AN INVESTIGATION INTO THE EFFECTIVENESS OF MARITIME SECURITY IN COMBATING ILLEGAL, UNREPORTED AND UNREGULATED FISHING IN NAMIBIAN WATERS: A CASE STUDY OF THE KUNENE RIVER MOUTH

A MINI THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN SECURITY AND STRATEGIC STUDIES

IN THE FACULTY OF SCIENCE OF THE UNIVERSITY OF NAMIBIA

DEPARTMENT OF MILITARY STUDIES

BY

Avelinu Ngongo Justinu

201310969

October 2022

Main Supervisor: Dr. Torque Mude (Midlands State University)

Co-Supervisor: Dr. David Kimera (University of Namibia)

ABSTRACT

The purpose of the study was to investigate the effectiveness of maritime security in combating illegal, unreported and unregulated fishing activities in Namibian waters, with reference to the Kunene River Mouth. To realize this objective, the study evaluated the methods and technologies applied by the respective maritime security agencies in combating Illegal, Unreported and Unregulated (IUU) fishing activities at the Kunene River Mouth. The study employed a qualitative approach that is descriptive by design that utilized a case study approach. Moreover, purposive and snowball sampling techniques were used to select participants. The total sampled population was 43 participants comprising of members from the Namibian Navy, Namibian Police Water Wing, Ministry of Fisheries and Marine Resources and Directorate of Maritime Affairs as well as Namibian Ports Authority. In addition, data was collected through semi-structured open-ended interviews, focus group discussions and observation. The research findings revealed that, the current maritime security mechanisms used to counter IUU fishing activities at the Kunene River Mouth are ineffective, owing to the distance of 764 km to be covered by the coastal patrol vessels when launched from Walvis Bay to the Kunene River Mouth, which takes approximately 26-30 hours. The findings also indicated that challenges of inadequate funding for maintenance and fuel for coastal patrol vessels for the Namibian Navy and Ministry of Fisheries and Marine Resources hampered coastal patrols at the Kunene River Mouth. Hence, the lack of coastal patrols conducted at the Kunene River Mouth created a security vacuum that is exploited by illegal foreign vessels.

In the final analysis, the study recommended that the Namibian Navy with financial support from the Namibian government to establish a naval calling station along the northern Namibian coastline, preferably at Cape Fria that is 200 km from the northern maritime border. It is also recommended that the Namibian government to avail sufficient funding to the Namibian Navy and Ministry of Fisheries and Marine Resources for the maintenance and fuel for coastal patrol vessels in order to maintain constant presence at the Kunene River Mouth. The study further recommended that the Namibian and Angolan authorities to sign a Memorandum of Understanding on hot pursuit for illegal foreign vessels trying to flee into the respective countries territorial waters. Lastly, the study recommended for further research to be carried out on the impact of IUU fishing activities at the Kunene River Mouth on the Namibian economy.

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LIST OF ABBREVIATIONS AND ACRONYMS

AIS	:	Automatic Identification System
CDF	:	Chief of the Namibian Defence Force
DCoC	:	Djibouti Code of Conduct
DMA	:	Directorate of Maritime Affairs
DRC	:	Democratic Republic of Congo
EEZ	:	Exclusive Economic Zone
FAO	:	Food and Agriculture Organization
FGD	:	Focus Group Discussion
FOA	:	Fisheries Observers Agency
GDP	:	Gross Domestic Product
GPS	:	Global Positioning System
IMO	:	International Maritime Organization
ISPS	:	International Ship and Port Facility Security
IUU	:	Illegal Unreported and Unregulated
KRM	:	Kunene River Mouth
MDAC	:	Maritime Domain Awareness Centre
MFMR	:	Ministry of Fisheries and Marine Resources
MoU	:	Memorandum of Understanding
NAMPORT	:	Namibian Port Authority
NDF	:	Namibian Defence Force
Nm	:	Nautical mile
NS	:	Namibian Ship

NSF	:	Namibian Special Forces
NTS	:	Naval Training School
OPV	:	Oceanic Patrol Vessel
QRT	:	Quick Reaction Team
SADC	:	Southern African Development Community
UAS	:	Unmanned Aerial Systems
UAV	:	Unmanned Aerial Vehicle
UK	:	United Kingdom
UNAM	:	University of Namibia
USA	:	United States of America
VMS	:	Vessel Monitoring System

ACKNOWLEDGEMENT

I would like to express my deepest gratitude to God Almighty for giving me the wisdom throughout my thesis writing. I extend a heartfelt thank you to the Ministry of Defence and Veterans Affairs of the Republic of Namibia, particularly the Chief of the Defence Force Air Marshall Martin Pinehas for granting me permission to conduct research at Captain (N) PN Sacharia Naval Base in Walvis Bay. I would like to thank my supervisors Dr. Torque Mude and Dr. David Kimera for their immense contribution throughout the research, their insight, guidance and comments have been valuable resources for the development of my thesis.

I am also grateful to Prof. André Du Pisani, Dr. Richard Iroanya, Captain (Namibian Navy) Joseph John Claasen, Commander (Namibian Navy) Israel Haindongo and Dr. Loide Shaamhula, who made critical comments on the research proposal and necessary improvement on the thesis. Mentors are rare to find and it is for this reason that I am eternally grateful for your infinite resolve to seeing others succeed. My sincerest gratitude to the members from the Namibian Navy, Namibian Police Water Wing, Ministry of Fisheries and Marine Resources and Directorate of Maritime Affairs, as well as Namibian Ports Authority for participating in the study, you are appreciated. Finally, special thanks to my fiancé Shalene Ockhuizen for her emotional support throughout my thesis writing. Finally, yet importantly, I would like to thank my parents, Johannes Justinu and Sofia Justinu for their moral support and encouragement to pursue my studies.

DEDICATION

I dedicate this study to my parents Johannes Justinu and Sofia Justinu for their encouragement and support, as well as letting me pursue my dream of being a military officer towards contributing to the Ministry of Defence and Veterans Affairs and academia through this thesis.

DECLARATION

I, Avelinu Ngongo Justinu, hereby declare that this study is my own work and is a true reflection of my research, and that this work, or any part thereof has not been submitted for a degree at any other institution. No part of this thesis/dissertation may be reproduced, stored in any retrieval system, or transmitted in any form, or by means (e.g. electronic, mechanical, photocopying, recording or otherwise) without the prior permission of the author, or The University of Namibia in that behalf. I, Avelinu Ngongo Justinu, grant The University of Namibia the right to reproduce this thesis in whole or in part, in any manner or format, which The University of Namibia may deem fit.

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CHAPTER ONE: INTRODUCTION AND BACKGROUND OF STUDY

1.1 Introduction

The study examined the effectiveness of marine security in combating Illegal, Unreported and Unregulated (IUU) fishing in Namibian waters, with reference to the Kunene River Mouth (KRM). In this study, effectiveness is conceptualized from the perspective of Iroanya, Dzimiri and Phaswana (2018) who define it as the degree to which a plan of action is successful in solving social problems. Green (2001) defines effectiveness from a military lens, as the measure of how a system or forces successfully execute its mission or duties with the given resources. Maritime security is the preventive and responsive measures to protect the territorial waters against threats and intentional unlawful acts such as piracy, illegal fishing, drug trafficking and human trafficking (Feldt, Roell & Thiele, 2013; Bueger, 2015).

The main responsibility of maritime security is entrusted with the naval forces of any country with assistance from civil organization. In addition, maritime safety is the preventive and responsive measures intended to protect the maritime domain against accidental or natural danger, harm and damage to environment, risks or loss, this include safeguarding against overfishing and oil spill (Feldt, Roell & Thiele, 2013). Maritime safety of a country is entrusted with the fisheries agencies and port authorities.

According to Anyimadu (2013), incidents of piracy and other maritime crimes such as Illegal, Unreported and Unregulated (IUU) fishing, oil spill, drug trafficking and human

trafficking have increased in West Africa. Moreover, the escalation in West African maritime insecurity greatly affected the Gulf of Guinea, which stretches from Senegal to Angola (Anyimadu, 2013). Namibia is no exception to such incidents; hence, Namibia shares coastal borders with Angola in the north also referred to as the Kunene River Mouth (KRM). Potgieter and Pommerin (2009) highlight the importance of maritime security in the Southern African waters to guard against IUU fishing, asymmetrical war and terror at sea by pirates, as previously experienced by African countries like Somalia, Seychelles and Nigeria just to mention a few. Furthermore, Neondoÿ (2010) state that, the Southern African coast is susceptible to piracy and IUU fishing.

As an institution of national security, maritime security is paramount in combating IUU fishing. This may constitute threat to national, economic and food security for Namibia, if proper mechanisms are not put in place. Of equal importance, is to safeguard the livelihood of the coastal community. Hence, most of the coastal communities are dependent on ocean resources for nutrition and economic benefits. Illegal activities in territorial waters have the potential to topple food and economic security, which could therefore undermine the ability of a state to manage these resources (White, 2017). Having said this, the study examines the effectiveness of maritime security in Namibian waters, with particular emphases on the Kunene River Mouth.

The Namibian coastline is approximately 1572 km long; it stretches from Lüderitz to the north (Van Zyl, 2000). Furthermore, vast resources are found in Namibian waters such as horse mackerel, hake, pilchard, monkfish, sole, snoek, tuna, kingklip, angelfish, john

dory, diamonds and phosphate (Food and Agriculture Organization, 2007). However, only fish species and diamonds are harvested in the Namibian waters.

According to the Food and Agriculture Organization (FAO) (2007), Namibia is one of the countries with the most profitable fishing ground. This is because of the Benguela current system from the eastern upwelling system (from the Indian Ocean), which bring about rich population of fish into Namibian waters (FAO, 2007). Van Zyl (2000) and Hartman (2019) affirm that by stating that the fishing industry is the third largest contributor to the Namibian economy, after agriculture and mining. They further state that the fishing industry is the second fastest growing industry after tourism. Though the fishing industry substantially contributes to the national economy, about 80 % of the entire catch is exported to European countries like Spain.

Before Namibia attained its independence in 1990, a large number of foreign unlicensed fishing vessels were fishing in Namibian waters (Van Zyl, 2000). By this time the 200 Nautical mile (Nm) (370.4 km) territorial Exclusive Economic Zone (EEZ) was not yet declared (Van Zyl, 2000). However, after independence the Government of the Republic Namibia announced the demarcation of the EEZ, under Act No. 3 of 1990, in accordance with the provision of the United Nations convention on the law of the Sea of 1982 (FAO, 2007). This meant that, unlicensed vessels were no longer allowed to fish illegally in Namibian territorial waters. Despite this law, illegal fishing continued to happen in the Namibian waters, in the immediate post-independence years. This was attributed to limited capacity in maritime security. Illegal fishing was mostly carried out

by the Spanish vessels, which exploited Namibia's limited capacity in maritime security (Van Zyl, 2000; Menges, 2004).

A decade of remarkable improvement in maritime security sector has resulted in more arrests for crimes of illegal fishing by Russian and Spanish vessels (Menges, 2004). Illegal fishing in Namibian waters sharply decreased, especially off the coast of Lüderitz and Walvis Bay (Ngutinazo, 2019). However, there is an increase in IUU fishing activities at Namibia's northern maritime border with Angola also known as the Kunene River Mouth, which constitutes serious threats to national economy of the state and National Law (Hartman, 2019; Ngutinazo, 2019).

In 2003, Namibia and Angola signed a treaty for the joint commission on the establishment of the delimitation and demarcation of maritime boundaries to curb illegal activities such the IUU fishing (Maletsky, 2005). Maletsky (2005) and Paterson (2007) further defined the maritime boundary of Namibia and Angola as the line of latitude seventeen degrees, fifteen minutes and zero seconds (17º15'00''S) south of the equator that commences at its intersection joint with the line of low water at the Kunene River Mouth and runs westward for a distance of 200 Nm.

The Kunene River Basin is located between Angola and Namibia, whereby the river rises about 32 km northeast of Huambo in the Sierra Encoco Mountains in Angola and flows southwards from the Angolan highlands to the border with Namibia, then turns west forming the border between the two countries until it reaches the Atlantic Ocean

(AHT Group AG, 2009). Furthermore, the Kunene River Mouth is an estuary that seeps into the Atlantic Ocean therefore forming water borders between Namibia and Angola. The Kunene River Mouth is an important biodiversity hot spot, because it is located between two National Parks namely the Iona National Park in Angola and the Skeleton Coast Park in Namibia, therefore making it a famous tourist destination (Paterson, 2007).

Furthermore, the vessels are reported to come from the Angolan waters, which are often not patrolled and enter into Namibian waters. They conduct their illegal fishing in Namibian waters, and then move back to the Angolan waters. In effort to combat these serious and illegal acts, the former minister of Fisheries and Marine Resources Mr. Bernard Esau called for intervention by the Namibian Navy to conduct vigorous patrols to safeguard the Namibian waters. In addition, there is growing concern of Illegal, Unreported and Unregulated (IUU) fishing at the Kunene River Mouth (KRM) despite the government efforts to tighten maritime security measures (De Klerk, 2021). Against this background, this study was prompted or motivated by calls to protect Namibian waters against illegal fishing. Hence, the study examined the effectiveness of maritime security in combating IUU fishing activities in Namibian waters, with particular emphasis at the Kunene River Mouth.

1.2 Statement of the problem

The “blue economy” contributes greatly to the Namibian economy. It is the third largest employment sector after mining and agriculture; the second Gross Domestic Product

(GDP) contributor after mining (Hartman, 2019). However, challenges of Illegal, Unreported and Unregulated (IUU) fishing activities in Namibia's northern maritime border with Angola at the Kunene River Mouth are on the increase (Ngutinazo, 2019; Hartman, 2019). These constitute serious threats to national economy of the state and a violation of national and international maritime law (Hartman, 2019; Ngutinazo, 2019). It clearly shows there is sea blindness within the Namibian waters particularly at the Kunene River Mouth that needs serious intervention.

Furthermore, Works and Transport Minister Mr. John Mutorwa has also stressed the need to address maritime security threat such as piracy, illegal fishing, oil spill and drug trafficking at a maritime security conference held in Windhoek from 13 to 17 May 2019 (Ngutinazo, 2019). In effort to contribute to the minister's (John Mutorwa) call on addressing maritime security threats, there is need to investigate the effectiveness of maritime security in combating IUU fishing activities in Namibian waters. With the above said, this study expounded knowledge on maritime security in Namibia by examining the effectiveness of maritime security in combating IUU fishing activities in Namibian waters, with reference to the Kunene River Mouth.

1.3 Research questions

1.3.1 Main Research Question

(i) To what extent is Namibia's maritime security effective in combating IUU fishing activities at the Kunene River Mouth?

