

Recent Naval Development of PLA(Navy): Assessment of China's Ocean Literacy and Implications for Bangladesh

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"Organized force alone enables the quiet and the weak to go about their business and to sleep securely in their beds, safe from the violent without or within."

-Alfred Thayer Mahan, 1660

Abstract

Bangladesh has enormous stake in the Indian Ocean Region, which goes further beyond the Bay of Bengal, consisting of ever-increasing trends in global maritime trade. Thus, the maritime frontier of Bangladesh has flourished significantly keeping up with the increasing maritime trades. The safekeeping of our maritime frontier is solidifying through the development of Bangladesh Navy. This journal topic offers a comprehensive examination of the Republic of China's Ocean Soft Power Strategy via Ocean Consciousness Propaganda to People's Liberation Army Navy's (PLA Navy) recent naval development, focusing on an in-depth analysis of the country's Ocean Literacy Policy and their potential implications for Bangladesh and Bangladesh Navy. Over an assessment of the PLA Navy's evolving capabilities and maritime ambitions through ocean literacy, this article explores potential maritime development of Bangladesh. Moreover, this article delves deeper into the dilemma -while there are prevailing government funded oceanographic research and development institutes; they are only at surface level. It would require major overhauling of different governmental policies & strategies towards building significant structures for ensuring ocean literacy over the years to come. Finally, the article covers the possible implications to begin a literacy revolution over the maritime frontier to increase ground level knowledge vis-à-vis increase naval development for Bangladesh Navy.

Keywords: Ocean Soft Power Strategy, Ocean Literacy, PLA(Navy), Oceanographic Research, Naval Development, Bangladesh Navy

Introduction

The Indian Ocean, often referred to as the "Ocean of Unity," is a vast expanse of water that holds immense importance for the global community. Stretching over 70 million square kilometers, it is the world's third-largest ocean, encompassing the shores of numerous countries, including India, Pakistan, Bangladesh, Sri Lanka, Indonesia, Australia including significant importance to China and even the United States. The significance of the Indian Ocean to Bangladesh & China cannot be overstated, as it serves as a critical lifeline for international trade, connecting their respective economies to Africa, Middle East and the Western world. It is also a bridge, between the Chinese & Bengalis to exercise their relations through the maritime domain.

Chinese culture is often associated with land-oriented civilization despite having one of the longest coastlines in the world. Starting from the 90s to the modern 21st century, China has expanded its ocean literacy strategy from the military into the mass population. The contents of such strategy have significant implications for countries in the region, including Bangladesh. In recent years, China has been rapidly expanding and modernizing its naval capabilities, emphasizing a shift from nearshore defense to a more global maritime presence. This shift reflects China's increasing interest in enhancing ocean consciousness and its implications between its naval & national strategies.

For Bangladesh, situated along the northern coast of the Bay of Bengal, the Chinese Ocean Literacy strategy holds notable implications. As an important strategic partner of China's Belt and Road Initiative (BRI), Bangladesh has witnessed growing cooperation in various sectors, including infrastructure development and trade from the Chinese frontier. The development of China's navy and its expanded presence in the Indian Ocean can impact Bangladesh in several ways. From the ocean consciousness campaigns, this article will try to analyze the possible implications of Bangladesh.

The aim of this article is to project the recent development of PLA(Navy) vis-à-vis analyzing their ocean literacy strategies and compose implications for Bangladesh.

Ocean Literacy in China

Ocean literacy is defined as having "an understanding of the ocean's influence on us and our influence on the ocean (Misbah, 2024)." Originally, ocean literacy campaign, instigated by NMEA (National Marine Educator Association) was to address the lack of ocean-related content in state and national science education standards, instructional materials, and assessments (NMEA, 2024). According to this definition, the NMEA developed a framework regarding ocean literacy, namely "The Essential Principles of Ocean Science K-12 (Ocean Literacy Principles)" and "The Ocean Literacy Scope and Sequence for Grades K-12 (Scope and Sequence)." The seven principles of ocean literacy are: (P1) Earth has one large ocean with many features, (P2) The ocean and life in the ocean shape the features of Earth, (P3) The ocean is a significant influence on weather and climate, (P4) The ocean made Earth habitable, (P5) The ocean supports a great diversity of life and ecosystems, (P6) The ocean and humans are inextricably interconnected, and (P7) The ocean is largely unexplored (NMEA, 2010).

