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WORLD MARITIME UNIVERSITY

Malmö, Sweden

**ANALYSIS OF NIGERIA'S DEEP BLUE
PROJECT (DBP).**

**A new paradigm for Maritime Security in the Gulf of
Guinea.**

**OHAGWA PETER UDOCHUKWU
Nigeria**

A dissertation submitted to the World Maritime University in partial
fulfilment of the requirements for the award of the degree of

**MASTER OF SCIENCE
in
MARITIME AFFAIRS**

(MARITIME SAFETY AND ENVIRONMENTAL ADMINISTRATION)

2022

Declaration.

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

(Signature): 

.....

(Date): 16th September, 2022

.....

Supervised by: Prof. Ronan Long.

Supervisor's affiliation: Director, Sasakawa Global Ocean Institute, Nippon Foundation Professorial Chair of Ocean Governance & the Law of the Sea, World Maritime University (WMU) of the International Maritime Organization (IMO), a Specialized Agency of the United Nations.

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Abstract

Title of Dissertation: Analysis of Nigeria's Deep Blue Project: A New Paradigm for Maritime Security in The Gulf of Guinea.

Degree: **Master of Science**

In a bid to holistically tackle the security challenges within Nigeria's maritime domain and by extension the Gulf of Guinea, the Nigerian government launched the Integrated National Security and Waterways Protection Infrastructure, also known as the Deep Blue Project in 2019. This study analyses Nigeria's Deep Blue Project as a maritime security intervention, to determine a number of issues including: its alignment as an ideal maritime security framework; areas that need improvement; as well as the aspects of the project which could be adopted into the Gulf of Guinea (GoG) collective efforts to enhance maritime security in the region.

Findings reveal that the DBP substantially aligns with maritime security frameworks obtained in some jurisdictions around the world, inasmuch as there exist areas that require improvement to meet global best practices. The research also shows that the pre-existing Yaoundé Architecture deals more with information sharing, hence, there is not yet an existing adequate asset contribution between GoG states to effectively tackle the security challenges in the region.

Taking Nigeria's Deep Blue project as a model, the research concludes that one nation cannot shoulder maritime security operations alone, hence, GoG states' regional collaboration would be best achieved if there is asset/personnel contribution by all stakeholders, and by using marine asset tag technology, make their assets readily available for deployment when the need arises, especially, within their respective maritime domains.

KEYWORDS: Maritime Security, Deep Blue Project, Distress, Domain Awareness, C4i, Nigeria, Strait of Malacca, Gulf of Aden, NIMASA, IMO.

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List of Abbreviations

AIS	Automatic Identification System
AIMS	African Maritime Integrated Strategy
AMD	African Maritime Domain
AMSSA	African Maritime Safety and Security Agency
AU	African Union
BMP	Best Management Practice
BIIS	Bakanila Integrated Information System
BIMCO	Baltic and International Maritime Council
C4i	Command, Control, Computer, Communication and Intelligence
CIA	Confidentiality, Integrity and Accountability
CRESMAC	Regional Centre of Maritime Security in Central Africa
CREMAO	West African Region Maritime Security Centre
DA	Designated Authority
D'BRAIN	Dynamic Bayesian Reasoning and Advanced Intelligent Network.
DBP	Deep Blue Project
DSC	Digital Selective Calling
DSSS	Department of State Security Services
DSC	Digital Selective Calling
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EIS	Eye-In-The-Sky
EUCAP	European Union Capacity Building Mission
FAL	Facilitation Committee
FCC	Federal Communications Commission
FIV	Fast Interceptor Vessel

FMOT	Federal Ministry of Transport
GGC	Gulf of Guinea Commission
GMDSS	Global Maritime Distress and Safety System
GoG	Gulf of Guinea
GoGIN	Gulf of Guinea Inter-regional Network
HF	High Frequency
ICC	International Chamber of Commerce
ICC	Interregional Coordination Centre
ICT	Information and Communication Technology
ICS	International Chamber of Shipping
IFC	Information Fusion Centre
ILO	International Labour Organization
INTERTANKO	International Association of Independent Tanker Owners
INTERCARGO	International Association of Dry Cargo Shipowners
IMO	International Maritime Organization
IMB	International Maritime Bureau
IMS	Integrated Maritime Strategy
IoT	Internet of Things
ISPS	International Ship and Port Security
ISC	Information Sharing Centre
IUU	Illegal, Unreported, Unregulated
JWG	Joint Working Group
LEG	Legal Committee
MAST	Marine Asset Security and Tracking
MALSINDO	Malaysia, Singapore, Indonesia
MDA	Maritime Domain Awareness
MDAT-GoG	Maritime Domain Awareness for Trade – Gulf of Guinea
MF	Medium Frequency
MICC	Maritime Inter-Regional Coordination Centre
MIS	Maritime Intelligence System

MSA	Merchant Shipping Act.
MSA	Maritime Situation Awareness
MSE	Mission System Equipment
MSF	Maritime Security Facilitation
MSP	Malacca Strait Patrol
MSSP	Malacca Strait Sea Patrol
MSIS	Multi-Sensor Integrated System
MSSI	Malacca Straight Security Initiative
MoD	Ministry of Defense
MPA	Maritime Patrol Aircraft
MMCC	Multinational Maritime Coordination Centre
NAF	Nigerian Air Force
NIMASA	Nigerian Maritime Administration and Safety Agency
NN	Nigerian Navy
NPF	Nigeria Police Force
OCIMF	Oil Companies International Marine Forum
ONSA	Office of the National Security Adviser
PMC	Project Management Committee
PoC	Point of Contact
ReCAAP	Regional Cooperation Agreement on Combating Piracy and Armed Robbery against ships in Asia
RFID	Radio Frequency Identification
RMAC	Regional Maritime Awareness Capability
SAR	Synthetic Aperture Radar
SHADE	Shared Awareness and Deconfliction
SMA	Special Mission Aircraft
SMH	Special Mission Helicopter
SMV	Special Mission Vessel
SNMS	Somali National Maritime Strategy
SOP	Standard Operation Procedure

SOLAS	Safety of Life at Sea
SPC	Single Point of Contact
SPOMO	Suppression of Piracy and Other Maritime Offenses
SUA	Suppression of Unlawful Acts.
SWOT	Strengths, Weaknesses, Opportunities, Threats
UAV	Unmanned Aerial Vehicle
UN	United Nations
UNCTAD	United Nations Convention on Trade and Development
UNCLOS	United Nations Convention on the Law of the Sea
US	United State
VLCC	Very Large Crude Carrier
VHF	Very High Frequency
WMD	Weapon of Mass Destruction

Chapter 1.

1.1 Introduction/Background.

The sea has been regarded as a zone of insecurity and danger through the course of human history. It is a source of threats such as piracy, robbery, transnational organized crime, terrorism, environmental degradation among others, from the time of colonialism to globalization (Bueger and Edmunds, 2017). Some literature has shown the issue of security to be core to human existence. It means to be free from fear or danger (Jackson-Preece, 2011). According to the Merriam-Webster (1828) dictionary, “security is the state or quality of being secure; such as freedom from anxiety, fear and danger”. An appreciation of how security is defined and deployed in general international relations is key to understanding the term maritime security. Depending on who is using the term and the context, maritime security could have different meanings. For example, to shipping industry operators, maritime security is specific about the maritime transport system as it relates to safety of cargo and its destination without intrusion or being hampered by criminal activities (Klein, 2011). This is due to the high vulnerability this mode of transport is subject to, with respect to piracy, terrorist attack and other hostile actions internationally, hence, the need for security in maritime transport (Papa, 2013).

Maritime security can also be understood as a concept pointing towards maritime domain awareness, or as a set of measures, operations, regulations and policies geared towards maritime domain security (Germond, 2015). This view is more comprehensive, in that it reflects almost all the aspects and strategies in maritime security engagements. Maritime security from a defence perspective, encompasses a greater range of threats than the notion of sea supremacy. (Klein, 2011). Most studies tend to merge the issues of maritime safety and security together, however, there exist sharp differences. While the former is talking about prevention of damage by accident

or natural factor, the latter is particular about prevention of damage by human factor, for example; acts of sabotage, terrorism, subversion, piracy, and the protection of the maritime domain against other international unlawful acts by a combination of preventive and responsive measures (AMSSA, 2019; Feldt et al., 2013). Maritime security efforts have global standards. Key to effective operation of all programs in maritime security is timely and accurate information. The September 9/11 2001 tragedy has shown the importance, and enhanced maritime security by increased international stakeholders' acceptance, more widely and improved maritime threats information dissemination, as well as heightened security awareness among stakeholders in the maritime sector (Johnstone, 2015).

Maritime transportation is an indispensable instrument for global trade, as it connects producers, manufacturers and consumers worldwide (Cicek et al., 2019). According to the United Nations Conference on Trade and Development (UNCTAD), 2002, over 90% of the world's commerce takes place through the sea. The issue of maritime security has been brought to the fore in order to raise consciousness about the sea, as a major line of communication, world's food source, as well as industrial raw materials among others (Eluwa & Rana, 2011). (David & John, 2006)

International maritime transport had witnessed a prosperous period characterized by the growing market integrations, with advances in technology and international trade flow globalization within the second half of the 20th century. Unfortunately, there has been disruptions of these achievements due to terrorist attacks with its negative implications (Papa, 2013). This threat is close to four decades old. For instance, an Italian cruise ship, MS Achille Lauro, was hijacked on October 7, 1985, which was regarded as a significant act of terrorism. As a result of that incident, the International Maritime Organization (IMO) adopted, "Measures to prevent unlawful acts which threaten the safety of ships and the security of their passengers and crews", Resolution A. 584(14). Before and since, there were equally other notable maritime insecurity incidents which include among others; a cruise ship, SS Santa Maria hijacking on

January 23, 1961, in La Guairá, Venezuela; attack on a Navy ship, USS Cole, on the 10th June, 2000, in the Yemeni port of Aden; and the attack on a VLCC oil tanker, M/V M. Star, on the 27th July, 2010, in the Gulf of Persia. The MS Achille Lauro incident also prompted the adoption of the Convention for the suppression of unlawful Acts against the Safety of Maritime Navigation (SUA), 1988 as amended. The SUA convention ensures that “appropriate action is taken against persons committing unlawful acts against ships, including acts of violence against persons on board ships, seizure of ships by force, or the placing of devices on board which are capable of damaging or destroying the ship” (IMO, 2019).

The International Convention for the Safety of Life at Sea (SOLAS), 1974 as amended, is a maritime regulatory regime, which covers special measures to enhance maritime security, as well as the International Ship and Port Facility Security (ISPS) in its Chapter XI-2. This was in sharp response to the devastating acts of terrorism of September 11, 2001, at the United States of America, and the need to protect the international maritime transport against terrorism (IMO, 2019; Hesse and Charalambous, 2004), and owing to the importance of international security, hence, the need for initiatives, mandates, regulations, geared towards security by governments (Kim et al., 2008).

1.2 Geographical Area of Study:

Nigeria is one of the most well-known developing countries in the world, Africa’s most populated country, as well as West Africa’s biggest country, with an area of 356,669 square miles (Falola, 2001). According to the World Population Review, 2022, Nigeria has a population of 216,908,161 million people, the largest in Africa. Nigeria’s coastline is approximately 853km, facing the Atlantic Ocean, and lies between Latitude 4⁰10’ to 6⁰20’N and Longitude 2⁰45’ to 8⁰35’E, having four distinct geomorphic units, and a maritime area of about 46,000km², with diverse and significant natural marine resources (Nwilo and Badejo, 2005; Awosika and

Folorunsho, 2021; Ateme, 2021). To the North, Nigeria is bordered by Republics of Chad and Niger, to the East by the Republic of Cameroon, to the West by the Republic of Benin, and the Atlantic Ocean to the South (Nwilo and Badejo, 2005). According to the Exclusive Economic Zone (EEZ) Decree 1978, Nigeria's EEZ is 200 nautical miles, about 210,900km² from the baselines, measuring from Nigeria's territorial waters (United Nations, 1978; Zubbey et al., 2019).



Figure 1. Nigeria within the Gulf of Guinea. Source: (Africa Centre for Strategic Studies, 2015).

As shown in Fig. 1., Nigeria can be seen to be strategically located in the Gulf of Guinea, as well as in the international seaborne trade. As a strategic player in the international seaborne trade, Nigeria is also a stabilizer in regional maritime security owing to her contributions to regional and global peacekeeping, as well as her military might, and have made several efforts, including developing some counter-piracy and other security measures and initiatives, towards vigorous responses to her maritime security challenges and by extension, the Gulf of Guinea (Onuoha, 2012).

1.3 Problem Statement:

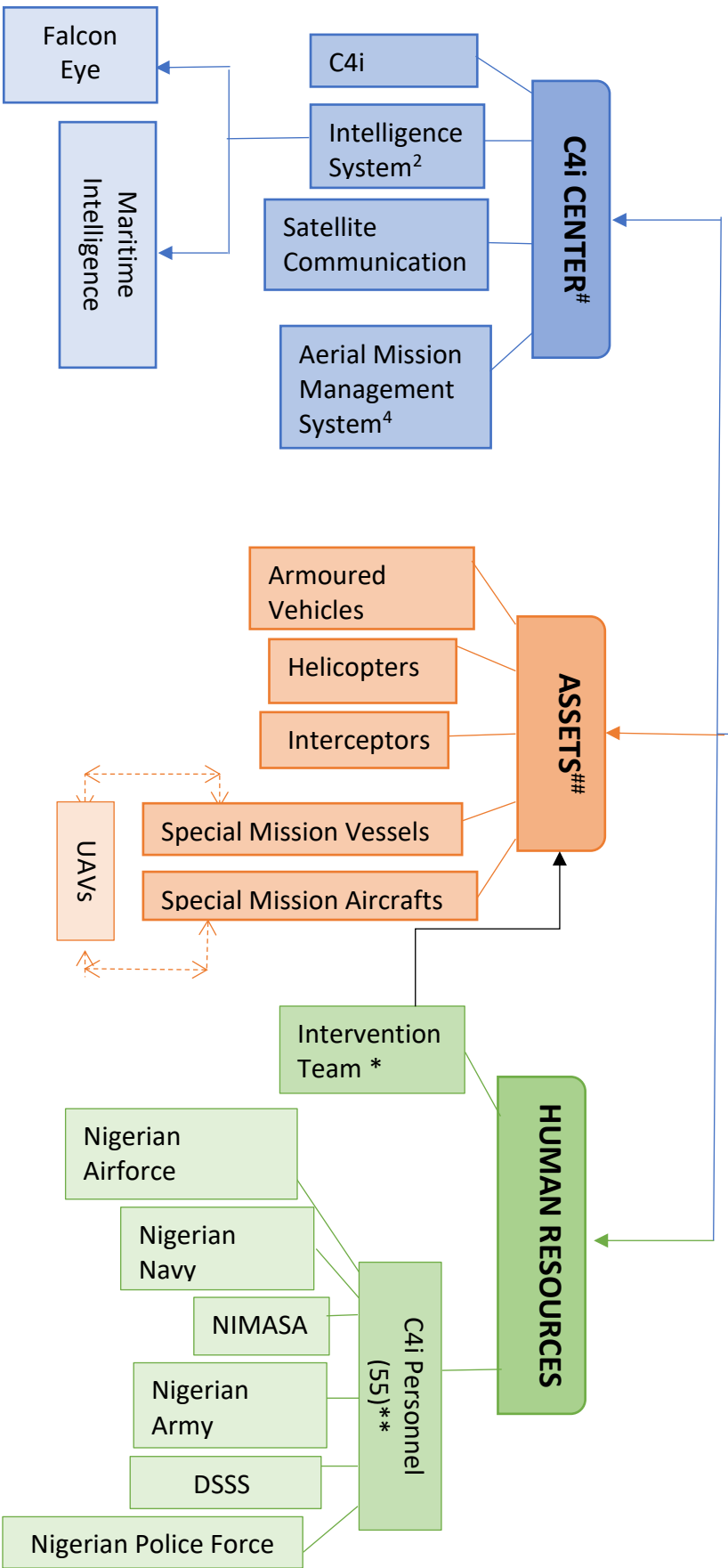
Nigeria, and indeed the Gulf of Guinea (GoG) have in recent times battled with the spate of maritime insecurity, especially, piracy attacks, and other forms of transnational organized crimes, which has portrayed the country, as well as the region as hotspots in the international maritime community. This has negatively affected Nigeria in particular, as her maritime domain has been tagged, "war-risk" zone, resulting in high insurance premiums and some other undesirable consequences. Nigeria is regarded as the microcosm of the GoG, and to a large extent the African continent (Onuoha, 2012; Paterson, 2007). According to Gilpin, 2007, the Gulf of Guinea (GoG) maritime security arrangements are under-resourced, and have scanty policy attention. Recently, a paradigm shift has been suggested through a number of national and regional initiatives, as countries in Africa, non-governmental organizations, commercial entities, as well as other stakeholders, gradually recognize the wide-ranging benefits of enhanced maritime security.

While countries in the region are willing to cooperate in maritime insecurity tackling efforts, there exists a problem of inadequate information about the extent and nature of maritime crimes, and also, the dearth of legal instruments to address these challenges (Otto, 2016). Among other things, there has been neglect on some serious security measures, especially, with respect to intelligence gathering (Temitope et al., 2020). According to Jacobsen, 2017, maritime security in the Gulf of Guinea is highly complex and involves issues like inadequate military equipment, legal deficiencies, as well as challenges like corruption and multiplicity of foreign responders. Suffice it to say that the above submissions confirm that there has not been a sufficient practical integrative approach or measures towards solving the issue of maritime insecurity in the Gulf of Guinea over the years, but more an example perhaps, of a collaborative or integrative theory, which has not yielded much positive or indeed expected results.

1.4 Deep Blue Project Description:

The Integrated National Security and Waterways Protection Infrastructure, popularly known as the Deep Blue (DB) Project, is a maritime security intervention project of the Federal Government of Nigeria. Started in August, 2019, and launched officially on June 10th, 2021, the DB project is complimenting already existing maritime security architectures in Nigeria (NIMASA, 2021). The need to develop a vigorous maritime security architecture towards a comprehensive solution to maritime insecurity in Nigeria and the Gulf of Guinea by extension, which will comprise civil, military and paramilitary authorities, for better synergy, gave rise to the Deep Blue Project. The project is domiciled and implemented by the Nigerian Maritime Administration and Safety Agency (NIMASA), and is acting on behalf the Federal Ministry of Transportation (FMoT), with partners drawn from the Nigerian Navy (NN), Nigerian Airforce (NAF), Nigerian Police Force (NPF), Department of State Security Services (DSSS) and Office of the National Security Adviser (ONSA). The components of the Deep Blue project include; trained civil and military personnel, a Command, Control, Communication, Computers and Intelligence (C4i) Operation Centre, comprising C4i Systems, Intelligence System, Aerial Mission Management System and Satellite Communication (Satcom). Other components are Falcon Eye liaison unit, helicopters, interceptors, special mission aircraft, special mission vessel, armoured vehicle, as well as intervention team.

COMPONENTS OF THE DEEP BLUE PROJECT



- 1 There are 5 stations installed in the C4i Centre, each with its unique purpose and mission.
 - 2 There are 2 Intelligence System stations dedicated to 2 intelligence operators in each operational Shift.
 - 3 SatCom. enables communication in high ranges as well as proper transfer of visual data.
 - 4 There are 2 MSIS workstations for the operational conduct of the Special Mission Aircraft.
- # C4i stands for Command, Control, Communication and Computers Intelligence Operation Center.

