

PROSPECTIVE ENGAGEMENT OF BANGLADESH NAVY IN SUPPORT OF BLUE ECONOMY

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Introduction

The maritime history of Bangladesh can be traced back from the early medieval period. The Muslim rulers of Bengal had been venturing at sea and had developed shipping and naval power. Thus, the history unveils that ours was a seafaring nation. As early as 543 BC, Bangalees established a kingdom in Sri Lanka, South India and Madras. Bengal was also charted on the oceanic navigation route during the early centuries of the Christian era. However, in the medieval period Bangalees were dominating at sea. The sea power was also dominant throughout the Mughal era. Ship building flourished at a faster pace in Bengal than any other parts of India during the Mughal period. However, during the British rule the naval prominence of Bengal gradually waned¹. Nevertheless, the legacy of maritime history remains at heart of the people of this country which flourished again after the independence.

The Father of the Nation Bangabandhu Sheikh Mujibur Rahman, a visionary leader could very well envisioned the maritime prospect of Bangladesh. Foreseeing the huge importance of the Bay of Bengal for the trade and economic development, he focused on the maritime sector as well as cherished to have a strong Navy. Under his visionary leadership, he promulgated the "Territorial Waters and Maritime Zones Act 1974", which was a milestone in the maritime history of Bangladesh. It was a step taken far ahead of many countries of the world. It is the foundation for the Blue Economy initiatives by the government of Bangladesh. With the wisdom and prudent decision of Prime Minister Sheikh Hasina, Bangladesh went to ITLOS and PCA to settle the maritime boundaries with our neighbors. As a result, we have earned a huge maritime area of 1,18,813 square km.

The newly demarcated area of the Bay of Bengal has opened a new economic frontier in Bangladesh. The concept of Blue Economy which was just evolving in recent years in some of the developing countries of the world got attention in Bangladesh. According to the World Bank, "The blue economy is the sustainable use of ocean resources for economic growth, improved livelihood and jobs, and ocean ecosystem health." The World Bank report says that the gross value added to Bangladesh in 2014-15 from the ocean economy was US\$ 6,192.98 million, which was around 3.33 per cent of the Bangladesh economy². However, Blue Economy has the prospect of contributing to Bangladesh's economy on a much higher level and it is now considered as a new development space. Consequently, the government has set the policies to interweave blue economic activities with the UN SDG 14 (Life below water), prepared Vision 2041 and Delta Plan 2100 and formulating the 'Bangladesh Maritime Zones Act

¹ Turn of Tide, A Chronicle of BN

² Mushfiqul Haque Mukit, Blue Economy: A new economic frontier of Bangladesh, <https://www.pressenza.com>

2019' to achieve sustainable development of Bangladesh for moving forward towards the end of the 21st century.

This article unfolds identifying the blue economy activities in Bangladesh highlighting the present capacity and prospect of these areas which will pay dividend in future. Bangladesh Navy (BN) is a strong pillar for of Blue Economy activities in Bangladesh. Besides, providing the traditional security at sea, BN is engaged in fishery protection duties which yields substantially to the marine reserve. With the expansion of marine economic activities, BN has also increased its benign duties in manifolds. In the last decade, BN has progressed a lot in terms of capacity building and ocean related activities. Thus, this paper critically dissects all the dimensions that BN is contributing to blue economy of Bangladesh. Finally, it suggests few areas where BN needs to focus its endeavor by expanding naval support towards blue economic growth as well as accomplishing national maritime objectives of Bangladesh.

Aim

The aim of this paper is to represent the current involvement and prospective engagement of Bangladesh Navy in support of Blue Economy.

Prospects of Blue Economy of Bangladesh

Blue Economy Activities

The third neighbor of Bangladesh is the Bay of Bengal. The role of marine resources in poverty alleviation, acquiring self-sufficiency in food production, protecting environmental balance, facing adverse impacts of climate change and other economic possibilities is unlimited. Alongside the existing land-based development activities, ocean based economic activities through the management of sea and its resources may be considered as a new horizon for the development of coastal countries like Bangladesh.



Figure 1: Major sectors related to Blue Economy in Bangladesh³

³ Hussain, M. G. & Failler, Pierre & Al Karim, Ahmad & Khurshed Alam, Md. (2017). Major opportunities of blueeconomy development in Bangladesh. Journal of the Indian Ocean Region.

Shipping and Port Facilities. International shipping is the carrier of world trade, transporting around 90% of global commerce. Shipping is the safest, most secure, efficient and most economical means of bulk transportation. Encouraging seaborne trade requires improvement of port facilities and other logistics support. In 2017-18 goods worth 51.53 billion US dollars were imported in the country while goods worth of 36.66 billion dollars were exported. A total of 27,32,900 lakh TEUs containers were transported through Chattogram and Mongla port in 2017-18⁴. The volume of containers handled has increased by over 10 percent a year over the last decade and a similar or faster growth rate is projected for the foreseeable future⁵. The import and export trade has increased by 24.36% in last five years. We have three sea ports – Chattogram, Mongla and Payra which operates with draft limitations. In view of this, Bangladesh at this moment needs port centric infrastructure for transport of huge quantity of goods related to the foreign trade. To meet these challenges, Bangladesh government has taken up Matarbari deep sea port project which will be made functional by 2025.

