



UNIVERSITY OF NAIROBI

INSTITUTE OF DIPLOMACY AND INTERNATIONAL STUDIES

**CHALLENGES FACING BLUE ECONOMY RESOURCE MANAGEMENT IN
AFRICA: A CASE STUDY OF KENYA**

BY

SANKALE KISWAA

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SUPERVISOR

DR. PATRICK MALUKI

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DECLARATION

I hereby declare this research project is my original composition and has not been presented in any other institution.

Signature.....

Date.....

Sankale Kiswaa

R50/35332/2019

This research work has been submitted for examination with my approval as supervisor.

Signature.....

Date.....

Dr. Patrick Maluki

DEDICATION

It is with utmost joy to dedicate this work to my family. Their encouragement and moral support has always given me the morale and impetus to finish that which I have set myself to accomplish.

ACKNOWLEDGEMENT

It is worth acknowledging right from the onset that that this research would not have been possible without the guidance and direction of my supervisor, Dr. Patrick Maluki, who owing to his enormous experience in the subject matter was able to guide me right from the onset.

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ABSTRACT

It is important to acknowledge from the onset that Africa is the second largest continent and also the largest island in the World, which is approximately one-fifth of the total surface of the earth. The continent has many coastal states. In addition, trade has been very crucial for African states, which depend highly on both imports and exports mainly through the sea. Yet with all these resources and potential, Africa has not fully focused on leveraging these resources for its development and betterment of the livelihoods of its population, which is now approximately one billion people. The Blue economy is the sustainable use of oceanic resources for economic growth and prioritizing water resources. For this reason, this study examined the challenges facing Blue economy resource management Africa using a case study of Kenya. This research was hinged on the Co-management theory as proposed by Pomeroy and Berkes. This research utilized both primary and secondary data sources, from interview guides to library literature review. From the first objective, which was the current status of the Blue economy resource management in Africa, the study found that resources are poorly managed as most inhabitants still suffer from large-scale poverty. “African continent presently sits at a crossroads of opportunity to re-evaluate its development pathway within the context of the Blue economy, taking into account socio-economic, political, and environmental considerations. “The study also found out that the main challenges to the Blue Economy resource management in Kenya are lack of effective policy, threat of the climate change, lack of sufficient capacity and advanced technology, lack of sufficient capacity building, education and training, underdeveloped shipbuilding industry and lack of proper mechanisms to collect revenue from foreign vessels, unfavorable tariffs, rapid and uncontrolled urbanization, lack of sufficient information/data, shortage of skilled labor and poor access routes, and maritime insecurities. From the findings, the key actors in the management of blue economy resources in Kenya include the Kenyan Government through Kenya Ports Authority, Kenya Revenue Authority, The Fisheries Department, Kenya Maritime Authority, the Kenya Navy, NEMA, and the Coast Guard among others; the private sector, the African Union and its subsidiaries, and the United Nations and its subsidiaries. The keys strategies employed in advancing Blue Economy resource management include harnessing of Blue Economy resources, Maritime Spatial Planning, using different techniques to measure economic progress, engaging in regional treaties and international agreements, and maritime partnerships. To overcome the underlying challenges and boost Blue Economy resource management, the study, therefore, recommends: (i) boosting of maritime security, (ii) increasing funding for Blue Economy programs, (iii) improving research and innovation, and (iv) introducing favorable tariffs.

LIST OF ABBREVIATIONS

ACPC	African Climate Policy Centre
ADP	Admiralty Digital Publications
AfDB	African Development Bank
AIMS	African Integrated Maritime Strategy
AIS	Automatic Identification Systems
AMISOM	African Union Mission in Somalia
APEC	Asia Pacific Economic Cooperation
APMA	American Professional Mariners Association
ASEAN	Association of Southeast Asian Nations
AU	African Union
AUC	African Union Commission
BE	Blue Economy
COMESA	Common Market for Eastern and Southern Africa
CTF	Combined Task Force
DMIT	Dar es Salaam Maritime Training Institute
DRRM	Disaster Risk Reduction and Management Strategy
EAC	East Africa Community
EASF	East African Standby Force
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zones
EU	European Union
FAO	Food and Agriculture Organization
FISH-i	Africa Fresh Water Fish in Africa
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GHG	Green House Gas
GNH	Gross National Happiness
GS	Genuine Savings
GSF	Global Shippers Forum
HOA	Horn of Africa
ICC	International Chamber of Commerce
IDIS	Institute of Diplomacy and International Studies

IDs	Identification Documents
IGAD	Intergovernmental Authority on Development
IGOs	International Organizations
ILO	International Labour Organization
IMLI	International Maritime Law Institute
IMO	International Maritime Organization
IMSSEA	Maritime Safety, Security and Environmental Academy
INMP	Integrated National Maritime Policy
IOC	Indian Ocean Commission
IOR	Indian Ocean Rim
IOR-ARC	Indian Ocean Rim/Arc
IORC	International Ocean Research Conference
ISCs	Information Sharing Centers
IUU	Illegal, Unreported and Unregulated
KAM	Kenya Association of Manufacturers
KDF	Kenya Defence Forces
KEPSA	Kenya Private Sector Alliance
KICD	Kenya Institute of Curriculum Development
KRA	Kenya Revenue Authority
KWS	Kenya Wildlife Service
LDCs	Least Developed Countries
MDA	Maritime Domain Awareness
MOU	Memorandum of Understanding
MOWCA	Maritime Organization for West and Central Africa
MRCC	Maritime Rescue Coordination Center
MSP	Marine Spatial Planning
NACOSTI	National Commission for Science, Technology and Innovation
NAFTA	North American Free Trade Agreement
NATO	North Atlantic Treaty Organization
NEPAD	New Partnership for African Development
NGOs	Non Governmental Organization
NPS	National Police Service
NPT	Treaty of Non Proliferation of Nuclear Weapons
OAU	Organization of African Union

PPPs	Public Private Partnerships
RECs	Regional Economic Communities
SADC	Southern Africa Development Cooperation
SAR	Search and Rescue
SDGs	Sustainable Development Goals
SIDS	Small Island Developing States
SMEs	Small and Medium Enterprises
SOLAS	Safety of Life at Sea
SSF	Small-Scale Fisheries
TTI	Tourism Training Institute
UASC	United Arab Shipping Company
UK	United Kingdom
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISDR	United Nations International Strategy for Disaster Reduction
UNSC	United Nation Security Council
UON	University of Nairobi
US	United States
USD	United States Dollars
VMS	Vessel Monitoring System
WB	World Bank
WCO	World Customs Organization
WIO	West Indian Ocean
WMU	World Maritime University
WTO	World Tourism Organization

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Blue economy as a concept first crept up on the world stage in Rio, in the United Nations (UN) conference on sustainable development in 2012. It has become a topical issue for many countries with a coastline especially countries with access to the Indian Ocean. This is because the prospect of having a thriving blue economy seems to guarantee higher Gross Domestic Products (GDPs) for countries practicing it. It is critical to fully appreciate that the maritime, coastal, and marine sectors will definitely “deliver energy, transport, food and services among other products and equally serve as a foundation for sustainable development in Kenya and other African countries.”¹

The African Union (AU) has been at the forefront of trying to develop and promote the virtues of the blue economy on the African continent. During the past ten years, “the African Union Commission (AUC) has built an enlarged Africa-wide consensus regarding the critical role that the blue economy could play in fostering structural transformation in Africa during the next decade.” This is captured in the African Union’s 2050 Africa’s Integrated Maritime Strategy (AIMS), which proclaims this economy as the “new frontier of African Renaissance.”² The AU Agenda 2063 promotes the blue economy and recognizes it as very important to the future of the continent.

The AIMS 2050 was developed by the AUC to give a blueprint of the future of Africa from a blue economy perspective and help in developing socio-economic development in the future. The Africa Development Bank (ADB) wanted a “platform for African countries to discuss ways to work together in developing blue economies and is putting this strategy at the forefront of discussions on the continents’ economic future. Similarly, the United Nations

¹ UNEP, (2015). *Blue Economy: Sharing Success Stories to Inspire Change* T. Bryan, Tanya; Neumann, Christian; Patterson, ed., Available at: www.unep.org/greeneconomy.

² Ibid, (2015), p. 12.

Economic Commission for Africa (UNECA) and the African Climate Policy Centre (ACPC) released a report in 2014 that also highlighted the Blue economy and unlocking full potentials of the Blue economy.”³

It is worth postulating that any economy including Kenya’s, needs to diversify it beyond land-based activities to, “marine and maritime sector is critical to achieving the Sustainable Development Goals (SDGs) and delivering smart, sustainable and inclusive growth. This is especially important in the context of the accelerated growth that the country is experiencing without any concomitant reduction in poverty.” The 2030 agenda for sustainable development describes how the Blue economy is crucial to keeping the economy viable for the foreseeable future and in the development of innovation and infrastructure.⁴

The Strategic Development Goals target “focuses on enhancing the economic benefits to Small Island Developing States (SIDS) and Least Developed Countries (LDCs) from the sustainable use of marine resources, including through the sustainable management of fisheries, aquaculture, and tourism. SIDS has been at the forefront of the blue economy advocacy, recognizing that oceans have a key role to play in humanity’s future and that the blue economy offers an approach to sustainable development better suited to their circumstances, constraints and challenges.”

It is worth noting that the lack of capacities, skills and access to cost-effective technologies makes it a challenge to “overcome the barriers to sustainable management of aquatic resources in Kenya. Addressing these challenges would boost the Blue economy of this region, while leading the fisheries sector to flourish sustainably, attract investments and ensure food security.”⁵ Legislation around the world that demands that fish must be caught in safe, sustainable and humane ways have cropped up in many national assemblies. Therefore,

³ Ngeso, J. (2012). *Growing the Blue economy potential in East Africa*, journal, Institute of Economic studies.

⁴ ECORYS, Deltares and OCEANIC, (2012). “*Blue Growth Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts Final Report*”, Rotterdam and Brussels.

⁵ Ngeso, J. (2012). *Growing the Blue economy potential in East Africa*, journal, Institute of Economic studies.

more and more, documentation is being required of fishermen. Such kind of developments will see innovation rise to be able to keep tabs on the many vessels in the water. Kenya is endowed with a “world-class ocean ecosystems which are under threat from both direct and indirect pressures through resource exploitation and human-induced habitat degradation.”⁶ For instance, over the last quarter century the mangrove cover has shrunk by 18 per cent.⁷ This is largely due to “over harvesting for firewood, timber and charcoal, clearing and conversion to other land uses, pollution, sedimentation, and changes in river flow.”

1.2 Statement of the Problem

Kathijotes, N. (2013), points out that “the Blue economy aims to promote the development of marine industry which ecologically, economically and socially benefit from the marine ecosystem and are suppose to ensure that the ecosystem- based management model should be the core in decision-making process of industrial and community development.” Just like most countries with maritime borders, Kenya is endowed with Blue Economy resources that are supposed to boost her economy. Some of the resources include fish, oceanic pharmaceuticals, oil and gas, oceanic minerals, and coral reefs among others.

It is important to appreciate that just like most countries with maritime borders, Kenya is endowed with Blue Economy resources that are supposed to boost her economy. Some of the resources include fish, oceanic pharmaceuticals, oil and gas, oceanic minerals, and coral reefs among others. Despite the fact that Kenya boasts a sizeable part of the Indian Ocean and other water bodies, it is not clear why it has never realized the full potential of the Blue Economy resources within its reach. For this reason, this research sought to examine ‘the

⁶ Diop, S., Scheren, P. and J. Machiwa. (2016). “*Estuaries: A Lifeline of Ecosystem Services in the Western Indian Ocean.*” Springer International Publishing, pp. 9-12.

⁷ Obura, D.O., Burgener, V., Nicoll, M.E., Ralison, H.O., Scheren P., Nuñez, P., Samoily, M., Waruinge, D. and J Tanzer. (2016). In press. “The Northern Mozambique Channel – a capitals approach to a Blue Economy future. IN: Handbook on the Economics and Management for Sustainable Oceans.” Markandya (eds.) Handbook.

challenges facing Blue Economy resource management in Africa’, with a specific focus on Kenya.

1.3 Research Questions

This study was guided by the research questions below;

1.3.1 What is the current status of the Blue Economy resources in Africa?

1.3.2 What are the challenges facing the Blue Economy resource management in Kenya?

1.3.3 What are the key actors and strategies employed in advancing the Blue Economy resource management in Kenya?

1.4 Objectives of the Study

The general objective of this research was to examine challenges facing blue economy resource management in Africa using a case study of Kenya. The specific objectives include;

1.4.1 To determine the current status of the Blue Economy resources in Africa.

1.4.2 To assess the challenges facing Blue Economy resource management in Kenya.

1.4.3 To analyze the key actors and strategies employed in advancing Blue Economy resource management in Kenya.

1.5 Literature Review

This is a critical section of the research and it is divided into both empirical and theoretical literature will be reviewed concerning the subject of the study.

1.5.1 Theoretical Review

Africa is “endowed with a variety of natural resources – living and non living, such as water, and diverse flora and fauna, including fish stocks, minerals and hydrocarbons.” The worth that can be harvested from the ocean alone “is conservatively valued at US\$ 4 trillion, which is equivalent to the GDP of countries in East Asia and the Pacific in 2017 and of which it is estimated goods and services provide \$2.5 trillion annually.”⁸ This could easily represent one

⁸ Diop, S., Scheren, P. and J. Machiwa. (2016). “*Estuaries: A Lifeline of Ecosystem Services in the Western Indian Ocean.*” Springer International Publishing, pp. 9-12.

of the biggest economies on the planet and one that just slightly lagged behind Italy and India's. Yet, "the continent still suffers from large-scale poverty, with 46 per cent of the population living in extreme poverty." By 2050 Africa will have 25 per cent of the world's population. Growth "has generally not been accompanied by broad-based social progress and structural transformation of the economy."⁹

It is worth generally accepted that while the continent is "experiencing a rising middle class, a large part of the population is still unemployed, and populations are suffering from a large unequal distribution of wealth." Illegal activities deny African coffers close to 42 billion US dollars every year, with most of these monies going to offshore accounts in tax havens like the Cayman Islands.

Africa is at the cusp of a great opportunity and it needs to re-examine its "development pathway within the context of the Blue economy, taking into account socioeconomic, political, and environmental considerations. Societies that are dependent on aquatic and marine resources and ecosystems should get ready to embark on a developmental trajectory focused on human and ecosystem well-being."¹⁰ Yet, within the context of the Blue Economy, there are "limited innovations, experiences, and practices that can be used to lead this transition. In order to carve its path, Africa needs to define its own understanding of prosperity and progress, while promoting innovative thinking and practices that will enhance human and ecological well-being." Creating an aquatic "and marine-centered African vision within which new forms of knowledge and social narratives will be expressed would offer much to both Africa and the global community."¹¹

It is worth appreciating that "The Blue Economy is Africa's future. This was said by Danny Faure, the deputy president of the Seychelles, back in 2014 at the 22nd Ordinary

⁹ Ibid, (2016), p. 14

¹⁰ UNEP, (2015). "Blue Economy: Sharing Success Stories to Inspire Change T. Bryan, Tanya; Neumann, Christian; Patterson," ed., Available at: www.unep.org/greeneconomy, p. 97.

¹¹ Neumann, B., Vafeidis, A.T., Zimmermann, J. and R.J. Nicholls. (2015). "Future Coastal Population Growth and Exposure to Sea-Level Rise and Coastal Flooding," A Global Assessment. PLoS ONE 10, pp. 9-13.

Session of the Assembly of Heads of State and Government of the African Union.” AU Agenda 2063 recognizes Africa’s blue economy as a major player in the future of Africa’s development and it was even dubbed ‘Africa’s future’: “Africa’s Blue economy 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”.¹²

1.5.2 Challenges Facing Blue Economy Resource Management in Kenya

It is worth acknowledging that the major challenges facing the blue economy in the country are listed, that is, the “Blue Economy resource management policy in Kenya is insufficiently guided by the concept of sustainability and remains driven by poor governance that continues to favor or allow overfishing, resource spoliation and other illegal acts. Economic growth has not reinforced stability or reduced food insecurity.”¹³

The “management of natural resources is constrained by the lack of national policies and of a legal framework that clarifies rights, responsibilities and accountabilities.” Marine life is endangered whether near the shore or in the deep sea. This is mainly to rapidly decreasing fish stocks which is caused by overfishing, which interferes adversely with the food chain, human activity has also degraded the coral reef which is essential to all sorts of marine life and habitats such as mangroves are on the decline.¹⁴

Climate change poses a serious threat to life in the sea and other water bodies. Increase in temperatures or even a decrease tends to affect the reproduction of many species that have made water bodies their habitat. Kenya is “part of the International Coral Reef

¹² Ibid, (2015), pp. 16-17.

¹³ Arnaud-Haond, S., J. M. Arrieta, and C. M. Duarte. (2011). “*Marine biodiversity and gene patents. Science*” 331: pp. 1521-1522.

