Blue Economy: Paving the Way to Sustainable Bangladesh

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The socioeconomic conditions of Bangladesh are driving the country to explore opportunities presented by its sea resources. The country's landmass ratio to population has reached a critical point, with land resources depleting rapidly. This trend is unfavorable for sustaining the nation's growing economy. The peaceful resolution of maritime disputes further underscores the necessity of maximizing the utilization of sea resources to promote the country's economic development. The Bay of Bengal (BoB) holds particular significance as the third neighbor of Bangladesh. Beyond its valuable sea resources, the BoB's strategic location plays a crucial role. Bangladesh's trade and commerce rely heavily on maritime routes, with over 90% of trade conducted via sea. This reliance highlights the strategic importance of the Bay of Bengal. In light of these factors, tapping into the extensive natural resources available through the sea holds paramount importance for Bangladesh's strategic growth and economic progress.

Although the eminent economist Gunter Pauli introduced the concept of the Blue Economy back in 1994, the idea gained prominence following the UN Sustainable Development Summit in Rio de Janeiro, commonly referred to as the Rio+20 summit, held in 2012. The widely accepted operational definition of the blue economy, as proposed by The Economist, is "A sustainable ocean economy emerges when economic activities are in harmony with the long-term capacity of ocean ecosystems to support such activities while maintaining their resilience and health". Nonetheless, the government's adoption of the blue economy concept occurred subsequent to the resolution of maritime boundary disputes. This resolution marked a turning point, aligning economic activities linked to the ocean with the capacity and resilience of the ocean ecosystem.

The concept of a blue economy advocates for promoting economic growth, enhancing livelihoods, and preserving environmental sustainability in coastal and oceanic regions. The significance of marine resources in uplifting communities from poverty, achieving self-sufficiency in food production, maintaining environmental equilibrium, addressing the adverse impacts of climate change, and exploring diverse economic prospects remains

boundless. Within the context of Bangladesh, the blue economy holds numerous opportunities and potential. According to government priorities and various literature sources, the primary sectors identified within the blue economy framework encompass marine fisheries, marine tourism, marine trade shipping and transport, marine renewable energy, shipbuilding and recycling industries, and marine biotechnology, etc. These sectors collectively represent Bangladesh's engagement with the blue economy, offering substantial avenues for harnessing its potential. Analyzing Bangladesh's current ocean economy by sector, it is predominantly composed of the following components: Tourism and Recreation (25%), Marine Fisheries and Aquaculture (22%), Transport (22%), Energy (19%), Ship & boat Building/Breaking (9%), and Minerals (3%).

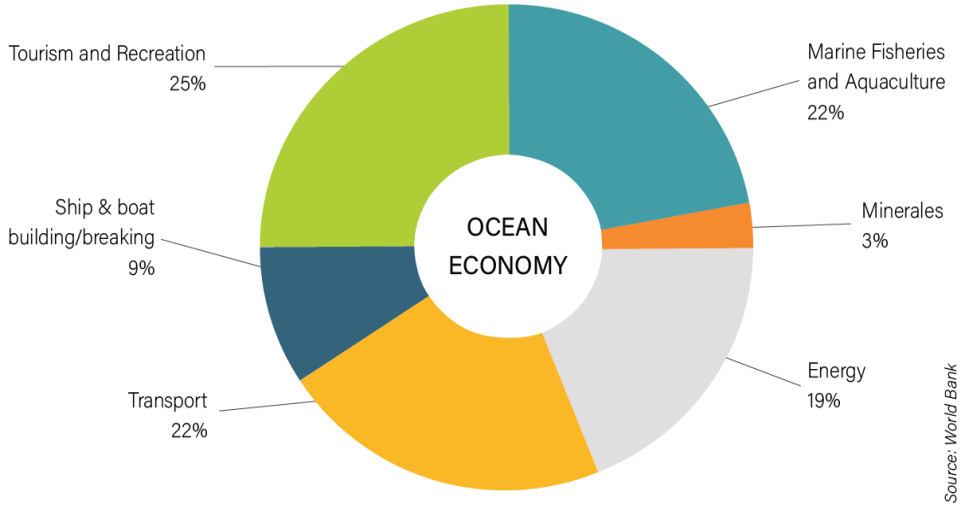

Figure 1: Sector-Wise Share of Ocean Economy in Bangladesh

The Sector-Wise Blue Economy Activities are Appended Below:

Sectors	Activities
Marine and Coastal Tourism	Angling from boats or shore, sailing at sea, boating at sea, water skiing, jet skiing, surfing, sail boarding, sea kayaking, scuba diving, swimming in the sea, whale and dolphin watching, visiting coastal natural reserves, trips to the beach, seaside and islands.
Fishing and Aquaculture	Capture fishery, seafood processing, and farming of aquatic organisms like fish, mollusks, crustaceans, and aquatic plants.
Shipping, Port & Maritime Logistics	Shipbuilding and repairing, ship management, container shipping services, cargo handling, jetty services, roll-on roll-off operators, custom clearance, freight forwarders, safety, and training etc.
Marine Renewable Energy	Offshore wind energy production, wave energy production, tidal energy production. Production from tidal ranges, ocean currents, ocean temperature differentials, and salinity gradients.
Biotechnology and Marine Genetic Resources	Pharmaceuticals, chemicals, seaweed harvesting, seaweed products, marine-derived bio-products. marine plant, animal, microbial, or other origin.
Minerals	Oil and gas, deep-sea mining (exploration of rare earth metals, hydrocarbon).
Marine Manufacturing	Boat manufacturing, sail making, net manufacturing, boat and ship manufacturing and repairing, marine instrumentation, aquaculture technology, marine industrial engineering.
Marine Construction	Marine construction and engineering.
Marine Commerce	Marine financial services, marine legal services, marine insurance, ship finance & related services, charterers, media & publishing.
Maritime Education and Research	Education and training, R&D.

Source: Dr Dilruba, 2019

Table 1: Sector-Wise Blue Economy Activities

There are numerous opportunities and significant potential within the blue economy sectors in Bangladesh, many of which remain largely unexplored. A remarkable success story

could unfold in our future if we effectively harness our sea and maritime resources. Some of the major sectors are discussed in the subsequent paragraphs.

Marine and Coastal tourism stands at the forefront among all the sectors within Bangladesh's blue economy. According to the Asian Development Bank (ADB), coastal and maritime tourism holds immense potential within the blue economy and could emerge as one of the largest sources of tourism revenue in Bangladesh. In 2015, the ocean contributed $6.2 billion in total value addition to Bangladesh's economy, equivalent to 3% of its GDP (TBS, 2020). With the introduction of marine tourism, Bangladesh has the potential to earn $1 billion annually, resulting in a remarkable 10% GDP growth within a decade, especially considering the expanded maritime boundaries of the country. This sector offers vast opportunities for the development of coastal and marine tourism, promising substantial employment opportunities for the local population. However, the sector faces several challenges, including limited marine tourism activities, safety and security concerns, the absence of dedicated zones, insufficient promotional efforts, underdeveloped infrastructure and human resources, budget constraints, and a lack of environmental awareness. To ensure rapid implementation, the Government of Bangladesh (GoB) has identified key action points in the seventh five-year plan (7FYP) and eighth five-year plan (8FYP). Additionally, the government has prioritized marine tourism in various development plans, including the Perspective Plan-2041 and Delta Plan-2100.

Marine fisheries and aquaculture constitute thriving sectors within our ocean economy. In the fiscal year 2020-21, marine fisheries production accounted for 14.74% of Bangladesh's total fishery production, playing a pivotal role in the country's economy. This sector not only sustains the livelihoods of millions but also makes a substantial contribution to the nation's food security. The value of aquatic products in international trade reached approximately $605 million, a figure that holds the potential for exponential growth with effective sector management. Bangladesh proudly ranks as the world's fourth-largest fish producer. Marine fisheries alone contribute around 20% to the total fish production and make a 1.2% to 1.4% contribution to the country's GDP, with room for further expansion in the future. In terms of employment, about five million people are directly or indirectly engaged in marine fisheries, where women progressively become a significant part of this sector's workforce. Despite these promising aspects, the growth of this sector is hampered by a lack of research and stock data, technological gaps, and a weak marketing strategy. Bangladesh has yet to fully tap into the opportunities presented by deep-sea fishing, including the abundance of tuna fish in the Bay of Bengal. Nonetheless, the government of Bangladesh has undertaken numerous short and long-term initiatives. These include updating legislative acts and policies, determining maximum sustainable yields, strengthening monitoring, control, and surveillance measures, combatting Illegal, Unreported, and Unregulated (IUU) fishing, and implementing projects like the Sustainable Coastal and Marine Fishery Project. These endeavors signal a commitment to harnessing the immense potential of the marine fisheries and aquaculture sectors in Bangladesh.