1.3.2 Subsidiary Questions

The subsidiary questions were:

(ii) What mechanisms are used to guard against or monitor unlicensed foreign vessels conducting IUU fishing at the Kunene River Mouth?

(iii) What is the level of training for the naval forces on countering IUU fishing at the Kunene River Mouth?

(iv) What challenges are encountered at the Kunene River Mouth in combating IUU fishing?

(v) What should be done to address the challenges associated with IUU fishing at the Kunene River Mouth?

1.4 Significance of the study

Namibia is still a developing country and the "blue economy" contributes greatly to the Namibian economy. Hence, by examining the effectiveness of maritime security in combating IUU fishing at the Kunene River Mouth, the study will contribute to the already existing body of knowledge on the country's maritime security, as well as help to inform policy makers in government on how to effectively safeguard the "blue economy" at the shared water borders with Angola.

1.5 Limitation of the study

Namibia has a vast coastline that is 1572 km long, however, the sample was taken from the Walvis Bay coast which was representative towards Namibian northern coastline

particularly the Kunene River Mouth (Van Zyl, 2000). This is because there is no naval base along the northern Namibian coastline that monitors and surveillance the Kunene River Mouth apart from the naval base in Walvis Bay. Moreover, Namibian Navy Headquarters is stationed in Walvis Bay where the naval operations are launched in response to IUU fishing at the Kunene River Mouth.

The researcher encountered several limitations; the study was constrained by time to collect data and financial resources for travels, because the study was conducted at the Namibian coastal town of Walvis Bay. However, the researcher overcame these challenges, by using own funds to travel and collected data in April 2021, by scheduling prior appointments with potential respondents. Furthermore, various stakeholders were hesitant on sharing information given the sensitivity of the research; however, the researcher countered this by wearing the Namibian Defence Force (NDF) attire and by presenting the military identification card with permission letter from University of Namibia (UNAM) to conduct research.

1.6 Delimitation of the study

Though, (IUU) fishing activities remains a challenge throughout most Namibian rivers, particularly in the Okavango, Chobe and Zambezi River. Nevertheless, the study only focused on the effectiveness of maritime security in combating IUU fishing at the Atlantic Ocean that forms the coastline of Namibia with particular emphases on the Kunene River Mouth. Moreover, the study was conducted in Walvis Bay, because all maritime security agencies are stationed in Walvis Bay where the operations or vessels

are launched. This is also due to fact that there is no naval calling station at the northern Namibian coastline to monitor, surveillance and control activities at the Kunene River Mouth. Therefore, the study only considered the IUU fishing crimes committed at the Kunene River Mouth.

1.7 Conclusion

To recapitulate, this chapter highlighted the background of the research, the problem statement, the main and subsidiary questions as well as the significant of the research. All factors that hampered the smooth conduct of the research were discussed under limitations. Moreover, the study focused on the IUU fishing activities at the Kunene River Mouth. The next chapter examined literature related to effectiveness of maritime security in combating crimes by looking at various mechanisms, technologies and equipment.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this chapter, some of the literature sources related to effectiveness of maritime security in combating crimes were reviewed. The discussion was based on journals, articles, previous research and books on these dynamics. The purpose was to link the theory to the statement of problem and the main research questions of the study. This chapter mostly considered the technological aspects and other few elements such as cooperation within the maritime security spectrum. Scholars that studied aspects of maritime security, which called for a thematic review of extant literature, beginning with technical innovations in the sphere of maritime security.

2.2 Technologies and mechanisms used to curb Maritime Insecurity

In the literature, technology is projected as critical to curbing maritime insecurity globally and Africa in particular. According to Till (2013), Navies all over the globe are challenged in the 21st century by technological revolution that they have no control over. However, there is need to develop a strategic approach towards technological advancement, hence it can have impact on Naval force's capacity to perform their tasks. Till (2013) further argues that, naval capability can only be achieved with technology. In short, Till (2013) highlighted that effectiveness of naval forces can only be achieved through technological advancement. The researcher agrees with Till (2013), approach to affirm the effectiveness of maritime security in combating IUU fishing activities in

Namibian waters. In addition, Till (2013), reviewing his work helped the researcher greatly on understanding the theoretical approach.

2.2.1 Automatic Identification System (AIS)

Africa Defense Forum (2018) states that decision makers need to understand that fighting piracy and other maritime crimes such as illegal fishing and oil spill at sea will not remove the maritime insecurity. Suitable measures need to be taken onshore in order to achieve success. These measures include the need to have state of the art equipment to conduct proper monitoring and surveillance of the sea. Moreover, with the widespread availability of satellite imaging, the forces make use of Automatic Identification System (AIS) to monitor activities in territorial waters, whereby every vessel has AIS, which allows forces or agencies to monitor territorial waters while onshore. It is mandatory by international maritime law for all vessels above 300 gross tonnage to be fitted with AIS for providing information about a vessel to other vessels and to coast authorities automatically when entering countries EEZ (International Maritime Organization, 2005). Interestingly, like the case of Namibia the AIS cannot be enforced, hence it is not incorporated in the domestic maritime laws of Namibia.

Furthermore, the AIS give observers a wide spectrum of information pertaining to ship activities. By analyzing this data, security forces can map out areas where most illegal activities occur and deploy resources where it is most need (Africa Defense Forum, 2018). For instance, when a high density of AIS signal hits in one area, this could

indicate a vessel or a boat slowing down. One would assume that those vessels are conducting transshipment to conceal their catch (International Maritime Organization, 2005).

Africa Defense Forum (2018) further asserts that, if vessels turn off their AIS signals, it could indicate that the vessels are trying to conceal action, they might be overfishing or spilling oil, therefore a quick reaction could be sent out to attend to a given problem in a timely manner. Either the quick reaction team is sent with a speedboat or a Helicopter depending on the equipment a country has (Vrey & Mandrup, 2015). The importance of technology in combating illegal fishing cannot be overemphasized. To a reasonable extent, application of technology is necessary because it enhances capacity for monitoring, surveillance and control of the sea from onshore.

2.2.2 Vessel Monitoring System (VMS)

Vessel Monitoring System (VMS) is an onshore satellite tracking tool or software used to monitor vessel movement and analyze vessels for the purpose law enforcement and resources management (Global Fishing Watch, 2010). Moreover, the VMS has proven to be a vital component in combating IUU fishing and the system is fully compliant with international fisheries regulations (TrackWell, 2017). The VMS is user friendly and used by Navies, coastguards and fisheries authorities for surveillance over the EEZ.

Maintaining the argument on indispensability of technology to maritime security, Rawley and Patmon (2018) assert that Africans have another opportunity to leap ahead

in technology to protect one of their most important areas of commerce, which are the African waters.

2.2.3 Aircraft

Rawley and Patmon (2018) further affirms that, Latin American Navies face similar maritime challenges as those in Africa and have learned that airborne surveillance is simply the best way to locate, track, identify, and classify surface maritime targets involved in illicit or illegal activity. In a study conducted in the Caribbean, which is known for having the highest narcotics transit, the probability of detecting a surface target within six hours rose from only five percent with a surface asset to 95 percent when maritime patrol aircraft were included (Rawley & Patmon, 2018). Only a handful of coastal African countries have fixed-wing maritime patrol aircraft and helicopters, but these aircraft face similar issues to surface assets with fuel costs and mechanical readiness resulting in limited flight time on station. Therefore, Unmanned Aerial Systems (UAS) could be the solution for Latin American Navies and African naval forces in curbing maritime insecurity (Rawley & Patmon, 2018).

2.2.4 Unmanned Aerial Systems (UAS)

Unmanned Aerial Systems (UAS) or Unmanned Aerial Vehicles (UAV) or drones are commonly used in developed countries; however, this technology could provide a way for African navies and coast guards to greatly enhance maritime security in a relatively inexpensive manner (Rawley & Patmon, 2018). It is often costly to deploy a vessel to conduct vigorous patrols over territorial waters, which are very vast. The use of UAV's

could be cost effective, because it will overlook territorial waters in a timely manner (Karpowics, 2018). Moreover, no fuel is needed, as the fuel prices are constantly on the increase (Rawley & Patmon, 2018; Karpowics, 2018). In addition, UAV's can enhance the naval quick reaction forces to act swiftly when illegal activities are identified. The cost of flying a UAV is negligible compared to flying manned aircrafts. Furthermore, UAS can also be used as credible evidence in court when pictures are taken by positively identifying foreign vessels conducting IUU fishing, whereby the UAS provide the Global Positioning System (GPS), date and time as well as the activity being conducted at the time (Karpowics, 2018).

In short, Rawley and Patmon (2018) postulated that, the use of drones is a possible solution for African maritime insecurity. The researcher strongly agrees with the above stated authors, because it is often costly to deploy vessels to constantly conduct patrols over vast territorial waters and one is not able to cover the whole EEZ in a timely manner. Therefore, the researcher used the above stated sources to benchmark the importance of technology in the maritime security arena. Countries with weak technological capacity within the maritime security arena are often exploited through piracy and illegal fishing (Food and Agriculture Organization, 2016).

2.2.5 Offshore Patrols with Coastal Patrol Vessels

Offshore patrols with coastal patrol vessels is the most common mechanism used to actively patrol the EEZ for the purpose of management and maintaining constant

presence at sea, as opposed to passive onshore monitoring systems like the VSM (Gonteb, 2006). Coastal patrols can be conducted with surface vessels as well as submarines, but effectiveness and efficiency cannot be achieved without assistance from onshore systems supplemented by other technologies such as UAS and helicopters (Gonteb, 2006). Furthermore, naval forces and maritime law enforcement agencies conduct border patrols, escorting foreign vessels through territorial water, counter-piracy and smuggling as well disaster relief (Holland, 2020).

2.2.6 Coastal Surveillance Systems (CSS)

The Coastal Surveillance Systems (CSS) is a sophisticated radar based system used for border protection, territorial integrity that is the EEZ by ensuring safety and security at sea (Indra, 2019). The CSS is integrated with Geographic Information System (GIS) that allows the radar to track and intercept units represented over the cartography. Furthermore, the CSS system consists of multiple Command and Control Centers (CCC) and a set of Sensors Stations (SS) therefore forming a main CCC. This CSS is considered as the modern-day solution for protecting a country's border against piracy, illegal immigration, drugs and human trafficking as well IUU fishing activities (Indra, 2019). In addition, the coastal surveillance radar system can be a fixed or mobile sensor station.

2.3 Cooperative Maritime Security

Considering that many African states lack sufficient capacity to monitor their waters, the idea of cooperative security, has been suggested as the best option for these states to

protect their marine resources (Osinowo, 2015). In this regard, Feldt, Roell and Thiele (2013), argue that successful maritime security can be achieved through maritime collaboration or cooperation. Global maritime community shows stakeholders of different influence and power can enforce compliance in the maritime domain (Feldt, Roell & Thiele, 2013). Moreover, consensus has been achieved between all stakeholders about the national territorial waters, which extend 12 nautical miles (nm) (Feldt, Roell & Thiele, 2013). However, the Exclusive Economic Zone (EEZ) extends 200 nm. This large area needs to be vigorously, patrolled. However, but some countries are facing challenges on keeping their own waters safe from piracy, illegal fishing, oil spill, human trafficking and drug trafficking. International bodies have attempted to minimize, stop, or otherwise control threats to security in the maritime domain (Feldt, Roell & Thiele, 2013). This includes actions from international organizations such as the International Maritime Organization (IMO), public agencies/organizations such as law enforcement, and naval forces, private industry such as shipping companies, ports, privately contracted armed security personnel and entities from all nations to achieve maritime security (Feldt, Roell & Thiele, 2013).

Africa Defense Forum (2018) strongly agrees with Feldt, Roell and Thiele (2013), that if one country is unable to monitor and protect its EEZ, the entire region pays the price. Furthermore, statistics revealed that, more than $23.5 billion is lost annually from illegal fishing. The estimated losses in West Africa are $ 2.3 billion and the estimated losses in East Africa amounts to $400 billion (Africa Defense Forum, 2018). African waters are of strategic importance to the rest of the world. Safe passage to ports in the region and

security within its waters are vital globally. Furthermore, Somalian naval forces were greatly challenged to keep its waters safe and secure from illegal fishing, oil spill and piracy from 2005- 2012 (Africa Defense Forum, 2018). However, due to the intervention international and regional bodies, maritime insecurities were curbed in the Somalia waters (Bell et al., 2017; Coelho, 2013). The researcher does not, entirely agree with the fact that countries have to be dependent on external help to protect or guard its territorial waters.

Rawley and Patmon (2018) maintain that cooperation is vital to achieve maritime security. However, one should not only be dependent on external assistance for security. Rawley and Patmon (2018) argue that cooperation should be used for information or knowledge sharing. This entails participating in joint exercise with elite forces or experts in the field of maritime security like those from United States of America (USA), Russia, United Kingdom and Germany, in order to empower naval forces to effectively counter maritime criminal activities.

Maritime security has been achieved in some parts of the world, mostly through international involvement (Bell et al., 2017; Coelho, 2013). Within the context of Africa, there are cooperative maritime arrangements such Indian Ocean Maritime Security Cooperative Arrangements; Djibouti Code of Conduct (DCoC); and in North Africa, the 5+5 security architecture (Maritime Security Index, 2019).

International cooperation by countries like the USA with Ghana helped built good relation with neighboring countries in the Gulf of Guinea, particularly Ivory Coast to the west and Togo to the east (Africa Defense Forum, 2018). Those are countries that had differences in the past which involves matters like different colonial masters (Ivory Coast and Togo being a French colony, whereas, Ghana was a British colony). Moreover, joint exercises under the auspices of the USA helped to improve interoperation and trust amongst nations (Africa Defense Forum, 2018). One may further argue, if regional maritime security is attained in the Gulf of Guinea, the perpetrators would shift its activities to vulnerable waters.

2.4 Challenges of Combating IUU Fishing

IUU fishing is one of the main threats that developing countries are faced with (Food and Agriculture Organization, 2016). This is because foreign vessels take advantage or exploit weak management regimes of developing countries that lack technological capacity and resources for effective monitoring, control and surveillance (Gonteb, 2006; Food and Agriculture Organization, 2016). If these activities go unchecked, it can threaten the livelihood of developing countries, therefore leading to food insecurity (Food and Agriculture Organization, 2016).

Rawley & Patmon (2018) noted that Africa's maritime economy is critical to the continent's growth and prosperity during the next few decades. The relevance of this assertion comes from the realization that the Gulf of Guinea, for example is bordered by eight West African nations with an estimated population of, 450 million who derive commercial benefit from this body of water (Rawley & Patmon, 2018). Additionally,

over 90 percent of foreign imports and exports cross the Gulf of Guinea making it the region's key connector to the global economy. The West African waters recorded the highest level of illegal fishing globally, which is attributed by lack of technological capacity and resources (Osinowo, 2015).