The assets utilized in the Deep Blue Project include 3 helicopters, 17 interceptors, 16 armored vehicle, 2 SMAs, 2 SMVs and 4 UAVs.
 * There are 340 personnel known as the intervention team that are deployed to operate the Deep Blue Project's assets.
 ** There are 55 personnel currently working at the C4i Centre comprising 31 NIMASA staff, 9 officers of the Nigerian Airforce, 8 officers of the Nigerian Navy, 3 officers of the Nigerian Police Force, 2 Officers of the Nigerian Army and 2 staff of the Department of State Service.

Figure 2. Deep Blue Project Components. Source: (Created by Author).

Nigeria's Deep Blue project is an integrated maritime security infrastructure consisting of trained civil and military personnel. Its main operational components include the Command, Control, Communication, Computer and Intelligence (C4i) Centre, as well as the marine, air and land assets. The C4i Centre serves as the operational nucleus of the DB project and works on a 24/7-hour basis, with personnel on real-time observatory watch on the security systems, codenamed the C4i and Intelligence systems, with the aim of identifying and coordinating response to maritime security threats, as well as other suspicious activities within the Nigeria's Exclusive Economic Zone (EEZ), Latitude: 4°4' 11 8°N (4.06995728°), Longitude: 4°45' 23 1°E (4.75640951°), and the Gulf of Guinea (GoG) by extension. The DB project could be seen as partly addressing, according to Okoronkwo et al., 2014, the Nigerian maritime environment's inclusion in the piracy hotlist, which in turn has become of major interest to security stakeholders, policy makers as well as researchers. There is also the need for strong synergy between security agencies, to enhance maritime security management and intelligence. The limitations faced as a result of operational mandates of the various military arms, as well as civilian authorities charged with the duty of securing Nigeria's maritime domain are taken care of within the DB project. It is aimed at ensuring security in Nigeria's maritime domain for safe and secure shipping, as well as averting economic sabotage.

Also, the DB project of Nigeria can be seen as appropriately responding to the call by the International Maritime Organization (IMO), for States to take measures to prevent unlawful acts against ships as obtained in Resolution A.584(14), adopted 20th November 1985, which spelt out, "measures to prevent unlawful acts which threaten the safety of ships and security of their passengers and crew", and particularly, resolution A. 545(13) of 17th November, 1983, which "urges Governments to take, as a matter of highest priority, all measures to prevent and suppress acts of piracy and armed robbery against ships in or adjacent to their waters, including strengthening of security measures" (IMO, 2019).

1.5 Aims of the Research:

The aim of this research is to examine what goes into an ideal maritime security structure, develop a theoretical model of good maritime security framework, analyse data from the DB project to see if it aligns with the framework, as well as compare with maritime security efforts or initiatives from other jurisdictions of the world with similar maritime security challenges as Nigeria. This will help identify areas that need to be improved upon within the DP project, in sync with global best practices, and recommend as appropriate, its model for adoption in the overall GoG maritime security operations.

1.6 Objectives of the Research:

The research objectives are formulated below;

1. To identify and analyse the merits and demerits of the Deep Blue project as a maritime security intervention.
2. Benchmark the DB project against an ideal maritime security framework and compare with some jurisdictions with similar security challenges or best management practices, and recommend the optimization of the DB project for more efficiency, and in sync with global best practices.
3. Identify practical areas of the DBP which could be adapted into the GoG collaborative maritime security efforts with a view to improving its effectiveness.

1.7 Research Questions:

The questions hinged on this research includes;

1. How is the Deep Blue project tackling existing security challenges in Nigeria's maritime domain?
2. What are the components and strategies of the DB project which compares with an ideal maritime security infrastructure and best practices as identified in other jurisdictions and globally?
3. How can the DB project be enhanced and optimized in its contribution to maritime security in Nigeria, and the Gulf of Guinea by extension?

1.8 Significance of Study:

According to Buegar and Edmunds, 2017, maritime security has been theorized and seen from a rather conservative point of view, hence, the need for a paradigm shift for maritime security. This theory could mean the existing cooperation between the States in the Gulf of Guinea in terms of regular meetings and deliberations, and not the actual deployment of adequate equipment, machinery, as well as human resources both individually or jointly, to effectively tackle shared maritime security challenges among the littoral states. Examination of ways by which stakeholders in the Gulf of Guinea have responded towards these challenges in practice, with particular focus on maritime domain awareness, as well as field operations will reveal how far the regular meetings of the GoG States and their willingness to cooperate have actually addressed GoG maritime insecurity.

The development of an Integrated National Security and Waterways Protection Infrastructure, otherwise known as the Deep Blue Project by Nigeria, seeks to introduce a new model or agenda, which is more practical in tackling maritime security challenges within Nigeria's Exclusive Economic Zone (EEZ), and the Gulf of Guinea by extension. The maritime environment has an interlinked complex security system which also incorporates strong land and sea connections (Buegar & Edmund, 2017), hence, the need for adoption of the Deep Blue Project model to serve as the GoG model for maritime security, incorporating various maritime stakeholders and ensuring

unified practical approach and deployment of necessary equipment and human resources in tackling maritime security challenges within the GoG. Also, analysis of the DB project's effectiveness since inception, and comparing with the efforts of other jurisdictions with similar challenges as Nigeria and the GoG, would help reveal how best to consolidate the project, both at the national and regional levels, for an efficient solution to maritime insecurity within Nigeria and the GoG region.

1.9 Scope and Limitations:

There was some difficulty in accessing certain data to further illustrate some aspects of the research from the Deep Blue project, being a national waterway security project, hence, its sensitive nature, as it affects national security. Also, the Deep Blue project, being a new project in the Nigerian maritime security architecture commissioned in the year 2019, and officially launched in the year 2021, does not have much scholarly literature yet or previous research carried out on its operations, hence, the limitation of sufficient literature on its operations subsists. Another potential limitation was unease of access to some vital security information from some selected jurisdictions for comparative purposes.

1.10 Methodology of the Research:

Basically, this research uses Qualitative Research method, that is to say, “research using methods such as participant observation, as well as case studies, which shows narrative or descriptive account of a practice or setting” (Drislane & Parkinson, 2011). This ensured the identification of the strengths, weaknesses, opportunities and threats (SWOT) (Gurel, 2017) of the Deep Blue Project, and how best the GoG could adopt the model for a practical and enhanced approach to maritime security within the region.

Also, based on the research questions, a mixed method was also applied in this research. It comprises qualitative, legal, and quantitative research methods. The legal, governance and technical frameworks of a good maritime security infrastructure was

analysed against the strategies of the Deep Blue project. Also, integrative literature reviews which show best management practices from other jurisdictions e.g., the US, Gulf of Aden or Strait of Malacca, with similar cases as the Gulf of Guinea, was used.

1.11 Sources of Data:

The primary source of data for this research was sourced from the Command, Control, Computer, Communication and Intelligent (C4i) Centre of the Deep Blue Project domiciled in the Nigerian Maritime Administration and Safety Agency (NIMASA), and also features some data from the International Maritime Bureau (IMB). Also, this research explores data from some published and unpublished reports and surveys, as well as narrative and descriptive experiences by some staff of the NIMASA C4i Centre and selected maritime security stakeholders in Nigeria, Gulf of Guinea, and around the world.

This research also features some information gathered through contacting via zoom with some maritime security personnel engaged in the Gulf of Aden and Strait of Malacca.

1.12 Research Approach:

This research approach was taken in order to ensure accurate records/figures of activities in the Deep Blue Project since inception, between 2019-2022, as to analyse the impact of the project since inception in the overall maritime security efforts in Nigeria and the Gulf of Guinea. This enabled me to get authoritative answers to the existing procedures in the DB Project, the various components and mode of operation from the managers, as well as personal discussions with other C4i personnel, stakeholders, among others. Also relying on experience as a staff of NIMASA to analyse the whole submissions. The use of case studies, scholarly articles enabled me to give a good narrative and description of asset types, capabilities, as well as possible interoperability between countries or littoral states in the Gulf of Guinea.

1.13 Research Data Limitation:

The research relied majorly on the data the C4i Centre of the Deep Blue Project were willing to give, due to some standing administrative procedure in the Agency on data protection. However, the data gathered were of immense help to this research. Also, currently, there is no known available literature that has comprehensively discussed Nigeria's Deep Blue project yet.

Also, most maritime security information is restricted in the selected jurisdictions, hence, it is difficult to extract more data for in-depth explanation of the research.

Chapter 2.

Literature Review.

2.1 Maritime Security, Historical Perspective:

The high seas are open to ships from all countries, both landlocked and coastal, to support economic activities and international trade, as well as to facilitate contacts among people, and the use of natural resources in a responsible manner. In recent years, however, criminal groups have been exploiting the freedom of navigation, hence, the sea has changed from a space where freedom existed, to a shared, vast but fragile environment (Fedotov, 2019; Feldt et al., 2013). The sophistication of transnational criminal activities and maritime crimes are increasingly expanding, both in types and sizes, hence, pose a threat to international peace and security, as well as threaten people's lives and safety, human rights, and sustainable development (Fedotov, 2019; Bruwer, 2020).

There exists no general definition of maritime security. It is broad, a focus area which is somewhat amorphous, a coherent definition is difficult to determine. (Feldt et al., 2013; Potgieter, 2012). The phrase, "maritime security", was coined towards the twentieth century when States' intervention at sea expanded, and on the recognition that the sea possesses more value for humanity than what was the previous understanding. More recently, the seas have been recognised by states as a new frontier for economic development, hence, they prioritize security in their territorial waters and other maritime zones, which is also a way of contributing to good order on the high seas (Bueger, 2015; Otto, 2020). To many observers, maritime security appears to be a large and unclear concept. The threats which prevail in the maritime domain prompts discussions in the line of maritime security. It elevates understandings about global existential threats, hence, many entities, from international, private and public sectors are involved, with the aim of maintaining good governance at sea, defending and

facilitating commerce, and preserving freedom at seas (Feldt et al., 2013; Bueger, 2015; Ryan, 2019).

There are many faces to maritime security challenges which include; piracy and armed robbery, illicit trafficking by sea, maritime terrorism, human trafficking, small arms and light weapons trafficking, cargo theft among others (Feldt et al., 2013). Illegal, Unreported and Unregulated (IUU) fishing, unlawful and intentional damage to the marine environment, illegal dumping or discharge of pollutants by vessels are also threats to the maritime domain (Kraska and Pedrozo, 2013). One of the oldest threats to maritime security is piracy. It was believed to have been eradicated by the 1830s in most of the world's oceans, with the exception of some parts of Asia. From the late twentieth century and early twenty-first century, it has emerged again as a significant threat to international maritime security and safety (Otto and Jernberg, 2020). These challenges may be hybrid in nature, and keeps evolving; an unpredictable and interconnected mix of irregular and traditional warfare, organized crime, and/or terrorism. The nature of IUU fishing as a security concern is exhibited by reference to its operational synergies with crime, as well as its impacts on human communities (Feldt et al., 2013; Rosello, 2020).



Figure 3. Pirates attacking a vessel. Source: (Dryad Global, 2022).

Maritime insecurity, especially the threat posed by piracy, as well as armed robbery against ships, have been on the International Maritime Organization's agenda since the early 1980s. Between the late 1990s and early 2000, the South China sea was the focus, including the Strait of Malacca and Singapore. In recent times, since 2005, the IMO has focused on the piracy in the Gulf of Aden, off the Somali coast and the Indian ocean. Currently, the IMO is implementing a strategy for maritime security enhancement in West and Central Africa, in sync with the maritime security agreements of the region (IMO, 2019). Also, a key issue on the maritime security agenda is maritime terrorism. This first came to international attention due to the Achille Lauro attack in 1985, and more recently, the 9/11, 2001, attacks on the Twin Tower and Pentagon in the United States of America (Otto et al., 2020).

On the other hand, there has been increasing interest in the issues bothering on Cybersecurity and maritime security over the past few years. There exist clear and critical points of intersection between the two security problems, but little attention has been paid to their combination (Kapalidis, 2020). According to Sadique et al., 2018, as cited by Obaidant et al., 2020, there are three basic security requirements, "confidentiality, integrity and availability", commonly called CIA triad. Organizations or individuals involved are impacted if any one of these basic requirements is lost. New and unexpected vulnerabilities can spring up due to the increasing international maritime community dependence on cyberspace, as well as heavy reliance on information and online systems (Kapalidis, 2020).

Maritime security operation is the responsibility of a government. To act on behalf of a state involves sovereign decision to pursue different options (Feldt et al., 2013) According to Kraska and Pedrozo, 2013, maritime security involves law enforcement, irregular, clandestine and special forces operations, as well as conventional military forces. Agencies and departments are linked with the air and ground elements of the joint armed forces; the coast guard, naval, marine police, other coastal and marine forces, including fisheries and oceanographic services, the intelligent community, as

well as international partners. These aforementioned organizations usually belong to the government of each state, and have the following maritime security elements mandate;

- Sea crime security protection
- Resource security, access to sea resources up to the seabed
- All seafarers and fishermen security
- Environmental protection
- Sea lines of communication security
- Political independence, sovereignty, and territorial integrity
- International and national peace and security (Feldt et al., 2013).

Maritime security is very important for the sustainability and growth of commerce globally, especially those conducted through the sea. Nigeria is challenged with some security issues on her maritime domain such as; piracy, armed robbery, human trafficking, stowaways, theft/pilferage among others, and have initiated intergovernmental partnerships at both national and regional levels towards enhancement of maritime security. (Onwuegbuchunam et al., 2021). The Gulf of Guinea (GoG) is currently notorious as one of the most dangerous globally, in comparison to the Malacca Straits and the Gulf of Aden. Maritime Security in the GoG region is widely acknowledged to be highly complex, involving a lot of issues which among others include; corruption, legal deficiencies, youth unemployment, political unrest, as well as inadequate military equipment. This portends a grave danger to the prosperity and stability of countries within the region. Countries in the region so far are unable to develop a coherent and cogent maritime security policy, framework or strategy to tackle the menace effectively (Ukeje and Ela, 2013; Jacobsen, 2017). High degree socioeconomic vulnerability is reflected in hostile acts against ships and seafarers. Hostile maritime acts could cause increase in political and social instability, as well as financial losses (Mazaris, 2017), hence, a significant issue in the present world order (Joy, 2021).

2.2 International Regulatory Frameworks on Maritime Security:

2.2.1 United Nations Convention on the Law of the Sea (UNCLOS):

The UNCLOS is regarded as the “constitution of the oceans”, hence, the nucleus of a complex regime consisting of various conventions on port and flag state duties, environmental regulation, trans-national organized crime and counterterrorism (Edwards et al., 2021). At the time of its adoption in 1982, the UNCLOS pre-empted low-intensity conflict pattern shifts of the late 1990s through encompassing several new security challenges. These included; illegal immigration, human trafficking, piracy, as well as environmental security (Williams, 2015). The UNCLOS addresses piracy in the Article 100, “Duty to cooperate in the repression of piracy”, which states;

“All states shall cooperate to the fullest possible extent in the repression of piracy on the high seas or in any other place outside the jurisdiction of any state” (United Nations, 1982).

Several other articles regulating response by states against piracy and associated crimes are contained in Articles 101 to 107 and 110 (Williams, 2015). Within the UNCLOS, the concept of “maritime security” captures many of the aforementioned challenges in three dimensions;

- Terrorism and extremist violence at sea,
- Transnational organized crimes at sea, also known as “blue crime”, including; maritime piracy, irregular migration, smuggling of narcotics and other illicit goods, deliberate pollution and illegal fishing,
- Inter-state challenges, including contested territorial claims, inter-state border and resource disputes, as well as grey zone operations (Edwards et al., 2021).

By ratifying the United Nations Convention on the Law of the Sea (UNCLOS), all States Parties have a responsibility in maritime security (Feldt et al., 2013).

2.2.2 Suppression of Unlawful Acts Against the Safety of Maritime Navigation (SUA):

The Suppression of Unlawful Acts (SUA) Treaties, adopted in 1988, provides international legal framework which stipulate appropriate actions to be taken against persons committing unlawful acts against a ship (IMO, 2019). In order to fill the voids in international law needed to combat other threats to human life, security of commerce and navigation at sea, which are not fully prescribed under UNCLOS, and ensure appropriate action is taken against persons committing unlawful acts against ships, the SUA convention and protocol was drafted and agreed in the year 1988 (IMO, 2019; Williams, 2015). Suffice it to say that the SUA Treaty contains the overarching actions, within the context of maritime security challenges, that states need to take.

The list of offences, according to Article 3 of the SUA convention states;

“Any person who commits an offence, if that person unlawfully and intentionally;

(a) seizes or exercises control over a ship by force or threat thereof or any other form of intimidation; or

(b) performs an act of violence against a person on board a ship, if that act is likely to endanger the safe navigation of that ship; or

(c) destroys a ship or causes damage to a ship or to its cargo which is likely to endanger the safe navigation of that ship; or

(d) places or causes to be placed on a ship, by any means whatsoever, a device or substance which is likely to destroy that ship, or cause damage to that ship or its cargo which endangers or is likely to endanger the safe navigation of that ship; or

(e) destroys or seriously damages maritime navigation facilities or seriously interferes with their operation, if any such act is likely to endanger the safe navigation of a ship; or

(f) communicates information which he knows to be false, thereby endangering the safe navigation of a ship; or
(g) injures or kills any person, in connection with the commission or the attempted commission of any of the offences set forth in paragraphs (a) to (f)” (United Nations, 1988).

This list of criminal offenses established by Article 3 requires Contracting Governments or State Parties implementation by means of national legislation, by prosecution or extradition (IMO, 2019).

In 2005, the 1988 SUA Convention and Protocol was amended to become the 2005 SUA Convention and Protocol. It adds new Articles “3bis”, containing three new categories of offenses namely;

- Proliferation of weapons of mass destruction (WMD) on the high seas,
- Using a ship as a means for committing terrorist acts or as a weapon,
- Transportation of a person, whom under other UN anti-terrorism conventions, is alleged to have committed an offense (IMO, 2019).

2.2.3 The International Convention on Safety of Life at Sea (SOLAS):

To make travel and trade through sea as safe and secure as possible is part of the International Maritime Organization’s mandate. To achieve this, the organization develops guidance and regulations through the Maritime Safety Committee (MSC), with inputs from its Facilitation (FAL) and Legal (LEG) committees, in order to mitigate or manage threats with the potential of compromising maritime safety. Appropriate guidance aimed at addressing maritime security has been adopted by the IMO. The IMO also supports Best Management Practices (BMP) which is developed by the shipping industry, having list appropriate procedures to be employed in response to acts or attempted acts of piracy or armed robbery against ships, as well as other maritime security initiatives and bridges (IMO, 2019).

New maritime security regulatory regime was adopted under the International Convention for the Safety of Life at Sea (SOLAS), 1974 as amended, on the 1st July, 2004, named, “special measures to enhance maritime security” (Chapter XI-2), which comprises the International Ship and Port Facility Security (ISPS) Code (IMO, 2019). Also, several frameworks have been introduced on either voluntary or compulsory basis, with a view to enhancing maritime security since the 9/11 2001 terrorist attack in the United States of America (Bichonu and Evans, 2013). In addition, the IMO, through its MSC and FAL Committees, as well as sub-division for Maritime Security and Facilitation (MSF), work in close cooperation on matters affecting other aspects of maritime security bridges, for example; stowaways, drug smuggling, and other transnational organized crimes (IMO, 2019).

