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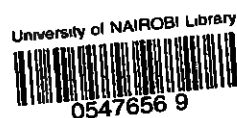
**MARITIME SECURITY AND RESOURCE EXPLOITATION:
THE ROLE FOR INTER AGENCY COORDINATION**

BY

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INTERNATIONAL STUDIES OF THE UNIVERSITY OF NAIROBI**

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DECLARATION

This Research project is my original work and has not been presented for the award of a Master of Arts Degree or any other Degree in any other University.

Signed.......... Date..... 23/3/2017

Lawrence Gituma Miringo

R50/82652/2015

This Research project has been submitted for examination with my approval as University Supervisor;

Signed.......... Date..... 23/3/2017

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DEDICATION

This work is dedicated to my family for their encouragement during my study.

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This study was completed through the successful efforts of many people that i would like to acknowledge here. Their contributions in terms of inspiration, time, advice and guidance were very useful.

I wish to extend my sincere gratitude to Kenya Navy, National Defence College and all the Lecturers from the University of Nairobi and other Universities and institutions for providing me the with the opportunity and facilitating the conduct of this study.

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ABSTRACT

Kenya's maritime zones are estimated at 230,000Km² which is approximately 40 percent of the country's total landmass. This area is referred to as the maritime domain and plays a vital role in Kenya's economic development. The importance of maritime trade to Kenya's economy and its potential contribution to economic development is demonstrated by the simple fact that 92% of Kenya's international trade, by volume, is carried by sea. Kenya's maritime domain is subject to a wide array of security threats, ranging from piracy and armed robbery against ships, to threats from maritime terrorism and the unlawful trade in weapons, smuggling, trafficking in narcotics and in persons, and illegal, unreported and unregulated fishing and marine pollution. These maritime threats negatively impacts on Kenya's sea borne trade and has exposed the inadequacy of the national maritime safety and security agencies in providing comprehensive maritime security. This can mainly be attributed to relatively few resources devoted to maritime security, limited capacity to conduct extensive maritime surveillance and interdiction operations, insufficient legal frameworks and lack of a formal mechanism for close integration and coordination of their activities. This state of affairs has led to an ineffective intervention at the national level and thus significantly contributing to maritime security and negative exploitation of marine resources. The objective of this study was to analyze the existing maritime security structure in Kenya and show how interagency coordination can enhance effectiveness in the provision of maritime security and marine resource exploitation, using the securitization theory as basis for analysis. Exploratory research was used in the study with focus on both qualitative and quantitative characteristics. Key informant interviews were the primary means of data collection. Participants were specialists in maritime affairs drawn from wide areas of specialization in Government, Private Sector and Academia. Data was analyzed through the Delphi method. The study reveals that the maritime security threats impacts negatively on Kenya Kenya's maritime economy and the national maritime safety and security agencies are inadequately equipped and ill prepared to provide maritime security. Finally, this study recommends the close integration and coordination of the various maritime security agencies to close the gaps that have been exploited by the criminal gangs in Kenyan waters. This new security architecture would enable accurate and coordinated decision making and responses to the maritime threats as early and distant as possible from Kenya's maritime domain, ensure freedom of navigation and free flow of commerce.

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LIST OF ABBREVIATIONS

AIS	Automated Information system
AQ	Al Qaeda
AS	Al Shabaab
AU	African Union
AUC	African union commission
BMU	Beach Management Unit
CG	Coast Guard
CPRI	Conflict and Peace Research Institute
CS	Copenhagen School
CZ	Contiguous Zone
EA	East Africa
EASC	East African Coastal Current
EEZ	Exclusive Economic Zone
ERC	Energy Regulatory Commission
GDP	Growth Domestic Product
GoA	Gulf of Aden
GoG	Gulf of Guinea
GoK	Government of Kenya
HIV/AIDS	Human Immuno Deficiency Virus
HOA	Horn of Africa
HS	High Seas
ICJ	International Court of justice
IDIS	Institute of Diplomacy and International Studies
ILO	International Labour Organisation
IMB	International Maritime Bureau
IMO	International Maritime Organization,
ISIS	Islamic State for Iraq and Syria
ISS	Institute of Security Studies
ITLOS	International Tribunal for the Law of the sea
IUU	illegal, Unreported and Unregulated Fishing
KFS	Kenya Forest Service
KMA	Kenya Maritime Authority
KMFRI	Kenya Marine and Fisheries Research Institute
KN	Kenya Navy
KPA	Kenya Ports Authority
KRA	Kenya Revenue Authority
KSH	Kenya Shillings
KTB	Kenya Tourist Board
KWS	Kenya Wildlife Service
LAPPSSET	Lamu Port South Sudan and Ethiopia Transport corridor
MAS	Maritime Assistance Service
MOD	Ministry of Defence
MoU	Memorandum of Understanding

MPA	Marine Protected Areas
MRAG	Marine Resources Assessment Group
MSO	Maritime Security Operations
MT	Metric Tonne
NACOSTI	National Council for Science Technology and innovations
NATO	North Atlantic Treaty organisation
NOC	National Oil Company
NPS	National Police Service
OP	Office of the President
OSCE	Organization for Security and Cooperation in Europe
RUF	Revolutionary United Front
SALW	Small Arms and Light Weapons
SAV	Submerged Aquatic Vegetation
SC	Somali Current
SID	Society for International Development
STD	Sexually Transmitted Disease
SWIOFP	Southwest Indian Ocean Fishery Project
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDOC	United Nations Office of Drugs and Crime
UNEP	United Nations Environmental Programme
UNSCD	United Nations Conference on sustainable Development
USA	United States of America
VMS	Vessel Monitoring System
VTS	Vessel Tracking System
WIO	Western Indian Ocean
WIOTC	western Indian Ocean Tuna Commission
WMD	Weapon of Mass Destruction
WTO	World Trade Organisation
WWF	World Wild life Fund

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CHAPTER ONE

1.0 Background to the Study

Oceans cover 71% of the planet earth. These include the Atlantic, Indian, Pacific, Arctic and the Southern Oceans.¹ These oceans connect the nations of the world including the landlocked who use the coastal states for access to ports. The oceans are critical to life as they constitute 95% of the biosphere. The oceans support life in a variety of ways including generation of Oxygen, absorbing Carbon Dioxide and recycling nutrients. Oceans also play a significant role in regulating climate and temperature.²

The oceans provide and support the global population with food and livelihoods. In terms of transport, Maritime transport is the most cost-effective way to move goods and raw material around the world. In fact over 90% of the world's trade is carried by sea a fact that positively impacts on the world economy. By so doing the Oceans contributes to poverty alleviation through provision of employment opportunities to seagoing personnel, ship recycling, ship owning and operating merchants as well as shipbuilding and repair and port services.³ The marine and coastal zones provide major resources for the imposition of global tourism and its attendant tourism development support infrastructure.

Increasingly the sea is being used as a means of transport for global trade. An estimated 93, 000 merchant ships are crewed by approximately 1.3 million seafarers and with 6 billion tons of cargo transported annually.⁴ The importance of the maritime trade and its future potential signifies the

¹World Atlas; <http://www.worldatlas.com/aatlas/infopage/oceans.htm>. Accessed on 10th September 2015.

²United Nations conference on Sustainable Development, Rio de Janeiro, 2012.

³<https://business.un.org/en/entities/13>. Accessed on 10th April 2016.

⁴ United Nations Conference on Trade and Development; Maritime Transport Review 2015, Newyork and Rome 2015.

growing importance of oceans as key drivers of global economy. A consequence of this growing importance of the maritime domain and its lucrative offering of commerce poses the reality of criminalization of the maritime domain.

The profitable aspects of the oceans have progressively been targeted by variety of criminal gangs ranging from locally organized crime syndicates to national, regional and international sophisticated criminal networks.⁵ This is most prevalent in littoral countries that do not have the will or capability to enforce jurisdiction over their maritime zones.⁶ Africa and Asia in comparison to other continents, are finding themselves as the epicenters of the growing maritime insecurity dynamics playing round the World.⁷

Africa, with an estimated population of 1.2 billion people, is the second most populous continent.⁸It is adjacent to two oceans and two seas; to the East is the Indian Ocean, to the North is the Mediterranean Sea while to the North East is the Red Sea. To the west of Africa is the Atlantic Ocean. Despite its endowments in material resources both on Land and Sea and its strategic location to major shipping lanes to Asia, America and Europe, it's still the poorest in the world.⁹

Historically, Africa has been continental in its strategic outlook and as a result; Africa has neglected its oceans, marine resources and maritime related issues.¹⁰ The general neglect of the African oceans has resulted in governance gaps at sea where criminal syndicates have filled the

⁵Francois Vreis et al: *Towards a Good Order at Sea*, Australian Journal for Maritime Affairs Vol 2 (4) 2010, Routledge Taylor and Francis 2014.

⁶Ibid.

⁷Ibid.

⁸United Nations *Population Fund: World Population Statistics*, 2014.

⁹African Union: *Agenda 2063*, Addis Ababa, 2013.

¹⁰*2050 African Integrated Maritime Strategy (AIMS 2050)*, Addis Ababa, 2013.

void. The lack of capacity to enforce jurisdiction over the maritime space beyond certain limits and political instabilities in many coastal states such as Nigeria, Cameroon, Somalia, Sudan, Eritrea and Kenya have created opportunities for criminal groups to negatively exploit the seas and oceans. The growing criminalization of the African oceans and seas is propagating an exponential rise in maritime security threats. Piracy in the Gulf of Aden, attacks on oil and energy infrastructures in the Gulf of Guinea and the increased loss of life in the Mediterranean Sea of African illegal migrants being smuggled into Europe are important pointers of maritime security threats at play. At a glance, it is the rest of the world that is concerned about the Security of Africa's oceans than Africans themselves. This implores that African emancipation, despite the abundance of natural resources both on land and sea will continue to be a deferred dream as long as the maritime security threats around its oceans prevail.

Kenya borders Somalia to the North, United Republic of Tanzania on its southern side. Kenya has a coastline of 536 km on the Indian Ocean with 221,778 square km Exclusive Economic Zone (EEZ). Kenya's coastline is endowed with a highly productive open sea and possesses abundant and diverse maritime resources. The country is also claiming an additional 150km beyond the EEZ limit as Outer Continental Shelf (OCS).¹¹ This will translate approximately 350,000km² which is almost equivalent to sixty percent of the land mass and an equivalent of the total land mass of 31 countries.¹²

¹¹Republic of Kenya, Office of The President, Cabinet Affairs Office, Task Force on Delineation of Kenya's outer continental Shelf: *Draft Integrated Ocean Management Policy*, August 2013.

¹²Kenya Maritime Authority: National Maritime Seminar; From Land To sea. New frontier for National Development, Nairobi, February 2015.

Securing the large water mass and the attendant maritime supply chain against disruption has been a great challenge to Kenya. The country's maritime trade and economy has increasingly been threatened by maritime insecurity prevailing in the West Indian Ocean, particularly the Somali piracy. The other maritime security threats that the country suffers range from terrorism, drug trafficking, human trafficking, migrant smuggling by sea, proliferation of arms, illegal fishing, dumping of toxic waste, introduction of alien species, illegal bio-prospecting and destruction of the marine environment.

1.1 Statement of the Problem

Kenya, like any other coastal state has been at the forefront in the fight against maritime security threats with her own national maritime assets and through regional and international cooperation with foreign navies. However, Kenya cannot effectively patrol her maritime space due to few assets, other technological and human resource capability gaps and resourcing.

The new emerging maritime security threats in the Indian Ocean negatively impacts on Kenya's sea borne trade and has exposed the inadequacy of various agencies in providing comprehensive maritime security. These can be attributed partly to relatively few resources devoted to maritime security, limited capacity to conduct extensive maritime surveillance and interdiction operations, insufficient legal framework and lack of a formal mechanism for close integration and co-ordination of the activities of the various maritime safety and security agencies including the local fishing communities. This has led to an ineffective intervention at the national level and thus significantly contributing to maritime security threats and negative exploitation of marine resources.

This study therefore seeks to identify Kenya's maritime security challenges and examine the coordination between the various national maritime safety and security agencies to mitigate maritime security challenges for enhanced protection and optimal exploitation of the marine resources.

1.2 Research Objectives

The study seeks to analyze the existing maritime security structure in Kenya and analyze how coordination between the different national maritime agencies and local fishing community can enhance maritime security and protection of Kenya's maritime domain.

The specific objectives are:

- a. To identify Kenya's maritime security challenges.
- b. To identify Kenya's Maritime Resources, threats and opportunities.
- c. To evaluate the roles, functions and coordination between the various national maritime agencies in addressing the maritime security challenges and resource exploitation in the Kenyan Maritime Domain.

1.2.1 Research Hypotheses

- a. National Maritime Safety and security agencies are inadequately equipped to provide maritime security.
- b. Optimal maritime resource exploitation can only take place in a secure maritime environment.
- c. Integration and coordination of the national maritime safety and security agencies will bridge the capability gaps and improve maritime security.

1.3 Justification

1.3.1 Academic Justification

This study will be a significant addition of knowledge to the previously conducted research and on-going research efforts at the international, continental, regional and national levels to develop solutions to the emerging maritime security challenges that continue to inhibit the sustainable exploitation of maritime resources in the Africa maritime domain, with specific reference to Kenya.

The research seeks to bring in the important role of national maritime stakeholders, both merchant and naval and fishing communities who, if included in the national security architecture, can be force multiplier in maritime security by providing early warning information gathered at sea in their daily fishing activities. This in turn may provide timely intervention or response by the national security agencies in securing Kenya's maritime space.

The research will also provide opportunity to the academia to develop further this new thought through further research in order to facilitate the creation of good order at sea and positive exploitation of marine resources for the economic advancement and improvement of the livelihoods of the people of Kenya.

1.3.2 Policy Justification

This research work should be of use to all ship owners, ship masters, and port facility operators, senior military officers at the policy making level, Defence analysts and government policy makers. The researcher did not find any scholarly works on the integration of the shipping and fishing community into the maritime security architecture anywhere in the continent as such the study will be a pioneer. In Africa, security of the state has always been associated with military

forces. This study is among the first to critically evaluate the capabilities and roles of the various maritime agencies in Kenya providing maritime security and the need to integrate and closely coordinate the other agencies for optimal performance despite the resource challenge. The researcher acknowledges that substantial work has been done in identifying the maritime security challenges that the region and the country faces. The interventions have heavily relied on the Navy. The researcher is optimistic that the recommendations of the study will inform policy change for better coordination of the various maritime safety and security agencies and the local fishing communities.

1.4 Literature Review

This section examines the literature related to maritime security challenges and their impact on maritime resource exploitation and responses from global, regional and national dimensions.

Maritime security is an age-old phenomenon and predates written historical record. Henry H. Adams *et al* (1984) in his book *Sea Power: a Naval History* argues that maritime security especially piracy, was caused by the trading of goods on the high seas as rival traders clashed against themselves.¹³ The term Maritime security elicits different meaning to different people and organizations depending on the interests and political orientations and therefore has no universally agreed definition. It is however generally agreed that maritime security threats are acts of man as opposed to perils of the sea to shipping and offshore resource exploration and exploitation activities. However, like any other international buzzwords, it is a term that draws attention to new challenges at sea and rallies support for overcoming the threats.¹⁴

¹³ Henry H. Adams et al: *Sea Power: Naval History*, Naval Institute Press Annapolis 1984, P. 1

¹⁴Christian Bueger: *Maritime Policy 2015*:<http://bueger> accessed 22/8/15 at 1900hrs.

Geoffrey Till (1984) argues that there is need to be clear in what should be necessary in future to constitute maritime security and prosperity. The author also takes cognizance of the fact that conjuring what should be included was not an easy task since maritime security comprehends so much.¹⁵

Kraska and Pedrozo (2013) in their works argue that discussion on maritime security should be centred on issue of threats that obtain in the ocean maritime domain and refer to threats as such as maritime state disputes, maritime terrorism, piracy, trafficking of narcotics, illegal migration, contraband, arms proliferation, illegal fishing, environmental crimes and maritime accidents and disasters¹⁶. Conversely they argue that absence of these threats is what should maritime security. However this definition has been found wanting in the sense that it fails to prioritize issues or provide clues of how those threats are interrelated and which threat should be included or excluded for example climate change.¹⁷

Greg Mills (1995) argues that maritime security need to be conceived in terms of linkages between states which have interests in common waterways. For the maritime sector to play its part, it will be necessary to develop a wider regional cooperation. This regional initiative will demand formalized structures for cooperation and regulation. The cases where little regional capacity exists, key states will have to take the lead in facilitating and coordinating such cooperation.¹⁸ The East African regional navies have limited capabilities for enforcing jurisdiction on their waters and therefore the need to enter into cooperation within and without the region in this endeavour.

¹⁵Geoffrey Till: *Sea Power: A Guide for 21st Century*, Frank Cass, London, 2004.

¹⁶ Kraska and Pedrozo: *International Maritime security Law*, Oxford University Press, London, 2013.

¹⁷ibid

¹⁸Greg mills: *Maritime Policy For Developing Nations*, Lancaster University, London 1995.

Craig Snyder in *Regional Security in the Third World* noted that unlike the case of collective defence where members of the alliance have to be alike, a collective security does not require such attribute. In collective security shared fears of uncontrolled violence as well as agreements that may not hold generate common interests. States' relationship in a collective security system is guided by the principle of reciprocity and the rules and norm that evolve from a society premised on mutual consent. Such a society survives on unleashing preponderant power against aggression by any one of its members. In effect collective security systems use deterrence to regulate international behavior and transform the competitive nature of state interactions.¹⁹ However this mechanism has not succeeded in Africa due the fact that majority of African countries have not invested in their navies or Coastguards (CG) and therefore any cooperation entered is on paper only and subsequently not effective to protect the seas and oceans.

The actors of maritime security have limited sphere of influence within the maritime domain. According to Hugo Caminos in "The Law of the Sea" argues that the state's is limited in its jurisdiction and enforcement of the UN International Convention on the Law of the Sea. In terms of this law states have jurisdiction and can enforce law within their territorial sea (12 nautical mile extension from shore or base line), but may only exercise control (not sovereignty or jurisdiction). In the contiguous zone (12 mile extension beyond the territorial sea), Within the Exclusive Economic Zone (200 nautical miles extension from base line), a coastal state has sovereign rights over the natural resources, living and non-living. It has jurisdiction with respect to artificial islands as well as installations and other structures. It also has jurisdiction over marine scientific research, rights for the protection and preservation of the marine environment and other rights and duties

¹⁹Craig Snyder: *Contemporary maritime security and Strategy*, Palgrave Macmillan, London, 2012.

provided for in the convention²⁰. The coastal state's rights over the continental shelf (200 mile extension from base line and 350 nautical miles where the coastal state has claimed an outer continental shelf), have no affect on the legal status of the superjacent waters, whether they be contiguous zone (CZ), Exclusive Economic Zone (EZZ) or High Sea (HS).²¹ International law provides for absolute freedom on the high seas, subject to four exceptions. First a warship of one state can only board the merchants ships of another flag if such power is granted by treaty between the two parties, secondly the ship is engaged in piracy does not enjoy such freedom; thirdly, a ship engaged in the slave trade forfeits its freedoms of the sea; and lastly, a ship that flies a foreign flag or refuses to show its flag is, in reality, of the same nationality as the warship.²² It is therefore necessary for National Navies, coast guards and other maritime agencies to be sufficiently equipped in order to enforce this jurisdiction.

