

Prospect of Blue Economy for Bangladesh Transforming Into A Middle Income Country

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ABSTRACT

Bangladesh has made noteworthy progress in poverty eradication, supported by sustained economic evolution. It has been among the fastest growing economies in the world over the past decade. Consequently, Bangladesh achieved lowermiddleincome status in 2015 and is on track to graduate from the UN's list of Least Developed Countries (LDC) in 2026. Bangladesh economy has been growing steadily. The revolution in blue economy is one of the main contributors for this. The last twelve years have been a golden era for the blue economic development of Bangladesh indeed. Bangladesh has been striving to exploit her sea-based resources for the people's economic prosperity and well-being. Presently, several projects are underway in her maritime sector. Bangladesh is emerging as a global role model for socio-economic progress and it is well known throughout the world. This paper takes an endeavour to find out the challenges to transform into a Middle Income Country (MIC), progress made in recent days and possible ways forward to promote Bangladesh into MIC considering Blue economic aspect.

I. INTRODUCTION

The Blue Economy can be defined as the sustainable use of ocean resources for economic growth, improved livelihoods, jobs and ocean ecosystem health. The concept of an oceans economy also embodies economic and trade activities that integrate the conservation and sustainable use and management of biodiversity encompassing maritime ecosystems and genetic resources. The blue economy has created new opportunities for the economic development of coastal countries by using sea and maritime resources on a national and international scale. When countries focus on their marine resources, the concept of blue economy emerges. This term has evolved into a call to action for

sustainable development. Marine resources are the only raw materials used in the blue economy so every country must share responsibility for protecting the seas.

According to the World Bank, the blue economy is the "Sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem. The concept of the oceans economy, also known as the blue economy that promotes economic growth, environmental sustainability, social inclusion, and the strengthening of ocean ecosystems all at the same time. It simply demonstrates that if the societal relative importance of the coastal ecosystem, which supports the life and subsistence of millions of coastal communities in Bangladesh. The blue economy is not just about market opportunities, it also provides for the protection and development of more intangible 'Blue' resources such as traditional ways of life, carbon sequestration and coastal resilience to help vulnerable states mitigate the often devastating effects of climate change. Bangladesh is now on pace to make significant development in the blue economy, which will contribute to the country's goal of becoming a MIC despite several challenges posed by the COVID-19 pandemic.

Significance of Blue Economy

The ocean can help to boost economic and environmental resilience. Investing in maritime decarbonisation, sustainable seafood production, and ocean-based renewable energy ensures greater health, biodiversity, job security, and a safer world for future generations. As a macroeconomic theory, the blue economy encompasses a wide range of national and global governance, economic growth, environmental protection and sustainability. Oceans cover 72% of the surface of our blue planet and constitute more than 95% of the biosphere. Life originated in the oceans and they continue to support all life today by generating oxygen,

absorbing carbon dioxide, recycling nutrients and regulating global climate and temperature. Oceans provide a considerable portion of the global population with food and livelihoods and are the means of mass transport for global trade.

Sustainable development is the organizing principle for meeting human development goals while at the same time using the ability of natural systems to provide the natural resources and ecosystem services upon which the economy and society dependent. Sustainable development and green growth are combined in the blue economy. It emphasizes the importance of long-term planning and coordination between the marine environment and the ocean and coastal zone economic systems. The blue economy can be defined as sustainable production, service and all other connected activities that use and safeguard coastal and marine resources.

Bangladesh is a riverine country. The navy is needed to protect the country's resources and to deal with cyclones. We want friendship with everyone. We believe in peaceful co-existence. We want peace in the world. We want rich countries to spend their resources not only on wars but also on the welfare of the people. Only then will poverty be eradicated from the world. We believe in that ideology and this is why Bangladesh has a reputation as a peace loving country. But we want to be self-sufficient. Bangladesh emphasized upon its ocean economy after the independence led by the father of the Bengali nation Bangabandhu Sheikh MujiburRahman. Blue Economy may be viewed as a macroeconomic lever, embracing multiple levels of national and international governance, economic growth, environmental protection and appreciation. It is an effort to combine sustainable development with green growth. It centered on the interaction and coordination of marine ecosystems with ocean and coastal zone economy.