2.3 IMO/African Frameworks and Collaborations on Maritime Security:

Appropriate guidance aimed at addressing maritime security challenges have been adopted by the IMO. This includes guidance to governments, shipowners and ship managers, ship masters and crews, on how to prevent and suppress acts of armed robbery and piracy against ships, among others (IMO, 2019). According to Brits and Nel, 2018, the African concept of security has been characterized by land-based conflicts, hence, little attention was paid to maritime threats and maritime environmental protection. The strategies and initiatives of the IMO to enhance maritime security in West Africa particularly, aligns with the Yaoundé Code of Conduct (IMO, 2019).

The African Union (AU) was compelled to develop a joint strategy aimed at addressing its changing African Maritime Domain (AMD), due to the rapid escalation of piracy, hence, the adoption of Africa’s Integrated Maritime Strategy (AIMS 2050) in 2014, which culminated to a binding charter on maritime security and safety in Lomé, 2016, popularly called the Lomé Charter (Brits and Nel, 2018). Also, the Economic Community of West African States’ (ECOWAS) Integrated Maritime Strategy (IMS),

is aimed at stopping and reversing negative trends in the maritime domain, and set out uniform standards to structure and regulate related activities (ECOWAS, 2014).

The Yaoundé Code of Conduct, developed by the West and Central Africa Sub-region is for the purposes of managing and reducing considerably the adverse impacts of illicit maritime activities such as piracy, armed robbery against ships, as well as illegal, unreported and unregulated (IUU) fishing, among others (IMO, 2019). According to ECOWAS, 2016, in the Yaoundé Code of Conduct, “Piracy consists of any of the following acts:

- (a) any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:
 - (i) on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;
 - (ii) against a ship, aircraft, persons or property in a place outside the jurisdiction of any state;
- (b) any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft;
- (c) any act of inciting or of intentionally facilitating an act described in subparagraph (a) or (b).

“Armed robbery at sea” consists of any of the following acts:

- (a) unlawful act of violence of detention or any act of depredation, or threat thereof, other than an act of piracy, committed for private ends and directed against a ship or against persons or property on board such a ship, within a State’s internal waters, archipelagic waters or territorial sea;
- (b) any act of inciting or of intentionally facilitating an act described in subparagraph (a).

“Transnational organized crime in the maritime domain” includes but is not limited to any of the following acts when committed at sea;

- (a) money laundering,
- (b) illegal arms and drug trafficking,
- (c) piracy and armed robbery at sea,
- (d) illegal oil bunkering,
- (e) crude oil theft
- (f) human trafficking,
- (g) human smuggling,
- (h) maritime pollution,
- (i) IUU fishing,
- (j) Illegal dumping of toxic waste,
- (k) Maritime terrorism and hostage taking,
- (l) Vandalization of offshore oil infrastructure”.

The Yaoundé Code of Conduct alludes to the point of Feldt et al., 2013, which points to the fact that there is limited success in sectoral approach to maritime security, hence, the need for a comprehensive approach; national, regional and international collaborations are of importance. Also, Otto and Jernberg, 2019; Walker, 2020, stated that regional initiatives or cooperation between States yields the most effective responses to piracy and other maritime security challenges, partly due to the fact that some types of piracy undertaken and causes, are largely driven by the littoral States’ geography and by the economic and political developments on land. The ability of States and Agencies to cope and respond are constrained by the transnational nature of threats and crimes at sea. A number of conventions and multilateral treaties play an important role in addressing these maritime security challenges, through encouraging cooperation and the enforcement of rules and common norms (Walker, 2020).

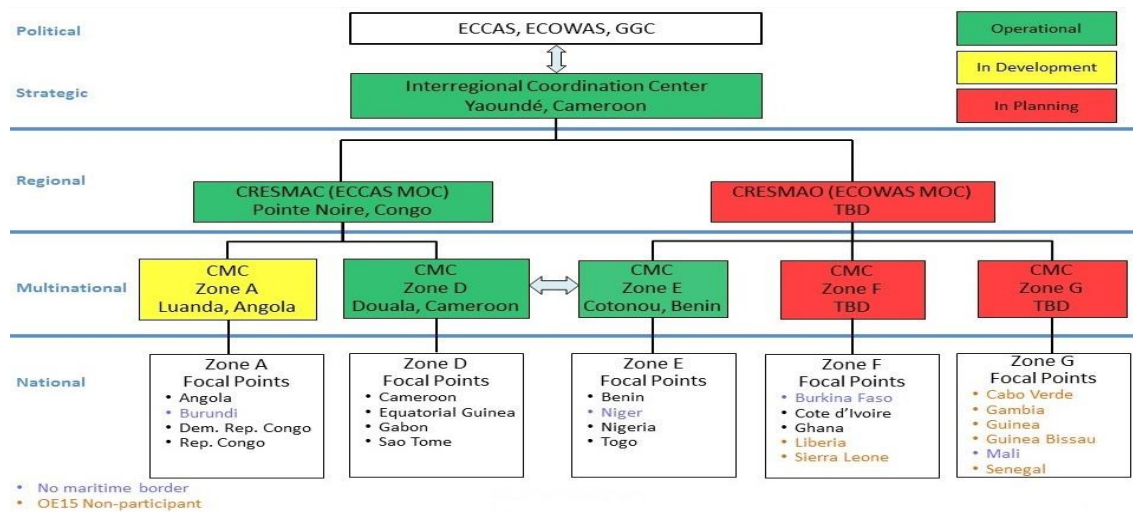


Figure 4. The Yaoundé Architecture/Information sharing. Source: (CIMSEC, 2015).

2.4 The IMO/Gulf of Guinea (GoG) Collaborations on Maritime Security:

The IMO assists Member countries in the GoG through developing and coordinating relevant procedures and structures, revising national legislations to criminalize piracy, armed robbery against ships and other unlawful maritime activities, and also ensuring that technical, operational and logistical personnel are trained adequately. Member States who seek to develop their own regional or national measures to address piracy, armed robbery against ships and other illegal maritime activities are provided with assistance by the IMO if requested. An example of regional instruments are the Djibouti Code of Conduct, concerning the Repression of Piracy and Armed Robbery Against Ships in the Gulf of Aden and the Western Indian Ocean, and also, the “Code of Conduct concerning the repression of piracy, armed robbery against ship, and illicit maritime activities in the West and Central Africa GoG region” (IMO, 2019). Internal security and territorial defence are core, but not the whole security responsibility of any nation’s armed forces. Most times, insurgency and communal violence are closely tied to piracy, drug trafficking, transnational terrorism and other criminal activities, hence, no nation can deal with these transnational challenges alone (Valencia, 2004).

2.5 Gulf of Guinea (GoG) Maritime Security and Nigeria's DBP Efforts:

Inasmuch as countries in the GoG region are faced with the dire maritime insecurity consequences, so far, they have not been able to develop a cogent and coherent maritime security strategy, policy or framework, to effectively tackle the menace (Ukeje and Ela, 2013). According to Charo, 2021, the absence of a national maritime security strategy, as well as a strategic national security policy puts national interest at stake and under threats, which engenders reactive responses among security agencies of the nation. Also, according to the African Centre for Strategic Studies, 2019, as cited by Charo, 2021, States are prompted to innovate numerous maritime security architectures due to the increase in maritime consciousness, in order to enhance their maritime security, which is often invincible defence to the contemporary way of life. The above submissions could be ascribed to part of the efforts being made in the Deep Blue project by the Nigerian government, in that, the DBP structure, unlike what existed before, aims to harmonize operational mandates between both civil and military agencies charged with the security of Nigeria's maritime domain, as well as providing a national strategy, backed by law, in tackling maritime insecurity within Nigerian waters and the GoG by extension.

2.6 Nigerian Legislation and Legal Frameworks on Maritime Security:

- Nigerian Maritime Administration and Safety Agency (NIMASA) Act, 2007:

Among the functions and duties of the Nigerian Maritime Administration and Safety Agency (NIMASA) is the provision of maritime security, as obtained in the NIMASA Act, 2007, Part IV (P), and also, to establish implementation procedure for conventions of the IMO and the International Labour Organization (ILO), as well as other international conventions to which the Federal Republic of Nigeria is a party, especially, on maritime safety and security (NIMASA, 2019).

- Nigerian Merchant Shipping (MSA) Act., 2007:

The Nigerian Merchant Shipping Act, 2007 also addresses maritime security in Part XXVII (Assistance to Salvage of Vessels), 396, “Duty to provide security”.

- Suppression of Piracy and Other Maritime Offences (SPOMO) Act., 2019:

The Suppression of Piracy and Other Maritime Offences (SPOMO) Act, 2019, offers more overarching national legal framework on provision of security and suppression of piracy and other unlawful acts in Nigeria’s maritime domain. The SPOMO Act. works in tandem with the provisions of the United Nations Convention on the Law of the Sea (UNCLOS), 1982, and the Convention for the Suppression of Unlawful acts against the Safety of Navigation (SUA), 1988, and its amendments. The objective of the SPOMO Act. is to, “prevent and suppress piracy, armed robbery and any other unlawful act against a ship, aircraft and any other maritime craft, however propelled, including fixed or floating platform”. (SPOMO Act, 2019).

2.7 Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia (ReCAAP) and The Malacca Straits.

The 1997 Asian financial crisis resulted in the surge in maritime piracy and armed robbery in Southeast Asia, leading to the drafting of ReCAAP by 16 countries in 2004. Since inception, ReCAAP has managed to decrease the number of attacks in the region significantly, and has become one of the bases for counter-piracy efforts in Southeast Asia (Hribernik, 2013). ReCAAP is an important regional agreement for combating incidents of piracy and robbery against ships (Win et al., 2016), and the first regional government-to-government agreement towards promoting and enhancing cooperation against piracy and armed robbery against ships in Asia (ReCAAP, 2021). Unfortunately, Indonesia and Malaysia are the only littoral states that chose not to ratify the ReCAAP, though affected by incidents of piracy, and were involved in the drafting process (Hribernik, 2013; Ismail, 2021; Menzel, 2022).

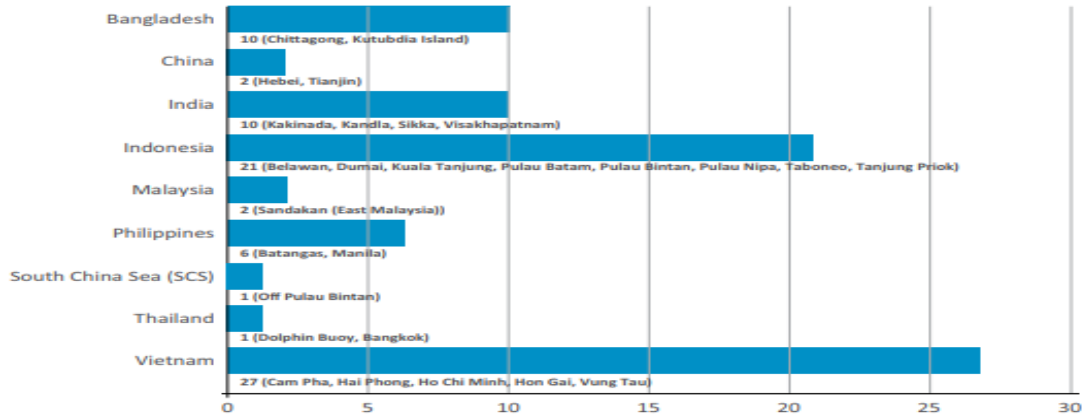


Figure 5. Incidents onboard ships at berth/anchor. Source: (ReCAAP ISC Annual Report, 2015).

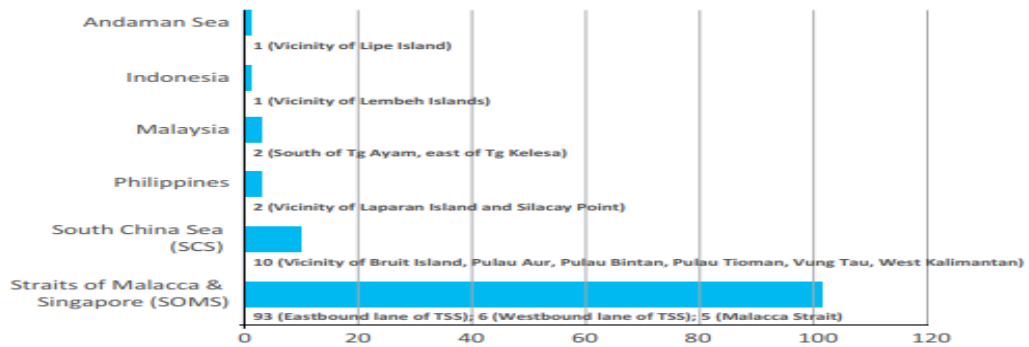


Figure 6. Incidents onboard ships while underway. Source: (ReCAAP ISC Annual Report, 2015).

In the ReCAAP agreement, the roles and activities include; Information Sharing Centre (ISC), in order to promote close cooperation among member countries in preventing and suppressing piracy and armed robbery against ships, increasing the capacity of member countries to prevent and suppress piracy and armed robbery against ships, as well as promoting cooperation with other regional and international organizations in information sharing and best practices to enhance their ability to handle incidents of piracy and armed robbery collectively (ReCAAP, n.d.-b; Win et al., 2016). Perhaps one of its shortcomings, ReCAAP is incapable of having a big impact in terms of joint maritime enforcement operations due to the fact that its

provisions are mostly limited to sharing of information. Also, it does not supersede the UNCLOS enforcement measure as a regional initiative because, for example, pirate ships in other states' territorial waters cannot be seized by any member state (Amri, 2014).

The operational gap in the ReCAAP necessitated other regional efforts to suppress piracy and other maritime security challenges, particularly, in the Strait of Malacca (Amri, 2014). Jointly the regional states within the Malacca Strait, Malaysia, Indonesia and Singapore, developed a unique mechanism for ensuring security and safety in the Strait (Upadhyaya, 2010).

2.8 Gulf of Aden Maritime Security:

The Gulf of Aden is an extension of the Indian Ocean, situated between the African continent and the Arabian Peninsula. It connects the Red Sea to the Arabian Seas through the Strait of Bab El Mandeb, and also, a critical part of the Suez Canal shipping route, which connects the Mediterranean Sea and the Red Sea (WorldAtlas, 2022). Somalia and Somaliland lie along its coastline to the South, Yemen to the North and Djibouti to the East (MarineInsight, 2021).

According to Lu et al., 2010, in 2008, the issue of maritime security was brought to the forefront of international debate due to the rise in piracy activities in the Gulf of Aden. The coast of Somalia and the Gulf of Aden off the Horn of Africa has become of growing concern to states and stakeholders in the shipping industry due to the recent increase in the range and frequency of pirate attacks within the region (Onuoha, 2010). Maritime security is paramount to Somalia, as it has a real impact on regional security, economic development and the entire region stability, hence, the European Union Capacity Building Mission (EUCAP), works with the Somali partners to strengthen the roles and functions of the Coast Guard and other actors, including provision of trainings and equipment (Neijnes, 2021).



Figure 7. Gulf of Aden. Source: (WorldAtlas, 2022).

Chapter 3.

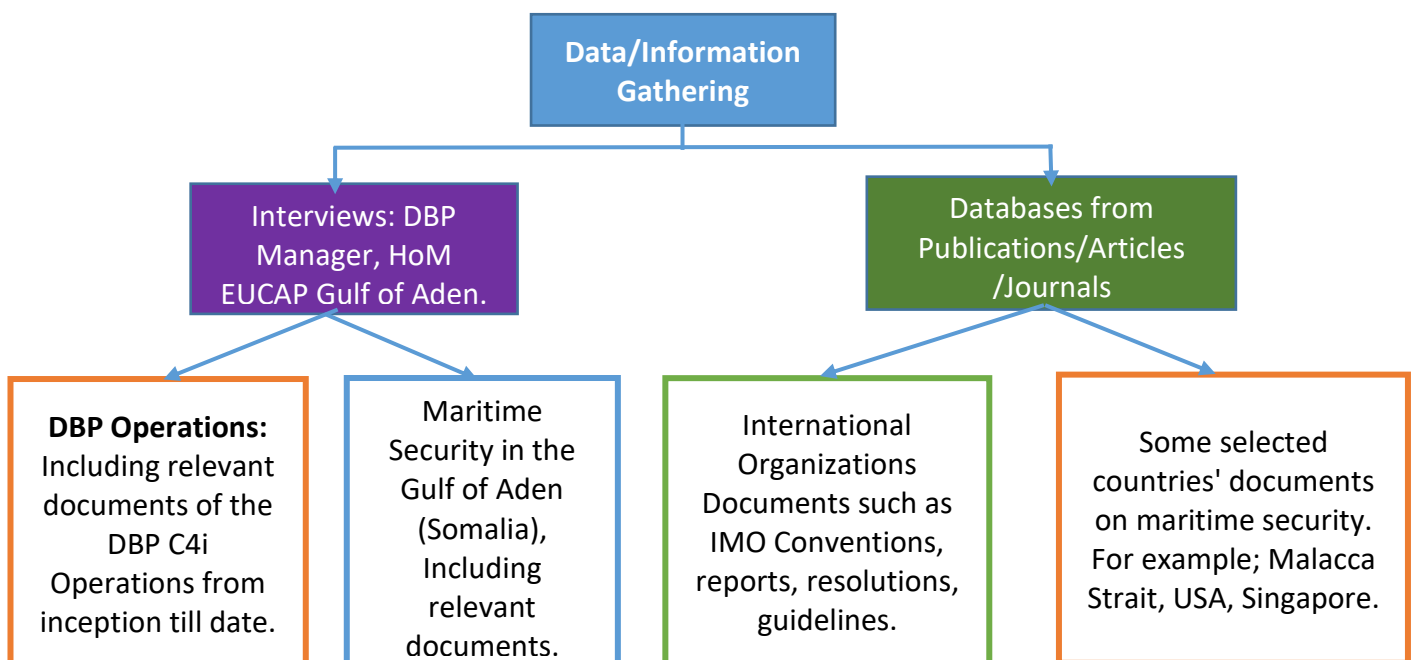
Methodology.

3.1 Introduction:

In order to answer the research questions and attain the set objectives of the research, several methods such as integrative literature reviews were adopted to analyse data collected from different literatures, as well as analysis of data from interviews conducted. The uniqueness of this research topic makes it necessary to incorporate and infer data from various literatures, as well as carry out interviews to activate new thinking about the topic and trigger more research. The researcher takes account of the sensitive and restrictive nature of data, as it has to do with the national security of the selected countries and jurisdictions, hence, part of the limitations of the research.

3.2 Data Collection:

The research data were primarily sourced through interviews with the Nigeria's DBP Manager, and Head of Mission, European Union Capacity Building Mission (EUCAP), through the good offices of its leader Mr. Christopher Reynolds, Mogadishu, Somalia, in the Gulf of Aden. Secondary data were sourced via literature reviews such as; scholarly articles, seminars/workshops, reports, credible governmental and intergovernmental databases such as; IMO, ICC IMB, SNMS, NIMASA, and other internet sources.