Robin Warner (2012) in *Ocean Governance and Maritime Strategy: Issue of Navies in Enforcing Multilateral Regimes*²³ argues that in the order of national priorities, enforcement of legislation within a state's own maritime zones will naturally take precedence over regime devised to regulate surveillance and enforcement regimes of their own vast EEZ are still nascent. Even states with sophisticated maritime patrol forces such as South Africa, Egypt and Nigeria have limited resources to provide comprehensive coastal surveillance, let alone contribute high seas policing.²⁴

²⁰ ibid

²¹ *United Nations: Third United Nations conference on the law of the Sea (UNCLOSIII) 1982.*

²² Ibid.

²³ Robin warner: *Ocean Governance and Maritime Strategy: Issue of Navies in Enforcing Multilateral Regimes*,; Ashgate publishers,surrey,2012.

²⁴ Robin Warner: *Ocean Governance:Transboundary, Enviromental, Marine and Coastal perspectives*; Ashgate publishers,surrey,2012.

Ji Guoxing (2002) in *Ocean Governance and Regional Cooperation* maintains that oceans governance in fact is part of security, and maritime is an essential element of security cooperation. Until now, maritime security cooperation has not been given enough attention. As the sea is the central component of Eastern African standby force, maritime cooperation could act as a catalyst for establishing a security regime, and serve as a bridge for broader security cooperation.²⁵

Buzan, Waever, Wilde (1998) sees International Security in the traditional military sense. They assert that security according to them is survival. Security arises when an issue is presented as posing existential threat to referent object be it state, government, territory or society.²⁶ This new thinking is useful in securitizing issues/actor that previously had not been categorized as security issues but due the changes in the environment, then it is necessary to securitize them in order protect or enhance security. Kenya has an estimated 230,000KM of sea area. This includes the 12km nautical miles, the Exclusive Economic Zone (EEZ) of 200 M along the 536 Km border. With the additional claim of 150KM as continental shelf, the country would have a total of 350,000KM sea space that is the equivalent to 60 percent of the total land mass. The EEZ lies in the rich Tuna strap found in the Indian Ocean, the country's offshore fishery zone that is negatively exploited by Distant Water Fishing (DWF) nations²⁷. Kenya is endowed with wide marine resources with an estimated worth of Ksh 90 billion annually. This includes Fishery and Aquaculture, ports and transportation systems, Renewable energy, Oil and Gas, manufacturing, hydrocarbons and seabed mineral mining, marine tourism among others.

²⁵JiGuoxing: *Ocean Governance and Regional Cooperation*, Shanghai Jiatong University, Shanghai, 2002

²⁶Buzan, Waever, dewilde: *Security; A new frame work for Analysis*, Llynne Reiner publisher; Colorado, 1998 PP 2

²⁷Republic of Kenya: Fisheries, monitoring, and surveillance capacity needs assessment report, February 2013

Securing the large water mass and the attendant supply chain has been a great challenge to Kenya and this was evidenced during the height of the Somali piracy threat that exposed the inadequacy of the various national maritime protection agencies in securing Kenya's Maritime region. The various agencies pursue individual mandates and functions and were ill equipped or totally lacked capacity to execute their functions. However, where capacities were available, there was no legal framework for the agencies to cooperate and created gaps that are being exploited even today by criminal cartels. Fishery is the most exploited as the fishery department is mandated to protect the national fishery but has no capacity enforce. The Act also does not allow enforcement powers to be transferred to other agencies, which with capacity can do the enforcement on behalf of the fisheries department. As such the foreign trawlers fish in Kenyan water and process the catch offshore without landing it in Kenya. The integration and coordination of the activities of the various maritime agencies will seal the gaps and create synergy in protection of our marine domain from negative exploitation. The various agencies that are charged with protection of Kenya's maritime resources include Kenya Navy, Kenya Maritime Authority, Kenya Ports Authority, State department of Fisheries, Kenya wildlife service, Kenya Forest Service, Kenya Revenue Authority, State department of Immigration and Kenya Marine Police. These agencies have no legal frameworks for cooperation and coordination. The integration and coordination would enhance complementarity and unity of effort.

1.5 Methodology of Study

This part of the study details the research methodology. It brings out methodology components such as; study design, study site, targeted population, sampling frame and size, methods of data collection, data analysis and presentation as well as ethical considerations.

1.5.1 Study Design

This research employed both quantitative and qualitative methods. Such approach offered flexibility and provided opportunities for diverse perspectives into the research topic. The study design used key informant interviews in primary data collection. Secondary data was obtained from written materials such as Foreign and Defence Policy papers on maritime security, National policy papers on maritime development and resource exploitation, United Nations Security Council Resolutions, the International Maritime Organization (IMO) and International Maritime Bureau (IMB) reports, Acts of Parliament establishing the various maritime safety and security agencies. The study also consulted scholarly works obtained from recognized authors, outstanding world academia, library books and journals, articles, magazines, periodicals, media and internet sources.²⁸

1.5.2 Study Site

The research location covered the entire coast of Kenya. This is because maritime security threats and marine resources are found in the entire coast. Key informants were drawn from wide areas of specialization that included National Government, National maritime agencies, local fishing communities and consultants on maritime issues from the Academia and private sector.

1.5.3 Data Collection Methods

Personal interviews of key informants were the primary mode of data collection. The study adopted both structured and unstructured questions in order to obtain respondents beliefs, and opinions on the study being undertaken. This offered advantages because the respondents were not limited to

²⁸Law J and Judge: *Science for social scientist*, Mackmillan, London 1984, P 20.

only answering the questions but also provided solutions at their level which they deemed are necessary for overcoming maritime security threats and challenges.

1.5.4 Target Population

Purposive and quota sampling was adopted in this study. Purposive sampling as a technique allowed for the use of cases that have the required information with respect to objectives of the study.²⁹The sampling frame for the study was drawn from key selected policy makers and senior management staff from the various agencies charged with providing maritime protection and securing of marine resources. The samples also included key stakeholders from the Private sector marine practitioners; Academia and local fishers 'communities who use the sea on a daily basis and experience maritime security threats and challenges first hand.

1.5.5 Ethical Issues

The researcher obtained a research permit from the National Council for Science Technology (NACOSTI) and innovations as required by the University of Nairobi. The participation in the research process by the participants was voluntary and because of the sensitive nature of the information, the highest standards of confidentiality and anonymity have been maintained.³⁰

²⁹Mugenda and Mugenda: *Research Methods; Quantitative and Qualitative approaches*; Acts press, Nairobi, 1999, P 50.

³⁰Nachmias and Nachmias: *Research Methods in Social Sciences' 5th Edition* ,University of Wisconsin , Milwaukee, P 84.

1.6 Theoretical Framework

Given the nature of the realities and the wide spectrum of the maritime security threats and their attendant risks to marine resources exploitation in the world and Kenya in particular, this study has used the Securitization Theory. Securitization theory was developed by the Copenhagen School (CS) and is propagated by scholars such as Barry Buzan, Ole Waever and Jaapde Wilde who are associated with the conflict and Peace Research Institute (CPRI)³¹. The theory conceptualizes security as a speech act arguing that the central concern should not be whether threats are real or not but rather how these security issues such as piracy, illegal fishing or migration can be socially constructed threats.

According to CS securitization as a speech act serves three purposes: first, it provides a dialogue through which an actor can claim that a referent object is existentially threatened. Secondly, the actor deems it fit to take special measures to avert the threat and thirdly, convinces other actors that irrational behaviors to counter insecurity are excusable. They assume that by labeling something as a security threat, the issue is depicted as a high priority case requiring immediate attention.³²

The CS further argues that securitization is inter-subjective and a two stage process. To them an issue can either be: (i) non-politicized or politicized and, (ii) securitized. They argue that an issue is securitized by being framed as a security through the securitization act of security actors such as government, political elite, military and civil society³³.

³¹Allan Collins: *Contemporary Security Studies*, edited by Emmers Ralf, Oxford University Press, New York, 2007.

³²Buzan, Waever, De wilde: *Security; A new frame work for Analysis*, Llynne Reiner publisher; Colorado, 1998 PP.24-25.

³³ ibid

NON POLITICIZED	POLITICIZED	SECURITIZED
Issues not in public debate	Issues managed through standard political systems Issues part of the public policies requiring government decision	Issues framed as security question through security act




Fig. 1: Securitization continuum (source: Buzan, Weaver, Dewilde)

Kenya's maritime zones constitute approximately 230,000km² which is equivalent of 40 percent of the total land mass. This area remains economically unexploited. The maritime sector plays an important socio economic development of Kenya. Its location in the Indian Ocean grants it the opportunities and potential of transforming Kenya into a maritime economy. With expected exploitation of offshore oil and Gas, growth of cargo volumes due to the demand of the rising population of the East African hinterland, there is need for a renewed focus on the maritime sector as key driver for wealth and employment creation, which are key to ensuring survival and livelihoods of Kenyans. Therefore the securitization of the maritime domain will ensure that maritime sector is given prominence and priority in the order of national issues in order to exploit and benefit from the potential that is lying idle. Secondly, fishery resources are being illegally exploited by foreign fishing fleets due to lack of national agencies capability and capacity to protect, prevent and deter. Therefore the securitization of the domain will lead to extra ordinary measures being taken to deliberately build the response capabilities of the various maritime safety

and security agencies. Lastly, the maritime sector is a capital intensive industry and investment can take place only when the maritime environment is secure. Therefore the securitization is the most important start point as the various national agencies activities can be integrated coordinated and their capacities developed in a comprehensive manner to be able to effectively respond to maritime security threats and secure the livelihood and survival of Kenyans.

1.7 Scope and Limitations

The study involved the analysis of security sensitive military, paramilitary capabilities and maritime safety and security agencies and therefore due to the nature of bureaucracies and confidential nature of the information, accessing classified security information may be difficult. However, necessary authorizations were sought from the relevant offices. The approval of the research by NACOSTI facilitated cooperation and access to the privileged information. The study covered a wide geographical area and some parts, especially the northern coast were experiencing insecurity and therefore took longer time than planned for the interviews to be conducted.

1.8 Chapter Outline

Chapter One introduces the study and highlights the study setting. It discusses the background to the problem and states the problem. It establishes the need to undertake the study to identify the roles of the different agencies in promoting or providing maritime security in Kenya and why these agencies need to be effectively coordinated to achieve sustainable maritime security. The chapter also discusses the methodology of the study and research questions. It also examines different thoughts by various scholars in the maritime security domain and maritime resources exploitation in the literature review and identifies various gaps therein.

Chapter two covers the global, regional and national maritime threat spectrum and the factors influencing the maritime insecurities, impact and mitigations measures

Chapter three covers the global, continental and national maritime resources exploitation challenges opportunities, impact and mitigation measures.

Chapter four examines the various agencies with the responsibility in promoting or providing maritime security. It also includes the role of the fishers' communities' contribution in protection of the maritime environment through the Beach Management Units.

Chapter five covers the summary, conclusions and recommendations of the study and suggested areas of further research.

CHAPTER TWO

MARITIME SECURITY THREAT SPECTRUM

2.1 Introduction

This chapter analyses the general maritime security threats spectrum and challenges in the African maritime domain. It starts with the overview of the maritime domain and its importance to mankind and examines the specific maritime security challenges and their implications on Kenya.

2.2 The Maritime Domain

The maritime domain is growing in stature and within a globalizing world; the importance of the sea is now even more accentuated. The oceans' growing stature increasingly plays out in innovation, competitiveness and knowledge as fundamentals to use the seas in a more constructive manner.³⁴ As a consequence, countries like Canada, Australia, China, India and Brazil are positioning themselves alongside more traditional maritime powers to utilize the political, economic and wider strategic potential tied up in the oceans.³⁵ A second consequence of the growing importance of the maritime domain and its lucrative offerings of commerce, information and resources is the reality of an increased criminalization of the maritime domain.

³⁴Suarez de Vivaro, JL & Mateos, JCR. "Ocean governance in a competitive world: The BRIC countries as emerging maritime powers – building new geopolitical scenarios". *Marine Policy* 34. 2010. 973.

³⁵Ibid P. 973–974.

Stated differently, the profitable aspects of the oceans are progressively also targeted by a growing variety of players ranging from loosely organized local crime syndicates to national, regional and also sophisticated transnational criminal networks. This is especially true in the case of ungoverned maritime spaces where littoral countries do not have the will or ability to carry out law enforcement in their maritime jurisdiction. In all of this, Africa is finding itself very much at the centre of the growing maritime security threats dynamics playing in the continent. Maritime security is a key component for any maritime nation intent or keen in exploiting its Oceans and Coastal areas for the benefit of its people.

2.3 The concepts of Maritime security

The term Maritime Security is an encompassing concept which involves many stakeholders in both the public and private sectors. The common aims of these varied stakeholders are to: (i) preserve the freedom of the seas, (ii) facilitate and defend commerce and, (iii) maintain good governance at sea³⁶.

Contemporary maritime insecurity emanates from transnational forces and irregular challenges. To secure its maritime zone Kenya must invest in both Maritime Security and Maritime Safety. By Maritime Security we refer to both preventive and responsive measures to secure the maritime zone against unlawful acts.³⁷ On the other hand Maritime Safety entails a combination of

³⁶ *ibid*

³⁷ *Ibid*

preventive and responsive measures undertaken not only to protect the maritime region but also to limit the effect of any human or natural disasters arising at sea.³⁸

The line of distinction is in whether the threat is man made or it arises out of unintentional risks and dangers. Safety concerns dangers posed either to ships, their crew and passengers or to the cargo and to general navigation. Basically the focus is on the protection of the maritime environment through regulations and techniques. Safety is usually a civilian responsibility that is realized through common efforts by state and non state actors. Ordinarily the IMO as a regulator keeps the appropriate standards for maritime safety.

Maritime Security is focused on operational requirements making a responsibility with no clear delimitations as relates Maritime Security Operations. Being a governmental responsibility, the state assigns a specific lead agency but which must coordinate and collaborate with other relevant government authorities to secure this important zone.³⁹

2.4 Maritime security threat spectrum

Africa is the only continent that suffers mostly from maritime insecurity. Although maritime piracy along the Indian Ocean coast of Africa has received much scrutiny, problems are much more complex. The maritime security threats have many faces and forms. They may range from piracy and armed robbery at sea to maritime terrorism. In addition there is illicit trafficking of people,

³⁸Lutz Feldt, etal ISPSW Strategy Series: Focus on Defense and International Security, Maritime Security – Perspectives for a Comprehensive Approach Issue No. 222 Apr 2013

³⁸ Ibid

³⁹ Ibid

narcotics, small arms and light weapons as well as cargo theft and global climate change. Other forms of security threats include inadequate regulatory systems and law enforcement capacity; insufficient security infrastructure, technology, operational capability and reach; lacking security cooperation; and last but not least, unsuitable ships and ports. The threat spectrum is discussed below:

2.4.1 Piracy

Piracy constitutes any illegal act of violence or any form of detention and depredation occasioned by private motivations on-board of a private ship or aircraft, and conducted within the high seas.⁴⁰ Historically, piracy is observed to have started over 4000 years ago with pirates hijacking ships to take goods that were carried onboard.⁴¹ Pirates such as the Vikings used long thin ships driven either by sail and wind or by slaves who rowed the boat quickly when they were chasing another ship. However, in the recent past, piracy has graduated into using modern boats driven by very high horse power engines and modern equipment and weapons. The IMB regards Piracy as the most prevalent threat to merchant shipping in the world. The IMB regards several key areas of the world oceans as particularly high risk areas from pirate attacks. These high risk areas include south East Asia and in Africa. In Africa the high risk areas include the states of the horn of and Western Africa especially in Gulf of Guinea. The IMB also reports that in 2013, there were 176 incidents of piracy worldwide, 10 of which occurred in the Gulf of Aden and 28 in West Africa. This is a

⁴⁰UN; Third convention on the law of the Sea(UNCLOS III) 1982.

⁴¹ Royal naval Museum: A brief history of piracy, Portsmouth, Royal Naval Museum library, 2002.

marked reduction from 297 attacks in the 2010 period where 150 incidents were recorded on the African coasts.⁴²

2.4.1.1 Impacts

Piracy causes serious challenges to coastal resource exploitation with devastating consequences, especially in countries which depend on fisheries as their economic mainstay. Piracy negatively affects the social and economic sectors of fishery-dependent countries, for example, Seychelles which is highly dependent on fisheries, has experienced about 4% decline in their GDP.⁴³ Piracy also undermined the development of the fishing business, for instance, there has been an observed price inflation of inputs into the seafood processing industry;⁴⁴ generated implications for the assessment and management of fisheries, for instance, piracy has shifted purse seining to the eastern areas of the Indian Ocean from the traditional fishing areas near Somalia. This also led to a 30% decline in gross tonnage of purse seine landings. This is in part due to a reduction in fishing licenses issued. Piracy has also created 'no-go zone' areas for marine and fisheries research vessels for fear of pirate attacks.⁴⁵ An example has been the effect this has had in authorization for the use of the Nansen research vessel to undertake stock monitoring above 10 degrees south, which includes waters of Somalia, Kenya and Tanzania.⁴⁶ This has subsequently affected employment and income to the fishing dependent communities and contributed to poverty.

⁴²IMB; Piracy falls in 2012 but seas off East and West Africa remain dangerous, ICC Commercial Crime Service, 16 January 2013

⁴³European Bureau for Conservation and Development (EBCD). *The impact of piracy on fisheries in the Indian Ocean*. Workshop report on the Impacts of Piracy on Fisheries in the Indian Ocean, International Workshop, Mahe, Republic of Seychelles, 28 February 2012

⁴⁴Daily media round up; *Somalia Report*. 30 April 2012. <<http://www.somaliareport.com>> accessed on 10 December 2015.

