

## **Analysis of the Sustainable Management of Marine Resources to Achieve Sustainable Development Goals: In the Context of Bangladesh**

**Tanima Howlader\***

### **Abstract**

*Bangladesh's coastal regions have very distinctive geomorphological features. Therefore, the fulfillment of the nation's development goals depends more and more on the coastal and marine environment. To ensure sustainable development the environment has been given the top-most priority. This study addresses possibilities for conservation, management, and the sustainability of marine resources in the context of Bangladesh. The study intends to accomplish two objectives. The first one is to discuss the current condition of the Bangladesh's fisheries and its prospects for the future. Secondly, to evaluate the standpoint of Bangladesh to ensure the sustainability of 'life below water'. The information in this research primarily comes from secondary sources. Besides, the gathered information has been examined by using various interpretive as well as analytical methods. The study focuses on the vast coastal area of Bangladesh. The results of this study have significant policy implications for how maritime resource management and environmental protection are currently managed. The findings of the research also give a broad assumption regarding the ocean governance and monetary value of coastal and marine resources. Strategic planning is vital to achieving sustainable development in Bangladesh, and it should emphasize on promising fields in the maritime sector.*

**Keywords:** Exclusive Economic Zone (EEZ), ocean governance, blue economy, sustainability.

### **Introduction**

The oceans act as a source of global and national economic growth, and provides us food security. Approximately, 139.5 million square miles of the earth is covered by oceans. Consequently, any kind of development must take water into consideration to ensure sustainability. In total, 121,110 square kilometres of Bangladesh's Exclusive Economic Zone are

---

\* Department of Public Administration, University of Dhaka, Email: [tanimakoyel@gmail.com](mailto:tanimakoyel@gmail.com)

covered with a diverse ecosystem. Additionally, Bangladesh has owned 1118,813 sq km of maritime territory since 2014 (Islama & Shamsuddohab, 2018). There is now a greater realization that the planet's bodies of water need even more in-depth consideration as well as mutual cooperation during and following the Rio +20 procedure. Nearly 90% of global trade and business currently normally occurs on the ocean. The large proportion of the vitally required energy sources, such as oil, gasoline, and petroleum, are derived from and transmitted through the oceans. The sea is the source of endless mineral as well as chemical resources. Over three billion people worldwide rely on the resources provided by marine and coastal species for their way of life. The marine fishery market is significant for the nation's nutrition and food stability since it offers multitudes of disadvantaged coastal residents a means of subsistence. To ensure economic development, different countries are currently attempting to utilize and analyze the coastal ecosystems. Conversely, maritime actions have started to negatively affect the marine ecosystem, which is extremely concerning. Over the past 20 years, scientists have frequently issued warnings concerning frequency of coral bleaching in oceans and the expanding extent of global warming.

Increasing blue prosperity and reaching sustainable development goals are recent priorities for the Government of Bangladesh (GoB). The government has started discussions with the actors to apply practical innovations and strategies to fully determine the possibilities of the marine environment. The Blue Economy has become popular issue following the maritime success over Myanmar and India. Thus, it emerged as a new concept in Bangladesh. In 2016, the worth of Blue Economy was 1.5 trillion USD (OECD, 2016). Focusing on aquatic ecological sustainability and fair utilization is essential for the sustainability of blue economy. Various stakeholders are indispensable to the blue economy's advancement (Howard, 2018). The Government has been conducting numerous events and dialogues to ensure the growth of blue economy. With a current projected asset value of approximately 24 trillion USD and a yearly USD 2.5 trillion value, the seas would persist to provide the coastal governments with important economic advantages (Iqbal, n.d).

### **Marine Resources and Sustainable Development Goal**

Sustainable Development Goals must take the ocean economy into consideration. The three components of sustainable development are development of social aspect, ensuring economic growth and environmental sustainability. The success of logical and appropriate protection and retention of marine life is sustainable resource usage based on the concepts of sustainable development.

The targets and indicators for achieving goal 14 of SDG (United nations, n.d.):

- minimizing pollution of marine, particularly those caused by human activities on land;
- conserving and maintaining coastal and marine habitats sustainably;
- preventing the effects of acidification of the oceans;
- fish harvesting must be controlled to prevent overfishing;
- restoring fish supplies to levels that are environmentally safe;
- assuring the complete application of current regional and global oceanic and maritime regulations;
- eradication of damaging fishing methods and Illegal, Unreported or Unregulated (IUU) fishing;
- reduction of incentives that fuel overfishing and excess supply;
- allowing local artisans access to maritime potential markets;
- the creation of guidelines for profitability and accessibility on maritime bio-prospecting;
- funding for research and innovation;
- facilities degree of investment towards the eco-friendly coastline and maritime tourism

### **Methodology**

The information in this research paper comes primarily from secondary sources. Data was gathered from research studies and published works that have been published in a variety of formats. The information gathered has been examined using various analytical and conceptual techniques.

