together, the principles offer a road map for ensuring that financial activities and investments in the ocean and coastal industries are environmentally sustainable and socially equitable.

The global community began shaping the policy and regulatory frameworks of the Blue Economy management from around 2015 during Kenya's MTP II period. Some of the chronological events with the Blue Economy initiatives are:

(i) The **Global Oceans Action Summit for Food Security and Blue Growth[96]** took place from 22th to 25th April 2014 in The Hague, The Netherlands. For the first time, global leaders, ocean practitioners, scientists, and representatives from governments, business, civil society and international organizations convened to explore action-oriented partnerships, governance arrangements, investment frameworks and new financing vehicles to address the health of oceans. The Summit identified steps towards critical internationally agreed targets for fisheries, aquaculture, habitat protection and pollution reduction.

(ii) **The 2030 Agenda for Sustainable Development,** including 17 sustainable development goals (SDGs) was adopted at the UN Sustainable Development Summit[97] in September 2015. In paragraph 33 of the Agenda, Member States recognized that social and economic development depended on the sustainable management of the planet's natural resources and determined to "conserve and sustainably use oceans and seas, freshwater resources, as well as forests, mountains and dry-lands and to protect biodiversity, ecosystems and wildlife."

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[94] 2050 Africa's Integrated Maritime Strategy; Africa Union 2012.
[95] https://www.unepfi.org/blue-finance/the-principles/
[96] The conference report can be found here - https://enb.iisd.org/events/global-oceans-action-summit-food-security-and-blue-growth/summary-report-22-25-april-2014
[97] https://www.un.org/en/conferences/environment/newyork2015

(iii) The high-level **UN Conference to Support the Implementation of SDG 14[98]** was convened at the UN Headquarters in New York from 5th to 9th June 2017, coinciding with World Oceans Day, to support the implementation of Sustainable Development Goal 14. The Conference which focused on conservation and sustainable use of the oceans, seas and marine resources for sustainable development raised global consciousness on ocean issues and produced strong ambitious outcomes. The political declaration, "Our ocean, our future: call for action" was adopted by the General Assembly on 6th July 2017 through resolution A/71/312. The resolution recognizes the oceans "as an engine for sustainable economic development and growth" and calls upon all stakeholders to conserve and sustainably use the oceans, seas and marine resources for sustainable development by taking, *inter alia*, actions to support the promotion and strengthening of sustainable ocean-based economies.

(iv) The **third UN Environment Assembly[99]** (UNEA-3) convened from 4th to 6th December, 2017, in Nairobi, Kenya. The Assembly adopted 11 resolutions and adopted, by consensus, a negotiated Ministerial Declaration through which they agreed to address the pollution of air, land and soil, freshwater, and oceans. The resolutions called for accelerated action and strengthened partnerships to, *inter alia*, combat the spread of marine plastic litter and micro plastics and address issues around water pollution.

(v) The **High-Level Scientific Conference 'From COP21 towards the United Nations Decade of Ocean Science for Sustainable Development (2021-2030)[100]'** took place from 10th to 11th September 2018 in Paris, France, at the UN Educational, Scientific and Cultural Organization (UNESCO). The conference synthesized recent scientific progress on ocean and climate interplays, evaluated the latest ocean-climate trends within the context of increased ocean action, and reflected on ways to move "from science to action" during the Decade of Ocean Science for Sustainable Development (2021-2030).

(vi) Nairobi hosted the first **Sustainable Blue Economy Conference[101]** from 26th to 28th November, 2018. Under the theme "The Blue Economy and the 2030 Agenda for Sustainable Development." The conference gathered over 18,000 participants from 184 countries with seven Heads of State and Government, 84 ministers, and leaders from a wide range of sectors in attendance. The conference attracted diverse levels and spectrum of attendees comprising governments, academia, the scientific and research community, UN and other intergovernmental organizations, international organizations, business and private sector entities, non-governmental and civil society organizations, and ordinary citizens. Over 60 commitments were made during the event covering all aspects of the Blue Economy.

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[98] https://www.unep.org/unepmap/news/news/map-un-ocean-conference-partnering-implementation-sdg-14-mediterranean

[99] https://www.unep.org/environmentassembly/unea3

[100] Conference report can be found here - https://enb.iisd.org/events/high-level-scientific-conference-cop21-towards-united-nations-decade-ocean-science/summary

[101] Conference report can be found here - https://enb.iisd.org/events/sustainable-blue-economy-conference/summary-report-26-28-november-2018

The chronological partnership engagements highlighted provide impetus to the high-level consideration the global fraternity puts on Blue Economy agenda. The engagements have put the agenda as top development policy priority for nations around the oceans and hinterland water bodies.

4.3. Development Partners engagement in Kenya

As Kenya aligned itself with the global and regional Blue Economy policy frameworks including the Africa Union which published the AU Blue Economy strategy in 2019; and the IGAD which developed its Blue Economy strategy in 2020, development partners formulated programmes to work with Kenya's Blue Economy sector that had immense potential. These programmes and projects are largely concentrated around the Indian Ocean coastline (JKP), Lake Victoria basin covering LREB and the other water bodies or lakes in the rift valley, the Mau Forest water catchment area, the Aberdare ranges catchment area, the Ewaso Nyiro basin, the Kerio Valley basin amongst others.

Key development partners which have worked with Kenya in pushing the Blue Economy agenda in the country include:
- The UK government through the Foreign, Commonwealth and Development Office and the Department for Food, Environment and Rural Affairs;
- Global Affairs Canada;
- Swedish International Development Agency;
- the European Union delegation in Kenya;
- United Nations Development Programme
- UN Habitat,
- Food and Agriculture Organization
- The United Nations Environmental Programme;
- The World Bank; and
- Private foundations and programmes namely; Mastercard Foundation, and Financial Sector Deepening Kenya.

These partners have covered a wide range of activities aligned with Kenya's sector plans focusing on Blue Economy initiatives.