⁴⁵Ibid

⁴⁶Ibid

2.4.2 Narcotics Smuggling

The crime of Drug trafficking involves the cultivation, the manufacture, the distribution and sale of substances prohibited by drug prohibition laws.⁴⁷ The narcotics smuggling is a highly organized and highly protected business. According to the UNDOC, the combined value of heroin alone from Afghanistan and Myanmar is estimated to 37 billion dollars in January 2015.⁴⁸ The cocaine from Latin America is estimated to be worth 7 billion dollars.⁴⁹

Of late Africa has joined the league of major drug traffickers acting as transit route between South America and Europe. There is evidence to show that each year between 46 and 300 metric tons of cocaine from South American passes through West Africa on its way to Europe.⁵⁰ This new development can be accounted for by many factors. First there is a heightened demand for cocaine but also a more robust counter-narcotics regime which has seen most traffickers rerouting their business to areas with low levels of law enforcement capacity. Secondly Africa is thought to offer high returns due ease to engage in corruption by security agencies in many African countries.⁵¹ For instance traditionally most heroin from Afghanistan was transported to Europe either through Central Asia or through Iran.⁵² But in the recent past, East Africa has become the minor “southern route”. According to the economist, improved law enforcement in central Europe; the war in Syria and strict border-security checks along the Balkan Route account for this shift.

⁴⁷United Nation office of Drugs and Crimes (UNDOC). [Http://unodc.org](http://unodc.org). accessed on 10th December, 2015

⁴⁸Ibid

⁴⁹United Nations Office on Drugs and Crime, World Drug Report 2010 (New York: United Nations Publications, 2011), pp.16-30.

⁵⁰ Congressional Research service: Report for Congress; Illegal Drug Trade in Africa: Trends and U.S. Policy,2009

⁵¹ Ibid

⁵²The Economist: Report on drug trafficking in East Africa, Jan 2015

The modus operandi is that ordinarily dhows offload consignments of heroin from cargo ships off the shores of Kenya and Tanzania. These are then taken to the coastal towns from where they are transported to the airports in Kenya and Ethiopia en route to Europe. There is also a growing African market for Heroin especially in Zanzibar, Mombasa and Dar es Salaam. Heroin is also smuggled to consumers in South Africa and Nigeria.⁵³ The recent capture and destruction over 3000kg of heroin, the largest seizure in Africa, and the transporting vessel by the Government of Kenya (GOK) is an attestation to the growing illicit trade in southern route.

2.4.3 Human Trafficking

According to UNDOC human trafficking involves the movement of people from one place to another and subjecting them to forced labour. These could be men, women or children who are taken in as domestic, agricultural, factory or restaurant workers or forced into prostitution.⁵⁴ The human trafficking industry is a lucrative business. The ILO estimates that 2.5 million people are subjected to forced labour. Most of these are in Asia and the Pacific region, others in the Middle East and North Africa while others are in countries with economies in transition and sub-Saharan countries.⁵⁵ Women, it is believed, constitute 80%.⁵⁶ This inhuman trade is estimated to generate USD 32 billion trade per year globally.⁵⁷

⁵³ Ibid

⁵⁴ International Peace Research Institute: *on military security challenges*, Oslo, 2007

⁵⁵ International Labour Organization, *A Global Alliance against Forced Labour* (Geneva, International Labour Office, 2005).

⁵⁶ US Department of State, *Trafficking in Persons Report: 2007* (Washington, DC: US Department of State, 2008), P.8.

⁵⁷ United Nations Office on Drugs and Crime, "Human trafficking: organized crime and the multibillion dollar sale of people" 19 July 2012, http://www.unodc.org/unodc/en/frontpage/2012/July/human-trafficking_organized-crime-and-the-multibillion-dollar-sale-of-people.html [Last accessed 20 February 2014].

Africa plays its fair share in this type of trafficking as well. The flow of trafficking that originates from Africa is bound towards various destinations within the continent as well as to the Middle East and central Europe. According to 2004 estimates, some one million people were trafficked from Africa of which around one third were sent to the Middle East and Europe.⁵⁸

The Eastern African region is becoming a major hub for trafficking with Kenya reported as a major destination for victims from Somalia, Tanzania, Uganda, Ethiopia and Sudan.⁵⁹ The victims from the region are transported to the Middle East and Europe as the major destinations. According to the Society for International Development (SID), the port of Mombasa and the suburb of Eastleigh constitute the East Africa's major human trafficking hub.⁶⁰

2.4.3.1 Impacts

Illegal Trafficking in persons affects the victims, their communities and the nation. At the Individual level the effect could result in various forms of malnutrition as well as exposure to Sexually Transmitted Diseases. It also leads to unwanted pregnancies and forced abortions. This in turn could result in psychological disorders.⁶¹

The impact on communities may also be disastrous and may include loss of cultural knowledge as parents are not available to pass on traditions. It also may lead to separation of people of different

⁵⁸Patrick Belser, *Forced Labour and Human Trafficking: Estimating the Profits*, (Working Paper, Geneva, International Labour Office, 2005), P.17.

⁵⁹Greater Horn of Eastern Africa Outlook; Human trafficking report. (GHEA outlook) No 25

⁶⁰ Ibid

⁶¹US Department of State, *Trafficking in Persons Report: 2007* (Washington, DC: US Department of State, 2008), P.8.

generations where parents are trafficked away from their children. Worse still it can result to introduction of new values of delinquency and crime by victims into rural communities where they return. There other social-economic effects of trafficking including loss of human resources from source communities leading to declining economic development and less productive workers necessary for social security in society.⁶²

At the national level human trafficking is regarded as a threat to global security in the sense that it is in the larger sense often part of a larger phenomenon of organized crime. This inhuman trade is worth billions of dollars and in some states, is more than states fiscal budgets. This can consequently lead to subversion of civil liberties, social crimes that degrade public safety and adherence to the rule of law, increased corrupt habits of law enforcers, immigration officers, as well as judicial officers in a country. Also strong organized crime networks could arise with all their attendant menaces. These factors can lead to the traffickers overthrowing governments or putting regimes of their own in power.

2.4.4 Illegal Fishing

Illegal, unreported and unregulated (IUU) fishing, also known as pirate fishing usually involves vessels fishing in areas where they do not have a license to operate; it can take place in territorial waters or on the high seas by foreign or domestic vessels. According to High Seas Taskforce Report 2006, the most common forms of IUU fishing in Africa include either or all of the following:

⁶² Ibid

- i) Unauthorized fishing in closed areas or seasons,
- ii) Illegal fishing by foreign vessels,
- iii) Fishing with fake licenses of vessel registration,
- vi) Non reporting or misreporting of catches,
- v) Fishing of protected species,
- vi) Taking fish in excess of allowed quota,
- vii) Using prohibited gear and methods,
- viii) Illegal transshipment and landing in unauthorized ports,
- ix) Fishing without an observer on board and
- x) Failing to operate a Vessel Monitoring System (VMS) to evade detection.⁶³

Losses in IUU run into billions of dollars. As with any illegal activity, estimating the extent of IUU, fishing is difficult. The Marine Resources Assessment Group (MRAG) and the University of British Columbia estimates that between 11 and 25 million tonnes of fish is caught via illegal via illegal or unregulated fishing every year.⁶⁴ This translates to a global cost of estimate of between USD 10 billion to USD 23 billion per year.⁶⁵ Developing countries are particularly vulnerable to IUU fishing. In Africa, IUU is estimated to be around 40 percent that would costs the continent roughly 9.2 billion dollars per year.⁶⁶

⁶³High Seas Taskforce Report,2006

⁶⁴ Marine Resources Assessment Group (MRAG), University of British Colombia. 2008

⁶⁵(Agnew et al; Extent of illegal fishing, National Institute of Health. London 2008)

⁶⁶Environmental Justice Foundation, *Pirates and Profiteers: How Pirates Fishing Fleets are Robbing People and Oceans* (London: 2005), PP.2-8.

2.4.4.1 Impacts

IUU fishing poses serious environmental, social, and economic challenges to countries and communities that rely on fish for food, employment and revenues. In addition, it poses serious challenges to the effective management and conservation of fisheries.⁶⁷ According to research, IUU may affect Fisheries and coastal states in a number of ways. Some of it is increased fishing mortality and secondly it is difficult to determine how much the target stocks were damaged. In addition there could be conflict with non-IUU fishermen especially the local fishermen who uses artisanal fishing method.⁶⁸

2.4.5 Armed Robbery at Sea

IMO defines Armed Robbery as any illegal act of violence that is committed for private gains and directed against a ship or persons, within a country's territorial waters.⁶⁹ In Africa armed robberies at sea incidents are on the increase with most of the reported cases in West Africa especially in the Gulf of Guinea.

Armed robbery at sea is a slightly different phenomenon than piracy. Unlike pirates who are more in number, there are usually not more than 20 armed looters that board ships and speedily snatch whatever is there to take. They usually come on speed boats and conduct their activity in a fast fashion. Rather than being called pirates the perpetrators are referred to as gangs of robbers. Armed robberies unlike the piracy activity take place near the shore and not in high seas.

⁶⁷Balton P: Fish Piracy; combating illegal, unreported and unregulated fishing, Flanders marine Institute, DA 2004

⁶⁸ Ibid

⁶⁹ICC International Maritime Bureau: Report of Piracy and Armed Robbery at Sea, 2015, P. 3

This illegal activity started gaining popularity amongst the poverty stricken population Africa in the 80's. However today robbers have become more sophisticated and their loot has become detailed, the looters are not only interested in cash and valuables but also oil barrels. Not only are these robbers operating near the shore but they are also venturing out deep into the sea. The conduct of their operations has become more violent and murder is also becoming rampant in such episodes. The criminal organizations are also conscripting the services of fishers for moving inlands, looting banks, and making escape through the seas.

2.4.6 Arms smuggling

Africa has become a major destination of arms smuggling due to the ready market availed by intra-state conflict. Trade in illicit arms emanating from major producers has created a global enterprise valued at US\$1billion which is equivalent to 10-20% of the global trade.⁷⁰

Small arm trafficking has and continues to have devastating consequences for the African continent as evidenced by the conflict among countries of the horn and those of the great lakes. Small arms and light weapons are the main tools of violence used to prosecute the continued conflicts in the continent over the past two decades have contributed to the ever increasing deaths and injuring thousands of innocent civilians in parts of Africa.

The main sources of SALWP in Africa are China and Israel. Most of these arms are remnants of Cold War weaponry that remained unused or they could originate from global arms brokers who

⁷⁰Africa Analyst: *Illicit arms trade in Africa*, Issue 1, 2006.

violate existing arms sanction regimes⁷¹. For instance in 1999 a 68-ton weapons cache was supplied to the RUF in Sierra Leone⁷². The most important aspect is that they are shipped through Oceans making the maritime zone volatile and affecting the peaceful use of the water ways.

2.4.6.1 Impacts

Arms smuggling in Africa has the following four principal effects;

First, Human Rights and International Humanitarian Law are the first casualties of preference of small arms and light weapons in society. These weapons are used to deprive people of their basic freedom and other important entitlements. In that sense these weapons impact on the citizens' lives groups or persons seek to acquire weapons in order to exercise their will or control on others.⁷³ Possession of Illicit arms plays a significant role in determining the winners of a particular conflict and also affects the intensity and duration of such conflicts. Secondly and sadly conflict perpetrators use these weapons to target civilians are often the deliberate targets of armed attacks during armed conflict in direct violation of International Humanitarian Law. Attacks on civilians compel conflict perpetrators to buy SALW for self defence hence increasing the supply and militarizing the conflict zones.

⁷¹

⁷² Ibid

⁷³ Mike Bourne, et al., "Implications of Illicit proliferation and misuse of SALW " in *Reviewing Action on Small Arms 2006: Assessing The First Five Years of The Programme of Action by Biting the Bullet* (London: International Action Network on Small Arms[IANSA], Biting The Bullet Project, 2006): P231

Thirdly, Economic development has been slow in conflict-ravaged countries, and in some cases for those ravaged by war like Somalia development is nonexistent. Conflict impacts development as it obstructs delivery and access to public goods.⁷⁴

Lastly, governance is also negatively impacted by SALW. The authoritative allocation of values in a society has direct impact on social-economic development and provision of a safe and secure environment. Presence of SALW in a country degrades good governance. High preference of violence occasioned by SALW proliferation in both conflict affected and non-conflict areas impacts on governance as the rule of law is eroded.

2.4.7 Illegal Trade

Africa has been faced with the challenge of illegal trade of general consumers products which is mainly an economic issue causing the loss of millions of dollars. The severity of the problem is evident from the fact that illegal trade amounts to tens of millions of dollars for a single coastal African country. Tanzania, for instance, lost around \$60 billion worth of revenue simply because of illegal transactions and also because of under valuation of the bulk of trade.⁷⁵ It is important here to note that Illegal trade can take a lot of shapes and some crimes like logging, wildlife, poaching animals for artefacts, money laundering, and counterfeiting all come under the umbrella term of illegal trade.

⁷⁴ Human Development Report, 2005

⁷⁵ Mark Curtis and Tundu Lissu, A Golden Opportunity? How Tanzania is Failing to Benefit from Gold Mining (2nd ed). October 2008, P.15.

2.4.8 Pollution

Over the last two decades, there has been massive pollution of the marine zone of the East African coastal areas.⁷⁶ One of the major sources of pollution that has caused most damage to the environment is toxic waste dumping and pollution emanating from human land-based activities. In 2004, in the wake of the tsunami that hit the Indian Ocean, a grim reality was exposed: the extent of the presence of highly toxic waste dumped along the Somali coastline. The waves smashed open barrels containing toxic waste that had been dumped there since the early 1980s. According to a story carried by Britain's Sunday Times, warlords in Somalia were paid by European firms to allow dumping of toxic waste in waters adjacent to their fiefdoms.⁷⁷ In February 2005, the United Nations Environment Programme (UNEP) issued an official statement in which it confirmed that Somalia's coastline had been used for many years by other states to dump nuclear and other hazardous waste. The reason proffered for the toxic waste dumping was as a result of the long war experienced in the country making it difficult for the authorities in Somalia to monitor shipments or to prohibit and sanction dumping of toxic waste in its territorial waters.⁷⁸

Most of the waste comprised of uranium, lead, cadmium, mercury, industrial and hospital waste, chemical waste, leather treatment and other toxic waste which are pollutants of the first rank. The

⁷⁶ See Intergovernmental Panel on Climate Change (IPCC). *IPCC expert meeting on detection and attribution related to anthropogenic climate change – meeting report*. The World Meteorological Organization, Geneva, 14–16 September 2009. <<http://www.ipcc.ch/pdf/supporting-material/expert-meeting-detection-anthropogenic-2009-09.pdf>> Accessed on 9 August 2010.

⁷⁷ Clayton, J. "Somalia's secret dumps of toxic waste washed ashore by tsunami". *The Times World News*. 4 March 2005. <<http://www.timesonline.co.uk/tol/news/world/article418665.ece>> Accessed on 18 November 2011; Carazzolo, B., Chiara, A. & L. Scalettari. *Ilaria Alpi: Un Omicidio Al CroceviadeiTraffici* (2nd ed). Milan: Baldini&Castoldi, 2002, 206.

⁷⁸ United Nations Environment Programme. "Rebuild differently after tsunami, United Nations Environment Programme advises in new report". Press Release UNEP/268, 22 February 2005. <<http://www.un.org/press/en/2005/unep268.doc.htm>> Accessed on 1 November 2014.

dumping was mostly done in containers left in the beaches and other disposable leaking barrels. The effect of all this is risky health conditions of the local communities along the Somali Coast line.⁷⁹ Marine pollution, however, is mostly the result of human land-based projects.⁸⁰ Similarly, marine pollution in the East African region has mainly come from land-based sources that include landlocked hinterland states that are heavily dependent on agriculture with rivers feeding into the Indian Ocean. The siltation caused by agricultural activities is a major pollutant to the marine environment.

2.4.8.1 Impacts

Marine pollution undermines the viability and sustainability of livelihoods on the East African coast. The health and well-being of the coastal populations is largely dependent on the well-being of the marine ecosystem.⁸¹ Marine pollution affects fish and other marine-living organisms. This may lead to shortages of food and fewer employment opportunities in the affected region.⁸² Reduced food supplies and fewer employment opportunities, coupled with a growing population, could give rise to heightened incidences of criminality as a source of livelihood.⁸³ Such criminal activities raise insecurity in transit states, directly affecting transportation of cargo to landlocked

⁷⁹ See United Nations Environment Programme. "After the tsunami – rapid environmental assessment". UNEP Asian Tsunami Task Force, UNEP, Nairobi, 2005. <http://www.unep.org/bh/Publications/Somalia/TSUNAMI_SOMALIA_LAYOUT.pdf> Accessed on 18 November 2011, 126–137.

⁸⁰ United Nations Environment Programme, *Overview of land-based sources and activities affecting the marine, coastal and associated freshwater environment in the Eastern African Region*. UNEP Regional Seas Reports and Studies No. 167, 1998.

⁸¹ Ibid

⁸² UNEP/UN-HABITAT; "Marine pollution and the role of cities". September 2005. <http://www.unep.org/urban_environment/PDFs/Coastal_Pollution_Role_of_Cities.pdf> Accessed on 18 November 2011.

⁸³ United Nations Environment Programme. "The state of the environment in Somalia: A desk study". <<http://books.google.co.ke/books?id=PBQxW3lmXLgC&l#v=onepage&q&f=false>> Accessed on 1 November 2014

hinterland states, Moreover; criminal activities may occasion activities directly imperiling maritime security, such as piracy and other organized crimes.

2.4.8.2 Maritime Terrorism

This entails undertaking of terrorist like acts and activities within the maritime zone. It may involve the use of vessels in the sea or at the port. But also the act could be targeted towards a fixed platform, personnel, facilities or settlements within the port towns.⁸⁴ Unlike Piracy which is motivated by private gain, maritime terrorism is motivated by political goals.⁸⁵ Maritime terrorism is less of security problem in the maritime domain as compared to piracy. The private orientation of piracy makes more common as compared to terrorism which has a political orientation.

Despite the fact that maritime terrorism is thought to be a less serious threat it can not be totally ruled out. Just like other terrorist acts, and attack at sea could have very devastating consequences. In fact the sea is more vulnerable to terrorist attack as sinking of a commercial ship can produce the maximum economic impact commonly sought for by terrorists. At times ships can also be converted into floating bombs or as delivery vehicles for bombs. The 1979 terrorist attack of yacht of Lord Mountbatten, the 2000 attack of the USS Cole by Al Qaeda and the 2004 attack of the Super Ferry 14 in Indonesia are telling examples of the devastation associated with Maritime Terrorism.