Present Status of Bangladesh to become MIC

The UN Committee for Development Policy (UN CDP) in its second triennial review assessed the economy of Bangladesh and found a strong fulfillment of Gross National Income (GNI) criterion, its per capita income was \$1,827 in 2019 against the threshold of \$1,222. In the Human Assets Index (HAI) criterion, the country's score stood at 75.4 points, well above the requirement of 66. In the Environmental Vulnerability Index (EVI), a country's score has to be less than 32 while Bangladesh's score was 27.3 in recent days. Bangladesh is scheduled to

officially become a developing country in 2026 as the UN committee recommended that the country should get five years to prepare for the transition due to the impact of the COVID-19 pandemic on its economy. The graduation to a developing country is a special step for the country in its efforts to reach the Sustainable Development Goal (SDG) by 2030, become a higher middle income country by 2031 and a developed country by 2041.



Figure 1: Prime Minister Sheikh Hasina inaugurates the 3rd IORA Blue Economy Ministerial Conference (The Asian Age, 2019)

Prospects of Blue Economic Zone in Bangladesh

Oceans supply food and livelihood to a large section of the world's inhabitants. The marine and coastal environment is also a valuable resource for the worldwide tourist sector and the rapidly growing field of nature-based tourism. After the resolutions of the maritime boundary dispute with neighbouring Myanmar and India, the term "blue economy" has stimulated interest in the whole country. Bangladesh presently possesses a total maritime area of 1,18,813 square kilometers in the Bay of Bengal (BoB) including the Exclusive Economic Zone (EEZ). Bangladesh's blue economy is one of the most significant instruments for attaining long-term development. Bangladesh relies significantly on international shipping for foreign trade because it is both a coastline and a riverine country. Bangladesh is abundant in biological variety as well as extensive aquatic regions. The development of the blue economic zone will result in a human flow to Bangladesh's coastal region. It will provide jobs and other earnings activities, fast improvement to other social services, physical security and the general quality of life for residents in coastal communities. There are still plenty of opportunities, as well as challenges to explore a wide range of blue economy sectors with

innovative technology addressing environmental changes to achieve economic goals.

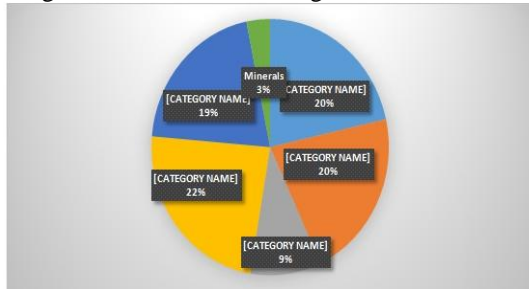


Figure 2: Composition of the Ocean Economy in Bangladesh in 2018

Bangladesh has only looked at a few Blue Economy industries so far, including fisheries and

aquaculture, shipbuilding, ship breaking, salt production, and port facilities. The main blue economic sectors are appended below:

- a. **Fisheries.** Recently fish farming is a highly traded, export-oriented sector. A wide variety of economically valuable fishes with high export values have long been fished. Commercial marine aquaculture, marine stock augmentation are developing very highly. More than 17 million people including about 1.4 million women depend on fisheries sector or their livelihoods through fishing, farming, fish handling, and processing.

