CENTRAL FOUNDATION FOR INTERNATIONAL STRATEGIC STUDIES

CFISS STRATEGIC HIGHLIGHTS

Blue Economy of Bay of Bengal in the COVID-19 Era

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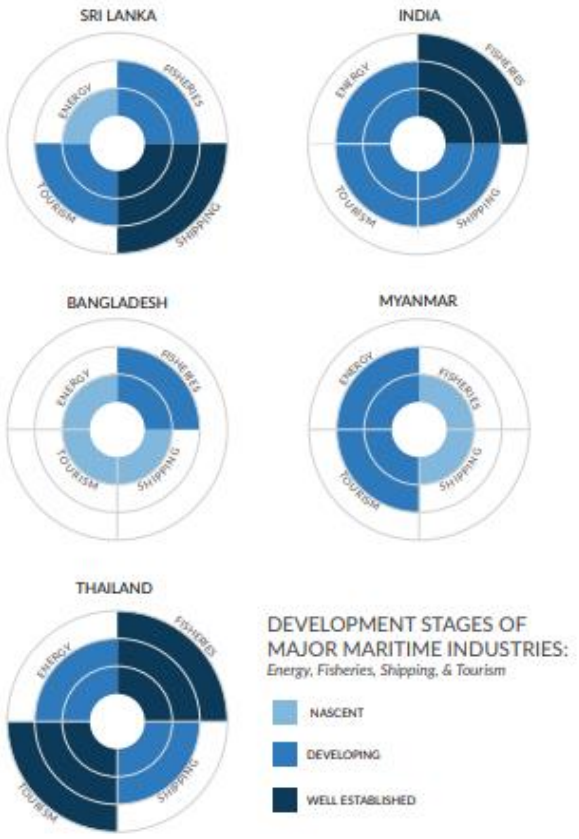
Introduction

Water, which is synonymous to life, can also take lives when there is not enough of it to sustain life and also when it is abundant but destructive in the form of a flood. As a country, Bangladesh depends on water for its survival more than others. Therefore, a need arises to understand the study of water from a security perspective. This paper gives a preview of the causes of water security challenges that Bangladesh is facing in the COVID-19 era. It will also analyze the security threats and discuss its impact on Bangladesh's blue economy. Finally, the paper offers a few recommendations that can help counter the mentioned threats. Specifically, the paper focuses on the progress that has been made across the Bay of Bengal, as well as the challenges that remain to maintain sustainable maritime security in the region amidst the pandemic.

Geographical Reality from a Bangladeshi Perspective

Bangladesh is situated in the deltaic part of South-East Asia. A huge volume of water enters the country from regions outside the nation and flows into the Bay of Bengal through three mighty rivers and their tributaries and distributaries, namely the Ganges, the Brahmaputra, and the Meghna drain. The Ganges, the Brahmaputra and the Meghna river systems drain a total catchment area of about 1.72 million sq km through Bangladesh into the Bay of Bengal. Out of this large catchment area, only 7% remains in Bangladesh. The other co-riparian countries are India, Nepal, Bhutan, and China.

The Bay of Bengal occupies the northeastern end of the Indian Ocean. It borders India to the west, Bangladesh to the north, Myanmar to the east, and Sri Lanka and Indonesia to the south. It is the largest bay in the world, covering over 839,000 square miles of the Indian Ocean. The bay is a valuable resource for China, Nepal, Thailand, and Bhutan, and their neighboring states. It is a vital transport hub that facilitates the South Asian Association for Regional Cooperation and the Association of Southeast Asian Nations member states. Below, on the left, the figure shows the comparison of major maritime industries among the neighboring countries of the Bay of Bengal.



Water Security in the South Asian Region

Water security in the Bay of Bengal is vital to maritime stability and governance in the South Asian region. States in the Bay of Bengal, especially Bangladesh are battling, to varying degrees, with issues of corruption, inadequate provision of public and private service, political and economic exclusion and the imminent environmental effects due to climate change. All these problems, if left unresolved, have the potential to adversely affect the relations between the coastal countries. This paper will describe these mechanisms in greater detail, focusing especially on how security issues of state officials are related to problems such as poor maritime law enforcement, slow development of the regional blue economy, pervasive illicit maritime economies, and even organized political violence in coastal areas. Given these kinds of maritime security threats as well as the health impact of the pandemic, government transparency is a must in this specific region. For Bangladesh to achieve greater penetration of social services to vulnerable coastal communities, it needs to polish its blue economy policies. As can be seen from the figure, Bangladesh is still lagging behind in terms of maritime industries. To address that, broad progress in these areas is a critical prerequisite for a lasting solution for the water security threats that rose after the COVID-19 outbreak.

