

## Emerging Blue Economy for Bangladesh: Opportunities, Challenges and Way Forward

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### Abstract

*Bangladesh's economy had been largely dependent on Ready Made Garment (RMG). Without product diversification, Bangladesh is likely face difficulties to keep up the GDP growth and to achieve vision 2041. Additionally, depletion of land-based resources made it mandatory for the nation to turn their attention towards the south for sustainable economic development. Single source dependency threatened national development, hence the call for the exploration of alternative resource arose. The primary objective of this study is to seek ways by which Bangladesh can more efficiently utilize the ocean resources in a sustainable way by examining the associated challenges and highlighting the opportunities therein. Study adopted Document analysis method. The research findings showed a huge vista for blue economy in Bangladesh like Shipping, Sea ports, Maritime education & research etc. The analysis indicated that, Bangladesh has several challenges including absence of governance, pollution, lack of security in the maritime area, lack of maritime domain awareness, lack of coordination, weak educational base etc. Strategies were proffered which include creation of maritime domain awareness, capacity building of responsible agencies, and effective surveillance over EEZ area. The paper concluded that Bangladesh has potentials to reap benefits from the Blue Economy. However, it requires strong political willingness and commitments which already have been demonstrated in Bangladesh.*

**Keywords:** Blue Economy, Marine Resources, Ocean governance, Marine Spatial Planning.

### Introduction

In this era of globalization, no country can only depend on its land resources. So, sourcing of alternative resources is obligatory especially for the developing country like Bangladesh. More over burdened with huge population, Bangladesh needs to focus for a new venue that can be the final destination for the livelihood of our future

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generation. Experts believe that the oceans can be considered as this source which has unfailing stock of food, minerals, medicine and energy.

Blue Economy is a sustainable economic concept, which can unveil a wide horizon for the economic growth of Bangladesh. Gunter Pauli, through his book “The Blue Economy: 10 years, 100 innovations, 100 million jobs” brought the Blue Economy concept into prominence. The “Blue economy” concept seeks to promote economic growth, social inclusion, and preservation or improvement of livelihoods while at the same time ensuring environmental sustainability.

Countries all over the world are increasingly recognizing the importance of the Blue Economy. Some of the world’s fastest growing economies such as China, India, Australia and South Africa are already actively pursuing Blue Economy, while supra-national authorities like European Union (EU) also has their own Blue Economy strategy. Europe’s vast territory gives it access to several sea and oceans and its maritime sector employs over 5.4 million jobs generating almost US\$ 569.8 billion a year.

The Government of China emphasizes on marine resources and the oceans to supplement its land resources. In March 2016, the Chinese government announced the 13th Five-Year Plan (2016-2020) which aims to achieve nearly 100 targets in the five-year period. These initiatives will help China to promote the growth of Blue Economy.

The Government of Bangladesh (GoB) has stated its interest to pursue the Blue Economy concept as part of country’s growth strategy. Visionary Prime Minister sheikh Hasina is very much thoughtful about Blue Economy which has been reflected in country’s 7th FYP calls.

However Bangladesh could not make successful progress on Blue Economy for which one of the reasons is her earlier practices which was only focused on resource extraction and financial benefits, leaving the concept of wider ocean resilience and environmental sustainability. Although it gives benefit in the short term, but in turn has resulted in excessive use, causing in depletion of resources and in some cases irreversible change of valuable aquatic resources. Also due to lack of technology and implementation of management measures, many opportunities remained untapped. As such her growth from ocean resources has not yet been in line with emerging Blue Economy concept. She lacks in Ocean governance, adequate law enforcement, security in the bay, maritime domain awareness, adequate funding, proper technology and monitoring to cope up with emerging Blue Economy.

The objective of this study is to identify the impediments for Blue economy development in Bangladesh. It is expected that the outcome would also include

strategies to mitigate identified impediments to provide some fruitful recommendation for successful implementation of Blue Economy in Bangladesh. Also, to ensure that development of the blue economy does not result in unsustainable and damaging practices for the benefit of short term economic gains over longer terms sustainable economic and social benefits.