2.5 Gaps Identified Within Reviewed Literature

Though technology is projected as critical to curbing maritime insecurity, developing countries will not be able to afford state of the art equipment. The same could be said of developing countries like Namibia. From the literature reviewed, various authors have concentrated on the technologies for curbing maritime insecurity, but not providing solutions that could assist developing countries to curb this insecurity. This has posed a gap on how effective such technologies and strategies are towards maritime security in developing countries. It is evident from literature that, despite the fact that there is state of the art equipment (coastal radar system, vessel monitoring system, coastal patrol vessels, aircrafts and UAS's), maritime insecurity is on the rise especially at the maritime borders like the case of Namibia. Therefore, the researcher examined what technology and mechanisms can be used to effectively monitor, surveillance and control territorial waters. This technology should be affordable for most Africans states.

2.6 Conclusion

To summarize, this chapter reviewed literature related to effectiveness of maritime security in combating crimes such as IUU fishing activities. Generally, this chapter examined the various mechanisms and technology used to curb maritime insecurity and also provided evidence to substantiate the findings of the study. This chapter further

highlighted that technology and financial resources are critical to curb maritime insecurity particularly in African countries with coastlines. The next chapter examined the methodology and design of the study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlined the methodology used for data collection for the study on investigating the effectiveness of maritime security in combating IUU fishing activities in Namibian waters with reference to the Kunene River Mouth. The chapter also clarified research design, research population, sampling and data analysis procedures as well as ethical consideration for the study.

3.2 Research Design

The study followed a qualitative approach to generate empirical data. Even though some statistical figures are referred to, the study was largely qualitative. Qualitative research was used, to understand, discover experiences from the earth observer personnel of the Namibian Navy, Ministry of Fisheries and Marine Resources (MFMR), Directorate of Maritime Affairs (DMA) and Namibia Ports Authority (NAMPORT) on the effectiveness of maritime security at the Kunene River Mouth. Qualitative research was also used to get in-depth information from the Commander of Naval Operation and Chief Operation Officer and Quick Reaction team of the Namibian Navy as well as personnel from the Namibian Police Water Wing; hence, they are able to stress their social experience of maritime security at the Kunene River Mouth. Lastly, the study was of a Descriptive nature by design; hence, it followed a Case study approach. The Case study allowed the researcher to obtain detailed information into the effectiveness of maritime security in combating IUU fishing activities Namibian waters with particular

emphasis on the Kunene River Mouth, which have been exploited by foreign vessels entering Namibian waters from Angolan waters.

3.3 Population

The population for this study consisted of respondents from five organizations namely the Namibian Navy, Namibian Police Water Wing, Ministry of Fisheries and Marine Resources, Directorate of Maritime Affairs (DMA) under the Ministry of Works and Transport, and Namibia Ports Authority. The study population consisted of 110 personnel from the Namibian Navy, only limited to experts responsible for monitoring the Earth Observer System manning the Maritime Domain Awareness Centre (MDAC), ten personnel and the population for the Quick Reaction Force, which is the team responsible to response to any emergency in the Namibian waters, 71 personnel that included the Commander of Naval Operations and Chief Operations Officer from the Namibian Navy.

In addition, the population for the Namibian Police Water Wing, which was ten personnel responsible in the Harbor limits. Moreover, the population for the experts from the Ministry of Fisheries and Marine Resources, the department responsible for monitoring the Earth Observing System, ten personnel. Furthermore, the population Directorate of Maritime Affairs which were four personnel responsible to identify risk pollution and risk at sea in Namibian waters. Lastly, the population for the experts from NAMPORT, who are responsible to monitor the Earth Observing System, which were five personnel. Based on the population, the largest population is from the Navy

because they are the main custodian that maintains maritime security in Namibian waters with assistance from afore mentioned organizations.

3.4 Sample

A purposive sampling method was used for this research because the interest was to identify the specialists who are responsible for monitoring the Earth Observing system for the various organizations. A sample of five personnel from the Namibian Navy who are responsible for monitoring, two personnel from Fisheries (monitoring team), two personnel from NAMPORT (monitoring team) and two personnel from DMA were ably identified. Furthermore, two personnel from the Namibian Navy, namely the Commander of Naval Operations and Chief Operations Officer from the Namibian Navy as key informants based on the key positions occupied.

The study also adopted snowballing sampling method especially with respondents from the Namibian Navy and Namibian Police based on the experience and challenges they have encountered during their tour of duty with regard to maritime security. Moreover, snowballing did not require sample size, the researcher kept adding respondents from the Navy and Police until data saturation was obtained. Six respondents were sampled from the Navy (four) and Police (two) through snowballing based on their years of experience in the maritime field. Lastly, the researcher also sampled 24 members from the Quick Reaction team of the Namibian Navy through systematic sampling method by conducting three focus group discussions with a maximum of eight in a group while adhering to COVID -19 protocols by keeping the required distance of 1, 5 meters from

each participant (Quick Reaction team). This brings the total sampled size for the study to 43 participants.

Table 1: Composition of the sample

Division	**Sample size**
Earth Observers from the Namibian Navy	05
Earth Observers from the MFMR	02
Earth Observers from NAMPORT	02
Earth Observers from DMA	02
Namibian Police Water Wing	02
Commander of Naval Operations and Chief Operations Officer	02
Experienced Naval Officers that started the Maritime Wing	04
Quick Reaction Force from the Navy	24
TOTAL	**43**

Based on the Table 1, out of the 43 total sampled respondents, 35 respondents were from the Namibian Navy that is 81 % of the total sampled respondents. This is because the Namibian Navy is the main custodian entrusted with maritime security in Namibian waters. The respondents of the Namibian Navy were critical for the study; hence, they had firsthand information on the issues centered on maritime security.

3.5 Research Instruments

Various research instruments were used for the study, which included semi-structured open-ended interviews, focus group discussion and observation.

(a) Semi-Structured Open Ended Interviews

The study used semi-structured open-ended interviews, because it allowed the researcher to follow up on answers that were of great importance for the topic at hand. Therefore, the semi-structured open-ended interviews were used to obtain data from Namibian Navy Officers, Namibian Police Water Wing, MFMR, DMA, and NAMPORT Earth Observers. Semi-structured open-ended interview was best suited for the above stated participants; hence, the respondents are experts in their various fields and are often busy to use other form of instruments such as questionnaires, which is not reliable or applicable to the type of study or participants. Furthermore, semi-structured open-ended interview allowed respondents to answer questions in much detail as possible while the researcher was taking note.

(b) Focus Group Discussion

Focus Group Discussion (FGD) was used to obtain data from the Quick Reaction team of the Namibian Navy while the researcher facilitated the discussion. The participants were sampled through systematic sampling method, in order to give each individual from the Quick Reaction team an equal chance of being selected. Moreover, the researcher opted to conduct a FGD with the Quick Reaction team, because they have firsthand information about the challenges faced when trying to execute their task of safeguarding Namibian waters. Furthermore, three FGD were conducted with the Quick Reaction team whereby each FGD consisted of a maximum of eight participants in a group for the purpose of control and adhering to COVID-19 regulations.

(c) Observation

Data was also collected through process of observation. The researcher observed viewing the earth observing system equipment used by the Namibian Navy, MFMR, DMA, and NAMPORT. As an observing technique was used to observe what types of vessels were used to conduct patrols.

3.6 Procedure

Before the researcher collected data, a permission letter or ethical clearance letter was obtained from the University of Namibia (UNAM). Furthermore, the researcher obtained a permission letter from the Chief of the Namibian Defence Force (CDF), to collect data at the Captain Sacharia Naval Base in Walvis Bay. In addition, the researcher also obtained permission to collect data from Namibian Police Water Wing, Fisheries Observer Agency (FOA), DMA, and NAMPORT in Walvis Bay. The researcher gained entry at the above stated stakeholders and organizations, by showing up in military uniform, because at the time of data collection, the researcher was a serving member of the Namibian Defence Forces (NDF) and presented the permission letter to conduct research from UNAM. Due to the nature of the research, the researcher collected data in Namibian Special Forces (NSF) attire. Before the researcher interviewed the identified respondents, he researcher paid a courtesy visit to the respective leaders and managers.

Primary data was collected through semi-structured open ended interviews with experts (Earth Observers) from the Namibian Navy (5), MFMR (2), DMA (2) and NAMPORT (2) whereby each interview lasted for 30 minutes, the researcher took note of points and

the data was analyzed at a later stage. Furthermore, semi-structured open-ended interview was also used with Commander of Naval Operation (1), Chief Operation Officer from the Namibian Navy (1) and four experienced Naval Officers that started Naval Maritime Wing in 1994, whereby each interview lasted for 45 minutes. In addition, semi-structured interviews were also used with two personnel from the Namibian Police Water Wing; each interview lasted for 25 minutes.

In addition, primary data was also collected through FGD with 24 personnel from the Quick Reaction team from the Namibian Navy. Moreover, three FDG were conducted, each FGD comprised of eight personnel and each FDG lasted for 45 minutes, while the researcher facilitated the discussion. During the FGD, the researcher took note of the vital points obtained from the group discussion.

Lastly, observation was conducted, in order to know how the earth observing equipment were operating, what equipment was used to monitor Namibian waters as well as to view how the Quick Reaction teams conduct patrol. This information helped the researcher obtain in depth information about the study.

3.7 Data Analysis

Qualitative methods were used to analyze data collected from the field. The qualitative data was collected from the earth observing personnel from the Namibian Navy, MFMR, DMA, and NAMPORT; Commander of Naval Operations, Chief Operations Officer from the Namibia Navy, Namibian Police Water Wing and the quick reaction team

through semi-structured open ended interviews, FGD and field observation. Qualitative data was collected through viewing annual budget of the Namibian Navy as well as viewing records and statistics for the cases reported in Namibian waters. Moreover, the researcher used Microsoft excel for statistical analysis to generate graphs. In addition, data collected from semi-structured open-ended interviews were analyzed through content analysis and systemically emerged into themes. This helped the researcher to determine whether the current equipment or strategies used by the maritime security agencies are effective or ineffective.

3.8 Research Ethics

The researcher observed the following ethical issues during the data collection process for the specified study:

3.8.1 Consent to collect data and involving of participants

Due to the sensitivity of the study, the identified stakeholders, organizations and participants would not have divulged information or participated in the study. Therefore, the researcher presented UNAM permission letter to conduct research and the permission letter from the Chief of the Namibian Defence Force (CDF) to collect data at the Captain Sacharia Naval Base in Walvis Bay. Moreover, the researcher paid a courtesy visit to stakeholder and organizations management for the intension to interview the employees or subordinates.

3.8.2 Right to privacy and confidentiality

Namibian Navy would not have been comfortable on giving classified information to the researcher; hence, the information might highlight weakness and might be exploited when in wrong hands. Therefore, the researcher ensured that the sensitive information given by the Namibian Navy would be kept confidential. Hence, the researcher is from a security background and will keep the classified information safe. Upon completion of the research, the researcher will submit the research to the Navy Commander, to keep it in the Navy security archives and should be limited to the top management of the Navy and other security experts such as the National Intelligence.

3.9 Conclusion

This chapter presented the research design for this study and highlighted that a qualitative approach was used to generate empirical data. The methodology also expounded the non-probability sampling methods that were utilized to sample the respondents, which was purposive and snowballing sampling techniques. This chapter also presented the research instruments, data collection and analysis procedures as well as the ethical consideration applied for the study. The next chapter presented the main findings on the effective of maritime security in combating IUU fishing at the Kunene River Mouth, which was collected through semi-structured open-ended interviews, FGD and observation.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the study conducted in the 2021 at the Captain Sacharia Naval Base, Police Water Wing, Fisheries department, DMA, and NAMPORT whereby all these key offices were stationed in Walvis Bay. The purpose of the study was to investigate the effectiveness of maritime security in combating IUU fishing activities in Namibian waters, with reference to the Kunene River Mouth. The study was therefore aimed at evaluating the methods and technologies applied by respective organizations and stakeholders to combat IUU fishing in Namibian waters. Furthermore, the study was conducted in Walvis Bay, hence is where the Naval Headquarters and other maritime security agencies offices are stationed.

The study collected data from 43 respondents that consisted of Earth Observers from the Namibian Navy (5), MFMR (2), DMA (2) and NAMPORT (2) through semi-structured open-ended interviews. Furthermore, semi-structured open-ended interviews were also used to collect data from Commander of Naval Operation (1), Chief Operation Officer (1) from the Namibian Navy and four experienced Naval Officers that started the Maritime Wing in 1994. In addition, semi-structured interviews were also used with two personnel from the Namibian Police Water Wing. Primary data was also collected through FGD with 24 personnel from the Quick Reaction team of the Namibian Navy. Respondents were selected through purposive sampling method based on their expertise in the maritime field. The findings are based on the views, opinions and perceptions of

the above stated respondents. Moreover, the data was analyzed and presented in themes to form textual report with the support of research literature. Lastly, the findings are discussed to address the objectives of the study.

4.2 Demographic Information of Respondents

The demographic information of respondents was profiled during data collection. The gender, age and years of experience in the field of maritime security of respondents are highlighted.

4.2.1 Gender Distribution of Respondents

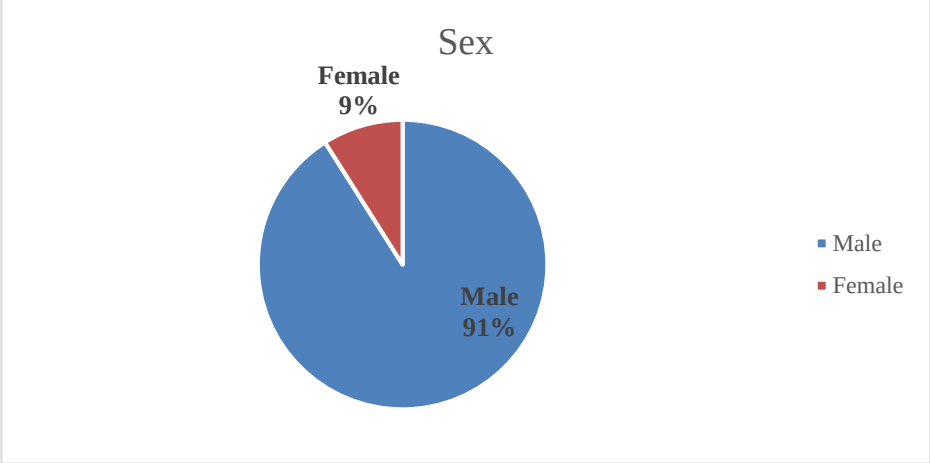

Figure 1: Gender Distribution of Respondents

Figure 1, shows the gender distribution of respondents that participated in the study. From the 43 respondents that participated in the study, 39 were male which constituted 91%, while four were female which constituted 9%. Moreover, from the four female respondents' one is an earth observer from the Fisheries department, one from NAMPORT and two from the Namibian Navy respectively. The results show that a

greater number male participated in the study compared to the female counterparts. Consequently, it shows that the maritime domain is a male dominated field though women are also given the opportunity to join the field maritime security.