### **Bangladesh on sustainable marine resources**

As Taking into account the challenges of sustainable delta governance, Bangladesh Delta Plan 2100 was prepared by the government for the following century. Fifteen key aspects of maritime and coastal pollution were highlighted by Bangladesh's National Program of Action (NPA) for Safeguarding the coastal and aquatic surroundings from land-based operations in 2005 (Alam & al, 2021). Among the key forces behind sustainable development has been outlined as the Blue Economy by Vision 2041, a long-term vision agenda for a prosperous Bangladesh. With the passage of the Bangladesh Maritime Zones Act 2019, extensive marine resources of the Bay of Bengal can be explored

and exploited, as well as the country's right over the enlarged maritime territory can be exercised. The new act has been introduced in place of the Territorial Waters and Maritime Zones Act 1974.

Moreover, the act specifies the size and contour of the Exclusive Economic Zone. The act gives authority to the Government of Bangladesh (GoB) to issue regulations authorizing individuals or groups to discover environmental resources or to restore or try to locate any such elements under such stipulations and restrictions as the government may establish. Furthermore, to ensure better integration of Blue Economy operations of the various governmental and non-governmental maritime actors across the country, the government has established a separate Blue Economy Cell(BEC). The National Environmental Policy Act (NEP) was the basis for the National Environmental Management Action Plan (NEMAP) of 1995. In addition, the BEC act 1995 does not incorporate the word "marine pollution" but outlines some remedies for ecological injury. This is particularly related to marine pollution because it lowers the condition of the ecological system. Before the BEC act 1995 was passed, there were no Environmental Impact Assessment (EIA) to be imposed by any laws or guidelines in place in Bangladesh.

Department of Fisheries (DoF) implemented the Community-based Climate Resistant Aquaculture Development Project in Bangladesh with Food and Agriculture Organization (FAO) funding to alleviate the negative effects of climate change. The Climate Smart Agriculture and Water Management Project was another project funded by the World Bank in the fiscal year 2021-2022 (DoF, National fish week 2022, 2022).

## **Result and discussions**

### **The fishery resource of Bangladesh and its future**

Fisheries is one of the most important sectors of Bangladesh's exports. The fisheries and livestock ministry performs functions related to fisheries. The Department of Fisheries is governed by the Ministry of Fisheries and Livestock. The organization focuses on developing and executing programs and projects that will allow for the sustainable utilization of fishery resources in order to retain the food supply. Moreover, the e-Extension program is used to spread advanced aquaculture innovations. Among the three most important contributing sectors of fisheries, only marine capture contributes 15.31% of the total (Annual Report 2021-22, 2022).

There are approximately 475 marine fish varieties as well as about 12 exotic species are being raised in Bangladesh. Major importing countries are 12 exotic species are being cultured in the country. A total of 98% of

fish items are exported to Japan, Europe, and the United States of America and the rest of the are exported to Southeast Asia and the Middle East. In the fiscal year 2020-2021, the total fish production was 46.21 lac Metric Tons (Annual Report 2021-22, 2022).

**Table 1:** *The marine fisheries resources of Bangladesh (2020-21) Source (DoF, National fish week 2022, 2022)*

Marine fisheries	681239 metric tons
Total fisheries collected by trawlers	119121 metric tons
Total fisheries collected by engine driven boats	562118 metric tons
Total exported marine fisheries and products	76591.69 metric tons
Total earnings by export	4088.96 crore taka
Fish processing plants	107
Total contribution in the export	1.24%
Total contribution in Gross Domestic Products (2020-21 fiscal year)	3.57%
Annual demand of fish	45.52 lakh metric tons