Table 1: Total fisheries production in Bangladesh in 2018-2019

Sector of Fisheries	Water Area (Hectare)	Production (Metric Ton)	% of Production	Productivity
A. Inland Fisheries				
(i) Inland Open Water (Capture)				
1. River and Estuary	853863	325478	7.42	381 kg/ha
2. Sundarbans	177700	18282	0.52	103 kg/ha
3. Beel	114161	99890	2.28	875 kg/ha
4. Kaptai Lake	68800	10578	0.24	154 kg/ha
5. Floodplain	2675758	781481	17.82	292 kg/ha
Capture Total	3890282	1235709	28.19	
(ii) Inland Closed Water (Culture)				
6. Pond	397775	1974632	45.04	4964 kg/ha
7. Seasonal Waterbody	Culture 144217	217340	4.96	1507 kg/ha
8. Baor	5671	10343	0.24	1824 kg/ha
9. Shrimp/Prawn Farm	258553	258039	5.89	998 kg/ha
10. Crab*	9377	12084	0.28	1289 kg/ha
11. Pen Culture	6330	12361	0.28	1953 kg/ha
12. Cage Culture**	1.76 lakh cu.m	3802	0.09	22 kg/cu.m
Culture Total	821923	2488601	56.76	
Inland Fisheries Total	4712205	3724310	84.95	
B. Marine Fisheries				
13. Industrial (Trawling)		107236	2.45	
14. Artisanal		552675	12.61	
Marine Fisheries Total		659911	15.05	
COUNTRY TOTAL		4384221	100	

In fiscal 2019-2020, Bangladesh earned worth tk 3442.8 crore exporting of fish and fisheries items. Bangladesh currently exports fish and fisheries items to other Asian and European countries like USA, Japan, Russia, China, Vietnam, Australia, UAE, India and Malaysia. Fishing industries in Bangladesh will continue to contribute significantly to the economic and food production. Bangladesh must seek alternatives to continue earning from this activity as demand for seafood continues to rise.

Bangladesh government has made a number of initiatives to boost fish productivity in recent days. Special attention is drawn in increasing total water area for aquaculture, augmenting open water capture fishery, ensuring access to fish cultivation for the poor and genuine fishermen. By supporting fishery research developing technologies, disseminating modern technologies, promoting the private sector with incentive, extended fish market, quality control in accordance with international standards are essential to ensure positive vibes.

- b. **Food Security.** Food security refers to the availability, accessibility, and consumption of food, including nutrition, as well as the safety and quality of the food. Bangladesh confronts tremendous hurdles in adapting to the consequences of climate change as a densely populated, low-income nation, notably in the areas of water and food security. Bangladesh has the third greatest aquatic fish biodiversity in Asia, due to the contributions of the three main rivers systems that flow from the Himalayas into the BoB along with the world's largest flooded wetland, the Bengal Delta. Bangladesh's wild fisheries represent almost 7% of the world's inland fish production and account for 52% of the country's fish production.
- c. **Aquaculture.** The aquaculture business has a lot of promise for future generations in terms of providing a healthy and sustainable protein source. Global population expansion, rising income and prosperity, better diets, and population growth all lead to increasing

seafood consumption. Increases in aquaculture output will be required as a result of the inability to obtain additional seafood from the oceans. Aquaculture or farmed seafood has great potential to fulfill rising demand while protecting wild fish stocks offering a healthy source of protein. Only 15% of total fish production in Bangladesh is contributed by marine fishing. It is deemed necessary to explore new opportunities in marine aquaculture as a viable alternative for more fish production. Private sectors must be encouraged for ventures and expertise should be built up for longline fishing, to catch tuna and other fish species in the deep marine water, and exclusive economic zone in the BoB. In 2018, Bangladesh was the fifth largest global aquaculture producer and the sector is expected to continue growing in the coming years. Economists expect Bangladesh to come out of the low-income country category and move into the lower-middle income category within the next seven years aquaculture exports will play an instrumental role in the transition. The eco-friendly programmes that stimulate production could be modified to include improved safety and quality standards for farmed fishes. This will not only keep Bangladesh's exports competitive but will also keep the country on its current growth trajectory to the MIC.

- d. **Tourism.** There are economic, socio-cultural and environmental benefits of tourism in Bangladesh. Tourism can provide direct jobs to the community, such as tour guides and hotel housekeeping. Indirect employment is generated through other industries like agriculture, food production and retail. Infrastructure development and visitors' expenditure generates income for the local community and can lead to the alleviation of poverty. This aids the local peoples in maintaining their coastal culture and heritage. Tourism provides financial support for the conservation of ecosystems and natural resource management, making the destination more authentic and desirable to visitors.