4.2.2 Age Distribution of Respondents

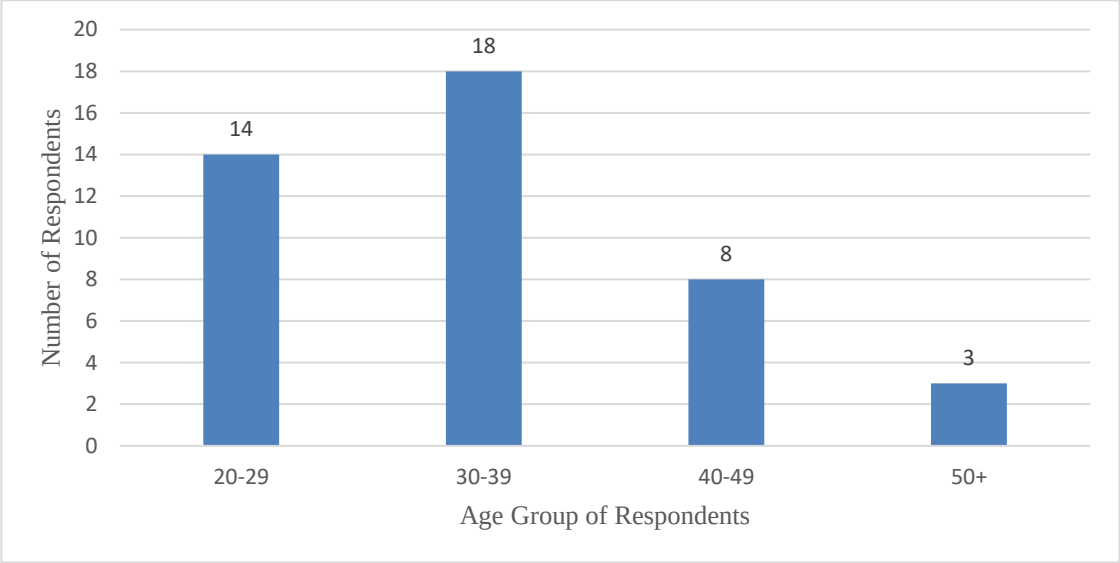

Figure 2: Age Group of Respondents

Figure 2, shows the age group of the respondents that participated in the study. 14 (32%) were respondents aged between 20-29 years, 18 (42%) were respondents aged between 30-39, eight (19%) were respondents aged between 40-49 years and three (7%) of the respondents were aged 50 years and above. The results indicate that most respondents were between the age group of 30-39 seconded by 20-29 years, which means that the age groups have more than 10 years of experience in the field of maritime security and they are being groomed to take over key positions in the maritime security sector.

Furthermore, the other two age groups 40-49 and, 50 and above, shows the level of experience and wealth of knowledge in the field of maritime security, which means this age groups have more perspective on the challenges encountered in the Namibian waters since the inception of the various organizations and stakeholders such as the Namibian Navy, Namibian Police Water Wing, Fisheries department, DMA, and NAMPORT. Generally, the results show a wide range of age distribution of the sampled respondents, which is good because it increased the prospect of understanding the perception about the effectiveness of maritime security in combating crimes in Namibian waters.

4.2.3 Years of Experience of Respondents within the field of Maritime Security

Table 2: Years of Experience of Respondents within the field of Maritime Security

Years of Experience	**Number of Respondents**	**Percentage of Respondents %**
10 years and below	14	32 %
11-20 years	18	42%
21-31 years	11	26%
Total	**43**	**100**

Table 2, shows the years of experience of respondents within the field of maritime security. The study revealed that 14 (32%) respondents had ten years and below, 18 (42%) respondents had 11-20 years and 11 (26%) respondents had 21-31 years. A higher percentage of respondents had 11-20 years of experience, which means they have vast knowledge on maritime security. Moreover, these individuals attended various developmental courses in the field of maritime security. The study further revealed that all respondents ventured into the maritime security straight after completing of grade 12

and acquired further knowledge on the job, by undergoing maritime courses or studies in various that are well vested with maritime security name United States of America (USA), United Kingdom (UK), China, Brazil, Greece, Norway, Australia, Sweden, Spain and South Africa. This implies that the human resource aspect with regard to experience and expertise is covered; hence, the participants are well exposed or knowledgeable on maritime security. This also indicates that, the longer one stay in an Organization, the more information or knowledgeable the respondents are in the field of maritime security.

4.3 Details of Namibian Waters

The study revealed that Namibia has a coastline of 1572 km from the Kunene River Mouth up north to the Orange River down south with a total ocean area of 564 748 km². This therefore indicates the maritime security organizations and stakeholders have vast area to cover with limited assets and platforms that are often operating or launching from Walvis Bay making distance to area of interest time consuming. Moreover, the Namibian territorial waters have to be guarded or monitored diligently because of the economic importance for the Namibian economy; hence, it has abundance of diamonds and fish species. This therefore makes Namibian waters a lucrative market for fishing both legal and illegal. Particularly the Kunene River Mouth is often exploited by vessels entering from Angolan waters, this is due to the absents of a Naval station in the northern part of the Namibian coastline.

In addition, Namibia has an Exclusive Economic Zone (EEZ) of around 200 Nm (370.4 km) which is the distance from the shoreline into the sea, in simple terms that is the Namibian waters. In other words, the EEZ is a sea zone over which a country has special rights over the exploration, exploitation, protection and management of marine resources (Gonteb, 2006). Furthermore, vessels that are licensed to fish in Namibian waters are only limited within the EEZ and are closely monitored to ensure compliance. In the EEZ any law of Namibia that relate to the exploitation, exploration, conservation or management of natural resources of the sea whether living or non-living shall apply at all times.

4.4 The Roles of Various Stakeholders in Maritime Security

The study identified various organizations and stakeholders that are responsible for securing and safeguarding Namibian waters. Moreover, the various organizations are highlighted with their roles in no particular order.

4.4.1 The Namibian Navy

The Namibian Navy was established in 1994 and is empowered with the constitutional mandate to protect the Namibian EEZ (Government of the Republic of Namibia, 2010). The Namibian Navy has a wide spectrum of responsibilities; the primary role of the Namibian Navy is divided into two that is during wartime and peacetime. The role of Namibian Navy during wartime is to protect and defend Namibian waters (EEZ) by maintaining constant onshore and offshore surveillance, and security of the countries entire coastline through naval combat engagement, search and rescue operations,

casualty evacuation, naval blockades and landward combat operations by maritime airborne and seaborne forces (Ministry of Defence, 2011).

During peacetime, the secondary role of the Namibian Navy assists civil organizations or agencies such MFMR in conducting offshore patrols by providing personnel who acts as a security element to the Fisheries patrol vessels as well as onshore surveillance, therefore enforcing fisheries protection regime. Onshore surveillance is considered very critical to the Namibian Navy to monitor all activities in Namibian waters; therefore, the Maritime Domain Awareness Centre (MDAC) of the Namibian Navy is entrusted with this responsibility. Furthermore, the Namibian Navy also conduct patrols at the coastline the Zambezi and Chobe River respectively to curb IUU, smuggling of contrabands and illegal entry into Namibia.

The Navy further assists civil authorities by protecting the blue economy by preserving maritime resources in the EEZ through the combating illegal fishing, immigration, smuggling (arms and drugs), human trafficking piracy and threats to the environment. Moreover, the Namibian Navy also protect Namibian waters and physically enforcing sea boundaries by conducting constant patrols as a deterrence measure and guarantee safe use of the Namibian sea.

4.4.2 Namibian Police Water Wing

The Namibian Police Water Wing was established 2016 entrusted with the responsibility to patrol in the harbor which is in the Territorial Sea Zone (12 Nm). However, currently the Namibian Police Water Wing is not doing that, because of lack in expertise with regard to maritime security, therefore making their function dormant in patrolling the Territorial Sea Zone (12 Nm). The Namibian Police Water Wing has a patrol vessel, which is currently operated by the Namibian Marines. This led to the Namibian Navy taking up the responsibility of maintaining security in Territorial Sea Zone (12 Nm) which was supposed to be covered by the Namibian Police Water Wing.

4.4.3 Ministry of Fisheries and Marine Resources

The MFMR was established in 1991, with the mandate to manage the living aquatic resources in Namibian waters by conducting sea and aerial patrols and onshore monitoring devices to guard against Illegal, Unreported Unregulated (IUU) fishing and sea pollution. Moreover, this is further intensified by liaising or cooperating with other government law enforcement agencies like the Namibian Navy and Police Water Wing through information sharing and conducting joint sea and aerial patrols. The MFMR also ensures the registering of fishing vessels to operate in Namibian waters. The MFMR further make certain that all licensed vessels fishing in Namibian waters keep their Automatic Identification System (AIS) on for the purpose identification and locating of vessels. Furthermore, the MFMR also prevent vessels trying to refuel from each other while in Namibian water.

4.4.4 Directorate of Maritime Affairs

The Directorate of Maritime Affairs (DMA) was established 2003 within the Ministry of Works, Transport and Communication to monitor the Namibian sea against risk of Pollution and risk at sea. The DMA does not have vessels, but are only limited to onshore monitoring and liaise with the Namibian Navy, MFMR and NAMPORT when oil spills are detected in the Namibia waters. The DMA is also responsible to register vessels allowed to do bunkering in Namibian waters. Moreover, bunkering can only be done in middle sea, which is 50 Nm (92.6 km) from shore. The DMA is also responsible for in cooperating international maritime law into the domestic law and ensure compliance.

In addition, DMA also ensures that the various government agencies and organization complies with all the maritime conventions that Namibia is signatory to. Lastly, it was noted, the DMA is struggling to carry out their duties due to the lack of work force, industrial and technological capacity. Based on this premises, the Namibian Navy, MFMR, NAMPORT always render assistance to DMA, because these agencies are more technology advanced in terms of vessels and equipment.

4.4.5 Namibian Ports Authority

NAMPORT was established 1994 and its role in maritime security is to support the government agencies involved in maritime security namely the Namibian Navy, MFMR and DMA in terms of compliance at sea and scrutinizing vessels docking at the

Namibian ports. NAMPORT also protect vessels from possible threats at sea by means of ensuring a safe passage that is in line with International Ship and Port Facility Security (ISPS) Code, which was developed during the aftermath 9/11 attack.

All the above stated organizations are stationed in Walvis Bay. Based on the above stated roles, only two organizations conduct patrols in the Namibian water that is the Namibian Navy and MFMR, while the other agencies are limited to onshore monitoring in exception of the Police Water Wing that is currently dormant. Furthermore, the Namibian Navy conducts most of the patrols; hence, the Namibian Navy is entrusted with most security tasks in the Namibian waters. The Namibian Navy overlooks the EEZ, making them the main custodian for maintaining maritime security in Namibian waters.

4.5 Current Deployment of the Namibian Navy

Since the Namibian Navy is the main the custodian for maritime security, the current navy deployment is highlighted in Figure 3.

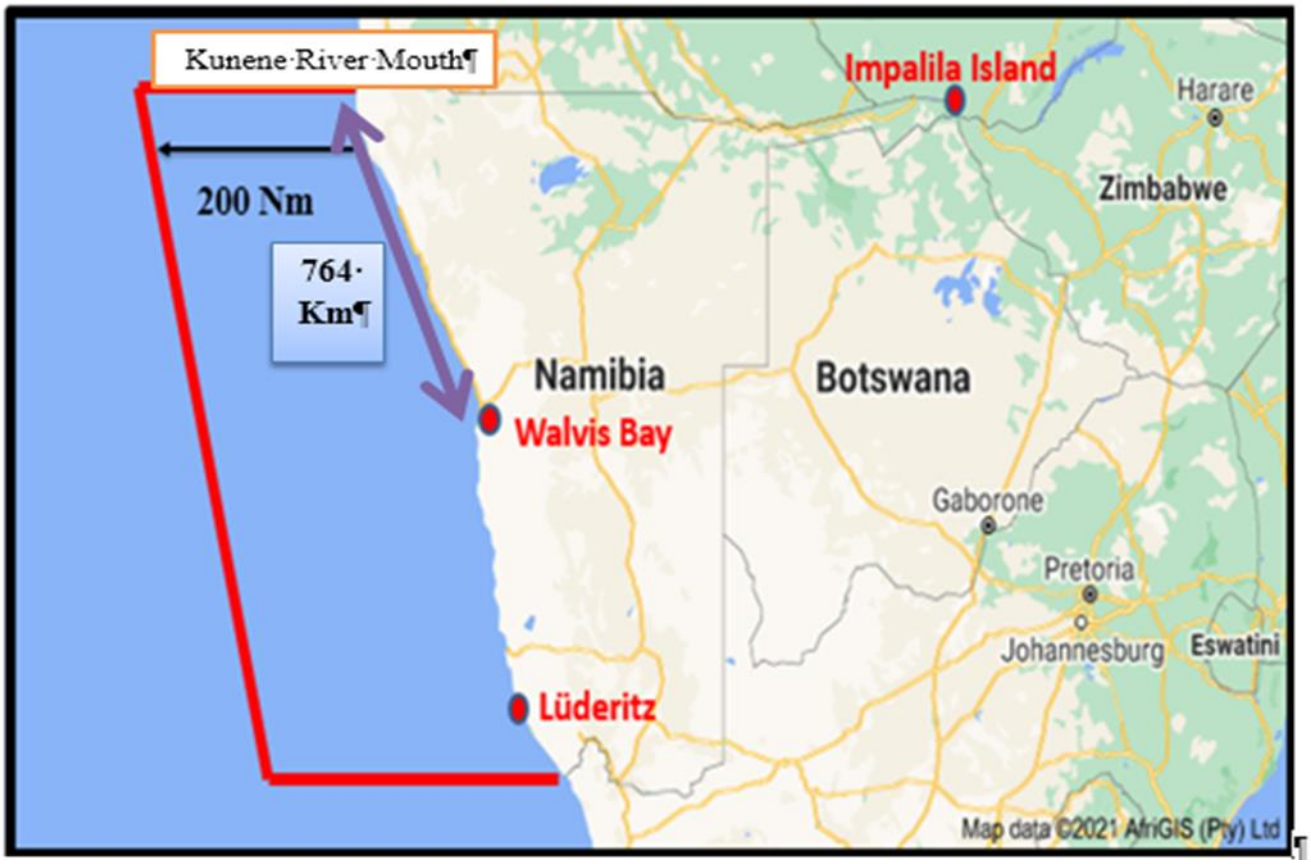

Figure 3: Naval Deployment for the Namibian Navy (Not to Scale) (Source: Google Map, 2021)

Figure 3, shows the current strategic deployment of the Namibian Navy in order to protect the EEZ along the Namibian coastline and the rivers. The red dots represent the three naval bases, namely the Sacharia Naval Base in Walvis Bay, Naval Calling station in Luderitz and Impalila Naval Base stationed at Impalila Island in the Zambezi Region. Furthermore, redline represents the Namibian water boundaries or borders that are within EEZ of 200 Nm. The Sacharia Naval Base in Walvis Bay is the where Namibian Navy headquarter is located and it caters or overlook central and northern Namibian waters, whereas the Naval Calling station in Luderitz caters for the southern Namibian waters and the Impalila Island Naval Base caters for the Zambezi and Chobe River.