### **Ensuring sustainability of Life below Water**

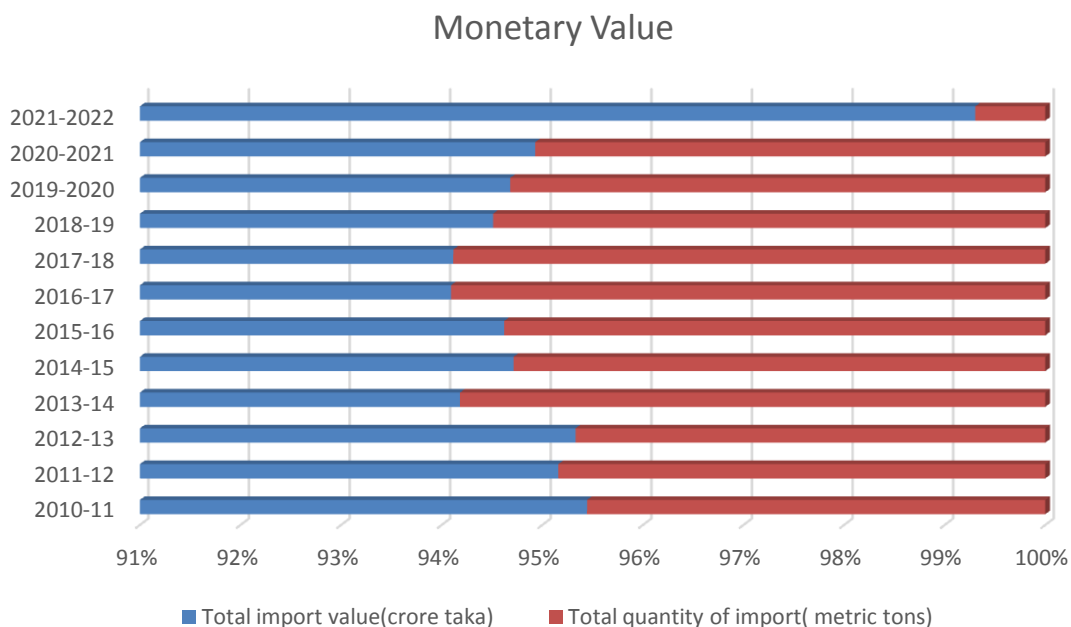
Bangladesh has tremendous aquaculture growth potential. Marine aquaculture varieties have a strong potential for growth and an export growth value. The Swatch of No Ground, which covers 1738 km<sup>2</sup>, has been designated by the government as the nation's first marine protected area to preserve the dolphins, cetaceans, sharks and other marine resources on a long-term basis that live in Bangladesh's marine waters. The government identified a number of different four locations in the coastal area as Ecologically Critical Areas (ECA) in order to conserve the environment sustainably and regulate and reduce pollution. The ECA Rules, which serve as a legal foundation for a more definite and robust approach to monitoring deviant behaviour within ECAs, were formally authorized by the government in 2016. The Department of Fisheries (DoF) has issued a 65-day ban on trawl fishing and shrimp production in the Bay of Bengal for open waters around May 20 to July 23 (Islama & Shamsuddohab, 2018).

A lot of aquatic creatures are suffering due to plastic contamination in the ocean. When used plastic is dumped into the environment, it does not significantly decompose naturally. In a list of the top 20 nations that

produce plastic waste that is plagued with problems like badly managed, there Bangladesh was ranked number 10 (Chowdhury & al, 2021).

Though plastic had been banned in Bangladesh in 2002, plastic carrier bags and other items are still frequently used throughout Bangladesh since the ban was not effectively implemented. Numerous marine species are being harmed by plastic waste. Shrimp commercially exported for the seafood industry was also found to contain 33 and 39 microplastic substances (Hossain & al, 2020). In coastal areas 0.43 kilogram of waste for each individual per day is generated; 8% of the total waste is plastic. A total of 0.12-0.31 million metric tons of plastic maritime debris were discharged annually from Bangladeshi coastal regions (Jamback & al, 2015).

### Monetary value



**Figure 1:** Total earnings from fisheries of last 12 years Source: Ministry of fisheries and livestock

### Ocean governance

The integrated management of the world's oceans and its resources is referred to as ocean governance. This goal is to protect the environment of the oceans, ensure the sustainable utilisation of marine resources, and safeguard the biological variety of marine. Recent times have seen a rise in the importance of ocean governance in international affairs. There are three elements in the broad ocean governance: laws, authorities, and implementation mechanisms.