4.4. The FCDO Kenya Devolution Programme

FCDO has supported devolution in Kenya from the advent of the implementation of the COK. From 2013 to 2015, the assistance was provided through Kenya Accountable Devolution Programme (KADP) phase 1 of the World Bank. The objective of the programme was to prepare counties in financial management, county planning and monitoring as well as working with other key agencies including the then Ministry of Devolution and Planning and the Council of County Governors (COG). The second phase of UK/FCDO assistance was provided from 2015 to 2019 through USAID/AHADI programme, KADP phase 2 and the UN joint devolution programme (UNDP, UNICEF and UN - Women) as implementing partners. The total programme allocation was £23 million. FCDO later formulated a third devolution programme, the KDP, approved to run from March 2020 to March 2025 with initial budget of GBP 38.5 million. The programme business case

offered a multipronged approach that aimed to work with multilateral organizations, setting up a research and knowledge management unit and a non-profit led consortium programme management. The programme output areas were as indicated in **Table 11**.

Table 11: KDP Key Output Areas

Output	Description
Output 1	Improved Inter-Governmental Relations and Coordination at National and Sub-National Level to Support the Devolution Sector.
Output 2	County Government Economic Planning and Development, Trade and Investment Capacity Strengthened.
Output 3	Enhanced Social Accountability and Participatory Approaches in Key Devolved Sectors to Improve Service Delivery.
Output 4	Research and Evidence Generation to Inform Public Policy, Facilitate Peer Learning and Improved County Service Delivery.
Output 5	Coordination

The programme also had technical assistance and sub-granting unit. Following the merger of DFID and FCO to form FCDO, UK programme budgets were largely rationalized and the programme was downsized to GBP 10 million. This necessitated a revision of the business case to only allow for the non-profit led consortium that also downsized its membership. The consortium was led by Act Change Transform (Act!) with PwC East Africa as its co-partner.

In the first year of implementation, Output 2 was designed to cover the public financial management and county planning with some meaningful achievements such as review of second-generation CIDPs for three counties, capacity strengthening for 5 counties on procurement and internal audit and budget execution in 7 counties. Following an internal pivot towards coordination with other UK government departments on trade and investments and an interest in the UK investments in the counties, the output was redesigned to focus on trade and investments for county economic development.

On consultations with the COG, the State Department for Devolution and target counties, the KDP focused this output area on Own Source Revenue management, Blue Economy and Trade and Investments Capacity Strengthening. In recognition of the significant role of Blue Economy in the development of the country, COG has established a standing Technical Committee on the Blue Economy further noting the inter-governmental nature of the sector. Several development partners were already supporting Blue Economy initiatives. An example is the European Union Go Blue programme working in the Coastal region with Jumuiya ya Kuanti za Pwani. This is the first fully-fledged programme partnering with a regional economic bloc. Within the UK Government, the Darwin initiative under the Department for Food, Environment and Rural Affairs (DEFRA) has been awarding grants for environmental conservation related works including those that cover the Blue Economy.

About six months before the KDP re-focused on the Blue Economy, the Lake Region Blue Economy MATC was formed. Inspired by the LREB Blue Economy Forum held in November 2018 just before the Sustainable Blue Economy Conference, the MATC was convened by national government MDAs as well as private sector, academia and NGOs with programmatic interest in the Blue Economy. The first KDP Blue Economy engagement was to provide technical assistance to the MATC to formulate their action plan otherwise call the Multi-Agency Action Plan[102].

This was initiated in early 2022, a few months to the Afri-Cities Summit that was scheduled for May 2022 in Kisumu city, the headquarters of the LREB counties. KDP sponsored a Blue Economy side event during the summit that was attended by over 100 participants. The side event was an opportunity for the MATC members to interact at technical and leadership level and to articulate their vision and action plan. The policy leadership of the country was represented by the Principal Secretary for the State Department for Blue Economy who doubled up as the President's Blue Economy Special Envoy and the Principal Secretary for the State Department of Devolution. The county governments in the LREB were well represented with two governors attending the event. The key resolutions of the Summit were to provide a monitoring and evaluation framework on the Blue Economy and undertake assessments in the counties. Other development partners such as Gatsby Trust and FAO were part of the support system to the MATC with Gatsby Trust assisting in the publication of MATC action plan.

The MATC action plan had 14 areas of intervention:
1. Protection of water towers.
2. Environment protection and management.
3. Climate change adaptation and mitigation.
4. Lake Victoria development and inland water transportation.
5. Standardization of facilities supporting Blue Economy services.
6. Fishing and aquaculture.
7. Infrastructure development.
8. Transboundary challenges and interventions.
9. Trade and investment.
10. Safety and security.
11. Governance and legislations.
12. Tourism, cultural and aquatic sports.
13. Capacity building, training, research and development.
14. Production capacity enhancement

Following the Summit, the MATC invited the KDP for a strategic planning retreat to discuss the assistance to be provided towards actualizing the resolutions of the Afri-cities Summit side -event. The retreat took place in July 2022, a month to the general election and one of the key observations was that eight out of 14 governors were serving their second term and therefore there would be at least eight new governors being elected. It was therefore seen as critical that the new governors be inducted to the plans of the MATC, the initiative and the partners. KDP partnered with the LREB

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[102] KMA (2020). Five Year Multi Agency Action Plan on Blue Economy for the Lake Region. Kisumu, Kenya

to convene a summit where the work of multi-agency was introduced to the new governors of the LREB elected after the August 2022 election.

The KDP delivered on the resolutions of the summit for the MATC, procuring an agent to provide a comprehensive monitoring and evaluation system on Blue Economy for the region. The KDP also carried out Blue Economy sector assessments for the five lake fronting counties of Homa Bay, Kisumu, Busia, Migori and Siaya.

Other key initiatives that KDP did on Bue Economy included partnering with the COG Blue Economy Technical Committee during their induction workshop in January 2023; engagement with the Commission on Revenue Allocation (CRA) that was preparing the fourth formula for revenue share for the FY 2025/2026. On the invitation of the CRA and following a resolution of the Senate, the team explored the possibility of including the Blue Economy as a parameter for revenue share. KDP also offered technical assistance to the Nairobi Rivers Commission domiciled in the State Department for Devolution as it worked with the five counties that share this resource alongside national government agencies to regenerate the Nairobi River.