In addition, from Figure 3, the Kunene River Mouth is 764 km from Sacharia Naval Base in Walvis Bay rendering the distance far for immediate response, therefore creating a security vacuum. Moreover, it takes the Namibian Navy medium size coastal patrol vessels namely the Namibian Ship (NS) Brukaros, NS Oryx and NS Brendan Simbwaye approximately 26 to 30 hours using economic speed of 15 knots per hour to reach the Kunene River Mouth. This therefore gives illegal and unlicensed vessels ample time to return to Angolan waters after conducting IUU fishing at the Kunene River Mouth. Moreover, there are limited coastal patrols conducted due to lack of funding to maintain vessels as well as funds for fuel, these mishaps are exploited by illegal foreign vessels. This is very worrisome for the Namibian Government, because the Government is losing unprecedented revenue from the IUU at the Kunene River Mouth.

4.6 Current Mechanisms used to guard against or monitor the Kunene River Mouth activities

The study identified the various mechanisms used by both the Namibian Navy and MFMR to monitor the Kunene River Mouth.

4.6.1 Coastal Vessel Patrol

The Namibian Navy and MFMR conducts sea patrol with coastal patrol vessels. The study revealed that the Namibian Navy and MFMR conducted two patrols each to the Kunene River Mouth in 2020. Based on the annual plan of the Namibian Navy and MFMR, patrols to the Kunene River Mouth are supposed to be conducted twice a month, for 15 days. However, this is not done due the lack of funds to maintain vessels as well as fuel for vessels.

The study further revealed that the Namibian Navy and Fisheries patrols are often hesitant to dispatch a patrol vessel to the Kunene River Mouth when a black dot is observed on the VSM, which is a clear indication that the unidentified vessel is conducting IUU fishing. It takes approximately 26 -30 hours when using economic speed of 15 knots per hour for the patrol vessel to reach the Kunene River Mouth. This therefore gives the unidentified vessel ample time to return to Angolan waters and the Namibian Navy and Fisheries patrol cannot pursuit the unidentified vessel into Angolan waters. Moreover, there is no evidence or image taken while the unidentified vessel is conducting IUU at the Kunene River Mouth.

The Namibian Navy conducts 15 days' coastal patrols with medium sized coastal patrol vessels NS Brenden Simbwaye, NS Brukaros, NS Oryx and sometimes utilizes the larger size logistic vessel NS Elephant to reach the Kunene River Mouth. This are combat vessels; hence, they are mounted with weapons but can still serve the purpose of patrolling. This is because Namibian Navy should be ready for any eventuality that could occur at sea. The study also revealed that the Namibian Navy, Namibian Police Water Wing and MFMR conduct joint patrols in the EEZ to deter and curb IUU fishing, with reference to the Kunene River Mouth

4.6.2 Aerial Patrol

The MFMR conducts aerial sea patrol with an aircraft to monitor activities at the Kunene River Mouth. The patrol aircraft used is the REIMS-CESSNA F406.

Furthermore, the patrol aircraft does not offer option for fast roping to disembark from the patrol aircraft onto the suspicious vessels at the Kunene River Mouth. Therefore, the aerial patrol team is only limited to taking pictures as evidence and also calling the onshore station in Walvis Bay to confirm whether the vessel is licensed to fish in Namibian waters, if not the suspicious vessel is informed to leave the Namibian waters. However, this could be avoided by conducting simultaneous sea and aerial patrols at the Kunene River Mouth. Moreover, it takes a flight time of 1hour and 20 minutes from Walvis Bay to the Kunene River Mouth. Nevertheless, when the fisheries patrol receives a call that vessels are conducting IUU fishing at the Kunene River Mouth, there are times the aircraft does not have fuel, which is the quickest method to reach the Kunene River Mouth. Furthermore, the patrol aircraft cannot fly during bad weather condition, therefore limiting the quick response capability.

4.6.3 VMS

The Namibian Navy and MFMR use VMS to monitor the Kunene River Mouth. In addition, the VMS used by the Namibian Navy and MFMR is able cover the entire Namibian waters. This is done by monitoring the vessels AIS for identification purpose. However, some vessels operating in Namibian waters switch their AIS, because it is not stipulated in the domestic maritime law of Namibia. This is mostly done by vessels entering the Namibian waters from Angola with aim to conduct IUU fishing at the Kunene River Mouth. Moreover, the VMS is also able to monitor vessels that switch of their AIS especially at the Kunene River Mouth. If the vessel AIS switched of, the VMS screen is able to show a dot only with no information of the vessel, it also shows the

direction of movement for tracking purpose. It indicates vessels coming from Angolan waters entering into Namibian waters, then remain stationary for two to four hours, sometimes more than return to Angolan waters. Though the VMS shows all activities in the Namibian waters, the information provided is backdated for four hours, meaning it does not provide real time imaging or information. This therefore means the Namibian Navy and MFMR monitoring system are in a grey zone for a period of four hours, which create room for IUU fishing activities at the Kunene River Mouth.

4.6.4 Informants

Additionally, there are also other methods used to assist the Namibian Navy and MFMR to monitor the Kunene River Mouth, which is information from registered vessels licensed to fish in Namibian waters. The registered vessels call the Namibian Navy and MFMR by informing them on vessels entering into Namibian waters from Angola. In addition, tourists who visit the Kunene River Mouth witness vessels entering into Namibian waters to conduct IUU also inform the Namibian Navy and MFMR. The tourists often try to present proof by taking pictures of these vessels while conducting IUU fishing at the Kunene River Mouth.

4.6.5 Cooperation through Memorandum of Understanding between Namibia and Angola

The other mechanism identified is the Memorandum of Understanding (MoU) signed in 2017 between the Namibian Fisheries patrol and the Angolan Fisheries patrol (Ministry of Fisheries & Marine Resources, 2017). This was aimed at sharing of information

about suspicious vessels and monitor IUU fishing at the maritime borders known as the Kunene River Mouth by conducting joint patrols in the that particular region. However, this MoU proved less fruitful, because the IUU fishing at the Kunene River Mouth increased after 2017. The study highlighted that the Angolan Navy and fisheries patrol lack the technological capacity and political will to conduct patrols at the maritime borders. Therefore, the vessels from Angolan waters exploit the maritime security vacuum that exist in Angolan waters to enter Namibian waters and conduct IUU at the Kunene River Mouth then return to Angolan water.

The findings reflect that, the current mechanisms used to guard against or monitor IUU fishing at the Kunene River Mouth are inadequate, therefore calling for other approaches or mechanisms. However, there exist MoU between Angola and Namibia on sharing of information about suspicious vessels at the northern maritime border, the IUU fishing activities are still on the rise with vessels fleeing back into Angolan waters, but no response from the Angolan authorities. Moreover, the sea and aerial patrols are launched from Walvis Bay, which is a distance of 764 km to reach the Kunene River Mouth. This takes a vessel 26-30 hours to reach the Kunene River Mouth, while it takes an aircraft 1 hour and 20 minutes, but the patrol team cannot disembark from the aircraft. Therefore, other approaches could be used by setting up a naval base close to the northern maritime border, in order to improve the response time and maintain constant presents at sea to deter and prevent IUU fishing activities at the Kunene River Mouth. Lastly, other mechanisms to be implemented will not entirely solve the problem at hand, but it will help reduce the IUU fishing activities at the Kunene River Mouth.

4.7 Budget for Naval Operations

The 2019-2020 annual budget and expenditure for naval operations was reviewed. Before looking at the cost, one need to look at the various expenses namely maintenance of vessels, fuel, lubricating oil, water, food and allowances for crewmembers. The annual budget that the Namibian Navy received was close to N$ 60 000 000.00 during 2019-202 financial year, whereby that amount is in cooperated in all naval operations and cater for all the various assets, vessels and platform of the Navy as well as rendering assistance to civil agencies. Furthermore, N$ 6 150 000.00 is spent on refueling all five naval vessels for operational readiness. Moreover, when these vessels are refueled twice in one year, the cost will be N$ 12 300 000.00. The N$ 12 000 000.00 for refueling account for 20.25 % of the annual budget.

In addition, maintenance cost estimated for all vessels is estimated to be N$ 30 000 000.00, which is 50% of the annual budget. The remaining amount of N$ 17 000 000.00, which is 29.75 % caters for other expenses such as conducting training drills. The average estimated cost based on a year's activity without including rendering assistance to civil authorities by conducting six months' patrolling twee weeks a month is roughly N$ 11 732 000.00. Looking at the numbers, the funding is therefore inadequate for the Namibian Navy to effectively carry out its constitutional mandate. For the effectiveness and efficiency for any naval operations, there is need for a dedicated budget.

4.8 Level of Training for the Namibian Navy personnel on countering IUU fishing activities at the Kunene River Mouth

Generally, the Namibian Navy has invested in human resource development since inception in 1994, through capacity building by sending personnel to various countries that are known to be naval powerhouses such the United States of America (USA), Germany and Brazil as well South Africa. Furthermore, all Namibian Navy personnel are trained on boarding, searching and seizure as well as self-protection, survival and navigation at sea. This is very important for all naval personnel; hence, it is often dangerous to board vessels that are conducting IUU fishing activities, whereby illegal foreign vessel might try to put up a fight with attempt to flee in order to avoid capture.

In addition, the Namibian Navy also has specialists such as the Quick Reaction Team (QRT) that comprises of marines and sailors trained to response to alerts and address threats that arise at sea. This team is dispatched to join the MFMR during coastal vessel patrols as well as aerial patrols, hence the team act as a protection element for the fisheries observers because the fisheries observers are not trained on weapons. Given the various dangers that are presented at sea, hence, illegal vessels will try to escape impounding or apprehension at all cost.

The QRT is well exposed in terms of training; hence, they are able to operate on land and in water. Most of the QRT members are mostly trained in Brazil and at the Naval Training School (NTS) in Walvis Bay, Namibia. However, the only areas that the team

is lacking is the hot pursuit training and fast roping or disembarking from an aerial platform or Helicopter onto a vessel. Moreover, fast roping from helicopter onto a moving vessel requires proper training for both the QRT personnel and the polit. Training on hot pursuit and fast roping from a Helicopter can enhance the Namibian Navy and MFMR quick reaction capabilities in order to impound or arrest all vessels conducting IUU at the Kunene River Mouth.

4.9 IUU fishing activities recorded at the Kunene River Mouth since 2017-2021

The statistics obtained from the Namibian Navy and MFMR revealed that at least 35 vessels were detected or identified conducting IUU fishing at the Kunene River Mouth since 2017 until present. These vessels sneak into Namibian waters at night to conduct IUU fishing at the Kunene River Mouth then sail back to Angolan waters. Some of the vessels conducting such activities are licensed to fish in Angolan waters while the others are not. These vessels are further alleged to be shipping the illegally obtained fish at the Kunene River Mouth to the Democratic Republic of Congo (DRC) (Shihepo, 2021). Though the Namibian Navy and MFMR can detect or monitor vessels conducting IUU fishing activities at the Kunene River Mouth using onshore devices such as the VMS, however, it is beneficial to catch the vessels doing the act by being physically present at the Kunene River Mouth in order to impound the vessel for prosecution.

The study also revealed that, the Namibian Navy and MFMR often report the cases to the Angolan Fisheries but are uncooperative at times, given the fact that some of the

vessels conducting IUU fishing at the Kunene River Mouth are licensed to fish in Angolan waters. In 2017, 14 vessels were detected conducting IUU fishing at the Kunene River Mouth, the incidents were reported to the Angolan authorities, and however, only one vessel was fined more than N $ 1, 5 million while the rest were scot-free.

Additionally, in 2018 only two vessels were detected conducting IUU fishing at the Kunene River Mouth, due to limited patrols conducted during the reflected year. This is attributed to the fact that some vessels from the Namibian Navy and MFMR were not sea worthy, meaning the vessels needed maintenance or service before going back at sea, in order to ensure safety of the crew. The other issue that limited 2018 coastal vessel patrols was lack of funds for fuel. The respondents further highlighted that, the lack of sea worthy vessels for 2018 was due to lack of funds to maintain the vessels. Moreover, the VMS also detected activities at the Kunene River Mouth during 2018, but could not be substantiated due to limited patrols conducted. This can also mean that there was more IUU fishing conducted at the Kunene River Mouth during 2018 due to the limited patrols.

For the period of 2019, 17 vessels were reported to have been conducting IUU fishing at the Kunene River Mouth and the matter was referred to the Angolan authorities but no feedback was received. This therefore shows that the Angolan authorities are not cooperative at times, which affect Namibia and Angola relationship with regard to protecting and preserving aquatic species from IUU fishing activities. Moreover, in the same year, a vessel that was suspected of conducting IUU fishing activities at the Kunene River Mouth requested permission to enter Namibian waters after spotting the

Namibian patrol vessel in the area, but was denied entry. IUU fishing activities was closely monitored in the area, due to the sea patrols that were intensified at the Kunene River Mouth in 2019, owing to the vessels that were repaired.

Furthermore, no IUU fishing activities were recorded in 2020, due to lack of sea patrols by the Namibian Navy, Namibian Police Water Wing and MFMR at the Kunene River Mouth. Moreover, in 2020 only four sea patrols were conducted at the Kunene River Mouth by the Namibian Navy, Namibian Police Water Wing and MFMR. The reduced presence at the Kunene River Mouth, therefore provided room for exploitation by illegal foreign vessels to conduct IUU fishing activities.

In 2021, during the month of October two large vessels with no visible markings were observed border hopping with fishing gear in Namibian waters entering from Angolan waters. Border hopping means that these vessels are illegally entering Namibian waters to conduct IUU fishing activities. Due to the absence of visible markings on the vessels, this means that the large vessels observed are also not licensed to fish in Angolan waters, meaning that the two large vessels are also operating illegally in Angolan waters. It is however not clear whether the Angolan authorities are aware of such activities. Furthermore, these suspected vessels do not respond when given instructions to stop by the Namibian Navy and MFMR patrol vessels, the vessels only retreat to the Angolan waters.