¹⁴ ASCLME programme/United Nations Development Programme. www.asclme.org ASCLME/SWIOFP. (2012). “Transboundary Diagnostic Analysis for the western Indian Ocean.” Volumes 1 & 2. ISBN: 978-0-620-57042-8

Initiative and has followed Seychelles, which is planning to protect 30 per cent of its exclusive economic zone of 1.37 million km by 2020, on restoring some of the damaged coral reefs.” Climate change by “causing physical and biological changes poses significant threat to fish yield; fish production, displacement of fish species, reduced fish production for export and a reduction of resilience of coastal communities and infrastructures.”¹⁵

Temperature fluctuations affect the density dwelling of many species.. Subjective “evidence in Kenya indicated that a reduction in precipitation and increase in temperatures have contributed to a decrease of some lake species.” Rises in sea level affects the laying grounds for egg hatching of many species. In West Africa, “sea surface temperature increased by 0.52, 0.46 and 0.24 °C, respectively, from 1982 to 2006.”¹⁶

This section posits that exploitation of resources by the government in Kenyan waters is minimal at best. Despite “favourable assessments of ocean-energy potential for the Indian and Atlantic Ocean coasts, these energy resources, wave, tidal, tidal range, ocean current, salinity gradient, ocean thermal energy and offshore wind energy, are so far not within reach of these countries.”¹⁷

The reasons may include: “the immaturity of existing ocean-energy technologies; the unit cost of ocean energy compared to other forms; lack of detailed ocean-energy resource-potential mapping; lack or inadequate development of coastal energy infrastructures; limited awareness about the potential and state of development of ocean-energy technologies; and the seasonal nature of some of the resources.” However, there are better prospects in the very near future.¹⁸ Global “assessment of the potential of ocean energy indicates that, by 2050, 10

¹⁵ United Nations Environmental Programme, (2015). “*Concept Note for Development of an Ocean Governance Strategy for Africa.*”

¹⁶ ASCLME programme/United Nations Development Programme. www.asclme.org ASCLME/SWIOFP. (2012). “Transboundary Diagnostic Analysis for the western Indian Ocean.” Volumes 1 & 2. ISBN: 978-0-6.

¹⁷ UNEP & EC, (2017). “*UNEP/EC Workshop on Area-based Management and Regional Cooperation for the Implementation of Ocean-related Sustainable Development Goals.*” Brussels: Environmental Programme & European Commission.

¹⁸ ASCLME “programme/United Nations Development Programme. www.asclme.org ASCLME/SWIOFP.” (2012). “Transboundary Diagnostic Analysis for the western Indian Ocean.” Volumes 1 & 2. ISBN: 978-0-620-

percent of global electricity production will come from ocean-energy sources. This should stimulate interest in the long-term potential of deep-sea and ocean energy.”¹⁹

The Mombasa port contains 29 berths and it is the largest port in the country so far and turnaround time for vessels arriving is about 5 days.²⁰ In terms “of tonnage and containers handled, it is the third-largest port in Africa, behind Durban and Port Said.” However, some of these ports are struggling with capacity challenges. Investment in “enhancing berths and terminals is required if the port is to maintain its position. Institutional reforms, such as facilitating greater private-sector involvement in the running of the port, may also be necessary to achieve efficiency improvements.” A United States Dollars (USD) 478.9 million-port is the approximated cost of construction of a port in Lamu. This would be the biggest port in the country once it is finished for it will have 32 berths. It is a project to link Kenya Ethiopia and Sudan by providing them with a transport corridor.²¹

Across African, “over 1400 national stocks of fisheries are being overfished, where a national stock can be defined as a stock within a nation’s Exclusive Economic Zone (EEZ).” A difficult line to determine what is natural stocks and what is national stocks since fish are usually a transboundary resource. But “the national stock represents a management unit under the Law of the Sea Convention; each nation is entitled to capture the fish swimming through its EEZ and is responsible for its management therein.”²² Overfished stocks exist in Kenya.”²³

1.5.3 Key Actors and Strategies in Advancing Blue Economy Resource Management

In the Kenyan context, the government is a major actor in advancing the marine resource management. The Ocean Economy in Kenya has three main sectors. First, is seaside tourism which accounts for slightly more than half of the Blue economy earnings. Second are port

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¹⁹ Ibid, (2017), p. 42

²⁰ UNEP. (2015). “*Blue Economy: Sharing Success Stories to Inspire Change*” T. Bryan, Tanya; Neumann, Christian; Patterson, ed., Available at: www.unep.org/greeneconomy, p. 5.

²¹ Ibid, (2010).

²² Neumann, B., Vafeidis, A.T., Zimmermann, J. and R.J. Nicholls. (2015). “Future Coastal Population Growth and Exposure to Sea-Level Rise and Coastal Flooding – A Global Assessment.” PLoS ONE 10, e0118571.

²³ Ibid, (2015), pp. 79-81.

activities. This accounts for almost a fifth of the blue economy's earnings. And lastly is fishing. It accounts for 14% of total earnings in the industry. The bureaucracy is managed by the following departments of government, Ports Authority, Kenya Revenue Authority, The Fisheries Department, Kenya Maritime Authority, the Coast Guard and other ministries.

The private sector is crucial to this economy, because while government comes up with legal bindings, policy guidelines and rules and regulations, it is the private sector that is executing day to day economic activities. They are the life blood to the system. The “government relies on the private sector, for example, Kenya Private Sector Alliance (KEPSA) and Kenya Associate of Manufacturers (KAM) on data and information that will help it come up with effective policies on the Blue Economy.” intimately involved with the private sector are the tertiary institutions. Some “universities, colleges, and other higher learning institutions are considered key actors because they play a significant role in producing skilled staff to work in various Blue Economy sectors.”

On strategy issues, Kenya has the chance to apply and utilize Marine Spatial Planning (MSP), which is a participatory, adaptive, and integrative process “that brings together multiple users of the ocean at various levels, including recreation, energy, gas and oil industry, conservation and fisheries to make informed and coordinated decisions about how to use marine resources sustainably.”²⁴

The maps are used by the MSP to determine the different locations of flora and fauna and also minerals that might be found in a specified area. The maps also mark habitats of different species found in an area. They aim to achieve the goals of those in power as they become the executors of the government's mandate. They are crucial for the blue economy. MSP is thus essential for the Blue Economy. The “Blue Economy framework should be an integrated, holistic, intersectoral-linked development space anchored on a quadruple-bottom

²⁴ UNEP. (2015). “*Blue Economy: Sharing Success Stories to Inspire Change*” T. Bryan, Tanya; Neumann, Christian; Patterson, ed., Available at: www.unep.org/green economy.

line approach, where development success is measured in economic terms as well as on the basis of environmental and material stewardship, social responsibility, and governance/transparency standing.”²⁵

Marine management at the coast is usually set up as projects. The activities relating to the management of the blue economy resources at the coastal environment in Kenya have been set up in the form of projects. These activities “in research, data collection, basic knowledge construction, and dissemination of information on ecosystems, constitute basic elements to build these ecosystems’ resilience.”²⁶ Various “crucial initiatives are invoked at the sub-regional level, such as: the East Africa Community (EAC) has developed a Disaster Risk Reduction and Management Strategy” (DRRM) for the period 2012-2016; “The DRRM document aims to mainstream prevention and risk analysis into development planning, programmes and projects, considering that this approach is one of the ways to consolidate sustainable development in the region as a whole.”

The “United Nations Economic Commission (UNEC) for Africa forecasts of climate change can provide opportunities for the renewal, modernization or improvement of maritime infrastructure, while the changing lifestyles of marine species due to climate change may require further research.”²⁷ Regional initiatives “in sustainable development and or climate change in Eastern Africa are often developed and supported in conjunction with the East African Community (EAC), the Common Market of East and Southern Africa (COMESA), and the Indian Ocean Commission (IOC).”

It is said that no new hard-hitting concept or relevant movement forward can be noted thus far as it relates with issues blue economy. An initiative taken by the Seychelles,

²⁵ UNEP & EC, (2017). “*UNEP/EC Workshop on Area-based Management and Regional Cooperation for the Implementation of Ocean-related Sustainable Development Goals*,” Brussels: Environmental Programme & European Commission.

²⁶ UNECA (United Nations Economic Commission for Africa). 2016. “Africa’s Blue Economy: A Policy Handbook.” Economic Commission for Africa, Addis Ababa, Ethiopia.

²⁷ Ibid, p. 16

Comoros, Madagascar, Mayotte and Reunion which is being dubbed the “vanilla islands” has its origins from the Indian Ocean Commission. It aims at marketing these countries to the outside world and the use of the marine wildlife resources is a big part of it.

The United Nations Convention on the Law of the Sea (UNCLOS) specializes at bringing to reckoning the special interests of countries. It charters the rights that coastal and landlocked countries have over their Blue economy and tries to set a balance so not to disadvantage a state or a group of states at the expense of another.²⁸ For example, “while the coastal State has sovereign rights for the economic exploitation and exploration of the EEZ and jurisdiction with regard to, inter alia, the protection and preservation of the marine environment, it must have due regard to the rights and duties of other States, which, in turn must have due regard to the rights and duties of the coastal State and shall comply with the laws and regulations adopted by the coastal State in accordance with the provisions of UNCLOS and other rules of international law (articles 56 and 58).” EEZs need to be monitored to ensure the workers in these facilities are being given a humane working environment and also that marine resources are conserved and not polluted.²⁹

It is worth appreciating that mapping also helps identify underwater treasures. There was a United Nations Educational, Scientific and Cultural Organization (UNESCO) convention back in 2001 which resolved to protect underwater treasures. It can be considered as “the best system to protect the underwater cultural heritage, without identifying ownership of the heritage or redefining the maritime zones.”³⁰ Greater awareness of the public is needed in order to preserve our cultural heritage more effectively.

²⁸ UNECA (United Nations Economic Commission for Africa). 2016. “Africa’s Blue Economy: A Policy Handbook.” Economic Commission for Africa, Addis Ababa, Ethiopia.

²⁹ UNCTAD. (2014). “*The Oceans Economy: Opportunities and Challenges for Small Island Developing States*,” New York and Geneva.

³⁰ UNEP. (2015). “*Blue Economy: Sharing Success Stories to Inspire Change*” T. Bryan, Tanya; Neumann, Christian; Patterson, ed., Available at: www.unep.org/green_economy.

The AIM'S 2050 strategy has been adopted by Kenya in order to build up the blue economy.³¹ The AU also adopted this strategy and this is very crucial geopolitically in both “maritime boundaries or delineation; and maritime governance. Through the Africa Union Border Programme, in accordance with UNCLOS, the AU shall make an assertive call to solve existing maritime boundary issues peacefully between member States including within bays, estuaries, and inland waters (lakes and rivers).”³²

It has “apartment-style living in the comfort, luxury and security of a typical hotel. In its development, English Point Marina has incorporated best-practice standards of sustainability currently available, covering areas such as the conservative use of energy, the treatment and recycling of grey water, and sewage treatment, among others.”³³

1.6 Justification of the Study

This section found that Africa happens to be one of the richest regions in terms of Blue economy resource. Some of these resources include: fisheries and aquaculture, deep ocean mining, marine transportation and shipping, and marine tourism amongst others

1.6.1 Academic Justification

In undertaking this study, this section found that there is a gap in study of the blue economy in not only Kenya but Africa as continent. It is crucial to understand the topic of the study in order to harness such resources better. How else does anyone justify the wealth in terms of the blue economy in this country yet see a lot of poverty in the same region. Study into this topic, may give other scholars or even policy makers insights into the problems that face this economy. New knowledge may also come to light in which no researcher had ever thought to pursue before.

³¹ UNCTAD. (2014). *“The Oceans Economy: Opportunities and Challenges for Small Island Developing States,”* New York and Geneva.

³² Hoge JF (Jr), (2009). *“Global power shift from West to East in making: Growing economy turns into political military power,”* The Seoul Times, p. 13.

³³ UNECA (United Nations Economic Commission for Africa). 2016. *“Africa’s Blue Economy: A Policy Handbook.”* Economic Commission for Africa, Addis Ababa, Ethiopia.

1.6.2 Policy Justification

This research aims to be able to influence policy makers come up with more appropriate and relevant policies toward the Blue economy from the findings it gathers. The study's findings will help in: conservation efforts, tackle overfishing, create regulatory institutions, identify new and appropriate technology, and training and research.

1.7 Theoretical Framework

It is important to appreciate that Pomeroy and Berkes have an underlying philosophy that seems to gel well with this kind of study. It is called the co-management theory, which they established in 1997. This is a theory that wants seeks to address the efficiency of this type of economy relying on the responsibility shared between the management of resource and the government of the day.³⁴

1.7.1 The Theory of Co-Management

It is worth noting that the theory of co-management is a divergent idea. it relies on two basic premises, normative and objective benefits. This section notes that objectively, “co-management is believed to lead to more effective resource conservation and less costly management when used to manage a marine resource.”³⁵ This outcome works through several different mechanisms. These include “improved management due to incorporation of better data and local ecological knowledge; more appropriate rules and regulations that can respond rapidly to changing conditions; and more effective and efficient enforcement due to increased legitimacy of the management structures.”

The empirical benefits of co-management, which involves monetary resources, research information and eco-system layouts, it is still an efficient way of gauging normative benefits. Co-management regimes are considered to be “more ethical than command-and

³⁴Alpizar, M.A.Q. (2006), “Participation and fisheries management in Costa Rica: From theory to practice.” *Marine Policy* 30: 641-650.

³⁵Bardhan, P. and J. Dayton-Johnson. (2002). “Unequal irrigators: Heterogeneity and commons management in large-scale multivariate research. in the drama of the commons.” Ostrom, E., T. Dietz, N. Dolsak, et al., editors. National Academy Press: Washington, DC. pp. 87-112.

control management; hold promise for increasing equity and; may lead to gains in social capital, increased conflict resolution, and more harmonious relationships; and may contribute to the empowerment and development of marginalized communities.”

The management of natural resources is usually classified as follows in terms of topology: “open access (*res nullius*), state management (*res publica*), community management (*res communes*), and private management. This is a common part of natural resource management.”³⁶ All four of, “these management types are recognized as idealized types. In praxis these types are often mixed and the boundaries between them blurred.” Pinkerton is more liberal with his views. He thinks that such sort of management should involve both private and public stakeholders. He has a 10-point chart where the distinction between private and public can be made. The real crux in this theory is that it distinguishes government efforts collecting views from the public to government accepting and taking views and opinions from the public in an open and unbiased forum. The government does not own the process, but the process is democratic owned by all stakeholders available and so are the decisions made.

1.8 Hypotheses of the Study

This study was guided by the hypotheses below;

1.8.1 Blue Economy resources in Africa are not well managed

1.8.2 Kenya is not facing significant challenges in the blue economy resources management

1.8.3 Kenya is not employing effective strategies in advancing blue economy resource management.

1.9 Research Methodology

This section describes the different frameworks the study took to move from its initial stages until it arrives at its logical conclusions.

³⁶Beem, B. (2007), “Co-management from the top? The roles of policy entrepreneurs and distributive conflict in developing co-management arrangements.” *Marine Policy* 31(4): 540-549.

1.9.1 Research Design

This research was exploratory in nature since there isn't much research done in this area. It explored the challenges of the blue economy in the country, its operations and what could be done to improve on revenue from this sector of the economy.

1.9.2 Study Site

Sites explored for this study were in Nairobi County, Mombasa County and Kisumu. Kisumu and Mombasa were chosen because of the large water bodies found there. These are Lake Victoria and Indian Ocean respectively. Nairobi was selected because it hosts a lot of blue economy conferences.

1.9.3 Target Population

The data examined targeted the Fisheries Department, Kenya Maritime Authority, Ministry of Trade, Kenya Ports Authority, Ministry of Transport, Ministry of Mining, Ministry of Tourism, Kenya Revenue Authority, and other stakeholders involved in the Blue economy.

1.9.4 Sampling Techniques and Sample Size

First of all, the researcher used purposive sampling to identify and select key informants from the departments concerned with the Blue Economy. The researcher also used inclusion and exclusion criteria to sample previous literature and come up with pertinent resources that were used in the study.

1.9.5 Data Collection Methods

This study utilized both qualitative and quantitative study approaches through the use of both primary and secondary data. The primary data was collected through telephone interviews. In addition, this research this study used secondary data from journals, books, periodicals, websites and documents from agencies involved in the blue economy such as UNECA, World Bank and many others.

1.9.6 Data analysis

The final data collected was analyzed using document analysis and content analysis techniques. This is due to the fact that, the information gathered was qualitative in nature, supplemented by secondary data.

1.9.7 Data presentation

Since it was qualitative in nature, data was presented through narrative descriptions.

1.9.8 Ethical consideration

The study used a combination of both primary data and secondary data sources; therefore, it did require the necessary research permits. The researcher started by acquiring a research authorization letter from IDIS before being granted a permit by NACOSTI. While conducting telephone interviews, the researcher assured participants of their confidentiality and anonymity. The researcher also applied ethical measures in research where he ensured that he acknowledged the sources used in the study through in text citations and references. This also ensured that the study was minimal to zero plagiarism.

1.9.9 Limitations of the Study

The study was limited by the fact that, the country was affected by the COVID-19 pandemic at the time when the researcher was just preparing to collect data. To counter the limitation, the researcher was forced to change the approach of the study by conducting telephone interviews. Unlike the one-on-one interviews, it's difficult to control the tempo of the telephone interviews because the respondents might be distracted by other engagements while talking on phone.