Shipbuilding and Recycling Industries. Bangladesh has an opportunity to nurture and develop her shipbuilding industries which had a long glorious heritage. If we become proactive in shipbuilding sector to catch hold a chunk of global projects and ensure construction of all ships for our own use at local shipyards, it will wage huge contribution to our economy. There are more than fifty shipyards in Bangladesh and a hundred of shipbuilders or contractors and marine workshops are actively involved in shipbuilding activities. Implementation of business-friendly policy and incentives from government can make this sector a booming one. The global ship recycling industry has been mainly concentrated in Asia. We have already proved ourselves as a prominent ship-recycler and emerging ship-builder nation. In the global industry, Bangladesh contributes to less than 0.01 per cent only. On the other hand, the ship breaking industry of Bangladesh is known worldwide. During 2013, about 300 ships were dismantled, which is the highest number in six years and Bangladesh ranked 2nd considering number of ships while ranked 3rd from the point of gross tonnage. It provides about 70-75% scrap steel as raw material for steel and re-rolling mills, saving a lot of foreign currency. There are about 125 ship breaking yards with annual turnover of about USD 2.4 billion. Ship recycling must be turned into modern industry with all eco-friendly infrastructure and compliance of international convention⁶.

Coastal Tourism. Having the world's largest unbroken sea-beach and vast coastline, Bangladesh has an immense potential to develop sustainable coastal and marine tourism. In Bangladesh, coastal and marine tourism is already in operation, though on a limited scale. But the growth of tourism in this country is lagging behind compared to the world as a whole. By developing the tourism in marine and coastal areas, Bangladesh can increase GDP, generate more jobs, reduce poverty, earn foreign

⁴ Yearly Report by Bangladesh Container Port Throughput, <https://www.ceicdata.com>

⁵ A Briefing Note on the Port Sector in Bangladesh, <https://openknowledge.worldbank.org/handle/10986/12395>

⁶ Rear Admiral M. Khurshed Alam, Secretary, MAU, MOFA, 'Ocean/Blue Economy For Bangladesh'

currencies, gain sociocultural benefits, conserve the environment, and protect coastal areas⁷.

Fisheries and Aquaculture. Fisheries and aquaculture sector have emerged as the second largest export industry in Bangladesh and produces 2.5% of the global production of shrimp. The Bay of Bengal is a huge source of fish and other aquatic resources. At present we have 475 species of marine fish, 56 species of shrimp, crab and lobster in our sea area. Presently 15.41% of the total fisheries comes from marine sources⁸. Marine fishery products make an important contribution to the blue economy in Bangladesh. Bangladesh is the 4th largest fish producing country in the world. Contribution of marine fisheries is about 20% of the total fish production in the year 2015-16 which is 0.6 million tons in number per year. Fisheries' contribution to national GDP is 3.69% where agricultural GDP is 23.12%⁹. The value of aquatic products in international trade (export and import) in 2015 was \$649.1056 million. Exports were 75,337.93 tons, worth about \$605.878 million and imports reached 88,593.50 tons, with a value of approximately \$43.2276 million in 2015¹⁰. Bangladesh can increase its fishery production by industrializing its marine fisheries and exploring large pelagic fish harvesting, long line fishing of tuna and tuna-like fishes. Already GoB procured a modern survey vessel named RV Meen Sandhani to do a stocktaking of available fishing sources in the Bay of Bengal.

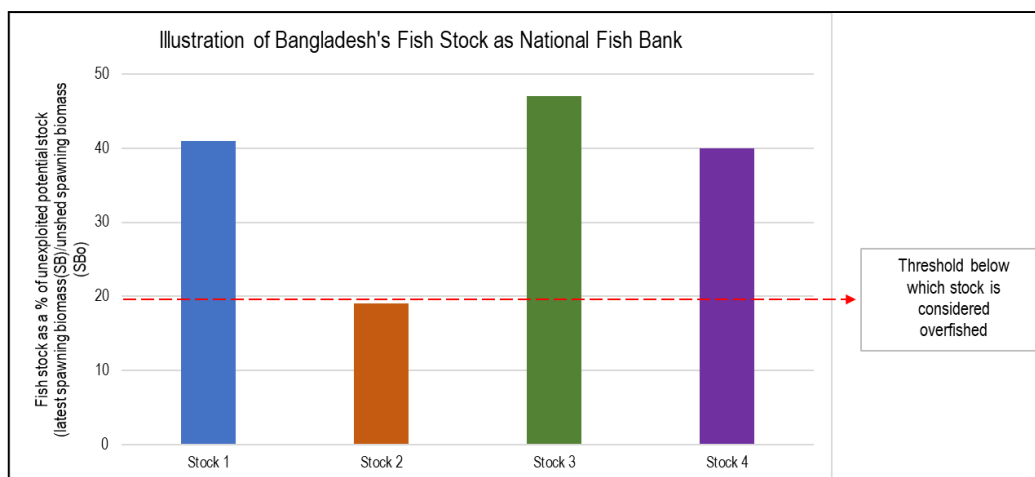


Figure 2: Illustration of Bangladesh's Fish Stock as National Fish Bank¹¹

Figure 3: Composition of Marine Catch in Bangladesh¹²

⁷ Nur Nobi, Mohammad and Majumder, Md. Alauddin (2019) "Coastal and Marine Tourism in the Future," Journal of Ocean and Coastal Economics: Vol. 6: Iss. 2, Article 12.