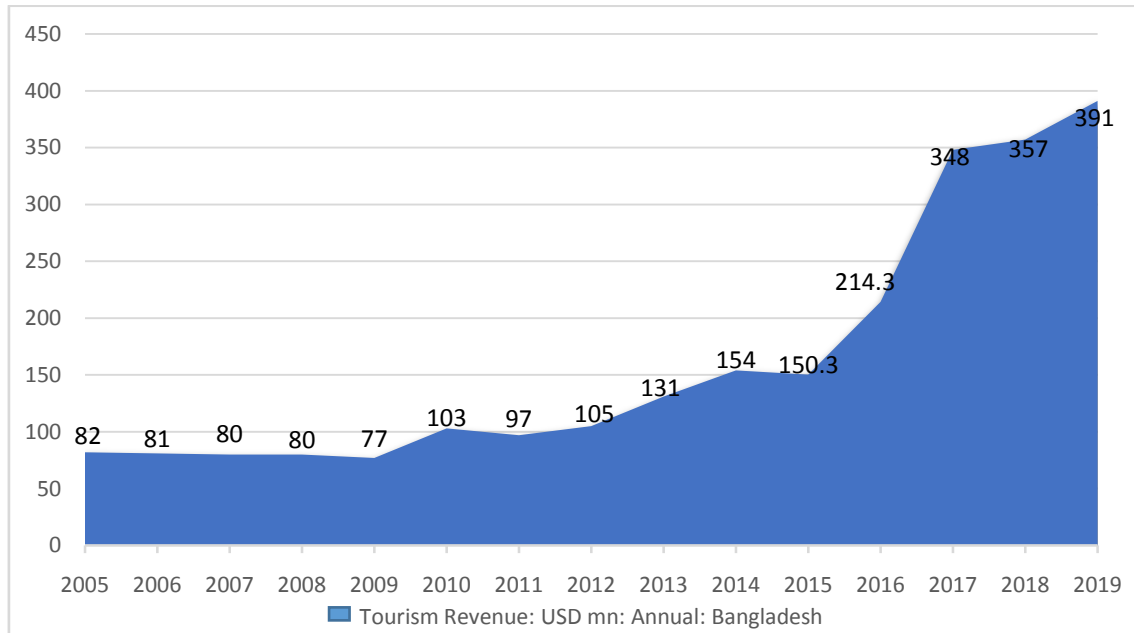


Figure3: Yearly Tourism Revenue in Bangladesh

Figure shows Bangladesh's Tourism Revenue reached an all-time high of 391 USD mn in Dec 2019, compared with 357 USD mn in 2018. Bangladesh has already taken steps to discover more tourism destinations through a public-private partnership. Tourism-related disciplines such as tourism and hospitality management are taught in several universities in Bangladesh. In coastal tourism areas, the government lays a strong emphasis on communication and security.

e. Shipping and Maritime Transport. Bangladesh is a riverine country with a large waterway system. The marine

transportation sector, as well as the country's social and economic growth, rely heavily on waterways transportation. Maritime shipping and transport organisations are responsible to formulate policies and plans to facilitate the quick implementation of various projects. Bangladesh government is concerned with the maintenance and expansion of viable, efficient, and dependable water transportation and communication systems as the most cost-effective means of expanding the country's blue economy while ensuring world-class port, maritime, and water transportation management.