The Namibian Navy and MFMR patrol vessels cannot pursue the vessels into Angolan waters, which is against the International Maritime Law. Based on this, the Namibian Navy and MFMR will only be able to carry out hot pursue if Angola and Namibia authorities sign a Memorandum of Understanding (MoU) that allows for hot pursue when illegal vessels are spotted fleeing into the other countries territorial waters. Moreover, this will allow for quick impounding of vessels and giving of fines to vessel conducting IUU fishing at the Kunene River Mouth area, which will therefore act as a way of deterrence, hence there will be no place to flee.

Additionally, unflagged foreign vessels are often seen conducting IUU fishing activities at the Kunene River Mouth by tourists and crewmembers from vessels licensed to fish in Namibian waters. They always alert the Namibian Navy and MFMR, however, the Namibian Navy and MFMR coastal patrol vessels are stationed in Walvis Bay that takes about 26-30 hours with the economic speed of 15 knots per hour to reach to the Kunene River Mouth, by that time the vessels would have sneaked back into Angolan waters. Moreover, one need to consider whether the coastal patrol vessels have fuel and logistical supplies such food and water for the crewmembers before dispatched at sea. The crewmembers from the licensed vessels fishing in Namibian waters and tourists use binoculars to view illegal foreign vessels sneaking into Namibian waters and conduct IUU fishing activities. The country is losing an unspecified amount of fish tonnage, because of IUU fishing activities. The informants therefore advised for better strategies to be adopted by the Namibian Navy and MFMR to detect and prevent IUU fishing at the Kunene River Mouth.

Furthermore, when sea patrols are not conducted, the maritime security agencies mostly depend on informants such as tourists and crewmembers to report on suspicious activities at the Kunene River Mouth. This therefore means that more effort should be focused in that area; hence, the Namibia is losing revenue from IUU fishing activities at the Kunene River Mouth. Moreover, if these issues are not looked at, it may constitute a threat to Namibian fishing industry, therefore affecting state revenue.

4.10 Challenges encountered when combating IUU fishing activities at the Kunene River Mouth

The study identified the various challenges encountered when combating IUU fishing activities at the Kunene River Mouth.

4.10.1 Financial Constrains

One of the major challenges identified was the financial constrains especially during the 2020 financial year. Given the fact that most financial resources had to be channeled to the Health sector in the fight against the COVID- 19 Pandemic. Furthermore, only four sea patrols were conducted in 2020; hence, the vessels were not sea worthy due to lack of maintenance or availability of fuel, this all cascade down the financial constraints. Moreover, the coastal patrol vessels are only dispatched when need arises, which already provides a loophole. In addition, these challenges are often exploited by the illegal foreign vessels; hence, there are no coastal patrol vessels to monitor their IUU fishing activities at the Kunene River Mouth. In order for the Namibian Navy to effectively combat IUU fishing at the Kunene River Mouth, there is need for adequate funding.

4.10.2 Response/Reaction Time

The distance from Walvis Bay to the Kunene River Mouth is approximately 764 km, which takes the coastal patrol vessels 26-30 hours with an economic speed of 15 knots per hour. This distance from Walvis Bay to the Kunene River Mouth is a contributing factor to the inability of the Namibian Navy and MFMR to respond to illegal foreign vessels detected at the Kunene River Mouth.

4.10.3 Uncooperativeness from the Angolan Authorities

Uncooperativeness from the Angolan authorities was also identified as one of the key challenges of combating IUU fishing activities at the Kunene river mouth. Hence, the Angolan authorities are not honoring the bilateral agreement signed between Namibia and Angola to prevent and deter IUU fishing activities in the EEZ, explicitly along northern maritime border known as the Kunene River Mouth (Government of the Republic of Namibia, 2015). Moreover, when the illegal foreign vessels are detected by the Namibian Navy and MFMR coastal patrol vessels and instructed to stop, they disregard the instruction then flee back into Angolan waters. The Namibian Navy and MFMR coastal patrol vessels do not have the right to pursue the illegal foreign vessel into Angolan waters.

4.10.4 Lack of Coastal Radar System

Lack of coastal radar system that is able to provide real time information as compared to the VMS, which provide vessel information that is backdated for four hours. Though

one may argue that, the vessels are not travelling fast and it is easy to track their movement during the four-hour period. Nevertheless, the four hours warrant enough time to conduct IUU fishing at the Kunene River Mouth then return into Angolan waters.

4.10.5 Lack of Coordination between Maritime Security Agencies

There is the lack of coordination in terms of sharing of information on foreign illegal vessels spotted by informants as well as sharing of information on when vessels will be dispatched for patrol at the Kunene River Mouth between the maritime security agencies. This therefore hampers the efficient management, protection, surveillance and monitoring of the EEZ particularly at the Kunene River Mouth.

4.10.6 Lack of participation in Joint Naval Exercises

Furthermore, there is lack of participation in joint naval exercises with Southern African Development Community (SADC) and other regional states. Invitations are always sent out but the Namibian Navy sends members as observers due to limited budget.

4.10.7 Lack of training on fast roping

Fast roping training for the quick reaction team was also one of the challenges identified. These skills are critical for facing the modern day challenges in the realm of maritime security, which allow the quick reaction team to pursuit illegal foreign vessels, trying to flee back into Angolan water. Furthermore, fast roping will allow the quick reaction team to conduct fast roping from a helicopter onto illegal foreign vessels.

4.10.8 Absence of maritime authorities at the Kunene River Mouth

Lastly, the absence of a maritime authority to coordinate the maritime security issues to the rest of the maritime security clusters was identified as one of the key challenges'. There is no authority appointed to lead operations such the IUU fishing activities at the Kunene River Mouth. This is due to the lack of constant presence at the Kunene River Mouth.

4.11 Effectiveness of Maritime Security in combating IUU fishing activities at the Kunene River Mouth

In analyzing the results, the current maritime security is ineffective in combating IUU fishing activities at the Kunene River Mouth. Effectiveness was measured by examining the current mechanisms and technology used by maritime security agencies. When sea patrols are not conducted at the Kunene River Mouth, there is no credible evidence apart from informants like tourists and crewmembers from licensed vessels that calls the maritime security agencies stationed in Walvis Bay to report the matter. It takes approximately 26-30 hours when a vessel is dispatched from Walvis Bay to reach the Kunene River Mouth. By the time the coastal patrol vessel reaches the Kunene River Mouth, the illegal foreign vessel flees into Angolan water to escape prosecution. In addition, onshore technology like the VMS shows suspicious activities on the screen, but no arrests are made, because the VMS's are stationed in Walvis Bay, while monitoring activities at the Kunene River Mouth.

Furthermore, when aerial patrols are conducted and suspicious illegal foreign vessels are spotted conducting IUU fishing activities at the Kunene River Mouth, the aircraft is not

mounted with infrared camera to take pictures to present it as evidence in court. Moreover, the aircraft cannot be used to conduct fast roping to board the illegal foreign vessel. The MoU signed between Namibia and Angola authorities on cooperation through information sharing on suspicious activities at the maritime borders is unhelpful. This is because when Namibian authorities report to the Angolan authorities on illegal foreign vessels detected of conducting IUU fishing activities, the Angolan authorities do respond. This therefore renders the current mechanisms and technologies used in combating IUU fishing activities at the Kunene River Mouth ineffective.

4.12 Proposed Interventions on improving the effectiveness of maritime security in combating IUU fishing activities at the Kunene River Mouth

Results indicate that, the current mechanisms and technologies used by maritime security agencies are ineffective in combating IUU fishing activities at the Kunene River Mouth. This therefore calls for other strategies and mechanism.

4.12.1 Establishment of a Naval Base close to the Northern Maritime Border

Due to the long distance from Walvis Bay to the Kunene River Mouth (764 km) that hampers quick response to counter illegal foreign vessels entering Namibian waters from Angolan waters. There is need to establish a naval calling station preferable at the Cape Fria, in order to reduce the distance to be covered by coastal patrol vessels in countering IUU fishing activities.

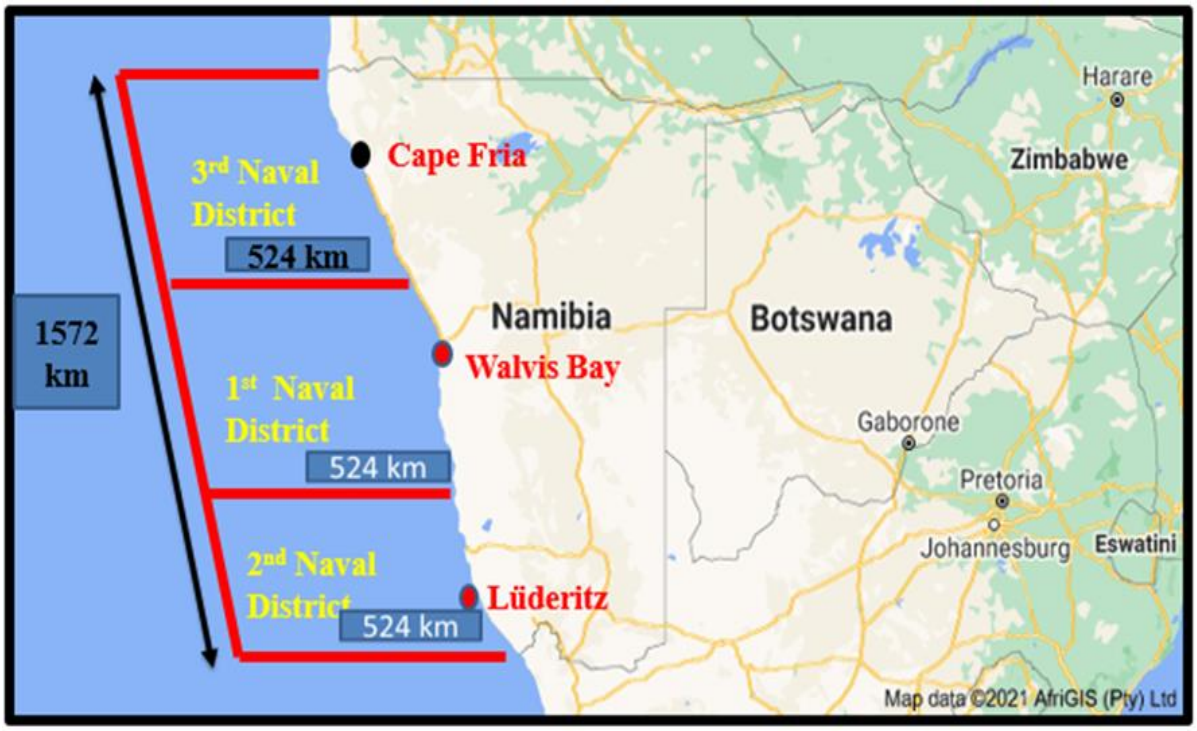

Figure 4: Proposed naval calling station and districts (Source: Google Map, 2021)

Figure 4, shows the proposed naval base and districts, whereby the red dots shows the current naval bases along the Namibian coastline namely Walvis Bay and Lüderitz. The black dot shows the preferable location of setting up a naval base along the northern coastline which is at Cape Fria that is 200 km from the northern maritime border. Moreover, for the Namibian Navy to effectively combat IUU fishing activities at the Kunene River Mouth, it is advisable to divide the Namibian waters into districts for the purpose of easier control and intensifying constant presence at sea in all respective districts.

As indicated in Figure 4, Walvis Bay will be district 1, Lüderitz will be district 2 and Cape Fria will be district 3. This therefore means that each district or naval base will be operating within the radius of 524 km, which will therefore reduce the fuel usage with

reduced distance to be covered. Lastly, the Namibian Navy cannot operate in isolation without considering the other organizations entrusted with maritime security namely the Namibian Police Water Wing and MFMR, this means that they should also be stationed at each district to strengthen cooperation amongst the maritime security cluster also allowing for an integrated coastal surveillance.

4.12.2 Namibian Navy to acquire Helicopters and UAVs

Given the fact that the current mechanisms or technologies used are inadequate to combat IUU fishing activities at the Kunene River Mouth. There is need for the Namibian Navy to acquire a patrol helicopters and UAV's with infrared camera system that will improve the current monitoring and surveillance systems. Likewise, the Namibian Air Force and Namibian Police Helicopters can also be utilized for conducting coastal aerial patrol, which allow for disembarking or fast roping from the Helicopter onto the suspicious vessels.

4.12.3 Cross Border Agreement between Angolan and Namibian Authorities on Hot Pursuit

The method of operation used by illegal foreign vessels are to conduct IUU fishing at the Kunene River Mouth, then flee into Angolan water when detected by the Namibian Navy and MFMR coastal patrol vessels. However, the Namibian Navy and MFMR cannot pursue illegal vessel into Angolan water without permission from the Angolan authorities. Therefore, the Namibian and Angolan authorities need to sign a Memorandum of Understanding or cross border agreement that allows hot pursuit when

an illegal vessel is spotted conducting IUU fishing at the Kunene River Mouth and fleeing into the other countries territorial waters.

4.12.4 Training for Quick Reaction Team

Currently, the quick reaction team is not trained on conducting fast roping from a helicopter onto a vessel, which will enhance the Namibian Navy quick reaction capabilities when impounding an illegal vessel while conducting aerial patrols.

4.12.5 Setting up of coastal Radar System along the Namibian coastline

It is observed that, the current onshore monitoring system used by both the Namibian Navy and MFMR is backdated for four hours, which therefore provide ground for IUU fishing activities to be conducted during the four hours' gap. It is beneficial for the Namibian Navy to acquire and set up the coastal radar system along the Namibian coastline. Hence, the radar shows the real time current information that will supplement the current onshore monitoring system.

