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Maritime Non-Traditional Security Threats against the Blue Economy: Collaborative Approach of Maritime Agencies in Bangladesh

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ABSTRACT

Human-induced non-traditional security threats (NTS) faced in the maritime domain have been a prime concern for the growth of the Blue Economy in Bangladesh. The identified threats range from illegal, unreported, and unregulated (IUU) fishing to maritime terrorism, drug trafficking, piracy, armed robbery, human trafficking, and pollution. There are a number of agencies (Bangladesh Navy, Bangladesh Coast Guard) involved in ensuring security in the Bay of Bengal (BoB). But still, the occurrence of NTS threats is on the rise. Therefore, this study aims to identify the limitations of the existing security measures in Bangladesh against maritime non-traditional security threats in the BoB. In addition, the study explores the 'Ways and Means' for a prolific collaborative approach of maritime agencies combating maritime NTS threats in BoB against BE of Bangladesh. An interpretive approach has been adopted in this study. Data has been collected from the fisherman communities of Cox's Bazar, Teknaf, and Inani, as well as from the Bangladesh Navy, Bangladesh Coast Guard, BSMRMU, BORI, and renowned maritime security experts. The findings of the paper reveal the existing gaps and challenges in maritime security, the lack of preparedness and coordination among maritime agencies, the need for inter-agency cooperation, and targeted interventions. The research findings also suggest adopting a comprehensive and collaborative approach to enhance maritime security through a multi-agency model adopted by various countries around the world. This includes strengthening security measures, improving coordination among maritime agencies, establishing dedicated marine authorities, enhancing preparedness for marine accidents, and addressing the challenges posed by NTS threats at BoB.

Keywords: Non-Traditional Security Threat, Bangladesh, Maritime Security, Multi-agency, Blue Economy

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INTRODUCTION

Background

Bangladesh now possesses a maritime territory of 1,18,813 square kilometers after the resolution of maritime border delimitation disputes with Myanmar and India in 2012 and 2014, respectively. The area equals 81% of the land territory of Bangladesh (Hossain 2018). These resolutions have almost doubled the total area under the sovereign rights of Bangladesh. Since 2014, the Government of Bangladesh (GoB) has started discussions with stakeholders to integrate the idea of a blue economy into pertinent policies and programs (Rahman 2018). With increasing maritime activities, security challenges have also increased manifolds and are likely to further aggravate. Although there have been several studies about Bangladesh's Blue Economy (BE) prospects, no comprehensive assessment of the security issues that may arise has yet been conducted. As a result, the struggle over National Blue Economy Initiative (NBEI) security issues has never received much attention (Rahman 2018). Particularly, maritime non-traditional security risks have emerged as a major worry and difficulty for the NBEI.

Non-traditional maritime security threats include illegal, unreported, and unregulated (IUU) fishing, maritime terrorism, drug trafficking, acts of sea piracy, armed robbery, illegal human trafficking, etc. (Hossain 2017). As the booming economy of Bangladesh is highly dependent on maritime trade, the security of maritime assets and elements from NTS threats becomes paramount to ensuring economic development. The FDMN crisis, the alarming increase in fisherman deaths due to piracy, or the smuggling of Yaba through the nation’s southeast border with Myanmar have proved the issue of resolving NTS threats very urgent (Nabi 2019).

Under the National BE Initiatives, GoB has selected BN as the "Lead Organization" for all marine security concerns (AFD 2018). The Bangladesh Navy (BN) and Bangladesh Coast Guard (BCG) can perform a number of tasks with various legal frameworks as part of their ocean monitoring and surveillance missions. It includes monitoring, surveillance, and enforcement of illicit operation and fishing regulations as well as applying significant penalties for infractions. However, the necessity of a coordinated and collaborative effort is felt to engage all maritime stakeholders in combating NTS in the BoB. Without the intelligence and information of the concerned stakeholders, it becomes difficult to ensure security proactively.

The strategic advantage of a multi-agency collaborative approach lies in its ability to pool diverse expertise, resources, and jurisdictional authority. Maritime security is a multidimensional undertaking that demands the involvement of various stakeholders,

including naval forces, the coast guard, customs, environmental agencies, intelligence services, and law enforcement bodies. Collaborative efforts leverage the unique strengths of each agency, enabling a holistic comprehension of threats and the formulation of nuanced strategies for their mitigation. The purpose of this research is to create a foundation for planning, organizing, and developing a sustainable collaborative working model inclusive of concerned maritime agencies in Bangladesh to suppress maritime NTS threats in BoB.

Problem Statement

Promoting the Blue Economy (BE) is now a top priority for the Government of Bangladesh (GoB) to attain the status of a developed country (Hasina 2019). In the context of Bangladesh, the rapid growth of the BE has raised a pressing need to address maritime non-traditional security threats that jeopardize its sustainable development. Many strategic installations (Power plants, EPZs, offshore oil and natural gas rigs, oil reserves, tourism hotspots) of many coastal countries are located along the seacoast. Bangladesh is no exception. Major ports and harbors handle maritime trade, which requires round-the-clock surveillance and protection for their sustainability. Besides, disturbances in fishing, piracy in maritime trade, drug trafficking, and arms smuggling—any breach of security in the maritime arena—will have a shattering effect on the country's national economy (Das 2013).