1.10 Research Study Layout

The study layout was presented in the following fashion: In Chapter One discussion is centered on the background to the problem, the problem statement, the theoretical framework and methodology, research questions, objectives of the study, and justification of the study.

In Chapter two delineates the findings on the blue economy and the status it is in. Chapter three elaborates on the challenges facing the blue economy in the country. Chapter four talks about factors that enhance the blue economy in the country and the strategies used to further such developments within the country. Lastly, chapter five summarizes the findings, conclusions, and the research recommendations.

CHAPTER TWO

THE CURRENT STATUS OF THE BLUE ECONOMY RESOURCE MANAGEMENT IN AFRICA

2.1 Maritime Resources in Africa

This section was keen to review the status of the maritime resources. The study notes that 46 per cent of African still lives in dire poverty even though Africa is the richest continent in the world in terms of resources.³⁷ The population of Africa will have doubled by 2050 making Africa account for a quarter of the human population on the planet.

Even though Africa's middle class is growing it has not been in tandem with broad based structural reforms of many of its economies. Unemployment is still a serious problem in the continent as has been witnessed with the many Africans risking their lives to cross the Mediterranean into Europe on rubber dinghies just to find work. Forty two billion US dollars every year is earned illegally, tax free from the continent from illegal logging and fishing.³⁸

It is vital to appreciate that there is a great potential for development to be attained from the blue economy only if government in Africa have a change of heart on their developmental models. Having said this, such kind of development must always consider human and ecosystem safety.³⁹ There are still many challenges facing this type of economy but to overcome them African governments need to develop models of development that are relevant to their particular unique situations and stop borrowing models from outside institutions like the Bretton woods institutions. These models must not just look to exploit marine and aquatic resources but also to conserve them.

³⁷Bardhan, P. and J. Dayton-Johnson. (2002). "Unequal irrigators: Heterogeneity and commons management in large-scale multivariate research. in the drama of the commons." Ostrom, E., T. Dietz, N. Dolsak, et al., editors. National Academy Press: Washington, DC. pp. 87-112.

³⁸ Hoge JF (Jr), (2009). "Global power shift from West to East in making: Growing economy turns into political military power," The Seoul Times, p. 13.

³⁹ Hoge JF (Jr), (2009). "Global power shift from West to East in making: Growing economy turns into political military power," The Seoul Times, p. 15.

The Africa Union's Agenda 2063 is a start in Africa's quest to become independent in its thinking and executing its development programs. The agenda that seeks to develop Africa's Blue economy and cultivate partnerships that rely on reciprocity in this century. It should be noted that Kenya was the first country to host the blue economy conference back in December of 2018.⁴⁰ Kenya having hosted the first blue economy summit has shown Africa's dedication to contribute to this economy and it is clear that it is willing to offer up "scientists, activists, policymakers, and business leaders sincerely willing to explore, promote, and invoke innovative ways to achieve sustainable development."⁴¹

The Food and Agricultural Organization (FAO) released figures, stating that over 4 billion people receive fifteen per cent of their protein intake from fish. It also estimated that there could be as much as 10000 species of unknown fish in our oceans which could be helpful in the future for human beings for their dietary, cosmetic, pharmaceutical and bio energy needs.⁴² Back in 2011 the fishing and marine industries brought in 24 billion US dollars into Africa's coffers. This represented about one per cent of Africa's GDP and nine per cent of all the catch in the world. Market share for African fish and marine wildlife are as follows: "Europe (70 per cent), Asia (15 per cent), Africa (11 per cent), and North America (2 per cent)." Oceania and South America are each estimated at 1 per cent. By 2015 fish catch and increased to eleven million tones with half of them coming from wild catches. This represented five per cent of the world fish production. By 2017 Africa had a favorable balance of payment when it came to the fishing industry, amounting to over a billion US dollars.⁴³

⁴⁰ Sustainable Blue Economy Conference (2018). "The Nairobi Statement of Intent on Advancing the Global Sustainable Blue Economy." Nairobi, Kenya.

⁴¹ Hoge JF (Jr), (2009). "Global power shift from West to East in making: Growing economy turns into political military power," The Seoul Times, pp. 9-11.

⁴² FAO. 2015. "Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication." Food and Agriculture Organization, Rome, Italy. www.fao.org/3/a-i4356e.pdf

⁴³ Alpizar, M.A.Q. (2006). "Participation and fisheries management in Costa Rica: From theory to practice." Marine Policy 30: pp. 655.

2.2 The Blue Economy Opportunities

In reviewing the maritime resources, this section found that conservation efforts of marine wildlife and ecosystems have to start with the local communities since they are the most vested in the well-being of these systems. They live off of them and make a living off of them so they are keen on what is going on within their environment and this can make them knowledgeable of their surroundings.⁴⁴

It is safe to state that for any sort of development to take place affordable and available energy has to be in play in any economy. Africa's growing population has made the demand for energy to increase tremendously. Sources of energy on the continent could be supplemented by other blue sources found in our oceans. For example, oil and gas or even other cleaner options like tidal and wave energy. For example, TC's Energy, "a renewable developer from Ghana has signed a contract with Sweden's Sea-based for the design, manufacture and installation of a 100 MW wave energy project off the coast of Ada Foah."⁴⁵

The Co-management theory has put sharing of responsibility between energy users and the government at the center of its definition. It postulates that this sort of management is cost effective and efficient than many other models. It is highly recommended for blue economy management. This is because local knowledge is essential to any research and this combined with government statistics will lead to the formulation of better policies and laws in the industry. Locals give enforcement of the laws its legitimacy.

Ghana is at the forefront of adapting wave technology. "It has a contract with Sea-based, contracted by TC's Energy, to develop 100 MW wave energy."⁴⁶ It is a pioneering effort in the continent and very few actually exist around the globe. There's also another project Ghana is developing that will use wave energy. It is projected to generate 1000 MW

⁴⁴ Alpizar, M.A.Q. (2006). "*Participation and fisheries management in Costa Rica: From theory to practice.*" Marine Policy 30: p. 671.

⁴⁵ Ibid, (2006), p. 678.

⁴⁶ Hoge JF (Jr), (2009). "*Global power shift from West to East in making: Growing economy turns into political military power,*" The Seoul Times, pp. 9-11.

of energy. The contract for this project was awarded to Yampro Energy.⁴⁷ Even though Africa has a large supply of resources in terms of minerals and gemstones it has to be noted that between 2007 and 2016 Africa's exports of oil and gas constituted roughly 62% of all exports coming from the continent in terms of revenue generated.⁴⁸ A good portion of this exported oil and gas was mined from the seas. About 30 per cent of all mineral wealth in the world is located in Africa, many of which come from maritime zones. 8 and 7 per cent of the world's oil and gas respectively come from Africa.⁴⁹

The amount of reserves for natural gas keeps increasing year by year. By 2015 African coastal states control 7.5% of the natural gas in the world.⁵⁰ In the last decade a lot of natural gas reserves have been discovered off shore of east Africa. This clearly boosts the potential for a blue economy. Even though the world seems to be angling for a fossil free future the increase in natural gas reserves may just fill the energy gap in the continent that is so desperately needed. Currently 625 million people in Africa are without electricity.⁵¹

The Regional Economic Communities (RECs), Intergovernmental Organizations (IGOs), and States have recognized the importance of the blue economy and already have drawn blueprints for the future on how to go about exploiting, harnessing and conserving it. The Indian Ocean Commission which has four African members is in the process of developing a Blue Economy Action Plan.⁵² Mauritius, Seychelles and South Africa are the countries in Africa that have some sort of advanced blue economy strategy. The UN has

⁴⁷ UNEP & EC, 2017. "UNEP/EC Workshop on Area-based Management and Regional Cooperation for the Implementation of Ocean-related Sustainable Development Goals," Brussels: Environmental Programme & European Commission.

⁴⁸ UNEP & EC, (2017). "UNEP/EC Workshop on Area-based Management and Regional Cooperation for the Implementation of Ocean-related Sustainable Development Goals," Brussels: Environmental Programme & European Commission.

⁴⁹ Ibid, (2017), p. 17.

⁵⁰ Ibid., p. 17

⁵¹ Alpizar, M.A.Q. (2006). "Participation and fisheries management in Costa Rica: From theory to practice." Marine Policy 30: p. 671.

⁵² UNECA (United Nations Economic Commission for Africa). 2016. "Africa's Blue Economy: A Policy Handbook. Economic Commission for Africa," Addis Ababa, Ethiopia.

adopted the blue economy in to its SDG.⁵³ In particular, SDG 14 refers to “Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.”

The EAC, UNEP, AfDB, AU, and other institutions have started sponsoring RECs, IGOs, and States so that they can develop blue economies in Africa.⁵⁴ This is an approach that is being modeled globally and this has resulted in the establishment of international, regional, and bilateral cooperation which has even resulted in Private Public Partnerships (PPPs).

The different sectors in the blue economy are being ailed by limited legislation. That is the legislation doesn't consider how these different sectors are interconnected with each other or other sectors of the economy. For example, energy harvesting from the ocean are never considered as part of tourism or transportation legislation.⁵⁵ Also, as Africa looks into the future and the need for more energy, more and more policy makers are thinking of nuclear energy and ignoring the safe and bountiful source of energy that is tidal or wave energy.

It is critical to acknowledge that what is needed is a little bit of imagination from the policy makers for them to see the potential the blue economy has and how much energy can be harnessed from such endeavors.⁵⁶ A comprehensive outlook must be the approach to solve energy deficiencies where both land and sea policy are looked at as two sides of the same coin. Awareness and civic education on the topic of blue economy is the only way to make it a viable economic model for the future and to align it with the growing trend of economies

⁵³ Alpizar, M.A.Q. (2006). “*Participation and fisheries management in Costa Rica: From theory to practice.*” Marine Policy 30: p. 671.

⁵⁴ UNCTAD, 2014. “*The Oceans Economy: Opportunities and Challenges for Small Island Developing States.*” New York and Geneva.

⁵⁵ UNCTAD (United Nations Conference on Trade and Development). 2014a. “Small Island Developing States: Challenges in Transport and Trade Logistics. Background note to third session of Multi-Year Expert Meeting on Transport, Trade Logistics and Trade Facilitation.” Geneva, 24–26 November.

⁵⁶ Alpizar, M.A.Q. (2006). “*Participation and fisheries management in Costa Rica: From theory to practice.*” Marine Policy 30: p. 671.

and industries around the world that are “going green”. This means that there can be advantages to the blue economy if it uses clean and safe and conservatory methods.⁵⁷

The AfDB has an aim of empowering member nations through sustainable development models using long term plans with long term perspectives. The development goals of the period between 2016-2025 will be realized through these five areas: “Light up and Power Africa, Feed Africa, Industrialize Africa, Integrate Africa, and Improve the Quality of Life for the People of Africa”. The feed Africa strategy is aided by the blue economy. Protein being the key ingredient to the building blocks of life, fish becomes an important food source here in Africa and in countries like Senegal, 75% of the population consume fish on a regular basis.⁵⁸

A United Nations report stated that currently over two hundred and seventy-five million people eat fish as their staple, averaging 10.5 kg per capita consumption. The African Leaders for Nutritional Initiative are giving support to initiatives that concern nutritional well-being it is ironic of the 13 nations that consume fish the most, eight of them are landlocked countries while seven of them developing countries according to FAO.⁵⁹

The nearly two thirds of fish production is of a small scale nature which is mainly for consumption and it emanates from rural communities. This sector employs over 12 million people and women are the most active in the processing of this food stuff. Moreover, the entire fisheries sector employs approximately “more than 12 million people as full time including part time fishers and processors. Women also play a critical role in the processing, marketing, and distribution platforms and networks with far reaching implications for resilient household economies.” Capture fisheries appear to have stagnated, with constant yearly figures of production at about 10 million tones but with aquaculture and inland fishing

⁵⁷ Sale, P.F. et al. 2014. “Transforming management of tropical coastal seas to cope with challenges of the 21st century.” *Marine Pollution Bulletin* 85(1):8-23. doi:10.1016/j.marpolbul.2014.06.005.

⁵⁸ *Ibid.*, p. 19.

⁵⁹ Sachs, J.D., Schmidt-Traub G. and Durand-Declare D. 2016. “Preliminary Sustainable Development Goal (SDG) Index and Dashboard.” SDSN working paper under public consultation, pp. 2-23.

figures seem to be growing at a rate of about 18% annually. About half of the fish captured in small holdings is lost due to one reason or another. But this can be remedied if the blue economy concept is taken seriously. There is therefore need to “promote best management practices, improve markets access, promote local consumption and support through regional and sub-regional economic zones”. Opportunities for fisheries Africa are supported by the following organizations ECOWAS, COMESA, AUC and NEPAD.⁶⁰

2.3 Managing Trends of Blue Economy Resources

The Blue economy movement in Africa hopes to transform the industry both in maritime and inland water in the next ten years. Business model for this economy should be able to facilitate investment in people, nature, the society and other businesses and meets the safety criteria for people, for the environment all the while generating a profit. Thirty eight countries in Africa are Coastal and this shows massive potential in blue economy for the continent.

“Morocco, South Africa, Namibia, Mauritania, Seychelles and Senegal are major players in the fishing industry”. As a global commodity fish generates about 140 billion US dollars annually. This kind of market share augurs well for African countries in their bid to improve their economies. Value addition to the products promises even more profits estimated in the range of 24 billion US dollars extra in revenue. Fish can be classified as large pelagics (such as sardines, shell fisheries and cephalopods. Aquaculture has many benefits, like: provision of food security for people, creation of employment and providing the government with much needed Forex from exports. In agricultural circles fishing is the leading agricultural export in the continent in terms of volume but when it comes to income generated it only amounts to six per cent of GDP. Countries that depend largely on fishing are Sierra Leone and Seychelles whose percentage of earnings from fishing are 110 and 24

⁶⁰ Rustomjee, C. (2016). Financing the Blue Economy in Small States. Center for International Governance Innovation.

respectively.⁶¹ Another opportunity for the growth of blue economy is the trade in sea weed which is booming in Tanzania.

The challenges in the Blue economy industry are: poor management of monitoring and evaluating fish stocks, dated infrastructure and lack of statistical data and illegal fishing. Overfishing is causing a loss of revenue in the amount of 2.5 billion US dollars annually in West Africa alone. It is also denying the coastal people much needed protein in their diet.⁶²

Sea food is increasingly being over harvested and this puts in doubt the sustainability of this industry. Some of the measures taken to remedy this is the chain of custody rule and traceability. In terms of traceability the African continent is not doing too well owing to the meagre allocation of resources to institutions that were created to deal with this issue. It is never too early to start conservation efforts of seafood and the time has come for African governments to give subsidies to Small and Medium Enterprises (SMEs) in the industry. The lack of structure to small scale fisheries make them easily marginalized by government and financial institutions because they will lack financial accounting services, lines of credit and because of minimal taxation not many social benefits will come their way. Climate change and population growth and urbanization affect marina and aquatic resources.⁶³

2.4 The Future of Blue Economy Resources

Park argues that “ecosystems are critical in supporting coastal water quality, healthy fisheries, and coastal protection against flooding”. He further observes that, “Integrated management (watersheds and deltas) present unique tools in this context to address upstream and downstream linkages in terms of ecosystem service trade-offs and synergies.”⁶⁴

⁶¹ Hoge JF (Jr), (2009). “*Global power shift from West to East in making: Growing economy turns into political military power*,” The Seoul Times, pp. 9-11.

⁶² Richmond, M.D. (2015). “Threatened marine species. In: UNEP-Nairobi Convention and WIOMSA. The Regional State of the Coast Report: Western Indian Ocean. Chapter 10.” UNEP and WIOMSA, Nairobi, Kenya, pp.129-150.

⁶³ Payet, R.A. and Obura, D.O. (2004). “The negative impacts of Human Activities in the Eastern African Region?” An International Waters Perspective. *Ambio* 33:24-34.

⁶⁴ Park, D. (2014). “Rebuilding the classification system of the ocean economy.” *Journal of Ocean and Coastal Economics*, 2014, p. Article 4, pp. 2-5.

The Blue economy as further significance than just to feed Africa and it also has the potential to unite the continent, give Africa much needed energy resource, uplift standards of living for the African and it can increase the lifespan of communities by giving people the resources to manufacture pharmaceuticals. The feed Africa a strategy is being implemented in coastal and marine ecosystems.⁶⁵

Eastern Africa has many maritime organizations. One of them is the Port Management Association of Eastern and Southern Africa (PMAESA) which is a body that promotes best practices among the members on the use of ports and it also facilitates capacity building measure in matters concerning the port.⁶⁶

The need for efficiency has led many countries in the region to establish maritime administrations inside ministries of transport or just set up an independent body with the mandate to carry out such tasks. International Maritime Organization (IMO) agencies have the mandate to make sure that minimal pollution occurs to maritime resources and also regulate the shipping industry. The main shipping organization in the sub-region is “the Intergovernmental Standing Committee on Shipping (ISCOS) and its job is to determine shipping policy”.