KDP infused other FCDO programmes into the Blue Economy sector, harnessing what other programmes were doing and leveraging on their comparative advantages to advance its work. DEFRA partners and the KDP Blue Economy component collaborated to leverage on each other's respective strengths. KDP introduced a key partner of DEFRA, Conservation International to the MATC where it was accepted as a member and immediately sought ways to integrate their program on Marine Conservation with sustainable aquaculture, currently being implemented in Lake Victoria where it works with beach management units. Similarly, KDP facilitated a meeting for another DEFRA partner, Nature Kenya, with Siaya and Busia County governments on the implementation of the Land Use Plan which they developed for the Yala Swamp. The goal was to support the adoption of the plan by the respective County Executive committees, County assemblies and integration into the CIDPs.

The KDP partnered with the East Africa Research Hub (EARH) of FCDO to commission a study on Inland Waters Blue Economy. The EARH runs a challenge fund managed by PwC. PwC commissioned the study whose findings were anticipated to provide the Kenyan Blue Economy policy space with more information on the opportunities and insights within the inland waters ecosystem.

The foregoing discussion provides insight into the level of interventions that KDP and other development partners contributed to the Blue Economy policy development and implementation in Kenya. These milestones would not have been achieved without the partners coming in to intervene.

4.5 Summary matrix of select development partner engagement in Blue Economy in Kenya

The matrix in **Table 12** summarizes the mapping of development partners that have partnered with Kenya on the Blue Economy activities.

Table 12: Mapping Development Partner Engagement

No.	Development Partner (Implementing Partner)	Project Name and Duration	Project Purpose	Amount	Kenya Local Partners and Beneficiaries
1.	Foreign, Commonwealth and Development Office of the UK Government (ACT KENYA)	Kenya Devolution Programme October 2021 – March 2025.	Technical Assistance on Blue Economy strategy and framework development – Programmes included technical assistance to the Blue Economy Committee of the COG in stakeholder engagement and strategy development; to the Lake Victoria Blue Economy MATC in developing its masterplan and a monitoring and evaluation system; capacity assessment for five counties and a research and publishing of the inland waters' blue economy;		▪ Council of Governors ▪ Lake Victoria Blue Economy Multi-Agency Team[103] ▪ East Africa Research Hub; ▪ Price Water House Coopers
2.	Foreign, Commonwealth and Development Office of the UK Government and the Governments of Germany, Netherlands, Switzerland, Australia, Sweden, Canada and the IFC (Private Infrastructure Development Group / Infra Co Africa.)	Lake Victoria Water Bus	Provide safer, and more reliable transport for approximately 38,500 passengers/ year.	USD 3.8millon	Kenya, Uganda and Tanzania ports off Lake Victoria.
3.	Darwin Initiative of the UK Government[104] (Oceans Alive Foundation)	Strengthening Kilifi County Beach Management Unit April 2024 – March 2025	The Kilifi County Beach Management Unit Network has recently been constituted and needs to build clear governance processes and capacity to support its members. The focus is on building governance capacity and capability to form a common voice to lobby county government on behalf of 17 BMU members and mobilize resources to help manage and enforce joint co-management of a 5,724km2 inshore coastal fishery catering for 4,713 individual fishers and livelihoods in coastal products value chains.	GBP 99,814	▪ Kilifi County Beach Management Unit ▪ Kilifi County Government.

[103] The Multi -Agency Team includes up to 40 entities encompassing county governments, national government agencies, non-governmental organizations, development partners and academic and research institutes.
[104] The Darwin Initiative is managed by the UK Department for Environment, Food and Rural Affairs.

No.	Development Partner (Implementing Partner)	Project Name and Duration	Project Purpose	Amount	Kenya Local Partners and Beneficiaries
4.	Darwin Initiative (Fauna and Flora International - UK)	The Upper-Ewaso Ng'iro North Ecosystem

April 2023 – March 2028 | The Upper-Ewaso Ng'iro North Ecosystem supports 1.2 million people, critical habitats, and globally-important wildlife. Unsustainable use and climate change have caused natural resource and water scarcity, leading to competition and conflict. This project provides a nature-based solution to these diverse challenges. Building capacity for sustainable natural resource management, facilitating adoption of nature-based solutions to deliver economic benefits, and restoring habitat, will increase water security, build resilience to climate change, and increase peaceful co-existence for people and wildlife. | GBP 4million | ▪ Kenya Wildlife Service
▪ Water Resources Authority
▪ Kenya Forest Service
▪ County Governments of Nyeri, Meru, and Laikipia
▪ Laikipia Conservancies Association
▪ Mount Kenya Trust
▪ Northern Rangelands Trust
▪ Ol Pejeta Conservancy |
| 5. | Darwin Initiative (Fauna and Flora International - UK) | Community-led conservation and fisheries development in North coast, Kenya

June 2022 – March 2025 | Kenya's northern coast supports extensive coral reefs and seagrass meadows, critical marine species habitat, important carbon sinks, and community wellbeing, yet it is increasingly threatened by unsustainable practices including over exploitation, destructive fishing, and by-catch. The project secures ecosystem health and function in existing and new locally-Managed Marine Areas to safeguard community wellbeing, carbon sinks, and endangered marine species. Activities include building capacity in sustainable, local marine resource management and decision-making, and influencing policy approaches at a regional scale. | GBP 567,385 | ▪ County Government of Lamu
▪ Kenya Wildlife Service
▪ Kenya Fisheries Service
▪ Pate Community Conservancy
▪ Kiunga Community Wildlife Association
▪ The Nature Conservancy
▪ Northern Rangelands Trust |
| 6. | Darwin Initiative (Conservation International Foundation) | Pairing community conservation areas with sustainable aquaculture in Lake Victoria. | The project works in Lake Victoria, Kenya to develop and demonstrate a new model for responsible aquaculture and inland fisheries that conserves native species and produces long-term benefits to people through community-based incentives. The team worked with two beach management units, community and conservation health experts and a leading-edge aquaculture | GBP 399,454 | ▪ Homa Bay County
▪ Kenya Fisheries Service
▪ Kenya Marine and Fisheries Research Institute
▪ Women Enterprise Fund |