Maritime non-traditional security threats, encompassing issues such as illegal fishing, piracy, smuggling, marine pollution, and transnational organized crime, constitute a multifaceted array of challenges that intersect and overlap. The conventional singular-agency approach, which often operates in isolation, faces limitations in effectively addressing these multifarious threats. The need for a coordinated and synchronized response becomes paramount to counteract the complexity and transboundary nature of these challenges.

Hence, a multi-agency approach is necessary to engender situational awareness, swift information exchange, joint patrolling, and optimized resource allocation. These factors synergistically fortify the nation's ability to detect, deter, and respond to diverse security challenges. Unfortunately, in the present national maritime security architecture, there is no joint collaboration initiative to suppress the maritime non-traditional threats in the BoB (Hossain 2017). However, the collaborative approach of the internal maritime agencies has been adopted by many countries around the world and has seen success in combating NTS threats. In Bangladesh, the absence of such a collaborative approach will expose the opportunity for maritime crimes, fail to ensure national maritime security, and endanger future blue economic endeavors.

Research Objective

The key objectives of this study are:

a. To identify the limitations of the existing security measures in Bangladesh against maritime NTS threats in BoB.

b. To explore the ways and Means for a prolific collaborative approach of maritime agencies combating maritime NTS threats in BoB against BE of Bangladesh.

Rationale

The findings of this study may help future policymakers understand the limitations of the present security arrangement in Bangladesh to combat the multi-dimensional facets of maritime NTS threats in BoB. Furthermore, it will provide a foundation step for planning, organizing, and developing a sustainable collaborative working model inclusive of concerned maritime agencies in Bangladesh to suppress maritime NTS threats in BoB.

LITERATURE REVIEW

Numerous studies underscore the multifaceted nature of non-traditional maritime security threats. Authors such as Alom (2017) emphasized the intricate relationship between economic prosperity and security, highlighting how challenges such as piracy and illegal fishing can erode the benefits of the blue economy. Similarly, Ahmed (2019) analyzed the interplay between maritime security and sustainable development, shedding light on the potential consequences of unchecked threats on the livelihoods of coastal communities.

Bhattacharyya (2019) discussed issues such as transnational organized crime, smuggling, and terrorism, which pose threats to the blue economy of Bangladesh. The research emphasized the importance of enhancing naval capabilities, fostering regional cooperation among Bay of Bengal littoral states, and improving intelligence sharing to mitigate these non-traditional security challenges effectively.

Farook (2016), in his study, critically examined the necessity of comprehensive policies, legal frameworks, and international cooperation to combat these threats effectively and ensure the sustainable growth of Bangladesh's blue economy. Das et al. (2012) emphasized the need for comprehensive approaches that integrate maritime security, law enforcement, and regional cooperation to effectively address these threats and protect Bangladesh's maritime interests.

According to Nabi (2019), military approaches alone will not solve the

difficulties of maritime security. Although naval forces play an essential role in enhancing and improving maritime security, there must be a collaborative and coordinated effort that spans different sectors and transcends international borders. Nevertheless, the author left scope to develop a collaborative approach model to combat maritime NTS threats.

In terms of collaborative approaches, Keter (2022) stressed that maritime security and blue economy legislation, policies, frameworks, and strategies ought to adopt a multi-stakeholder approach to enhance coherence for effective implementation and success. Additionally, Coelho (2013) explored the role of intelligence-sharing mechanisms in bolstering collective efforts against security threats, suggesting that information exchange is pivotal for preemptive action in Africa.

Hasan (2017) carried out a study on enhancing coastal security to support the blue economy. Though he mentioned sharing information on inter-agency platforms, his study was centered on the challenges and options for the Bangladesh Navy in particular. Alom (2017) studied the interoperability amongst the maritime agencies to capitalize on the blue economy, focusing on the role of the Bangladesh Navy. But the overall planning regarding the development of the security domain was left open for elaborative study in the future.

Many countries in the world have already adopted a multi-agency collaborative approach against maritime NTS threats. Among them, Singapore responds to challenges to marine security by using a "whole of government" strategy (Ho 2012). Singapore has introduced an inter-agency Navy-led Maritime and Port Security Working Group at Changi C2 Centre with three functional groups. In addition, the Information Fusion Center (IFC) is responsible for multilateral cooperation to resolve maritime issues. It was found that the multi-agency approach significantly deterred piracy, illegal smuggling, and other maritime security challenges, contributing to Singapore's reputation as a secure maritime hub (Hossain 2017).