The AU’s 2050 AIMS and the African Maritime Transport Charter (AMTC), if well implemented could transform the ports of Africa and the shipping industry for the good of the whole east Africa.⁶⁷ The main political and economic organization is the EAC, from which Treaty Articles 95-105 cover maritime transport. 50% of the countries in the region are member states of the EAC.⁶⁸

⁶⁵ Ibid, (2014), p. 13.

⁶⁶ Mmochi, A. (2015). Mariculture. In: UNEP-Nairobi Convention and WIOMSA. “The Regional State of the Coast Report: Western Indian Ocean.” Chapter 22. UNEP and WIOMSA, Nairobi, Kenya, pp. 289-305.

⁶⁷ Hoge JF (Jr), (2009). “*Global power shift from West to East in making: Growing economy turns into political military power,*” The Seoul Times, p. 13.

⁶⁸ Park, D. (2014). “Rebuilding the classification system of the ocean economy.” *Journal of Ocean and Coastal Economics*, 2014, p. Article 4, pp. 2-5.

Training facilities are crucial to the maritime industry and this is why IMO has trained “over 150 high-level maritime administrators at the World Maritime University (WMU), maritime lawyers at the International Maritime Law Institute (IMLI), and security and environmental personnel at International Maritime Safety, Security and Environmental Academy (IMSSEA)”.⁶⁹ Outside the region, “South Africa has also maritime training programs. National and regional training institutions for seafarers are Bandari College (Mombasa) and the Dar es Salaam Maritime Training Institute (DMIT).”⁷⁰

East Africa’s approach to the blue economy is one of promoting shipping and port development. This creates jobs and empowers the local populations, Madagascar being a good example of this point through the building and upgrading of their ports.⁷¹ The blue economy initiatives must always take into consideration the effects on the environment and the opinions of local people in order to avoid misunderstandings that may lead to conflict. Cooperation between countries especially in fighting terrorism is very important indeed to allow the smooth continuation of maritime commerce. Eastern Africa coast line has had some challenges, for example, piracy, maritime terrorism, regional political instability and insecurity which have slowed the gains of the Blue economy.

It is acknowledged that some of the technical challenges that are facing the region in the blue economy are: few shipping vessels are available, limiting the amount of commerce the region can engage in with the world, delays of cargo at the port is also another problem and also the cost of doing business on the ports has to be made competitive so that traders won’t prefer to dock their cargo in other areas.

⁶⁹ Ibid (2014), p. 3.

⁷⁰ Ibid, (2014), p. 21

⁷¹ Appeltans, W., S. T. Ahyong, G. Anderson, M. V. Angel, T. Artois, N. Bailly, R. Bamber, A. Barber, I. Bartsch, and A. Berta. (2012). “The magnitude of global marine species diversity.” *Current Biology* 22: 2189–2202.

2.5 Chapter Summary

This chapter has described the challenges facing the blue economy in the region. It has also described how the African union agenda 63 will facilitate the full harnessing of the blue economy. Crucial sectors in the blue economy are: fishing and aquaculture, oil and gas industry and maritime transport. The chapter also clearly earmarked the different international organizations that have been working in the region to see that the vision for the blue economy in the region is fulfilled.

CHAPTER THREE

CHALLENGES FACING BLUE ECONOMY RESOURCE MANAGEMENT IN KENYA

3.1 Introduction

“The Blue Economy resource management policy in Kenya is insufficiently guided by the concept of sustainability and remains driven by poor governance that continues to favour or allow overfishing, resource spoliation and other illegal acts. Economic growth has not reinforced stability or reduced food insecurity.”⁷² This section presents findings in from the telephone interviews conducted regarding the challenges facing Blue Economy resource management in Kenya.

3.2 Lack of Effective Policy

Challenges in both remain, as they do in the “sustainable use of natural resources that is intrinsic to them. The management of natural resources is constrained by the lack of national policies and of a legal framework that clarifies rights, responsibilities and accountabilities. Along the coast or at sea, marine and coastal ecosystems face many challenges including a rapid decrease of fish stocks combined with reef degradation, whereas in many littoral zones, habitats such as mangroves and alga laminate keep on decreasing in Kenya.”⁷³

As on respondent reacted, “what has been hurting our efforts to harness maximumly on the Blue Economy is lack of an effective policy. While we might be having a policy framework in place, it has not been implemented successfully. Without a proper policy, we cannot move forward.”

Therefore, lack of effective policy in Kenya has resulted in loss of blue economy resources through avoidable instances of climate unpredictability. The destruction of marine

⁷² Arnaud-Haond, S., J. M. Arrieta, and C. M. Duarte. 2011. Marine biodiversity and gene patents. *Science* 331: 1521-1522.

⁷³ *Ibid*, 1521.

habitats “and resource depletion is the first most visible consequences of climate change and contribute to food insecurity and the aggravation of natural disaster impacts. Pollution of the oceans originates from a number of marine and land-based sources including river discharges, agricultural and industrial run-off, urban outfalls, municipal or industrial waste water, atmospheric deposition, illegal or indiscriminate dumping, accidents, fishing operations, maritime transport and off-shore construction. Some of the largest urban agglomerations are located in coastal areas and are growing.”⁷⁴

Closely related, another participant stated that “well, I don’t think we have enough laws and policies that are for our ocean environment. Like the kind of ships that are coming in and the discharges that they put in our ocean, I don’t think we have people who are checking on that, to be honest. So that in the long run, we are likely to get our living organisms around the ocean area to be affected. There is one convention specifically that is supposed to protect us from such instances. I don’t remember the name of the convention, but I will have to check but you see when the ships come and they are offloading, they have to follow some order. I am not so sure if we have such conventions as a country. Secondly, we have not domesticated it here. It therefore follows that nobody is looking to see what kind of stuff is being discharged that is obviously going to affect our ocean. Climate change is happening everywhere. So, if it is affecting the rest of the world, our ocean will not be left behind. It’s also going to be affected and just because we don’t have effective policies in place.”

Marine pollution occurs in the form of anthropogenic underwater noise, hazardous substances, heavy metals, radioactive materials, Persistent Organic Pollutants (POPs), nutrients (phosphorus and nitrogen), pesticides, and plastics. As an example, agriculture, in particular “excessive and inefficient use of nitrogen fertilizers, can create harmful algal

⁷⁴ World Bank 2016. “Blue Economy Development Framework— Growing the Blue Economy to Combat Poverty and Accelerate Prosperity.” April.

blooms (over 500 globally) and low oxygen hypoxic conditions leading to dead zones. Globally, an average of 13,000 pieces of plastic litter are estimated to be afloat on every square kilometer of ocean, with the potential to kill sea birds, sea mammals and fish each year, many of which are endangered, threatened or protected under national and international law.”⁷⁵

Failing to implement the necessary policies and Acts also lead to delay in infrastructural development and incapacity to collect revenue from foreign vessels. As one participant stated, “since the Blue Economy committee came into place, they tried to implement the fisheries Act which now is trying to streamline the licenses that are being given to those international fishing vessels. It was not open for all, as it were initially when they didn’t have to be licensed. So, they are now able to monitor the number of licenses they are issuing out to these foreign fishing vessels. And there are types of regulations that have been put in place, so that when you come to fish in our waters, you must offload a certain percentage of the fisheries within our port. So, I would say that our infrastructure is not well developed, in that we even lack enough cold rooms to support the law that has been put in place, so that when we license a fishing vessel, and we tell it to give us 30 percent of their catch, assuming we have licensed 10 such vessels, giving us 30 percent of their catch, then we lack enough infrastructure to support that. So, that means we have to check on our fisheries department. Secondly, if the 30 percent is landed, do we have enough capacity to take care of all that fish? I don’t think so. So, I think we have to better develop our infrastructure in terms of the cold rooms and so on, or us to be able to maximize our earnings in terms of fishing.”

⁷⁵ ASCLME programme/United Nations Development Programme. www.asclme.org ASCLME/SWIOFP. 2012b. “Transboundary Diagnostic Analysis for the western Indian Ocean.” Volumes 1 & 2. ISBN: 978-0-620-57042-8

3.3 Threat of the Climate Change

“Climate change and environmental mismanagement are growing threats to the integrity and sustainability of the aquatic and marine resources on which the Blue Economy is based. Kenya is part of the International Coral Reef Initiative and has followed Seychelles (which is planning to protect 30 per cent of its EEZ of 1.37 million km² by 2020) on restoring some of the damaged coral reefs.”⁷⁶ On land, “during 2004–2016, the total glacier area on Mt. Kenya (Africa’s second highest mountain and Kenya’s tallest and a major water tower) decreased by 44 per cent.”⁷⁷ At this pace, all glaciers may disappear by 2030. Wide areas of Africa, including Kenya, “have seen climate changes, sea levels rise, coastal erosion, saltwater intrusion, warming seawaters, ocean acidification, coral bleaching and an upsurge of invasive species as a result of global warming. Kenya’s coral reefs in the western Indian Ocean represent one of the largest systems in the world. Two severe coral bleaching episodes due to El Niño climate events that occurred in 1998 and 2016 caused 25 per cent and 10 per cent loss, respectively, of the coral coverage in the region. Though slowly recovering, these ecosystems are still highly vulnerable.”⁷⁸

When asked to comment on how climate change and ocean degradation are impacting on the Blue Economy, one key participant interjected, “we have not assessed the impact of climate change to enable us quantify or give specific impact but you know climate change, rising sea level has impact on breeding site of fish, fish breed in mangroves. So, when sea level rises, it means these mangroves are going to be covered, which in turn affects breeding site. Rising sea level also affects a second type of aquaculture called mariculture, where ponds are constructed along the intertidal levels, such that the ponds are filled during high

⁷⁶ UNEP & EC, 2017. “*UNEP/EC Workshop on Area-based Management and Regional Cooperation for the Implementation of Ocean-related Sustainable Development Goals*,” Brussels: Environmental Programme & European Commission.

⁷⁷ World Bank 2016. “Blue Economy Development Framework— Growing the Blue Economy to Combat Poverty and Accelerate Prosperity.” April.

⁷⁸ *Ibid*, 23.

tides. So those ponds are constructed in such a manner that you cannot change the position say by 10 or 20 meters. They are just constructed at the exact place such that when water level rises, the high tide level, the ponds get filled up and the inlet of the ponds are blocked so that the fish that is inside remain there. And then during the low tide, the fish remains inside there. That is how they collect the fingerlings of thrones. So, in undeveloped aquaculture, that's the method of collecting fingerlings. But when sea level rises, it means that method of technology cannot work. So, farmers won't get sufficient fingerlings to stock. This will in turn affect that type of technology of culturing thrones. Seal level rise affects coastal infrastructure and fish handling facilities. I cannot say Kenya can quantify and say this is how much but what is happening and going by the effects of climate change, am talking of rise of sea level. Those are some of the things affecting aquaculture. And then also climate change on the other side, we look at the extremes. I have looked at the melting of the glaciers, that releases water into the sea and causing sea level rise, and then looking at the other side, the extremes of high temperatures, high temperatures will affect sea surface temperatures. Rise in sea surface temperatures have adverse effects on choral leaves, what we refer to as choral leave bleaching. So, when temperatures rise, it affects the survival of the choral leaves. And choral leaves are important in marine aquatic lives. Because they provide nursery breeding and growing areas of the marine species. Those ones may not have been documented, but from science and the technologies being applied, the impacts are there. Like in choral bleaching, we have documented research findings which you can google and find out the degree to which these choral leaves have been affected.”

Supported by secondary literature, it is considered that by causing biological and physical changes, climate change poses a major threat to fish production. Temperature “increase affects the physiological process and sea upwelling, which leads to decline in fish stock. Subjective evidence in Kenya indicated that a reduction in precipitation and increase in

temperatures have contributed to a decrease of some lake species.” Sea level “rise affects spawning and nursery grounds and also fishing facilities, which impact negatively on fish production and access to fish for consumption.”⁷⁹ Also, an increase in “salinity and ocean acidification affects physiological processes such as impaired fertilization, and the ability of organisms to osmo-regulate, as well as habitat destruction leading to a decrease in fish reproduction. Also, the increasing intensity and frequency of extreme weather events can decrease safety at sea for fishers.”⁸⁰ Scarce quantitative and qualitative data about underground water reserves remain a challenge.

From the response of another key participant, “Blue Economy is about exploiting ocean resources and by ocean resources, I mean all sectors of economy such as shipping, maritime transport, wind energy, fishing activities and so forth. So, climate change mostly in the ocean affects the acidification of the ocean. What is meant by acidification is that the PH of the ocean water and water quality changes. And the results of acidification is that fishing grounds may migrate to other areas because of unfavorable water quality and maybe PH changes. PH changes also affect the growth of plant foods which are fish foods. And you see, if they affect the planting production, that will also mean that there is no enough food for the fish to feed and thus affect fish production and fishing activities, both to the local and foreign fishing grounds. We also talk about piglets planting, for example, the conservation of the mangrove ecosystem and with acidification which is brought about by climate change, that also affects the production of piglet farming which is one of the sectors of the Blue Economy especially in areas of Kwale. Most of the mangrove which are habitats for a variety of wild fish. This is affecting the breeding and habitation grounds of fish, thus impacting the production of fish production. PH changes affects the growth of piglets, for example... so, climate change and ocean degradation changes the water quality of our oceans, which in turn

⁷⁹ United Nations Environmental Programme, 2015. “*Concept Note for Development of an Ocean Governance Strategy for Africa.*”

⁸⁰ Ibid, 19.

affects the Blue Economy.”

From the secondary data, Plastic pollution “has been identified as a major threat to both aquatic and marine ecosystems in Kenya.”⁸¹ Moreover, a proportion “of the materials used in fisheries and aquaculture may become marine debris. This affects fish production and other marine organisms and it also affects humans. Furthermore, the scenic beauty and tourism sector is greatly affected by waste pollution.”⁸²

Most key informants seemed to be in tandem that indeed, climate change is really impacting the Kenyan Blue Economy. As another one responded, “okay, I will just mention what I perceive. It may not have been proved. But the issue of climate change and the sea level, we have seen the rising of the waters, which are now submerging some of the mangrove areas which need to be exposed, and mostly I will relate this to fisheries, because we do not have a lot of information on other resources. But what we have seen is that at some stage, fishermen are not able to get fish, and the reason they talk about is the warm temperature, and the sea is quite deep, and they are not able to access the fish with the kind of gear they have. So, some low catches are attributed to that. And also, this affects the way the fish breed, because temperature changes affect the normal breeding pattern of some marine fishes.”The United Nations High Commissioner for Human Rights (UNCHR) office “has identified climate change as:

“Posing particular risks to the rights to life, food, water and health. Increasing temperatures and unpredictable rainy seasons place a lot of pressure on water resources, resulting in less grazing land during the dry season, diminished livestock herds and increased competition over grazing lands, such as in the Lake Turkana areas. Water pollution has become a leading cause of death and disease in Africa. In Kenya, the recent outbreaks of cholera have underlined the risks associated with insufficient improved water sources and sanitation facilities. The country faces a water crisis, with a population of 46 million, 41 per cent of Kenyans still rely on unimproved water sources, such as ponds, shallow wells and rivers. The inadequate management of wastes has led to

⁸¹ UNEP-Nairobi Convention & WIOMSA, 2015. “*The Regional State of the Coast Report: Western Indian Ocean*”. J. Paula, ed., Nairobi, Kenya: UNEP and WIOMSA.

⁸² United Nations Environmental Programme, 2015. “*Concept Note for Development of an Ocean Governance Strategy for Africa*.”

increased contamination of freshwater, estuarine and marine environments.”⁸³

3.4 Lack of Sufficient Capacity and Advanced Technology

The capacity of Kenyan ports to handle immense cargo has been questioned, given the delays normally experienced at the current ports.”⁸⁴ Closely related to insufficient capacity is lack of advanced technology to tap into and effectively manage Blue Economy resources. Kenya “is not currently exploiting its ocean and sea energy sources. Despite favourable assessments of ocean-energy potential for the Indian and Atlantic Ocean coasts, these energy resources – wave, tidal, tidal range, ocean current, salinity gradient, ocean thermal energy and offshore wind energy – are so far not within reach of these countries.”⁸⁵

As one respondent reacted, “technology, like now, the kind of fishing vessels that our fishermen apply are artificial. They use simple fishing vessels, and this limits their access to reach EEZ. So, they concentrate on the coastal waters and because they cannot go far, that creates increased fishing pressure on the coastal waters. So, lack of technology hinders exploitation of the EEZ because of the rudimentary fishing vessels and gears.”

From the secondary literature, it is evident that “the immaturity of existing ocean-energy technologies i.e. the unit cost of ocean energy compared to other forms, lack of detailed ocean-energy resource-potential mapping, lack or inadequate development of coastal energy infrastructures, limited awareness about the potential and state of development of ocean-energy technologies and the seasonal nature of some of the resources also impact on the blue economy.”⁸⁶

Another key respondent reacted that “I think the Blue Economy sector in our country

⁸³ United Nations Environmental Programme, 2015. “*Concept Note for Development of an Ocean Governance Strategy for Africa.*”

⁸⁴ UNEP et al., 2010. *Green Economy in a Blue World*, Nairobi, Kenya: UNEP. Available at: www.unep.org/greeneconomy and www.unep.org/regional-seas.