⁸⁴ The Council for Security Cooperation in the Asia Pacific (CSCAP) Working Group

⁸⁵ International Maritime Bureau, Status of Piracy,2013

2.4.8.3 Impacts

South East Asia is a region that has experienced most of the cases of maritime terrorism. The Eastern African region has not experienced any maritime terrorism incidents but has experienced many terrorist attacks on land. It is believed from intelligence circles that the an Al Qaeda controlled the cargo ship that delivered the explosives that the terrorists used in the twin attacks on US Embassies in Tanzania and Kenya in August 2008. This resulted in the killings over 224 people and injuries to over 5000.⁸⁶ It is also believed that Al Qaeda has been buying ships since 1994.⁸⁷ There is increasing symmetry in terrorism and piracy in West Africa's Gulf of Guinea and the Horn. In fact a similar scenario can be replicated down in the Eastern African region.

2.4.8.4 Mitigation

Given the monumental costs of this threat, there should be put in place mechanisms of cooperation for regional and national maritime security agencies to mitigate this transnational threat.

2.4.9 Maritime Boundary Disputes

Mostly due to their colonial legacies, African land borders have been poorly demarcated in a manner that allows for unfettered and undocumented movement of people and goods. This is seen as a major source of dispute among countries who either seek to control of existing natural resources in the region or to influence external relations of the region but can not agree on maritime boundaries.

⁸⁶CNN. Nairobi and Daressalam Us Embassy Attacks,8 august 1998. [Http://edition.cnn.com](http://edition.cnn.com) accessed 18 Jan 2015

⁸⁷ Michael Richardson,ISAS Singapore.

Oil and Gas deposits are trans-boundary resources as such cause most disagreements among Africa states. The Kenya-Somali maritime boundary dispute is the most recent of this type among where the limits of neighboring and adjacent state's maritime boundaries may differ. Increased oil find and other natural resources exploration along the African coasts has heightened international companies interest in Africa. The effect is that such multinational influence government policies especially those of developing countries in need of technology transfer among other favours. This makes such counties vulnerable to conflict interests of the multinational companies leading to national maritime disputes. The 1982 United Nations Convention on Law of the Sea (UNCLOS) points out the rights and duties of every littoral state and provides a firm regime to address maritime disputes.

However, UNCLOS has been criticized on its EEZ, the Continental Shelf and the OCS delimitations. Most of remain unclear and states depend on own interpretations. Lackly enough the International Court of Justice (ICJ) and the International Tribunal on the Law of the Sea (ITLOS) have however created significant judicial precedent on the delimitation rules to be applied in the delimitation of these maritime zones as between neighboring and adjacent nations.

The exploitation of maritime natural resources rekindles long forgotten boundary disputes. Currently, maritime boundaries have developed between Kenya and Somalia and between Côte d'Ivoire and Ghana.⁸⁸ States need secure maritime environment for the pursuit of economic and

⁸⁸ISS August 2015

security interests. At times pursuit of these vital states interests lead to tensions and war – a situation commonly express as the Africa resources curse.

States require control of their maritime zones in order to develop appropriate technology for the exploitation of the Ocean resources⁸⁹. There is also growing interest by African states to open new Oil fields as such these states are courting new and well established oil companies leading to potential disputes.⁹⁰ Lastly, exploitation of Africa's Oil has comparative advantages compared to that of Europe and the USA.⁹¹

2.4.9.1 Impacts

Unresolved maritime boundary claims and competition over coastal resources seriously jeopardizes Africa's efforts towards the realization of regional maritime security communities. Such communities are important for the creation of combined economic zones and for executing joint anti-crime operations. If these efforts are not realized it impact negatively on Africa's envisaged blue economy by 2050 in her Integrated Maritime Strategy (2050 AIMS).⁹²

The absence of Integrated Maritime Strategy in Africa generates disputes which could result to war among African states.⁹³ This situation also impedes the fight against maritime crime such as piracy which requires effective cooperation between states. There is a risky of increased Piracy

⁸⁹Centre for Boundary Research; *A rise in African Maritime boundary disputes*, Dec 2014.

⁹⁰ Ibid

⁹¹ Ibid

⁹² AU: Agenda 2063, Addis Ababa, 2014

⁹³ 2050 AIMS, paragraph 18. For the 2050 AIM strategy, see [http://www.AU.int/Mari time](http://www.AU.int/Mari%20time) (accessed 1 August 2015).

and other maritime crimes if states perceive each other as threats to their national interests and sovereignty.⁹⁴

2.4.10 Climate Change

The Intergovernmental Panel on Climate Change's Fifth Assessment Report published in 2013 stated with "high confidence" that "the rate of sea level rise since the mid-19th century has been larger than the mean rate during the previous two millennia" and that "it is virtually certain that the upper ocean (0-700 meters) warmed from 1971 to 2010."⁹⁵ This is disastrous as it damages port and other maritime infrastructure in the Indian Ocean region. The net effect is on ocean environmental systems and human well-being. The rising sea levels and climate change threaten coastal regions with habitat destruction, biodiversity loss, shoreline erosion, saltwater intrusion into rivers and freshwater aquifers, severe storm surges, and the forced displacement and migration of populations, particularly of low-lying island nations like Mauritius, the Maldives, and Seychelles. Additional stressors of the oceans such as weak management, pollution, and resource exploitation, have the potential to drastically harm human well-being. Thus, food security, economic security, and regional security are closely linked to fisheries, which sustain the livelihoods of more than 38 million people worldwide.⁹⁶

⁹⁴ Ibid

⁹⁵ Regional state of Cost report; Western Indian Ocean,2014

⁹⁶ Ibid

2.4.10.1 Impact

The coastal region contributes significantly to the economic development of the country. Mombasa which is the second largest town in Kenya and a major port with huge fisheries projects is located in the coastal zone. Significant sea level rise will have serious effects on the livelihood and the well-being of a large proportion of the coastal population.⁹⁷ A rise in sea level can cause tidal inundation, initiate or exacerbate coastal erosion, impede coastal drainage and augment saline intrusion. In the recent past, the effects of climate change have been experienced in the northern coast of Kenya where a village had to relocate inward after the sea level rise and their livelihoods have been seriously affected.⁹⁸ Without an effective management system and legal framework, issues of water pollution, rising water temperatures, ocean acidification, and IUU fishing have the potential to devastate African fisheries and, consequently, the physical health, socio-economic well-being, and overall security of local populations.⁹⁹

2.4.11 Port and the Maritime Transportation System

Worldwide Port and shipping operations and their associated facilities and infrastructure collectively represent one of the single greatest and vulnerabilities challenges to the security of nations and the global economy today. The reason that ports and shipping activity are so difficult to secure lies primarily in their topography.¹⁰⁰ Ports are typically large, asymmetrical activities dispersed over hundreds of acres of land and water so that they can simultaneously accommodate

⁹⁷ International Convention on rational use of coastal zone. Sea level Rise in East African coastal Region,2009

⁹⁸ Ibid

⁹⁹ Ibid

¹⁰⁰ United States Government: Maritime and port security white paper,2008.

Ship, truck and rail traffic, petroleum product/liquid offload, storage or piping, and container storage. The movement of freight, cargo and transport through a port is generally on a “queuing” system, meaning that any delay snarls all operations.¹⁰¹

Globally, there are very few uniform standards for point-to-point control of security on containers, cargoes, vessels or crews - a port’s security in one nation remains very much at the mercy of a port’s security, or lack thereof, in another nation. Organized crime is entrenched in many ports, and a large majority of them still do not require background checks on dock workers, crane operators or warehouse employees.¹⁰² Most ports lease large portions of their facility to private terminal operating companies, who are responsible for their own security. The result of this is a balkanized, uneven system of port security and operations management as a whole. With over 95 percent of the world trade dependent on maritime transport.¹⁰³ This fact alone makes maritime networks an attractive target of terrorists. While terrorists have in the past targeted land or aviation assets, experts believe that this could soon change to include shipping, port, coastal facilities, and container/container yards because of their vulnerability and the increased surveillance and hardening of land and aviation facilities and transportation.¹⁰⁴

When captured in November 2002, Abdal-Rahim al-Nashiri, Al Qaida’s operations chief in the Persian Gulf confessed that they had developed a four-pronged strategy to attack Western shipping

¹⁰¹ Dianne Feinstein “Our Vulnerable Seaport Security” op-ed column in the San Francisco Chronicle 7 April 2003.

¹⁰² United States Government: Maritime and port security white paper, 2008.

¹⁰³ www.unctad.org/en/docs/rmt2003_en.pdf

¹⁰⁴ Paul Blustein and Walter Pincus; “Port Problems Said to Dwarf New Fears,” Washington Post, 24 February 2006, para 16.

targets that include ramming vulnerable vessels at sea, blowing up medium-sized vessels at ports; attacking vulnerable, large cargo ships such as super tankers from the air by using explosive-laden small aircraft and Underwater attacks by divers or attacking vulnerable, large cargo ships such as super tankers from the air by using explosive-laden small aircraft, Underwater attacks by divers or suicide demolition teams, using limpet mines. It is believed that targeted the bombing of the USS Cole in 2000, and the French tanker Limburg in 2002 was conducted by Al Qaida operatives trained by Al-Nashiri who was an explosives expert, specializing in naval demolition sabotage.¹⁰⁵

2.4.11.1 Impacts

Ports and shipping remain attractive targets for criminals and organized crime because of the centralized aggregation of both containerized and warehoused goods that often have not yet been subjected to end-user accounting and valuation. Terrorists are increasingly aware of the fact that the maritime industry represents an exploitable soft target in terms of smuggling in arms, personnel, or lethal WMD components and as a point of attack. They understand the fact that a strike on a large port facility like the port of Mombasa could cripple a nation's economy, significantly impact world stock markets and cause significant casualties and potential long-term environmental damage.

2.4.12 Lack of capabilities

Naval capabilities for high-intensity operations can be useful in dealing with the technological challenges posed by pirates, and drugs and human traffickers. Helicopters, small maritime patrol

¹⁰⁵David Eshel: The Threat of Maritime Terrorism: Defense Update, 10 December 2005

aircraft, drones and even aerostats make a significant contribution to the interception, and/or deterrence of illegal activities at sea.¹⁰⁶ In the Caribbean, the smugglers use commercial vessels and yachts but often resort to so-called 'speed boats', which operate at speeds with which few patrol raft or warships, can compete. Africa is a scenario where pirates or smugglers use both small high speed boats and dhows. With dispersion due to large areas, these operations require large long-range helicopters of the sort that can only be carried on bigger offshore patrol vessels, corvettes and frigates are therefore invaluable for this role. They may need to carry weaponry that can shoot out the engines of boats that will not stop. Should the smugglers resort to submersibles, which are usually only detectable by their wake, or even submarines, sophisticated radars and surveillance systems are often the most effective means of detecting them. These capabilities are non-existent in most navies of the continent. It is only South Africa and Egypt which have relatively such capabilities but fall outside the hotspots for piracy and smuggling. It is important to note that these capabilities are required for effective deterrence and disruption at sea.

It is therefore encouraging to note the extent to which African countries are beginning to invest more substantially in the defence of their own maritime interests. Around West Africa, for example, Nigeria has taken a strong lead in the establishment of an Information Fusion Centre and the acquisition of patrol boats, helicopters and ground- and sea-based maritime surveillance systems.¹⁰⁷ This particularly applies to the seas around Africa, where few countries have the necessary level of GDP (estimated at about US\$10 billion) to operate effective coastguards/navies.

¹⁰⁶Jane's Defence Weekly "Anti-piracy sensor for Fire Scout", 20 June 2012.

¹⁰⁷Nkala, O. "African countries ramp up maritime surveillance capabilities". *DefenseNews*. 2 September 2013.

The result is a vast area of seven to eight million square kilometers of sea policed accordingly by too few assets, many of which are barely serviceable, although the growing economic power of the African continent will hopefully generate greater resources in the future for naval capability acquisition.

2.4.13 Lack of Cooperation

Since maritime crimes are not limited to the borders of any specific country, there is Need for both inter-state and regional cooperation. These operations are however very expensive.¹⁰⁸ Since all countries are potentially affected by maritime crime due to the percentage of trade carried by sea, , all countries should contribute to maritime security enforcement including the landlocked countries, who have a right for use of sea by law. In spite of this, it seems as if landlocked states are in no hurry to become involved in the combating of piracy or other maritime crimes. Memorandums of understanding (MoUs) on cooperation are generally only reached between Coastal states, specifically those most heavily affected by piracy. In Africa, only a small number of states have the financial resources and training necessary to conduct such operations on their own.¹⁰⁹ This is further exacerbated by the fact that not all countries have navies. It has been shown that cooperation between states can be effective in the management of piracy. The reality however is unequal regional and inter-state cooperation due to lack of resources.

¹⁰⁸Guilfoyle, D. "Counter-piracy law enforcement and human rights". *International and Comparative Law Quarterly* 59/1. 2010. 143.

¹⁰⁹ *ibid*

2.4.13.1 Mitigation measures

The growing maritime security threats landscapes off the East, West and Central African regions tie into mounting continental and regional consciousness to a growing response spectrum to prevent or contain the effect of maritime security threats. Regional platforms are being used to mobilize member states to take a closer interest in events in their waters and also cooperate in order to effectively address threats destabilizing their regions. The regional approach further builds on the continental consciousness directed from the African Union Commission and that of the United Nation that encourages regional bodies to cooperate and act collectively against maritime threats. Regional approach paves the way for actors to cooperate more intelligently in order to address unfamiliar threats. This can be achieved through conduct of joint patrols and surveillance, information sharing, coordination and prosecution of maritime crimes in respective countries and also joint acquisitions and sharing of naval platforms as adopted by European and NATO naval forces in their current anti-piracy operation in the Gulf of Aden and high risk areas in the Indian Ocean.

CHAPTER THREE

3.0 KENYA'S MARITIME RESOURCES AND EXPLOITATION CHALLENGES

3.1 Introduction

This chapter analyses the Kenya's Marine resources and underlying challenges in their positive exploitation. It starts with the description of the coastal habitats that are critical in supporting and sustaining the marine resources in the coastal ecosystem concluding with threats to the exploitation, implications and recommend possible mitigation measures.

3.2 Biophysical setting of the Kenyan Coast

Kenya's coastline extends 563 km, from Somalia's boundary at Shakani to the north of Tanzania's border at Vanga in the south. The Kenyan coastline has features in line with the coastline from the border point of Vanga with Tanzania to Malindi with an extensive mangrove forests along the shores.¹¹⁰ River Tana and River Athi are two major streams that empty their waters into the Indian Ocean. The River Tana originated from Mt Kenya is the longest with a length of around 850 km and a water structure of around 127,000 km² and releasing 4,000 million cubic meters of water that does not include salt and 6.8 million tonnes of residue at Kipini where it enters the ocean forming the Tana Delta.¹¹¹ The Athi River is the next river and originated from the central highlands. On its way down stream, it is joined by the Tsavo in the lower basin changing name to

¹¹⁰UNEP:) Eastern Africa Atlas of coastal resources: UNEP Regional Reports and Studies, No. 1 Nairobi, 1998.

¹¹¹Kitheka et al: Fluxes and suspended sediments in tidal inlets draining a degraded mangrove forest in Kenya. *Estuarine, Coastal Shelf Science* vol 56, PP 655- 667.

Galana River before entering the Indian Ocean at Sabaki in Malindi. The river Athi-Galana-Sabaki system is at length of 390 km and empties a water structure area of 70,000 km².¹¹²

It is estimated that the yearly drainage of water that does not contain salt from Athi Sabaki river into the sea is 6 million m. The large amounts of residue into the streams, is attributed to poor utilization of the land such as soil erosion which cause a menace to the endurance of coastal plants ranging from mangroves to coral beds which are seen as big tourist appeals.

Kenya's global shelf is around 2-3km to 200m offshore. The continental shelf is conquered by white sands and deposits. It is estimated to be an area of approximately 19,120Km² of which around 10,994km² is of very significant importance to Kenya as it serves as the fishing ground for local fishers communities.¹¹³

The Kenyan coast is also influenced by four oceanic currents namely the EASC, SC, ECC. During the heavy rains the EASC travels north of Malindi where it connects with the Somali current.

This interaction between EACC and SC creates Temperatures ranging from warm to cool which has an influence over the output of marine ecological community leading to cooler temperatures in the north.

¹¹² Government of Kenya: State of coast report: Towards Integrated management of Coastal and Marine resources Management, NEMA, Nairobi, 2009.

¹¹³ UNEP: Eastern Africa Atlas of coastal resources: UNEP Regional Reports and Studies, No. 1 Nairobi, 1998.

3.3 Critical Coastal Habitats.

The coastal ecosystem is categorized as one of the sea rocks in the East African seas classified as part of the coral coast of the East African Marine system by the World Wildlife Fund (WWF). This ecosystem ranges from swamps to shores. The ecosystem provides support and production of marine life and also provides livelihoods and income generation activities for the communities. These critical habitats within the Kenyan coast and their significance are discussed in the sections below.

3.3.1 Mangrove forests and coastal wetlands

Mangroves are salt tolerant evergreen forests. They are forests which lie between land and water. These forests are mostly found in the northern part of the Kenyan coast and the lifelong Tana/Sabaki estuaries. The Total number of mangroves in the country stands at 61,000 ha.

The mangrove forests play an important role in nurseries and providing fish with food. They are rich in nutrients. This is beneficial to the fish and other species since they live mostly inside waters. The mangrove forests are also important to the people of the coastal region. Their logs have a variety of uses ranging from construction to cooking.

Threats. Increased population and a high market demand especially for poles and firewood have led to over-exploitation of the resource in several areas, particularly in the vicinity of urban centers. Inadequate number of Forest Guards and lack of operational boats have been the biggest handicap to the effective patrols of the resource. Conversion of mangrove areas into other activities like urban development especially in Lamu county and salt pans in Malindi have resulted in the reduction in acreage of the mangrove areas. In addition, oil spills and pollution from industrial waste particularly in Mombasa have been responsible for mangrove death, while sea level rise has

reportedly caused death to frontal zone mangrove species. Increased soil erosion and the subsequent sediment deposition as well as excessive flooding associated with heavy rains such as the El Nino phenomenon of 1997/98, has resulted to mangrove destruction especially on the river estuaries. Infestation by pest has been reported to a lesser extent but these threat is minor as compared to the rest. It is averaged that over 16,000 ha of mangrove plantation has vanished due to pollution and other environmental threats. It is also estimated that 10310 ha of mangrove forest cover has been lost either due to conversion pressure, over-exploitation or pollution.¹¹⁴

Mitigation measures. There has been no management plan that has ever been prepared and implemented on Kenya's mangroves. Thus, an inventory for mangrove species has not been done despite continued harvesting of the resource. Prior to the moratorium on exploitation of mangroves and the subsequent lifting of the ban, licensed dealers have been operating in specific localities and remove specified quantities under the control of Forestry Department. The criteria for allocation have however been more of ad hoc basis as opposed to conformity to a harvesting plan, a situation that could easily lead to over-exploitation. There are several tourist hotels and facilities within the mangroves forests temporarily licensed by Forestry Department but their activities cannot be controlled by forest department alone and there exists no coordination mechanism between Forestry Department and other marine Agencies. Therefore, a need arises for coordination of the agencies and also need to take an inventory of private and business premises within the mangrove areas in order to ascertain their status regarding the licensing and activities. In view of the above scenario, there is a need to ascertain the status of mangroves in Kenya with a focus on Preparation of a comprehensive management plan for the National mangroves, develop and

¹¹⁴Abuodha, P and Kairo J. G. Human induced stresses on mangrove swamps along the Kenyan coast. *Hydrobiologia* 2001, 448 PP255-265

implement a mangrove management plan, there is need for a Re-forestation and rehabilitation of degraded mangrove areas, a need to establish a monitoring mechanism of mangrove health, sensitization of the local communities and policy makers on the opportunities and as well as threats of the mangrove forests.