In the Indian Maritime Security (MS) Model, the Cabinet Secretary chairs the National Committee for Strengthening Maritime and Coastal Security (Rahman 2019). The National Command, Control, Communication, and Intelligence (NC3I), located in Gurgaon with the Information Management and Analysis Centre (IMAC), is the nerve center. The Indian structure is linked with the Shipping Hub, State Fishery Monitoring Centre, Automatic Identification System, RADAR, Vessel Traffic Management System, Coastal Database, Ships at Sea, etc. (Rahman 2019).

The maritime security apparatus of the United States is a multi-agency effort that incorporates major actors from multiple departments of the government. The Departments of Defense, Commerce, Homeland Security, Energy, State, and Transportation all have major responsibilities and key roles in executing the maritime

security national strategy (Herzinger 2021). The author noted that this cohesive approach facilitated swift decision-making and resource allocation during emergencies.

Udochukwu (2022) explored a suitable strategy for Nigeria's Deep Blue Project (DBP) for ensuring maritime security in a multi-faceted and challenging environment. Highlighting the examples of the USA, Somalia, Malaysia, Indonesia, and Singapore, the author recommended cross-agency information sharing, coordinated search and rescue missions, and joint monitoring of maritime activities. The study underscored why countries with a multi-agency approach could combat the unique challenges while successfully promoting sustainable resource management and security.

These examples underscore the efficacy of multi-agency collaboration in countering maritime threats across diverse geographical and geopolitical contexts. The reviewed literature consistently demonstrates that integrated strategies, joint training, information sharing, and coordinated operations significantly enhance a nation's ability to address multifaceted maritime challenges. While each country's circumstances are unique, the common thread is the recognition that a collaborative approach is key to achieving comprehensive maritime security and maintaining the integrity of their maritime resources.

The literature reviewed on different countries' approaches highlights the importance of maritime security and multi-agency collaboration. Researchers highlighted the importance of such a strategy in the context of Bangladesh as well. However, research gaps persist in finding the limitations of existing measures and developing such a collaborative multi-agency model from Bangladesh's perspective. Addressing these gaps through empirical research would contribute to a more nuanced and context-specific understanding of maritime security challenges and enhance Bangladesh's capacity to safeguard its blue economy effectively.

RESEARCH METHODOLOGY

By gaining knowledge in a dynamic context from several points of view, the researcher intends to comprehend reality (Lincoln & Guba 2000). Hence, interpretivism is used in this study. Because the study attempts to examine the limitations of existing security measures against maritime NTS threats from multiple points of view, the researcher also wants to discover the prolific collaborative approach of maritime agencies combating maritime NTS in Bangladesh.

Interpretive study helps in gaining understanding of the phenomenon under consideration and is adaptable in that it aids in locating the missing piece of what is unknown or only partially understood (Ghauri & Grönhaug 2005, pp. 202–204). This study uses an interpretive research approach to address its research objectives. In this

type of research, unstructured and semi-structured interviews as well as questionnaires can be used to gather data (Ghauri & Grönhaug 2005, pp. 112–113). According to some, this research is more pertinent in the context of discovery and will allow access to previously unknown information.