⁸⁵ UNEP & EC, 2017. *UNEP/EC Workshop on Area-based Management and Regional Cooperation for the Implementation of Ocean-related Sustainable Development Goals*, Brussels: Environmental Programme & European Commission.

⁸⁶ *Ibid*, p. 41.

is not developed. So, currently, there are no effective technologies to harness the ability of our Blue Economy sector to now be economically viable to our economy. I would say for example, fishing activities. Fishing activities, for me to go fishing and expect cash that can really increase the economy, we first need very good boats that can go beyond our coastal waters, they can go to our EEZ. So, we do not have boats that can go that far. And most of the boats that can go to the deep sea are foreign vessels which takes these resources to the foreign countries. We do not have the right fishing gears, for example. We use archaic gears; we use nets that are not suitable for coastal fishing. By coastal fishing, I mean not beyond three nautical miles. That is one sector. Another sector for example is oil and gas. We do not have capability to exploit our oil and gas resources. We cannot for example conduct basic exploration for oil and gas in our ports. So, other technologies, for instance, wind harnessing, tides or ocean currents for energy production. Look at our ports. As much as there is a lot of development, we have to import technology from China or Japan or other countries. So, we still have to look for the right technology to exploit our Blue Economy resources effectively.”

Closely related, another respondent reacted that ““we have not developed our technology. What we have now is the BMS vessel maundering systems. But it is not adequate, so, first, it cannot tell us those illegal fishing vessels unless the coast guards and the Kenya Navy patrol those areas just to search for them. So, we need a technology that will indicate and show that whenever there is an entry of an illegal fishing gear in the Kenya’s exclusive economic zone or coastal waters. What we have now will just show you that there is a vessel in your EEZ but it cannot give more details. And then because we are using a technology borrowed from France, we don’t have control over it. They can switch it off. So, if it is switched off, maybe we have not paid the bill, so, you can imagine. It is not under our control, we don’t have technology of our own, something we can say this is now ours and we can really monitor fishing activities in our EEZ. When I Secondly, we need to get

information from the foreign fishing vessels. We have electronic data transmitting system which is in use but again just like what I have just said about the BMS, it is not adequate in that, those people report what they feel they can give us, but not what they must give us. And yet data is very key when it comes to sustainable management of our fisheries.”

There are, however, better prospects on the horizon. Global “assessment of the potential of ocean energy indicates that, by 2050, 10% of global electricity production will come from ocean-energy sources. This should stimulate interest in the long-term potential of deep-sea and ocean energy. In addition, ocean energy technologies are improving and being added to, while interest in ocean energy on the back of technology advances is growing. Apart from ocean-energy development itself, opportunities based on it include irrigation, desalination and cooling.”⁸⁷

Another respondent looked at the technologies in terms of communication. As he stated, “what I have seen happening technology-wise on social media is that we have ship owners who are able to connect and share their experiences online, which has not been happening because technology as not been advanced as it is. So, when people are on board on different ships, they are able to share what is happening here or there, and compare their experiences and they are able to negotiate better terms if they didn’t have fair terms. Otherwise, it would also e helpful when it comes to the running operations of the ships. For instance, when we have an integrated system of monitoring the ships, which I am not sure we have as a country, but like what happens in other regions, he shipping lines have agreed to be installed with devices which are technology savvy. So that wherever they are, they are able to communicate. Somebody who is in an office somewhere, for instance, is able to monitor the location of the ships in the ocean. When the ships encounter any difficulties out there, for instance, they can quickly send a message to the monitoring units and then this unit is able to

⁸⁷ Ibid., p. 42

discharge some help to the ship. That is one. So, it has helped in terms of reducing insecurity or improving the security of the ships.”

Another respondent stated that if Kenya can upgrade its technologies, it can harness the Blue Economy resources maximumly, “if we look at technology, too much improved technology is able to play a role in exploitation of resources. The ship is able to use very sophisticated technology to either search for fish or gather the fish for their consumption. That is why we are trying to manage any technology that is coming up, we trying to put measures in place so that we do not over exploit marine fishes especially the highly migratory fishes. The other thing is that when we talk about small scale fisheries, it is very important because it plays a role in improving fish production, as in how much they can catch, for example they can be able to tell where the fish is, take a shorter time to get to he location of he fish, so that is a positive impact of technology in small scale farming. On the other hand, if the technology is no well manage, it might lead to over exploitation. We are again thinking about how we can get overcome the issue of under reporting. When fishermen under-report, we get low catches. And we are looking for ways through which we can monitor this without necessarily getting people on board. We are thinking of achieving this by putting up cameras that will enable vessels to report electronically, and improve our management.”

3.5 Lack of Sufficient Capacity Building, Education and Training

The coastal and “marine tourism sector in Kenya often has difficulty in attracting or maintaining enough skilled personnel to work in its various sectors due to both seasonality and lack of career opportunities.”⁸⁸ This can “lead to problems in service quality and erode destination competitiveness. Few tourism businesses in Kenya and other IOR destinations offer formal in-house training programs. Service levels in many establishments in the region are low and often not commensurate with prices charged.” In Kenya, the current

⁸⁸ Celliers, L., 2016. A Regional Approach for Incorporating Marine Spatial Planning in Resource and Biodiversity Management of the Western Indian Ocean, WIOMSA and the Nairobi Convention Secretariat.

“accommodation classification systems does not involve regular reviews of properties, thus eliminating an important incentive for maintaining standards. There are several reputable institutions in Kenya that can provide valuable capacity building opportunities.”⁸⁹

When asked about how the upgrading of the Bandari college and Kenya National shipping line will help improve services in the coastal towns, one respondent stated that “Bandari college will offer training to both artisanal fishers, I told you we lack the technology. So, Bandari college will build the capacity of our local fishermen. It will also train our youth on sea faring. We now have a program called Observer programme, where we attach some youth from Kenya to go and monitor what those foreign vessels are doing and how they do fishing. It is a requirement within the law. But most of them lack the capacity, so, we expect the Bandari college to train them. And it is not only Bandari college. We have Fish Force Academy. There is a memory in the university of Nairobi under the faculty of law. They have identified a constituency in Mombasa to put up Fish Force Academy, which will help in legal issues concerning the Blue Economy, maritime issues, and they are also working together with Nelson Mandela University in South Africa.”

In order to address Tourism Training Institute (TTI) capacity needs, Kenya needs to forge bilateral partnerships with TTIs. Partnerships “often involve exchanges of instructors for continued learning, facilitation of internship placements for students, and technical assistance in areas such as curriculum development, training material creation, and program administration.”⁹⁰ Capacity “development for ecosystem-based integrated coastal and ocean management is essential to achieve sustainable development of oceans and coasts and the development of suitable responses to address climate change, preserve biodiversity and resources, provide for sustainable ocean and coastal livelihoods, as well as respond to new

⁸⁹ Sachs, J.D., Schmidt-Traub G. and Durand-Declare D. 2016. Preliminary Sustainable Development Goal (SDG) Index and Dashboard. SDSN working paper under public consultation, 20p.

⁹⁰ Caldow, C. et al., 2015. Biogeographic assessments: A framework for information synthesis in marine spatial planning. *Marine Policy*, 51, pp.423–432. Available at: <http://dx.doi.org/10.1016/j.marpol.2014.07.023>.

and emerging challenges. Despite its importance, however, the reality is that financial considerations will determine the extent of capacity building that occurs.”⁹¹

As for the capacity of the beach management units, one key informant stated that “well, as I said, beach management units normally are artisanal fisheries. By artisanal fisheries I mean that they just fish along the coastal. They do not go beyond the three nautical miles. So, their fishing is traditional. Their fishing is small scale fishing, mainly for subsistence and maybe whatever is left is what is being sold in these local markets. So, their boat capacities is small. They are using very small boats that cannot go beyond the three nautical miles. So, whereas it’s a good mechanism to have BMS along the coastline, their capacity needs to be enabled. They need to be given boats that can go beyond twelve nautical miles or beyond our territorial waters, they need to be given gears, they need to be trained to use those gears that can help them catch as much fish as possible to support their local markets and perhaps their export to other international markets. So, their capacity is a bit small scale and they have a potential to enhance our Blue Economy sector, for example, they are involved in boat building and repair, for example. If they have the capacity to build bigger boats, for example, then their capacity will also be enhanced in terms of getting a better catch that can support their families and that can be enough for them to export.”

When asked about how the quality of training instructors at the institutions and the training equipment affect the Blue Economy, one respondent answered that “if one I not properly equipped or the job how will they train? But I think, right now, we have enough Kenyan personnel who are adequately trained in maritime issues. So, they should be impacting the same knowledge to the trainees. So, I don’t think there is an issue there, really. Just that thee has not been a lot of interest in maritime training.”

In reaction to the same question, another respondent stated that “Blue Economy has

⁹¹ Ibid, p. 425.

very wide definitions. And you may be looking at various sectors, for example, water transport. When you look at this, it is part of the Blue Economy. Now, and I believe that is where you are coming from: transport and exploitation of natural resources. Now, you are for instance asked where you will go to learn about the fisheries or even fishing. I do not think if there is any institution which teaches fishing studies. We don't have the facilities. But now, when you look at the water transport, you may need now to look at it from the sea vessels. You now look at water transport. Now, the entire Lake Victoria, do we have a school which teaches people how to drive boats? When you look at it at another level where you have big vessels, you need to have institutions. The bottom line here is that you can only teach what you know. And because the teaching institutions are also neglected by the ministry of education and higher learning and quite a number of other bodies, you cannot just open a school in Kenya. You must be approved.”

In contrast, another respondent that stated that “the Blue Economy is not only about the marine fisheries alone. We even have fresh water. We have Kenyatta University, University of Nairobi, University of Eldoret, Maseno University, Pwani University, all these learning institutions are offering courses related to the Blue Economy. And when it comes to instructional materials and instructors, I don't think we have a challenge in this respect. What we lack is the application of the modern technology. Because the technologies are there, but adoption is the challenge. I can't say that we face inadequacy of instructors and training facilities. That will not be correct.”

3.6 Underdeveloped Shipbuilding Industry and Lack of Proper Mechanisms to

Collect Revenue from Foreign Vessels

The study also found that another factor affecting the Kenyan Blue Economy is the underdeveloped ship building and repairing industry. As one respondent stated, “I think right now, our ship building and repair industry cannot be compared to what India or Bangladesh is

doing. We have only for example Seko that is building smaller boats, for example badge and tug boats. The company also makes repair to these boats and other foreign ships. However, ship building and repair industry is a big industry that if our country exploits that area, our capacity to build and repair bigger or smaller ships is enhanced, then we will have mass employment in that sector. We will have people developing different capacities or experience in terms of ship building and repair. This will significantly change the position of our country in terms of the Blue Economy. Looking at Africa, for example, there are no ship building industries that are well developed. If we develop that sector, you can imagine how many ships for example that may be ordered from our country for building that serve these local markets, the African market, for example. I will give an example of Seko, which is building ships for Tanzania. From that small-scale ship building and repair, we have been getting orders to build ships for other countries. So, you can imagine if this ship building and repair is enhanced to that industrial or large-scale building or repair. We would still get orders from Africa and as far as from international market. And I would think that the labor here would not be expensive like building a ship in China or Japan. So, I think the position, especially in Africa would be enhanced if we build our ship building and repair industry.”

The study also found out that lack of effective mechanisms was an obstacle towards collecting revenue from the foreign vessels, which impacts on the Kenyan Blue economy. As one respondent reacted, “The foreign vessels do not report to our ports. They come from wherever they come, they carry out some fishing activities from our waters and they go unnoticed. They do not land that fish into our ports, so that that fish can be accounted for, revenue can be generated from it or tax can be generated from it. So, you see, the big fishing vessels that foreigners come with are not registered in our country. They are registered in other countries. So, their obligations to pay taxes or the fish that they get is landed in foreign countries. And once the fish is landed in foreign countries, it means that is revenue being

landed in another country, that is ax being channeled in another country and our country in the fishing port, we do not have enough storage facilities for fish, for example. And leave alone storage facilities. Even value addition, for example processing the fish and adding value to it such as canning the fish or exporting it to foreign markets. We do not have those enabling infrastructure. We do not have storage and fish processing facilities, so, fish is caught in our waters, landed and processed in other countries, and all the revenues and all the taxes are paid in in those countries and for us, we are sold the fish products at higher prices. And you know if you are importing, you are not generating good revenue. Whereas when you are exporting, that's where you generate good revenue. So, I think enabling infrastructure is not supportive of the Blue Economy and harnessing of our Blue Economy resources in our country.”

As another respondent reacted, “we have a ship building and repairing industry, but its very small. F it was to e expanded it old obviously affect or economy in terms of the Blue Economy, because it would bring a lot of revenue o our country. This is not happening right now because the sector has not been grown and nurtured enough.”

Collaborating other respondents, another interviewee stated that “well, shipbuilding industry is not well developed. Even for us to exploit the Blue Economy, we have been exporting industrial fishing vessels from Bangkok, Thailand and Asia. And you see, that is also a challenge, especially when you look at it in terms of why most of us are still practicing archaic type of fishing. So, ship building industry is not well developed. We have some people building ships ere an there, you go to Kisumu, you find some people building ships and small vessels, you go to Mombasa and find the same, but the industry needs to be developed. So, there is challenge there. Because we cannot access the right fishing vessels and so, this limits our ability to access the deep sea fishing. Another thing is, most of the ships are not built here in Kenya. We have to get them from outside. And even maintaining

the ships is very expensive. This makes us not benefit much like other investors who are utilizing the Blue Economy resources because of what is happening within our country. And then even getting the right boats even for our fishermen becomes expensive. So, these are just challenges that we are facing. We can either benefit by us going to exploit or benefit from others exploiting and coming to use our facilities to process the fish. At the moment, most of the ships are going elsewhere to other countries.”

To echo the responses of other respondents, another key informant stated that “now, we have narrowed down on ship building. We need to look at where we are in terms of ship building. Now, are we looking at exploitation of the Blue Economy using ships or vessels which is most likely? Now, if you don’t have the facilities to build or repair the boats, how are you going to exploit the resources? So, definitely, you want to go to a place, and you cannot because probably you have to import the containers. And you see, a ship is a big thing. You cannot transport it on a truck. Unless you have that industry developed, then you are not going to exploit it. Because you do not have the vessels. So, we need to start the local building of our own vessels in order to fully exploit this sector.”

3.7 Unfavorable Tariffs

From the findings, unfavorable tariffs also affect Kenya’s efforts towards streamlining and harnessing the Blue resources. As one respondent reacted, “I can say that in Kenya, fuel is very expensive. And what we are experiencing is that most vessels are fuelled locally. So, we asked ourselves as country, because we have to compete in the region, we have to put in use zero-rated fuel which is there already. This should be 0.7 percent, and you find that fuel already has a levy, the load levy. Then you ask yourself why most of the fuels leave Kenya just to go fuelling and come back. The reason is because the tariffs are very high. And the incentives to make them come here and we have one of the best facilities like the African marine but they will not come because of the expenses. The fuel is very expensive, and this is

something that hinders our growth on the Blue Economy. And we are asking ourselves what we can do. If we have to fish, the nets, the gears that fishermen are using or the related equipment, we need to look at how we can make them accessible at a an affordable price to enable investment.”

3.8 Rapid and Uncontrolled Urbanization

From the secondary data, rapid and uncontrolled urbanization is also another challenge facing the Blue Economy resource management in Kenya. Damage from “over exploitation, poorly controlled development and inadequate concern for communities and resource management has been a feature of coastal and marine tourism globally, with substantial changes in the landscape coming from the construction of infrastructure, buildings and facilities.”⁹² Coastal tourism “development patterns in Kenya and other Indian Ocean Rim (IOR) countries typically are driven by broad market dynamics in a relatively unplanned and undirected manner. The overriding trend in land tenure in coastal areas is that the market is subject to high levels of control or capture by elite public-private interests, and linked to broader patron-client governing structures.”

United Nations Conference on Trade and Development in 2014 observed that,

“Urban development in East Africa in particular has had a number of negative effects, including coastal degradation and beach and soil erosion, untreated sewage entering seas, the destruction of important coastal habitats, land saturation and a decrease in the land available for agricultural and other uses. Along many coastlines of the IOR, Kenya included, tourism has developed in a haphazard and unplanned fashion causing major social and environmental problems.”⁹³

3.8.1 Lack of Sufficient Information/Data

There is a significant vagueness regarding the data needed for Blue Economy resource management decision making and public policy formulation concerning marine and coastal tourism in Kenya. Information is often “incomplete, outdated or inconsistent, which makes

⁹²World Bank 2016. “Blue Economy Development Framework— Growing the Blue Economy to Combat Poverty and Accelerate Prosperity.” April.