3.3.2 Sandy beaches and sand dunes

Beaches with loose particles are common along Kenya's coastline and they are controlled by marine deposits. Some of the places consist of sandy hills caused by breeze from the seaside. The biggest dunes take place in the Tana River and they play an important role in wildlife and other resources. Small beaches which comprise of loose particles are usually seen off shores.

Beaches play a vital role for animals like sea turtles where they hatch their eggs in the environs of the beach.

Threats. Beaches are the link between land and sea. Therefore, because of the intensity of economic activities on land, there has and continues to be a habitat modification. This has serious consequences on the endangered animals and human beings way of living. The effects of climate change are already being experienced and have resulted in changes in sea level and coastal erosion with significant effects on the beaches and other near shore and coastal habitats like the coral reefs, mangroves and bottom sediment ecosystems.¹¹⁵

Mitigation measures. To remedy the situation, there is need for clear guidelines and regulations to control physical planning in near shore areas. These calls for a coastal planning and developments guidelines or regulations enforced under a integrated coastal zone management plan

¹¹⁵Maina et al: Human deforestation Outweighs future climate change impacts of sedimentation on coral reefs.,Natural community,4,2014.

to provide for effective inter agency coordination and cooperation in development activities in near coast areas.¹¹⁶

3.3.3 Coastal pelagic habitats

Below the global shelf lies the coastal zone. This is an area where provision is controlled by radiance and food. Principal and second provisions are dependent on the monsoon activities in Kenyan seas. Vigilance over the coastal fishery is a major issue and hence it is hard to get the right data of fish captured by foreign ships. This is the area where uncontrolled fishing ships trespass Kenya's borders and special economic area.

Threats. The pelagic zone is threatened by degradation of the quality of water which is polluted as a result of waste and oil spills. This has led to decline in pelagic species like sharks and other bottom fish species. Poaching by foreign trawlers has also precipitated the decline. This has been aggravated by weak monitoring, control and surveillance capabilities of the fishery Department. Lack of a legal framework for cooperation and coordination by other maritime security agencies *erodes the effectiveness of the agencies protection and prevention of this negative exploitation of the fishery resource.*

Mitigation measures. Most of the coastal pelagic zone lies in the EEZ and this is a very wide area. The fishery department has no sufficient capabilities to monitor control and conduct surveillance. However, this gap can be bridged by cooperating and coordinating with other agencies that have capabilities. Therefore there is need for interagency cooperation and coordination of sea activities. This can be done by amending the respective Acts and regulations.

¹¹⁶Government of Kenya: Kenya state of coast Report 2009, Nairobi, Kenya.

This legal framework will allow the actions of the agencies that are not directly responsible for fishery protection to be allowed or recognized by law. As it stands, it is only fishery officers that can enforce fisheries laws. It is also recommended that a fish port be established, that will give incentives for foreign trawlers to process their fish local. With these, the country will benefit from taxes and employment creation. There is also need for regional cooperation for trans boundary control of migration movements of fish because of the pressure and impacts of climate change. This calls for bilateral actions on countries sharing the sea to control resource extraction and management.¹¹⁷

3.3.4 Seagrass Beds

SAV develop from sea plants and have developed to function in marine surroundings. SAVs contain leaves and produce their own food through a process called photosynthesis. SAVs do not have robust axis and branches to withstand power on the surface. Their blades are held by floatability of water thus remaining adjustable when unveiled to different temperatures.

Seagrasses occur in broad bed that shelter the biggest size of beach bends and form a significant environment for many animals which live inside the systems. The SAVs also play a role for species which are extinct.

Threats. Threats to seagrass are attributed to sedimentation in the Sabaki catchment area, beach seining in the seagrass intertidal area and shallow water trawling.¹¹⁸

¹¹⁷ Ibid

¹¹⁸ Katwijk et al: Sabaki River sediment load and coral stress; Correlation between sediments and condition of the Watamu- Malindi reef systems in Kenya. Mar. Biol 167:675-683

Mitigation Measures. There is no legislation in place to protect seagrass beds in Kenya. However they are protected under Marine Protected Areas (MPAs) but receive no appropriate awareness and because of this most of them are in MPAs. There is need for fisheries department and the government to invest in further more analysis to generate data required to be used in their administration.

3.3.5 Sediment and Soft Bottom Habitats

The loose sandy particles control the offshores of Malindi and Lamu and provided with debris all the way from Tana and Athi rivers respectively and in the creeks systems in the northern coast. This soft bottom sediment supports shrimps and bottom fish populations. It also forms the breeding ground for other species of fish.¹¹⁹ Kenyan fishing trawlers are concentrated in this area around Ungama bay at the mouth of River Tana.

Threats. Trawling in these areas is not controlled as the Fishery department has no capability to go to sea. In absence also of lack of cooperation or coordination mechanism for regular patrols in the area, the trawler fish inside the 2.5 km limit which is restricted for breeding thereby destroying species as by catches. This depletes the fish stock in our coastal zones.

Mitigation Measures. To redress this, there is need for coordination and cooperation mechanism between the maritime agencies in order to complement one another in the protection of marine resources. There is also need for the fisheries department to embrace technology in the protection of the fishery resource. For example by enforcing the use Vessel Monitoring system, all fishing vessels registered and engaged in fishing in Kenya maritime zones, will be required to fit the VMS

¹¹⁹ KMFRI: Current status of trawl Fishery in Malindi-Ungwana Bay. Report by Kenya Marine and Fisheries Research Institute, Mombasa, Kenya, 2006, P. 97

systems on the vessels. With this simple technology, the fishery department would be able to monitor the activities of the fishing vessels including position, location and time through the computers. This will ensure that they fish in authorized area only and any illegal activity like transferring fish in to another vessel will be detected and prompt actual interdiction at sea.

3.3.5 Coral Reefs

Kenya's reefs form part of the East African reef system, reducing in dimensions and distinction. Communities living along the coast spread from depth less waters. The reefs comprise of over 200 breeds of corals and the most prominent ones are the reef building ones.

The coral reefs are very vibrant as they provide abode to many breeds ranging from turtles to sharks. Their significant habits range from securing the coastline to productivity. The coral reefs also support coastal artisanal fishery which form the livelihood for the coastal communities. Coralreefs are also a major tourists' attraction in marine and coastal tourism especially in the underwater diving adventure.

Threats. The coral reefs ecosystem support marine as they are nutrient rich and form the breeding ground for the majority of the fish species. However, fresh water inflows from River Tana and Athi subdue the progress of the corals. This is evident as the coral reefs are crushed from the tributaries. Massive desecration with minimal control and crushing fishing methods are degrading the coral ecosystem with subsequent decline in its support to marine life especially fish hatchery. This problem is compounded by the fishery department inability to closely monitor and control fishing around the reef system due to lack capabilities such as trained manpower and sufficient boats for patrol required for effective monitoring, control and surveillance and neither do

coordination mechanism between the fisheries department and other agencies with patrol capabilities exist and where they exist they are adhoc.

Mitigation Measures. The coral reefs have are at the center of marine administration in Kenya and the west Indian Ocean region because of their ecological system and tourism attraction. Protection of the reefs have been enhanced in marine protected areas where fishing and other extractive practices are restricted during specific periods and opened to extraction once the fish communities have restocked. However, pollution from land based activities continues to endanger the coral reef ecosystem. Therefore there need to put in place an enforcement and compliance mechanism tool land based activities that pollute the sea. This will require cooperation and coordination between the coastal county governments of Lamu,Tana River, Kilifi, Mombasa and Kwale and the NEMA on enforcement of environmental regulations. There should be an awareness program to sensitize the local populations living along the shore on the dangers and benefits of protecting the local environment through control of their daily activities.

3.4 Kenya's Marine Resources, threats and mitigation measures

The following living and dead resources are abundant in the Kenyan coast. The living resources are supported by the critical Habitats that have been discussed above.

3.4.1 Fisheries

Kenya is endowed with natural fisheries assets in both the fresh hinterland bodies and the Indian Ocean and aquaculture. The National Fish Production in the country stands at 163,000 MT valued

at over KSh40 billion.¹²⁰The inland Capture Fisheries accounts for 70 % ex-vessel valued at Ksh. 20 billion, Aquaculture fishery accounts for 24% with farm-gate value of KSh. 18 billion and marine Fisheries accounts for 6% with an ex-vessel value of about Kshs. 2 billion.¹²¹The inshore marine fishery with very valuable fishing regions such as north kenya ranging from Lamu to Faza. The other rich zone is the Malindi-Ungama Bay which extends all the way from Sabaki to Tana River. Most of the trawling is seen along the coast line with sea breeds being utilized with a few being produced in the shallow seas.

Fishing dealing with artillay- This entails the use of shipping equipments ranging from nets to traps. Small-scale fishing is important and although it involves a lot of manual work it provides job creation and improves the living standards of people in the coast. Most of the trawlers take part in thus and of fishing in the coast and account for more than 80% of the fish caught. The people of the coastal region depend on it. What is left is 5% which is caught by the fishermen who undertake it as a business. There are various groups of fish in Kenya which range from sharks to big fish. Demarsal breeds are mostly found inside the ocean. The sharks and other fish account for 21%.

¹²⁰ Susan Imende; Fishery in Kenya, Lecture at National Defense College, Nairobi, September 2015.

¹²¹ Republic of Kenya: Fishery Department. Annual Report, 2014

The species in the open sea make up less than 15% , crustaceans make up 10% of the total volume and primarily prawns with octopus and oysters accounting for only 2.5% of the total catch.¹²²

The aquarium fishery is another form of fishery which is lucrative and meant for the export market. Fish in the aquarium tops a one of the best commodities in the ocean. Majority of the fish caught in the county is sold to the western and Asian nations. Under exploitation of fishing can be attributed to a number of reasons ranging from lack of information to under utilization of the shipping vessels.

Under exploitation of Fishing in Kenya can be attributed to a number of number of factors including inadequacy of information on the fisheries potential, little institutional support for fisheries development, lack of investment in the fisheries sector,(due to the perceived poor returns from fisheries), lack and malpractices in the fish market, and the use of inefficient traditional canoes. To add on to that fishing becomes hard as a result of the powerful winds and the construction of the fishing sector is underutilized.

Threats. The major challenges to fishery exploitation in Kenya is due to environment degradation and pollution from land based industrial developments and settlements that discharge pollutants into the ocean, lack of effecient fishing technology as mjority fishermen use traditional build canoes and methods which are labour intensive with lower productivity coupled with poor governance leading to over-fishing.Climate change especially global warming had led to change

¹²² Ibid

in fish migratory patterns , breeding and feeding habits, reduced fishing grounds, farming areas hence decline in productivity.

Mitigation measures. There is enough ability to effectively monitor the actions of foreign shipping equipments in the EEZ. Illegal, Unauthorized and Unregulated fishing occurs in this area with huge consequences on the produce. This state of affairs can be mitigated by capacitating the Fisheries department so that it may carry out effective surveillance monitoring of our maritime waters. Cooperation and coordination between the maritime agencies is paramount for information sharing and coordination activities order to effectively utilize the available scarce resources.

3.4.3 Ports, Harbours and shipping

Maritime transportation carries 92% of Kenya Kenya's imports and exports. It also makes up 15% of Kenya's financial system on the coast. The Mombasa port is the biggest port in the country, but the most vital in the region. The port extends its services from US to South Sudan and is linked to the global ports. Other than this there is a smaller one in Mombasa which is efficient and vital for holding small ships. Others are situated in places like Shimoni and Malindi.

The Lamu port has been used for ship business for over 2000 years is being developed as second largest port after Mombasa as one of the major infrastructure projects under LAPPSSET.¹²³ Kenya Ports Authority manages all the ports and harbours in Kenya. Container traffic through the port of Mombasa has been growing steadily over the years. In the first nine months of 2015 (Jan- Sept) the port handled approximately 19.87 Million tones of cargo against 18.05 million tones used in

¹²³Republic of Kenya; Ministry of planning and National Development, *Kenya Vision 2030*. Government printer Nairobi, 2012.

the duration of 2014. This translates to a growth of 10.8 %. Forecasting on the regional economic growth, the KPA came up with strategies of ways to modernize its terminals to meet the growing cargo traffic as the volume of the vessel at the port was fixed for many years. Kenya is building is building another second terminal in Mombasa to cope with the demanding trade in the area which is brought about by steady growth in the construction industry.

The country's coast is strategically located in the busy route of Middle East to different world avenues. This geostrategic position offers the country the advantage to tap on the opportunities afforded by this lane of communication that lies unexploited. This includes the opportunity to establish world standard dockyard for ships repair and maintenance as the closest world standard ship repair facility in the region is in Cape town South Africa. There is also expanded opportunity for coastal and maritime tourism for the luxury cruise and beach hotels. It is averaged that 50 different shipping vessels are mostly on the Kenyan coast.

There is a heavy traffic of tankers and other vessels transiting off our coastal maritime zone to other destinations of the world. Most of this movement is less than 300 nautical miles offshore, there is likely possibility of the ships discharging bilge waters and tank washings at sea. Due to the oceanic currents, this may occasionally reach and pollute the Kenyan coast. A navigational or marine accident may occur and the oil spill can wash up on the Kenyan coast with devastating effects on our maritime and coastal tourism as it happened in the Gulf of Mexico in 2012 when oil spill incident severely affected the economy of the western are of the United States. The government initiatives to improve infrastructure and facilities in the port is remarkable but the

Mombasa port remains inefficient making it expensive in comparison to other ports in the region and therefore reducing Kenya's competitiveness in the global maritime trade.

Mitigation measures. To effectively monitor activities in Kenya's maritime spaces, the country would need to invest more in satellite imagery to monitor the EEZ and the Continental shelf waters and also strengthen its monitoring surveillance and control capabilities through development of a modern maritime law enforcement agency with reach capabilities and an efficient and equipped Kenya maritime authority to be able to effectively enforce maritime regulations. The Country's oil spill response mechanism must also be adequately equipped and routinely tested for preparedness in case of a major oil spill in and off the coast. In order to answer to swift growth of the containers at the port, KPA needs to embrace Information Technology and install additional cargo handling equipment and undertake relevant personnel skill training to respond to future increases and therefore increase Kenya's economic competitiveness. There is also need for the development of an integrated Maritime policy to guide and regulate developments within the maritime sector. The lack of this policy framework inhibits development of other clusters, other than port and infrastructure development that are government guided. An integrated maritime policy will unlock the other subsectors that are underexploited as investors, through regulatory frameworks will be able to be assured of their investments as the consequences and tradeoffs expected will be anchored in law.

3.4.4 Salt production

The manufacture of salt occurs in the northern coast of Kenya next to the mangroves place in Malindi. There exists huge pans in the area. Massive clearance of these plants in Ngomeni swamps to make way for the building of the salt industry. Currently there are eight salt works in the country

making up more than 7,922 ha. This production is moving to other places and the effect is very serious.

Threats. Extensive manufacture of salt has led to land use management in the mangrove places with mangroves disappearances and forest catchments. The transformation of the plants into salt pans has led to decay of freshwater because of the high salt levels. There exists a great capacity for manufacture of salt in the county of Lamu. If this is followed it will change the environmental scene.

Mitigation. To harness sustainable mining, the erection of a pond should be done near the plants to ensure they grow without any interference. Such moves would assist the producers of salt since the plants function as windbreakers. In addition waste from the ponds should be geared towards the sea to protect the plants from excess salt. This calls for an effective coordinated effort between the different agencies charged with the administration of the coastal assets as enshrined in the integrated coastal zone management plan 2010. This coordination mechanism is not in place and needs to be developed anchored in law. There is also need for NEMA to be expanded and capacitated with the necessary skills to be able to effectively monitor and control land based activities that have serious consequences on the maritime domain.

3.4.5 Oil and gas exploration

Drilling of oil and gas continues along the coast. Examination for the potential of hydrocarbons is hard as a result of limited research at hand. Areas like Lamu and Malindi remain valuable. Rocks to be used for hydrocarbon have been seen along the coast with temperatures being favorable offshore. There are activities which take place in Lamu basin as well as reservoirs which have been dug. The drilling company devoted to using products that are friendly to the environment.

Mitigation. The ERC manages the drilling of oil and gas in the coast. It is vital to note that sound environmental measures are provided in the EMCA and other rules to reduce pollution and other negative effects to the environment. The state should make sure that joint laws are entered upon between companies to assist the locals.

3.4.6 Coastal tourism

The tourism industry in Kenya has grown rapidly since the colonial era. It is one of Kenya's foreign exchange earners leading to job creation. It has generated over 20% of the country's foreign earnings. Kenya also serves as the most preferred destination in the continent bringing tourists from all corners of the globe. Vision 2030 makes Kenya as one of the leading tourist places in the globe. According to KTB, over 50% visit the coast aiming it an attractive destination.

The central tourist attractions range from good weather to modernized infrastructure.

Threats. Tourism and coastal tourism in particular has been on the decline and this is attributed to several factors, including political clashes and post election violence 2007/8, terrorist incidents in the country which have elicited adverse coverage by the international media and contests from other states such as south Africa and china.

Mitigation measures. Tourism is a sensitive industry. The tourists require assurance of their safety and therefore security is the foremost critical requirement that must be ensured and guaranteed. The country needs to manage its politics such a way that the ongoing political debates do not evoke negative emotions and result in political standoffs from either side. This once negatively reported by international media will deter tourists from visiting the country. A thriving marine tourism

requires a peaceful maritime environment and therefore well-integrated and coordinated maritime security architecture is critical in provision of maritime security.