### **Review of the Existing Literature**

(Hossain M.S, 2001) states that the coastal and marine environment become increasingly important in fulfilling social and economic development and strategic objectives of the country. Approx. 22% of total population live along the coastal zone and hence high level of natural resources is being exploited causing degradation of the environment. In his study, although few traditional blue economy sectors like fisheries, aquaculture, and tourism were discussed, but his research mainly focused on environmental degradation due pollution effect caused by the human activity. Thus, his work did not explore full potentials of Blue economy including emerging sectors like Ship building, Ship recycling, Maritime education and research etc.

(Spalding M.J. 2016) stated enormous ways how ocean contributes to human life as well as regulating our climate and the weather. In this article he described few traditional ocean economy sectors (i.e., Offshore oil and gas, Fishing, Aquaculture, Shipping etc.) as well as new sectors (like Renewable energy, Blue biotechnology, Blue Carbon etc.) and their potentials. Also indicated the need for coastal and marine spatial planning exercises to ensure activity of one sector does not overlap with another. However, author did not mention the way out for overcoming the challenges for most of the sectors. Also, his study was on international perspective which did not exactly focus the scenario of the developing countries like Bangladesh.

(Deb A.K, 1998) in his article, described that shrimp culture in the coastal areas of Bangladesh rapidly expanded in the last two decades in an unplanned and unregulated way which has impact on both environmental and socio-economic issues. The rapid expansion of shrimp culture farms has been mostly at the expense of large-scale destruction of valuable mangroves. Thus, to gain benefit from one sector, it results destructions in so many others. He concluded that we must find a path of synergy between aquaculture development and coastal environment, or the expected blue revolution will turn fake. Although his study was on Bangladesh perspective, but his research focused only on aquaculture especially on its negative impact on environment. Thus the author did not venture to explore the other Blue Economy sectors with potential prospects and challenges for the same.

### Present state of Blue Economy in Bangladesh

According to a World Bank report, the gross value added to Bangladesh in 2014-15 from ocean economy was US\$ 6,192.98 million which was around 3.33 per cent of the Bangladesh economy. Bangladesh's current ocean economy is comprised (Figure 1) largely of tourism and recreation (25 percent), marine capture fisheries and aqua-culture (22 percent), transport (22 percent), and offshore gas and oil extraction (19 percent), Ship & Boat -building/breaking (9 percent), Minerals (3 percent).

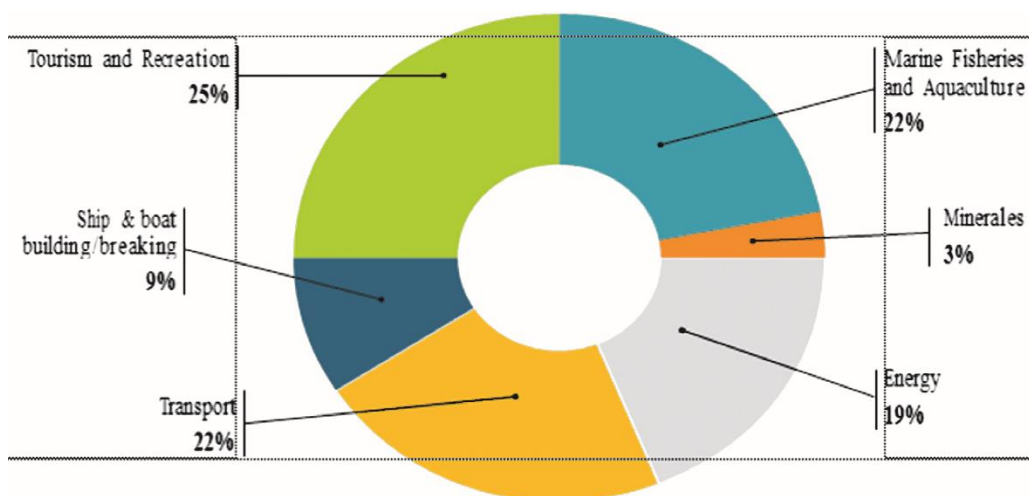


Figure 1: Pie chart of Ocean Economy in Bangladesh, Percent of Gross Value Added (2014-15)

Source: World Bank Report ‘Towards a Blue Economy: A Pathway for sustainable growth in Bangladesh’. 2018

Employment data in the Bangladesh ocean economy are limited. Estimates suggest more than 17 million people are employed in fisheries and aquaculture (full and part-time, including inland production), of which some 1.35 million works in marine capture fisheries and aquaculture (Meisner et al. 2016). An estimated 6 million more people are employed in sea salt production and ship breaking. Other reports estimate that 30 million people dependent on the ocean economy in Bangladesh (Failler et al. 2017), or almost 20 percent of the total population in 2015 (UN DESA Population Division 2017).