⁹³ UNECA (United Nations Economic Commission for Africa). 2016. “Africa’s Blue Economy: A Policy Handbook.” Economic Commission for Africa, Addis Ababa, Ethiopia.

country comparisons challenging.”⁹⁴ Many parts of the Indian Ocean, “particularly in the deep-sea, are virtually unknown. Required types of information are not confined to scientific data. Typically, little is known about the human side – social sciences and their role in sustainable development often ignored. There is a need to identify and address the data gaps to improve planning and destination management. In particular, tourism statistics are critical for policy makers and businesses to understand tourism sector performance and emerging trends. Data on tourist values and needs allows a destination to adapt to changing market conditions through its marketing and product development strategies.”⁹⁵

Insufficient sectorial and specific information limits networking opportunities in marine and coastal tourism particularly for SMEs in Kenya. Gaps in “key data adversely affect investment and increase the risks of project failure. Knowledge needs to be better systematized to bear on policy formulation, including better integration of government, Non Governmental Organizations (NGO) and private sector data. Initiatives, such as ‘OURCOAST’ and Marine Knowledge 2020, which share data through a collaborative approach, can inform established and emerging coastal and marine industries, and can be extended to IOR destinations.”⁹⁶ All IOR countries, “including Kenya would benefit from the sharing of statistics that have been collected following a similar methodology using the same indicators.”⁹⁷

⁹⁴ UNCTAD (United Nations Conference on Trade and Development). 2014a. “Small Island Developing States: Challenges in Transport and Trade Logistics. Background note to third session of Multi-Year Expert Meeting on Transport, Trade Logistics and Trade Facilitation.” Geneva, 24–26 November.

⁹⁵ UNECA (United Nations Economic Commission for Africa). 2016. “Africa’s Blue Economy: A Policy Handbook.” Economic Commission for Africa, Addis Ababa, Ethiopia.

⁹⁶ Ibid, 39

⁹⁷ UNCTAD (United Nations Conference on Trade and Development). 2014a. “Small Island Developing States: Challenges in Transport and Trade Logistics. Background note to third session of Multi-Year Expert Meeting on Transport, Trade Logistics and Trade Facilitation.” Geneva, 24–26 November.

3.8.2 Shortage of Skilled Labour and Poor Access Routes

The wish to increase ship building for international markets in container ships, tankers and other bulk carriers is still a challenge to Kenya.⁹⁸ But that expansion faces significant “obstacles both internally and externally. Within each country, the ship building industry faces shortages of skilled labour, particularly for the construction of more complex vessels such as container ships. The amount of labour is not an issue, but the skills are, and while training can overcome the skills shortages, the costs of training must either be borne by governments or passed on to the industry, reducing their productivity and increasing their costs. Any reductions in competitiveness would come at a particularly difficult time.”⁹⁹

Transport Aviation is critical to the expansion of many coastal and marine destinations in the IOR, Kenya included. Operators and host communities “cannot reap the economic benefits of a thriving tourism industry or develop their local economies without adequate transport connections to and between countries. Many of the more remote island destinations in the IOR have very poor access transport links with mainland areas. Currently, flights to and from small islands are generally limited and very costly.”¹⁰⁰

The high regional flights costs act as a hinderance to those interested in visiting Kenya and any other IOR country. Ibid opines that,

“An option that deserves greater attention, especially for small airlines with important long-haul markets, is the creation of strategic partnerships with larger airlines. In the longer term, entrance of a low-cost carrier could significantly improve regional air connectivity to more remote destinations, benefitting both the region’s residents and tourists. While the Indian Ocean has high potential for cruise tourism, the market is still fairly limited and has been affected in past years by piracy. One common problem is limited port infrastructure, which restricts the number and size of vessels that can visit. Other gaps include: lack of a clear cruise homeport in the region; poor roads leading from ports to key tourism attractions, and limited opportunities.”¹⁰¹

⁹⁸ Ibid., p.134

⁹⁹ Ibid, p. 135

¹⁰⁰ World Bank 2016. “Blue Economy Development Framework— Growing the Blue Economy to Combat Poverty and Accelerate Prosperity.” April.

¹⁰¹ Ibid.

3.8.9 Maritime Insecurities

Neither economic development nor Blue Economy is conceivable if safety and security conditions are not provided. Maritime “safety and security are considered key conditions for the development of the Blue Economy in Africa according to the 2016 Lomé Charter, as well as by African Union’s Africa’s 2050 AIMS”.¹⁰² They can also be linked to “SDG 16, which emphasizes the absolute need for peace, justice and efficient institutions as key conditions for economic and social progress. Criminal activities (such as piracy and armed robbery at sea, illicit trafficking of goods and people, and environmental crimes) pose a serious threat to the sustainable use of Blue Economy resources in Kenya and thereby have a negative impact on the social development and economic growth of the continent.”¹⁰³

Piracy threat from Somalia and its environs has a negative impact on Blue Economy resource management in Kenya. According to Schlesinger, “in the Horn of Africa (HOA), maritime piracy pose substantial risks to seaborne trade, with considerable commodities, ranging from raw materials and energy to high-value manufactured products, being shipped between global economic powerhouses, like Western Europe and the Far East through several of the world’s most dangerous waterways, notably the Strait of Malacca and the Gulf of Aden.”¹⁰⁴

According to Maluki “the formation of regionalism in the Indian Ocean Rim involved disparate interests that pursued security interests differently. The Indian Ocean Rim defines a distinctive region in international politics consisting of 27 coastal states bordering the Indian Ocean.”¹⁰⁵ The countries vary in the size of their populations, economies, trade, and technological development and in the composition of their GDP. A number of sub-regions are

¹⁰² UNEP-Nairobi Convention & WIOMSA, 2015. *The Regional State of the Coast Report: Western Indian Ocean*. J. Paula, ed., Nairobi, Kenya: UNEP and WIOMSA.

¹⁰³ Ibid., p. 41

¹⁰⁴ Schlesinger, R. (2009). “*Dealing with Pirates: How Julius Caesar Handled Things*,” U.S. News and World Report, p. 13.

¹⁰⁵ Maluki P M, (2011). “*Regionalism in the Indian Ocean: Order, Cooperation and Community*.” VDM Verlag Dr. Müller Publisher, pp. 11-14.

evident, for example Southern and Eastern Africa, Gulf of Aden, Oman Sea, South-Asia, Southeast Asia, and Australasia. It also includes a number of regional organizations, such as Association of Southeast Asian Nations (ASEAN), Gulf Cooperation Council (GCC), South Asian Association for Regional Cooperation (SAARC), and Southern Africa Development Cooperation (SADC).”

Piracy along the Indian Ocean not only interferes with Blue Economy resource management in Kenya but also other countries, since Kenya is a significant geopolitical partner to many states across the world. Chellaney, reveals that “the foremost geostrategic characteristic of the Indian Ocean is that it is an area of communication, for not only countries within its Rim, but also the world.” In the year 2000, the International Hydrographic Organization (IHO) decided to “curve up” 20% of the world’s ocean, the Southern Ocean, which stretches from the coast of Antarctica north to 60 degrees latitude, thereby curtailing the size of the Indian Ocean. 50% of the world’s container ships use the Indian ocean and over 30% of the world’s cargo pass through its waters.¹⁰⁶

The gap in policy of maritime resource management in Sub-Saharan Africa has been taken advantage of by narcotic traffickers, illegal weapon dealers, migrants, illegal fishing and wildlife as well as pirates. The last point has especially increased the cost of doing business.¹⁰⁷ Aquaculture needs to be regulated before it does irreparable harm to the environment and brings about clashes in coastal communities. This is a serious issue in Kenya and Madagascar because of the clearing of mangrove trees in order to build prawn ponds.

3.9 Chapter Summary

This chapter has discussed the challenges facing Blue Economy resource management in Kenya. From the library research, these challenges include lack of an effective policy, threat

¹⁰⁶ Chellaney B, (2008) “*Chinese Navy aims to challenge India’s pre-eminence in the Indian Ocean: Dragon in India’s backyard*,” Asian Age, p. 8.

¹⁰⁷ Awaluddin, A. (2005). “*Marine Biotechnology Research in Malaysia*,” MIMA, Kuala Lumpur, pp. 109-113.

of the climate change, lack of sufficient capacity and advanced technology, lack of capacity building, education and training, rapid and uncontrolled urbanization, lack of sufficient information/data, shortage of skilled labour and poor access routes, and maritime insecurities.

CHAPTER FOUR

THE KEY ACTORS AND STRATEGIES EMPLOYED IN ADVANCING BLUE ECONOMY RESOURCE MANAGEMENT IN KENYA

4.1 Introduction

This section outlines findings from both primary and secondary data.

4.2 Key Strategies Employed in Advancing Blue Economy Resource Management

4.2.1 Harnessing of Blue Economy Resources a Primary Concern for Kenya

As one respondent stated, “Kenya can derive increased economic benefits from sustainably harnessing the Blue economy in competitive port facilities and services. The proposed investments include: development of small commercial port in Takaungu, fish markets in Kisumu, Lamu, Mombasa and Nairobi; upgrading of Bandari College into National Maritime Centre of Excellence; fish ports in Lamu, Kilifi and Shimoni fish processing, cold storage facilities and accreditation. The Blue economy provides great unexploited potential in social and economic development of Kenya as a state. This is because of maritime policy failures, which can be traced back to a combination of outdated institutions dominated by ineffectual nation – state members.”

As another participant stated, “already the Lamu port is impacting on the resources because we are talking about constructing a port and destruction of a habitat, which is very crucial for our marine organism. And sometimes you find that the development takes a very upper role and sometimes, you find that you have destroyed either the fish or other marine organisms where they used to be, including dolphins and other organisms. Also, a port in itself is an incentive. So, let people come and land their fish. So the port can have a negative impact on the resource, ecosystem and the habitat, but again it has a positive impact on getting the increased production, increased revenue, and also creates employment opportunities and income for the people. For us, we say when you have a port; you are able to

monitor your resources. You can do inspection, and you can be able to how you solve your issues.”

In support of Kenya harnessing blue economy resources as a key strategy, another respondent stated that “As I was saying, refinery of the oil and all those kinds of things. So, at the end of the day, it is going to open up in terms of tourism, so, we are going to get more tourists, we are going to get more imports and exports, we will have job creation for our people, so, out of that, the Lamu port, itself because it is linked with the Blue Economy and so many others. If you go to Kisumu, for example, you know we have a lot of fish there and so many kinds of things. So I believe we have a lot of potential in the Kisumu port and this ship that the President commissioned just the other day, was it about Sunday or whatever... so, if we really expand and improve the infrastructure in the Kisumu, just like the way Mombasa is trying to come up with, I know Kisumu has the potential for fish, especially the fresh water fish and the tilapia and all those... its really going to help us and improve the Blue Economy and help people to go and venture into the same. So, Lamu and Kisumu are great.”

4.2.2 The Framework Document Guiding the Blue Economy Use in Kenya

“Foreign policy strategy is the key element in the process by which a state translates its broadly conceived goals and interests into actionable results.”¹⁰⁸ In addition Kenya has set up a Blue economy committee and published its existence in the Kenya gazette on 6th January 2017. The committee consists of principal secretary in the fisheries department, transport, national treasury, and environment and is chaired by the chief of defense of the Kenya Defence Forces (KDF). Its function is to coordinate and implement blue economy programs that have been designated a priority.

¹⁰⁸ Pierre, de Senarclens and Ali, Kazancigil, Regulating Globalization. *Critical Approaches to Global Governance* (New York: UN University Press, 2007), p. 107.

The importance of the Blue economy resource management is only possible through effective maritime governance in the Kenyan perspective. This is mainly because maritime governance emerged as an important issue in the conference, as it incorporates the influence of state and non-state actors that is, stakeholders, community society organizations, non-governmental organizations. In taking the initiative to host the conference, Kenya inched even closer to realizing the potential of harnessing the Blue economic resources through good maritime governance.

“The realization of the full potential of the Blue Economy requires the effective inclusion of all societal groups, especially women, youth, local communities, and marginalized or underrepresented groups. In relation to economic development, these groups often face limited access to opportunities and public services, inadequate legal standing, poor opportunities to contribute to value addition, low benefits, and a lack of recognition of the unique and valuable role they could play in society.”¹⁰⁹ He further points out that, “the opportunities to harness the Blue Economy are conditioned by complex national and international interests, which can either favour partnership building and collaborative engagement or create tensions between interested parties.”

Maluki states that, “resources are increasingly being exploited by its littoral and island states hence making it geo-strategically important to global trade and energy security. Historically the Indian Ocean has been a critical geostrategic space of competitive maritime security that features the presence of extra-regional naval forces.”¹¹⁰ Thus “the Indian Ocean Region is a region in which instability and conflict can quickly arise from imprecise border delineations, issues of energy and resource security and changing national interests for various states within East Africa.”

¹⁰⁹ Sarr, Olu. *GCLME Fish farmers to learn about mariculture techniques*. The Guinea Current Large Marine Ecosystem (GCLME) Project, (2012), p. 91.

¹¹⁰ Maluki, Patrick. *Regionalism in the Indian Ocean: Order, Cooperation and Community*. VDM Verlag Dr. Müller Publisher (2011), p. 78.

4.2.3 Marine Spatial Planning

“Kenya has the opportunity to utilize and apply Marine Spatial Planning (MSP), which is an integrative, adaptive, and participatory process that brings together multiple users of the ocean at various levels, including energy, industry, fisheries, oil and gas, government, conservation, and recreation, to make informed and coordinated decisions about how to use marine resources sustainably.”

The MSP usually makes use of maps “to create a more comprehensive picture of a marine area, identifying where and how an ocean area is being used and what natural resources and habitats exist. It aims to achieve ecological, economic, and social objectives that usually have been specified through a political process. MSP is thus essential for the Blue Economy. The Blue Economy framework should be an integrated, holistic, intersectoral-linked development space anchored on a quadruple-bottom line approach, where development success is measured in economic terms as well as on the basis of environmental and material stewardship, social responsibility, and governance/transparency standing.”

From the primary data, Kenya has not conducted maritime spatial planning. As one respondent reacted, “well, you know as a country, we have not done any marine spatial planning. However, if we take that root, it will be the best way to develop our Blue Economy. that will mean that well, we are designating this place as a shipping route, and that area is being planned and developed and all the necessary infrastructure to develop maritime space to be a shipping route have been developed. It will again enhance our maritime safety in that particular area. Marine spatial planning is about allocating spaces for different sectors of the Blue Economy. if we say this s a conservation area whereby, we have for example marine protective areas, we are saying that these places have a sensitive ecosystem, an area which is specifically enhancing our conservation efforts. We go to another sector, this is a place where people can do sky-diving, different water spot activities, and we designate that are for water

spot activities and all the resources and infrastructure for developing that area for such activities. This will ensure effective utilization of the ocean to enhance our Blue Economy. I would add an example that well, we identify an area that is very good for production of energy from the ocean tides, for example. We designate that area for that particular purpose, we develop the infrastructure to have that power this will enhance effective utilization of our ocean and also increase revenue obtained from enhancing the infrastructure that enabled the development of our Blue Economy sector.”

As another respondent reacted, “maritime spatial planning is not something that we can say we are moving towards that direction. When we have a maritime plan, we are able to apportion activities for better management and sustainability. Because you know what can be done where which resources can be harvested and so on. So, it is going to play a very great role in guiding what development we can put in place. So, for us to be able to exploit our Blue Economy, we need that maritime plan, where we know which resources we need and how we can utilize them appropriately, thus avoiding conflict and make people responsible over their resources.”

4.2.4 Using Different Techniques to Measure Economic Progress

It is important to measure real economic progress as part of a Blue Economy strategy. Kenya is uniquely placed to “evolve and innovate economic metrics in order to provide decision-makers with a more complete picture of the health of the whole economy, rather than the narrow picture provided by Gross Domestic Product (GDP) alone.”¹¹¹

A commonly desired outcome expressed by “countries working toward establishing a sustainable Blue Economy involves a desire for increased human well-being and the maintenance or enhancement of environmental Africa's Blue Economy.” Sustainable

¹¹¹ UNEP et al., 2010. *Green Economy in a Blue World*, Nairobi, Kenya: UNEP. Available at: www.unep.org/greeneconomy and www.unep.org/regionalseas.

advancement and well-being in Kenya and ecological health elements are integrally qualitative rather than purely quantitative and, therefore, necessitate for a rethinking of which economic tools we include in our economic toolkit. Examples of existing alternative economic metrics include: “(i) Index of Sustainable Economic Welfare (Genuine Progress Indicator, or GPI): This is a measure that uses GDP as a foundation; it accounts for both current environmental issues and long-term sustainable use of natural ecosystems and resources. While GDP is a measure of current income, GPI is designed to measure the sustainability of that income. (ii) Green GDP: This is a tool designed to factor into GDP environmental degradation and depletion of natural resources in the national income accounts. (iii) Genuine Savings (GS): This is defined as the true level of saving in a country after depreciation of produced capital; investments in human capital (as measured by education expenditures); depletion of minerals, energy, and forests; and damages from local and global air pollutants are taken into account. This includes the value of global damages from carbon emissions. GS measures the built, natural, and intangible capital that is required for human society to exist and to thrive. (iv) Gross National Happiness (GNH): This index mainly consists of a cutoff identification method that identifies sufficiency, in terms of achievements in relation to and among the following: psychological well-being, health, time use, education, cultural diversity and resilience, good governance, community vitality, ecological diversity and resilience, and living standard. (v)The Human Development Index (HDI): Although not an economic metric per se, HDI is a composite statistic of health, education, and income per capita indicators. These indicators have the explicit purpose of shifting the focus of development economics from national income accounting to people-centered policies. The HDI, however, is still based on quantitative indicators and not qualitative.”¹¹²

¹¹² UNEP & EC, 2017. “*UNEP/EC Workshop on Area-based Management and Regional Cooperation for the Implementation of Ocean-related Sustainable Development Goals*,” Brussels: Environmental Programme &

4.2.5 Regional Treaties and International Agreements

“The activities relating to the management of the marine and coastal environment in Kenya have been set up through regional platforms. Activities in research, data collection, basic knowledge construction, and dissemination of information on ecosystems, constitute basic elements to build these ecosystems’ resilience.”¹¹³ Other key initiatives are also undertaken at the regional level, such as: The EAC has developed a “DRRM for the period 2012-2016. The DRRM document aims to mainstream prevention and risk analysis into development planning, programmes and projects, considering that this approach is one of the ways to consolidate sustainable development in the region as a whole. As inter-governmental collaboration is essential to addressing DRR at a regional level, the fourteen countries of Eastern Africa are also part of the Africa Regional Platform for Disaster Risk Reduction. The regional offices of United Nations International Strategy for Disaster Reduction (UNISDR) serve as a supportive secretariat for regional platforms.”¹¹⁴

The Indian Ocean States, Kenya included, “also aim to strengthen their individual and collective efforts to reduce and manage disasters. With support from UNISDR, the World Bank and other partners, capacity building is provided through Islands Project to enhance local capacities and national expertise, enabling countries to produce their own risk assessments and loss databases.”¹¹⁵ Presently, “the perspective of the development of a regional strategy and/or planning for DRR is underway.”