3.4.7 Coastal mining

Different mineral deposits are seen on the Kenyan coast. Some are in huge amounts, but few are utilized. Salt, titanium, gypsum and clay are available in vast quantities and are economically exploited as indicated below:

3.4.7.1 Limestone

Huge deposits of limestone are found in the coastal areas of Kenya and Tanzania. Exploitation of limestone is common and depends on limited changes in the limestone's make up. It has been used in cement production and this sector is one of the biggest industries on the coast leading to job creation for thousands of youths.

3.4.7.2 Coral Rocks

Are cut and molded into sea blocks for construction purposes are available in large quantities in the whole coastal strip area especially in Manda in Lamu, Malindi, Kilifi and Kwale. Coral blocks are in great demand in all the coastal counties and provide livelihood to many people along the construction chain like the excavators, transporters, hardware merchants and construction personnel.

3.4.7.3 Sand

Sand is a significant construction component and is excavated along Kenya's coastline. Clay is utilized for the construction of bricks and is excavated for building purposes in Mombasa and other areas of the coastal region.

3.4.7.4 Titanium

Mining exploration along the coast raises the image of mining in coast and in Kenya. Mining is set to be one of the foremost enterprises. It is seen to raise the contribution of the sector and increase its GDP. Tiomin, a Canadian mining company is engaged in mining of the titanium since 2008 in Kwale.

Threats

Sand, coral and other mineral deposits are excavated with supporting laws in place. They cannot be replenished and if the excavation continues then environmental pollution will be seen to take place. Sand mining has serious effects ranging from threatening native forests to environmental degradation.

CHAPTER FOUR

4.0 KENYA'S MARITIME AGENCIES AND THE PROVISION OF THE MARITIME SECURITY

4.1 Introduction.

This chapter analyses the various maritime agencies responsible for providing maritime security and safety, regulation of ports and harbors and administration of Kenya's maritime domain and mitigation of the maritime security and resource exploitation challenges discussed in chapter three of this Study. In this Chapter, the research focuses on Agencies, their roles, functions and the challenges they encounter in execution of their functions. The agencies include both security and non security entities. It starts with government mandated security agencies that include, Kenya Navy, Kenya Maritime Police Unit and Kenya Wildlife Service. They are followed by government agencies and institutions responsible for maritime safety, administration and regulation of Kenya maritime domain, which are civilian functions. These Agencies include Kenya Maritime Authority, Kenya Ports Authority, State Department for Immigration, Kenya Revenue Authority (customs department), State Department of Fisheries, and Kenya Forest Service. Beach Management Units (BMUs) are also analyzed due to the fact that as representatives of fishing communities they play a key critical role in co-management and exploitation of the marine resources especially fisheries.

4.2 Kenya Navy

Kenya Navy is one of the three Services of the Kenya Defence Forces (KDF). It is established under Article 241(2)(c) of the Constitution of Kenya 2010.¹²⁴The mission of the Kenya Navy is the protection of the Republic's maritime environment and national interests from seaborne aggression.

Kenya Navy is also mandated with other functions that broadly range from military to Humanitarian assistance and relief operations. These functions are categorized into four types as follows; Defence of Territorial integrity.¹²⁵This is achieved by application of maritime power to protect our maritime interests;

Diplomacy.¹²⁶ This includes the utilization of marine power to support foreign policy goals to make strong international unity and to show the ability and avoid enemies.

The Constabulary Role.¹²⁷This entails the employment of maritime forces to enforce the law of the land or to implement law and regulations established by an international mandate. The examples of this role are amongst others, operations against piracy, terrorism, trafficking and coastal defence and lastly;

The Benign Role.¹²⁸ It's name denotes that meaning conflict has no place in marine work. The tasks range from aid to SAR. Explosive disposal and diving assistance. Diving assistance has been provided widely in the country where incidents of drowning in the various water bodies have occurred. Kenya Navy because of her quick mobilization capability is very important in the early

¹²⁴Uraia Trust: The Constitution of Kenya 2010, National Council for Law Reporting 2012.

¹²⁵ Republic of Kenya: Kenya Defence Forces Act 2012, Kenya Law Reform Commission 2012.

¹²⁶ Ibid

¹²⁷ Ibid

¹²⁸ Ibid op cit

phases of catastrophe. The ability to undertake these roles comes from courage, flexibility in the Kenya Navy missed with sea abilities. The Kenya Navy is headquartered in Mombasa and has strategic Bases located along the Kenyan coastline from South border at Vanga with Tanzania and at Shakani with Somalia to the North. These strategic locations allow effective response by the Kenya Navy to any threats to National interests in the Indian Ocean.

4.2.1 Challenges

In the recent past Kenya's maritime trade and economy has been negatively impacted by maritime threats from among others, piracy, terrorism, trafficking and smuggling of unlawful reporting, uncontrolled fishing and illegal disposing of dangerous waste.

The Kenya Navy while performing its roles has been able to mitigate these emerging threats. However, it has been limited in her operations by the following factors; First, is the lack of mandate for enforcement of law at sea. The Kenya Navy is by nature not a law enforcement agency. For this reason, its personnel are restricted in determining when offences established under both international and national penal laws on customs regulations, pollution prevention from ships and shipping operations regulations, sanitation laws and immigration regulations, to mention a few. Secondly, National and international law of the sea impacts negatively her effectiveness in the crimes; boarding powers and rights of visit. These powers are not vested in navies but police and coastguard; Thirdly, the ineffectiveness of other maritime Agencies (KMA, KPA, Marine Police, KWS, Fisheries, KFS and KRA) which are supposed to deal with internal maritime security, stretches the Kenya Navy into the internal environment which puts on pressure on the few available assets and capabilities; Fourth is Limited Assets. The Kenya Navy has few assets to cover the

expansive waters. This capability gap gives rise to ungoverned maritime spaces that is exploited by criminal gangs. Fifth is lack of adequate Technology. Rapidly changing technology requires the service to change with its pace and due to the huge cost implications, the Service is not capable of matching the pace of the technological change and this constrains in the detection and subsequent interdiction of drug trafficking boats which employs latest technology to monitor and outmaneuver naval capabilities. This propagates maritime insecurity.

4.3 Kenya Maritime Police Unit

Kenya Police is one of the four (4) Services of the National Police Service (NPS) established under article 243(2)(a) of the Constitution of Kenya 2010.¹²⁹ The core function of NPS is the maintenance of law and order in the country.¹³⁰

Maritime Police Unit is one of the units of Kenya police that was established in 2007 as a standalone unit. It was previously a small detachment within the Port Police Kilindini division. Its core function is to give protection in the sea and oceans in Kenya. The creation of the unit was done following site visits along the Kenyan coast, the Lake Victoria Basin and other lakes in Rift Valley that include Turkana, Naivasha and Baringo that indicated serious threats to National Security, in that, it was identified that there were intrusion of weapons, drug trafficking amongst other illegal acts.

¹²⁹Uraia Trust: The Constitution of Kenya 2010, National Council for Law Reporting 2012.

¹³⁰ National Police Service Act, amendment Bill 2014.

expansive waters. This capability gap gives rise to ungoverned maritime spaces that is exploited by criminal gangs. Fifth is lack of adequate Technology. Rapidly changing technology requires the service to change with its pace and due to the huge cost implications, the Service is not capable of matching the pace of the technological change and this constrains in the detection and subsequent interdiction of drug trafficking boats which employs latest technology to monitor and outmaneuver naval capabilities. This propagates maritime insecurity.

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¹²⁹Uraia Trust: The Constitution of Kenya 2010, National Council for Law Reporting 2012.

¹³⁰ National Police Service Act, amendment Bill 2014.

As a law enforcing agency, it also supports the local Police establishments within which its jurisdiction falls. The other functions of the Maritime Police Unit include; the protection of life and property at sea and lakes; providing security in the sea and oceans of Kenya, provision of internal security in the sea and lakes in Kenya; staying vigilance on marine operations and actions; deterrence and overseeing of drugs, their prevention and intrusion of weapons. Regulatory and overseeing refugee inflows and staying alert on stowaways, providing security to tourists and undertaking security patrols along the beach and undertaking searches and rescue mission along the Kenyan coast and execution of IMO laws; conduct investigations at sea and facilitation of free flow of maritime activities. The Unit has eight detachments, four in the Indian Ocean coast at Mombasa, Kwale, Kilifi and Lamu and four others in Lake Victoria, Naivasha, Turkana and lake Baringo.

4.3.1 Challenges

The marine police unit is tasked with the security of Kenya territorial waters and this is expansive water mass. The unit has no reach capabilities required to maintain presence and enforce compliance. The unit also suffers from chronic shortfall of skilled boats crew for effective manning and operations of the available boats. The saline nature of the marine environment requires frequent maintenance and the unit has inadequate logistic support that cannot sustain the unit for sustained presence at sea throughout the year. The equipment serviceability state is averagely low. This has severely impacted on onboard communications which are very essential component on patrolling. The unit has no existing legal framework for cooperation and coordination with other maritime security agencies and where coordination and cooperation has been undertaken, it has been based personal or adhoc basis. The unit, because of these operational challenges has been

limited to irregular patrols on only internal waters and ports only. These challenges leave serious maritime security regulations enforcement gaps that fuel illegal migration, pollution, poaching of marine resources and contraband smuggling in the Kenya's maritime domain.

4.4 Kenya Wildlife Service

Kenya Wildlife Service (KWS) is a statutory body formed by KWS and the Conservation Act 2013, Cap 376, Laws of Kenya.¹³¹KWS is the mandated authority in charge national parks and all other protected areas including marine parks. It has an administration and military section charged with MPAs. KWS core mandate is to protect Kenya's wildlife. Other functions of the service include: Conservation and management of animal protects areas and resorts under its mandate. It also provides protection to animals and humans in these areas. In collaboration with county governments establish committees responsible for wildlife conservation; Engagement with all stakeholders to raise awareness or promote those activities geared towards achievement of sustainable wildlife conservation; On behalf of the national government, collect revenue and charges from wildlife and develop a mechanism for benefit sharing with communities living in wildlife areas; Coordination and participation in development and execution of the ecological community plan and national parks strategies and the most important to advice the National government on all matters that appertains to wildlife just to mention a few.¹³²

¹³¹Wildlife Management and Conservation Act 2013. Available at<http://www.kenyalaw.org> accessed 14 Feb 2016

¹³²Ibid

As discussed in chapter 2, Kenya consists of varied sea and coastal ecosystems. These range from coral reefs to other coastal breeds. These ecosystems play an important role in the livelihoods of many local people. In addition they also conserve the soundness of sea areas.

Because of the increasing coastal population and the resultant pressure of over exploitation of fishing stocks on the near shore it became prudent for the government to establish Marine Protected Areas along the Kenyan coast. The role of MPA is centered around sea ecosystem and in specific upgrading viable fisheries linked with the coastal ecosystem. Fishing is restricted within the MPAs as they are breeding areas of the various fish species. In these MPAs endangered species of sea mammal like the turtle and the coral reef is protected which is a major coastal tourist attraction in Kenya.¹³³ There are 8 MPAs in Kenya and all are under the management KWS.

4.4.1 Challenges

In the protection of these valuable parks the KWS experiences the following challenges; lack of skilled personnel is a major challenge as the maritime environment requires specialized training which is not available to every warden as it is also very and undertaken in specialized external training institutions. This coupled with few boats at the disposal of the parks and their operational limitations inhibits effective patrolling of the MPAs. The increasing population along the coast has contributed to increase in illegal fishing along the MPA which also contributes to conflict between the locals and the National parks. There are cross-cutting roles between KWS and Fisheries Department and this complicates operations between the two units and with the absence of a

¹³³Obura, D.O., et al. 1998. *Rapid Assessment of Coral Reef Biophysical and Socio-economic Conditions in the Kiunga Marine Reserve, Kenya: Methods Development and Evaluation*. Rome and Nairobi: FAO/UNEP.

coordination mechanism leaves serious gaps that are exploited by unscrupulous fishermen and fishing fleets.

4.5 Kenya Maritime Authority

Kenya Maritime Authority (KMA) is a government body within the ministry of transport and infrastructure. It is formed an by Act of Parliament, under the KMA Act, Cap 370, Laws of Kenya and its objective is to control, monitor and co-ordinate sea affairs in the republic of Kenya.¹³⁴ The specific functions of KMA are contained in Section 5 of the KMA Act.¹³⁵

4.5.1 Challenges

KMA since its establishment has effected regulations and has been gradually building its human and material capacities. At present it experiences severe shortfalls on maritime specialized skills required for enforcement of compliance like ships surveyors for ships inspection that is one of her main functions amongst others. The Authority also has no boats required to maintain presence and enforce compliance at sea and the marginal seagoing capability that it has, is for beach safety awareness only. The authority has to rely on other agencies for assistance in enforcement. KMA is tasked with coordination maritime issues in the country however, the overlapping roles of agencies creates duplications and therefore make coordination difficult and these duplication can also be removed through changing of the various law that govern the respective agencies. This makes any form of coordination difficult as by law the Agencies are responsible to their line

¹³⁴ Republic of Kenya: Kenya Maritime Act 2006, Nairobi, 2007 available at [http:// www.kenyalaw.org](http://www.kenyalaw.org) accessed 15 Jan 2016

¹³⁵ Republic of Kenya: KMA Act 2009, Government printer, Nairobi, 2007

ministries and not KMA. All these challenges severely limit the KMA in the execution of its functions posing serious gaps in the mitigation of the maritime security challenges.

4.6 Kenya Revenue Authority

The Kenya Revenue Authority (KRA) was formed by an Act of Parliament, Chapter 469 of the laws of Kenya, which came into being on 1st July 1995.¹³⁶ It is a state corporation under the ministry of National Treasury mandated with the role of collection of levies in the interest of the government and its main purpose is the collection, managing and execution of laws in connection to levies. The specific functions of KRA are as stipulated in the KRA Act 2005.¹³⁷ The functional departments and sections of KRA comprise the Customs Services Department, the Domestic Taxes Department, the Road Transport Department and the Support Services Department which comprises Legal Affairs, Internal Audit, Research and Corporate Planning, Information and Communication Technology (ICT), Investigations, Human Resource and Administration, Finance, Corporate & Public Affairs, Revenue Protection Services and Tax Programmes & New Business.¹³⁸

The Customs and Excise Department was formed in 1978 and is the biggest of all the revenue sections in KRA. It is concerned with human resource, collection of levies amongst other things. The sole role of the department is to acquire and manage the customs and levies. Some of these levies range from excise duty to VAT.

¹³⁶ Republic of Kenya: KRA Act 1995, Revised 2014, Nairobi, 2014 available at <http://www.kenyalaw.org> accessed 12 Feb 2016.

¹³⁷ Kenya Revenue Authority: KRA Profile. www.kra.go.ke accessed 14 Feb 2016.

¹³⁸ Ibid

4.6.1 Challenges

KRA despite its elaborate modernization programme and the procurement of patrol boats and scanners, has not been able to meet the revenue targets for the last 2 years. In the last financial year it had a shortfall of Ksh 1.9 Billion. The customs and excise department, responsible for import and export duties collection at the port was the major culprit. The challenge that KRA faces in duty collection at the port is attributed to the following;

Under declaration of Imports. High value imported goods are undervalued and less duty is paid making the country lose revenue. This is facilitated by KRA personnel, KPA staff and cargo owners; Tax evasion. This is when goods imported are through collusion classified as duty free yet they are not and even pass the verification stages with all the scanners for detection available. This is major gap which allows dangerous cargo like drugs to get into the country; sabotage of the IT systems. The Simba system is an electronic customs clearance system .this system is very efficient by is occasionally tampered resulting in system breakdown causing backlog and congestion at the port. This creates an artificial crisis resulting to manual system adoption which gives way to manipulation allowing goods into the country with no or less duty paid. Corruption; is the major challenge in KRA. Through unscrupulous staff who facilitate tax evasion and share the proceeds with the importers. This is a major leakage of revenue and because of the flaws therein, unaccustomed cargo, drugs and illegal arms are let into the country with devastating consequences on the economy and security. The four boats that are operated by the Authority ,only two are dedicated to the coast and are only concentrated at the port of Mombasa with very irregular and limited patrol capability, leaving the rest of the ports of Lamu, Malindi, Kilifi and Shimoni unmanned. This is the avenue used to land narcotics/ drugs and illegal's arms into the country.

There is little collaboration with other maritime agencies and mostly is with the police for prosecution purposes. There is no coordination with the other maritime agencies.

4.7 Kenya Forest Service

Kenya Forest Service (KFS) is a government body formed in 2007 under the Forest Act 2005.¹³⁹

The service has a management and paramilitary Arm and its core mandate is to protect,¹⁴⁰ develop and effectively administer forest resources for Kenya's development. Specific functions of the service are as seen in the Forest act 2005.¹⁴¹

In order to effectively perform these roles, The KFS administration consists of conservancies, offices, stations and extension officers who play an important role in forest administration and vigilance. KFS has also involved local communities adjacent to forest by forming groups that work jointly with KFS in sustainable management of forest assets. As a whole there are more than 300 community forest affiliations.

4.7.1 Challenges

Increased population and a high market demand especially for poles and firewood have led to over-exploitation of the resource in several areas, particularly in the vicinity of urban centers. Inadequate number of Forest Guards and lack of operational boats have been the biggest handicap to the effective patrols of the resource. Conversion of mangrove areas into other activities like urban

¹³⁹ Republic of Kenya: Forest and conservation management Bill 2014. Available at Available at <http://www.kenyalaw.org> accessed 14 Feb 2016

¹⁴⁰ Ibid

¹⁴¹ Republic of Kenya: Kenya Forest Act 2005, National Council for Law Reporting. 2012.

development (e.g. Lamu) and Salt pans in Malindi have resulted in the reduction in acreage of the mangrove areas. In addition, oil spills and pollution from industrial waste particularly in Mombasa have been responsible for mangrove death, while sea level rise has reportedly caused death to some mangrove species.

4.8 State Department of Fisheries

State Department of Fisheries is one of the departments in the ministry of Agriculture, Livestock and Fisheries. Fisheries are administered under the Fisheries Act (Cap 378) of 1991 however new rules for the development are contained in the National Oceans and Fisheries Policy accepted by the executive in 2008 and together with ministry of fisheries development, Strategic Plan 2008 to 2012 (approved in March 2009). The New Fishery Management Bill 2014, seeks to align the policies with constitution and is pending approval in Parliament.¹⁴²The Department is charged to give leadership in the administration and progress of the fishing resources. It is also mandated to coordinate, develop and manage the sectors by making it unique and business oriented to access earnings and advances the standards of its people, thus creating job creation and addressing food insecurity. Some of the key Strategic Objectives include of the department range from building capacity to providing extension services.