### Opportunities of Blue Economy

In Bangladesh a total of 26 productive Blue Economy sectors have been identified. Figure 2 below shows the major opportunities of Blue Economy Development in Bangladesh.



Source: M. Gulam Hussain, Pierre Failler, A. Al Karim and M. Khurshed Alam (2019), ‘Major Opportunities of Blue Economy Development in Bangladesh’. (Site visited on 24-Apr’20).

A few of the prosperous sectors has been discussed below:

**1) Maritime Trade, Shipping and Transport:**

Shipping is the driving force of the global economy. It is safe, secure, and efficient and most environmentally sound means of bulk transportation. South Asian countries are well linked with the global world and their economies growing rapidly. The geographical location of Bangladesh offers an opportunity to act as a bridge between South Asia and Southeast Asia. This strategically rewarding location has huge potential to turn into a hub of connectivity for South Asia and Southeast Asia (Figure 3).

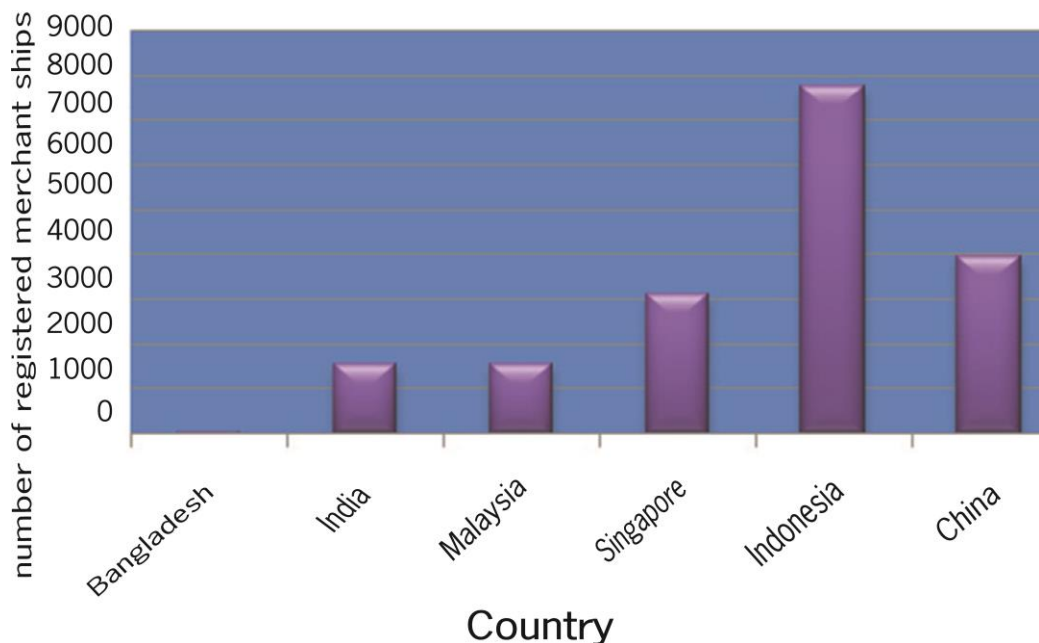


Figure 3: Geographic location of Bangladesh-connectivity

Source: Based on the data from Bangladesh Bank

Maritime transport is very important for Bangladesh as its social-economic prospects largely depend on their ability to connect to the rest of the world and access international markets. This is the area where Bangladesh can play an important role and can get distinct benefits offered by the blue ocean. More than 90% of the Bangladesh’s exterior freight trade is sea borne. Presently Bangladesh’s value of export and import stands at about USD 67 billion (2013-14) and are supported by 2500 foreign ships visiting our ports. Against our import and export value, during last ten years, importers, exporters and buyers has paid USD 95 billion as freight and related charges to shipping companies, airlines and freight operators to carry goods in and out of Bangladesh. Except for some limited trade with India and Myanmar, the bulk of our international trade is sea-borne.