Conceptual Framework

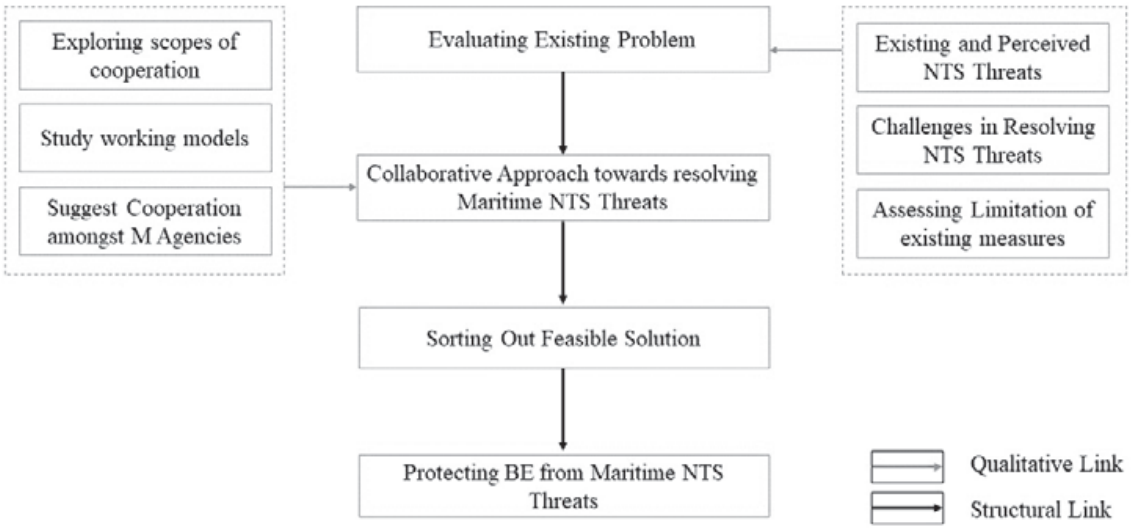

Figure 1: *Conceptual Framework of this Research (Author's Own Construct)*

Source of Data and Data Collection Technique

In this research, data were collected from both primary (KII and FGD) and secondary (document Study and Desk Research) sources. The researcher conducted narrative and phenomenological research in order to gather data from the local fishermen and coastal dwellers in Teknaf, Inani, and Cox's Bazar through FGD. Attempts were made to analyze a few case studies that were collected through desk research, research articles, dissertations, web pages, books, journals, reports, and policy documents of the Government of Bangladesh. FGDs and secondary data were used to identify the limitations of the existing security arrangements in Bangladesh against maritime NTS as well as different working models related to maritime security around the world. KII was carried out to generate a broad range of perspectives on developing a proficient Collaborative Approach regarding the maritime security of Bangladesh.

Interviews were carried out with the maritime security experts of Bangladesh and responsible dignitaries of the concerned maritime agencies of the security domain (namely the Bangladesh Navy, Bangladesh Coast Guard, BORI, BSMRMU, and many more). Nonetheless, few statistics and data were represented from the literature and secondary sources to conceptualize the problem and fulfill the objectives.

Data Analysis Technique

Thematic data analysis techniques have been used in this research. The researcher coded and transcribed the collected data and material from various sources. To ensure accuracy, the transcribed data were then read and reread multiple times. The researcher tried to establish relationships between themes that were relevant to the research objective.

Sampling and Sample Size

This study uses a non-probability sampling strategy and a technique called purposeful sampling. A sample taken with a particular goal in mind is known as purposeful sampling. According to the literature, this sampling aims to choose knowledgeable and typical population members. The theoretical framework of the study, which supports the research objective from the outset, serves as the foundation for sample selection. For the sake of this study, deliberate sampling that is informed a priori by a body of social theory that the research questions are based on is ideal (Miles and Huberman 1994; Curtis et al. 2000).

The sample size for this research is 83. Out of 83 respondents, 73 were local fishermen and coastal dwellers dependent on the sea, and the remaining 10 were representatives of the concerned maritime agencies in the security domain. They were interviewed using a semi-structured questionnaire. A total of 3 FGDs, comprising 73 respondents, were conducted in the Inani, Teknaf, and Cox's Bazaar areas.

Table 1: Description of Respondents

Types of Respondents	Study Sample	Instrumentation
Fisherman from Teknaf	24	FGD (FGD 1)
Fisherman from Inani	33	FGD (FGD 2)
Sea-dependent Dwellers from Cox's Bazaar	16	FGD (FGD 3)
Maritime Security Experts and Representatives from Maritime Agencies	10	KII
Total Respondents	**83**	

RESULTS AND DISCUSSION

Perceived Non-Traditional Security Threats

According to Hossain (2017), three major categorized NTS threats exist to the security of the marine environment. The first is unauthorized maritime activity. The second

category is the illegal exploitation of maritime resources and pollution. Among those, the pertinent issues are smuggling of weapons and drugs, human trafficking and illegal immigration, hijacking of ships and maritime terrorism, and illegal, unreported, and unregulated fishing (IUU fishing). The third category is sourced from the ocean itself, in the form of tsunamis or tropical cyclones. This paper concerns only the first and second types of threats, which are mostly human-induced. Azad (2009) depicted the existing non-traditional security threats in tabular form. This represents the what, Who, and where of the threats and their impact on national security.

Table 2: Maritime Security Threat Matrix (Azad, 2009)

Category of Threat	Source	Zone of Occurrence	Security Implications
IUU fishing, poaching, natural Resource exploitation	Internal and external	Inshore and territorial waters, waters in non-delimited zones between the neighboring littorals	Conflict between Stakeholders in inshore and territorial waters, and conflict between neighboring littorals
Deliberate pollution of marine environment	Mostly internal, also external	All segments of maritime Zones	Threat to ecology, marine health and life
Ordinary theft, armed robbery, piracy	Internal and external	All segments of maritime Zones	Violent and bloody confrontation, loss of life, impact on maritime trade and commerce
Illegal trafficking of arms, drugs, and humans	Internal and external	Shore to High Seas to Shore abroad	Threat to internal security, health and human security, and international relations
Terrorism	Internal and external	All Zones	Threat to ocean peace and stability
Mercenary operations, maritime insurgency, hijacking, etc	Limited to the parties concerned	Normally, zones beyond EEZ	Foments international terrorism, supports separatist movements, and destabilizes regimes

The annual report 2022 on piracy and armed robbery against ships in Asia published by ReCAAP ISC revealed that the increase in incidents in 2022 occurred in the Singapore Strait, Bangladesh, Malaysia, and the South China Sea. In Bangladesh, five incidents (four actual and one attempted) were reported in 2022, compared to none in 2021.