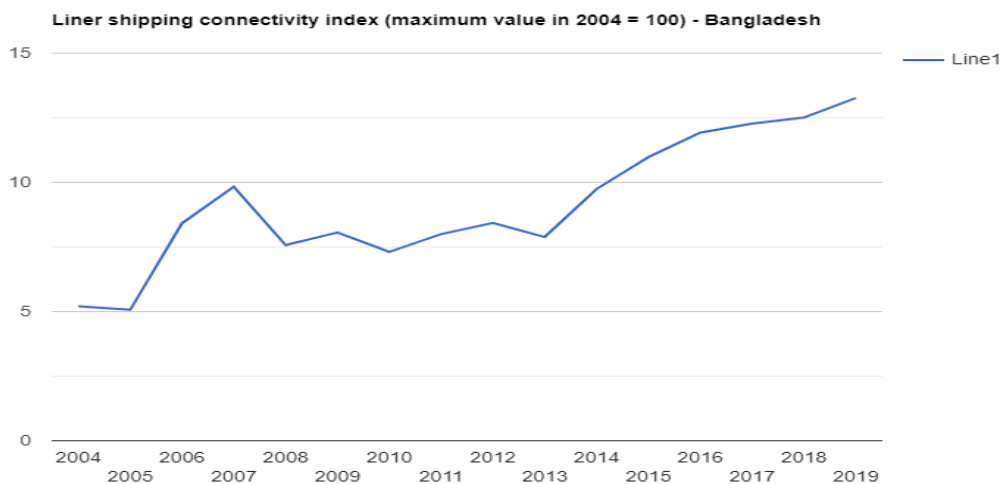


Figure4: Liner shipping connectivity index for Bangladesh

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. In Bangladesh most of its largest cities and industries along with critical value chains tend to be concentrated in coastal areas to ensure access to transport routes and continuous flows of resources and products.

f. **Renewable Marine Energy.** Wind, wave, tidal, biomass, thermal conversion, and salinity gradients all have significant potential for generating renewable energy in the ocean. Renewable energy demand is predicted to climb two and a half times globally by 2035,

with Bangladesh being no exception. Renewable energy from tides and waves, offshore wind turbines, subsurface geothermal resources, and marine biomass might all be feasible options for meeting energy demands and addressing climate change mitigation goals. In December 2009, the Bangladesh Government established Bangladesh's only RE authority Sustainable and Renewable Energy Development Authority (SREDA), Power Division, under the Ministry of Power. The SREDA deals with energy management in the country and now has an ambitious target of producing 2000MW of electricity from renewable sources by 2021.

Table 2: Renewable Energy Installed Capacity in BD on 02 Sep 2021

Technology	Off-grid (MWp)	On-grid (MWp)	Total (MWp)
Solar	346.7	185.99	532.69
Wind	2	0.9	2.9
Hydro	0	230	230
Biogas to Electricity	0.69	0	0.69
Biomass to Electricity	0.4	0	0.4
Total	349.79	416.89	766.68

By the year 2021 the energy saving will be 15% and 20% by 2030 of total energy consumption. Increasing Renewable Energy generation and the proportion of energy saving will promote Bangladesh into a Middle Income Country.

g. **Biotechnology.** Biotechnology research & development in Bangladesh is based on both domestic and international cooperation. Marine biotechnology has been gaining popularity throughout the world, and the activity is likely to contribute more to yearly growth in the coming years. Marine biotechnology is a relatively new subset of biotechnology that simply refers to the science and technology of using marine bio resources, such as fish, algae, bacteria to produce desirable products and other benefits for humans. Many institutes, research centres, universities and private organization of the country are involved in conventional biotechnology works with mentionable progress and success. Government needs to establish national marine biotechnology R&D institute and programmes. If marine organisms can be utilized as a source of new materials, especially for uses in health and food, the potential pharmaceutical and coastal aquaculture industries and the livelihoods of

the country's underprivileged people would benefit. Bangladesh is speeding up development and commercialization of genetically modified agricultural types in order to help the country achieve its goal of becoming a MIC.

h. **Marine Education, Training and Research.**

Human resources that are well trained, skilled, and educated are the driving force behind the growth of an economy that can engage in corporate globalization and the resulting technological revolution. After determining the needs of the global market and local industry, relevant courses in marine science, ocean and coastal engineering, maritime education, and commerce must be introduced at the tertiary level. A large community of trained coastal and offshore engineers, navigators, merchant mariners, fisheries technicians, biotechnologists, and a range of other professions may provide a drive to blue economic growth. Bangladesh Marine Academy, Bangladesh Marine Fishery Academy, Bangladesh Navy Hydrographic and Oceanic Centre, BSMRMU, private marine academies, Bangladesh University of Engineering and Technology, Military Institute of Science and Technology, University of

Dhaka, Bangladesh University of Engineering and Technology, University of Chittagong, University of Science and Technology at Noakhali and Patuakhali, University of Khulna, Shahjalal University of Science and Technology designed programmes to produce human resources to contribute various maritime sectors at undergraduate and graduate level. Bangladesh has enormous potential for seafaring job opportunities and to earn foreign currency to enrich the blue economy of Bangladesh.