Unfortunately, there are only 71 registered (2021) Bangladeshi merchant ships which are not sufficient to carry even a fraction of our cargo. From Figure 4, Bangladesh has the least number of registered ocean-going ships which indicates the poorest fleet of the country compared to that of other countries like Malaysia, India, Singapore and China.



*Figure 4: Comparison of Number of Registered ships*

Source: Mercantile Marine Department, Bangladesh.

## **2. Seaports**

In today's globalized world, ports play a strategic role for the national trade and economy. The seaports that we have are our great assets. We must develop them and utilize them to the maximum extent.

The projected shipping growth in Bangladesh suggest that by 2043 Bangladesh will handle more than 124 million tonnes of cargo. In this circumstances the expansion of port facilities and to increase the number of national fleets is time demanding. Considering the facts Chittagong port alone has taken various mega initiatives along the coast to expand the port area in different strategic locations with sector wise like Oil & Gas, Bay terminal, Coal based mega port, Patenga container terminal, Laldia container terminal etc. Experts' opinion is that, Ctg port, can become a regional economic hub, if the facilities being modernized/upgraded, including capacity in all the sectors i.e. the requirements for a standard international sea port. Bangladesh must enhance the existing handling capacities of ports and develop deep seaports with more capabilities. Establishment of seaports can significantly reduce export lead times and earn steady flow of revenue for the country.

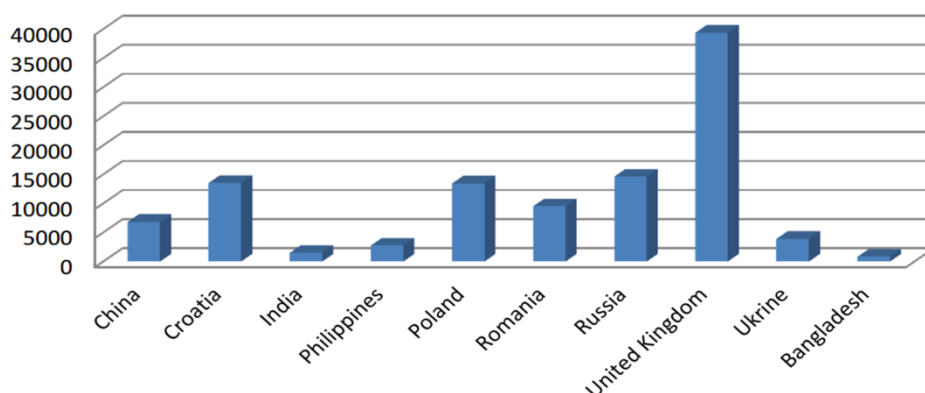
In addition, there are other opportunities knocking at the door of Chittagong port. It is strategically located close to Myanmar, China, and India. Also landlocked neighbor's Nepal and Bhutan and the emerging economic giant India also wants access to Chittagong port to send goods to its seven north-eastern states which is not only cost-effective but also less time consuming. Thus, our country can earn huge amount of foreign currency by leasing its port facilities to other countries.

At present, around 600 ships arrive in Bangladesh per year and anchor in the ports of Ctg and Mongla. With this new opening of Blue Economy, obviously, a huge number of ships will anchor in the ports of Bangladesh and earning from this sector is likely to increase tremendously. There will be many shipping agencies to operate and activate with freight forwarding resulting in huge growth in our banking and insurance sector as well.

## **3. Maritime Education and Research**

The multi-disciplinary sectors under the blue economy require highly skilled technical manpower and motivated group of research scientists. Hence Bangladesh needs to prepare skillful human resources for maritime sectors on i) Maritime security; ii) Maritime pollution; iii) Preservation and protection of marine living and non-living resources; iv) Oceanographic and marine sciences research and transfer of technology; v) Protecting marine environment; vi) Global climate change, etc.

Well trained, skilled and educated human resources are the driving force of the development of an economy.