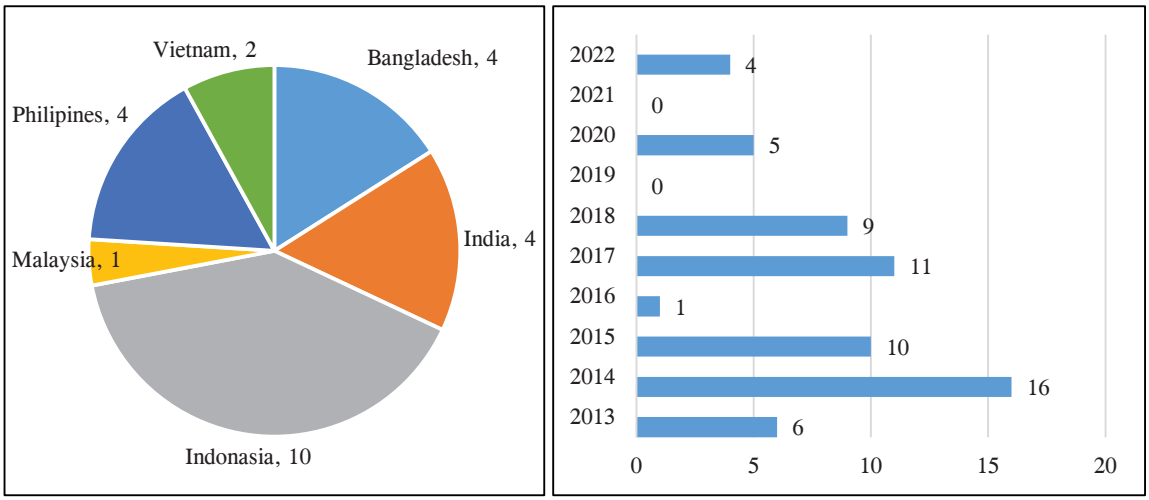

Figure 2: Statistics on Armed Robbery and Piracy in Different Countries in 2022 (Left) and Bangladesh in 2013-2022 (Right) (ReCAAP 2023)

The above statistics indicate that the maritime area of Bangladesh is prone to armed robbery and piracy incidents despite the active participation of various law enforcement agencies. This drives a plan for developing the existing security measures.

A few case studies reveal present Gaps

Case Study 1: Murder of 10 Fisherman in Cox's Bazar

From the respondents of local dwellers of Cox's Bazar (FGD 3), the murder incident of 10 fishermen was informed. The discovery of 10 decomposed bodies on a trawler on April 23, 2023, off the Nazirertek beach in Cox's Bazar is one of the most ruthless and brutal examples of armed robbery and maritime domain in recent times. The bodies inside the trawler were inside a freezer in the trawler and received as decomposed.

The case has prompted an investigation focusing on maritime security threats. Initial inquiries are exploring the potential connections between the incident and issues such as fishing dominance, drug trafficking, and conflicts between fishermen and robbers in the region. The case has highlighted concerns surrounding maritime criminal activities, emphasizing the need for robust security measures and enforcement in the Bay of Bengal region.

Case Study 2: 1.1 Million Liters of Oil Spillage in Meghna River

On December 25, 2022, 1.1 million liters of oil spillage were observed in the Meghna River. Since 2014, Bangladesh has suffered from five spillage incidents totaling 1.77 Million liters of oil into the Karnaphuli, Meghna, and Shela rivers. The failure and lack of preparedness of the National Committee on Oil and Chemical Spillage (NOCS) were

uncovered in responding to the oil spill in the Meghna River in Bangladesh (Yousuf 2023). The spill exposed the committee's apathy, lack of coordination, and unawareness of its responsibilities, even though it had been formed two years prior. Instead, the Bangladesh Coast Guard took the lead in responding to the spill. The NOCS met 10 days after the incident, and officials from the Department of Environment arrived 24 hours later. However, it was deduced that no command structure was established, no technical mechanism was ensured, and no financial support was sought for the recovery operation.

The mentioned case clearly demonstrates the absence of a dedicated marine authority and a lack of preparedness, coordination, and cooperation among maritime agencies in addressing maritime security threats and effectively managing marine accidents in Bangladesh.

Case Study 3: Escalation of Drug Trafficking in BoB

The BoB is located at the crossroads of three drug-producing regions: Bangladesh is a transit country for drugs produced in the Golden Triangle and, to a much lesser degree, the Golden Crescent (UNODC 2005). Having direct air, sea, and road communications with all regional drug-producing countries, Bangladesh is now facing a massive domestic drug addiction problem as a spillover effect. Aside from the socio-economic harm, drug trafficking has also been linked to terrorist funding (Azad 2009). Drug peddlers keep changing their routes constantly. The smugglers use sea routes for smuggling Yaba and other drugs. In Bangladesh and Myanmar's case, the bulk of drug trafficking happens through the Bay of Bengal and the land points of transit between Bangladesh and Myanmar (The Business Standard 2021).