3.3 International Standards for An Ideal Maritime Security Framework:

The International Maritime Organization (IMO), through its Maritime Safety Committee, MSC.1/Circ. 1333/Rev.1, 2015, gave recommendations to governments, especially, as it concerns prevention and suppression of piracy and armed robbery against ships, and other forms of maritime security challenges. The recommendations, among others, include;

3.3.1 Piracy and Armed Robbery Against Ships:

1. “It is imperative for governmental or other agencies concerned to gather accurate incident statistics involving piracy and armed robbery against ships before embarking on any set of recommendations or measures. The statistics to collate should include; type, area and nature of the attacks, with special emphasis on types of attack, precise geographical location and modus operandi of the offenders and to disseminate these statistics to all stakeholders in a format that is understandable and usable. Information which could enable governments to act in a coordinated manner even before an attack occurs can be obtained using advanced intelligence”.
2. “Governments should issue to ships entitled to fly their flag necessary advice and guidance on any appropriate additional precautionary measure ships may need to protect themselves from attack, based on the statistics of incidents or intelligence reports on piracy and armed robbery against ships”.
3. “Representatives of shipowners and seafarers should be involved by the governments in the development of measures to prevent and suppress piracy and armed robbery against ships” (IMO, 2019).

3.3.2 Action Plans:

1. Development of action plans specifying how to prevent attack in the first place, and actions to take when an attack occurs.
2. Need to counter any ensuing oil spills or leakages of dangerous substances that the ship may be carrying, in case there is a collision or grounding of a ship, as a result of an attack.
3. Need to take appropriate measures for the purpose of maximizing effectiveness and efficiency, as well as minimizing any relevant adversity, by all national agencies involved in preventing and suppressing piracy and armed robbery against ships.
4. Establishment of a Point of Contact (PoC), through which the ships entitled to fly a country's flag may request assistance or advice when sailing in waters believed to present a heightened threat.
5. As set out in Article 100 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), States are required to cooperate to the fullest possible extent in the repression of piracy. To this end, states are requested to take an active part in the fight against piracy, if they are interested in the security of maritime activities. This could be done by contributing to capacity building efforts, deploying naval vessels and aircraft in accordance with international law to patrol the affected areas, as well as by prosecuting suspected pirates (IMO, 2019).

3.3.3 Cooperation and Communication Between Various Agencies and Response Time after an Incident Has Been Reported to the Coastal State:

According to the MSC. 1/Circ. 1333/ Rev. 1, Annex, (page 4), the following should be adopted by the coastal State;

1. An incident command system for operational, as well as tactical response in each country concerned, in order to provide a common terminology; a unified command structure; integrated communications; a manageable span of control; designated incident facilities; consolidated action plans and comprehensive resource management.
2. Mechanisms for dealing with other maritime security issues, e.g., drug-trafficking, smuggling and terrorism. In order to efficiently use the limited resources, they should be incorporated into the incident command system.
3. Develop, or if existing, keep reviewing procedures for rapidly relaying alerts received through communication centres to the responsible entities for prompt actions.
4. When appropriate, governments should by bilateral or multilateral agreements cooperate in establishing a Single Point of Contact (SPC) for ships to report threats of piracy of specific high threat area activities (IMO, 2019).

3.3.4 Criminal Jurisdiction:

1. For committing acts of piracy or armed robbery against ships, a person apprehended at sea, outside the territorial sea of any state, should be prosecuted under the laws of the investigating State, and by mutual agreement with other substantially interested states according to MSC. 1/Circ. 1333/ Rev. 1, Annex, (page 6).
2. To enable States, apprehend and prosecute persons committing such offences, it is recommended that States should take such measures as may be necessary to establish their jurisdiction over the offences of piracy and armed robbery at sea, including their legislation adjustment if necessary (IMO, 2019).

3.4 Maritime Security Apparatus of the United States of America (USA):

The maritime security apparatus of the United States is a multi-agency effort, which incorporates major actors from multiple departments of the government. Departments of Defense, Commerce, Homeland Security, Energy, State and Transportation, all have major responsibilities and key roles in executing maritime security national strategy (Herzinger, 2021). This strategy, along with its related plans, represent a multi-layered approach, and includes improved maritime domain awareness, as well as enhanced prevention, protection and recovery capabilities (USHS, 2013). The main document guiding American maritime security policy is the 2005 National Strategy for Maritime Security, along with its supporting plans; the Maritime Operational Threat Response Plan, the National Maritime Domain Awareness Plan, the International Outreach and Coordination Strategy, the Maritime Transportation System Security Plan, the Maritime Infrastructure Recovery Plan, and the Maritime Commerce Security Plan. Each document offers departmental responsibilities and plans, classifies focus areas, and shows how each line of effort supports the overarching strategy, as well as the effective measures to employ (Herzinger, 2021).

The United States maritime security strategic objectives include;

1. Establishment of consistent and unified US positions on maritime security initiatives and programs for bilateral and multilateral exchanges.
2. Full incorporation of international law in the advancement of worldwide maritime security.
3. Emphasis on maritime security as a key priority in the US international policy.

3.5 The Gulf of Aden, (Somalia) Maritime Security Strategy:

The interview conducted on maritime security strategies in the Gulf of Aden, through the European Union Capacity Building Mission (EUCAP), revealed that maritime security, maritime response and recovery, as well as maritime safety are part of the

pillars in National Maritime Strategy of Somalia, which is aimed at addressing peaceful and stable maritime domain as a matter of national security. One of Somalia's Maritime Security Strategic Goals is to enhance capacities in order to ensure that agencies and naval assets with defence roles are able to protect the maritime domain from threats or losses as a result of illegal acts of aggression, which can impact on security, economy, as well as the environment. Another strategic goal is to strengthen and ensure effective exercise of defensive authorities and responsibilities to detect, deter and interdict unlawful acts against assets, infrastructure and the country's maritime domain interests, including the interest of stakeholders and users.

The objective is to delineate roles and responsibilities within and amongst national maritime agencies with respect to enforcement jurisdictions, and also, facilitate inter-agency cooperation and coordination in support of national strategy. The Somali National Maritime Strategy, 2022, has the following stated goals;

1. Maritime defence forces which comprise a military command and control structure of naval and supporting forces, including inter-service liaison, regional and international cooperation mechanisms.
2. Maritime defence administration which comprises personnel, procurement, infrastructure, professional education and established system of promotion, as well as capacity to administer a maritime, civil, military and criminal justice system.
3. Establishment of shared capability for Maritime Domain Awareness/Maritime Situational Awareness (MDA/MSA).
4. Maritime Security Focal Point establishment at the Federal and State levels
5. Establishment of a National Maritime Operational Coordination Capability which can integrate coastal communities at the Federal, State levels, as well as the regional and international centres.

3.6 The Strait of Malacca Maritime Security Infrastructure:

Having three littoral states of Malaysia, Singapore and Indonesia, the Strait of Malacca is one of the most important international Straits in the world. Its importance in international shipping activities can be viewed from the existence of oil flows, which ships transport through the Strait, which is larger than the Suez Canal, and also, greater than those being transported through the Panama Canal. In an effort to eliminate transnational crime that occurs in the Malacca Strait, cooperation between maritime stakeholders is one of the options taken to overcome the limitation of facilities and infrastructure (Lee & McGahan, 2015; Kusuma et al., 2021). The firm action taken by Malaysia and the littoral states ensured dramatic reduction in attacks in the Malacca Strait. The multi-jurisdictional measures, such as “eye-in-the-sky”, and coordinated patrols, have resulted in piracy drop in the region (Baharum, 2007; Hassan, 2007).



Figure 8. Strait of Malacca. Source: (IILSS, 2021).

The Operation MALSINDO (Malaysia, Indonesia, Singapore), was the first commitment of the three littoral states towards coordinated patrols in a multilateral, rather than bilateral setting between each other. States allocates a number of vessels for coordinated patrols in the Strait of Malacca, with the aim of combating piracy and other transnational organized crimes which occur within the Strait. It is also known as the Malacca Straits Security Initiative (MSSI), or Malacca Straits Sea Patrol (MSSP)

(Ho, 2004; Massey, 2008). There were 17 ships assigned to operation MALSINDO when it took off in 2004, both Malaysia and Singapore contributed 5 ships each, while Indonesia contributed 7 ships. The ships only patrol the territorial waters of the state they are from, due to the need to respect the sovereignty of each state (Massey, 2008). Cross-border pursuits through other states' territorial seas is not allowed under MSSP, as it is seen as an interference with other states' sovereignty, hence, one of the weaknesses (Amri, 2014).

Aerial patrols over the Strait of Malacca, under the Eyes-In-The-Sky (EiS) plan, was also launched by the countries in the region to supplement the MALSINDO effort (Amri, 2014). According to Cheney-Peters, 2015, the Eyes-in-the-Sky component of the Malacca Strait Patrol (MSP) is geared towards enhanced Maritime Domain Awareness (MDA) and enforcement. The Maritime Patrol Aircraft (MPA) patrols twice a week as a contribution by those participating in the EiS initiative, and these aircrafts are allowed to fly no closer than 3NM from the land of EiS states. Two patrols a week along designated areas in the Strait of Malacca and Singapore are conducted by the MPAs, and a military officer from each state is onboard during any mission and is responsible for alerting their respective monitoring agencies when suspicious contacts are made (Pullen & Truver, 2006; Massey, 2008).

3.7 Identified Components of An Ideal Maritime Security Infrastructure:

Based on the above listed IMO-MSC recommendations and guidance to governments on maritime security architecture, especially, as it affects piracy and other transnational organized crimes, and also, based on the identified best practices from the US, Gulf of Aden and the Strait of Malacca as captured above, the identified components of an ideal structure for maritime security are, (but not limited to);

COMPONENTS OF IDEAL MARITIME SECURITY FRAMEWORK	Maritime Domain Awareness (MDA)
	Legal Framework
	Adequate Human Resources
	Alerting System
	Advanced Intelligence System
	Air and Sea Assets
	Unified Command Structure
	Integrated Communication/Common Terminology
	Governance System, Multi-Agency/Multi-Layer Approach, and Cooperation between stakeholders
	Point of Contact (PoC) Establishment and Action Plan Development
	Accurate Incident Statistics
	Contingency Plan for Oil Spill or Leakages due to attacks
	Mechanism for other Maritime Security challenges, e.g., drug-trafficking, smuggling among others.

Table 1. Components of an ideal maritime security framework. Source: (Created by the Author).

3.8 Alignment of Nigeria’s Deep Blue Project with the Maritime Security Features of the above Mentioned Comparative Studies:

3.8.1 Maritime Domain Awareness Capabilities:

According to NIMASA, 2021, the primary aim of the DBP C4i Centre is to provide Maritime Domain Awareness (MDA), intelligence and reconnaissance, to aid informed enforcement operations, particularly, on maritime security and safety interventions. All the information needed by other components of the DB project, for example, situational awareness and intelligence, emanate from the C4i Centre. The components of the C4i Centre include; the C4i System Stations, Maritime Intelligence System, Aerial Mission Management System with Multi-Sensor Integrated System (MSIS), Communication Systems and Satellite Communication System. The reports generated from the Centre, among others, include; sea piracy and armed robbery

incidents, maritime domain trend analysis, maritime intelligence summary, maritime security threat assessments, vessel investigation records, record of events.



Figure 9. Deep Blue project C4i Centre. Source: (Captured by Author).

The C4i systems for maritime domain awareness have the following capabilities;

- Coastal and Satellite Automatic Identification System (AIS) signals worldwide
- Synthetic Aperture Radar (SAR) – for Non-AIS complying vessels
- Arena statistics and case reports
- Trend analysis and alerting
- Multi Sensor Integration System (MSIS) – for Aerial Mission Management
- Coastal Radar detecting;
 - Small craft
 - Bunkering activity
 - Criminal activities close to shore
- GoGIN MMCC Zone E integration for security and SAR
- External system integration into Lloyd’s list and the NAVY Falcon Eye.

The feedbacks to the C4i Centre from these aforementioned systems include;

- Vessels operating within and close to Nigerian waters
- Vessels with incidences
- Vessels operating with dark activities
- Profile of voyage path of vessels for the past eight years

Nigeria EEZ - Overview (August 2018 – August 2021)

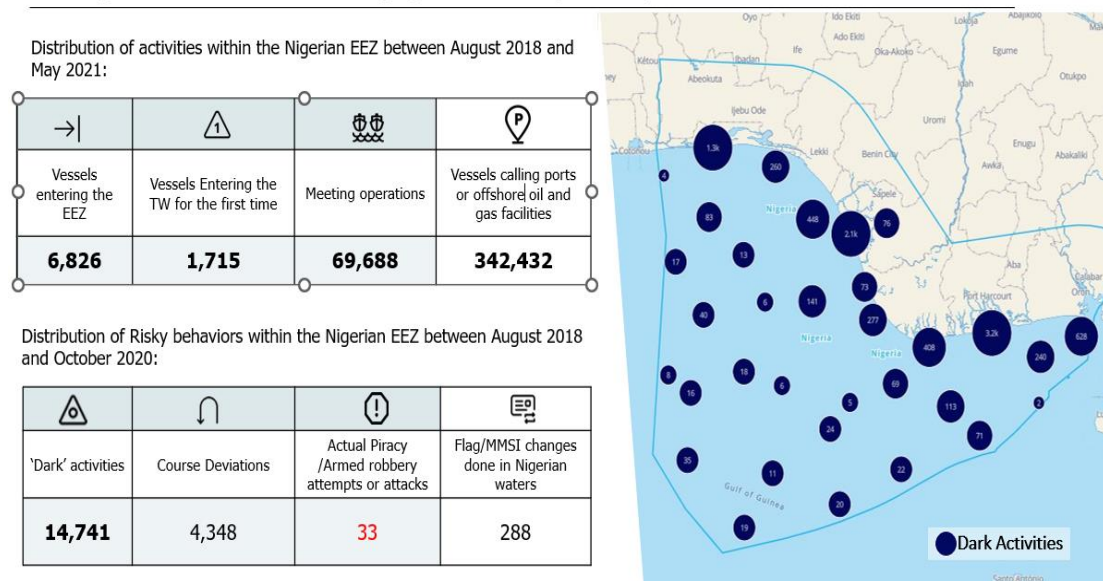


Figure 10. Activities within Nigeria's EEZ from C4i MDA systems. Source: (NIMASA C4i, 2021).

In addition to the above mentioned DBP C4i capabilities and system generated information regarding domain awareness, the C4i Centre is also in collaboration with some national and international organizations, geared towards maritime domain awareness and security. They include;

- Nigerian Navy Falcon Eye Centre
- Nigerian Navy RMAC Centre
- GoG Maritime collaboration Forum (GoG-MCF/SHADE)
- Yaoundé Architecture Regional Information System (YARIS)
- Maritime Domain Awareness for Trade Gulf of Guinea (MDAT-GoG)
- International Maritime Bureau (IMB).

3.8.2 Legal Framework Backing the Deep Blue Project Activities:

The Deep Blue project uses both national and international laws on maritime security to carry out its activities. The legal frameworks include;

1. The Nigerian Maritime Administration and Safety Agency (NIMASA) Act. 2007, which stipulates, “provision of maritime security”, in Part IV (P).
2. The Nigerian Merchant Shipping (MSA) Act. 2007, which also hinted at maritime security in Part XXVII (Assistance to Salvage of Vessels), 396, “Duty to provide security”.
3. More specifically, the Deep Blue project leverages on the provisions of the Suppression of Piracy and Other Maritime Offences (SPOMO) Act. 2019, which is a more overarching national legal framework on the provision of maritime security, as well as suppression of piracy and other unlawful activities in Nigeria’s maritime domain.
4. International conventions, such as ISPS, SUA, including other conventions to which the Federal Republic of Nigeria is a party, especially, on maritime security and safety (NIMASA, 2021).

3.8.3 Personnel Engaged in the Deep Blue Project and Trainings:

The personnel deployed to the DB project are in two categories; C4i Centre personnel and response/intervention personnel at sea. The C4i personnel is composed of both civilian and military officers specifically trained for the DBP operations. The personnel are drawn from NIMASA, Nigerian NAVY, ARMY, AIRFORCE, Department of State Service (DSS) and the Nigerian Police Force (NPF). The response/intervention team are about 350 personnel, and are composed majorly of military personnel with specific training on the DB project integrative modus operandi

on response and general maritime security within Nigeria’s EEZ and the GoG by extension.

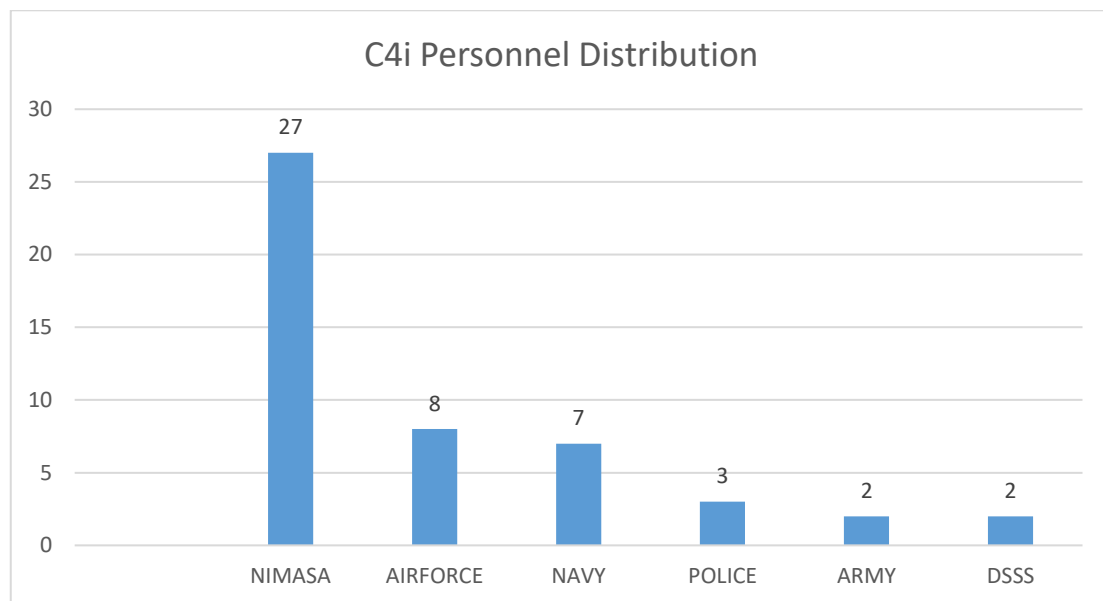


Table 2. Summary of Staff strength of the C4i Centre. Source: (NIMASA C4i, Created by Author).

The personnel engaged in the DB project have equally undergone certain security trainings as summarized in the table below;

S/N	TYPE OF TRAINING	DATE OF TRAINING	LOCATION OF TRAINING	REMARKS
1.	C4i OPERATORS COURSE	08/01/2019 - 06/02/2019	NMRDC, KIRIKIRI	20 OPERATORS CERTIFIED
2.	C4i OPERATORS COURSE (ADDITIONAL)	27/11/2019 - 13/12/2019	NMRDC, KIRIKIRI	15 OPERATORS CERTIFIED
3.	INTELLIGENCE SYSTEM OPERATOR COURSE	18/02/2019 - 19/03/2019	NMRDC, KIRIKIRI	21 INTELLIGENCE OPERATORS CERTIFIED
4.	SHIFT SUPERVISOR COURSE	06/05/2019 – 03/06/2019	NMRDC, KIRIKIRI	14 SHIFT SUPERVISOR CERTIFIED
5.	C4i MISSION SYSTEM EQUIPMENT (MSE)	5/07/2021 – 23/7/2021	OJO NAVAL TOWN NAF IKEJA LAGOS	4 OPERATORS CERTIFIED

Table 3. Command, Control, Computer, Communication and Intelligence (C4i) Training. Source: (NIMASA C4i Centre).