*Figure 5: GDP per capita of Bangladesh and other seafarer supplying countries in 2013*

Source: World Bank (2013)

Figure 5 compares the GDP per capita in USD of the major seafarers supplying countries with that of Bangladesh. Bangladeshi Mariner’s contribution USD 235 million per year which was duly commended at 2<sup>nd</sup> Meeting of Parliamentary Committee on Shipping Ministry held on 18 March 2019 at National Parliament. This can be accelerated if we can avail to fill up the shortage by supplying well trained officers and ratings in the world market. Hence promoting this sector,

Bangladesh can play a great role and could be a major seafarer supplying country in the future and thus can grab the seafaring market which will increase the GDP rate of the country like others.

### **Challenges Militating against Blue Economy**

The challenges militating against Blue Economy in Bangladesh include Effective Legal framework for ocean governance, Security threat in maritime area, Mismanagement and destructive fishing activities, Pollution in the Bay of Bengal etc.

#### **1. Effective Legal Framework for Ocean governance**

Although there are a few international conventions and regional agreements (like UNCLOS, BWM, MARPOL, UNEP Regional Seas Convention etc.) to which Bangladesh is signatory (Rahman & Mahmud, 2018), but they are not yet harmonized with national regulation. In fact, there is no national regulation to address and ensure the compliance with international law (Patil et al., 2018).



For maritime and ocean governance, Bangladesh government earlier adopted various legislation and regulatory framework like Coastal Zone Policy-2005, Coastal Development Strategy-2006, Port Act 2006, Marine Fisheries Ordinance and Rules 1983, National Energy Policy-2004, etc (Shamsuzzaman & Islam, 2018). But most of them were enacted a long time back. So, in the context of rapid changes in social, economic, cultural and environmental circumstances, the legal framework now appears insufficient for tackling new challenges (Islam & Wahab, 2005).

Hence the key challenge is to adopt new policy or to update the existing policy as required for ensuring ocean governance.

## **2. Security Threat in Maritime Area**

Bangladesh being at a strategic location of the Bay of Bengal, encounters a number of challenges to ensure Security in her sea area.

Although the country has a competent national security apparatus, i.e., the Navy and Coast guard, maritime security in the Bay of Bengal demands more security. At present *Bangladesh Navy & Coast guard* is mostly limited to coastal patrolling. As a result, many of the threats are not being handled properly. Hence Capacity building is a challenge at this stage.

Monitoring the EEZ area is essential to ensure the security of the Bay to protect her resources from international piracy and IUU fishing etc. or to monitor marine incident/accidents at sea. Hence it is required to bring whole area under a proper surveillance. But the huge expenses to ensure surveillance over the Bay is a challenge.

The vast ocean area is surrounded by socially and economically backward coastal population who can be de-motivated any time with very negligible economic wellbeing. They are mostly engaged in fishing. Most of the fishermen are illiterate and do not have any knowledge of environmental sustainability and the security related policy of ocean space. Also, our study curriculum is such that from the beginning of our school, we know that we are a riverine country, without considering the ocean and its resources and so having less knowledge of ocean. So, creating awareness of our Maritime domain is a key challenge.

## **3. Mismanagement and destructive fishing activities**

Absence of linkage between the responsible agencies, lack of capacity of physical assets & manpower are the key challenge for this sector. There is no practical linkage between DoF and Coast Guard for use of their manpower and logistics for enforcement of regulatory measures in the coastal waters. The ability of DoF is limited due to lack of physical assets such as patrol boats and a chronic shortage of trained manpower.

Marine wing of DoF has a staff strength of 183 which is only 4.2 per cent of the total (4363) strength.

Assessing the fish stock remains as another management challenge. In Bangladesh till today, marine fish stocks are being assessed and based on fragmented and less reliable catch data from commercial vessels which is unable to give true picture of the fish stock. This situation obviously leads the sector towards over exploitation.

Among all fishing methods, bottom trawling is the most destructive fishing method which is common in this area. Bottom trawling is unselective and severely damaging to benthic ecosystems. But the people engaged on this activity cannot properly realize the long-term effect of the same. These are basically due to insufficient knowledge and education among the coastal community. Some other factors which influence this activity are over-population of the coastal zone, low incomes, low social & economic status, lack of alternative employment opportunities, and low environmental awareness. Due to this reason withdrawal of the Bottom trawling practice is a challenge for fisheries sector.