⁸ Rear Admiral Khurshed, op. cit.

⁹ Mohammad Rokanuzzaman & Dilruba Chawdhury, A SWOL Analysis of Deep-Sea Fishing of Bangladesh, <https://www.researchgate.net/publication/338035302>

¹⁰ Mohammad Rokanuzzaman & Dilruba Chawdhury, Significance of Marine Fisheries in Bangladesh, <https://www.researchgate.net/publication/337858687>

¹¹ P.G. Patil, J. Virdin, C.S. Colgan, M.G. Hussain, P. Failler, and T. Vegh (2018). Toward a Blue Economy: A Pathway for Sustainable Growth in Bangladesh. Washington, DC: The World Bank Group.

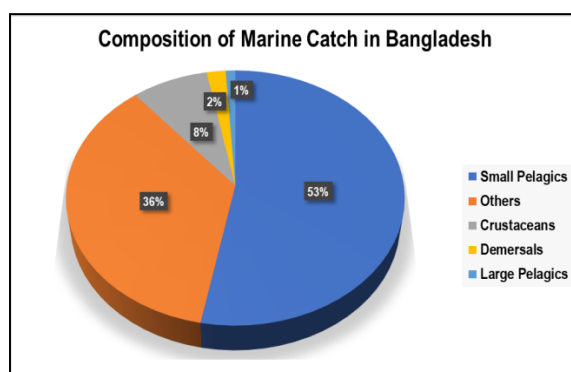


Figure 3: Composition of Marine Catch in Bangladesh¹²

Seaweed Culture. So far 118 species of seaweed have been found in the coastal area. Out of these 18 species are commercially important and cultivable and these are being used all over the world as food, raw materials for cosmetics and pharmaceutical industry. Commercial seaweed cultivation may open new opportunities for sources of income and earning foreign exchange through exports. Presently Bangladesh Fisheries Research Institute (BFRI) working on it.

Marine Biotechnology. The global market for marine biotechnology products and processes is currently estimated at US \$ 2.8 billion and projected to grow to around US\$ 4.6 billion by 2017. Marine bio-tech has the potential to address a suite of global challenges such as sustainable food supplies, human health, energy security and environmental remediation¹³. It has wide-ranging applications in industrial sectors including pharmaceuticals, cosmetics, nutritional supplements, molecular probes, enzymes and agrochemicals.

Energy. In 2009 offshore fields accounted for 32% of worldwide crude oil production and this is projected to rise to 34% in 2025¹⁴. Oil will remain the dominant energy source for many decades to come, but the Ocean offers enormous potential for the generation of renewable energy-wind, wave, tidal, biomass, and thermal conversion and salinity gradients. Renewable energy enjoys almost 22 percent share of the global energy mix. Bangladesh is yet to assess the true potential of its offshore oil and gas prospects. Until 2014, 19 exploratory wells were drilled in the Bay of Bengal, resulting in only two gas discoveries, i.e. The Sangu and the Kutubdia, with small reserves. The Sangu reserves of 0.8 Tcf have already depleted, whereas the Kutubdia reserves 0.04 Tcf are yet to be developed. Moreover, the drilling of the Magnama (3.5 Tcf) and Hatia (1.0 Tcf) yet to produce any commercial volumes of hydrocarbons¹⁵. In the future, oil and gas exploration and exploitation must be accomplished with full participation between public and private sectors to share data and information, monitoring, and best practices, as well as monitoring and assessment protocols and results.

¹² P.G. Patil, J. Viridin, C.S. Colgan, M.G. Hussain, P. Failler, and T. Vegh (2018). Toward a Blue Economy: A Pathway for Sustainable Growth in Bangladesh. Washington, DC: The World Bank Group.

¹³ UNESCO, IMO, FAO, UNDP (2011) A Blueprint for Ocean and Coastal Sustainability. Paris. <http://unesdoc.unesco.org/images/0021/002150/215002e.pdf>

¹⁴ International Energy Agency (2011) World Energy Outlook 2011. IEA, Paris.

¹⁵ Rear Admiral Khurshed, op. cit.

Deep-Sea Mining. The world is gearing up for the exploration and exploitation of mineral deposits on and beneath the sea floor. Due to rising commodity prices, is turning its attention to the potential riches of polymetallic nodules, cobalt crusts and massive sulfide deposits. By 2020, 5% of the world's minerals, including cobalt, copper and zinc could come from the ocean floors. This could rise to 10% by 2030. Global annual turnover of marine mineral mining can be expected to grow from virtually nothing to €5 billion in the next 10 years and up to €10 billion by 2030¹⁶. Coastal countries like Bangladesh need to prepare herself to ensure optimal benefits from resources in her own EEZ and continental shelf.