The above case represents that the constant change in drug peddlers' routes and the use of sea routes for smuggling drugs, particularly Yaba, further complicate law enforcement efforts. The Bay of Bengal and the land transit points between Bangladesh and Myanmar serve as key locations for drug trafficking activities in the region. Efforts to address this issue require robust maritime security measures, inter-agency and transnational cooperation, intelligence sharing, and targeted interventions to disrupt drug trafficking networks and prevent the smuggling of drugs through these routes.

Limitations of Existing Measures

Presently, a number of organizations are directly involved in ensuring security against NTS threats in the BoB. But they lack the required intelligence and information from the lead directorates or bodies in the concerned field. When interviewed on June 4, 2023, a Senior Scientific Officer of Bangladesh Oceanographic Research Institute (BORI), said:

> The primary limitation of security measures against maritime NTS threats is that law enforcement agencies do not have any information or traces of the sea users.

> If we do not know, trace, or control who is going to the sea, staying for how many days, what they are doing, when they are returning, in which area they are operating, and which routes are being used, it is impossible to think about the protection of maritime resources and people.

The above quotation points out that the lack of information and traceability among sea users is a significant limitation in addressing maritime non-traditional security threats. Without knowledge of who is accessing the sea, their activities, and operating areas, it becomes challenging to implement effective security measures. This limitation hinders the identification of potential threats, comprehensive surveillance, risk assessment, law enforcement efforts, and the development of maritime domain awareness. To overcome this limitation, it is essential to enhance information sharing, strengthen national inter-agency cooperation, establish registration systems, and utilize advanced technologies. Improved traceability of sea users will enable a better understanding of maritime activities, the detection of threats, and the implementation of targeted security measures to protect maritime resources and ensure the safety of people.

Both the fisherman communities at Teknaf (FGD 1) and Inani (FGD 2) supported the issue regarding the lack of information and traceability of sea users and agreed that they do not record adequate information about their activities at sea anywhere. When asked why no one informs the concerned authority about their whereabouts at sea, one respondent from the fisherman community of Inani (FGD 2) expressed the following view:

> We do not know that informing someone of our whereabouts is required. No one from the government or law enforcement agencies asked this. We casually inform someone that we are going fishing. Staying in the sea depends on the fish catch. If the amount is good, we return to the shore after one or two days. If the amount is not good, it may last for 8–9 days.

The above account reveals the lack of general awareness of the fisherman and the necessity of the practice of informing the concerned agencies about the fishing trip and the duration of stay. It is understandable that the duration at sea may depend on the fish catch and can vary from one to several days. However, from a maritime security perspective, having mechanisms in place to communicate and share information about fishing trips can be beneficial to enhance safety, enable better coordination during emergencies, and contribute to overall maritime domain awareness. One of the resource persons revealed for this study that the fishing boats do not have any communication devices other than mobile phones. Those become useless without network coverage. Moreover, they do not have any GPS, AIS, or other kinds of location-positioning devices. So, they become untraceable. While it may not be currently enforced or mandated, encouraging the adoption of voluntary reporting mechanisms or initiatives to promote communication among fishermen and relevant authorities could be considered to

improve safety and security at sea.

While interviewing on June 6, 2023, an important limitation was revealed by the Station Commander, Teknaf, Coast Guard (East Zone), which concerns resource limitations of the force and duplication of effort. He asserted:

> BCG operates in Teknaf with a limited number of resources for combating NTS threats across the maritime boundary. The infrastructure, personnel, and technology are not enough for carrying out operations effectively. Besides, sometimes it is observed that the informers (sources of intelligence against trafficking) provide information to us, the RAB, and also the BGB. So, unknowing each other's course of action, all the forces carry out operations. This results in duplication of effort.

An important conclusion can be derived from the above statement. The resources of the GoB are shared amongst the law enforcement agencies. If there had been information sharing amongst the agencies or a joint cooperation center, both the challenges regarding 'shared resources' and 'duplication of effort' could have been eradicated. In addition, the concentration of force, knowledge, and working experience of multiple agencies would contribute to the joint effort.

Ways and Means for a Prolific Collaborative Approach

National BE initiatives involve a significant number of ministries, organizations, and law enforcement organizations. The Bangladesh Navy oversees safety and order at sea jointly with the Coast Guard of Bangladesh. The legal elements are handled by the Bangladesh Police, BCG and RAB. Through their economic activities, port authorities, Bangladesh Shipping Corporation, marine fisheries, Petrobangla, shipyards, ship breaking yards, and similar companies directly support BE. All these organizations work relentlessly with their individual efforts. Coordinated involvement of all these stakeholders will enhance the BE achievement for Bangladesh (Rahman 2019).