4.2.6 Maritime Partnerships

The UNEP and UNDP have jointly developed the “CC DARE initiative, implemented under the one UN Banner. The CC DARE initiative provides timely technical and financial support

European Commission.

¹¹³ UNECA (United Nations Economic Commission for Africa). 2016. “Africa’s Blue Economy: A Policy Handbook. Economic Commission for Africa,” Addis Ababa, Ethiopia.

¹¹⁴ World Bank 2016. “Blue Economy Development Framework— Growing the Blue Economy to Combat Poverty and Accelerate Prosperity.” April.

¹¹⁵ UNCTAD, 2014. *The Oceans Economy: Opportunities and Challenges for Small Island Developing States*, New York and Geneva.

on request to countries in sub-Saharan Africa and to SIDS for flexible and targeted actions to remove barriers and create opportunities for integrating climate change adaptation into national development planning and decision-making frameworks.”¹¹⁶ The programme is intended to strengthen and complement planned and continuous climate change risk management and adaptation activities in these countries using tailored and quick support.

The UNFCCC “has developed strategies and mechanisms to enhance terrestrial “Green Carbon sinks. In recent years, however, there has been increasing attention to marine and coastal ecosystems.”¹¹⁷ Similarly to the “Reduction of Emission due to Deforestation and forest Degradation (REDD) mechanism in the forest domain, blue carbon relies on the capacity of marine and coastal ecosystems to sequester carbon.”¹¹⁸ In Africa, “coastal habitats are abundant, which makes blue carbon important for climate change strategies for development that include a commitment to reduce carbon emissions. In addition, blue-carbon markets may offer African countries additional economic incentives to manage resources sustainably and to restore their coastal and marine ecosystems.” In Eastern Africa, “two cases can illustrate the opportunities available through the development of blue carbon.” In Kenya, “the Mikoko Pamoja Mangrove Carbon Conservation Project aims to rehabilitate, protect and use sustainably the mangroves in the southern part of Gazi Bay, leading to the generation of estimated 3,000 tons in CO₂-equivalent of carbon credits, to be sold on the voluntary carbon market and generating approximately USD 12,000 per annum to the local community.”¹¹⁹

¹¹⁶ UNCTAD (United Nations Conference on Trade and Development). 2014a. Small Island Developing States: Challenges in Transport and Trade Logistics. Background note to third session of Multi-Year Expert Meeting on Transport, Trade Logistics and Trade Facilitation. Geneva, 24–26 November.

¹¹⁷ Sale, P.F. et al. 2014. “Transforming management of tropical coastal seas to cope with challenges of the 21st century.” *Marine Pollution Bulletin* 85(1):8-23. doi:10.1016/j.marpolbul.2014.06.005.

¹¹⁸ *Ibid.*, p. 56

¹¹⁹ World Bank 2016. “Blue Economy Development Framework— Growing the Blue Economy to Combat Poverty and Accelerate Prosperity.” April.

4.2.7 International Organizations

Kenya also incorporates the UNCLOS to help her in the management of blue economy resources. UNCLOS “establishes a comprehensive regime for the conservation and sustainable management of marine living resources, for the development of the resources of the seabed and subsoil beyond the limits of national jurisdiction, for the protection and preservation of the marine environment, as well as for marine scientific research and the transfer of marine technology.¹²⁰ The special interests and needs of developing countries, whether coastal or land-locked, are recognised in a number of ways throughout UNCLOS, which also sets out rights for archipelagic States and for landlocked and geographically disadvantaged States.”

The UNCLOS also aims “at balancing the respective rights and obligations of coastal States and other States. For example, while the coastal State has sovereign rights for the economic exploitation and exploration of the EEZ and jurisdiction with regard to, inter alia, the protection and preservation of the marine environment, it must have due regard to the rights and duties of other States, which, in turn must have due regard to the rights and duties of the coastal State and shall comply with the laws and regulations adopted by the coastal State in accordance with the provisions of UNCLOS and other rules of international law (articles 56 and 58).” With “respect to activities in the EEZ, necessary measures must be taken to ensure effective protection of human life and of the marine environment from harmful effects which may arise from such activities.”¹²¹

Kenya has also adopted the 2050 Africa’s Integrated Maritime Strategy to boost blue economy.¹²² In Eastern Africa, “fisheries management is vested in central government ministries responsible for fisheries, within the department of fisheries, under the guidance of

¹²⁰ UNEP-Nairobi Convention & WIOMSA, 2015. “*The Regional State of the Coast Report: Western Indian Ocean.*” J. Paula, ed., Nairobi, Kenya: UNEP and WIOMSA.

¹²¹ Ibid.

¹²² UNCTAD, 2014. “*The Oceans Economy: Opportunities and Challenges for Small Island Developing States.*” New York and Geneva.

national fisheries legislation (Fisheries Act and regulations).”¹²³ Nevertheless, in many countries there is “a significant disconnecting between the regulations and objectives outlined in fisheries policies and the actual practice of fisheries and its administration. Although African fisheries provide major benefits, they are under threat from ineffective governance that leads to over-exploitation, often well beyond biologically sustainable limits. The primary agency for coordinating African fisheries policy has been NEPAD’s Partnership for Africa’s Fisheries (PAF). PAF works to improve the sustainability of Africa’s fisheries and improve the returns provided by this sector.”¹²⁴

4.3 Key Actors in Advancing Blue Economy Resource Management

4.3.1 The Kenyan Government

In the Kenyan context, the government is a major actor in advancing the marine resource management. The Ocean Economy in Kenya has three main sectors. First, is seaside tourism which accounts for slightly more than half of the Blue economy earnings. Second are port activities. This accounts for almost a fifth of the blue economy’s earnings. And lastly is fishing. It accounts for 14 percent of total earnings in the industry. The bureaucracy is managed by the following departments of government, Ports Authority, Kenya Revenue Authority, The Fisheries Department, Kenya Maritime Authority, the Kenya Navy, NEMA, the Coast Guard and ministries.¹²⁵ This type of approach where a multisectoral approach has been used to resolve a problem can safely be termed as a functional approach since stakeholders are the ones coming up with viable solutions.

¹²³ Richmond, M.D. 2015. “Threatened marine species. In: UNEP-Nairobi Convention and WIOMSA. “The Regional State of the Coast Report: Western Indian Ocean.” Chapter 10. UNEP and WIOMSA, Nairobi, Kenya, pp.129-150.

¹²⁴ Ibid., (2015), p. 144

¹²⁵ GOK, (2017), Kenya Gazette Vol. CXIX – No 2, Gazette Notice No.3. Nairobi 6 January 2017. p4

4.3.2 The Private Sector

The private sector is crucial to this economy, because while government comes up with legal bindings, policy guidelines and rules and regulations, it is the private sector that is executing day to day economic activities. They are the life blood to the system. The “government relies on the private sector, for example, Kenya Private Sector Alliance (KEPSA) and Kenya Associate of Manufacturers (KAM) on data and information that will help it come up with effective policies on the Blue Economy.” Intimately involved with the private sector are the tertiary institutions. Some “universities, colleges, and other higher learning institutions are considered key actors because they play a significant role in producing skilled staff to work in various Blue Economy sectors.”

From the response of one participant, “Well, the private sector, the NGOs are normally involved in environmental conservation efforts and activities. And I think we have had very many organizations along the coast that are pro environmental conservation and sustainable harnessing of our Blue Economy resources. And also, I think the private sector, for example, if they want to undertake a project, they will involve environmentalists, who will come up with environmental impact assessment. And when they come with EIS, that means they are also cautious of environmental protection. The footprint that is being left by that particular project; they have what we call management plan that enhance sustainable utilization of our resources. They keep in mind that as long as you want to develop the Blue Economy system, its also important to make it attainable. So, I think there are a lot of environmental initiatives that are geared towards developing the Blue Economy sector and also sustainable harnessing of our natural resources.”

Another respondent stated that “I can say we need the private sector because they contribute a lot in terms of funding, the private sector funds some SMSEs. This one plays a critical role in financing the small and medium enterprises. The private sector also plays a

critical role in policy shaping. They do so by giving their views, just in policy development, and also, they contribute in terms of investing in the Blue Economy sector.”

4.3.3 The African Union and its Subsidiaries

Kenya is part of the African Union and its operations and activities must adhere to the regulations of the AU. The 2050 AIM Strategy provides a “working policy for the protection and continual exploitation of the African Maritime Domain (AMD).¹²⁶” These policies come “from African Think Tanks, NGOs and Academia, RECs, Regional Mechanisms (RMs), AU Member States, specialized institutions and other important stakeholders such as Maritime Organization of West and Central Africa (MOWCA), African Port Management Associations (APMA), Union of African Shippers Council (UASC), Maritime Training Institutions, all Memorandum of Understanding (MoUs) on Port State Control, the United Nations, the IMO, among other organizations.”¹²⁷

The Blue economy laws in the content of Africa were drawn with contingencies in place and also taking into account that many of Africa’s nations are landlocked countries but still have a lot of potential with their inland blue resources. “The objectives under Article 3 of the African Charter on Maritime Security and Safety and Development in Africa (Lome Charter) adopted by the Assembly of the African Union during its Sixth Extraordinary Session held from 11th to 15th October 2016 stresses, that among other objectives, the charter should formulate policies to hinder and curb national and transnational crime, including terrorism, piracy, armed robbery against ships, drug trafficking, smuggling of migrants and even trafficking in persons.”¹²⁸

¹²⁶ Jacqueline, S. (2015). “*Operation Atalanta Continued Success, Enhanced Mandate*,” Impetus, No. 19, Spring/Summer, p. 9.

¹²⁷ Hoge JF (Jr), (2009). “*Global power shift from West to East in making: Growing economy turns into political military power*,” The Seoul Times, pp. 9-11.

¹²⁸ Ibid, (2009), p. 13.

4.3.4 The United Nations and its Subsidiaries

Just like the AU, Kenya's activities related to the Blue Economy are also guided by the UN. The United Nations notes that some of the regulatory efforts by the national assembly involving blue economy have been done with such legislation as "the amendment to the Insurance Act which makes it a requirement for marine cargo businesses to be placed with insurers registered in Kenya, the enactment of the Fisheries Management and Development Act, 2016 which provides for the conservation, management and development of fisheries, and the Mining Act, 2016 which has transformed the legal framework governing mining in Kenya." Other relevant laws that are currently at an advanced stage in Parliament include "the Energy Bill 2015 as well as the Petroleum Exploration and Development Bill, 2015, which both contain provisions touching on offshore operations in the energy and petroleum sectors respectively."¹²⁹

4.5 Chapter Summary

This chapter has delineated the key actors and strategies in advancing the Blue Economy resource management in Kenya. Starting with the actors, they include the Kenyan government, the private sector, the African Union and its subsidiaries, and the United Nations and its subsidiaries. The key strategies in advancing the Blue Economy resource management in Kenya include Marine Spatial Planning, using different techniques to measure economic progress, and regional treaties and international agreements.

¹²⁹ UNEP & EC, (2017). "UNEP/EC Workshop on Area-based Management and Regional Cooperation for the Implementation of Ocean-related Sustainable Development Goals," Brussels: Environmental Programme & European Commission.

CHAPTER FIVE

SUMMARY, CONCLUSION RECOMMENDATIONS

5.1 Introduction

This section highlights the main discoveries and conclusions. From the conclusions, recommendations will be offered on how to boost the Blue Economy resource management in Kenya. The section will suggest effective and practicable measures that will help advance the management of Blue Economy resources.

5.2 Summary of Key Findings

This study examined the challenges facing blue economy resource management Africa, a case study of Kenya. The study was guided by the following objectives: (i) To determine the current status of the blue economy resource management in Africa; (ii) To examine the challenges facing blue economy resource management in Kenya, and (iii) To analyze the key factors and strategies employed in advancing blue economy resource management in Kenya.

The study was hinged on the co-management theory as proposed by Pomeroy and Berkes in 1997. This research used secondary data from library literature review. The study found out that Africa has a wide Blue Economy scope and if managed effectively, can result in significant economic gains. The study also found that the challenges facing the Blue Economy resource management in Kenya include: lack of an effective policy, threat of the climate change, lack of sufficient capacity and advanced technology, lack of capacity building, education and training, rapid and uncontrolled urbanization, lack of sufficient information/data, shortage of skilled labour and poor access routes, and maritime insecurities. The study also found the key actors in advancing Blue Economy resource management in Kenya include the Kenyan government, the private sector, the African Union and its subsidiaries, and the United Nations and its subsidiaries. The key strategies in advancing the Blue Economy resource management in Kenya include Marine Spatial Planning, using

different techniques to measure economic progress, and regional treaties and international agreements.

5.2 Conclusions

It can be concluded that Africa is endowed with immense Blue Economy resources that are, however, being underutilized. Africa needs to implement the AU Agenda 2063 to boost its prospects in the management and utilization of the Blue Economy resources. The study also concludes that the challenges facing the management of Blue Economy resources in Kenya stem from both internal and external factors.

The factors such as lack of an effective technology, lack of sufficient capacity building and lack of information/data stem from the ineffectiveness of some government apparatuses. However, challenges such as lack of coherent regional arrangements are beyond the government's span. Due to the fact that the Blue Economy resource management involves both internal and external actors, the study, therefore, concludes that Kenya can effectively manage its resources if it works with both the internal actors such as the private sector and the pertinent external actors such as the AU and the UN.

Africa's oceanic and marine spaces are an undeniably normal point of political talk; its characteristic assets have remained to a great extent underexploited yet are presently being perceived for their potential commitment to comprehensive and maintainable improvement.

This "Blue world" is more than only an economic space; it is a piece of Africa's rich topographical, social, and social canvas. Through a superior comprehension of the huge open doors rising up out of putting and reinvesting in Africa's sea-going and marine spaces, the adjust can be tipped far from unlawful reaping, corruption, and exhaustion to a reasonable Blue advancement worldview, serving Africa today and tomorrow.¹³⁰ Subsequently if completely exploited and well dealt with, Africa's Blue Economy can constitute a noteworthy

¹³⁰ Richmond, M.D. 2015. "Threatened marine species. In: UNEP-Nairobi Convention and WIOMSA. "The Regional State of the Coast Report: Western Indian Ocean." Chapter 10. UNEP and WIOMSA, Nairobi, Kenya, pp.129-150.

wellspring of riches and launch the continent's fortunes.

“Kenya is in the process of formulating her integrated ocean management policy including an institutional framework to guide the use and management of ocean space and resources within it. The policy is intended to identify critical ocean related issues and activities and subsequently provide a sound legal and institutional approach within which they can be addressed in a holistic manner”. A strong national economy and legal reforms will enhance Kenya's the state of maritime technological transfer and exploitation of blue economy.

5.3 Recommendations

The following recommendations have been adopted, following the study findings.

5.3.1 Boosting Maritime Security

The first step towards realizing the full potential of Blue Economy resources in Kenya and how they can be effectively managed is ensuring a secure maritime environment. It is crucial for Kenya to make maritime security a priority because the sea is not only a transit route for goods and people but it also offers up many resources that are useful to people and their communities. At the moment the blue economy is being under-utilized and threatened by bad practices such as piracy. Maritime insecurity is a threat, not just to Kenya, but to the whole world.

5.3.2 Increasing Funding for Blue Economy Programs

In its budget, the Kenyan government must make effort to increase funding for all projects related to the Blue Economy. Sectors such as deep-ocean mining and oil and gas exploration are underutilized because of lack of sufficient funding towards marine research and innovation programs. Through increased funding, Kenya can develop complex research institutions aimed at discovering how untapped areas such as deep-sea mining and oceanic pharmaceuticals can be tapped and managed to help boost the Kenyan economy.