No.	Development Partner (Implementing Partner)	Project Name and Duration	Project Purpose	Amount	Kenya Local Partners and Beneficiaries
		October 2021 – June 2024	company to develop and implement sustainably-financed lake-based community conservation areas.		▪ Victory Farms Limited ▪ Pathfinder International ▪ Fauna and Flora International, UK
7.	European Union (GiZ, AICS - Italy, Camoes -Portugal, Expertise France, UN Habitat and UN Environment)	Go Blue 2021 - 2024	The overall objective of the programme was to unlock the potential of sea-land opportunities in coastal urban centres for sustained, inclusive and economic growth with employment impact, while conserving and sustainably using the coastal and marine environment as well as promoting effective and integrated maritime governance.	EUR 24.7 million	▪ Jumuiya ya Kaunti za Pwani[105] ▪ Kenya Marine and Fisheries Research Institute ▪ Technical University of Mombasa.
8.	Global Affairs Canada (Africa Enterprise Challenging Fund).	Investing in Women in the Blue Economy 2022 - 2027	The programme seeks to enhance women's economic empowerment by promoting women and young women's participation in the traditional and non-traditional sectors of the blue economy. The goal of the programme is to contribute to the development of economic empowerment of women-owned enterprises, their suppliers, and producers along key supply chains where women are discriminated against in Kenya's Blue Economy.	CAD 9.7 million	▪ Women and Young-women owned MSMEs in the counties of Mombasa, Kwale, Kilifi, Tana River, Lamu, Taita Taveta, Busia, Siaya, Kisumu, Homabay and Migori.
9.	Gatsby Africa Trust	Lake Victoria Marine Spatial Plan	Gatsby is working closely with the government in Kenya to develop a spatial planning, zoning, and carrying capacity framework for Lake Victoria. This framework has the potential to supporting a more intelligent approach to the regulation of the industry, which should then encourage investment and help stakeholders mitigate the risks.		▪ State Department for Blue Economy and Maritime Affairs ▪ Kenya Marine and Fisheries Research Institute ▪ Kenya Fisheries Institute ▪ Kenya Maritime Authority and National Land Commission

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[105] The JKP is the Coastal Region Economic Bloc bringing together the six counties of Mombasa, Kwale, Kilifi, Lamu, Taita Taveta and Tana River.

No.	Development Partner (Implementing Partner)	Project Name and Duration	Project Purpose	Amount	Kenya Local Partners and Beneficiaries
10.	The World Bank (State Department for Blue Economy and Maritime Affairs)	The Kenya Marine Fisheries and Socio-Economic Development (KEMFSED) 2020 - 2025	KEMFSED focuses on improving marine fisheries. It aims to strengthen the management of fisheries that are priority to coastal livelihoods by implementing interventions to secure stocks to the required levels for sustainable harvesting.	USD 100million	▪ Kwale, Mombasa, Kilifi, Tana River and Lamu Counties
11.	Swedish International Development Agency / SIDA (Financial Sector Deepening Kenya)	Not specified	This partnership has been instrumentalized as an aquaculture pilot, within 5 counties, targeting 300 cage and artisanal pond farmers with a local fish MSE as the anchor. This partnership has since revived hitherto dormant MSEs within the region and is geared towards achieving commercial sustainability of the MSEs & smallholders within the region.		▪ Lake Region Economic Bloc – the counties of Kisumu, Homa Bay, Migori, Siaya and Busia.
12.	Global Affairs Canada (Colleges and Institutes Canada / Humber College)	Kenya Blue Economy Skills Training (KBEST) Institutions Partnership, 2022 - 2029	KBEST focuses on developing and delivering gender-responsive and industry-relevant competency-based education and training curriculum and pedagogy in blue economy skills areas. This will tap into Siaya County's economic potential in various sectors including fisheries, tourism, marine transport, aquaculture, and renewable energy.	USD 25 million	▪ Siaya County - Bondo Technical Training Institute, Lucy Onono Vocational Training Centre and Mahaya Vocational Training Centre.
13.	International Development Research Centre / IDRC (Africa Centre for Technology Studies).	Opportunities for blue economic empowerment and COVID-19 resilience of fisher women in Kenya	The project will test and adopt climate-smart integrated multi-trophic aquaculture (IMTA) of seaweeds and fish to improve livelihoods and resilience of fisher women in Kenya's coastal region, with case studies in Kwale and Kilifi counties. It will engage beach management units, technological institutions, women's groups, the private sector, and policymakers to study, co-design, and deploy model IMTA farms, and use	CAD 1.4million	▪ Kwale and Kilifi counties

No.	Development Partner (Implementing Partner)	Project Name and Duration	Project Purpose	Amount	Kenya Local Partners and Beneficiaries
			them as platforms to gain practical insights. It will promote knowledge translation, dissemination, and learning for IMTA systems upscaling, climate change, and COVID-19 response strategies for the local community in Kwale and Kilifi counties, as well as other coastal communities in Kenya.		
14.	European Union (WWF Kenya)	Small-scale fisheries for sustainable Blue Growth improving food security and livelihoods in Coastal Kenya and East Africa (KECOFISH). October 2020 – October 2023	To assess the situation and find innovative solutions for improving food security and livelihoods in Coastal Kenya and East Africa. The main objective is to improve the contribution of Small-scale fisheries to sustainable blue growth, food and nutritional security and livelihoods in Coastal Kenya.	EUR 900,000	▪ Lamu County
15.	Mastercard Foundation (Technoserve)	The Blue Biz Programme 2023 - 2027	The BlueBiz Programme is dedicated to creating pathways for dignified and fulfilling work for young women and men in Kenya's coastal communities, specifically in Mombasa, Kwale, Kilifi, Lamu, and Tana River counties.	USD 3.6million	▪ Mombasa, Kilifi, Kwale, Lamu and Tana River counties.
16.	International Fund for Agricultural Development (Government of Kenya)	Aquaculture Business Development Programme	The programme development objective is to increase the incomes, food security and nutritional status of the wider communities of poor rural households involved in aquaculture in the targeted counties through small holder aquaculture development and aquaculture value chain development.		▪ Kenya Marine and Fisheries Research Institute ▪ Ramogi Institute of Advanced Technology ▪ National Aquaculture Research Development and Training Centre – Sagana

No.	Development Partner (Implementing Partner)	Project Name and Duration	Project Purpose	Amount	Kenya Local Partners and Beneficiaries
					▪ World Fish Centre Counties of ▪ Migori ▪ Kakamega ▪ Homa Bay ▪ Nyeri ▪ Meru ▪ Kirinyaga ▪ Tharaka-Nithi ▪ Kisii ▪ Kisumu ▪ Siaya ▪ Busia ▪ Embu ▪ Kiambu ▪ Machakos ▪ Kajiado

Source: Author, 2025 and various sources

CHAPTER FIVE: FUTURE OF BLUE ECONOMY IN KENYA

5.1. Introduction
From the various studies and research on the potentials of Blue Economy, indications are that its future outlook is quite promising with significant benefits for economic growth, employment creation, improvement of livelihood and environmental sustainability. The future of Blue Economy, according to Kenya Maritime Authority,[106] is projected to contribute close to KES. 600 billion and create over 52,000 jobs by 2032.