Blue Economy of Bangladesh (Before and After COVID-19)

While countries like China, Japan, and the Philippines have been earning from the ocean economy for around 300 years, Bangladesh is relatively new in this industry. Marine fish, plants, and animals provide 15% of the protein that 43 million people

consume globally. About 30% of the world's gas and fuel demand is supplied from different seaside gas and oil fields. With time the global blue economy is growing more prominent. Using the Bay of Bengal, Bangladesh earns a significant amount of foreign currency.

According to the Ministry of Foreign Affairs, twenty-six maritime economic functions have been identified among the fishery, maritime trade and shipping, energy, tourism, coastal protection, maritime safety and surveillance for the development of the blue economy in Bangladesh. But the recent pandemic has halted many of the ongoing projects and thus the blue economy is facing a setback. The following summarizes this phenomena: how some of the maritime economic activities were underway to harness the benefits of the blue economy and how the COVID-19 outbreak has affected them.

a. Managing Freshwater Resources

The freshwater reservoir is a unique structure in an estuary to store a portion of freshwater that flows into the ocean during monsoon periods. The reservoir plays a crucial role in the livelihood of the rural and urban coastal populations. It has many advantages: there is no need for land acquisition, and no land and forest submergence is likely to happen in inland reservoirs. These were found to be a great success in countries like India, Netherlands, Singapore, China, South Korea, and Hong Kong, and are proven to be beneficial to the local population and their livelihoods. Bangladesh too had undertaken projects to create such reservoirs as it had the potential to create new freshwater

ecosystems. The creation of a reservoir also offered an opportunity to promote water sports and tourism by attracting tourists from around the world. The plan was to increase industrial, recreational, and freshwater fishery activities in the reservoir. But all infrastructural development has been put on hold due to the pandemic.

b. Livelihood Security in the Coastal Zones (Agricultural and Fisheries)

Combating a pandemic and providing treatment for affected people will likely increase the demand for water to be used for public health and human consumption. For example, the coastal agricultural system in Bangladesh faces a multitude of problems caused by the rise in sea-levels and lack of freshwater. More than 30% of the cultivable land and one-fourth of the population of Bangladesh lives in the coastal belt. A total of 366,650 ha of land is affected by salinity in Barisal and Patuakhali, where farmers usually only cultivate during winter and leave the land uncultivated during other seasons. Thus, biodiversity, crop yields, cropping intensity, production levels, and the quality of people's livelihoods are much lower than other parts of the country. At the same time, demand for food in the area is increasing with the steady increase in population. Therefore, to provide secure livelihood in the coastal zones, building resilience for this cultivation system is highly important. Bangladesh plans to develop a coastal agro-ecosystem stewardship strategy which will identify indicators for measuring climate resilient agriculture and develop a conceptual framework for profiling the spatial resilience across various agro-ecosystems for appropriate

location-specific policy interventions. It will cover all five dimensions, namely, social, economic, ecological, physical, and institutional; to mitigate the COVID-19's effect on coastal agriculture.

On the other hand, Bangladesh has a total of 166,000 sq. km. area of water including the Exclusive Economic Zone (EEZ) in the Bay of Bengal. According to the Department of Fisheries, there are about 255 trawlers, 67669 mechanized and non-mechanized boats engaged in fishing. In the year 2017-18 total fish production from Marine sources was 6.55 lac metric MT. There might be a decline in the production rate due to the pandemic as people's spending capacity has decreased and it is affecting the aggregate demand.

c. Environmental Sustainability

Climate vulnerability is a looming challenge that has the potential to increase maritime migration, degrade coastal welfare, and undermine the potential of the blue economy. Bangladesh is geographically exposed to a multitude of adverse impacts of climate change, due to its location in the tropics, in the delta of three of the world's biggest rivers, and its flat, low-lying deltaic topography.Predicted climate change will create barriers to future poverty reduction and reverse many of the important socio-economic gains made by the country. Sea level rise will affect the vast coastal area and low-lying river estuary zones of Bangladesh. The livelihoods of coastal communities and the natural environment of the coastal zones will be severely affected by the

anticipated sea-level rise. The mangrove forest of the Sundarbans is the most important ecosystem of the country, as the survival of 10 million people depends on it. People will be forced to move out of their homes, take refuge on dry lands, and change their way of earning. This will result in a complete change of their way of life. Recently, amidst the pandemic, there can be seen an increase in the intensity or frequency of many extreme events such as floods, land erosion, heat waves, salinity intrusion, etc. in Bangladesh. Such impacts pose additional risks for already vulnerable communities striving to combat poverty and achieve sustainable development.