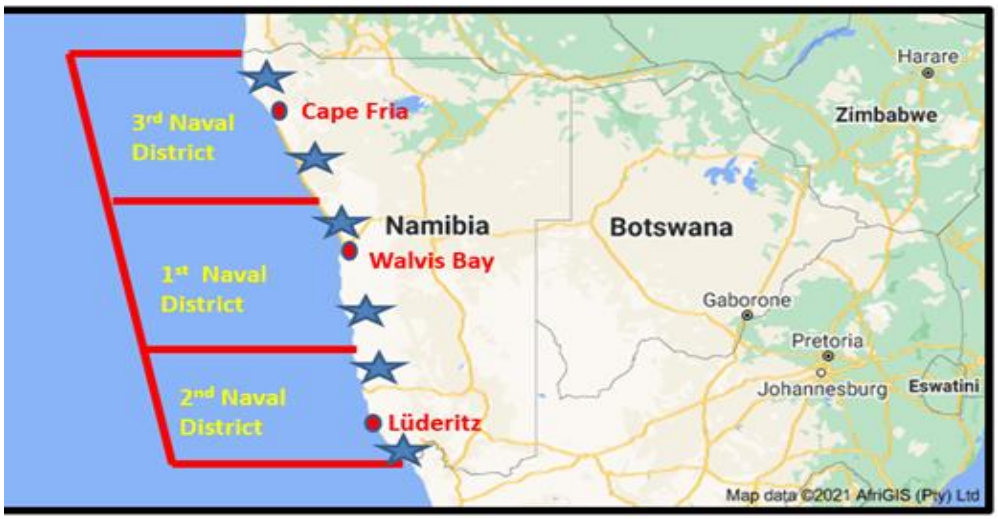

Figure 5: Coastal Radar systems along the Namibian coastline (Source: Google Map, 2021)

Figure 5, shows the proposed set up for the coastal radar systems along the Namibian coastline, which is presented with blue stars. Each district will have two coastal radar systems, which allows for effective range and radius to detect vessels that switch off their AIS that will be indicated on the radar screen. This will therefore allow for effective onshore monitoring and surveillance.

4.12.6 Participation in Joint Naval Exercises

The Namibian Navy are always invited to partake in joint exercises, however, due to limited budget they only send members as observes, which is not much helpful compared to as the members are participating therefore gaining knowledge, experience and skills in the field of maritime security.

4.12.7 Dedicated budget

The results indicated that, the Namibian Navy and MFMR conducted two patrols each at the Kunene River Mouth in 2020. This was due to lack of sea worthy vessels as well as lack fuel for vessels to conduct patrols. Though indicated in the annual plans for the Namibian Navy and MFMR, that sea patrols at the Kunene River Mouth are to be conducted at least twice a month, for a period of 15 days, but could not be realized due to the limited budget. Furthermore, the most effective way of combating IUU fishing activities is by maintaining constant presence at sea through conducting patrols, which requires adequate funding. Lastly, if sea patrols are not conducted, the maritime security agencies depend on informants such as tourists and crewmembers to report on suspicious activities at the Kunene River Mouth.

4.13 Conclusion

To sum up, this chapter presented results and discussed information regarding effectiveness of maritime security in combating IUU fishing activities at the Kunene River Mouth. It was noted that, the current mechanisms used to monitor or guard against IUU fishing activities at the Kunene River Mouth are ineffective, therefore calling for other strategies or mechanisms to be applied. This is attributed to the limited budget and technologies as well as the distance to be covered for launching a patrol vessel from Walvis Bay to the Kunene River Mouth, which is considered far to reach the Kunene River Mouth in a timely manner. The next chapter presented the conclusion, summary and recommendations for the study.

CHAPTER FIVE: CONCLUSION, SUMMARY AND RECOMMENDATION

5.1 Conclusion

This chapter highlighted the conclusion, summary and recommendation based on the effectiveness of maritime security in combating IUU fishing activities in Namibian waters, with reference to the Kunene River Mouth. In summary, the researcher looked at the current mechanisms and equipment used by the Namibian Navy and MFMR on countering IUU fishing activities at the Kunene River Mouth. IUU fishing activities are still taking place at the Kunene River Mouth, which calls for other mechanisms and strategies to be adopted.

5.2 Summary of Chapters

Chapter one of this study discussed and analyzed the maritime crimes such IUU fishing, piracy, human trafficking, oil spill, drugs and weapons smuggling in the African waters with reference to the Gulf of Guinea. This gave further insight on the various crimes that occurs in territorial waters depending on the maritime security measures in place. Moreover, illegal foreign vessels often take advantage or exploit the maritime security vacuum that exists in African territorial waters. The study was motivated by the ongoing IUU fishing activities at the Kunene River Mouth that occurs on a regular basis, if not a daily basis therefore warranting a national security concern for the Republic of Namibia.

Chapter two focused on various mechanisms used by different states to effectively and efficiently combat maritime crimes in territorial waters. The developed countries use more sophisticated mechanisms such as constant coastal patrols by using coastal patrol vessels, aircrafts carriers, aircrafts and UAVs. It is further intensified with onshore monitoring and surveillance devices such as the coastal radar systems that shows the real-time imaging or information. Unlike for developing states that uses outdated or old patrol coastal vessels that are often costly to maintain, which therefore hampers patrols at sea. Moreover, the onshore monitoring devices like the VMS that is used by some developing states are backdated for four hours, which therefore affects the effectiveness in combating maritime crimes. Furthermore, effective maritime security can only be achieved through technological advancement, cooperation, political and economic will.

Chapter three discussed the various maritime security agencies that were interviewed namely the Namibian Navy, Namibian Police Water Wing, MFMR, DMA and NAMPORT. They were only limited to the earth observer experts from the above stated agencies, Commander Naval Operations and Chief operations officer from the Namibian Navy, members from the quick reaction team of the Namibian Navy as well as experienced naval officers that started the Namibian Naval Maritime Wing in 1994. The collected data was further analyzed through content analysis that was later generated into themes based on the main research questions for the study.

Chapter four presented the research findings, whereby the main research finding was that the distance of launching a vessel from Walvis Bay to the Kunene River Mouth, which is relatively far compared to launching a vessel from Cape Fria. Moreover, the findings also revealed lack of financial resources for maintenance of vessels and fuel as well food and water for crewmembers, affects or hinders effectiveness of maritime security. This chapter also looked at the current mechanisms used by the Namibian Navy and MFMR to guard against or monitor the Kunene River Mouth, which the conducting of coastal patrols with vessels and aircraft as well as onshore patrols by using the VMS.

Chapter five evaluated the main research questions and draw conclusion that the current maritime security mechanisms used are rendered ineffective in combating IUU fishing activities at the Kunene River Mouth based on the ongoing IUU fishing activities. This is attributed by the financial constrain, therefore limiting the maintenance of vessels as well as fuel for coastal patrol vessels, water and food for crewmembers. Also owing to the distance that vessels are dispatched from Walvis Bay to the incident point, which is the Kunene River Mouth, therefore taking time and resources to respond to IUU fishing activities. This chapter also provided recommendations for study, which is mostly centered on providing a dedicated budget to combat maritime crimes and to set up a naval calling station along the northern maritime border preferably at Cape Fria that is 200 km from the Kunene River Mouth.

5.3 Evaluation of Research Questions

The following research questions were posted at the beginning of the study:

5.3.1 The research addressed the following main Research Question:

(i) To what extent is Namibia's maritime security effective in combating IUU fishing activities at the Kunene River Mouth?

This was measured by looking at the current mechanisms and technologies used by maritime security agencies in combating IUU fishing activities at the Kunene River Mouth. The findings revealed that, the extent of current maritime security in combating IUU fishing activities at the Kunene River Mouth is rendered ineffective due to the ongoing IUU fishing activities at the Kunene River Mouth. Coastal sea patrols are always launched from Walvis Bay to the Kunene River Mouth, which is 764 km away; the vessel takes approximately 26-30 hours to reach the Kunene River Mouth, by the time the coastal patrols vessel reach the Kunene River Mouth, the illegal foreign vessel would have already retreated to Angolan waters after looting Namibian resources. Furthermore, due to the financial constrains the coastal sea patrols are only conducted when reports comes through that a foreign vessel is spotted conducting IUU fishing activities at the Kunene River Mouth. This therefore means the maritime security agencies are using a reactive rather than a proactive approach. In addition, the VMS used by the Namibian Navy and MFMR is backdated for four hours, therefore creating room for IUU fishing activities to place during the four hours' caps. Lastly, if sea

patrols are not conducted, the maritime security agencies depend on informants such as tourists and crewmembers to report on suspicious activities at the Kunene River Mouth.

(ii) What is the level of training for the naval forces on countering IUU fishing at the Kunene River Mouth?

Generally, the Namibian Navy invested in the human resources aspect, hence members are sent for training to countries that are known to be naval powerhouses such the USA, Germany, Brazil and South Africa. Moreover, the members are trained on hot pursuit, boarding, searching and seizure as well as survival and navigation at sea which prepared them for any threat at sea. Furthermore, the quick reaction team is trained to counter any threats at sea, however, they lack training on fast roping from the helicopter, which could improve the Namibian Navy rapid response capability. To a large extent it can be concluded that question relating to level of training for naval officers, the members need further training to counter the strategies and tactics used by the criminal syndicates.

(iii) What challenges are encountered at the Kunene River Mouth in combating IUU fishing?

The major challenges identified is the distance of launching a vessel from Walvis Bay to the Kunene River Mouth which is a distance of 764 km, that takes a vessel approximately 26-30 hours sailing on economic speed of 15 knots per hour. Furthermore, the lack of financial resources to maintain the coastal patrol vessels as well as fuel for vessels. This therefore means that, no coastal sea patrols can be conducted, which provide a security vacuum at the Kunene River Mouth. These challenges therefore affect the effective of maritime security at the Kunene River Mouth.

5.4 Recommendations

Based on the research findings, the following strategies and equipment are recommended to address the main research questions on combating IUU fishing activities at the Kunene River Mouth.

5.4.1 Establish a Naval Base at Cape Fria

Due to the long distance from Walvis Bay to the Kunene River Mouth (764 km) that hampers quick response to counter illegal foreign vessels conducting IUU fishing activities at the Kunene River Mouth. The study therefore recommends for the establishment of a naval base along the northern coastline preferably at Cape Fria that is 200 km from the northern maritime border. This will consequently increase presence at the Kunene River Mouth and reduce cost of fuel compared to sailing from Walvis Bay to the Kunene River Mouth. In addition, launching a coastal patrol vessel from Cape Fria will take approximately four to six hours to get to the Kunene River Mouth compared to the 26-30 hours that will be taken when launching from Walvis Bay.

5.4.2 Adequate funding to combat IUU fishing activities at the Kunene River Mouth

For Namibian Navy and MFMR to effectively monitor, surveillance, protect and control territorial water there is need for adequate funding. This will assist the Namibian Navy to effectively execute its constitutional mandate with a dedicated budget for vessel maintenance, fuel, food and water for crewmembers. Overall, this can only be achieved through political and economic will from the government of the Republic of Namibia.

5.4.3 Acquiring of Coastal Patrol Vessels

When demarcating new districts, each district will have their own resources, assets, systems, platforms and vessels to improve effectiveness and efficiency. The study therefore recommends for the acquisition of six Oceanic Patrol Vessels (OPV) whereby each district can be allocated with two OPVs. Moreover, this will allow for smooth rotation of vessels, meaning when one vessel is due for maintenance the other vessel will still be operating. Furthermore, this will also allow for maintaining constant presence at sea by deploying two coastal patrol vessels to be stationed at Cape Fria to monitor and detect any illegal foreign vessels. The two vessels should operate on a rotational basis to make sure that there is constant presence at the Kunene River Mouth.

5.4.4 DMA to in cooperate International Maritime Law in Namibian Domestic Law

According to the International Maritime Law, it is mandatory for vessels with a tonnage more than 300T to have AIS. However, that law is not applicable in the Namibian waters; hence, it is not in cooperated in the Namibian domestic maritime law. The study therefore recommends that DMA, to in cooperate and enforce the International Maritime Law of mandatory AIS on vessels with vessels more than 300 tonnages in the Namibian domestic maritime law.

5.4.5 Strengthen Cooperation between Maritime Security Clusters

The study recommends for the need to change in operational strategy and strengthen cooperation between the Namibian Navy, Namibian Police Maritime Wing and MFMR

by maintaining constant presence at the Kunene River Mouth through joint coordinated coastal patrols. Moreover, the coordination and cooperation between the stakeholders entrusted with maritime security will help fill the vacuum of not having enough resources to fulfill some tasks, which could improve the interoperability amongst the maritime security agencies. This will therefore, mean that the MFMR could avail a coastal patrol vessel with personnel, the Navy also provide manpower, while the Namibian Police Water Wing provides a helicopter with few personnel.

5.4.6 Appointment of a Maritime Authority

Due to the absence of an overall maritime security authority, there exist lack of coordination and cooperation between the maritime security clusters especially communicating on IUU fishing activities at the Kunene River Mouth. The study therefore recommends that the Namibian Navy to be assigned or appointed as the overall maritime authority to provide leadership and guidance based on their expertise in the field of maritime security.

5.4.7 10 % fish quota allocation the Namibian Navy and MFMR

Since, the Namibian Navy and MFMR are the only identified maritime security clusters that conduct coastal patrols with a limited budget. The study recommends for the Namibian Navy and MFMR to be allocated with 10 % fishing quota, which will help in maintaining and sustaining operations in terms of providing fuel and servicing the coastal patrol vessels.

5.4.8 Power of arrest to be given to the Namibian Navy, MRMR and the Namibian Police Water Wing

At present, the Namibian constitution is silent on the maritime agency given the power of arrest in Namibian waters. The study therefore recommends for the Namibian constitution to be amended concerning Namibian maritime laws in order to empower all maritime agencies involved in conducting coastal patrols namely the Namibian Navy, Namibian Police Maritime Wing and fisheries observers.

5.4.9 Acquisition of Helicopters and UAV's

Namibian Navy quick response capabilities can be improved by acquiring a Helicopter, which allows for fast roping from the Helicopter onto the vessels. This Helicopter can be stationed at the Cape Fria to respond to IUU fishing activities at the Kunene River Mouth. Furthermore, effectiveness of maritime security on combating IUU fishing activities at the Kunene River Mouth can also be improved through the acquisition of two UAV's. This will therefore assist in maintaining constant aerial surveillance at the KRM.

5.4.10 Air Force and Police Helicopters to be utilized for patrols

Due to the ongoing financial constrain by the Namibian Government, the Namibian Air Force and Police Helicopters can be utilized to assist the Namibian Navy in conducting aerial sea patrols as well as a quick response tool to counter IUU fishing activities at the Kunene River Mouth.

5.4.11 Setting up of Coastal Radar Systems along the Namibian coastline

There is a need for the Namibian Navy to acquire and set up coastal radar systems along the Namibian coastline, in order to supplement the current onshore monitoring tools such as the VMS's.

5.4.12 Training quick reaction team on fast roping

The Namibian Navy quick reaction team needs to be trained on fast roping from a Helicopter onto a vessel. This will therefore improve the Namibian Navy quick response capabilities, which will allow the use of Helicopter to pursue an illegal foreign vessel attempting to flee into Angolan water.

5.4.13 Recommendation for further research

In view of the findings, the following academic recommendations were noted:

a. The study recommends for a comparative study to be carried out on what technologies and mechanisms used by other Southern African Development Community (SADC) states with a coastline.

b. The study also recommends for a study to be carried out on the impact of IUU fishing activities at the Kunene River Mouth on the Namibian economy.