Ocean Governance. Integrated ocean governance has been evolving, with three elements: laws, institutions and mechanisms of implementation¹⁷. But our developments are often diminished due to lack of appropriate ocean governance measures, whereas various policies are either poorly implemented or lacks supervision. So, a regionally integrated management and governance system is the demand of the day in order to ensure sustainable maritime development in the Bay of Bengal region. A peaceful and prosperous ocean realm of the Bay of Bengal through the integrated and cooperative partnership would determine the future development and economic growth of Bangladesh¹⁸.

Bangladesh Navy as a Pillar of Blue Economy

Security Dimension

The mission of Bangladesh Navy is to defend the country from threats emanating on, above and under the sea; promote and protect our maritime interest, assist maritime governance and contribute to the diplomatic objective of our nation. In pursuant to this mission, BN regularly promotes all development within the maritime sector as well as underpin the development work of any new potential sectors. Bangladesh government rightly understood that a huge populous country with tiny land like ours, will never prosper with the limited resources of our land. The Vision 2021 and the associated Perspective Plan 2010-2021, adopted by the Government of Bangladesh, to become the Middle-Income Country by 2021 and obtain the status of a developed country by 2041 has led the government to look towards the Ocean. The government recognized Blue Economy as striving for the attainment of sustainable development, taking into account advantages and strategies for managing the oceanic resources. Obviously, this implicates the reliance on the navy to lead many of these national maritime issues in order to protect our maritime interests and coordinate the Blue Economy Activities.

Maritime Operations and Exercises. BN has been conducting full range operations and exercises in our maritime domain in support of the entrusted roles. Over the years, the dimension of the operations has expanded and changed due to the context of global security. BN has been assigned the duty of Lead organization for the security matters related to Blue Economy. BN has started “Operation Blue Guard” from 01

¹⁶ Ibid.

¹⁷ Mizan R Khan, The rising stakes for ocean governance, The Daily Star, 29 Oct. 20.

¹⁸ Rear Admiral M Khaled Iqbal, Ocean Governance for Sustainable Maritime Development in the Bay of Bengal, https://bsmrmu.edu.bd/public/files/econtents/5f8065115fd17vol4_issue1_article_1_khaled_iqbal.pdf

March 2017 for ensuring the security of ships and establishments engaged in Blue Economy projects. BN ships, high speed boats and naval contingents are deployed to perform the tasks. Presently, BN is providing security to vessels of 1200 MW coal-based power plant project, LNG Terminal project, LNG Single Point Mooring (SPM) with Double Pipeline project etc. BN looks after the security of all maritime ports and offshore installations. Bangladesh Coast Guard (BCG) ships also carry out surveillance in coastal and EEZ area to prevent piracy, smuggling, human trafficking and Illegal, Unreported and Unregulated (IUU) by foreign fishing vessels.

Fishery Protection. It is one of the prime duty BN performs under aid to the civil power. Due to the regular and effective operation of the Navy, it has been possible to export the country's Hilsa and other sea fishes abroad which contributes to our economy. The production of Hilsa in the country has increased by about 84% in the last 11 years. This is about 12% of the country's total fish production, and at current price is worth around Tk 20,618 crore. Hilsa's contribution to Bangladesh's GDP is about 1%. BN has been operating special operation like 'Operation Jatka' and 'Ma Hilsa Reservation Campaign' since 2001 in order to protect national resources. Ministry of Fisheries and Livestock (MoFL) has planned to declare 10% Marine Protected Area (MPA) of maritime area. Presently, we have only 3.8% area as MPA. BN ships are continuously patrolling these areas enforcing rules & regulations for conservation of marine resources. BN has achieved the "National Fisheries Award 2019" in recognition of its outstanding contribution to Bangladesh's fisheries resources and marine fisheries management.