5.2 Future Programming
Future programming in Blue Economy should aim at creating a coordinated set of activities and projects designed with the strategic objectives of upscaling economic growth. There should be multiple initiatives or activities on Blue Economy implemented jointly with other sectors of the economy to create synergy and complementarity. The collaborative framework developed for the LREB counties could offer a best practice in future programming in Blue Economy in Kenya. From the KDP perspectives, the following should be considered key to the future programming in Blue Economy:

(i) **Sustainable Fisheries and Aquaculture:** The country aims to develop fisheries and aquaculture sector using sustainable practices by improving fish stock management, promoting aquaculture and putting measures for environmental sustainability in both ocean and inland water ecosystems. The sector should be supported in future programs.

(ii) **Coastal, marine and inland waters tourism:** The beautiful coastline, serene riparian zones as well as both oceanic and inland waters biodiversity place the country as a leading ecotourism destination in the region. Furthermore, investment in ecologically friendly tourism infrastructure will be vital for sustainable growth in this sector. Kenya is ranked among the best achievers in the regional renewable energy sector. More investment in the solar and wind energy is expected to contribute significantly to the country's energy security and economic growth[107]. Both levels of government (national and county) should invest in ecologically friendly tourism infrastructure and conservation to boost coastal, marine and inland waters tourism. The investments should include developing tourism practices that protect the environment while providing economic benefits to the local citizens.

(iii) **Ports, Harbours and Maritime Transport:** Modernization of ports of Lake Victoria is aimed at improving maritime transport infrastructure with unprecedented benefits to the lake region communities. Regionally, it is anticipated to contribute significantly to intra and inter trade with and outside the EAC region due to improved connectivity thus supporting economic growth as well as regional integration. The future programming should continue supporting activities around the lakes especially the beautification and development of the Kisumu lakefront.

(iv) **Offshore Oil and Gas Exploration:** These resources are potential in Kenya's future programming targets given the expansive EEZ that spans an area of 200 nautical miles from its

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[106] Kenya Maritime Authority. (2018). *Kenya National Blue Economy Strategy.* Nairobi, Kenya: Kenya Maritime Authority.

[107] Government of Kenya (2018). *National Energy Policy*. Ministry of Energy. https://www.energy.go.ke

coastline covering an area estimated at 230,000 km² in the Indian Ocean. This is still a new area in Kenya but could be promising in terms of returns on investment.

(v) **Renewable Energy:** Kenya is ranked among the best achievers in the regional renewable energy sector. More investment in the solar and wind energy is expected to contribute significantly to the country's energy security and economic growth[108]. In the recent years, approximately 70% of the country's electricity is generated from renewable energy. Cumulatively, the main sources of renewable energy are from:

   a) Geothermal energy where Kenya is the leading producer in Africa with a capacity exceeding 1000 MW which contributes around 45% of the national electricity supply and is a key driver of the country's renewable energy production.

   b) Hydropower, which though subject to variability due to climate change effects, still remains an important source of energy providing about 30% of electricity with major hydro plants including the Seven Forks dams in Tana River.

   c) Wind power has been gaining traction in the country especially with the development and implementation of Lake Turkana wind power project which is ranked the largest in Africa. It adds about 310 MW into the national grid hence contributing about 10% of power into the national generation mix.

   d) Solar power is increasingly being harnessed in the country especially from the arid and semi-arid areas using the off-grid solutions. While contributing a meagre 5 %, the potential of solar power is nonetheless substantial with various government and private sector initiatives currently promoting the installations.

As a key component of Blue Economy, the government has set ambitious renewable energy targets aiming to increase the share of renewable energy in the energy mix as part of its commitment to sustainable development and reducing dependence on fossil fuel which are pro greenhouse gases emitters. The strategy is to have 100% clean cooking by 2028 and 100% clean energy on the Kenyan grid by 2030[109]. Investment in renewable energy especially along the coast and riparian zones of inland waters is therefore another target area for future programming in Blue Economy.

5.3 Analysis of Futuristic Potential of Blue Economy

The potential of Blue Economy in Kenya is massive, with many opportunities that can spur sustainable growth, create jobs, improve livelihoods and enhance resilience against climate change. Nonetheless, realizing these potentials require a coordinated approach that involve policy reforms, investments in sustainable practices, community participation and commitment to conservation. By addressing current challenges and leveraging its rich blue resources, the country can position itself as a champion in the Blue Economy within the region and beyond. Furthermore, the blue resource presents significant opportunities for sustainable development and the fact that the country is strategically located along the Indian Ocean

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[108] Government of Kenya (2018). *National Energy Policy*. Ministry of Energy. https://www.energy.go.ke
[109] Climate Investment Funds (2024). Project Spotlight: In the Final Stretch to 100% Clean Power, Kenya leads, learns and clears a few hurdles. www.cif.org Accessed 22nd February, 2025

and has a plethora of inland water bodies. This analysis gives a perspective of the future of Blue Economy in the country with proposed strategic recommendations for its growth and development:

a) **Sustainable fisheries:** With an extensive coastline and rich water bodies sustainable management and development of fisheries is capable of providing food security and creating employment opportunities. Policy options should be geared towards implementing advanced fisheries management practices, aquaculture development and environmental-friendly fishing techniques. Such policies should be in sync with various protocols, strategies and treaties Kenya has assented to regionally and internationally. This will guarantee sustained fish stock and increased fish production in any of the country's water body.