Sea-level rise (SLR) will affect the vast coastal area and low-lying river estuary zones of Bangladesh. A recent study revealed that the SLR rate in Bangladesh's coastal areas during the last 22 years is many fold higher than the mean global SLR rate. A table explaining the SLR trend in Bangladesh is given below,

Station Name	Region	Trend(mm/year)
Hiron Point	Western	4.0
Char Changa	Central	6.0
Cox's Bazar	Eastern	7.8

Table 1: Trend of SLR along the coast of Bangladesh

Source: SAARC Meteorological Research Council (SMRC)

With the steady SLR rate shown in the table, the livelihoods of coastal communities and the natural environment of the coastal zones are expected to be severely affected. People will be forced to move out of their homes, take refuge on dry lands, and change their way of earning. This will result in a complete change of their way of life. Recently, amidst the pandemic, an increase in the intensity or frequency of many extreme events such as floods, land erosion, heat waves and salinity intrusion in Bangladesh can be observed. Such impacts pose additional risks for already vulnerable communities striving to combat poverty and achieve sustainable development. On June 9, this year, Bangladesh took over the reins of the "Climate Vulnerable Forum" (CVF) for the next two years, and said it would push for more ambitious climate action despite the global economic strain caused by COVID-19.

d. Renewable Energy Production

Recent survey researchers have discovered large natural gas and oil reserves at the Bay of Bengal. Researchers concur that the bay holds more oil reserves in the Asia-Pacific region than any other location. Both China and India have shown interest in exploration and oil mining in the Bay of Bengal. On the other hand, marine-based renewable energy such as wind, wave and tidal range and currents offers a significant potential to contribute to low-carbon energy supplies for regions with appropriate coastal features. The energy scenario has changed worldwide due to the pandemic. Amidst lockdown, most of the countries shifted their energy mix towards renewable energy. The low operating

costs of renewable energy, as well as a decline in demand for electricity, facilitated this shift. Like the other coastal countries, Bangladesh too can alleviate its energy deficiency with renewable energy sources. Coastal wind covers all activities related to the development and construction of wind parks in marine waters and the exploitation of wind energy by generating electricity offshore. Other renewable energy producing machinery, such as wave energy converters may help to reduce wave attack and generate electricity. The renewable marine energy sector can provide viable work opportunities; particularly for maritime communities that used to rely on fisheries. In the pandemic, there is a need for incentives such as grants, subsidies and tax credits to encourage private investments in the large, expensive infrastructure that is required to move from small prototypes to pilot plants.

e. Tourism

Globally, coastal tourism is the largest market segment and represents 5% of world GDP and contributes to 6-7% of total employment. In 150 countries, it is one of five top export earners and in 60 of those nations, it is the first. It is the main source of foreign exchange for one-half of Least Developed Countries (LDCs).Bangladesh had been trying to come up with a sustainable tourism plan so that it can create new jobs and reduce poverty. Tourism is human-resource intensive. One job in the core industry creates one and a half additional jobs in the tourism-related economy. But due to the current COVID-19 outbreak, many international flights are closed. The lockdowns have significantly reduced

people's movement domestically as well, which is vital for the development of this sector.

f. Arsenic Effect

The extensive and excessive occurrence of (As) in groundwater of the Bengal Aquifer System (BAS) in Bangladesh, mostly within 100 meters of the ground surface across the floodplains of the Ganges, Brahmaputra and Meghna Rivers, is resulting in a national public health catastrophe. Groundwater from shallow hand-pumped tube wells installed at a few tens of meters to 150 m belowground level (bgl) is used for domestic supply by 80% of the population. Most of these tube wells are privately owned and are operated throughout the year at a very low discharge rate. Approximately, 27% provide water exceeding the Bangladesh national limit of arsenic in drinking water, and 46% exceed the World Health Organization guideline value. Deeper groundwater throughout Bangladesh is almost uniformly free of excessive arsenic and therefore installation of deep wells for domestic water supply is a practical and economic mitigation response to the arsenic crisis. But the concern also includes the fact that deep tube wells are not available in every village households. Sometimes there is one for a village and in the pandemic situation it is tough to collect water from those places. This may play a role in rising cases of arsenicosis and the continuing exposure increases the risk of non-fatal outcomes and slow death.

g. Poor Sanitization

Bangladesh has made significant progress in reducing open defecation, from 34 percent in 1990 to just one percent of the national population in 2015. However, the current rate of improved sanitation is 61 percent, growing at only 1.1 percent annually. Still, the quality of sanitation coverage is an emerging area of concern, with more than 40 percent of all latrines classified as "unimproved." Drinking water access is widespread, but half of the drinking water consumed fails to meet water safety standards. In urban areas of Bangladesh, piped water supply reaches only about one-third of the population, and there is no systematic sewer disposal and treatment system. Only Dhaka, Bangladesh's capital city, has a sewer system, and it serves just 18 percent of the city. Planning and service delivery are often supply driven, and government agencies have overlapping functions and pay insufficient attention to operation and maintenance issues. Along with the contagious coronavirus, the aforementioned points are contributing to the spread of waterborne diseases which may result in causing disastrous impact on health and nutrition.