S/N	TYPES OF TRAINING	DATE OF TRAINING	LOCATION OF TRAINING	REMARKS
1.	BASIC INFANTRY TRAINING	28/01/2019 – 19/03/2019	NONWA AND ELELE BASE	500 TRAINED
2.	BASIC INTERVENTION TRAINING COURSE	20/05/2019 – 16/08/2019	ELELE BASE	340 TRAINED
3.	BASIC INTERVENTION TRAINING COURSE (ADDITIONAL)	29/07/2019 – 31/08/2019	ELELE BASE	40 TRAINED

Table 4. Maritime Security Training. Source: (NIMASA C4i Centre).

S/N	TYPE OF TRAINING	DATE OF TRAINING	LOCATION OF TRAINING	REMARKS
1.	SPECIAL MISSION AIRCRAFT PILOT COURSE (1 ST CYCLE)	2/10/2020 – 02/11/2021	MORRISTOWN NEW JERSY U.S.A.	10 TRAINED AND CONCLUDED
2.	SPECIAL MISSION AIRCRAFT PILOT COURSE (2 ND CYCLE)	10/11/2020 – 23/11/2021	MORRISTOWN NEW JERSY U.S.A	10 TRAINED AND CONCLUDED

Table 5. Special Mission Aircraft Training. Source: (NIMASA C4i Centre).

S/N	TYPE OF TRAINING	DATE OF TRAINING	LOCATION OF TRAINING	REMARKS
1.	SPECIAL MISSION VESSEL COURSE (NIGERIA)	16/06/2021 – 30/07/2021	OJO NAVAL TOWN LAGOS	40 TRAINED AND CERTIFIED
2.	SPECIAL MISSION AIRCRAFT PILOT OTS COURSE (NIGERIA)	1/7/2021 – 19/7/2021	NAF BASE LAGOS IKEJA	7 TRAINED AND CERTIFIED
3.	SPECIAL MISSION AIRCRAFT TECHNICIANS COURSE (NIGERIA)	14/05/2021- 13/8/2021	NAF BASE LAGOS IKEJA	8 TRAINED AND CERTIFIED
4.	SPECIAL MISSION HELICOPTER PILOTS COURSE (NIGERIA) PART 1	31/05/2021 – 16/07/2021	OJO NAVAL TOWN LAGOS	8 TRAINED AND CERTIFIED
5.	SPECIAL MISSION HELICOPTER PILOTS COURSE (NIGERIA) PART 2	19/6/2021 – 24/8/2021	OJO NAVAL TOWN LAGOS	11 TRAINED AND CERTIFIED
6.	SPECIAL MISSION HELICOPTER TCHNICIANS (14) / (5) CREW CHIEF TRAINING COURSE (NIGERIA)	19/6/2021 – 24/8/2021	OJO NAVAL TOWN LAGOS	19 TRAINED AND CERTIFIED

Table 6. Other Local Trainings on Aircraft Operations. Source: (NIMASA C4i Centre).

3.8.4 Deep Blue Project C4i Alerting Systems and Reporting Lines:

According to Gonzalez, 2020, an alerting system is a platform which centralizes alerts from various systems and tools, and distributes those alerts to professionals who can act on the incident or inform the wider business ecosystem. These platforms help to ensure quick responses to events, as well as reduce the possibility of ignoring or overlooking alerts. The DBP C4i has a chain of alerting systems and reporting lines,

depending on the nature of the incident being handled. The summary is below captured;

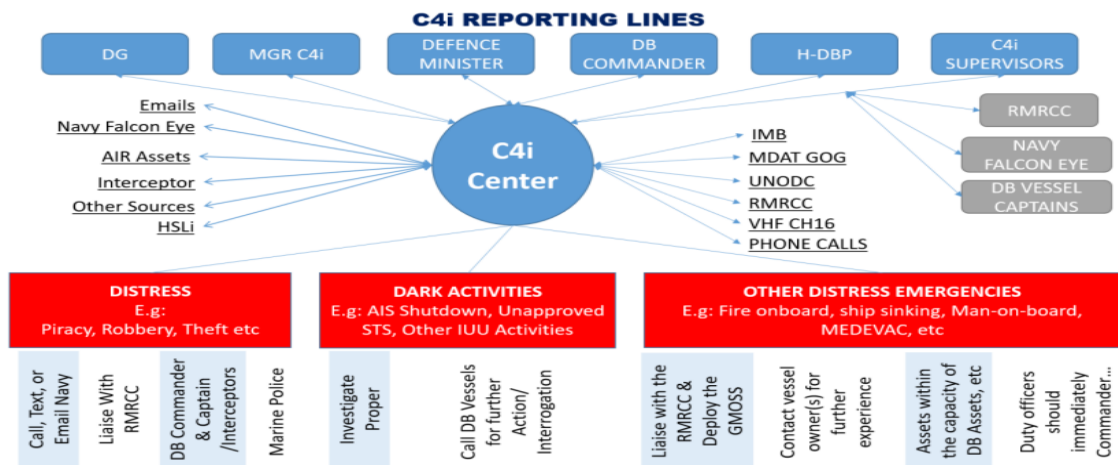


Figure 11. DBP C4i Alerting Systems/Reporting Lines. Source: (NIMASA C4i Centre, 2022).

3.8.5 Advanced Intelligence System of the Deep Blue Project:

The C4i of the DBP has a dedicated Maritime Intelligence System (MIS) work station for its operations. The system tracks, investigates and reports both present and past activities of vessels calling into Nigerian waters from any part of the world, including vessel owners or operators. Vessels with irregular movements, dark activities or vessels that can pose threat to Nigeria’s maritime domain are identified for further investigations and necessary actions. The Intelligence System aids investigation and analysis of vessels and trends, and has the capability of presenting all AIS transmitting vessels with their unique information. Its overall capabilities, according to NIMASA C4i, 2022, include;

- Coastal AIS + SAT AIS signals all over the world
- Database consisting of several providers
- Ability to monitor vessel’s movement up to 8 years backwards
- Area analysis capability
- Trend analysis capabilities
- Alert setting capabilities

- Case report and arena statistics reports
- Risk calculation of vessels and company risk analysis capabilities.

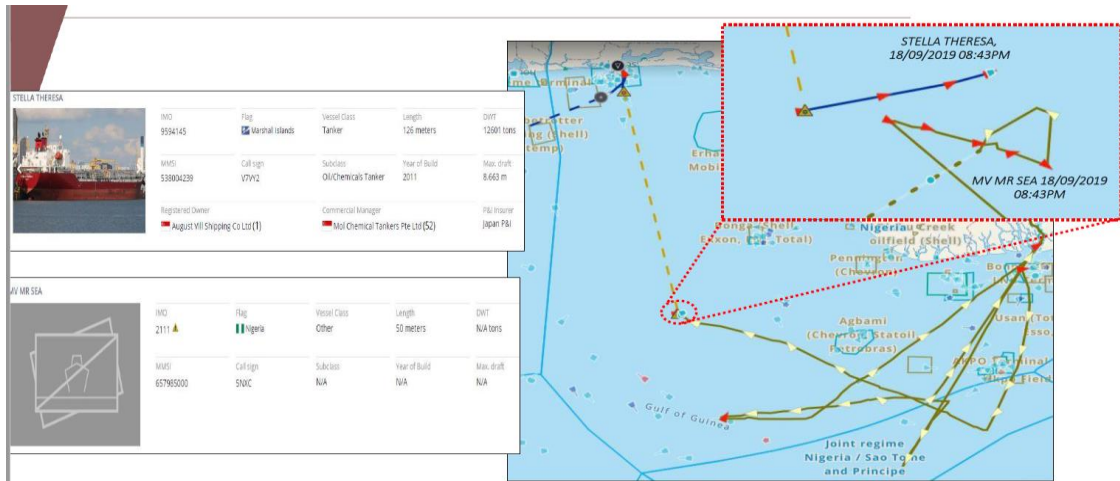


Figure 12. Past activities of a vessel tracked by the C4i MIS. Source: (NIMASA C4i).

3.8.6 The Deep Blue Project Air, Sea and Land Assets:

The DB project has the following air, sea and land assets;

- Special Mission Vessels (DB Lagos & DB Abuja) – 2
- Special Mission Aircraft – 2
- Special Mission Helicopters – 3
- Fast Intervention Vessels – 17
- Unmanned Aerial Vehicle (UAV) – 4
- Armoured Vehicles – 16

1. The Special Mission Vessels (SMVs) are composed of; hybrid propulsion/green technology, 2 fast interceptor boats, a helipad, and has speed of 21knots, low fuel consumption, with a length of 55.20m, and classed by Germanischer Lloyds (GL).

2. The Fast Interceptor Vessels (FIVs) are composed of communication equipment, projectors, maritime Radar, three outboard engines of 300hp each, night vision capability and a speed of 55knots.
3. The Special Mission Aircraft (SMA) – New Williams FJ44-34 turbofan engine, advanced multi-mode Radar, line of sight data link, AIS enabled, multi-sensor integration system (MSIS), Satellite communication system, with 10 crew maximum capacity.
4. The Special Mission Helicopter (SMH) – Augusta AW 139, has a max cruise speed of 156ktas, fast drop system, communication equipment, AIS enabled, with carriage capacity of 2 Pilots, 6 crew.
5. The Unmanned Air Vehicle (UAV) has 2 longwave infrared thermal imaging cameras, AIS enabled, day and night vision, heat signature classification and endurance capacity of up to 8-12 hours.
6. The Armoured Vehicles (Musketeers) are Toyota 6.7L V8 OHV Rover Stroke Turbo-Diesel, 300hp @2,800rpm: power to weight: 37.5hp/ton, 130-liter capacity, with estimated 500km travel distance.



Figure 13. Some assets of the DB project. Source: (Captured by the Author).

3.8.7 The Deep Blue Project Command Structure:

A military officer, within the rank of a Brigadier General, is appointed by appropriate military authorities within the Deep Blue project to exercise command and control of all military grade assets involved in the project, as well as oversee the project's operational activities, either in full or acting capacity. The Director General of NIMASA, also appoints a top-ranking officer of the Agency to manage and control the DB project's routine administrative affairs, including personnel welfare and equipment maintenance. A formal organogram of the DBP is still ongoing.

3.8.8 Deep Blue Project's Integrated Communication/Common Terminology:

The mode of communication within the DB project's shore and sea operations is based on the Command, Control, Computer, Communication, Intelligence (C4i) training, which included; C4i Operator Course, Intelligence System Course and Shift Operator Course for the personnel engaged in the C4i Centre, while that of the military intervention team included; Basic Infantry and Intervention Courses, Special Intervention training among others. Suffice it to say, the communication/common terminology used by personnel is as offered by the aforementioned training. According to NIMASA C4i, 2022, "during operations, the Centre establishes communication with the sea assets through encrypted radio communication channels via tactical radios; VHF, MF and HF. As a backup to the radio communication system, there is provision for satellite communication devices on both platforms". Also available in the C4i Centre is a data link function, where information on targets can be sent to the intervention teams during operations.

3.8.9 Deep Blue Project's Governance System, Multi-Agency, Multi-Layer Approach, and Cooperation Between Stakeholders:

The Nigeria's DB project governance system is composed of a steering committee having the following as members;

- The Honourable Minister of Transport
- Honourable Minister of Defense
- National Security Adviser
- Chief of Defense Staff
- Chief of Naval Staff
- Chief of Army Staff
- Inspector General of Police
- Director General of NIMASA

The multi-agency approach of Nigeria's DBP involves the following agencies of government, who serve as the Project Management Committee (PMC);

- Federal Ministry of Transportation (FMOT)
- Ministry of Defense (MOD)
- Nigerian ARMY, NAVY and AIRFORCE
- Department of State Security Service (DSSS)
- Office of the National Security Adviser (ONSA)
- Nigerian Police Force (NPF)
- Nigerian Maritime Administration and Safety Agency (NIMASA).

The multi-layer approach to maritime security in the Deep Blue project involves air, land and sea approaches;

- The first approach is the deployment of Special Mission Vessels at sea, including fast interceptor boats within Nigerian waters. These vessels periodically patrol the Nigerian maritime domain and intercepts any illegal activity. The C4i Centre communicates the vessels on any identified suspicious activity also for prompt actions.
- The airborne assets, Special Mission Aircraft and Helicopters, periodically patrol the Nigerian waters and send signals of suspicious activities to the C4i Centre through the Mission Systems Equipment (MSE). The MSE Operator analyses and verifies the signals from the aircrafts, which are real-time pictures and videos footage through a Multi-Sensor Integration System (MSIS), and shares suspicious target's information with other intervention units of the projects for further necessary actions.
- Another approach is the deployment of armoured vehicles to monitor activities of criminals on land close to the creeks.

The existing Deep Blue project's stakeholders' cooperation is through a Joint Working Group (JWG), comprising the Nigerian Maritime Administration and Safety Agency (NIMASA), the Ministry of Transportation, the Nigerian Ports Authority, Nigerian Navy, Marine Police Interpol, the oil industry under the aegis of Oil Companies International Marine Forum (OCIMF) and the shipping industry represented by ICS, BIMCO, INTERTANKO, INTERCARGO and the Nigerian Shipowners' Association. The aim of the JWG is to facilitate coordination between the government and the industry, and combine efforts in order to deter and respond to incidents of piracy and armed robbery in Nigeria's EEZ and territorial waters, as well as address other issues on maritime security (NIMASA, 2020).

3.8.10 Deep Blue Project's Point of Contact (PoC), Action Plan Development and Incident Statistics:

The C4i Centre serves as the PoC for the Deep Blue project. The DBP's action plan is specified in the Standard Operating Procedure (SOP), which among others include;

fast response/intervention, better decision-making process, information delivery precision and accuracy. Incident statistics records, in the form of Operational Log, are kept in the C4i Centre of the Deep Blue project on a 24/7hour basis. Also, records of vessels with irregular activities are also kept in the electronic log for future reference and investigation purposes.


 NIGERIAN MARITIME ADMINISTRATION AND SAFETY AGENCY (NIMASA) C4i OPERATIONAL CENTER - VESSELS OF INTEREST OPERATING IN THE NIGERIAN MARITIME DOMAIN - REPORTED VIA C4i INTELLIGENCE SERVICE													
COMMERCIAL COMPLIANCE GUIDE (INTERNATIONAL PORT CALLS AND CABOTAGE TRADE - 2021)											Monday, May 10, 2021		
SECTION A											SECTION B		
REPORTED BY C4i OPERATIONAL CENTER											REPORTED COMPLIANCE BY NIMASA OPERATIONAL DEPTS./ UNITS		
INTERNATIONAL TRADE PORT CALLS													
S/N	LOCATION	COORD (LAT/LONG)	VESSEL NAME	IMO	MMSI	CALL SIGN	FLAG	TYPE	GT	ETA	DATE ARRIVED	VOYAGE ORIGIN	Compliance Status (3% Levy, SPL (W/R), 0.5% STV/R, STS)
1	Apapa-Lagos	6.44395,3.38262	AQUARIUS HONOR	98276572	354530000	3PNC3	Panama	bulk carrier	33032	5/2/2021	5/2/2021	China, Xingang	
2	Apapa-Lagos Anch	6.36079,3.39167	INTERLINK DIGNITY	974769	538005706	V76F4	Marshall Islands	bulk carrier	25548	5/3/2021	5/3/2021	Canada, Montreal	
3	Bonny River Anch	4.48783,7.18704	BUDVA	9933500	262008000	4003	Montenegro	bulk carrier	24288	5/3/2021	5/3/2021	USA, Mobile	
4	Apapa-Lagos	6.43887,3.3951	CHARIANA L.	9154002	538006750	V70W9	Marshall Islands	bulk carrier	27011	5/6/2021	5/6/2021	Ukraine, Odessa	
5	Apapa-Lagos	6.43700,3.37859	VICTORIA	9338828	636009703	05V74	Liberia	bulk carrier	30570	5/2/2021	5/5/2021	China, Liyangang	
6	Apapa-Lagos	6.44073,3.38909	RHINE CONFIDANTE	9497853	636009165	05J06	Liberia	bulk carrier	33044	5/2/2021	5/5/2021	China, Liyangang	
7	Apapa-Lagos	6.43724,3.38897	MDI EGED	969977	636009032	05S02	Liberia	bulk carrier	34049	5/3/2021	5/5/2021	Russia, Taman	
8	Apapa-Lagos	6.44692,3.37859	DESERT HONOUR	9860330	246693000	5V085	Greece	bulk carrier	36400	4/23/2021	5/6/2021	Brazil, Santos	
9	Apapa-Lagos Anch	6.36003,3.39704	JAY	9440388	538003972	V70L6	Marshall Islands	bulk carrier	33045	5/6/2021	5/6/2021	Brazil, Santos	
10	Apapa-Lagos Anch	6.36786,3.34920	NAVIN EAGLE	9485086	538007890	V7LW4	Marshall Islands	bulk carrier	5087	5/6/2021	5/5/2021	Spain, Garrucha	
11	Apapa-Lagos Anch	6.27873,3.37799	KING M	984282	374560000	3BMT6	Panama	bulk carrier	20992	5/7/2021	5/6/2021	Turkey, Iskenderun	
12	Apapa-Lagos Anch	6.27893,3.39989	ZOLA	970046	5630060500	9V5994	Singapore	bulk carrier	38353	5/6/2021	5/6/2021	Germany, Rostock	
13	Onne	4.69845,7.65396	INTERLINK NOBILITY	970077	538005698	V7609	Marshall Islands	bulk carrier	25548	5/5/2021	5/5/2021	Canada, Montreal	
14	Warri	5.91915,7.2542	TONG JI MEN	9103954	358005000	3PQ4	Panama	bulk carrier	27011	5/4/2021	5/4/2021	China, Xingang	
15	Apapa-Lagos	6.43824,3.37693	PAPUA	92766006	319122500	26HA4	Cayman Islands	bulk carrier	19798	5/8/2021	5/8/2021	Brazil, Santos	

Table 7. Vessels of interest within Nigeria's maritime domain. Source: (NIMASA C4i, 2021).

3.9 Alignment of the GoG Framework to the Identified Ideal Regional Cooperation on Maritime Security:

- Multi-jurisdictional Approach
- Bilateral/Multilateral Single Point of Contact (SPC)
- Asset Contribution

3.9.1 Gulf of Guinea Multi-Jurisdictional, Bilateral/Multilateral SPC Approaches to Maritime Security:

The strategy adopted in June, 2013, at Yaoundé Cameroun, by the heads of government of the Economic Community of West African States (ECOWAS), Economic Community of Central African States (ECCAS), including the Gulf of Guinea Commission (GGC), on multi-jurisdictional, bilateral/multilateral Single Point of Contact approaches, towards prevention and prosecution of illicit activities in the GoG’s maritime domain are as illustrated by the picture in Fig. 15. The Yaoundé Architecture comprises the Interregional Coordination Centre (ICC), the information-sharing interface between the Regional Maritime Security Centre for Central Africa (CRESMAC), and the Regional Maritime Security Centre for West Africa (CRESMAO). The Gulf of Guinea coastal space is divided into five (5) operational maritime zones, and the coordination of activities are done by five Maritime Multinational Coordination Centre (MMCC) (GoGIN, 2022). A Code of Conduct on the repression of piracy, armed robbery against ships, as well as other illicit maritime activities in the West and Central Africa was adopted in order to promote collective efforts on information sharing, interdiction, prosecution and support to victims of attack (Osinowo, 2015).