b) **Aquaculture:** Indications are that by investing in sustainable aquaculture practices, the country can significantly reduce on depletion of wild fish stocks and improve on food and nutrition security. Innovations should be encouraged by building the capacity of fishery sector practitioners. Deliberate efforts towards integrated aquaculture systems should be made so that fish farming can be combined with crop farming to increase productivity and provide and alternative livelihood to rural populations. Otherwise, aquaculture is beneficial to the environment and fishing practices by reducing pressure on wild fish stocks as it offers alternative seafood source, contributing to food security by producing a reliable supply of protein, potential for economic growth through job creation, and the ability to manage fish populations. It also helps improve fish health through controlled breeding and feeding practices. When done sustainably, aquaculture can also help maintain biodiversity and protect natural ecosystems[110]. However, there are challenges that can be experienced if aquaculture is not practiced sustainably. The challenges may include water pollution, destruction of the habitat and spread of diseases. There also issues of dependency on fishmeal produced from wild catch which again may lead to depletion of wild fish. Finally, there can be genetic concerns as a result of intensive breeding of aqua cultured fish. Policy interventions will be necessary to counter these challenges.

c) **Marine and riparian zone tourism**: Kenya's coastline has been traditionally significant for attracting tourists. The main coastal tourism products are marine parks, beaches, coral reefs and diverse marine life. In the case of inland waters especially lakes, there are emerging tourist circuits to these new frontier tourist attraction sites which are integrated with culture and sport tourism. The trending development of ecological tourism and community-based tourism initiatives have provided sustainable income for the coastal and riparian communities.

d) **Renewable energy:** There is substantial potential for wind and waves from the ocean and lakes which have the capacity to contribute to clean energy coupled with the potential for solar power installation especially on the riparian zone of inland waters. By effectively investing in these clean sources of energy, there will be energy security and in particular in the hard-to-reach areas of the country. Kenya will then be able to meet its commitment of having clean energy by 2030. Policies should be in place to encourage and incentivize communities and private investors to participate in clean energy production.

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[110] EU Aquaculture Assistance Mechanism. What are the main benefits of aquaculture? https://aquaculture.ec & Aquaculture Supports Sustainable Earth (2020). National Oceanic and Atmospheric Administration. www.fisheries.noaa.gov Accessed 23rd February, 2025

e) **Marine biotechnology:** A huge potential exists in the use of marine resources for pharmaceutical and cosmetic products. Investing in research in this sector will call for collaboration between research and higher learning institutions and private sector in order to facilitate extracting and developing products from marine organisms for new markets. The net effect of this is enhanced innovations and economic diversification in Blue Economy space.

f) **Maritime Transport and Shipping:** The value chains in this sub-sector have become key contributors to Blue Economy. The improvement of port infrastructure in Kisumu for instance has seen a boost in regional trade. Investments in logistics services, eco-friendly shipping practices such as those practiced by the Kenya Shipyard Limited as well as green port initiatives will ultimately lead to enhanced attractiveness of the marine and inland waters ports.

5.4 Potential Areas for Future Partnerships

Blue Economy programs across diverse sectors require huge investment to develop. To advance sustainable Blue Economy programs in Kenya, government engagement with development partners in several key priority areas will be inevitable. By focusing on these priority areas, the government can effectively collaborate with development partners to promote a sustainable Blue Economy. From the potential that the country has, the listed blue sectors would benefit greatly from the engagement with development partners for support.

(i) Marine Conservation and Biodiversity: Collaboration in projects and programs aimed at protecting marine ecosystems (both oceanic and inland waters), will require support from the development partners. This shall include establishing marine protection areas, promoting sustainable fishing practices and conduction regular research on aquatic species and habitats.

(ii) Sustainable Fisheries Management: Support from partners to develop sustainable fisheries policies and projects that promote responsible fishing practices, reduce overfishing and enhance the resilience of fish stocks. This can also involve community-based fisheries management approaches that promote an integration of fisheries management and environmental conservation.

(iii) Pollution control and waste management: The proposed engagement is to have partners jointly with stakeholders develop strategies to address marine pollution particularly plastic waste. Initiatives may include promoting recycling, reducing single use plastics and implementing waste management systems that prevent degradation of aquatic ecosystems.

(iv) Climate Change Adaptation and Mitigation: Blue Economy activities have their foundation on aquatic ecosystems. These very ecosystems are highly vulnerable to the impacts of climate change. There will be need to engage in programs that will enhance resilience of both coastal and inland water riparian communities to climate change effects such as rising sea and lake levels and extreme weather events such as flood and drought. Measures could include ecosystem-based adaptation and developing of climate resilient infrastructure that support Blue Economy activities.

(v)Blue Economy innovation and technology: Engagement with Partners will foster partnership for research and innovation in Blue Economy sectors such as aquaculture, renewable energy ocean and

lakes energy and marine biotechnology. Support towards start-ups and technology transfer will help drive sustainable practices in the management of blue resources.

(vi) Capacity building and training: A recent capacity need assessment supported by KDP and undertaken by the PwC identified capacity gaps in the development of Blue Economy. The assessment recommended that partners be engaged towards the enhancement of skills and knowledge of stakeholders including local communities, MDAs and private sector players in sustainable Blue Economy development. The capacity building and trainings could be administered through training programs, workshops and knowledge sharing networks such as P2P forums.

(vii) Policy development and Governance: A number of County Governments that are involved in Blue Economy initiatives especially at the coast and around the Lake Victoria region have enacted a number of policies and laws and further establish institutional framework to facilitate development of Blue Economy. There are however gaps in policies, laws and institutional arrangements that will require working with development partners to strengthen the policy framework as well as governance structures that support sustainable Blue Economy activities, project and programs. This shall among others include developing clear and integrated legal frameworks, enhancing coordination among the many players in the Blue Economy space and promoting transparency and accountability.

5.5 Lessons Learnt from the Programmes and Projects in Blue Economy

During the four-year implementation of the KDP, there are valuable lessons learnt which can guide future programming and implementation of future Blue Economy projects in the country:

(i) Effective governance and policy frameworks are important for successful implementation of Blue Economy activities and projects. The KDP through an assessment undertaken by the PwC highlighted the need for clear policies, legal framework and institutional arrangements to support sustainable development initiatives.