Policy Recommendations

While the outbreak of COVID-19 has affected all sectors of the economy, the aspects and scopes of its probable impacts on the water security and blue economy of Bangladesh largely remain unexplored. It might seem like a less significant aspect of the national economic and strategic issue during the time of the pandemic. However, its long term effects might wipe out the successes Bangladesh has achieved so far in

this strategically and economically important sector. Therefore, an inter-ministerial appraisal of the current situation has to be immediately formulated, which will consequently produce some policy level modifications and revitalization. From the very individual level concerning the livelihoods of the people dependent on the blue economy to the strategic level of national significance have to be analyzed regarding the current interaction of the concerned stakeholders during this pandemic. The halted projects concerning national and international stakeholders have to be reappraised and tailored following the current situation and future trajectory. Moreover, the issue of climate change has to be considered as it is often negated even during the normal course of affairs. Bangladesh has successfully managed to mitigate the adversarial effects of the cyclone *Amphan* during the very early and risky stages of the pandemic. Bangladesh has the opportunity of initiating a regional forum on disaster management using its knowledge and experience. While the country is almost poised to adjust to changing dynamics of the 'new normal', the tourism industry will also begin to reposition and revitalize itself. However, there has to be a coordinated effort to ensure adequate health safety measurement across all stakeholders involved in this emerging industry. Bangladesh has to closely monitor how the blue economy of other coastal neighbors is adjusting during the pandemic and formulate a credible strategy to revitalize its economy using the unexplored resources lying under the Bay of Bengal.

Blue Economy may be stimulated by putting the right 'enablers' in place which are the prerequisites to create an environment open to innovation and growth. This includes research and education but also spatial planning. Additionally, Bangladesh need to

remove barriers to create better conditions for innovation and maritime economy to develop. The strategic foresight of extracting opportunities amid difficult times, even a pandemic, will determine the strategic adaptability of a growing economy like Bangladesh. Therefore, every aspect of the economy and the country's strategic stances has to be reappraised in regard to the pandemic. This paper contributes to providing a framework of this much-needed appraisal and a set of policy-oriented recommendations With a view to improving food security, eradicating poverty and delivering shared prosperity, it suggests that global leaders, ocean practitioners, scientists, and representatives from government, business, civil society, national and international organizations need to come together to explore action-oriented partnerships, governance arrangements, investment frameworks and new financing vehicles to turn the tide not only on the health of Oceans but also how the resources of the sea could be used for economic emancipation in this pandemic situation. Bangladesh has immense potential of extracting the most out of its maritime resources and devising a contemporary and regionally inclusive maritime strategy. It should maintain a policy level vigilance to tailor its priorities and future trajectories in this regard. While the initial steps it has taken so far will face the test of challenging times, a coordinated policy reshuffle will pave the way to its accomplishing vital maturity in the strategic theatre of the Bay of Bengal. The COVID-19 pandemic will exacerbate existing economic and potentially other ecological challenges as well. It is therefore critical to use new tools such as strategic foresight to predict such challenges and seek solutions. Harnessing the resources and ensuring water security is crucial for Bangladesh’s overall economic development. Furthermore, there is also

a need for greater cooperation with neighboring countries in order to formulate an effective regional approach towards addressing water security challenges.

Conclusion

The strategic foresight of extracting opportunities amid difficult times, even a pandemic, will determine the strategic adaptability of a growing economy like Bangladesh. Therefore, every aspect of the economy and the country's strategic stances have to be reappraised in regards to the pandemic. This paper contributes to providing a framework of this much-needed appraisal and a set of policy-oriented recommendations. Bangladesh has immense potential of extracting the most out of its maritime resources and devising a contemporary and regionally inclusive maritime strategy. It should maintain a policy level vigilance to tailor its priorities and future trajectories in this regard. While the initial steps it has taken so far will face the test of challenging times, a coordinated policy reshuffle will pave the way to its accomplishing vital maturity in the strategic theatre of the Bay of Bengal.

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