5.5 Conclusion

This chapter outlined the conclusion, summary and recommendation drawn from the study. The current mechanisms used to monitor or guard against IUU fishing activities

at the Kunene River Mouth is rendered ineffective. Therefore, effectiveness can be achieved or improved through the use other technologies such as UAV's, Helicopters and Coastal Radar Systems as well as setting up of naval calling station at Cape Fria.

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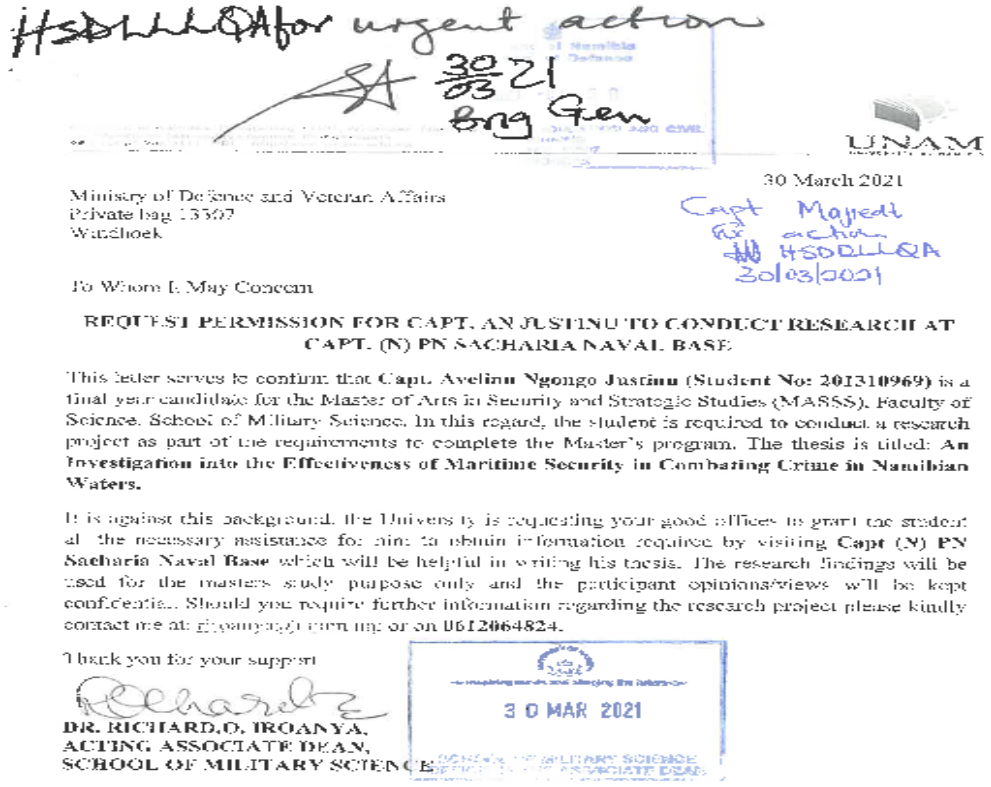
APPENDIX A

Requesting permission to conduct research at Captain (Navy) PN Sacharia Naval Base



HSDLLLQA for urgent action
30/03/21
Brig Gen

UNAM

30 March 2021

Ministry of Defence and Veteran Affairs
Private bag 13367
Windhoek

Capt Majedi
For action
HSDLLLQA
30/03/2021

To Whom It May Concern

REQUEST PERMISSION FOR CAPT. AN JUSTINU TO CONDUCT RESEARCH AT CAPT. (N) PN SACHARIA NAVAL BASE

This letter serves to confirm that **Capt. Avelinu Ngongo Justinu (Student No: 201310969)** is a final year candidate for the Master of Arts in Security and Strategic Studies (MASSS), Faculty of Science, School of Military Science. In this regard, the student is required to conduct a research project as part of the requirements to complete the Master's program. The thesis is titled: **An Investigation into the Effectiveness of Maritime Security in Combating Crime in Namibian Waters.**

It is against this background, the University is requesting your good offices to grant the student all the necessary assistance for him to obtain information required by visiting **Capt (N) PN Sacharia Naval Base** which will be helpful in writing his thesis. The research findings will be used for the masters study purpose only and the participant opinions/views will be kept confidential. Should you require further information regarding the research project please kindly contact me at [illegible] or on **0612064824.**

Thank you for your support

DR. RICHARD.O. IROANYA,
ACTING ASSOCIATE DEAN,
SCHOOL OF MILITARY SCIENCE

30 MAR 2021

APPENDIX B

Permission letter from the Chief of the Defence Force (CDF)

NAMIBIAN DEFENCE FORCE

Tel: (061) 204 9111 x 2802
Fax: (061) 204 2124
E-mail Address: cdefence@ mod.gov.na

Chief of the Defence Force
Private Bag 13307
WINDHOEK

Enquiries: Brig Gen E. Hiuanga
Our Ref: CDF/3/2/5/14 Your Ref:

April 2021

See Distribution

RE: APPROVAL TO CONDUCT AN ACADEMIC RESEARCH

1. The student 17315287 Capt A.N Justinu, student number 201310969, studying at the University of Namibia, towards Master of Arts in Security and Strategic Studies (MASSS), with the Faculty of Science, School of Military Science, is hereby granted permission to conduct an academic research at Capt (N) PN Zacharia Naval Base Walvisbay.

2. The research topic concerned is titled: "An Investigation into the Effectiveness of Maritime Security in Combating Crime in Namibian Waters."

3. Therefore, render him your support in this regard especially in the area where our internal information is not highly classified. This permission does not allow in any form, hard or soft to publish information acquired through your research, without obtaining prior authorization from my office.

REPUBLIC OF NAMIBIA
MINISTRY OF DEFENCE
2021 -04- 07
CHIEF OF THE DEFENCE FORCE
P/BAG 13307
WINDHOEK

MK PINEHAS "psc" "Bcom" "MBA"
CHIEF OF THE DEFENCE FORCE: AIR MARSHAL

Enclosures: a. Letter from UNAM
b. Research Proposal
c. Research Questionnaire
d. Research Timetable Programme

All official Correspondence must be addressed to the Chief of the Defence Force

APPENDIX C

Semi-structured open-ended interviews for the study

Research Topic: An Investigation into the Effectiveness of Maritime Security in Combating IUU fishing in Namibian Waters: A Case Study of the Kunene River Mouth.

Research questions:

The research will address the following main research question: **To what extent is Namibia's maritime security effective in combating IUU fishing at the Kunene River Mouth?**

Supporting questions will be:

- ✓ What mechanisms are used to guard against or monitor unlicensed vessels conducting IUU fishing at the Kunene River Mouth?
- ✓ What is the level of training for the naval forces on countering IUU fishing at the Kunene River Mouth?
- ✓ What challenges are encountered at the Kunene River Mouth in combating IUU fishing?
- ✓ What should be done to address the challenges associated with IUU fishing at the Kunene River Mouth?

Potential participants for the study

- ✓ Commander Naval Operations and Chief Operation officer from the Namibian Navy.
- ✓ Navy personnel working at the Earth Observer System.
- ✓ Navy personnel from the quick reaction team.
- ✓ Fisheries Observer personnel working at the Earth Observer System.
- ✓ Namport personnel working at the Earth Observer System.
- ✓ Nambian Police members from the Water Wing.

Open-ended interview

Sir, I am 17315287 Capt Avelinu Ngongo Justinu from the Directorate of Policy and Plans (DPP), a master student at the University of Namibia (UNAM) studying towards a Master's degree in Security and Strategic Studies (MASSS), in the department of Security and Strategic Studies.

As part of my studies at the University of Namibia, I am conducting research **on the Effectiveness of Maritime Security in Combating Illegal Unreported and Unregulated fishing in Namibian Waters with reference to the Kunene River Mouth.** The blue economy contributes greatly to the Namibian economy, which is the third largest employment sector after mining and agriculture; the second Gross Domestic Product (GDP) contributor after mining. In addition, the Namibian coastline is approximately 1572 km long, which stretches from Lüderitz until up north, which requires proper security measures over such a vast area. There is an increase in cases of IUU fishing activities in Namibia's northern maritime border with Angola, which constitute serious threats to national economy of the state and rule of law.

I just want to confirm from maritime security experts, whether our Namibian Navy, Namibian Police Water Wing, Ministry of Fisheries and Marine Resources, Directorate of Maritime Affairs and Namibian Ports Authory has the technological capacity to effectively monitor IUU fishing activities at the Kunene River Mouth. Therefore, I will be asking a few questions on the effectiveness of maritime security in Namibian waters.

Semi-structured Interview: Maritime Security Agencies

Interview number:……..

Date:……..

(Please answer the following questions)

1. Years of experience within the field of maritime security?

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2. What is the role of your Organization with regard to Maritime security?

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3. What other line ministries are assisting in maritime security and what role do the line ministries play in maritime security?

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4. Is your Organization part of any regional body in combating maritime insecurity?

Yes ☐ No ☐

5. If no from the previous question, what is your opinion on the lack of regional partnership in combating maritime insecurity?

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6. What is the current Earth Observing System (EOS) used by your organisation to monitor IUU fishing at the Kunene River Mouth?

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7. (a) In your opinion, is the above stated equipment effective?

Highly effective ☐

Moderate ☐

Less effective ☐

(b) Give reason for your answer in (a)?

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8. Does the Earth Observing System cover all the Exclusive Economic Zone (EEZ) of Namibia?

Yes ☐ No ☐

If no, state how is the rest of the EEZ monitored?

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9. Are unlicensed foreign vessels entering Namibian waters from Angolan water detected on time by the Earth Observing System and what is the next step?

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10. Are the current systems in place able to detect vessels that switch of their AIS when entering into Namibian waters?

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11. What other crimes other than IUU fishing activities are experienced at the Kunene River Mouth?

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12. In exception of the use Earth Observing System and patrolling, what other measures are used to keep surveillance of activities at the Kunene River Mouth?

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13. What type of training is offered to the quick response team?

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14. How often are patrols conducted at the Kunene River Mouth?

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15. How long are the patrols conducted?

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16. In your opinion, are the current coastal patrol vessels, speed boats and submarine chasers effective in patrolling the Namibian waters with reference to the Kunene River Mouth and if not, what could be the possible solutions?

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17. In your opinion, does the current economic down turn have an effect on maritime operations?

Yes ☐ No ☐

If yes, give reason how?

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18. How many successful arrest for unlicensed foreign vessels were made from 2017-2021 at the Kunene River Mouth and how were they detected?

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19. What measures are taken on the current IUU fishing persisting at the Namibia and Angola border also known as the Kunene River Mouth?

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20. What challenges is the quick reaction team faced with in effectively executing their tasks?

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21. What challenges is your Organisation faced with tackling IUU fishing at the Kunene River Mouth?

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22. In your opinion, what could be done to address the challenges associated with maritime security in Namibian waters, especially at the Kunene River Mouth?

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23. Any other recommendations that could improve maritime security and effectiveness in combating IUU fishing at the Kunene River Mouth?

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Thank you for your participation sir and madam…

APPENDIX D

Focus Group Discussion for the Quick Reaction Team from the Namibian Navy

Research Topic: **An Investigation into the Effectiveness of Maritime Security in Combating IUU fishing in Namibian Waters: A Case Study of the Kunene River Mouth.**

Research questions:

The research will address the following main research question: To what extent is Namibia's maritime security effective in combating IUU fishing at the Kunene River Mouth?

Supporting questions will be:

- ✓ What mechanisms are used to guard against or monitor unlicensed vessels conducting IUU fishing at the Kunene River Mouth?
- ✓ What is the level of training for the naval forces on countering IUU fishing at the Kunene River Mouth?
- ✓ What challenges are encountered at the Kunene River Mouth in combating IUU fishing?
- ✓ What should be done to address the challenges associated with IUU fishing at the Kunene River Mouth?

Potential participants for the study

- ✓ Quick Reaction Team from the Namibian Navy

Focus Group Discussion: Quick Reaction Team from the Namibian Navy

Sir, I am 17315287 Capt Avelinu Ngongo Justinu from the Directorate of Policy and Plans (DPP), a master student at the University of Namibia (UNAM) studying towards a Master's degree in Security and Strategic Studies (MASSS), in the department of Security and Strategic Studies.

As part of my studies at the University of Namibia, I am conducting research on the Effectiveness of Maritime Security in Combating Illegal Unreported and Unregulated fishing in Namibian Waters with reference to the Kunene River Mouth. The blue economy contributes greatly to the Namibian economy, which is the third largest employment sector after mining and agriculture; the second Gross Domestic Product (GDP) contributor after mining. In addition, the Namibian coastline is approximately 1572 km long, that stretches from Lüderitz till up north, which requires proper security measures over such a vast area. There is an increase in cases of IUU fishing activities in Namibia's northern maritime border with Angola, which constitute serious threats to national economy of the state and rule of law.

I just want to confirm from maritime security experts, whether our Namibian Navy, Namibian Police Water Wing, Ministry of Fisheries and Marine Resources, Directorate of Maritime Affairs and Namibian Ports Authory has the technological capacity to effectively monitor IUU fishing activities at the Kunene River Mouth. Therefore, I will be asking a few questions on the effectiveness of maritime security in Namibian waters.

Focus Group Discussion: Quick Reaction Team from the Namibian Navy

FGD number:…….

Date:……..

(Please answer the following questions)

1. Years of experience within the field of maritime security?

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2. What is the role of the Quick Reaction Team with regard to Maritime security?

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3. Are unlicensed foreign vessels entering Namibian waters from Angolan water detected on time by the Earth Observing System and what is the next step for the Quick Reaction Team?

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4. What other crimes other than IUU fishing activities are experienced at the Kunene River Mouth?

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5. In exception of the use Earth Observing System and patrolling, what other measures are used to keep surveillance of activities at the Kunene River Mouth?

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6. What type of training is offered to the quick response team?

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7. How often are patrols conducted at the Kunene River Mouth?

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8. How long is the patrol conducted?

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9. In your opinion, are the current coastal patrol vessels, speed boats and submarine chasers effective in patrolling the Namibian waters with reference to the Kunene River Mouth and if not, what could be the possible solutions?

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10. In your opinion, does the current economic down turn have an effect on maritime operations?

Yes ☐ No ☐

If yes, give reason how?

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11. How many successful arrest for unlicensed foreign vessels were made from 2017-2021 at the Kunene River Mouth and how were they detected?

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12. What measures are taken on the current IUU fishing persisting at the Namibia and Angola border also known as the Kunene River Mouth?

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13. What challenges is the Quick Reaction Team faced with in effectively executing their tasks?

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14. In your opinion, what could be done to address the challenges associated with maritime security in Namibian waters, especially at the Kunene River Mouth?

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15. Any other recommendations that could improve maritime security and effectiveness in combating IUU fishing at the Kunene River Mouth?

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Thank you for your participation sir and madam…