(ii) Investing in capacity building and strengthening institutions is essential for the successful execution of Blue Economy projects. The KDP emphasized on the significance of training and equipping county governments and communities with the necessary skills and knowledge to manage and sustain Blue Economy activities and projects.

(iii) Engaging local communities and ensuring their participation in Blue Economy projects is important for their success. It was demonstrated during the implementation of the KDP that involving communities in decision making process and project implementation leads to better outcomes and increased ownership hence sustainability.

(iv) Regular monitoring and evaluation of Blue Economy projects is critical to tracking progress, identifying challenges and making necessary adjustments. Good lessons learnt from the monitoring and evaluation can be used for future programming. The KDP through the Blue Economy work stream that was led by the PwC supported the development and operationalization of a monitoring, evaluation and learning (MEL) system that was administered through a Collaborative Framework coordinated by a MATC and hosted by the KMA.

(v) Securing of sustainable financing for Blue Economy activities, projects and program is crucial for their long-term success. The KDP identified as critical the need for innovative financing mechanism and partnership with development partners to sustain Blue Economy funding.

(vi) The foundation for Blue Economy is a healthy environment and social inclusivity. It is therefore important that Blue Economy activities and projects address environmental and social challenges including climate change, pollution and social equity. The KDP put emphasis on the importance of integrating environmental conservation and social inclusivity into Blue Economy strategies at all levels.

(vii) The use of technology and innovation is able to enhance efficiency and effectiveness of the Blue Economy projects and programs. The KDP showcased the potential of digital tools such as the MEL systems to improve project outcomes and promote sustainable development.

(viii) Collaboration with regional and international partners is essential to strengthening Blue Economy projects and programs and in particular by promoting knowledge sharing. Internally, KDP supported the establishment of a collaborative framework between the LREB counties and MDAs working in the region. This was aimed at creating synergies and leverage resources available for Blue Economy across sectors. Given that most of the blue resource within the Lake Region is tied to Lake Victoria which is transboundary and shared between Kenya, Uganda and Tanzania, regional cooperation is critical a role that is played by the EAC through the Lake Victoria Basin Commission in line with the Protocol for Sustainable Development for Lake Victoria Basin.

5.6 Challenges Affecting Achievement of Sustainable Blue Economy

The main challenges for the achievement of a true sustainable Blue Economy include:

(i) Fast growing human population, the intensification of agriculture and unplanned urbanization of coastal areas. This leads to environmental degradation of the blue resources from mainly pollution, coastal and riparian zone erosion and overfishing and over exploitation of other marine resources which undermines the sustainable use of the blue resources especially the marine and other aquatic resources.

(ii) Climate change, pollution and loss of biodiversity and critical habitats. This challenge has been caused by global warming phenomenon, environmental degradation and pollution. Climate change is currently among the top threats to sustainable Blue Economy development. This is because the foundation of Blue Economy is water and its resources which are among the most vulnerable to climate change. It is evident that rising sea and lake levels and changing temperature threaten coast as well as inland water ecosystems and livelihoods. Adapting and mitigating these impacts must be priority in future planning strategies.

(iii) Investment barriers for Future Development of Blue Economy due to limited access to financing for innovation and sustainable Blue Economy projects slowing down growth in Blue Economy. It is therefore important to establish mechanisms for mobilizing public and private investment to access capital needed for Blue Economy projects.

(iv) Blue Economy projects and programs should be founded on environmental sustainability (especially aquatic ecosystems) and social inclusivity in addressing social challenges such as poverty and climate change and social inequity. This shall call for integration of environmental conservation and social inclusion into Blue Economy strategies to guide programming.

(v) Unsustainable fisheries practices and Illegal, Unreported and Unregulated (IUU) fishing;

(vi)Low investment in the Blue Economy space.

(vii) Difficulty with coordination due to several sectors with mandate over the Blue Economy spaces using different policy and legal frameworks.

(viii) Limited knowledge on the potential of the Blue Economy for Food and nutrition security, employment and revenue generation.

(ix) Limited Blue Economy sectoral data and research capability.

(x) Unsustainable tourism practices.

5.7 Recommendations on Operational and Policy Interventions

A number of studies, surveys, sectional papers and assessment on sustainable blue have been conducted and each have offered useful recommendation on the future outlook of Blue Economy as a new frontier for economic development. It is anticipated if these recommendations are implemented, they can have significant positive effect on Kenya's economic growth. However, success in the implementation of these recommendation requires strong commitments and collaboration from the players in Blue Economy. Undoubtedly, if environmental conservation and sustainable practices are prioritized in the Blue Economy space, the country can harness and benefit from the full potential of its blue resources for long term economic growth. Success in these areas requires strong commitment and collaboration among government, local communities, and other stakeholders. By prioritizing sustainable practices and environmental conservation, Kenya can harness the full potential of its marine and coastal resources for long-term economic growth and resilience. Below is a highlight of collated operational and policy recommendation that if implemented can lead to sustainable development of Blue Economy in Kenya:

a) **Operational recommendations**

(i) **Adopt Integrated Coastal Zone Management (ICZM):** For the coastal as well as riparian zone resources, it is recommended the use of ICZM frameworks to manage resources in those critical ecosystems holistically and importantly balancing development and environmental protection and citizen needs. This would involve the establishment of a multi-stakeholder platform for collaborative decision making, involving local communities, government agencies, NGOs and private sector.

(ii) **Apply data-driven Sustainable Fisheries Management:** Data driven sustainable fisheries management plans involve use of data in surveillance, stock assessment and seasonal closures to allow fish population to recover. This should also entail promoting community led initiatives for co-

management of fisheries, empowering local fishers to enforce sustainable practices. Other interventions that would promote sustainable fisheries management may include implementation of catch limits to circumvent overfishing; promotion of selective fishing gears to reduce by catch; establishment of marine protected areas to conserve biodiversity and strengthening monitoring and enforcement of fishing regulations.