Kenya has a significant sea life known to play an important function in fish. Most of the fish comes from Lake Victoria. The Kenyan marine ranges from coastal reefs to fishing nets. The small shipping vessels work together with small based fishermen. The fishers of EEZ have similar

¹⁴² Susan Imende: Fishery Resources in Kenya; NDC Lecture, Nov 2015.

features to their neighbors and are used by different ships sell permits from the Government. IUU fishing remains a critical concern to the fisheries sector in the country. Kenya loses approximately KShs. 10 billion.¹⁴³ This estimated loss is linked to potential loss in revenue to the Kenya Government, and negative impact on food security, livelihoods, wealth and job creation.

Challenges. The loss is attributed mainly to unlawful, unreported and uncontrolled IUU. The underutilization of the marine fishery in Kenya is attributed to the following challenges;

Inadequate Institutional and legal framework to support some strategic initiatives. The Fisheries and management Bill 2014 proposes amongst enhanced penalties for IUU, requirement of 25% of the catch in Kenya to be landed in Kenya for local economy and food security;¹⁴⁴

Inadequate capacity for off shore enforcement. The Fisheries department has no boats/capacity for offshore fishery enforcement and this is largely exploited by foreign distant fishing vessels which do not report or land their fish in Kenya. The Fisheries management 2014 Bill proposes mandatory declaration and landing of the fish in the country designated ports;

Understaffing of critical skilled personnel especially marine scientists in the department to drive the sub sector; uncoordinated approach to fishery management by the stakeholders since fisheries cannot be managed by a single entity and there are no legal frameworks that do exist to strengthen coordination of agencies and stakeholders. The new fisheries management bill 2015 inter-agency Monitoring, control and surveillance for a coordinated enforcement of fisheries regulation. Prohibitive laws. The fishing Act, require the appointment of fishery officer in other agencies for enforcement purposes to the rank of an inspector. This limits other agencies Like the Kenya Police in enforcement duties as their small limited patrols have two or three officers below

¹⁴³ Ibid

¹⁴⁴ Ibid

the rank of the inspector as the inspector is usually the station commander and rarely undertakes; the other challenge is that there are no designated fish landing ports in the country. Therefore there are no centralized locations where fishing vessels can be verified and certified for their activities; Lack of technology is also a major challenge as Fisheries has not adopted nor enforced Vessel Monitoring system (VMS) technology to monitor fishing vessels in our Fishing zones. This is a cost effective way of overcoming IUU in our waters.

4.9 State Department of Immigration

The State Department of Immigration is one of the departments under the ministry of Interior and coordination that was formed by an Act of Parliament, Kenya citizenship and Immigration act 2011.¹⁴⁵ During independence, the department was under the Ministry of Home Affairs before being moved to office of the president. After this it was put under the new Ministry of Immigration and Registration of Persons under coalition government. Issues of Citizenship issues were among the important issues that led to change of constitution.

Its functions range from controlling the movement of people in and outside of the country to providing citizenship.

4.9.1 Challenges

The department is responsible for giving direction of all people be it at the airports or at border posts. This task is well performed at airports due to the tight controls and regulations of the world

¹⁴⁵Republic of Kenya: Kenya citizenship and immigration Act 2011. Available at <http://www.kenyalaw.org> accessed 14 Feb 2016

Aviation industry. However, serious challenges abound in seaports and land posts due the long porous borders and lack of adequate capacities to efficiently monitor our maritime zones. The immigration further experiences challenges on staffing in outpost sea border entry points like Kiunga because of insecurity whereby posted personnel to this posts never report or occasional absent themselves for long periods of time. Specialized training on maritime skills is also major challenge to the department. The department has a small boat and is not capable of venturing out to open sea leave alone the expansive sea territory. Infrastructure and facilities like offices are also lacking in outpost stations. There is little coordination with other maritime agencies as the there are no formal coordination mechanism and where coordination is done is on ad hoc basis. The immigration stations at seaports have neither equipments nor boats neither to facilitate coordination nor to visit ships at anchorage and relies on assistance from other agencies with this capabilities. Unlike other security agencies, immigration personnel are civil servants that do administer themselves as opposed to the security personnel who have an elaborate logistical back up. This hinder effectiveness and coupled with corruption, entry of aliens, illegal and unaccustomed goods, drugs, illegal arms have been smuggled into the country through our shores and have serious impact on national security due to crime and terrorism and also affects negatively our economy

4.10 Beach Management Units- Fisher Communities

Fisheries in Kenya had been administered using local knowledge. After independence the Government of Kenya took over the administration of fishing. This resulted to a downturn in the fish stocks with the local fishing sector collapsing. The main issues range from illegal fishing to fishing conflict. The Fisheries in Kenya is regulated Fisheries Act Cap 378 pending the approval

of Fisheries management bill 2014.¹⁴⁶ This Act has been ineffective due to lack of enforcement capacity as well as overlapping administrative competences between various authorities for fisheries, KWS, and KFS and the maritime security agencies. Tensions has also risen due to various fishery administration levels ranging from governments to traditional authorities. One main reason is the view that the sector belongs to the government resulting to disunity among the locals. To overcome this situation, Kenya undertook a shift towards co-management of Fishery resources in 1990s by creating Beach Management Units which aim to combine elements from all administration to participatory levels. It forms a connection between the government and fishermen. The primary aim is to allow for interaction of all stakeholders which will be emulated in all processes and various abilities executed. This has changed the view the manner in which natural resources are seen as common belongings to be used for present and future use.

The BMU concept essentially replaces the traditional usage of elders at landing sites and legally empowers the local communities and represents an ecosystem approach to fisheries management which a solution to overexploitation of fisheries. The core roles of BMUs are both preventive and deterrent. In prevention the BMUs law enforces compliance to fisheries and confiscates fishing gears, denies access to fishing grounds and also arrests on behalf of fishery department.¹⁴⁷

4.10.1 Challenges

BMU have been Successful in the decrease in the use of destructive fishing gear, increased cooperation between local communities and government institution especially fisheries

¹⁴⁶ Republic of Kenya: Fisheries Act 387, Kenya Law Reform Commission, 2006.

¹⁴⁷ Kenya Coastal Development Project: Fisheries Monitoring Control and Surveillance(MCS) Report ,2013.

department, significant expansion of community participation, and higher levels of compliance. However, BMUs are restricted in their functions due to absence of capacity in things like training and equipment. Other reasons include in fights amongst the BMU team. The poor working relations with the fisheries sector of absence of civic awareness touching on self-compliance.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The Research study sought to examine the roles of national maritime agencies including the local fishing communities and establish how best they can be empowered, integrated into a security architecture and coordinated for effective mitigation of the maritime security challenges to enhance exploitation of Kenya's seaborne trade, protection and exploitation of the marine resources. This section therefore is the concluding part and will provide outcomes of the study. The outcomes are divided into three sections namely, the summary of findings, conclusions and recommendations.

5.2 Summary

The purpose of this study was to examine Kenya's maritime security challenges, the maritime resources therein and the roles of the national maritime agencies including the local fishing communities to establish how best they can be empowered, integrated into the security architecture and coordinated for effective mitigation of the maritime security challenges to enhance exploitation of seaborne trade, protection and exploitation of the marine resources.

Kenya territorial waters in the Indian Ocean cover a surface area of approximately 230,000 square kilometers and a distance of 200 nautical miles offshore, while the navigable inland waterways cover a surface area of approximately 10,700 square kilometers.¹⁴⁸ The maritime sector plays a

¹⁴⁸Ibid

significant role in the social and economic development of Kenya as over 95 percent of Kenya's international trade is transported by sea while it is estimated that over 60,000 Kenyans are employed directly or indirectly in the sector.¹⁴⁹

However an analysis of the various national maritime policies indicates that the government has not prioritized the development of the maritime industry despite the great potential that exists. The Kenya vision 2030, the latest development blue print which aims to transform the country into a newly industrialized nation by the year 2030 also does not have specific strategies that guide on how the exploitation of the maritime resources both in the EEZ and high seas can be attained. It is estimated that Kenya's oceanic resources are worth Kshs. 90 billion a year.¹⁵⁰ Most of wealth is continuously being exploited by criminal gangs, local and from other countries that have advanced technology and capacity.

Fishery is the most affected sector where the great potential has not been exploited. The marine fishery accounts for only Ksh 3Billion that translates to 0.8% of the GDP. This is a production of 8000MT against a potential of 17000M. The EEZ has a potential of 154,000 MT which is illegally exploited by Distant Water Fishing vessel that do not land the fish in the Kenyan Ports.¹⁵¹ Kenya earns more from inland fishery from Lake Victoria and Aquaculture, with cumulative revenue of Ksh 24Billion than oceanic fishery a significant indicator on the lost revenue through illegal exploitation.¹⁵²

¹⁴⁹Kenya Coastal Development Project: Fisheries Monitoring Control and Surveillance(MCS) Report ,2013.

¹⁵⁰ Republic of Kenya: *Country position Paper; 1st conference on Blue Economy*, Mauritius September 2015.

¹⁵¹ Ibid

¹⁵²Susan Imende: *Fishery Resources in Kenya*; NDC Lecture,Nov 2015.

The other sector that investments have been made is in ports and shipping infrastructure. This is due to the significance of the sub sector in Kenya's Economy. Ports and shipping is very important in the economic development of Kenya as 95% of the country trade is transported by sea and the port of Mombasa also serves the east African hinterland with an estimated population of 350 Million people.¹⁵³ The full potential of the subsector has not been realized due to lack of an integrated maritime policy to guide on the development of the sector. The port infrastructure and facilities are also not fully developed and therefore increasingly struggling to handle the huge cargo volumes and growing market.

Renewable ocean energy, offshore hydrocarbons and seabed minerals, shipbuilding and marine tourism are the other maritime industry sub sectors with great potential that have not been exploited thus, hindering the economic takeoff. The study also reveals that Kenya's maritime trade and economy has been negatively impacted by maritime threats from among others, piracy, terrorism, trafficking and smuggling of illegal immigrants and drugs, proliferation of arms, illegal bio-prospecting, illegal trade, illegal unreported and unregulated fishing (IUU), illegal dumping of toxic waste, introduction of alien species, drug trafficking and the destruction of marine environment. These maritime threats have exposed the inadequacy of various agencies in providing comprehensive maritime security. These agencies are the Kenya Navy, Kenya Marine Police, Kenya Maritime Authority, and Kenya Ports Authority, Kenya Revenue Authority, Kenya wildlife Service, Kenya Forest Service and the Fisheries Department. The study further reveals that the agencies ineffectiveness is attributed mainly to relatively few resources devoted to

¹⁵³ World Bank:Kenya Profile,2014

maritime security, limited capacity to conduct extensive maritime surveillance and interdiction operations, insufficient legal framework and lack of a formal mechanism for close integration and co-ordination of their activities.

5.3 Recommendation

95 percent of Kenya's international trade is carried through the sea. Maritime domain is therefore a very significant and key pillar of the country's' socio economic structure. The marine sector sustains Kenya's' national prosperity, therefore a vital national interest. As an expansive water mass and a pathway of the global commons it is vulnerable to exploitation by terrorist groups and other criminal cartels for financial gains, movement of equipment and personnel as well as a medium for launching attacks.¹⁵⁴ The domain as opposed to others, presents a wide array of targets that fit into terrorist's operational objectives of achieving mass casualties and also inflicting economic harm on Kenya. The basis for its effective prevention is the awareness and threat knowledge backed by credible deterrent and interdiction capability. To achieve this and be able to protect Kenya's vital interests and secure the survival and livelihoods, it is recommended that the various maritime safety and security agencies be closely integrated and coordinated in a common architecture built on closely linked and mutually supporting three (3) pillars of Information/intelligence, Assets and Organization.

¹⁵⁴US Government: Department of Homeland Security Maritime security strategy plan 2005

5.3.1 Information/intelligence pillar

In protecting Kenya maritime domain, it is important to know what is going on therein. The basis for effective prevention measures is awareness and the threat knowledge. Without persistent awareness there will be no effective decision making and vital response opportunities are lost.

Maritime awareness is enabled through surveillance, detection, deterrence and interdiction. It entails incorporation of intelligence acquired, collected, fused and analyzed through a centralized system and forwarded to those who need it and when they need it for effective responses to the maritime threat. The intelligence gathering will be through all the national maritime agencies, land based sources, sea assets and international sources.

5.3.2. Assets Pillar

Assets are a key pre requisite in responding to maritime threats in the maritime domain. Responses for threats at sea call for ships, boats and other naval assets that also play multi roles of surveillance, deterrence, interdiction and other law enforcement operations at sea. Kenya maritime domain is wide covering over 230,0000 KM² and requires many dedicated seagoing capabilities. These capabilities make significant contribution in the disruption of illegal activities at sea. The disruption of criminal activities forces the criminal gangs to abandon their illegal activities.

All the Maritime security agencies with the exception of the Kenya Navy have no credible sea going capabilities and where they have, are mainly limited to not more than five nautical miles. With these capability challenges, it is recommended that pooling together of the various capabilities be adopted and they be put under a central lead agency with the requisite infrastructure

for coordination and direction in the short term. The assets will also be centrally maintained for economy of effort. The agencies may access the assets for use on request. In the long term, there is need to for joint acquisition of integrated capabilities and development of both sensors and platforms to be able to effectively respond to maritime threats and challenges.

5.3.3 Organization

In order to share the information and intelligence gathered and deploy maritime assets to threat response, there need to be an organization where the national maritime safety and security agencies can be centrally coordinated. It is recommended that a National Maritime Information Coordination Centre (NMIC2) is created. This will be a jointly operated maritime operations centre for information sharing and coordination for optimal utilization of resources. It will be a focal point for coordination of all threat responses in the Kenya Maritime Domain. It will be a fixed structure that will collect information on the maritime domain, cross-check and analyze, monitor and initiate action to prevent the threats or alleviate potential damage.

This operations centre will maintain close liaison and shall engage with other organizations involved in the management of the maritime environment and share information as appropriate to compliment their initiatives.

The operations center will serve as a 24-hour information hub for Kenya responsible for ensuring full situational awareness through timely, reliable, and accurate monitoring and reporting within the maritime domain. Due to logistical constraints, this cell should be placed under KN which has the requisite superior communications, assets and facilities and is mandated to undertake all the constabulary/coastguard functions of the Republic.

5.3.4 Rationale

Kenya Navy is the leading Agency in maritime security in Kenya. The force is mandated in its secondary role, to undertake operations against piracy, terrorism, trafficking, humanitarian assistance, and disaster relief Search and Rescue and fishery protection. The government has invested heavily on the service over last 50 years and besides the sea going capabilities that enhance its mobility, endurance and reach on any part of the Kenyan Maritime domain. It has a highly skilled human resource base, capacity building institutions, strategic bases and surveillance stations along the coastline that provide additional capabilities to ensure tasks are carried out effectively. Therefore to get most out of the country's limited resources, this coordination role should be delegated to the service. However, this operations centre may be transferred to any another agency after they have built and acquired the requisite capabilities.

5.3.5 Requirements

In the operationalization of this organization appropriate instruments of legislation should be put in place to institutionalize the arrangement particularly in respect to the International Law of the Sea especially in the patrolling the EEZ with enforcement powers are vested on Kenya Navy on behalf of the other agencies. The coordination will also require pooling together of sea going resources and embarkation of personnel on different vessels tasked for threat response from other agencies. This will require entering into MoUs between the agencies to facilitate these activities.

5.4 Organizational structure

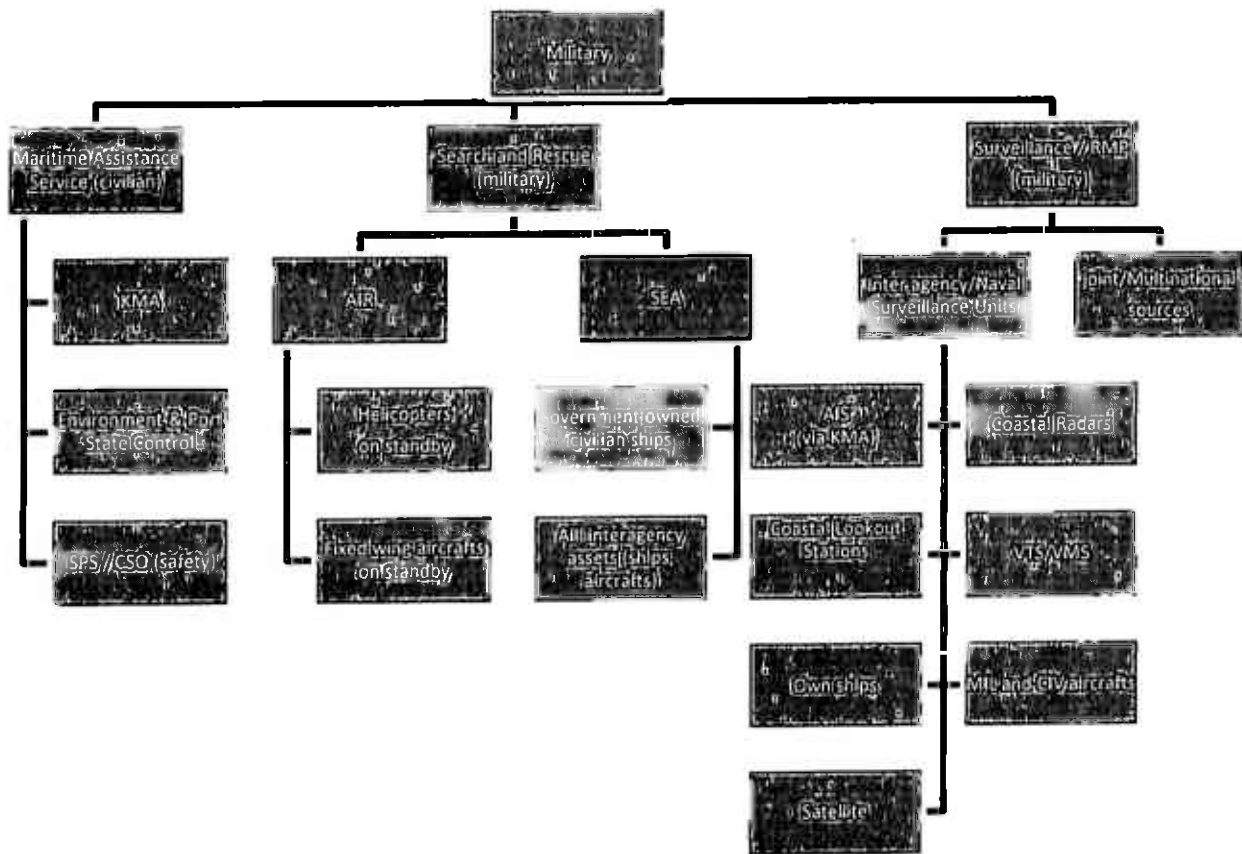


Fig.II: Organizational layout of the proposed joint inter agency operations centre. (Source: modified from the Royal Danish Navy)

5.4.1 Staffing Concept

The joint operations center will be staffed by appropriately qualified civilian and uniformed personnel seconded from the national maritime agencies as may be required. The recommended staffing for a duty shift will be four officers manning three critical cells as follows;

Recognized Maritime Picture (RMP) Cell. This cell will be responsible for surveillance and maritime picture compilation of Kenya's maritime domain. Based on threats analysis, the cell will

advice on the assets to be deployed and the lead agency. It will be headed by an officer from the military.