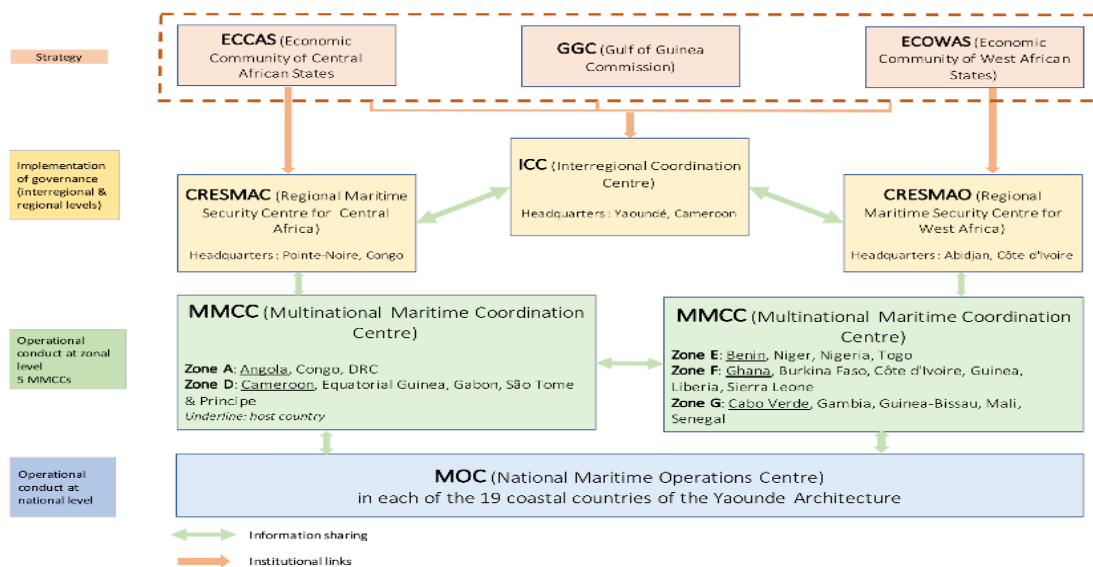


Figure 12. Yaoundé Architecture for maritime security and safety. Source: (GoGIN, 2022).

3.9.2 Gulf of Guinea Maritime Security Asset Contribution:

There appears to be little if any joint asset contribution arrangement exists so far between states within the Gulf of Guinea towards the security of the region's maritime domain, from the available literature. The Yaoundé agreement, according to Hassan and Hasan, 2017, only features; establishment of information sharing network, non-binding legal instrument, scope of enforcement powers, prosecution of pirates, maritime security cooperation, seizure of pirate ship, including adoption of certain national strategies. Governments in the region have been slow to understand how their absence in the maritime domain costs them untold revenue, as well as undermines the security on land, as criminal activities start at sea and ends onshore; Hence, the need to fashion and implement an all-inclusive security policy by stakeholders, having the requisite assets, especially, by the countries signatory to the Yaoundé Code of Conduct, including ECOWAS, ECCAS, and GGC (Osinowo, 2015; Ifesinachi & Nwangwu, 2015). However, prior to the Yaoundé Code of Conduct of 2013, several initiatives had been taken by the GoG states towards fighting piracy and other associated trans-national maritime criminality within the region (Ifesinachi & Nwangwu, 2015).

Chapter 4.

4.0 Discussions and Analysis.



Figure. 15. Components of ideal maritime security framework national/regional. Source: (Created by Author based upon best international practice).

4.1 Deep Blue Project's Strengths, Weaknesses, Opportunities, and Threats (SWOT)/Areas for Improvement in Comparison with An Ideal Maritime Security Framework:

4.1.2 Maritime Domain Awareness (MDA):

According to Bueger, 2015, the goal of maritime domain awareness is to develop a shared understanding of threats and developments at sea. Each MDA Centre has its own strength, hence, works complementarity to the overarching system, which is basically enabling trust, being flexible and adapting to changing situations at sea. Also, Buegar and Edmunds, 2017, stated, "the aim of MDA is to provide a rich information database, often in real time, against which maritime security activities, including interceptions and inspections of vessels can be planned and targeted, through a data-mining technique which is centralized. A comprehensive maritime domain awareness should include; detection, tracking and identification of vessels (Bannister & Neyland, 2015). The Deep Blue project appears to have a considerable MDA capability, owing to the multi-sensor system integration, as well as other capabilities within the C4i System towards situational awareness at sea, which are able to generate; vessels with dark activities, past voyages and routes of vessels, among other feedbacks to the C4i Systems for analysis. This is similar to the Bakanila Integrated Information System (BIIS), used by Indonesia in the Malacca Strait, which is able to provide early warning notification and information by analysing suspicious events or objects based on certain behaviour or anomalies (Kusume et al., 2021). Also, the alliance of the DBP's C4i Centre with other MDA platforms, e.g., NAVY, IMB, GOG-MCF/SHADE, YARIS, MDAT-GOG, alludes to the point of Bueger, 2015, on complementary efforts.

4.1.3 Legal Framework:

To create a new and stronger legal framework, or operate within existing ones is vital to maritime security. Domestic legislative framework, which supports maritime security demands and promotes the international order is very important. However,

ineffective implementation has remained a challenge in the region (Ukeje & Ela, 2013; Gopal, 2022). Nigeria's DB project could be seen as having a substantial legal framework/backing for its operations, especially, with respect to instituting appropriate legal proceedings against wrongdoers or culprits. Apart from some international laws backing prosecution of offenders, for example; UNCLOS, SUA, among others, which are obligatory, the recent Suppression of Piracy and Other Maritime Offenses (SPOMO) Act., 2019, put in place by the Nigerian government, stands out as an overarching domestic legal framework backing the DBP's operations. The SPOMO Act. equally provides for prosecution of perpetrators, for example; since the signing into law, 10 pirates have been prosecuted and given sentences after their arrest through the DBP's joint operation with the Nigerian Navy (NN) (NIMASA, 2019). This alludes to the point of Ukeje & Ela, 2013, that, "no other GoG country boasts of any significant coastguard or naval capability to constitute effective deterrence or countermeasure against growing maritime crimes apart from Nigeria, and to a lesser extent Angola.

4.1.4 Adequate Human Resources:

The number of personnel engaged in the Deep Blue project so far appears to be insufficient, especially when one considers the number of coastal zones, as well as inland waters that make up Nigeria's maritime domain that need to be covered at an operational level. The DBP's operations are concentrated majorly within the Lagos coastal zone and yet to be operational in some other zones, for example; Akwa-Ibom, Bayelsa, Delta, Edo, among others, hence, the need to open up the C4i contact point in other coastal zones, engage and deploy more personnel to the zones to effectively cover the vast Nigeria's coastline, and particularly, the creeks, where most maritime criminality emanate. According to Nnadi et al., 2016, there was a significant variation in piracy and armed robbery attacks in the Gulf of Guinea between 2002 and 2015, with the highest occurring in Nigeria, particularly, Lagos ports and anchorages. This could be the reason for the DBP's focus on the Lagos coastal zone in the meantime.

However, the DB project is still new and will undoubtedly be subject to further expansion in the region.

4.1.5 Alerting and Advanced Intelligence Systems:

The C4i Unit of the Deep Blue project has different sources of alerts as earlier captured. However, the Digital Selective Calling (DSC) aspect, which enables vessels, especially those in distress, to communicate or send messages to the shore station such as the C4i Centre, needs to be further enhanced. The current DBP's Intelligence System, which has the capability of giving present and past history of vessels movements appears to fit into the project's scope considerably, in terms of detecting maritime threats not involving hostilities. However, as a security project, which aims at combating threats such as piracy, armed robbery and other transnational organized crimes, there is a need for a higher technology in the DBP's Intelligence System. According to Ng et al., 2012, there is increasing pressure to detect and prevent the occurrence of acts of hostilities through maritime surveillance and monitoring operations. An efficient maritime security system has to augment surveillance and monitoring operations with capabilities to reason and interpret situational information, as well as transform the knowledge into actionable indicators. Suffice it to say that the DBP should have a security technology capable of detecting vessels under attack for quick identification and prompt actions by the C4i Centre personnel and the intervention team. One of the key technologies that could be used in an integrated maritime reasoning and monitoring system is the Dynamic Bayesian Reasoning and Advanced Intelligent Networks (D'Brain), a system based on Bayesian Networks (Ng et al., 2012), used to reason potential ship behaviours, especially, the behaviour of pirate vessels in their prowling state (Dabrowski & de Villiers, 2015; Wen et al., 2019).

4.1.6 Assets of The Deep Blue Project:

The Deep Blue project has an array of assets for maritime security interventions which are impressive. The marine, air and land assets of Nigeria's DBP alludes to the point of Joy, 2021, "each nation makes an effort to increase its defence capability in order to address the security problems which arise from air, land and sea". However, addition of submarines to the existing assets of the DBP will enhance its defence capabilities, inasmuch as the DBP is complimenting already existing maritime security architecture in Nigeria, for example, the NAVY. According to Joy, 2021, submarines are efficient, in that they immediately identify imminent attacks. On the other hand, there is a need for more air, land and sea assets for the DBP, considering Nigeria's massive coastal zones the project needs to cover.

4.1.7 Unified Command Structure:

One of the unique features of Nigeria's Deep Blue project is the synergy between the civil and military authorities engaged in the project for the purpose of securing Nigeria's maritime domain. The DBP has two distinct command structures which take care of administrative and operational needs of the project. According to Twrdy et al., 2014, a wide spectrum of civil and military instruments is needed to meet today's maritime security challenges. Nonetheless, in order to avoid any futuristic civil-military misunderstandings that could impair the project's sustainability, it is important that the DBP's command structure is unified to allow a firm grip of both administrative and operational aspects of the project by the Designated Authority (DA), in this case, the Nigerian Maritime Administration and Safety Agency (NIMASA), which is answerable to the international maritime community, for example, the IMO, as well as the indigenous maritime stakeholders. Un-unified command structure can lead to a conflict of interests, hence, could seriously affect the DBP's sustainability owing to the bureaucracies associated with both civil and military modes of operations and lines of reportage, which Kasselmann, 2012, described as leading to a prevalence of different perspectives. In other words, the DA – NIMASA, should take full custody of operational assets of the DBP, to be able to deploy them

during emergency situations, which are usually characterized by urgency, without recourse to any chains of command that must be broken before assets are deployed to salvage distress situations at sea. A functional organogram of the DBP is also recommended, which spells out clear responsibilities and action lines of the different agencies engaged in the project.

4.1.8 Integrated Communication/Common Terminology:

The modes of communication within the Deep Blue project are basic considerably. However, as a security intervention project which deals with distress situations at sea, a more globally recognized mode of integrated communication and use of common terminology is needed. The Global Maritime Distress and Safety Systems (GMDSS), is therefore recommended for the DBP, which according to the Federal Communications Commission (FCC), 2017, is an internationally recognized distress and radio communication safety system, and a crucial modern maritime communication system (Lees & Williamson, 2020). Suffice to say, maritime distress management requires transnational communication and understanding, as well as coordination, hence, the need for a more globally recognized communication pattern within the DBP.

According to Ilcerv, 2020, “the GMDSS architecture ensures that a ship in distress and emergency situation anywhere in the world’s oceans must always be heard and able to provide an answer”. For example; all ships engaged in international voyages are expected to be equipped with the GMDSS, and also, have crews who are trained in the GMDSS, and are expected to communicate using the terms during emergency situations. GMDSS training for personnel engaged in the DBP is paramount, to enable them to keep abreast with international technical, operational and communication standards.

4.1.9 Governance System, Multi-Agency/Multi-Layer Approach, and Cooperation Between Stakeholders:

The governance system of Nigeria's Deep Blue project, which appears to be a tri-ministerial collaboration between the Federal Ministries of Transportation, Defense and Police Affairs, under the supervision of the Office of the National Security Adviser (ONSA), is a good development. According to Bueger and Edmunds, 2017, maritime security is multifaceted, a holistic approach is therefore necessary, which focuses on threats as shared problems, rather than sometimes notional or institutional distinctions between actors. The above collaboration gave rise to the Integrated National Security and Waterways Protection Infrastructure – The Deep Blue Project, which integrates both civilian and military personnel who are specially trained on maritime domain awareness, as well as military intervention personnel in order to ensure vigorous approach towards securing Nigerian waterways and the GoG by extension. According to the Somali National Maritime Strategy, 2022, it is the collective response, utilizing all the instruments of national power, that will ensure maritime security, inasmuch as the delineation of roles and functions are important aspects in functioning of individual security entities.

This DBP's arrangement, which brings together some agencies of the government from the aforementioned ministries, for example; NIMASA, under the Ministry of Transportation; the NAVY, ARMY, AIR FORCE, DSSS, under the ministry of Defense and the NPF under the Ministry of Police Affairs, alludes to the point of Feldt et al., 2013, on, "Comprehensive Approach", where more than one authority is engaged to contribute to maritime security, rather than a sectoral approach, which has only limited success. The maritime skills developed over time, and through a combination of experiences, common exercise, common set of rules and common operations by the civil and military community are tagged "enablers" (Feldt et al., 2013). However, as earlier pointed out, there is need to ensure DBP's sustainability through a uniform structure, managed by DA-NIMASA, which handles both operational and administrative aspects of the DBP, in order to meet global best

practices of swift and efficient emergency responses and asset deployments, as well as devoid of unwarranted bureaucracies. The multi-layer approach to the DBP seems, at least, very considerable, particularly, with respect to asset deployments which aim to cover air, land and sea.

According to Papa, 2013, as cited by Ringsberg & Cole, 2020, “lack of consultation with stakeholders acts as a barrier to compliance”. The establishment of the Industry/NIMASA Joint Working Group is a boost to the Deep Blue project. It alludes to the point of Ringsberg & Cole, 2020, “a maritime security stakeholder network, where all resources and knowledge about security culture are made available”. According to NIMASA, 2020, the objective of the Joint Working Group is to accelerate efforts to tackle maritime security threats through facilitating stakeholders’ interaction, as well as pursuing projects through mutual collaboration and enhancing transparency between government and industry in addressing shared goal of permanent prevention of piracy and armed robbery in Nigerian waters and by extension, the Gulf of Guinea region. In addition, this JWG will among other benefits, create room for stakeholders’ participation and contributions, especially, with respect to assets for operation enhancement.

4.1.10 Point of Contact, Action Plan Development and Accurate Incident Statistics:

The DBP’s C4i Centre appropriately serves as the PoC as obtained in different jurisdictions. However, there is need for equipping the Centre with some latest technologies for maritime security management and operations in addition to the existing equipment, to guarantee more efficient real-time Watchkeeping and necessary actions by personnel engaged in the Centre. More importantly, the personnel engaged in the C4i Centre should be able to order for asset deployment in emergency or distress cases independently, owing to the emergencies associated with such situations. The newly developed Standard Operating Procedure (SOP) of the C4i Centre captures most

action plans of the DBP. However, a more detailed SOP, which streamlines various aspects of the project is needed.

The statistics of incidents, as well as events are properly captured in the C4i Centre by both manual and electronic logging, which is in sync with most best practices around the globe.

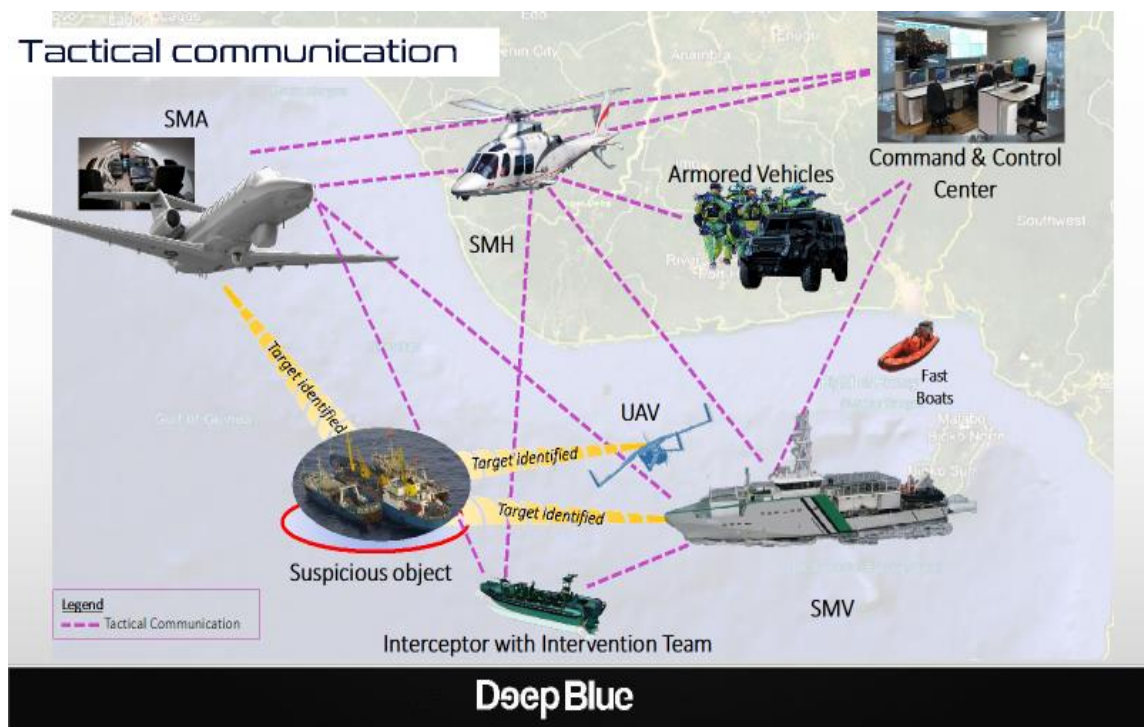


Figure 16. DBP Tactical Communication between C4i Centre and Assets. Source: (NIMASA C4i).

Table 8. Summary of Strengths, Weaknesses, Opportunities and Threats (SWOT) within Nigeria’s DBP.

<p><u>Strengths:</u></p> <ul style="list-style-type: none"> • Good Maritime Domain Awareness (MDA) capability. • Good Point of Contact. • Substantial legal frameworks for operations. • Considerable air, land and sea assets for response. • Good governance system including multi-agency cooperation, civil and military partnership. • NIMASA/Industry Joint Working Group (JWG) establishment. 	<p>Multi-sensor system integration, etc.</p> <p>The C4i Centre.</p> <p>SPOMO Act., NIMASA Act., SUA, etc.</p> <p>SMVs, SMAs, SMHs, UAVs, Armured Vehicles.</p> <p>“Comprehensive approach”. Feldt et al., 2013.</p> <p>Stakeholders’ participation and contribution.</p>	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> • Lack of internationally recognized distress communication pattern. • Insufficient technology or Intelligence system for handling threats involving hostilities and cyberattacks. • Limited operational area or coverage within Nigeria. 	<p>Need for the GMDSS and training.</p> <p>Advanced technology needed for pirates detection and Cybersecurity within the DBP.</p> <p>Concentration in Lagos coastal zone.</p>
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<p><u>Opportunities:</u></p> <ul style="list-style-type: none"> • Model for adoption in the Gulf of Guinea, particularly, on asset/personnel deployment for maritime security real-time response. • Stakeholders’ enlightenment, compliance and contribution towards overall maritime security efforts. 	<p>In addition to the existing Yaoundé architecture.</p> <p>Asset/technical contributions by stakeholders is a boost.</p>	<p><u>Threats:</u></p> <ul style="list-style-type: none"> • Un-unified command structure allowing the DA-NIMASA take full grip of the DBP, especially, custody of assets. • Sustainability plan for the DBP and critical assets maintenance. 	<p>Need to avoid civil-military bureaucracies and conflict of interests.</p> <p>Roadmap for the DBP’s sustainability.</p>
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4.2 The Gulf of Guinea (GoG) Multi-Jurisdictional, Bilateral/Multilateral SPC and Asset Contribution:

The multi-jurisdictional, bilateral/multilateral approaches to maritime security in the Gulf of Guinea is a welcome development in many respects. However, the lack of adequate joint operations between member states and asset contribution from each state towards effective joint operations makes the Yaoundé architecture more of a theory than practical. On the other hand, the non-binding Code of Conduct’s implementation has been slow, particularly, owing to the delayed operationalization of the MICC, hence, the need for greater political will (Osinowo, 2015). Lack of interoperability, political will, capacity, as well as information sharing agreements are part of the challenges which encumber joint patrols (Cheney-Peters, 2015). According

to Hassan and Hasan, 2017, there is growing consensus on the need to jointly respond and tackle the problem. Collective vigilance of the maritime domain of regional countries can lead to successful suppression of piracy. Joint anti-piracy operation, common surveillance procedure, as well as joint operational coordination capabilities are necessary to facilitate an effective maritime security operation via a regional security system.