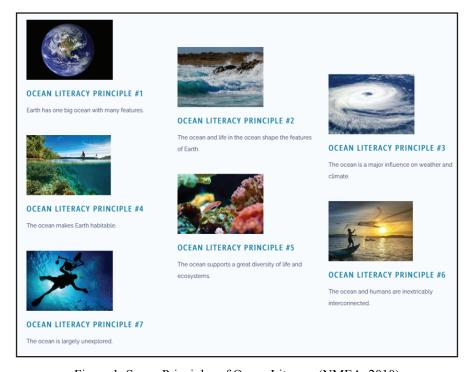


Figure 1: Seven Principles of Ocean Literacy (NMEA, 2010)

Opening with their ocean soft power strategy, the Chinese grew into ocean literacy with their ocean culture & ocean consciousness strategy developments. They call it the promotion of ocean soft power via ocean consciousness propaganda. China has established several marine research institutions, namely the State Oceanic Administration (SOA) and the Institute of Oceanology at the Chinese Academy of Sciences. These institutions are effortlessly contributing to ocean literacy amongst the mass population by improving understanding of marine ecosystems, oceanography and climate change impacts. The SOA, established in 1964, created an "Ocean Development Strategy Research Institute" in 1987, commonly known as the China Institute for Marine Affairs. China's ocean strategies came into fruition in the first decade of the 21st century. In the 16th National Party Congress, "Implementing Ocean Development" was proposed in its section on economic construction and reform (Communist Party of China, 2002). The following 6 months saw the State Council issue the "Outline of the National Ocean Economic Development Plan" (State Council, 2003). It was the first instance of implementing an economic development plan in cohesion to the ocean frontier of China. In the following years, the State Council published another document entitled "Outline of the National Marine Development Plan" (State Council, 2008). This was an elaborate plan to enhance national power focus to a more marine interest resource. In early 2010s, the then President of China, President Hu Jintao called for raising ability to extract ocean resources and building China into a maritime powerhouse, during the 18th National Party Congress. President Xi Jinping's signature foreign policy, the Belt and Road Initiative (BRI) has visible reflection of China's ocean strategy. For China & Xi Jinping, the ocean is the hope for the 21st century. The world knows the desires of China to become a prominent sea power, and is rightly said, "the day that China develops into a global ocean power is inevitably the day that the Chinese nation will have made its mighty comeback!" (Gao, 2007).

Globally, major countries are revising their security and military strategies, as well as their ocean literacy research structures. They are creating new forms of educational systems to take critical commanding positions in naval rivalry. To achieve ultimate military dominance, the United States is pursuing technical and institutional innovation. India is moving forward with its New Look military overhaul. Meanwhile, Brazil, Canada, Korea and many other countries are adjusting and optimizing their military capabilities through enriching their ocean awareness. The US Government has established the world-renowned organization, NMEA, which is educating countries around the world with a vision of ocean-literate societies. Brazil, through its National Coastal Management Plan

(Plano Nacional de Gerenciamento Costeiro-PNGC), is allowing increased participation and active involvement of communities and other stakeholders outside the government in decision making and planning of public policies regarding coastal areas of states and municipalities (Larson and Ribot, 2004). Inspired by the "Ocean Literacy for All" program of IOC-UNESCO, Indian origin Estuarine and Coastal Studies Foundation (ECSF) initiated its "Ocean Literacy Program" in 2023. Canada & Korea have launched a coalition between Busan Cinema Center and Canadian National Film Board with an innovative initiative, Ocean School. Respective Embassies from the two countries have organized several workshops including practical classes, increasing ocean literacy in the countries.