Search and Rescue (SAR) cell. This cell will be responsible for all search and rescue operations within Kenyan maritime domain and the inland water bodies. It will advise on Air, Naval and Land SAR assets to be deployed in any given situation and designate a lead agency. It will be headed by an officer from the military.

Maritime Assistance Service (MAS) cell. This cell will be responsible for environmental and port state control measures, provide advice and assistance to mariners on request. It will also be responsible for the implementation and adherence to ISPS codes by all vessels all vessels operating in Kenyan waters. It will be headed by a specialist civilian officer from Kenya maritime Authority. The Joint operations centre will be coordinated by the duty officer in charge who will be responsible for the processing and timely dissemination of reports and direct operational information exchange with the authority responsible for action.

5.4.2 Administrative Requirements

Administrative support to the joint operations centre is to be provided by the Kenya Navy. The national maritime agencies will provide specialized personnel to man the specific cells allocated to the agencies. The Budgetary implications of running the operations centre are minimal and can be funded by the Kenya Navy.

5.4.3 Legal Arrangements

Legal frameworks will be required to be put in place to facilitate joint working establishment, environment and operationalization of the cell. The agencies will also be required to review their

legislation to ensure information sharing, collaboration and joint operations. This should or could be in the form of MoUs, agreements or legislation.

5.5 Resource Implications

The interagency integration and coordination call for a coherent, integrated interagency investment strategy especially on capability developments. At present all agencies are independently and directly funded from the National Treasury and pursue individual strategies.

To provide Kenya with capabilities required to effectively identify and respond to maritime threats, it is recommended that a joint investment strategy be adopted and a joint capabilities integration and development funding be created under the lead agency for unity of effort.

5.6 Conclusion

The maritime security is a critical component for any nation that is committed and keen on exploiting its maritime spaces for the economic and social advancement of its people. The traditional and emerging maritime threats in the Indian Ocean especially, piracy, terrorism trafficking and pollution negatively impacts on Kenya's seaborne and has exposed the inadequacy of the various maritime agencies in providing comprehensive maritime security. The agencies lack resources, sufficient legal framework and a formal integration and coordination mechanism of their activities. This has resulted in the exploitation of the nation's rich resources especially fishery by foreign fishing fleets. The lack of a comprehensive maritime policy has and also continues to hinder investments in the lucrative maritime sector.

To protect Kenya's maritime interests in the Indian ocean, there is an urgent need to securitize the maritime domain, establishing a close integration and coordination mechanism that will ensure permanent surveillance and awareness of the maritime domain supported by a robust inter agency response capability operated through a centralized command and control center under Kenya Navy as the lead agency which has all the necessary infrastructure in place built over the last 50 years.

This action will create synergy in all our maritime safety and security agencies that that will secure our oceans and seas, open opportunities for investments in the potentially lucrative but under invested maritime sector. This will eventually contribute to economic and social development of our people, catalyze industrialization and provide the employment opportunities that are the major national security challenges that the country is experiencing.

5. 7 Suggestions for further Studies

This study is the first of its kind in the country, region and Africa. The proposed securitization and integration and coordination of the various maritime safety and security agencies which lie under different line ministries is a pioneering work that is likely to be resisted by powerful individual in the line ministries who have personally benefitted from the huge budget allocation but with no corresponding results as a consequence on national apathy on anything concerning the sea. The securitization, coordination and direction will bring in together military and civil entities with different work ethics, values and conflicting organizational cultures. Therefore further research should be undertaken in these areas especially on the effects of securitizing the fishery, where all local fishing vessels will be required to be registered, painted in distinct colours for ease of

identification and requirement of fishing within specific areas, reporting before and after return on fishing expeditions to authorities. This may infringe on individual rights and freedoms but necessary for the survival of the nation. These are opportunities of further research.

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APPENDICES

Appendix I: Authorization Letter



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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Date:

26th February, 2016

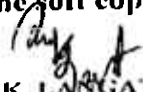
Lawrence Gituma Miringo
National Defence College
P.O. Box 2438 I
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Maritime security challenges and resource exploitation: The role of Inter Agency Coordination*" I am pleased to inform you that you have been authorized to undertake research in **all Counties** for a period ending **25th February, 2017**.

You are advised to report **the Principal Secretary, Ministry of Defence, the County Commissioners and the County Directors of Education, all Counties** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.


DR. S. K. LAGAT, OGW
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The Principal Secretary
Ministry of Defence.

The County Commissioners
All Counties.

The County Directors of Education
All Counties.

Appendix II: Kenya Navy

General Information

This questionnaire will be a guide for Key informant interview with senior Kenya Navy officers responsible for policy and strategy in naval operations.

Name:

Position:

Location:

Date:

Expected Questions

1. What are the roles and functions of Kenya Navy?
2. What maritime security challenges are you experiencing and how are you engaged?
3. What assets and capabilities do you have to undertake the roles and functions?
4. What challenges do you have in mitigating the threats?
5. There are many maritime agencies charged with protection of marine and coastal resources in the country. Do you cooperate or coordinate your activities with them and how?
6. Is there a regulatory framework to guide on the coordination/cooperation?
7. What are the weaknesses and challenges encountered in the coordination and cooperation efforts?
8. The roles and functions of the many maritime agencies are overlapping/duplication. What are the challenges encountered through these overlaps/duplication roles.
9. Is there are deconfliction mechanism in place?

10. What interaction mechanism is there between the Navy and fishing community that goes to sea everyday and have a lot of information on what goes on?
11. What interaction mechanism is there between the Navy and Department of fisheries in the protection of fishery in our maritime zones?
12. Do you maintain a register of fishing boats in the Kenyan waters and how do you identify them during your patrols?
13. In the Mumbai twin attacks, the terrorist got into India through the sea disguised as fishermen in small boats. Do the small fishing boats pose a security threat and how can this best be mitigated?
14. Oil exploration is currently being undertaken in our northern waters? Do we have sufficient capabilities in both physical and environmental monitoring and protection?
15. Are there any weaknesses in law that impedes successful protection and exploitation of our marine resources?
16. In your opinion, what do you see as priority areas that must be addressed in order to protect our maritime and coastal resources?

Appendix III: Kenya Ports Authority General Information

This questionnaire will be a guide for Key informant interview with senior KPA officers responsible for Port and Harbor operations.

Name:

Position:

Location:

Date:

Expected Questions

1. What are your roles and functions as an authority?
2. Are there designated Ports for use by local and foreign fishing vessels?
3. Are there records of how many port calls are made by foreign-flagged fishing vessels to Kenya annually?
4. Which agency or the entity has the primary responsibility for implementing Port State Measures for fishing vessels in Kenya?
5. How do you regulate the movement and inspection of foreign fishing vessels in Kenyan ports.
6. Are there operational procedures in place for sharing of information on fishing and fish Cargo vessels arrival with other government agencies especially KRA and Fisheries department amongst others?

7. Once a fishing vessel docks, when do your responsibilities cease and to who do you handover to?
8. Are there operational procedures in place for handover of responsibilities to other agencies?
9. Is the authority able to know what catch has been declared by the fishing vessels and duty/taxes paid to the government by the fishing vessel/company?
10. Are there any weakness in the system and how do you think they can be mitigated?
11. Foreign fishing vessels fish in our waters illegal, process and offload the fish to other fishing vessels. What is the authority doing stop this menace?
12. Vessel Monitoring System (VMS) is being used by most coastal countries to monitor their fishing fleets. Why has this not been adopted in Kenya?
13. There are many maritime agencies charged with protection of marine and coastal resources in the country. Do you cooperate or coordinate your activities with them and how?
14. Is there a regulatory framework to guide on the coordination/cooperation?
15. What are the weaknesses and challenges encountered in the coordination and cooperation efforts?
16. The roles and functions of the many maritime agencies are overlapping/duplication. What are the challenges encountered through these overlaps/duplication roles.
17. Is there are deconfliction mechanism in place?
18. How can the cooperation and coordination between the agencies be enhanced?

Appendix IV: Fishing communities

General Information

This questionnaire will be a guide for focus group discussions with fishing communities in Mombasa, Kilifi and Kwale counties. The focal group will be composed of local fishing communities' organizational leaders like the Beach management Units as representatives of their respective fishermen.

Name:

Position:

Location:

Date:

Expected Questions

1. What is the number and demographic characteristics of the members of the fishing communities/BMU in the area?
2. What are the functions of the BMU/fishing community organization in the area?
3. Do you have any regulations that guide your organization and are they approved?
4. Do you have a mechanism of vetting and registering your members and do you keep records?
5. How many boats and of what type do you use for fishing?
6. Are your boats inspected for sea worthiness and licenced?
7. Are your members aware of the fishing regulations and are there any awareness programs by fishery dept on the same?

8. How do you declare your catch to the authorities?
9. How do you mitigate on illegal fishing and do you have sanctions in place?
10. Do you have any training on safety for your members and who or which institutions conduct it for you?
11. How many fishermen are in your organization and how often they go to sea do.
12. What type of vessels do you use?(Canoes, motorized boats or sails)
13. How far do you go from the shores?
14. Do you fish together with larger fishing fleets?
15. Is there any conflict with them on the fishing grounds?
16. Do you encounter any illegal activities at sea and how do you report them and to whom?
17. Is there a formal reporting procedure and do you coordinate in any way?
18. Do you interact or share your experiences with government agencies like the Kenya Navy, KWS, KPA, KMA or Fisheries department?
19. In your opinion what can be done to improve

Appendix V: Kenya Marine Police

General Information

This questionnaire will be a guide for Key informant interviews with senior Kenya Marine Police Officers, responsible for Port and Marine Policing Operations.

Name:

Position:

Date of Interview

Expected Questions

1. What are your roles and functions?
2. You are responsible for maritime security in territorial waters which is a vast area. How do you do it?
3. What challenges are you encountering in your operations?
4. What are the Maritime security challenges that are predominant in Kenyan waters?
5. Do you have sufficient capabilities to address the challenges?
6. What type of boats do you have and how often do you conduct patrols?
7. Criminals especially pirates have faster speed boats than police boats? Is this a major problem and how are you dealing with this capability gap?
8. Do you have enough logistic support?

9. There are many agencies responsible protection of maritime resources. Do you cooperate/coordinate your activities with them?
10. In what areas do you cooperate coordinate?
10. Is there a regulatory framework that guides the coordination/cooperation?
11. What challenges are there in the cooperation/coordination?
12. Canoes and small fishing boats have been used by criminal to propagate theft on ships at the port. Is this a major problem?
13. How do you distinguish between genuine fishermen and impostors at sea?
14. Fishing boats go to sea every day and observe activities. Is there a mechanism of collaboration with them to tell/report on activities they have observed?
15. In the Mumbai twin attacks, the terrorists got into India through the sea disguised as fishermen in small boats. Do the small fishing boats pose a security threat and how can this best be mitigated?
16. What do you think can be done?
17. What are the priority issues that need to be addressed to improve maritime security?

Appendix VI: Kenya Maritime Authority

General Information

This questionnaire will be a guide for Key informant interviews with senior Kenya Maritime Authority personnel responsible for policy and strategy in Maritime administration.

Name:

Position:

Date of Interview

Expected Questions

1. What are your roles and functions?
2. How is the organization addressing maritime safety and security challenges in the country?
3. As an authority you are responsible for Maritime Administration in the country. How do you do that?
4. What operational challenges are you experiencing in execution of your functions?
5. Before the organization creation, your roles were performed by Kenya Ports Authority. How has been the separation of functions and are there still duplications, challenges or friction?
6. There is rampant illegal fishing activities and exploitation of marine resources in our maritime zones. As an authority how are you addressing the issues?
7. Many countries have adopted Vessel monitoring systems to electronically monitor their fishing grounds and fleets. Why has Kenya not embraced this?
8. Do we have designated fishing ports for the foreign fishing vessels?
9. What are your responsibilities in terms of handling of fishing vessels and what linkages do you have with KRA and Fisheries department to ensure that the catch is well declared, legal, and taxes are duly paid to the government?

10. Pollution from both land based activities and waste from ships at sea is a major threat to our fishing ground and tourism. How are you seized on the issue?
11. There are many fishing boats in the country. How do you administer them and do you maintain a register?
12. Is there a vetting mechanism for the fishermen?
13. There are local fishermen who live adjacent to the ports. Are they allowed to fish or operate their boats at the port?
14. How do you ensure that they are safely crewed and their activities do not impede safe navigation of other seafarers?
15. In the Mumbai twin attacks, the terrorists got into India through the sea disguised as fishermen in small boats. Do the small fishing boats pose a security threat and how can this best be mitigated?
16. There are many maritime agencies with overlapping roles between them. What challenges do these pose in the effective administration of maritime affairs?
17. Coordination of their roles is paramount to seal the security gaps that may be exploited by criminal/terrorist. Do agencies or your authority have a coordination mechanism?
18. Is there are deconfliction mechanism in place ?
19. What operational procedures are there for coordination or cooperation?
20. What are the challenges in coordinating safety and security issues with other Maritime agencies?
21. What capacities do you have to er

Appendix VII: Kenya Forest Service

General Information

This questionnaire will be a guide for Key informant interviews with senior Kenya Forest Service personnel responsible for Coastal forest resource conservation.

Name:

Position:

Date of Interview:

Expected Questions

1. What are your roles and functions?
2. How do the coastal forests contribute the national economy?
3. What operation challenges do you experience in the protection and monitoring of the coastal forests?
4. Mangroves are critical ecosystems for fish breeding. What are the challenges in their conservation?
5. What capacities do you have that are specifically targeted for mangrove conservation?
6. How do you access mangrove forests on the islands?
7. Do you conduct marine patrol and how often?
8. What type of boats do you have for patrols (if any)?
9. Some Mangrove forests are on private lands. What challenges do you experience in their protection? Is there friction with land owner

10. Do you coordinate activities with other Maritime agencies responsible for maritime security and resources protection? (KWS,NPS,KRA,KMA)
11. Are there operational procedures in place to guide the cooperation / coordination?
12. Do you have/ involve local communities in your mangrove protection and conservation efforts?
13. Small fishing boats are used to illegally Harvest mangroves because mobility in shallow waters? What are you doing in that regard?
14. Do you maintain a register of small fishing boats/ that have been arrested with mangrove poles?
15. What is your sanctions regime on these offences and how effective have they been?
16. Industrialization and high population along the coast have led to pollution of the coastal water the thus threatening the Mangrove ecosystem. What efforts are you doing to mitigate on this effects?
17. In your own opinion what is the priority issues that should be addressed to save this important Maritime habitat?

Appendix VIII: Kenya Wildlife Service

General Information

This questionnaire will be a guide for Key informant interviews with senior Kenya Maritime Authority personnel responsible for policy and strategy in Maritime administration.

Name:

Position:

Date of Interview:

Expected Questions

1. What are your roles and functions?
2. What maritime security challenges is the organization experiencing?
3. How do you protect the Marine life along the wide coastline?
4. You have a number of protected marine parks along the coast? What is there significance?
5. What is the contribution of your marine parks to the national economy?
6. What are the challenges in the protection of these resources in marine parks?
7. Local communities live around the Marine protected areas as their ancestral home/land. Is there any conflict and how have you gone about it?
8. Local fishermen, cannot fish in far waters because they don't have the reach capability. What are your efforts in preventing over fishing in the local waters?
9. How often do you conduct marine patrols?
10. What capacities do you have in terms of manpower and equipment for control?
11. How do you differentiate illegal from legal fishing?

12. Do you coordinate with other maritime agencies?
13. What is your coordination and cooperation with department of fisheries in protection of fishing and endangered species?
14. Who conducts training (marine) and how often? Is it sufficient and upto date?
15. What are Marine protected areas and why are they important?

Appendix IX: State Department of Fisheries

General Information

This questionnaire will be a guide for Key informant interviews with senior state department of Fisheries personnel responsible for marine Fishery resource.

Name:

Position:

Date of Interview:

Expected Questions

1. What are your roles and functions?
2. What is the approximate sea area that falls under your responsibility?
3. What are the maritime safety and security challenges in the country?
4. As a department responsible for fishery protection, how do you do that?
5. What operational challenges are you experiencing in execution of your functions?
6. There is rampant illegal fishing activities and exploitation of marine resources in our maritime zones. As an authority how are you addressing the issues?
7. What capacities both personnel, equipments/boats do you have for performing these duties?
8. How often do you undertake sea patrols?
9. What logistic support infrastructure do you have to support the maintenance and efficient running of the boats?

10. Many countries have adopted Vessel monitoring systems to electronically monitor their fishing grounds and fleets. Why has Kenya not embraced this?
11. Do we have designated fishing ports for the foreign fishing vessels?
12. There are many fishing boats in the country. How do you administer them and do you maintain a register?
13. What/how is the registration procedure?
14. How do you licence fishing vessel?
15. How do you ensure compliance?
16. What sanctions regime is there and how effective are they?
17. What linkages do you have with KRA to ensure that the catch is well declared, legal, and taxes are duly paid to the government?
18. Pollution from both land based activities and waste from ships at sea is a major threat to our fishing ground and tourism. How are you seized on the issue?
19. Is there a vetting mechanism for the fishermen?
20. There are local fishermen who live adjacent to the ports. Are they allowed to fish or operate their boats at the port?
21. Do you have awareness programs targeted to the fishermen on what type of nets to use, which species not fish and where, safety, etc.
22. How do you ensure that they are safely crewed and their activities do not impede safe navigation of other seafarers?
23. In the Mumbai twin attacks, the terrorists got into India through the sea disguised as fishermen in small boats. Do the small fishing boats pose a security threat and how can this best be mitigated?

24. The maritime securities agencies have similar protective roles of our fisheries like your department. What challenges are there in the duplication of roles?
25. The other maritime agencies are also well staffed and better equipped than you. Do you cooperate with them in any way?
26. Are there a coordination/ cooperation guided by any legal framework?
27. Are there operational procedures in place for the cooperation?