#### **4. Pollution in the Bay of Bengal**

Bangladesh is a party to MARPOL 73/78 with all its annexes. However, the country has not enacted any enabling act to give effect to the MARPOL Convention in her domestic sea area. This resulted as a short fall in application of Coast Guard Act 1994 (CG Act). There is a lack of management for debris disposal from shipbuilding yard infrastructure & recycling of steel for producing iron rods for construction which is hold by local businessman & politicians. The same are the main cause for shipbreaking pollution. Therefore, lack of political willingness for enacting a law for pollution control is the challenge.

Compliance and enforcement mechanisms as a port and coastal state are very weak, fragmented and uncoordinated. The concerned authorities (PSC) failed to prosecute any foreign ships in the past for many large-scale oil pollution incidents. Hence having less authority of PSC inspector is a challenge to exercise effective control over foreign flag vessels to ensure anti-pollution measures over the sea.

Bangladesh is lacking in institutional capacity of responsible govt. agencies. Combating vessel-source marine pollution involves a huge amount of investment in facilities and equipment. Bangladesh Coast Guard is currently facing an extreme shortage of patrol boats and other equipment for detection of marine pollution. Also, Bangladesh provides no reception facilities at sea ports. Hence budget for increasing the institutional capacity is a challenge which must be overcome to ensure anti-pollution measures.

## **Strategies to mitigate Challenges militating against Blue Economy**

Each sovereign country has the right to make use of its sea resources for her sustainable development. This national responsibility led the govt. to make the development strategies to overcome the challenges. These are subsequently discussed.

### **4.1 Development of Effective Governance**

Bangladesh needs to adopt a comprehensive maritime strategy with concentration in ocean governance. These strategic plan should be based on stakeholder consultations and effective institutions to ensure proper uses of her ocean resources. In order to harmonize the International and regional conventions with national regulation, Bangladesh government should enact a new act which will serve as a single uniform policy and law to address all the issues in consistence with national legislation. Needless to mention that the process of making a new act namely the IMO Convention Act is a good step to address all maritime issues affecting everything concerning IMO Conventions and related UN and international conventions (Rahman, 2017). Also, regarding National policies and Acts, different govt. agencies like the Department of Shipping (DOS) and Fisheries (DOF) should update their rules as required or make a new shipping and fisheries act (Islam et al. 2017).

For resource and environmental management relevant to Blue Economy, we need to adopt: 1) Integrated Coastal Zone Management (ICZM) and 2) Marine Spatial Planning (MSP) policy frame work in order to protect the ocean from the effect of over fishing, illegal coastal development, pollution and climate change. ICZM addresses national concerns for coastal waters and natural habitats (mangrove, coral reef, and sea grass) and adjacent coastal areas. It provides a method to resolve problems of interaction between coastal lands and coastal waters. MSP process can be developed to provide a judicious response for resolving conflicts and multiple oceans uses.

### **4.2 Maintenance of Security in Maritime Area**

Capacity building of *Bangladesh Navy & Coast guard*: Although Bangladesh Navy and Coast Guard are technically competent, but they lack proper equipment and effective manpower. The policymakers should focus on protecting the exclusive economic zones (EEZ) and continental shelf from any maritime security threat. *Therefore, Bangladesh Navy has to be modernized. So, it needs a commitment for the commissioning of a new warships into the fleet.*

**Installation of Surveillance system over EEZ:** With the help of own satellite, Bangladesh can develop a surveillance system for ensuring the security of the Bay. The same will also assist in effective communication among ships and prevent marine

accidents. New surveillance technologies can increase monitoring capability and guide law enforcing agencies to suspicious activities like piracy, IUU fishing etc.

**Developing maritime awareness:** Sustainable progress in maritime security can be acquired by developing awareness among the general people about the ocean. Schools and colleges should include ocean literacy in their syllabus to create awareness from the beginning.