5.3.3 Improving Research and Innovation

Some of the challenges such as lack of sufficient data, lack of sufficient capacity, and lack of effective technology can only be overcome if the Kenyan government improves research and innovation within the maritime field. Blue Economy is a wide and complex field that requires sophisticated technologies to tap and manage. Areas that Kenya already enjoys dominance, for example, tourism and fishing, requires electrical and dignified records to help track progress, improve operations, and management. Through improved research and innovation, Kenya will be able to attain sufficient capacity to effectively utilize, manage and expand its Blue Economy opportunities, for example, ship building artistry.

5.3.4 Introducing Favorable Tariffs

Kenya should also think towards making the tariffs favorable if she wants to improve the status of her Blue Economy. From the response of one participant, “well, favorable tariffs will attract investors in our country and to come and invest in our Blue Economy, if a country has good tax regulation, me as an investor will be willing to come and invest in that country because maybe the taxes allow for making profits for example. So, favorable tax regimes and reforms will attract investors to come to our country and invest in the Blue Economy sector. Let’s take the example of those who are coming to undertake oil exploration. By paying some tax, the country earns revenue. When all the ports will be built, like a part from Kilindini port, we are putting some other ports in Lamu, Shimoni, Kwale and Kilifi. And now we have one here in Mombasa. When those fishing vessels come to land, Kenya earns some revenue. There is a law, in our fisheries management and development Act 2016 that requires all foreign fishing vessels to land in our waters. After landing, they are supposed to sell 30 percent of their catches to the country. So, when they sell this, we increase supply of fish into the domestic market. This will also address the issue of food security, and then also, it will support SMEs, in terms of getting raw materials to do value addition and product

development from the catches. So, this is a tariff. If there is a law requiring the foreign vessels to sell 30 percent of their catch to our country, that is a fair tariff that will benefit the country more. Again, every time the ships land into our waters, they will be paying some taxes, and also anybody who wants to export fish will have to pay export duties. When we look at this in terms of oil exploration, as of now, we cannot say that we have made major site discoveries. But in the event such discoveries are made, then the products that will come from oil and petroleum products will be very important to the country. When we look at it in terms of landing ships for the foreign landing vessels, user fee to our ports and other general ports like Mombasa and Kilindini, and then those ships are using our waters because they have paid the fishing fee.”

5.4 Areas for Further Study

6 Although the study has examined challenges facing the Blue Economy resource management in Africa, focusing on Kenya, the researcher only used qualitative data from key informants. In as much as qualitative data is very crucial in deriving important and detailed information, future researchers should supplement qualitative data with quantitative data, which is usually unbiased, objective, and can be generalized. Besides, quantitative research techniques allow researchers to collect data from as many respondents as possible. Besides, future studies should strive to narrow down on specific challenges rather than being general. For example, a study should be conducted on technological challenges, financial challenges, or climate change challenges, instead of combining all of them.

BIBLIOGRAPHY

- Alpizar, M.A.Q. (2006). *Participation and fisheries management in Costa Rica: From theory to practice*. Marine Policy.
- AMISOM (2016), ‘AMISOM’s new Force Commander formally assumes office’, press release, 19 July 2016.
- Appeltans, W., S. T. Ahyong, G. Anderson, M. V. Angel, T. Artois, N. Bailly, R. Bamber, A. Barber, I. Bartsch, and A. Berta. (2012). The magnitude of global marine species diversity. *Current Biology*.
- Arnaud-Haond, S., J. M. Arrieta, and C. M. Duarte. (2011). *Marine biodiversity and gene patents*. *Science* 331.
- Article 239 (4) , Constitution of Kenya 2010.
- ASCLME/UNDP. (2012). A Strategic Action Programme For Sustainable Management of the Western Indian Ocean Large Marine Ecosystems. Building a partnership to promote the sustainable management and shared governance of WIO ecosystems for present and future generations.
- Awaluddin, A., *Marine Biotechnology Research in Malaysia*, MIMA, Kuala Lumpur (2005).
- Bardhan, P. and J. Dayton-Johnson (2002), “Unequal irrigators: Heterogeneity and commons management in large-scale multivariate research.” in *The drama of the commons*. Ostrom, E., T. Dietz, N. Dolsak, et al., editors. National Academy Press: Washington.
- Bartley, D.M., and Leber, K.M. (2004). *Marine ranching*, FAO Fisheries Technical Paper. No. 429, FAO, Rome.
- Beem, B. (2007), “Co-management from the top? The roles of policy entrepreneurs and distributive conflict in developing co-management arrangements.” *Marine Policy*.
- Berkson, J. B., and C. N. Shuster. (1999), *The Horseshoe Crab: The Battle For A True Multipleuse Resource*, Fisheries.
- Bouchard, C. and Crumplin, W (2010). *Neglected no longer: the Indian Ocean at the forefront of World geopolitics and global geostrategy*. *Journal of the Indian Ocean Region*, Vol. 6(1).
- Chellaney B, (2008) ‘*Chinese Navy aims to challenge India’s pre-eminence in the Indian Ocean: Dragon in India’s backyard*’, *Asian Age*.
- Degu, W. (2007). *The State, the Crisis of State Institutions, and Refugee Migration in the Horn of Africa* (Lawrenceville).
- Diop, S., Scheren, P. and J. Machiwa. (2016). *Estuaries: A Lifeline of Ecosystem Services in the Western Indian Ocean*. Springer International Publishing.


- ECORYS, Deltares and OCEANIC, (2012). *Blue Growth Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts Final Report*, Rotterdam and Brussels.
- Eriksson, M. (2013). Somalia's Civil War, Security Promotion and National Interest. Swedish Defense Research Agency FOI-R--3718—SE. ISSN 1650-1942. Mainstay of defense.
- FAO. 2015. Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication. Food and Agriculture Organization, Rome, Italy.
- Francois, V. (2010). *African Maritime Security: A Time for Good Order at Sea*, Australian Journal of Maritime and Ocean Affairs.
- GOK, Kenya Gazette Vol. CXIX – No 2, Gazette Notice No.3. Nairobi 6 January 2017. Goldie, A.J. *Africa. A Modern History*. London, (2006).
- Hagmann, Tobias (2005) “Confronting the concept of environmentally induced conflict”, Peace, Conflict and Development, issue 6, Jan 2005.
- Hoge JF (Jr), (2009) ‘Global power shift from West to East in making: Growing economy turns into political military power’, The Seoul Times.
- Hurlburt, K., Seyle, D., Mody, C., Paul, R., Bellish, J., and Jankovsky, B., (2013), “The Human Cost of Maritime Piracy 2012”, Working Paper, Colorado: One Earth Future (OEF) Foundation.
- Hussein Solomon, (2012), “Critical Reflections of the African Standby Force: The Case of its SADC Contingent”, Southern African peace and security studies, vol. 1(2).
- Jacqueline, S. (2015). ‘Operation Atalanta Continued Success, Enhanced Mandate’, Impetus, No. 19, Spring/Summer.
- Jakkie Cilliers, Henri Boshoff and Festus B. Aboagye, Somalia: the intervention dilemma, ISS Policy Brief Nr 20, (2010).
- Kalinaki, D., 2016, ‘How Shortage of Equipment, Poor Operation Flaws Cost Amison 19 Soldiers’, The Monitor (Kampala).
- Kamara, A.R., 2014, ‘Sierra Leone Military Chief projects image of the force in Somalia’, Sierra Express Media.
- Kenya Maritime Authority, (2017).
- Magnier , M.K., (2010) India embraces Russian arms. New Delhi signs five deals, buying fighter jets, an aircraft carrier and nuclear reactors, Los Angeles Times.
- Maluki P M. *Regionalism In The Indian Ocean: Order, Cooperation And Community*. VDM Verlag Dr. Müller Publisher (2011).


- Meredith, M. *The State of Africa. A History of Fifty Years of Independence.* Johannesburg, (2005).
- Mmochi, A. (2015). Mariculture. In: UNEP-Nairobi Convention and WIOMSA. *The Regional State of the Coast Report: Western Indian Ocean.* Chapter 22. UNEP and WIOMSA, Nairobi, Kenya.
- Mugridge, D. (2009). *Malaise or Farce – The International Failure of Maritime Security.* Defence and Security Analysis.
- Nancy Karigithu, Maritime Security and Its Impact on Trade in the Region, A speech by former managing director of Kenya Maritime Authority - now she is principle secretary, (2014).
- Neumann, B., Vafeidis, A.T., Zimmermann, J. and R.J. Nicholls. (2015). *Future Coastal Population Growth and Exposure to Sea-Level Rise and Coastal Flooding, A Global Assessment.* PLoS ONE.
- Obura, D.O., Burgener, V., Nicoll, M.E., Ralison, H.O., Scheren P., Nuñez, P., Samoilys, M., Waruinge, D. and J Tanzer. (2016). In press. The Northern Mozambique Channel – a capitals approach to a Blue Economy future. IN: *Handbook on the Economics and Management for Sustainable Oceans.* Markandya (eds.) Handbook.
- Operation Phakisa to move SA Forward South Africa News, July 15 2015 at <http://www.sanews.gov.za/south-africa/operation-phakisa-move-sa-forward>.
- Park, D. (2014). Rebuilding the classification system of the ocean economy. *Journal of Ocean and Coastal Economics*, 2014, p. Article 4.
- Paul Williams, ‘Thinking about security in Africa’, *International Affairs*, 83:6, (2007).
- Payet, R.A. and Obura, D.O. 2004. The negative impacts of Human Activities in the Eastern African Region? An International Waters Perspective. *Ambio*.
- Powell, Benjamin, Stringham Edward. (2009). *Public Choice and the Economic Analysis of Anarchy: A Survey.* Public Choice.
- Rajamani L (2016). Ambition and differentiation in the 2015 Paris Agreement: Interpretative possibilities and underlying politics. *International and Comparative Law Quarterly*.
- Rauch, James. *Networks Versus Markets in International Trade.* *Journal of International Economics* (1999).
- Richmond, M.D. 2015. Threatened marine species. In: UNEP-Nairobi Convention and WIOMSA. *The Regional State of the Coast Report: Western Indian Ocean.* Chapter 10. UNEP and WIOMSA, Nairobi, Kenya.

- Rodrigue, J.P. Ports and Maritime Trade in Barney Warf. Encyclopedia of Human Geography, London: Sage, (2010).
- Rustomjee, C. (2016). Financing the Blue Economy in Small States. Center for International Governance Innovation.
- Sachs, J.D., Schmidt-Traub G. and Durand-Declare D. 2016. Preliminary Sustainable Development Goal (SDG) Index and Dashboard. SDSN working paper under public consultation.
- Sale, P.F. et al. 2014. Transforming management of tropical coastal seas to cope with challenges of the 21st century. Marine Pollution Bulletin.
- Schlesinger, Robert, (2009). “Dealing with Pirates: How Julius Caesar Handled Things,” U.S. News and World Report.
- Sieff M, (2009) ‘*Russia unveils tough new security strategy*’, United Press International.
- Sustainable Blue Economy Conference (2018). The Nairobi Statement of Intent on Advancing the Global Sustainable Blue Economy. Nairobi, Kenya.
- Swatuk, Larry A. and Dianne Rahm, (2004). Integrating policy, disintegrating practice: water resources management in Botswana. Physics and Chemistry of the Earth, Vol. 29,
- UNCTAD (United Nations Conference on Trade and Development). 2014a. Small Island Developing States: Challenges in Transport and Trade Logistics. Background note to third session of Multi-Year Expert Meeting on Transport, Trade Logistics and Trade Facilitation. Geneva, 24–26 November.
- UNECA (United Nations Economic Commission for Africa). 2016. Africa’s Blue Economy: A Policy Handbook. Economic Commission for Africa, Addis Ababa, Ethiopia.
- UNEP & EC, (2017). *UNEP/EC Workshop on Area-based Management and Regional Cooperation for the Implementation of Ocean-related Sustainable Development Goals*, Brussels: Environmental Programme & European Commission.
- UNEP. (2015). *Blue Economy: Sharing Success Stories to Inspire Change* T. Bryan, Tanya; Neumann, Christian; Patterson, ed., Available at: www.unep.org/greeneconomy.
- United Nations Environmental Programme, (2015). *Concept Note for Development of an Ocean Governance Strategy for Africa*.
- Yaakob, O., Rashid, M., and Mukti, M., Prospects for Ocean Energy in Malaysia, International Conference on Energy and Environment (2006).

APPENDICES


Appendix 1: NACOSTI Data Collection Permit


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22 April 2020

TO WHOM IT MAY CONCERN

RE: INTRODUCTION TO CONDUCT THESIS RESEARCH INTERVIEWS **COL JOHN SANKALE KISWAA (37237)**

The above named Senior Officer is a Participant at the National Defence College enrolled in the 2019/2020 class pursuing a Masters of Arts Degree in International Studies which is conducted in collaboration with the University of Nairobi. The Participant is working with the Ministry of Defence.

He is currently undertaking Research on a thesis entitled: ***Challenges Facing Blue Economy Resource Management in Africa: A Case study of Kenya.*** Part of the data collection for this research requires him to collect information from your Office/ Organization/ Department about the Challenges Facing Blue Economy Resource Management in Kenya.

The purpose of this letter therefore, is to request you to allow him conduct a Key Informant interview during working hours. The information to be collected will be strictly for research purposes and shall be treated with the confidentiality it deserves.

We hope that our request will meet your highest consideration.

J O OIGARA
Lieutenant Colonel
for Commandant

Appendix 3: Research Consent Form

Consent Form

My name is Sankale Kiswaa. I am currently a Masters student at the University of Nairobi and National Defence College (Kenya), undertaking a Masters Degree in Diplomacy and International Studies. As part of my Degree course, I am undertaking a research Project for my Honours dissertation. The title of my project is Challenges Facing Blue Economy Resource Management in Africa: A Case Study of Kenya.

This study aims to examine challenges facing Blue economy resource management. The findings of this project will be useful in influencing and filling academic and policy gaps. This research is purely for academic purpose only. I am looking for respondents to interview for the study and if you agree to participate, you will be asked a few questions pertaining to the topic. Please note that participation in this exercise is voluntary and the whole process should take few minutes.

You are absolutely free to opt out of this research any time. You will remain completely anonymous and all the data collected from this study will be treated with utmost privacy and confidentiality. If you have read and understood this information sheet, questions you had have been answered and you would like to participate in the study, please sign the declaration form.

Declaration of Consent

I have read through the participant information sheet. I now consent voluntarily to be a respondent in this research project.

Signature:

Date:

Appendix 4: Data Collection Tool

INTERVIEW SCHEDULE

SECTION 1: The challenges facing blue economy resource management in Kenya

1. How is climate change and ocean degradation impacting on the Kenyan Blue economy?
2. How does lack of access to technologies affect blue economy activities in Kenya?
3. How does inadequate fisheries port infrastructure and related facilities affect blue economy, especially revenue collection from foreign fishing vessels?
4. How does the small capacity of Beach Management Units affect activity implementation?
5. In what ways does insufficiency in teaching quality of instructors at training institutions and training equipment affect the blue economy?
6. In what ways does weak shipbuilding and repairing industries in Kenya hamper the position of Kenya in the blue economy?
7. How does limited diversification of tourism products affect the blue economy?

SECTION 2: The key actors and strategies employed in advancing blue economy resource management in Kenya

1. Which are the key agencies/actors that play a crucial role in advancing the Blue Economy resource management?
2. In what way does the private sector help to boost the Blue Economy resource management?
3. In what ways is the Maritime spatial planning (MSP) helping the Coastal economy?
4. In what ways will good tariffs, taxation and fiscal reforms uplift the blue economy?
5. How will the upgrading of Bandari College and the revival of Kenya National Shipping Line help improve services in the Coastal towns?

6. How does the existing Mombasa Port impact the blue economy?
7. How will the construction of Kisumu and Lamu Ports impact the blue economy?

Thank you for your participation.

Appendix 5: Map of Study Area





Appendix 6: Press Release



Source: Kenya National Bureau of Statistics (2018)



Source: Kenya National Bureau of Statistics (2018)

Appendix 7: Plagiarism Report

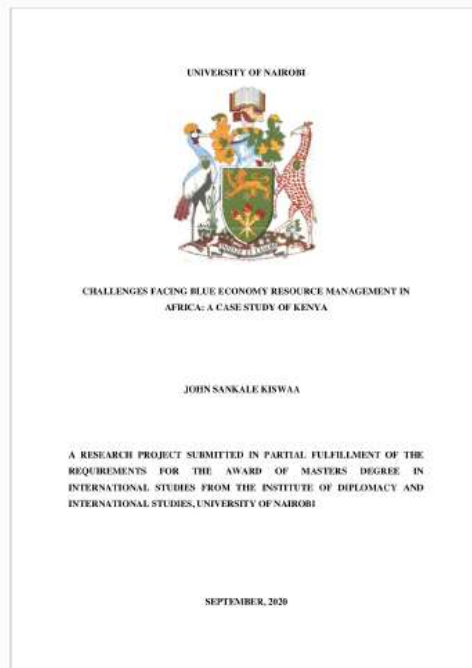


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