(iii) **Adopt Sustainable Aquaculture Practices:** There should be deliberate efforts to encourage the adoption of sustainable aquaculture practices by providing training and capacity building programs for local farmers. It is also important to consider investing in research and development for innovative aquaculture techniques that minimizes negative environmental impacts. Use of integrated multi-trophic aquaculture (IMTA)[111] is encouraged. Further, initiatives to improve access to markets locally and externally for aquaculture products should be enhanced but most importantly as aquaculture and other related activities are promoted, there must be deliberate efforts to ensure environmental safeguards are in place to protect these aquatic ecosystems.

(iv) **Expand Marine Biodiversity Conservation Areas:** There is need to expand the marine protected areas (MPAS) to include inland waters and have them conserved as critical habitats and biodiversity hope spots.

(v) **Strengthen Monitoring and Enforcement:** There is need to strength monitoring and enforcement mechanisms for blue resources management using technology like satellite monitoring and drone surveillance to, in particular, combat illegal fishing and pollution to aquatic ecosystems. This will certainly require increased funding and capacity for fisheries enforcement agencies to ensure compliance with laid down regulation as well as protection measures.

(vi) **Engage Citizen and Build their Capacity:** Citizen engagement in blue resources management should be fostered through education, training and participatory decision making. Further, there should be deliberate efforts to develop programs that provide alternative livelihoods to minimize pressure on marine and other blue resources such as ecological tourism and sustainable harvesting practices.

(vii) **Promote Marine Tourism:** This should be achieved through investment in eco-friendly tourism infrastructure and undertaking aggressive market campaigns to promote coastal and inland water attraction sites. Furthermore, local communities should be engaged in tourism activities but within the guidelines of sustainable tourism principles.

(viii) **Modernize both Castal and Inland Water Ports:** Ports play a significant role in export of Blue Economy products. Upgrading of port infrastructure to handle larger vessels as well as increase their efficiency in cargo handling is a necessity.

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[111] FAO. (2013). *Technical guidelines for responsible fisheries. Aquaculture Development 5. Integrated Multi-Trophic Aquaculture.* Food and Agriculture Organization of the United Nations. Rome. Available at: http://www.fao.org/3/i3217e/i3217e.pdf

(ix) **Increase Investments in Renewable Energy projects:** Kenya is among the countries with great potential for renewable energy currently contributing to 70% of the total installed electricity capacity in the country hence reducing significantly reliance on fossil fuel that are known to be contributors of greenhouse gas emission. The country can achieve this by investing in solar, wind and tidal energy along the coast as well as on the riparian zone of the inland water bodies. It would also be important to promote research and development of renewable energy technologies.

(x) **Promote Sustainable Coastal and Riparian Zones Agriculture and Forestry:** This should be achieved by concerted efforts to promote sustainable agricultural and agroforestry practices including reforestation programs along the coastal region as well as the riparian zones of the inland water bodies.

b) Policy recommendations

(i) **Provide Investment incentives.** For Blue Economy to have a grounding that is sustainable, there will be need to provide investment incentives for investors in the various sectors involved in harnessing blue resources. It thus calls for creation of favourable investment conditions through incentives for green investments and sustainable marine projects and programs that have the potential to attract both local and international investors. The benefits from adoption of sustainable practices are often not immediate. Sustainable practices may need the introduction of financial incentives targeting fishing, aquaculture and ecotourism. Such incentives could take the form of subsidies, tax breaks or even access to low interest loans. Importantly due to the heavy capital investment that may be needed, deliberate efforts should be made to encourage public-private partnerships to invest in Blue Economy projects and programs.

(ii)**Develop and implement a comprehensive and integrated national Blue Economy strategy** that will provide a clear vision, goal and a roadmap for sustainable development of blue sectors in the coastal and in land water zones. It is important to align this strategy to international conventions such as the UN Sustainable Development Goals and the AU Blue Economy agenda in order to leverage technical and financial resources for its implementation.

(iii) **Review and strengthen existing fisheries and marine environmental laws** to incorporate sustainability as well as ecosystem-based approaches. This should be coupled with strict implementation of regulations on pollutants and waste disposal in coastal and along the inland waters to protect these critical ecosystems.

(iv) **Allocate sufficient funding for marine research** focusing mainly on identifying sustainable practices, new marine products as well as ecosystem health assessments. To achieve this, it is important that mechanisms are developed to promote partnership and collaboration with universities, research institutions and private sector in order to foster innovations in marine biotechnology, conservation technologies and sustainable fish methods.

(v) **Undertake Capacity building and governance:** It is important that education and training programs in Blue Economy related fields and themes are undertaken across the stakeholder' spectrum. There is therefore need to enhance the capacity of government institutions and agencies that are responsible for marine and coastal management through training and adequate resource allocation. The outcome of the training should lead to promotion and operationalization of partnership between government, academia, research institutions and private sector in order to foster innovation in marine technologies, sustainable practices, blue carbon markets and conservation efforts. And to ensure prudence in the use of such resources, transparent governance frameworks should be fostered that allow stakeholders participation in decision making regarding such resources.

(vi) **Establish Regional Cooperation:** There is need to establish and strengthen cooperation with neighbouring countries in the West Indian Ocean region and within East African Community on transboundary marine resource management and conservation joint efforts. It is therefore imperative that the players in the Blue Economy space actively participate in regional initiatives such as shared fish stock assessment and management as well as joint marine research programs as witnessed in the Indian Ocean as well as in the inland water lakes such as Victoria, Naivasha, Nakuru and Turkana.

(vii) **Undertake Public awareness Campaigns:** There is need to launch public awareness campaigns to educate citizens and stakeholders on the importance of Blue Economy, marine conservation and adoption of sustainable practices. To have maximum impacts, such campaigns should involve media, opinion and local leaders as well as schools in promoting awareness of aquatic biodiversity protection and encouraging responsible behaviour and stewardship.

(viii) **Ensure Social inclusion:** It is important that local communities are fully engaged in the management of aquatic resources through participatory approaches that provide a platform for citizens' engagement in project identification, planning, implementation, monitoring as well as benefits sharing. It is expected that projects and programs on Blue Economy shall be all inclusive and beneficial to all segments of society. Efforts should be made to address disparities and promote equity in development. Future Blue Economy programs should be designed in a way that empowers marginalized communities by having targeted sub projects to address the needs of such segment of society.

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