Chapter 5.

5.1 Conclusion and Recommendations.

The Gulf of Guinea maritime threats constitute a collective challenge to all the stakeholders, both in the region and internationally. Regional cohesion and interaction still leave much to be desired (Osinowo, 2015; Potgieter, 2012). According to Ukeje & Ela, 2013, poor preparedness and inability to acknowledge and confront shared maritime challenges and threats are part of the key features of current maritime security challenges in the GoG. An integrated multidimensional approach which strengthens maritime security is urgently needed in order to combat maritime crimes, especially, piracy, in the Gulf of Guinea (Hassan & Hasan, 2017). Limitation of facilities/infrastructure calls for cooperation between maritime stakeholders (Kusume et al., 2021), hence, the need for stakeholders within the GoG to adopt the DBP system towards adequate asset/personnel contribution and coordination for maritime security in the region.

Significantly, since the inception of the Deep Blue project, there has been a drop in the rate of maritime criminality in Nigeria. The integrative nature of the DBP and available assets makes it stand out as a laudable maritime security intervention project within the Gulf of Guinea by the Nigerian government, inasmuch as there exist some aspects of the project that needs standardization and improvement. For example; the interview conducted in the DBP's C4i Centre showed the summary of piracy and robbery incidents handled in the Centre from inception to date as follows;

- Year 2019 = 33
- Year 2020 = 33
- Year 2021 = 6
- Year 2022 (Q1) = 0



Figure 17. A cluster of piracy events in Nigeria's EEZ in 2019. Source: (NIMASA C4i Centre).

According to the ICC IMB annual reports, 2021, on actual and attempted piracy and armed robbery attacks against ships in Nigeria for the same periods shows almost the same figures (See Appendices 1-4);

- Year 2019 = 35
- Year 2020 = 35
- Year 2021 = 6
- Year 2022 (Q1) = 0

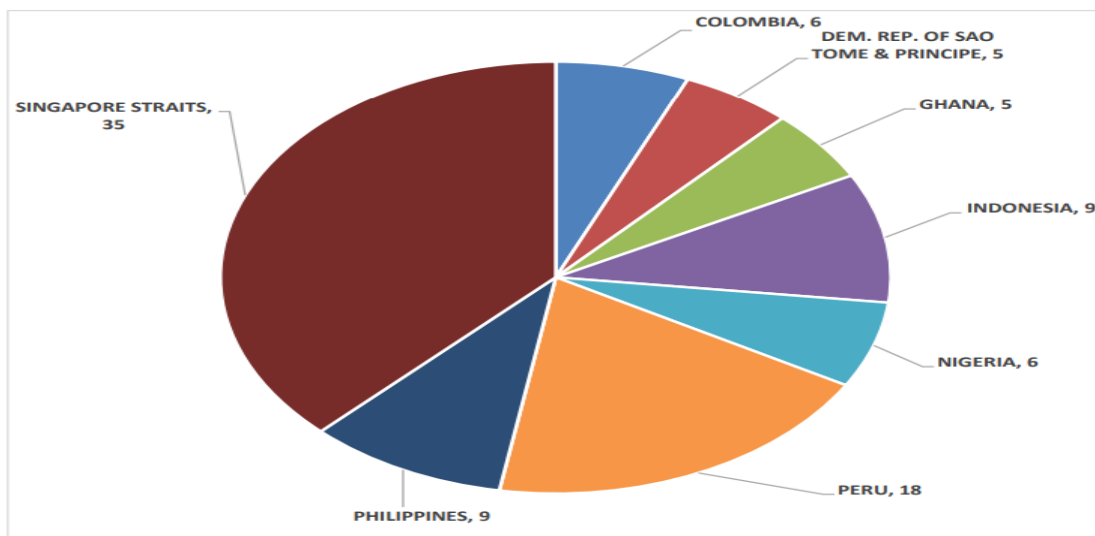


Fig. 18. Global incidents of piracy and armed robbery against ships 2021. Source: (ICC IMB).

The above map and chart from NIMASA C4i Centre and ICC IMB respectively, shows the status of incidents in years 2019 and 2021, which depicts a downward trend or reduction in incidents. Prior to 2019, or the commencement of Nigeria's Deep Blue project, there were high figures in incidents of piracy and armed robbery against ships. For example, there were 33 incidents in 2017, and 48 incidents in 2018 (ICC IMB, 2021). The high incidents and similar figures in the years 2019 and 2020 could be attributed to the period during which the DBP's intervention team, as well as assets and other operational equipment were being assembled.

The DBP/Nigerian Navy joint operation successfully apprehended ten (10) sea pirates in May, 2020, for hijacking a Chinese fishing vessel, FV Hai Lu Feng II. The pirates have since been sentenced to 48 years each in prison, under the Suppression of Piracy and Other Maritime Offenses Act., which gives legal backing to the Nigeria's DBP towards speedy prosecution of criminals in the Nigerian maritime domain, and ensuring an end to illegalities and threats within Nigerian waters and the Gulf of Guinea by extension (NIMASA, 2021). Suffice it to say, this shows how the DBP is tackling existing security challenges in Nigeria's maritime domain, as well as the GoG by extension.

Also, the impact of Nigeria's Deep Blue project has been acknowledged by the international maritime community. The IMO's Secretary-General, Mr. Kitack Lim, during the 2020 G7++ Friends of the Gulf of Guinea London Technical Plenary, commended the Nigerian government and NIMASA for the launch of the DBP, which according to him, shows commitment to fight against piracy. The NIMASA DBP/Stakeholders' JWG has equally been commended by the international body. Also, the ICC IMB in its 2021 annual report, thanked in a special way, the Nigerian authorities, particularly, NIMASA and the Nigerian Navy, for continued and prompt information, action and valuable inter-agency cooperation in the fight against piracy

and armed robbery against ships in Nigeria, and equally urged continued cooperation from other West African authorities/navies in the region.

5.2 Recommendations:

It is recommended that Nigeria's Deep Blue project serves as a model for the Gulf of Guinea littoral states towards a robust maritime security for the entire region. This recommendation is with particular reference to a common coordination Centre, probably, the Nigeria's DBP C4i Centre, owing to the strategic location of Nigeria in the GoG, and more importantly, adequate asset and personnel contribution, coordination and deployment for enhanced sea patrols within the jurisdictions of the Gulf of Guinea member states, for prompt response(s) to distress emergencies like piracy, armed robbery against ships, and other forms of maritime criminalities within the region. One country cannot defend international threats. It needs cooperative measures and a combination of countries' powers, hence, the reason for joint patrol and training by some countries (Joy, 2021).

According to ICC IMB, 2020, the substantial drop in the number of incidents in the Straits of Malacca in recent times was due to the increased and aggressive patrols by littoral states' authorities within the region. This is undoubtedly an important consideration that needs to be taken onboard in making recommendations on how to improve maritime security in the Gulf of Guinea. On the other hand, according to the Somali National Maritime Strategy, 2022, maritime threats have significant land-based dimensions, hence, land-based actors and capabilities are equally as important to maritime security as the specialized maritime capability usually associated with institutions and maritime operations. Suffice to say that the DBP's land, sea and air asset capabilities stand as a good model. The GoG region can adopt this system of adequate assets and constant patrols, with each state covering its maritime domain adequately and liaison with other member states through a central reporting system in the form of an Interregional Coordination Centre (ICC) as suggested by the IMO. This is similar to the Information Fusion Centre (IFC) in Singapore, a common information

feed operating system, for the participants of the Malacca Straits Patrol and Eye-in-the-Sky (Cheeney-Peters, 2015).

There will be greater demand for maritime security capabilities to achieve increased investment and growth in the Blue Economy. Working with a broad range of actors, including building capacities, helps to enforce rule of law and maritime sovereignty, countering piracy, illegal fishing, trafficking networks and maintaining good order at sea (Voyer et al., 2018; Neignes, 2021). It is important that the GoG states makes available their assets/personnel capabilities for maritime security, and where necessary, procure more maritime security assets to compliment that of Nigeria's DBP towards a comprehensive coverage of the entire GoG region, with each state patrolling and policing their maritime boundaries and ensuring swift action when alerted of any security breach in her maritime domain. Maritime security asset declaration by each GoG member state, especially, the littoral states, will equally enable a full knowledge of assets and response capabilities of each littoral state within the GoG and the possibility of tagging those assets for ease of identification, deployment and tracking.

Nowadays reality is how the growing globalization, as well as information and communication technology (ICT), have affected and boosted every part of our lives (Mahmood et al., 2019). Governments, industries and academia turn to Internet of Things (IoT), including Radio Frequency Identification (RFID), for security purposes (Chen & Jin, 2012). As of today, the US Department of Energy Office of Scientific and Technical Information has developed a Marine Asset Security and Tracking (MAST) system, which works with sensor data from a radio frequency tag by different methods (Hanson et al., 2008). The MAST can be adapted into the GoG collective maritime security efforts, to enable tagging and ease of identification and deployment of any maritime security asset within the GoG in close proximity to incident locations in real-time, as well as having response team from each state take responsibility of actions within their jurisdiction and report to the central coordination Centre, in which the Nigeria's DBP C4i Centre is suggested. The integration of IoT into the GoG

collective maritime security efforts, will among other things, help the region overcome maritime cybersecurity challenges and be prepared for any eventual full automation of ships or shipping operations.

References.

- ACSS. (2015). *Security Challenges Nigeria Must Face, Part 7: Maritime Security*. Africa Centre for Strategic Studies. <https://africacenter.org/spotlight/fundamental-security-challenges-nigeria-must-face-part-1-identity/fundamental-security-challenges-nigeria-must-face-part-7-maritime-security/>
- ACSS. (2019). *Trends in African Maritime Security*. Africa Centre for Strategic Studies. <https://africacenter.org/spotlight/trends-in-african-maritime-security/>
- Amri, A. (2014). *Piracy in Southeast Asia: an overview of international and regional efforts*. <https://ro.uow.edu.au/cgi/viewcontent.cgi?article=2061&context=lhapapers>
- Ateme, M. E. (2021). Developing marine and coastal resources in Nigeria: Prospects and challenges. *Maritime Technology and Research*, 3(4), 335–347. <https://doi.org/10.33175/mtr.2021.244473>
- Bannister, N. P., & Neyland, D. L. (2015). Maritime domain awareness with commercially accessible electro-optical sensors in space. *International Journal of Remote Sensing*, 36(1), 211–243. <https://doi.org/10.1080/01431161.2014.990647>
- Bichonu, K., & Evans, A. (2013). Maritime security and regulatory risk-based models: Review and critical analysis. *Terrorism and International Transport*, 111–141. <https://doi.org/10.1787/9789282102329-6-en>
- Brey, M. (2013). *La Moncloa. Home*. www.lamoncloa.gob.es. <https://www.lamoncloa.gob.es/Paginas/index.aspx>
- BUEGER, C. (2015). From Dusk to Dawn? Maritime Domain Awareness in Southeast Asia. *Contemporary Southeast Asia*, 37(2), 157–182. <https://www.jstor.org/stable/24916578>
- Bueger, C. (2015). What is maritime security? *Marine Policy*, 53, 159–164. <https://doi.org/10.1016/j.marpol.2014.12.005>
- Bueger, C., & Edmunds, T. (2017). Beyond sea blindness: a new agenda for maritime security studies. *International Affairs*, 93(6), 1293–1311. <https://doi.org/10.1093/ia/iix174>
- Charo, A. M. (2021). Role of Maritime Policies and Strategies in Shaping the Maritime Security Threats in Kenya. *African Journal of Empirical Research*, 2(1), 115–131. <https://doi.org/10.51867/ajer.v2i1.18>
- Chen, X.-Y., & Jin, Z.-G. (2012). Research on Key Technology and Applications for Internet of Things. *Physics Procedia*, 33, 561–566. <https://doi.org/10.1016/j.phpro.2012.05.104>
- CHENEY-PETERS, S. (2015, July 29). *Patrolling International Skies: Understanding Joint Air Patrols*. Asia Maritime Transparency Initiative. <https://amti.csis.org/patrolling-international-skies-understanding-joint-air-patrols/>

- CIMSEC. (2015). *OBANGAME EXPRESS 2015: Two steps forward. One step back.* / Centre for International Maritime Security. <https://cimsec.org/obangame-express-2015-two-steps-forward-one-step-back/>
- Dabrowski, J. J., & de Villiers, J. P. (2015). Maritime piracy situation modelling with dynamic Bayesian networks. *Information Fusion*, 23, 116–130. <https://doi.org/10.1016/j.inffus.2014.07.001>
- Denton, G. L., & Harris, J. R. (2019). Maritime Piracy, Military Capacity, and Institutions in the Gulf of Guinea. *Terrorism and Political Violence*, 1–27. <https://doi.org/10.1080/09546553.2019.1659783>
- Editor. (2019, July 2). *RI, Filipina, dan Jepang Gelar MARPOLEX 2019*. Jurnal Maritim. <https://jurnalmaritim.com/ri-filipina-dan-jepang-gelar-marpolex-2019/>
- El-Shweky, B. E., El-Kholy, K., Abdelghany, M., Salah, M., Wael, M., Alsherbini, O., Ismail, Y., Salah, K., & AbdelSalam, M. (2018). Internet of things: A comparative study. *2018 IEEE 8th Annual Computing and Communication Workshop and Conference (CCWC)*. <https://doi.org/10.1109/ccwc.2018.8301678>
- Falola, T. (2001). *Culture and Customs of Nigeria*. In *Google Books*. Greenwood Publishing Group. https://books.google.se/books?hl=en&lr=&id=srupO5334OcC&oi=fnd&pg=PR9&dq=Nigeria&ots=dDVNxxga6m&sig=Keg7nBa78hiZUF_aXc6IvdWxPos&redir_esc=y#v=onepage&q=Nigeria&f=false
- FCC. (2017, March 10). *Global Maritime Distress and Safety System (GMDSS)*. Federal Communications Commission. <https://www.fcc.gov/wireless/bureau-divisions/mobility-division/ship-radio-stations/global-maritime-distress-and-safety>
- Feldt, L. (2013). *Maritime Security: Perspectives for a Comprehensive Approach* [electronic Resource]. In *Google Books*. Institute for Strategic, Political, Security and Economic Consultancy (ISPSW). https://books.google.se/books/about/Maritime_Security.html?id=YtEnnQEA CAAJ&redir_esc=y
- GoGIN Interregional Network. (2022). *GoGIN / Yaoundé Architecture*. GoGIN. <https://www.gogin.eu/en/about/yaounde-architecture/>
- Gonzalez, C. (2020, June 15). *IT Alerting Systems | OnPage Incident Alert Management System*. OnPage. <https://www.onpage.com/what-is-an-it-alerting-systems-features-principles-and-best-practices/>
- Gopal, P. (2022). India's maritime security legal framework and its influence on international maritime security cooperation. *Maritime Affairs: Journal of the National Maritime Foundation of India*, 1–13. <https://doi.org/10.1080/09733159.2022.2074583>
- Hanson, G. R., Smith, S. F., Moore, M. R., Dobson, E. L., Blair, J. S., Duncan, C. A., & Lenarduzzi, R. (2008, July 1). *Marine asset security and tracking (MAST) system*. Wwww.osti.gov. <https://www.osti.gov/biblio/984483>
- Hassan, D., & Hasan, S. (2017). Effectiveness of the Current Regimes to Combat Piracy in the Gulf of Guinea: An Evaluation. *African Journal of Legal*

- Studies*, 10(1), 35–65. <https://doi.org/10.1163/17087384-12340014>
- HERZINGER, B. (2021, December 15). *The United States' Conceptualization of Maritime Security*. Asia Maritime Transparency Initiative. <https://amti.csis.org/the-united-states-conceptualization-of-maritime-security/>
- Hribernik, M. (2013, March 1). *Countering Maritime Piracy and Robbery in Southeast Asia: The Role of the ReCAAP Agreement*. Papers.ssrn.com. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2342274
- ICC IMB. (2019). *ICC INTERNATIONAL MARITIME BUREAU PIRACY AND ARMED ROBBERY AGAINST SHIPS REPORT FOR THE PERIOD*. https://www.icc-ccs.org/reports/2019_Annual_Piracy_Report.pdf
- ICC IMB. (2021). *ICC-IMB Piracy and Armed Robbery Against Ships Report ICC INTERNATIONAL MARITIME BUREAU PIRACY AND ARMED ROBBERY AGAINST SHIPS REPORT FOR THE PERIOD*. https://www.icc-ccs.org/reports/2021_Annual_IMB_Piracy_Report.pdf
- Ifesinachi, K., & Nwangwu, C. (2015). Implementation of the Yaoundé Code of Conduct and Maritime Insecurity in the Gulf of Guinea. *Research on Humanities and Social Sciences*, 5(21), 54. <https://www.iiste.org/Journals/index.php/RHSS/article/view/27092>
- IILSS. (2021, April 24). *Navigational Regimes of Particular Straits, Malacca and Singapore case study*. IILSS-International Institute for Law of the Sea Studies. <http://iilss.net/navigational-regimes-of-particular-straits-malacca-and-singapore-case-study/>
- Ilcev, M. (2020). New Aspects for Modernization Global Maritime Distress and Safety System (GMDSS). *TransNav, the International Journal on Marine Navigation and Safety of Sea Transportation*, 14(4), 991–998. <https://doi.org/10.12716/1001.14.04.26>
- IMO. (2019a). *G7++ Friends of the Gulf of Guinea London Technical Plenary*. www.imo.org. <https://www.imo.org/en/MediaCentre/SecretaryGeneral/Pages/G7---Friends-of-the-Gulf-of-Guinea-London-Technical-Plenary.aspx>
- IMO. (2019b). *Maritime Security and Piracy*. www.imo.org. <https://www.imo.org/en/OurWork/Security/Pages/MaritimeSecurity.aspx>
- IMO. (2019c). *RESOLUTION A.545(13) adopted on 17 November 1983 MEASURES TO PREVENT ACTS OF PIRACY AND ARMED ROBBERY AGAINST SHIPS*. [https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/AssemblyDocuments/A.545\(13\).pdf](https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/AssemblyDocuments/A.545(13).pdf)
- IMO. (2019d). *Search Posts*. [Imo.org](http://imo.org). <https://imo.org/en/GoogleSearch/SearchPosts/Default.aspx?q=MSC.1/Circ.133/Rev.1>
- Ismail, A. (2021). Revealing Indonesia's Reluctance to Participate in the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP). *Indonesian Journal of Peace and Security Studies (IJPSS)*, 3(1), 1–13. <https://doi.org/10.29303/ijpss.v3i1.55>
- Joy, J. (2021). *Maritime Security of India: Capabilities and Challenges*.