Falling back to the Chinese domain, it is to be mentioned that the PLA(N) plays a critical role in China's overarching national security and development strategy. Its forces include submarines, surface ships, aircraft, marine, and coastal defense. The PLA(N) consists of the ETC Navy (Donghai Fleet), STC Navy (Nanhai Fleet), NTC Navy (Beihai Fleet), and PLA(N) Marine Corps. Naval bases, submarine flotillas, surface ship flotillas, and aviation brigades are all part of the TC navies. In accordance with the strategic requirements of near seas defense and far seas protection, the PLA(N) is accelerating the transition of its tasks from near seas defense to far seas protection missions, as well as improving its capabilities for strategic deterrence and counterattack, maritime maneuver operations, maritime joint operations, and comprehensive defense integrated support. All of these are the successful implementation of oceanic studies and campaigns throughout the country and the military, as well. For instance, RMB 232.22 billion (\$37.58 billion) was provided to China's 179 marine scientific research institutes in 2011, with RMB 13.90 billion (\$2.25 billion) coming from government funding (SOA, 2013). In the same year, there were 25,154 students enrolled in adult education programs, 104,479 students in vocational schools with an ocean theme, and 179,165 undergraduate and graduate students in marine programs in higher education (SOA, 2013). The South China Sea, the Indian Ocean, the Pacific Island Nations, and developing African Nations are now eligible to apply for scholarships from the SOA and the Ministry of Education for graduate-level marine studies at four Chinese universities (Marine Scholarship, 2014). These educational initiatives help initiate the development process of the naval frontier of the country.

Crossing the Threshold: Literacy to Development

China's naval modernization effort has been ongoing for about 30 years, since the early to mid-1990s, and has made the Chinese navy a much more modern and capable force. China's navy is a formidable military force within China's near-seas region, and it is conducting an increasing number of operations in more-distant waters, including the Western Pacific. China's navy is now numerically the biggest in the world, surpassing the U.S. Navy in terms of the quantity of battle force ships (i.e., the kinds of ships that are included in the stated size of the U.S. Navy). Furthermore, Asia Times reported on June 2021; to improve situational awareness, lower the cognitive burden on its submarine commanders, and provide autonomous decision support, the PLA (Navy) plans to equip its nuclear submarines with AI-based decision-support systems. Moreover, on May 18, 2022, China launched Zhu Hai Yun, an unmanned ship that can be operated remotely, travel freely across open waters, and carry dozens of drones, submersibles, and other vehicles for ocean research. Qianlong No. 2, a Chinese unmanned underwater vehicle, successfully finished its first search for Sulphide deposits in the southwest Indian Ocean in 2016. These submersible boats are useful for keeping an eye on submarine movements and can even be sent on minelaying missions close to Indian territorial waters. The China Maritime Studies Institute publishes research to inform the U.S. Navy and Marine Corps, advise U.S. civilian and military leaders and educate the joint force's next generation of warfighters. Chinese research vessels conduct a variety of oceanographic surveys which are crucial for understanding environmental patterns and marine biology, but they also serve strategic naval purposes (Yousuf, 2024). These studies help improve the operational capabilities of submarines and other naval assets, including the used technologies like sonar and torpedo guidance systems.

According to the Department of Defense, "The PLA(N) is the largest navy in the world, with a battle force of about 340 platforms, including major surface combatants, submarines, ocean-going amphibious ships, mine warfare ships, aircraft carriers, and fleet auxiliaries" (Cordesman, 2019). About 85 patrol combatants and vessels that are equipped with anti-ship cruise missiles (ASCM) are not included in this number. The total battle force of the PLA(N) is anticipated to increase to 400 ships by 2025 and 440 ships by 2030. Major surface combatants will account for much of this growth.8 Contrastingly, 294 people served in the U.S. Navy. The increasing number of surface and sub surface vessels will come into fruition with the increasing amount of ocean literate officers, sailors and even the public, who all contribute to their ever-growing seapower.