#### 4.3 Mitigation of unsafe fishing activities

**Effective Governance & adequate law enforcement:** For conservation of marine living resources of Bangladesh, government should apply applicable rules and regulations in collaboration with local and foreign expertise to betterment of our marine resource stock and sustainable practice of marine fishing for future generation. Needless to mention that Bangladesh government has taken various legislative measures to protect overfishing, conserve and enhance the ecological sustainability of fish and other marine resources.

**Determining Total allowable catch (TAC):** To determine the fish stocks at our EEZ & to maintain the database for proper planning, Survey and assessment of fish resources should be conducted. Ministry of fisheries must assess the fish stock based on scientific data and determine the total allowable catch (TAC). Growing the blue economy requires assessing the value of marine resources which includes fish stocks.

**Banning unsafe fishing practices:** Practice of bottom trawling to be banned and adopt safe methods of fishing to save our eco system. To implement same, first we need to create awareness/motivate/educate among fishing boat owners and crew members about the bad effect of this unsafe fishing practices, effect of overfishing/ IUU fishing. Quite often this big community has been ignored by the policymakers in Bangladesh (Shamsuzzaman & Islam, 2018).

#### 4.4 Prevention of pollution in the Bay of Bengal

**National comprehensive policy for prevention of pollution:** Govt should adopt a national policy for pollution prevention. However it is appreciable that to prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris/litter and nutrient pollution by 2025, ‘Ministry of Water Resources’ has been nominated as lead ministries. Different actions, such as formulation of coastal zone policy and strategy, establishing proper Waste Reception Facilities at port(s) etc. are identified to achieve the targets.

**Effective steps by Flag State & Port State Control:** The pollution of oil, garbage and sewage by ships is governed globally by MARPOL convention. The government should

take necessary steps for ensuring environmental compliance by the ships which are entitled to fly Bangladeshi flag by way of introducing a proper system of survey, certification and monitoring as prescribed by the relevant international legal instruments such as the MARPOL Convention.

Also, Port State Control has an important role to ensure compliance with above international mechanisms & should take strong measures against any foreign ships violating the regulations. PSC inspectors should be given more authority to act against violation of marine pollution.

## **Conclusion**

Blue economy is the use of sea and its resources for sustainable economic development. Bay of Bengal can be one of the important venues for Blue economy implementation with its huge living and non-living marine resources. Sustainable use and management of these resources would leverage economic development and create enormous job opportunities for Bangladesh.

Blue Economy has opened a window of opportunity for the development of Bangladesh. But there are constraints for the development of blue economy potential. First and foremost is the need to overcome current economic trends that are rapidly degrading ocean resources through unsustainable extraction of marine resources, destruction of marine and coastal habitats, climate change, and marine pollution. In protecting the sea, the challenge lies with huge expenses for developing surveillance system for effective monitoring.

## **Recommendations**

From the above discussion it can be concluded that, Bangladesh has a huge possibility to enrich her economy with sea-based resources through ensuring a sustainable balance between the protection of marine ecosystem and marine resources. However, below are some recommendations that can be drawn for the successful implementation of Blue Economy concept:

- a. Govt. may develop/strengthen national policies to better integrate Blue Economy considerations and governance frameworks.
- b. It is necessary to reform the governance system. Govt. should take immediate initiative for institutional reform to ensure better coordination between government agencies.
- c. Bangladesh Navy along with other coastal security agencies like Coastguard may be equipped with modern and adequate platforms and equipment to undertake vested responsibility of maintaining security of the Bay.

- d. Enough budget to be allocated for installing the surveillance over the Bay covering its whole Maritime area which will increase monitoring capability.
- e. Maritime Community may take awareness drive through workshop, seminar, and media coverage including T.V., Radio, YouTube and Facebook to motivate the people for maritime domain awareness and understanding so that people become ocean-minded instead of ocean-blind.
- f. As a measure for prevention of Marine litter at sea, the port authority should establish ‘Waste Reception Facilities’ at their Port for the disposal of Garbage. Port State Control should strictly act against ships violating MARPOL Regulation.
- g. Govt. should encourage private sectors to come forward for investing in Blue Economy sectors. The private sector must play a key role in the development of blue economy. Also, the foreign investment should be attracted in exploring oil and gas in its offshore zones.

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