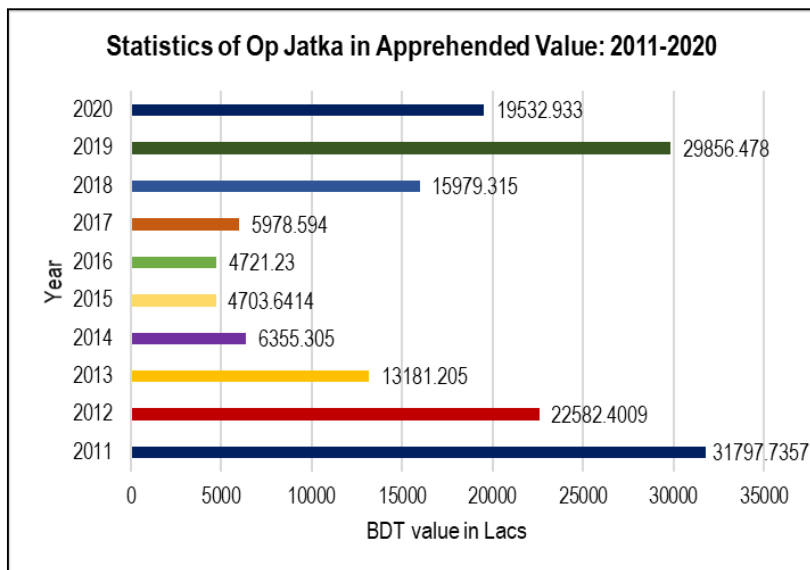


Figure 4: Op Jatka Achievements

Figure 5: Op Jatka BN Ships Deployment



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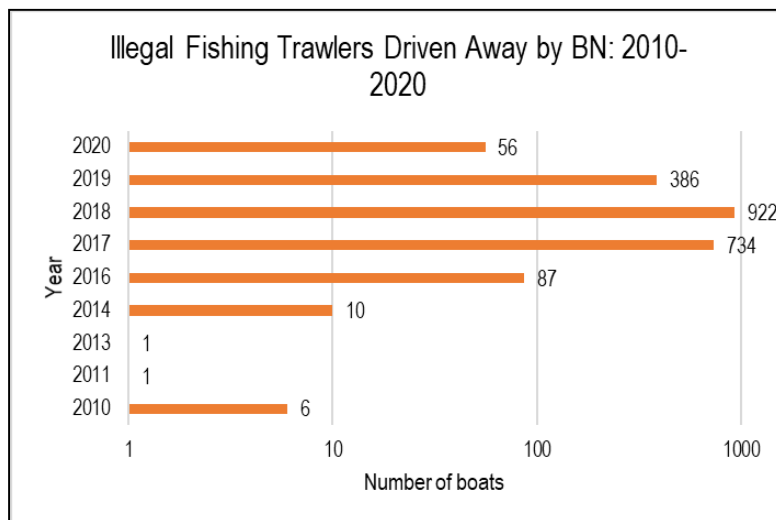


Figure 6: Prevention of IUU Fishing

Preservation of Good Order at Sea. Bangladesh Navy being a strategic organ of the government and the lead maritime organization, is vested with the responsibilities to protect and promote the maritime interests of the country. But due to contemporary complex maritime security environment, Bay of Bengal is likely to be canvas of wide range non-traditional security threats. Among others; maritime piracy, maritime terrorism, gun running, poaching, drug and human trafficking, armed robbery etc. are major maritime security challenges for Bangladesh.

Anti-Piracy/Anti-Smuggling Operation. As protector of the vast sea area of Bangladesh, BN remains vigilant at sea round the clock and conducts extensive operation to protect the maritime interests of Bangladesh in Bay of Bengal. On any given day, 7 to 8 ships remain consistently deployed at sea for encountering any piracy and smuggling incidents. Due to relentless effort and incessant presence at sea by BN, incidents of piracy and petty theft are almost nil in Bangladeshi waters recently.