Naval Development Through Ocean Literacy: Implications for Bangladesh

For Bangladesh, it's crucial to adapt to the progressing ocean literacy in other countries; for neighboring ones, even more so. To engage in regional diplomacy, and assess the potential risks and opportunities associated with the PLA(Navy)'s expansion, Bangladesh may need to enhance the programs and policies regarding ocean literacy. The inauguration of Bangladesh Institute of Maritime Research and Development (BIMRAD), in July 2018 has been a starting grid on the country's track to ocean literacy. The vision of the maiden dedicated research institute is to train the young minds of our country to generate and apply knowledge for naval purposes by becoming a "Unique National Maritime Think Tank." To bring this vision into fruition, this maritime institute is conducting cutting edge research in the maritime realms to promote national maritime interests as its mission. The objectives of BIMRAD include:

- a. Developing awareness among the stakeholders in the maritime sector, academicians and policymakers on importance of the ocean and ocean-related activities for the development of the country.
- b. Studying the maritime heritage of the country with the objective of dissemination of the knowledge of such history.
- c. Promote public awareness on the maritime front.
- d. Conduct study and research in areas of maritime interest and many more.

Recently, at an international conference hosted by the Centre for Governance Studies at the Pan Pacific Sonargaon Dhaka, DG BIMRAD shared his insights as a speaker. In his discussion, he addressed the implications and reasonings of Bangladesh seeking to join ASEAN from a maritime perspective. He also emphasized the necessity of a centralized database system or Marine Spatial Data Infrastructure (MSDI). Furthermore, looking forward to the United Nations Ocean Conference 2025, French Embassy in Bangladesh organized a seminar to convene the key actors in the blue economy sector to discuss the present condition and prospects of the blue economy in Bangladesh. DG BIMRAD highlighted the organizations ongoing activities in the maritime frontier and expressed strong interest in working collaboratively to achieve vision of maritime Bangladesh.



Figure 2: DG BIMRAD Shares his Insights on the Theme "Turbulent Waters: Navigating Maritime Security in a Divided Indo-Pacific"

On the naval frontier, Bangladesh Navy Hydrographic and Oceanographic Centre (BNHOC) was established in 2001 to monitor survey works, store date and circulate generated charts within Bangladesh Navy. The very same year, BNHOC brought home the prestigious membership of International Hydrographic Organization (IHO). This organization circulates permanent, temporary and situational notices & adjustments to charts of our maritime boundary to internal and external maritime agencies. Currently, BNS ANUSHANDHAN, SHAIBAL & SUROVI are some of the prominent hydrographic and survey ships of Bangladesh Navy. These vessels carry out oceanographic research onboard while protecting the maritime zones of the country.



Figure 3: Participation in Training Program by BIMRAD on "Coastal and Marine Resources Management Towards a Locally Adapted Marine Spatial Planning (MSP) Framework"

The Centre for Naval Research & Development (CNRD), under the supervision of Commodore Superintendent Dockyard, started functioning in January 2013. It has successfully completed more than 20 projects which include sophisticated control system adaptations, temperature monitoring system redesigning and even digital gyro & compass based systems. It undertakes different types of research related to technical and technological aspects.

On 16 January 2018, under the supervision of the Ministry of Science & Technology, Bangladesh Oceanographic Research Institute was founded in Pechwardip. It was the fruition of the passage of the Bangladesh Oceanographic Research Institute Act, 2015 in the parliament. In the years 2022-2024, over 7 projects have been initiated by BORI with promising results. These include:

- a. Distribution of physicochemical parameter on the coast of Cox's Bazar to Chittagong.
- b. Investigation of sedimentology and mineralogy of the coastal marine area of the Chattogram region of Bangladesh.
- c. Biochemical composition, morphometric variability and habitat distribution of Horseshoe Crabs along the coastal area of Bangladesh.
- d. Optimization of agar and carrageenan extraction control and continuation of seaweed taxonomic study.
- e. Oil grease concentration level in the South-Eastern coastal sediment of Bangladesh.
- f. Carbon Sequestration capacity of tidal marshes and mangroves soil and their response to climate change in the Deltaic central coast of Bangladesh.
- g. Assessing the microplastic distribution in water, sediment and fish species in the Sundarbans Reserve Forest (SRF), western coast of Bangladesh.