Government of Bangladesh has implemented various acts and rules to protect the coastal and marine fisheries resources:

The Marine Fisheries Ordinance 1983, The Marine Fisheries Rules 1983, The Environmental Conservation Act 1995, The Territorial Waters & Maritime Zones Act 1974, Territorial Waters and Maritime Zones Rules 1977, Bangladesh Coastal Zone Policy 2005 by Ministry of Water Resources, Ports act 1908 , Territorial Waters and Maritime Zones (Amendment) Act 2021, Marine Fisheries Act 2020, National Fisheries Policy 1998, The Explosives Act 1884, The Marine and coastal water Conservation Act 2004 (Not enacted yet), The Port Authority Act 1976 (Alam & al, 2021).

In the context of Bangladesh, the goal of the ocean policy needs to focus on guaranteeing a healthy, sustainable ocean that is properly utilized and regulated for the benefit of all parties to accomplish overall development.

## **Conclusion**

Bangladesh has a tremendous opportunity to diversify its economy using marine resources by maintaining sustainable stability. As a maritime nation, Bangladesh got access to a significant chunk of the ocean, which also contribute significantly to the growth of the national economy, prosperity and the well-being of the following generations. To achieve a prosperous blue economy, Bangladesh must improve its understanding of oceanography, do more investment in research and study of marine, transfer technologies in the marine domain, encourage innovation, and do a collaboration with the international sector. Bangladesh may also consider adopting an integrated strategy. Bangladesh must also ensure that it complies with international law and conventions and uses ocean resources efficiently and sustainably. Sustainable ecosystem management can be achieved through effective marine environment planning. Besides, the competence of the economic stakeholders will have a significant impact on the future growth prospects of Bangladesh's Blue Economy plan. Nevertheless, we must consider the growing dangers of rising sea levels, coastal flooding, fish resource scarcity, pollution, natural catastrophes, etc. There are many obstacles in executing the Blue Economy, but there exists a broad potential to significantly advance the growth and proper implementation of measures can successfully lead to the achievement of sustainable development.

## Reference

- Alam, M. W., & al, e. (2021). Protecting the marine and coastal water from land-based sources of pollution in the northern Bay of Bengal: A legal analysis for implementing a national comprehensive act. *Environmental challenges*.
- (2022). *Annual Report 2021-22*. Ministry of Fisheries and Livestock. Retrieved December 6, 2022
- Chowdhury, G. W., & al, e. (2021). Plastic pollution in aquatic systems in Bangladesh: A review of current knowledge. *Science of The Total Environment*, 761. Retrieved November 22, 2022
- DoF. (2022). *Natioanl fish week 2022 Compendium (In Bengali)*. Department of Fisheries, Ministry of Fisheries and Livestock. Retrieved November 17, 2022, from <http://www.fisheries.gov.bd/site/page/cc02ff66-b470-4b76-aadd-25c7f18a09a7/Sonkolon>
- DoF. (2022). *National fish week 2022*. Department of Fisheries, Ministry of Fisheries and livestock. Retrieved November 19, 2022, from [http://fisheries.portal.gov.bd/sites/default/files/files/fisheries.portal.gov.bd/publications/85db2215\\_1dde\\_4108\\_8b7e\\_1fba761bb28f/2022-07-25-06-47-df3096627f187d56212530b671113147.PDF](http://fisheries.portal.gov.bd/sites/default/files/files/fisheries.portal.gov.bd/publications/85db2215_1dde_4108_8b7e_1fba761bb28f/2022-07-25-06-47-df3096627f187d56212530b671113147.PDF)
- Hossain, M. S., & al, e. (2020). Microplastic contamination in Penaeid shrimp from the Northern Bay of Bengal. *Chemosphere*, 238. Retrieved November 22, 2022
- Howard, B. C. (2018). Blue growth: stakeholder perspective. *Marine policy*, 87, 375-377.
- Iqbal, R. A. (n.d). Ocean Governance for Sustainable Maritime Development in the Bay of Bengal. *BMJ ISSN 2519-5972*, 4(1), 13-20.
- Islama, M. M., & Shamsuddohab, M. (2018). Coastal and Marine Conservation Strategy for Bangladesh in the Context of Achieving Blue Growth and Sustainable Development Goals (SDGs). *Acta scientific agriculture*, 2(12), 170-182. Retrieved november 12, 2022, from <https://actascientific.com/ASAG/pdf/ASAG-02-0280.pdf>
- Jamback, J. R., & al, e. (2015). Plastic waste inputs from land into the ocean. *Science*, 347, 3-6. Retrieved November 22, 2022
- OECD. (2016). *The ocean economy in 2030*. paris: OECd publishing.
- United nations. (n.d). Retrieved November 17, 2022, from United Nations: <https://bangladesh.un.org/en/sdgs/14>