Economic Valuation of Blue Economy in Bangladesh

In terms of the blue economy, Bangladesh is a great way to start. Bangladesh, as one of the coastal countries, has set its sights on the process leading up to the first International Workshop on Blue Economy in 2014. Bangladesh government has taken initiative in securing international momentum and mutual supportive approach to the blue economy to fully develop all the sectors and endorse the plans. Bangladesh government also established the Blue Economy Cell in 2017. Bangladesh has been able to maintain an annual average Gross Domestic Product (GDP) growth rate of more than 7.0 per cent in the past four fiscal years and it is passing through a phase of demographic dividend which will continue till 2030, employment generation for all active population remains an immediate challenge for the country. For the benefits a blue economy can generate, a flawless and defined target setting is essential. The potential for creating jobs by utilizing ocean resources properly is undeniable with environmental sustainable manner. Estimates suggest more than 17 million people in fisheries and aquaculture (full and part-time, including inland production), of which some 1.35 million work in marine capture fisheries and aquaculture. An estimated 6 million more people are employed in sea salt production and ship breaking. Other reports cite estimates as high as 30 million people dependent on the ocean economy in Bangladesh.

Bangladesh has a competitive advantage over other countries due to its low labor costs and plentiful human resources. The ocean economy contributed US\$6.2 billion in Gross Value Added (GVA) to the Bangladesh economy in 2015, which is approximately 3% of GDP. From the composition of the Bangladesh ocean economy, the gross value added is derived evenly from these sectors except from shipbuilding, shipbreaking, and minerals. Bangladesh is committed to becoming a

MIC and sustaining the potential of the Blue Economy despite the hurdles posed by the Covid-19 epidemic. The importance of public-private partnerships in the development of Bangladesh's tourism sector cannot be overstated. Bangladesh Tourism Revenue grew 9.5 % YoY in Dec 2019, compared with an increase of 2.6 % YoY in the previous year. Bangladesh Tourism Revenue Growth rate data is updated yearly, available from Dec 2003 to Dec 2019. Bangladesh is moving forward toward its goal of becoming a MIC and all sectors of the blue economy like are functioning to achieve its goal. The benefits are likely to be available to marginalized populations soon.

Recent Progresses in Blue Economic Area

Bangladesh government has taken some steps in recent days to enrich the blue economy area to transform the country into MIC. Some progresses in this area are follows:

- a. Despite the nationwide strict lockdown due to COVID-19 pandemic, the work of a mega plan is going on in full swing to develop the coastal slope by the BoB.
- b. Around 77 project sites are under construction in the country's south-eastern district Cox's Bazar.
- c. Cox's Bazar international airport and its modernization is now near completion.
- d. The Matarbari deep-sea port construction is about to end and will be proficient to play a significant role in enhancing trade connectivity with Bangladesh's main import destinations China and ASEAN countries.
- e. The 'Installation of Single Point Mooring (SPM) with Double Pipeline' project is being implemented to ensure the unloading of imported crude oil and finished products with ease, safely, at a low cost and within a short time, reducing system losses in the import of crude and finished products.
- f. Bigger ships will be able to moor at Matarbari directly once the deep-sea port project is completed. Container carriers four times bigger than the current capacity will be able to berth at Matarbari which will reduce the import-export cost by 15%.
- g. Project develops round the clock at remote Maheshkhali upazila to build four power plants on salt fields with a total capacity of 3,600MW.



Figure5: Matarbari coal power under construction plant

h. A durable permanent land-based LNG terminal at Matarbari as the demand is growing fast.

j. Sabrang Tourism Park, Naf Tourism Park-proposed economic zone in Jaliradip in Cox's Bazar and Sonadia Eco-Tourism Park are being turned into tourism hotspots to attract local and foreign visitors.