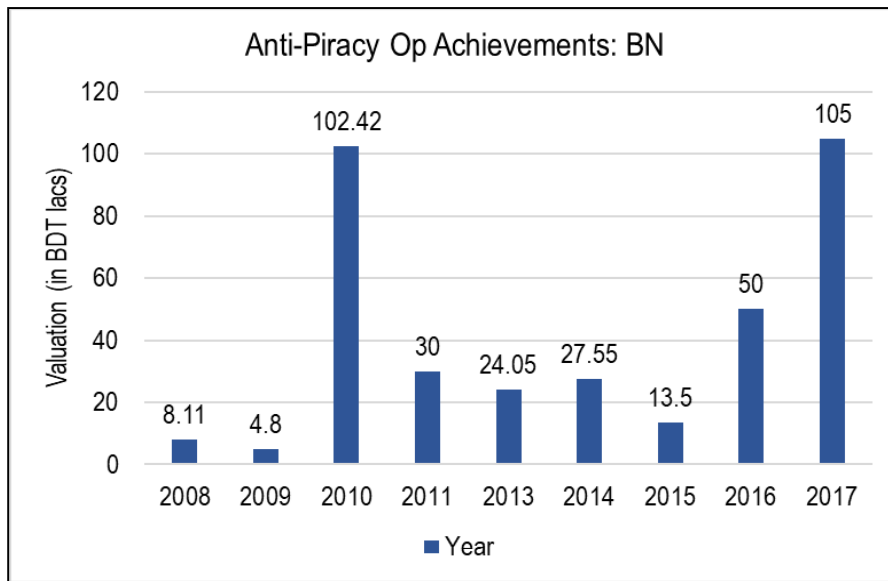


Figure 7: Anti-Piracy Op Achievements by BN

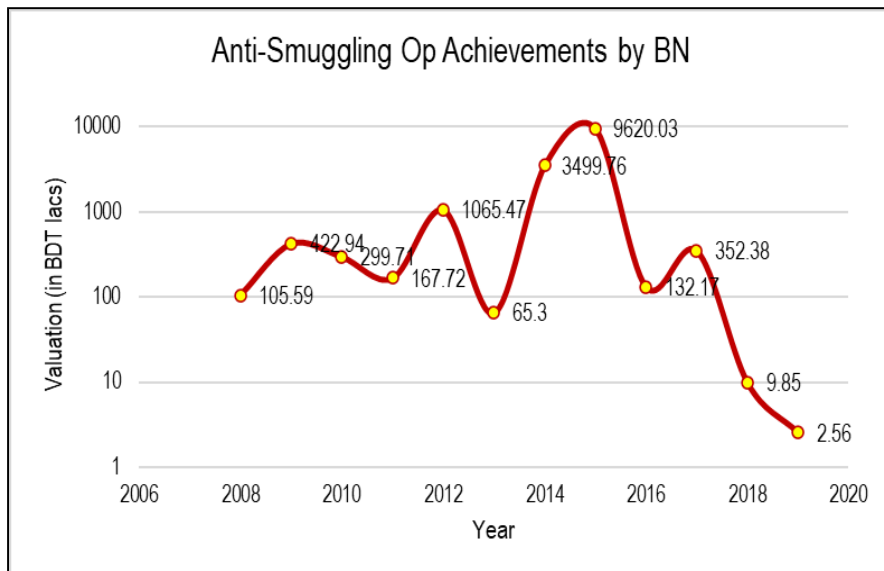


Figure 8: Anti-Smuggling Op Achievements by BN

Anti-Human Trafficking. Human trafficking has emerged as one of the most pervasive forms of human rights violation. The recent influx of Rohingyas from Myanmar has multiplied this problem for Bangladesh. Combating human trafficking is one of the major constabulary tasks of BN. BN ships deployed in territorial waters and high seas always remain vigilant to interdict any sorts of human trafficking through Bangladeshi water.

Year	Boats	Crew/ Apprehended Persons	Destination	Place	Value (in BDT)
2012	2	44	Malaysia	Shapuri Island, Ctg Outer anchorage	20,00,000/00
2013	1	24	Malaysia	Off St Martins Island	-

2014	3	665	Malaysia	Off St Martins Island, Ctg Outer anchorage	1,70,20,000/00
2015	2	138	Malaysia	Ctg Outer anchorage, Shahpuri Island	1,52,00,000/00
2020	1	5	Malaysia	Off St Martins Island	-
Total	9	876	-	-	3,42,20,000/00

Table 1: Anti Human Trafficking Drive by BN

Maritime Terrorism. Southeast Asia is one of the world's busiest and strategic chokepoints, accounting for approximately 40% of the total global maritime trade. Bangladesh Navy remains ready at all times to counter any maritime terrorist act in BD waters. Bangladesh Navy has already founded Special Warfare Diving and Salvage Command which comprises elite Special Operations Forces of the Bangladesh Navy. It is specially organized with highly skilled commandos equipped with special weapons and equipment to conduct maritime special force operations including counterterrorism operations.

Capacity Building Dimension

Establishment of Academia. A science-based approach is essential to the development of the Blue Economy. This will provide a basis for informed decision-making and adaptive management. Well-trained, skilled and educated human resources are the driving force of the development of an economy. Having assessed the need of world markets and local industry, appropriate courses on marine science/oceanography, ocean and coastal engineering, maritime education and trade are essential to introduce at the tertiary education system¹⁹. The government has already focused on capacity building where BN is a partner and acts as a facilitator towards the development of the Blue Economy in terms of creating human resources.

BORI. Bangladesh Oceanographic Research Institute (BORI) is the country's first and only national institution on marine science and oceanography. The Institute is working to conduct all the activities as a focal point of Bangladesh at national and international levels in the field of oceanography. BN is associated to BORI from its inception. BN provides all support for their research at sea and contributes at the management level being a part of the governing board.

Public Universities. Being a maritime nation, Bangladesh did not have any universities with an Oceanography or Ocean science faculty/department until recently other than the University of Chittagong. Recently with directives of government, various universities in Bangladesh like, University of Dhaka, University of Khulna, Noakhali University of Science and Technology, Patuakhali Science and Technology University (PSTU), Shahjalal University of Science and Technology, Bangabandhu Sheikh Mujibur Rahman Maritime University has opened Oceanography or Marine

¹⁹ Rear Admiral Khurshed, op. cit.

science faculty and are working on marine scientific research. BN provides all out support for their research work by taking them for sea expeditions.

BIMRAD. The Bangladesh Institute of Marine Research and Development (BIMRAD) has been established by BN which started its journey on 03 Jul 2018. It is an independent think tank research institute to study issues relating to the maritime domain of Bangladesh and Blue Economy. It aims to provide advice and options for government maritime agencies, stakeholders and other relevant organizations.

BSMRMU. To keep pace with the developing world in the field of maritime studies and research, BN pursued to establish Bangabandhu Sheikh Mujibur Rahman Maritime University (BSMRMU) in 2013. The University started its journey as the 37th public university of the country, the 3rd Maritime University in South Asia and the 12th Maritime University in the world. The university would conduct both graduate and post-graduate courses in various fields, which includes subjects related to Port and Shipping Administration, Maritime Technology, Naval Architecture, Oceanography, Marine Science, Hydrography, Ocean Engineering, Offshore Engineering, Coastal Engineering, Maritime Laws etc.

Assistance to Researchers. Bangladesh Navy has been providing marine research and data collection opportunities to marine science related academicians/ professionals of several Bangladesh universities/institutions by providing them sea trips by Navy warships. Such cooperation has strengthened the relationship between Navy and marine academicians / professionals. At present, BN is the only platform which facilitates such research work for the academicians /professionals and BN will continue this effort for the benefit of the country.