These projects are conducted by various departments under BORI. These include Physical Oceanography, Geological Oceanography, Chemical Oceanography, Biological Oceanography and Environmental Oceanography & Climate Department. On top of the projects that have been concluded up to now, there are many more ongoing projects which include:

a. Winter stratification, frontal zone identification and coastal current detection in the eastern coast of Bangladesh.

- b. Investigation of sedimentation and minerology of the seafloor deposits along the central coastal marine area of Bangladesh.
- c. Assessing coastline erosion protection measures via in-depth examination of sedimentary process along southeastern coast of Bangladesh.
- d. Status and impact of oil grease in the water and the sediment of coastal region of Bangladesh.
- e. Carbon sequestration capacity of tidal marshes & mangroves soil and their response to climate change in the deltaic central coast of Bangladesh.

It is expected that these projects will have fruitful outcomes that can increase the maritime literacy in Bangladesh.

The first ever Maritime University (MU) of Bangladesh that came out by an Act of the Parliament on 26 October 2013. MU is committed to providing quality education based on state-of-the-art technological support responsive to the emerging challenges at home and abroad. Its mission includes nurturing and development of world class professionals who will create a Bangladesh competent to compete in the competitive world of maritime business, service and employment. Throughout this mission, it hopes to achieve promoting and creating a learning environment for higher maritime education with excellence, thus contributing to the maritime literacy of Bangladesh. It has 6 faculties currently with over 7 different under & postgrad programs. On 29 September 2024, the



Figure 4: MoU Signed between World Maritime University, Sweden and MU

President of World Maritime University (WMU) signed on the MoU to set forth the terms by which MU and WMU will engage in the field of maritime and marine affairs to expand educational opportunities for students.

The National Maritime Institute was initially started as a small institute at Goshaildanga, Chattogram in the year 1952. It has now been whitelisted by IMO as one of the modern institutes in the region. It currently conducts training in the Seafarer's Training Facilitated Campus. The institute was permanently established on 4th December 1989. It is currently conducting Pre-Sea courses on two main academic disciplines,

- a. Nautical &
- b. Engineering.

Moreover, many ancillary courses for both officers & crew are being conducted here as per the International Convention on STCW-95/2010 which are:

- a. Personal survival technique.
- b. Personal safety and social responsibilities.
- c. Certificate of proficiency in survival craft and rescue boat.
- d. Elementary first aid.
- e. Fire prevention and firefighting.
- f. Efficient deck hand.
- g. Tanker safety & familiarization course.
- h. Oil & chemical tanker safety & familiarization course.
- i. Global Maritime Distress & Safety System (GMDSS) course and many more.

These various courses enlighten the officers in the maritime frontier of the country. The NMI has hostel facilities for both Pre-Sea and Post Sea Rating seafarers. It also has a plan to introduce various shipping safety related courses in the future as per international standard.

National Oceanographic and Maritime Institute (NOAMI) was established in late 1978 by a group of marine science enthusiast to promote education and training in oceanographic sciences, assist in the creation of a knowledge base and disseminate it to the people in general and decision makers in particular with a view to developing the socio-economic condition of Bangladesh by proper exploration & exploitation of the country's oceanographic resources. NOAMI has been heavily affiliated with Bangladesh Navy, with its Founding Chairman and Chief Advisor being Rear Admiral Musharraf Hussain Khan for multiple decades.

As of now, NOAMI organized more than 100 seminars or workshops, 30 training programs based on ocean, marine, and multidisciplinary issues. NOAMI has been regularly organizing a training course on oceanography since 2003. More than 350 professionals are well trained through the course for multidisciplinary institutes. This course has a high level of acceptance in the professional and international community. Moreover, NOAMI has been publishing a journal since 1984, twice a year, including write-ups and research papers on Geological, Physical, Chemical, Biological & Marine Technological aspects of the ocean's estuaries, coasts and their resource utilization and blue economy. This is an enhancing hand in the ocean literacy frontier of our country.