- ELECTRONIC JOURNAL of SOCIAL and STRATEGIC STUDIES, Volume 2, Issue 3.* https://www.ejsss.net.in/article_html.php?did=13501&issueno=0
- KASSELMANN, H.-J. (2012). Civil-Military Cooperation: A Way to Resolve Complex Crisis Situations. *PRISM*, 4(1), 17–29. https://www.jstor.org/stable/26469791?seq=1#metadata_info_tab_contents
- Kraska, J., & Pedrozo, R. (2013). International Maritime Security Law. In *Google Books*. Martinus Nijhoff Publishers. https://books.google.se/books?hl=en&lr=&id=x1mBzyEXLNIC&oi=fnd&pg=PR5&dq=Maritime+Security+of+the+United+State+of+America&ots=sxYk8h4-s8&sig=Yen14wZ5CoD3AjVue9P791vdEQw&redir_esc=y#v=onepage&q=Maritime%20Security%20of%20the%20United%20State%20of%20America&f=false
- Kusuma, A. W., Prakoso, L. Y., & Sianturi, D. (2021). THE COOPERATION BETWEEN FLEET I COMMAND AND INDONESIAN MARITIME SECURITY AGENCY IN ELIMINATING TRANSNATIONAL CRIME IN THE MALACCA STRAIT. *International Journal of Education and Social Science Research*, 04(03), 51–61. <https://doi.org/10.37500/ijessr.2021.4305>
- Lee, T., & McGahan, K. (2015). Norm subsidiarity and institutional cooperation: explaining the straits of Malacca anti-piracy regime. *The Pacific Review*, 28(4), 529–552. <https://doi.org/10.1080/09512748.2015.1012537>
- Lees, G. D., & Williamson, W. G. (2020). *Handbook for Marine Radio Communication*. Informa Law from Routledge. <https://doi.org/10.4324/9781315766393>
- Lu, C.-S., Chang, C.-C., Hsu, Y.-H., & Metaparti, P. (2010). Introduction to the special issue on maritime security. *Maritime Policy & Management*, 37(7), 663–665. <https://doi.org/10.1080/03088839.2010.526290>
- Mahmood, S., Hasan, R., Ullah, A., & Sarker, K. U. (2019, January 1). *SMART Security Alert System for Monitoring and Controlling Container Transportation*. IEEE Xplore. <https://doi.org/10.1109/ICBDSC.2019.8645574>
- MarineInsight. (2021, February 17). *10 Gulf of Aden Facts You Must Know*. Marine Insight. <https://www.marineinsight.com/know-more/10-gulf-of-aden-facts-you-must-know/>
- Menzel, A. (2022). Fragmentation or Effective Governance? The Regime Complex of Counter-Piracy in Asia. *Politics and Governance*, 10(3), 80–89. <https://doi.org/10.17645/pag.v10i3.5380>
- Neijnes, K. (2021). #FieldVision | “Maritime security has a real impact on economic development, regional security and the stability of Somalia. Our support is making a great difference” | *EEAS Website*. Europa.eu. https://www.eeas.europa.eu/eeas/fieldvision-%E2%80%98maritime-security-has-real-impact-economic-development-regional-security-and_en
- Ng, G. W., Teow, L. N., Yong, K. C., Mui, S., Koh, A., Chong, W. H., Tan, K. H., Tan, Y. S., & Toh, B. (2012, July 1). *Technologies to aid decision making for*

- maritime security*. IEEE Xplore.
<https://ieeexplore.ieee.org/abstract/document/6290501>
- NIMASA. (2019a). *MARITIME SECURITY: TEN PIRATES BAG 48 YEARS IMPRISONMENT UNDER SPOMO ACT | NIMASA*.
<https://nimasa.gov.ng/maritime-security-ten-pirates-bag-48-years-imprisonment-under-spomo-act/>
- NIMASA. (2019b). *NIMASA DG: SPOMO Act Improving Nigeria's Image | NIMASA*. <https://nimasa.gov.ng/nimasa-dg-spomo-act-improving-nigerias-image/>
- NIMASA. (2020). *Nigerian Government and Industry Joint Working Group (NIWG) statement on maritime security collaboration | NIMASA*.
<https://nimasa.gov.ng/niwg-joint-statement/#:~:text=The%20NIMASA%2FIndustry%20Working%20Group>
- NIMASA. (2021). *President Buhari Launches Deep Blue Project in Lagos | NIMASA*. <https://nimasa.gov.ng/president-buhari-launches-deep-blue-project-in-lagos/#:~:text=President%20Muhammadu%20Buhari%2C%20GCFR%2C%20will>
- Nnadi, K. U., Nwokedi, T. C., Nwokoro, I. A., Ndikom, O. C., Emeghara, G. C., & Onyemechi, C. (2016). Analysis of Maritime piracy and Armed Robbery in the Gulf of Guinea Maritime Domain. *Journal of ETA Maritime Science*, 4(4), 271–287. <https://doi.org/10.5505/jems.2016.05706>
- Nwilo, P. C., & Badejo, O. T. (2005). OIL SPILL PROBLEMS AND MANAGEMENT IN THE NIGER DELTA. *International Oil Spill Conference Proceedings, 2005*(1), 567–570. <https://doi.org/10.7901/2169-3358-2005-1-567>
- Obaidat, M. A., Obeidat, S., Holst, J., Al Hayajneh, A., & Brown, J. (2020). A Comprehensive and Systematic Survey on the Internet of Things: Security and Privacy Challenges, Security Frameworks, Enabling Technologies, Threats, Vulnerabilities and Countermeasures. *Computers*, 9(2), 44. <https://doi.org/10.3390/computers9020044>
- Onuoha, F. C. (2010). Piracy and Maritime Security off the Horn of Africa: Connections, Causes, and Concerns. *African Security*, 3(4), 191–215. <https://doi.org/10.1080/19392206.2010.533067>
- Osinowo, A. A. (2015, February 1). *Combating Piracy in the Gulf of Guinea*. Apps.dtic.mil. <https://apps.dtic.mil/sti/citations/ADA618297>
- Potgieter, T. (2012). Maritime security in the Indian Ocean: strategic setting and features. *Undefined*. <https://www.semanticscholar.org/paper/Maritime-security-in-the-Indian-Ocean-%3A-strategic-Potgieter/3fc3d8de316b5007bd11224645414f38c3defd37>
- Pullen, L. D., & Truver, S. C. (2006). Security in the Pacific Rim: Evolving US Strategies, Doctrines, and Forces for Maritime Cooperation and Regional Collective Action. *The Evolving Maritime Balance of Power in the Asia-Pacific*, 133–163. https://doi.org/10.1142/9789812773425_0007
- ReCAAP. (2021). *About ReCAAP Information Sharing Centre | combating maritime*

- robbery, sea piracy*. [Www.recaap.org](http://www.recaap.org).
https://www.recaap.org/about_ReCAAP-ISC
- Ringsberg, A. H., & Cole, S. (2020). Maritime security guidelines: a study of Swedish ports' perceived barriers to compliance. *Maritime Policy & Management*, 47(3), 388–401.
<https://doi.org/10.1080/03088839.2020.1711977>
- Ryan, B. J. (2019). The disciplined sea: a history of maritime security and zonation. *International Affairs*, 95(5), 1055–1073. <https://doi.org/10.1093/ia/iiz098>
- Sadique, K. M., Rahmani, R., & Johannesson, P. (2018). Towards Security on Internet of Things: Applications and Challenges in Technology. *Procedia Computer Science*, 141, 199–206. <https://doi.org/10.1016/j.procs.2018.10.168>
- Susapien. (2022, May 14). *MALSINDO OPERATION AND PIRACY IN THE MALACCA STRAIT*. Medium. <https://susapien.medium.com/malsindo-operation-and-piracy-in-the-malacca-strait-216f81a16bbe>
- Twrdy, E., Androjna, A., & Pavliha, M. (2014). Proposed Model of Coast Guard Enhancing Maritime Security and Safety in the Republic of Slovenia. *PROMET – Traffic & Transportation*, 26(6), 497–506.
<https://doi.org/10.7307/ptt.v26i6.1491>
- Ukeje, C., & Ela, W. M. (2013). African approaches to maritime security: the Gulf of Guinea. *Www.africabib.org*, 11.
<https://www.africabib.org/rec.php?RID=408482427>
- Ukeje, C., & Wullson Mvomo Ela. (2013). *African approaches to maritime security : the Gulf of Guinea*. Friedrich-Ebert-Stiftung.
- United Nations. (1978). *Delimitation of Exclusive Economic Zone of Nigeria*.
https://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/NGA_1978_Decree.pdf
- United Nations. (1982). *United Nations Convention on the Law of the Sea*.
https://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf
- Upadhyaya, S. (2010). Malacca Strait Security Initiative: Potential for Indian Navy's Participation in the Evolving Regional Security Environment. *Maritime Affairs: Journal of the National Maritime Foundation of India*, 5(2), 47–67.
<https://doi.org/10.1080/09733150903441986>
- US Coast Guard. (2019). *United States Coast Guard > Assets*. [Www.uscg.mil](http://www.uscg.mil).
<https://www.uscg.mil/Assets/>
- US Homeland Security, T. W. H. (2013, December 1). *National Maritime Domain Awareness Plan for the National Strategy for Maritime Security [2013]*. [Www.hsdl.org](http://www.hsdl.org); United States. White House Office.
<https://www.hsdl.org/?abstract&did=747691>
- Valencia, M. (2004). *THE U.S. POSITION ON CO-OPERATIVE MARITIME SECURITY FRAMEWORKS*.
https://www.npi.or.jp/publications/data/Valencia_paper.pdf
- Voyer, M., Schofield, C., Azmi, K., Warner, R., McIlgorm, A., & Quirk, G. (2018). Maritime security and the Blue Economy: intersections and interdependencies in the Indian Ocean. *Journal of the Indian Ocean Region*,

- 14(1), 28–48. <https://doi.org/10.1080/19480881.2018.1418155>
- Wen, Y., Zhang, Y., Huang, L., Zhou, C., Xiao, C., Zhang, F., Peng, X., Zhan, W., & Sui, Z. (2019). Semantic Modelling of Ship Behaviour in Harbour Based on Ontology and Dynamic Bayesian Network. *ISPRS International Journal of Geo-Information*, 8(3), 107. <https://doi.org/10.3390/ijgi8030107>
- Williams, S. (2015). *International Legal Framework Governing Maritime Security*. The Maritime Executive. <https://www.maritime-executive.com/features/international-legal-framework-governing-maritime-security>
- Win, K. H., Ahmed, H., Ansari, A. H., Masum, A., & Jan, N. I. (2016). CRITICAL ANALYSIS OF THE EFFICACY OF THE ReCAAP IN COMBATING PIRACY AND ARMED ROBBERY AGAINST SHIPS IN ASIA. *Journal of the Indian Law Institute*, 58(2), 160–188. <https://www.jstor.org/stable/45163274>
- World Population Review. (2021). *Nigeria Population 2020 (Demographics, Maps, Graphs)*. Worldpopulationreview.com. <https://worldpopulationreview.com/countries/nigeria-population>
- WorldAtlas. (2022). *Gulf Of Aden*. WorldAtlas. <https://www.worldatlas.com/gulfs/gulf-of-aden.html>

Appendices.

Appendix A. ICC IMB Piracy and Armed Robbery Annual Report, 2019.

ICC IMB Piracy and Armed Robbery Against Ships – 2019 Annual Report

TABLE 1: Locations of ACTUAL and ATTEMPTED attacks, January – December: 2015 – 2019

	Location	2015	2016	2017	2018	2019	
S E ASIA	Indonesia	108	49	43	36	25	
	Malacca Straits	5					
	Malaysia	13	7	7	11	11	
	Philippines	11	10	22	10	5	
	Singapore Straits	9	2	4	3	12	
	Thailand	1					
EAST ASIA	China	4	7	2	3	3	
	Vietnam	27	9	2	4	2	
INDIAN SUB	Bangladesh	11	3	11	12		
CONTINENT	India	13	14	4	6	4	
SOUTH AMERICA	Brazil				4	2	
	Colombia	5	4	6	1	3	
	Dominican Republic					1	
	Ecuador			2	4	3	
	Guyana		2	1	2		
	Haiti	2	4	1	3	2	
	Mexico		1			1	
	Panama					1	
	Peru		11	2	4	10	
	Venezuela	1	5	12	11	6	
	AFRICA	Algeria					1
		Angola		2	1		
		Benin		1		5	3
		Cameroon	1			7	6
Dem. Republic of Congo		3	2		1	1	
Dem. Rep. of Sao Tome & Principe				1		1	
Egypt		1					
Equatorial Guinea						2	
Gabon						1	
Ghana		2	3	1	10	3	
Guinea		3	3	2	3	2	
Gulf of Aden*			1	3	1		
Ivory Coast		1	1	1	1	1	
Kenya		2	2	1		1	
Liberia		2				2	
Morocco			1			2	
Mozambique		1	1	2	2	3	
Nigeria	14	36	33	48	35		
Red Sea*			1				
Senegal			1				
Sierra Leone			4		1		
Somalia*		1	5	2			
South Africa		1					
The Congo	5	6	1	6	3		
Togo		1		1	3		
REST OF	Oman			1			
WORLD	Papua New Guinea	1					
	Yemen		1	3			
	Total at year end	246	191	180	201	162	

All incidents with * above are attributed to Somali pirates

Appendix B. ICC IMB Piracy and Armed Robbery Annual Report, 2020.

ICC-IMB Piracy and Armed Robbery Against Ships Report – 01 January – 31 December 2020

TABLE 1: Locations of ACTUAL and ATTEMPTED attacks, January – December: 2016 – 2020

	Location	2016	2017	2018	2019	2020	
S E ASIA	Indonesia	49	43	36	25	26	
	Malaysia	7	7	11	11	4	
	Philippines	10	22	10	5	8	
	Singapore Straits	2	4	3	12	23	
	Thailand					1	
EAST ASIA	China	7	2	3	3		
	Vietnam	9	2	4	2	4	
INDIAN SUB	Bangladesh	3	11	12		4	
CONTINENT	India	14	4	6	4	6	
SOUTH AMERICA	Brazil			4	2	7	
	Colombia	4	6	1	3	1	
	Dominican Republic				1		
	Ecuador		2	4	3	5	
	Guyana	2	1	2			
	Haiti	4	1	3	2	5	
	Mexico	1			1	4	
	Panama				1		
	Peru	11	2	4	10	8	
	Venezuela	5	12	11	6		
	AFRICA	Algeria				1	
		Angola	2	1			6
		Benin	1		5	3	11
		Cameroon			7	6	
		Dem. Republic of Congo	2		1	1	
Dem. Rep. of Sao Tome & Principe			1		1		
Equatorial Guinea					2	3	
Gabon					1	2	
Ghana		3	1	10	3	9	
Guinea		3	2	3	2	5	
Gulf of Aden*		1	3	1			
Ivory Coast		1	1	1	1	3	
Kenya		2	1		1		
Liberia					2	2	
Morocco		1			2		
Mozambique		1	2	2	3	4	
Nigeria		36	33	48	35	35	
Red Sea*			1				
Sao Tome and Principe						2	
Senegal			1				
Sierra Leone			4		1		
Somalia*	1	5	2				
South Africa	1						
The Congo	6	1	6	3	3		
Togo	1		1	3	3		
REST OF	Iraq					1	
WORLD	Oman		1				
	Yemen	1	3				
	Total at year end	191	180	201	162	195	

All incidents with * above are attributed to Somali pirates

Appendix C. ICC IMB Piracy and Armed Robbery Annual Report, 2021.

ICC- IMB Piracy and Armed Robbery Against Ships Report – 01 January – 31 December 2021

TABLE 1: Locations of ACTUAL and ATTEMPTED incidents, January – December 2017 – 2021

	Location	2017	2018	2019	2020	2021
S E ASIA	Indonesia	43	36	25	26	9
	Malacca Straits					1
	Malaysia	7	11	11	4	2
	Philippines	22	10	5	8	9
	Singapore Straits	4	3	12	23	35
	Thailand				1	
EAST ASIA	China	2	3	3		
	Vietnam	2	4	2	4	1
INDIAN SUB	Bangladesh	11	12		4	
CONTINENT	India	4	6	4	6	2
SOUTH AMERICA	Brazil		4	2	7	3
	Colombia	6	1	3	1	6
	Dominican Republic			1		
	Ecuador	2	4	3	5	4
	Guyana	1	2			
	Haiti	1	3	2	5	4
	Mexico			1	4	1
	Panama			1		
	Peru	2	4	10	8	18
	Venezuela	12	11	6		
AFRICA	Algeria			1		
	Angola	1			6	4
	Benin		5	3	11	2
	Cameroon		7	6		1
	Dem. Republic of Congo		1	1		1
	Dem. Rep. of Sao Tome & Principe	1		1	2	5
	Equatorial Guinea			2	3	2
	Gabon			1	2	4
	Ghana	1	10	3	9	5
	Guinea	2	3	2	5	3
	Gulf of Aden*	3	1			1
	Ivory Coast	1	1	1	3	
	Kenya	1		1		
	Liberia			2	2	1
	Morocco			2		
	Mozambique	2	2	3	4	1
	Nigeria	33	48	35	35	6
	Red Sea*	1				
	Senegal	1				
	Sierra Leone	4		1		
	Somalia*	5	2			
	The Congo	1	6	3	3	1
	Togo		1	3	3	
REST OF	Iraq				1	
WORLD	Oman	1				
	Yemen	3				
	Total at year end	180	201	162	195	132

All incidents with * above are attributed to Somali pirates

Appendix D. ICC IMB Piracy and Armed Robbery 1st Quarter Report, 2022.

ICC- IMB Piracy and Armed Robbery Against Ships Report – First Quarter 2022

TABLE 1: Locations of ACTUAL and ATTEMPTED incidents, January - March 2018 – 2022

Locations	2018	2019	2020	2021	2022
S E ASIA					
Indonesia	9	3	5	2	3
Malaysia	1		1		1
Philippines	2	1	2	1	
Singapore Straits			5	6	11
EAST ASIA					
China	2	3			
Vietnam	2			1	
INDIAN SUB					
Bangladesh	4		1		1
CONTINENT					
India	2	1	5		2
AMERICAS					
Brazil	1	1	1	1	3
Colombia		1	1	3	
Dominican Republic		1			
Ecuador	1			1	
Haiti	3		1	1	
Peru	2	1	3	5	6
Venezuela	5	4			1
AFRICA					
Angola			3	2	4
Benin	5	1	3	1	
Cameroon	1	1		1	
Dem. Republic of Congo				1	
Dem. Rep. of Sao Tome & Principe			1	4	
Gabon			1	2	
Ghana	1	3		2	2
Guinea	1				
Gulf of Aden*	1			1	
Ivory Coast		1	1		1
Liberia		1			1
Mozambique			1		
Nigeria	22	14	11	2	
Somalia*	1				
South Africa					1
Togo		1	1		
Sub total	66	38	47	38	37
Total at year end	201	162	195	132	

All incidents with * above are attributed to Somali pirates.