Naval Build-Up. In the past decade, BN has mustered adequate assets to carry out its mandated tasks and are working to improve capabilities even further. The Government is very supportive to develop a credible fleet with robust and dynamic support structures, as well as a skilled and motivated workforce. Its “Forces Goals 2030 Initiative”, introduced in 2011 and being revised periodically, represents a major qualitative and quantitative improvement of our capabilities, turning the Bangladesh Navy into a credible three-dimensional force²⁰. The government has increased BN budget to substantial amount which will enable having a formidable three-dimensional Navy which can support all out with the development of our maritime domain and will contribute to the wellbeing of the nation.

Shipbuilding. BN is immensely patronizing the shipbuilding industries of Bangladesh and contributing to the development of the marine sector. At present, three prominent shipyards namely Khulna Shipyard Ltd (KSY), Dockyard & Engineering Works Narayanganj (DEW) and Chattogram Dry Dock (CDD) are operating successfully

²⁰ Interview of European Security & Defence (EDS) with Rear Admiral Mohammad Musa at the 12th Regional Seapower Symposium in Venice, ‘The Bangladesh Navy – An Available, Adaptive and Affordable Force’, 10 Mar 2020, <https://euro-sd.com/2020/03/allgemein/16528/>

under the management of BN. All these shipyards were enlisted as sick enterprise, but with the helms of BN these are now profitable organizations.

Scientific Dimension

Hydrography & Oceanography. BN has a Hydrographic Department with international standard hydrographic survey capability and is a member of International Hydrographic Organization (IHO). Bangladesh Navy hydrographic department (BNHD) is the primary agency responsible for hydrographic survey and oceanographic research. Hydrography and Oceanography is the scientific eye and the lynchpin of Blue Economy. Hydrography and associated metadata help directly in promoting Blue Economy. While settling the maritime boundary issues with our neighbors, BNHD has provided data and assistance as per the requirement of MOFA (MAU). Nonetheless, Hydrography is essential to Blue Economy for the following purposes:

Safe and Efficient Maritime Transportation. More than 80% of export- import of Bangladesh is transported through the sea. Updated nautical charts are essential for safe and efficient navigation of merchant ships.

Coastal Zone Management and Development. This includes construction & maintenance of ports, dredging operations, monitoring & improvement of channels, control of coastal erosion, land reclamation from the sea, etc. Hydrographic products provide essential input for better management and decision making in coastal zone management.

Exploration and Exploitation of Marine Resources. Over the years, the extensive hydrographic database has been built up which facilitate the process of exploration and exploitation of marine resources. In recent years, it has become evident that inadequate hydrographic services lead to costly delays in resource exploration.

Environmental Protection and Management. Safe and accurate navigation restrict pollution caused by maritime incidents, wrecks and oil spills. Hydrographic information is also important for the management, research and sustainable development of the marine environment.

Marine Science. Marine science depends largely on bathymetric information. Global tide and circulation models, marine geology & geophysics, the deployment of scientific instrumentation and many other aspects of marine science depend on bathymetric information.

National Spatial Data Infrastructures. Good quality and well managed national spatial data are an essential ingredient to economic and commercial development and environmental protection. Hydrographic information is an important part of any national spatial data infrastructure.

Maritime Boundary Delimitation. Good hydrographic data are an essential and fundamental requirement for the delimitation of the maritime boundaries. The charts of a national Hydrographic Office are recognized as the official source for such information.

Maritime Defence. Navies are major users of nautical charts and other products for surface and sub-surface operations. Chart coverage must be comprehensive and accurate in order to gain freedom of maneuver for warships. Hydrographic data and information provided by national Hydrographic Offices support a variety of products used in naval operations.

Awareness Building Dimension

There is a pressing need to indoctrinate our policy planners and mass people to build an awareness regarding the significance and the maritime trait of our economy. This is where, Bangladesh Navy is playing a pioneering role.

Seminar & Symposium. Bangladesh is a maritime nation, though often it prevails that we ignored the ocean for long. For the last couple of decades BN is endeavouring to bring the stakeholders under a common platform by arranging seminar & symposium on different issues. The seminars included national and international level participants from mostly maritime agencies. Maritime Domain Awareness (MDA) seminar is conducted every year before annual naval exercise where civilian maritime stakeholders are also involved. Maritime stakeholders provide their input and ideas on cooperation, engagement and security related issues. On World Hydrography Day, representatives of maritime organizations are also invited to share their experience and ideas on marine safety aspects and to enhance professional working relationships. These seminars and symposiums are designed to create sea awareness and to inculcate sea-education to more and more people from different walks of life.

Interrelation with Maritime Stakeholders. Bangladesh Navy has established the idea as being the hub for maritime stakeholders through extensive engagement with them. BN has maintained a close relationship with all maritime associates on different professional fields. Through these interactions, both sides get oriented with each other's capacity and capabilities. It also builds up positive awareness in areas of mutual interest.