Although there are some significant movements in the ocean literacy frontier, Bangladesh still has a long way ahead in this domain. To achieve significant naval development, it is paramount to gain ocean literacy on national and military levels. Learning from one of the maritime superpowers of Asia, the Chinese policies and strategies can be implicated to our country's ocean development studies to ensure a significant development in Bangladesh Navy. Some of the implications for Bangladesh are mentioned below:

- a. Bangladesh should further strengthen its oceanographic studies and military cooperation with China under bilateral security framework to grab maximum possible economic, political, and naval opportunities. It should go ahead with combined research and workshops with the country to enhance ocean literacy awareness at diplomatic levels. It should pursue its "Look East Policy" to get closer to China and South-East Asia, the new global center of economic gravity. A robust economy is unlikely until the government intervenes to increase ocean literacy initiatives. This initiative will begin with the root level, the national education policy. The curriculum must cover the entire spectrum from kindergarten to postgraduate students and people from all walks of life. Hence, this progressive change is only possible with formal and informal total public engagement. Finally, the Existential Meaning of Ocean Literacy for Maritime Bangladesh is to be understood as a talisman—a silver bullet of social emancipation and economic reformation for a flourishing Bangladesh—the future abode of our Gen Z and Gen A (Misbah, 2024).
- b. China has made large investments to bolster its naval power. By increasing ocean literacy amongst navy personnel as well as the public, the country is deploying cutting-edge aircraft carriers, submarines, and warships. Therefore, the PLA(Navy) has increased the size of both its surface and subsurface fleets.

China's capacity to project power beyond its immediate waters is improved by this expansion of literacy in oceanographic studies. Bangladesh Navy, with the help of BIMRAD & BNHOC can increase the research facilities for navy personnel. This can greatly increase the area of expertise of the personnel in operating more complex equipment.

- c. BIMRAD can further signify its studies through conducting seminars in schools, colleges and even universities. The organization, with the proper support from the Government, can create research policies for the public, increasing the ocean literacy rate amongst the mass.
- d. CNRD can play a more active role in this regard, increasing research on sub-surface combat systems, sonars and behavior of metals and other elements of the ship underwater. This can significantly bolster the shipbuilding frontier of the country, saving valuable foreign currency depending on our very own ocean literate engineers.

Conclusion

The PLA(Navy) has been doing wonders in military development sectors over the last few years. The envisioned modernization effort continuing from the last 30 years not only proves the initiatives for ocean literacy was fruitful, but also shows the level of commitment of the country and her forces have in bolstering their military power. Thus Bangladesh, one of China's friends in the IOR, has significant implications following China's ocean conscience frontier resurgence in development of her own navy.

Governments and military institutions around the world frequently publish research papers and carry out workshops, outlining the country's doctrines, policies, and strategic goals. One can evaluate the possible ramifications after learning the content. China's strategic framework for the future of the naval frontier is outlined in the ocean literacy strategies. Bangladesh can correlate the real development with the visualizations thanks to these policies. This improves our ability to analyze and, in turn, determine the implications for our beloved homeland

Bangladesh has a distinct diplomatic relationship with China. It would be practicable to demonstrate exemplary standards set by a friendly nation. Bangladesh Navy can follow the footsteps of PLA(Navy) effortlessly provided they follow the implications of ocean literacy on development of their navy. In

conclusion, as Bangladesh navigates its role in the Bay of Bengal and its relationships with China and other regional powers, a thorough and dynamic assessment of the aforementioned implications is essential. It requires a nuanced approach that balances national interests, regional cooperation, and strategic preparedness to safeguard Bangladesh's maritime and economic interests while contributing to the broader stability of the region. This ongoing assessment and adaptability to evolving circumstances will be crucial in addressing the changing maritime landscape in the Bay of Bengal and beyond.

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