Currently, Bangladesh's BE security issues are directly monitored by the Directorate of Naval Operations (DNO) and the Directorate of Blue Economy (DBE) at NHQ. In contrast, DBE directly supports the Blue Economy Cell within the Ministry of Power, Energy, and Mineral Resources (MPMER) to guarantee security and long-term growth in terms of BE activities in the BoB. Armed forces will augment maritime security agencies in need of a quick emergency response. Presently, BN and BCG maintain regular patrols at sea and in coastal areas. Yet, it is not possible to maintain a presence everywhere and effectively monitor the 1,18,813 sq km of sea area (Hossain 2017). Hence, the participation of all the maritime stakeholders (Port Authorities, Bangladesh Shipping Corporation, Marine Fisheries, Directorate of Narcotics Control, etcetera) is necessary.

Bangladesh can create a comprehensive national maritime security framework using the building block method, allowing it to lessen maritime security risks and strengthen maritime security. For this, Bangladesh must first develop self-capacity, which entails having a solid data base, appropriate surveillance coverage, a well-equipped operations center with representation from relevant stakeholder groups, and an extremely powerful national marine apex organization. Thinking broadly while beginning modestly might be the idea (Chew 2016). The National Maritime Surveillance System and National Maritime Data Bases are two examples of how an information sharing network or model can be considered. But in the case of Bangladesh, neither of these applies (Haq 2014). By developing these, the effectiveness of NTS threat response across the maritime boundary can be improved. Additionally, this would allow her to interact on a sub-regional or regional level. Bangladesh's national organizations can connect with sub-regional organizations, which in turn could connect with regional organizations, using this building block technique. In our situation, smaller regional umbrella groups like ReCAAP, ISC, or IFC might be a source of support for smaller local organizations (Hossain 2017).

Bangladesh must approach the subject of enhancing marine security from all angles, much like Singapore or India do. To begin with, at the national level, the necessary stakeholder activity needs to be brought under some sort of common umbrella in order for maritime affairs to run optimally and smoothly. An apex body at the ministerial level would provide a platform for policy formation based on the strategic direction provided by the government to plan, direct, coordinate, and manage marine activities. Rear Admiral Musa (2023) opined that under the Prime Minister's Office, a top-level institution called the National Maritime Division (NMD) may be created, which will be the governing authority for all maritime issues. Both Malaysia and Brunei already employ this type of system. An NMD has previously been discussed in the draft national maritime policy (Hossain 2017).

A common marine working hub at the functional level can be established in order to coordinate maritime security surveillance and on-field activities. A maritime security headquarters can be established to oversee all marine activities across the country in times of emergency or conflict. The Joint National Maritime Operations Center (JMOCC) can be a possible name for this (Hossain 2017). This will make collaboration and communication between organizations easier. Additionally, this will coordinate field operations and information exchange between many authorities and organizations, including the police, customs, and ports. In this regard, a respondent mentioned the hub and Spoke method:

> One integrated network can be created to infuse all the agencies' current monitoring capabilities. A hub-and-spoke strategy, which can be used to maximize each person's contributions, may be used. According to this concept, each

> organization will be in charge of its own capabilities and serve as a focal point for internal coordination. The remote stations and outposts where the agencies conduct their monitoring and surveillance operations would be the spokes. There will be a shared working linkage between the spokes.

As demonstrated by the case studies, it is crucial that the proposed security model include a comprehensive marine picture compilation infrastructure that covers the entirety of our coastline and maritime area. Satellite, Maritime Patrol Aircraft (MPA), Automatic Identification System (AIS), RADAR, and surface ship coverage are required for this. An Integrated Coastal Surveillance System (ICZM) would make this possible in Bangladesh (Hossain 2017). Such a database or infrastructure does not exist at the present time. Utilizing tools and systems like the Long-Range Identification and Tracking (LRIT), Automatic Identification System (AIS), and Fishermen's Database, the information sources for this database would be acquired (Bhuiyan 2017).

So, how should the functional components of the previously described proposal be implemented? While interviewing on June 6, 2023, one of the resource persons and a maritime security expert expressed his view:

> As a functioning modality, or at the field level, the deployed forces on-field would conduct surveillance, collect information, and produce a maritime image. The JMOCC and the service operation's rooms, respectively, would be used for processing and area-level collation. Then, operational decisions would be made at both this level and the upper level, which is NMD, or the main hub. Services HQ would be an element of NMD as well as a working hub.

Figure 3: Maritime Security Structure of Bangladesh (Hossain 2017)

Bangladesh would be able to efficiently monitor the vast sea region using an integrated coastal surveillance system that could be developed from the envisioned maritime security architecture. As a result, any anomaly would be discovered, matched with the database, and shared through the Information Sharing Center (ISC) with nearby countries.