Accelerating Blue Economic Growth through BN Support

Operational Capability Enhancement of BN

Bangladesh is experiencing accelerated development in maritime activities. The government has also focused and prioritized this sector in the policy level. Subsequently, the government has undertaken massive development, industrial works at the coastal belt. Sea Line of Communications (SLOC) of Bangladesh has become busier in the recent days. Needless to say, with more economic interest to protect, comes additional responsibility for Bangladesh Navy. Significant development in naval operational capability took place in this decade. From a buyer navy, we have become a builder navy. Also, BN has achieved operational capability in all dimensions of naval warfare i.e. surface, sub-surface and air. The surge in this development needs to continue in the years to come. BN needs to start contemplating the need for extended-reach operations deep into the Bay of Bengal AOR to effectively protect her maritime interests. As such, conventional naval build-up and highly-skilled manpower needs to

be developed as priority to fight and sustain in a 21st century three-dimension operational theatre. Without a strong naval deterrence, maritime interest, especially maritime trade cannot be protected meaningfully considering the geostrategic context of Bangladesh. To secure, support and protect the Blue Economic growth while meeting future operational requirements, Bangladesh Navy must continue to evolve in hardware, technology and training.

Developing Skilled Workforce

Bangladesh has a long way to go to establish strong workforce in the maritime sector. However, building up strong academia is a time and talent consuming process which cannot be done overnight. BN can contribute in the academic sector like universities and institutes in the marine sector with the technical and field support. Bangladesh Navy is already running few technical training institutes with her shipbuilding/repair establishments. A good number of skilled workers are coming out from there. By enhancing the capacity of these institutes will add additional skilled workforce in the maritime sector. It should also be mentioned that Bangladesh Navy with her almost 50 years of operational experience have created a huge skilled pool of manpower who have been trained systematically on marine activities and possess unparalleled experiences. The integration of these skilled naval personnel in all maritime sectors may fill-up the temporary void that exists almost everywhere.

Enriching Scientific Know-how

Maritime area of Bangladesh has a lot of unexplored venues. We are yet to ascertain or quantify the living and non-living resources in our ocean. Apart for exploitable resources, there are plethora of assets available in the marine environment. Again, uncontrolled exploitation of these resources is degrading for the marine environment. Therefore, strong scientific evidence is required before exploitation of any natural resources while ensuring preservation of the marine environment. Bangladesh Navy's hydrographic services and oceanographic activities have been the only seagoing competent scientific arm for Bangladesh till date. This service has not only provided accurate navigational information, but also have collected a wide range of environmental data. The naval hydrographic and oceanographic services and its fleet need expansion to support the scientific base for Blue Economic growth. We have huge data gap in our ocean area that warrants collection of physical oceanographic data for the naval operation in Bay of Bengal. Scientific information collected from the marine environment is also essential for national security. Therefore, a fine productive balance needs to be kept while maintaining the flow of information to meet scientific ends. To achieve this, there is no other organization than Bangladesh Navy who can serve both ends.

Decision Making at National Level

Time is ripe to establish a permanent top-tier government body to coordinate and regulate Blue Economic activities. By the virtue of Blue Economy, it spans several sectors and multifarious stakeholders. Being the lead agency for maritime activities, coordination of BN with maritime stakeholders is required to ensure smooth synergy

of related activities. An inter-ministry level body or a maritime division at the government level will pave the way for coordinated policy and implementation

approach. Bangladesh Navy may play a significant role in assimilating the priorities versus assets to achieve national objectives set forth by development goals. In relation to that, a National Hydrographic Office at ministerial level, headed by a National Hydrographer appointed from BN may be established to coordinate the technical matters relevant for decision making. With the glowing example of shipbuilding and port management sector, Bangladesh Navy has established the importance of naval approach for development in the maritime sector. This force has a lot of skilled personnel to underpin almost all sectors related to Blue Economy. While carrying the weight of knowledge from long experience in maritime operations, BN involvement in expedited maritime sectors can play significant role in taking them forward. It will also assist in building cooperation between civil and military components of the national maritime interest while ensuring coordination at all levels.

Conclusion

Our planet is often denoted as the 'Blue Planet', since it is covered mostly by water. So, it has become imperative to utilise this vast space of water body to accelerate the process of economic development as land resources are depleting rapidly. These massive areas of water are an enormous hub of natural and mineral resources, and extracting these resources is not a new concept in human history. Bangladesh is also paying attention in advancing its Blue Economy activities and looking forward to embark on this new frontier to utilize its vast sea region. The government has already identified the potential sectors of blue economy. BN is playing a significant role to support in every sector of blue economic activities of Bangladesh. Without ensuring security and good order at sea, no economic activities will be flourished. BN is safeguarding the sea as well as enhancing the capacity of a skilled work force in the country. Over the years, extensive hydrographic and oceanographic database has been built up by the Hydrographic services of BN which facilitates the process of exploration and exploitation of marine resources. BN also endeavours to create awareness among the stakeholders of our maritime domain by holding seminars and symposiums in a regular intervals. BN, a forerunner at sea with almost half a century experience, can play even greater role for the wellbeing of the country. To support and protect the Blue Economic growth and future operational requirements, Bangladesh Navy must continue to evolve in hardware, technology and training. It can take more aggressive steps to enhance skilled workforce and can integrate the existing to bridge the gap. It must expand its hydrographic and oceanographic capacity to meet the future challenges. BN role in the decision making process at the national level should be integrated further where creating a maritime division and a national hydrographic office at ministerial level can promulgate and adopt a comprehensive policy plan for the ocean economy of Bangladesh.

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(This paper has been published in the Navy Journal Vol 6, Number 1, 2020 issue)