Challenges in Blue Economy to Promote Bangladesh into MIC

Blue Economy has the prospect to contribute Bangladesh economy on a much higher level. Twenty six potential blue economy sectors have been identified by the MOFA which include the fishery, maritime trade and shipping, energy, tourism, coastal protection, maritime safety and surveillance for development of blue economy in Bangladesh. Few challenges are to become middle income country in near future:

- a. Climate change, rising carbon dioxide emissions, overexploitation, and inadequate management of marine resources need to be addressed seriously.
- b. Depending on its impact unmanaged mass tourism may have a detrimental effect on coastal ecosystems.
- c. Pollution caused by marine transportation especially ship-sourced oil is currently a major source of concern.
- d. Overexploitation and inadequate management of marine resources decline economic opportunities for some of the countries like Bangladesh.

- e. Lack of research and practical guidance on the implementation of the marine scientific research for the benefit of all mankind.
- f. Trade and commerce suffer at every level of the seaport process as a result of delays in receiving import cargoes and transferring export commodities to their final destinations.
- g. There is a scarcity of reliable finance provided via public-private partnerships in the blue economy.

Measures to overcome the Challenges

To promote food security, alleviate poverty and generate shared prosperity Bangladesh has to look into action oriented partnerships, investment frameworks and viable finance tools. Following measures are to be taken while Bangladesh is transforming into MIC:

- a. Long term plan to heighten capacity building for the expansion of different maritime sectors in Bangladesh.
- b. Expansion of marine scientific research, expert workforce and technological knowledge to derive maximum paybacks from exploiting deep-sea fishes and seabed resources.
- c. Coordinated effort of investors of real entrepreneurship and innovative development by public-private partners, secure financing to ensure good ocean governance.
- d. Developing an investment friendly infrastructure in the marine tourism atmosphere.
- e. Cost effective utilization of biodiversity that delivers functional ecosystems for supply oxygen, clean air, water, pest control, wastewater treatment and many ecosystem services.
- f. Manufacturing and engineering construction of ships and other floating vessels including repair and maintenance facilities to be explored.
- g. Oil and gas exploration and exploitation must be accomplished with full participation between public and private sectors to share data and information and monitoring climate change issues.
- h. Effective management is to be implemented for smooth port clearance to decrease and properly estimate lead times.

By increasing the extraction of marine resources, it is feasible to improve the ocean economic gross value addition and create jobs. The maritime economy of Bangladesh is made up of living resources, minerals, energy, transportation,

trade, and tourism and recreation. There is a significant potential for job development by properly utilizing mentioned areas.

II. CONCLUSION

Since independence in 1971 Bangladesh has achieved commendable progress in all socio-economic indicators. Bangladesh is on the right track to establish an innovative economic model to further accelerate development and consolidate people's well-being after graduation from LDC to low MIC. The Oceans and seas are the potential and versatile resource frontiers for the mankind, which are still remained under-explored mostly. Ocean-based industries such as shipping, fisheries, energy and minerals, renewable energies, sea ports, tourism, marine genetic resources, marine biotechnology etc. are contributing as key driving forces to the flourishing global economy. Both geographical and historical perspective Bangladesh is a maritime nation. The country had been waiting for four decades to settle her maritime boundary delimitation. Also the international tribunal verdicts pave the way to revive own maritime interests for the country.

For Bangladesh to advance its standing as a MIC, prudent supervision and productive use of maritime resources are absolutely vital. Bangladesh has a significant opportunity to diversify its economy with sea-based resources by ensuring a sustainable balance between the protection of the marine ecosystem and marine resources. Due to the resolution of a maritime boundary dispute with India and Myanmar, Bangladesh now has a designated maritime zone in the BoB. Bangladesh can now expand its economic growth potential by increasing its investments in marine trade and commerce. It is high time for Bangladesh to make use of millions of its unemployed youths in order to expand their employment opportunities. The BoB has the potential to be a crucial component in producing huge job possibilities in Bangladesh because to its immense living and non-living aquatic resources. To take advantage of the developing prospects of booming blue economy, Bangladesh needs to emphasize technology development and capacity building. Building strong living and non-living ocean resources management and good governance in fisheries, food security, marine aquaculture, tourism, shipping and maritime transport, renewable marine energy, biotechnology, marine education, training and research may be the priorities for the stakeholders. With a growing economy and desperate scarcity of land based resources

Bangladesh will become a MIC before expected timeline if it is able to successfully harness its marine assets.

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