In order to safeguard maritime security, the Navy and Coast Guard will be able to react swiftly to any potential threats. It's important to chalk out a SWOT analysis that would be considered in the specific context of the proposed multi-agency model for maritime security in Bangladesh, taking into account its unique characteristics and operational framework. The result has been generated based on the output of interviews with several Key Informants:

Strengths: • Reduce redundancy and duplication of Effort • Information Sharing • Resource Pooling • Specialized Expertise on various fields	**Weaknesses:** • Ego-centric stigma of agencies • Varying Priorities of the agencies • Communication and Information Management
Opportunity: • Enhanced Cooperation • Integrated Technical Advancement • Knowledge Sharing and Best Practices • Scopes of Regional Cooperation	**Threats:** • Political and Organizational Dynamics • Rapidly evolving Threats • Jurisdictional Disputes

Figure 4: SWOT Matrix for Multi-Agency Approach against NTS Threat

The discussion shows that most of the countries apply multi-agency models of maritime security strategies to get the most out of them. Countries have different maritime policies, which lead them to apply a cooperative maritime strategy which subsequently contributes to blue growth. (Rahman 2019). The collaborative approach contributes to the cultivation of trust and synergy among maritime agencies. Overcoming traditional bureaucratic barriers and fostering a culture of inter-agency cooperation can substantially streamline decision-making processes, allowing for agile responses to evolving threats. Regular joint training exercises, intelligence sharing, and coordinated operations not only amplify operational efficiency but also reduce redundancy and duplication of efforts.

Figure 5: Ensuring Security Has a Direct Positive Impact on Blue Growth (Rahman 2019)

CONCLUSION AND RECOMMENDATIONS

This study sheds light on the human-induced non-traditional security threats (NTS) faced by Bangladesh in its maritime environment. The identified threats range from unauthorized maritime activities to illegal exploitation of maritime resources and pollution. The article emphasizes the need for comprehensive and integrated approaches to address these challenges effectively.

The study reveals the vulnerability of Bangladesh's maritime area to armed robbery and piracy incidents, as indicated by the increase in such incidents reported in the region. This highlights the urgency of developing and strengthening existing security measures to ensure the safety and security of maritime activities.

Case studies presented in the paper demonstrate the existing gaps and challenges in maritime security. The murder of fishermen in Cox's Bazar underscores the ruthless nature of maritime criminal activities and the need for robust security measures in the Bay of Bengal region. The oil spillage incident in the Meghna River reveals the lack of preparedness and coordination among maritime agencies, calling for the establishment of a dedicated marine authority and a coordinated response mechanism. Additionally, the escalation of drug trafficking in the Bay of Bengal highlights the importance of addressing this issue through enhanced maritime security measures, inter-agency cooperation, and targeted interventions.

Furthermore, the article highlights the limitations of existing measures, such as the lack of information and traceability of sea users, resource limitations, and duplication of effort among different law enforcement agencies. Overcoming these limitations requires improved information sharing, enhanced awareness among fishermen, technological upgrades, and strengthened coordination among agencies and stakeholders.

Meanwhile, the findings explore various maritime security strategy models employed by different countries, such as the multi-agency model, the "whole of government" strategy, and the establishment of central hubs or centers. These models emphasize the importance of information sharing, operational coordination, and collaboration among different stakeholders.

Based on the findings, it is crucial for Bangladesh to adopt a comprehensive and collaborative approach to enhance maritime security. This includes strengthening security measures, improving coordination among maritime agencies, establishing dedicated marine authorities, enhancing preparedness for marine accidents, and addressing the challenges posed by NTS threats at BoB. BoB.In conclusion, by addressing the identified challenges and adopting effective strategies, Bangladesh can enhance its maritime security capabilities, protect its maritime resources, ensure the

safety of sea users, and promote sustainable development in the Bay of Bengal region.

In conclusion, the inexorable growth of Bangladesh's blue economy demands an adaptive and agile approach to safeguard maritime security. The mosaic of non-traditional security threats necessitates a paradigm shift from siloed agency efforts towards a harmonized and integrated strategy. The multi-agency collaborative approach may serve as a linchpin in this transformative shift, enabling the nation to protect its maritime resources, ensure sustainable economic progress, and uphold its sovereign interests in an increasingly dynamic maritime domain.

Recommendations

- To effectively pursue the blue economy, GoB may develop a practical maritime security strategy under the umbrella of an overall maritime policy and strategy. With the available resources, the approach should be primarily focused on preventing any undesirable activities associated with maritime security concerns.
- GoB may establish a 'National Maritime Division' to oversee maritime activities under Prime Minister’s Office. The division should be guided by both maritime strategy and national security strategy in order to maintain effective maritime domain governance. This organization will also be able to ensure coordinated efforts by all maritime stakeholders, including maritime security and law-enforcing organizations.
- GoB may establish a Joint National Maritime Operations Center (JMOCC) under the National Maritime Division. Bangladesh Navy may be given the lead role in setting up and running this organization, where representatives from BCG, DoS, DNC, Bangladesh Police, Bangladesh Army, BGB, RAB, Port authorities, and related ministries, divisions, and organizations will be integrated.
- A National Maritime Database System may be developed under JMOCC for effective surveillance, information gathering, and collation from all the concerned agencies and sources.

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