Maritime Trade, Shipping, and Shipbuilding and Recycling are pivotal components of the blue economy in Bangladesh. Historically, Bangladesh has been renowned as a shipbuilding nation with a rich heritage of timber shipbuilding spanning centuries. Currently, more than 90% of Bangladesh's external freight trade relies on maritime transportation, accounting for a trade value exceeding $110 billion. The country incurs a substantial expenditure of over $5 billion in freight charges to foreign shipping companies for both imports and exports. The Maritime trade routes in South Asia, alongside the Far East encompassing China and Japan, are experiencing the fastest growth. Bangladesh currently boasts 97 registered oceangoing vessels, and with the increasing number of ships,

it stands poised to leverage the vast opportunities within this industry. Additionally, shipbuilding and shipbreaking hold significant promise for the country. The shipbuilding sector plays a pivotal role in bolstering national defense, fostering industrial and shipping development, and driving employment and foreign currency inflow. Bangladesh is home to over fifty shipyards, with more than a hundred shipbuilders, contractors, and marine workshops actively engaged in shipbuilding activities. Projections indicate that by 2025, Bangladesh's shipbuilding capacity will reach 1.0 million gross tonnages, while the global capacity will stand at 92.5 million gross tonnages. Consequently, Bangladesh is poised to secure a 1.50% share of the global shipbuilding market by 2025. The shipbreaking industry has emerged as a prominent contributor to the national economy, benefiting sectors such as steel companies and shipbuilding firms. Although shipbreaking and recycling sectors face challenges related to safety, pollution, and environmental concerns, adherence to international conventions can mitigate these issues and strengthen Bangladesh's economy.

Marine Renewable Energy (MRE) resources have the potential to play a crucial role in addressing the escalating energy demands and boosting the economic activities of the country. Furthermore, they contribute significantly to mitigating emissions from conventional greenhouse gases. MRE resources encompass those that harness the kinetic, potential, chemical, or thermal attributes of seawater. Examples of these resources include ocean waves, tidal currents, tidal ranges, ocean currents, ocean temperature differentials, and salinity gradients. These renewable resources can be converted into a usable form, typically electricity, through a variety of energy conversion technologies. Bangladesh's annual power consumption stands at approximately 76.85 billion kWh per year, with a heavy reliance on natural gas for power generation. Currently, Bangladesh possesses proven natural gas reserves of 34 Trillion Cubic Feet (TCF), which will sustain the country for the next two decades. A noteworthy point is that a substantial 82% of this natural gas is consumed within the power sector for electricity production. Conversely, renewable energy sources contribute a mere 3% to the electricity generation mix. Renewable energy, comprising sources such as solar, biofuel, geothermal, and wind, holds the potential to serve as a viable alternative to conventional fossil fuels, primarily driven by environmental and economic concerns. The government of Bangladesh has exhibited significant commitment by actively promoting and subsidizing various renewable energy projects. This commitment reflects the growing interest and recognition of the importance of transitioning towards sustainable and cleaner energy sources.

Bangladesh is expected to become the 24th largest economy in the world by 2030 (The Daily Star, 2022). Moreover, the London-based think tank Centre for Economics and Business Research (CEBR) anticipates that by 2037, out of 191 nations, Bangladesh is likely to secure the 20th position, boosting a GDP of $1,628 billion at current prices. This remarkable economic growth underscores the imperative of ensuring the sustainable utilization of our ocean resources to support the country's burgeoning economy. While the prospects of a blue economy in Bangladesh are indeed promising, it's important to acknowledge the presence of challenges and risks that lie ahead. These challenges must be addressed as we pave the way for the development of the blue economy. In the context of sustainable development and poverty eradication, the blue economy emerges as a pivotal tool for achieving the sustainable growth and development of the nation.

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