Article

Ocean Literacy vis-à-vis Bold Investment: Thrusts to Convert Blue Prospects into Blue Resources

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Although the ocean has been serving the earth and human beings since the formation of this planet about 4.2 billion years ago, the term "Blue Economy" isn't that old. The concept was coined for the first time in 1994 by the Belgian economist Gunter Pauli in response to a United Nations request to prepare for the third session of the Conference of Parties (COP3) in Japan.

Since then different organizations have defined "Blue Economy" in different ways. However, the most accepted definition was given by the World Bank in 2016, which is stated as "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem." To materialize this concept, there is no alternative to strategic investment and knowledge capital, which can primarily be generated through "Ocean Literacy."

Ocean Literacy can be defined as the dissemination of knowledge about the availability of ocean resources, sustainable exploration, and conservative approaches to the ocean. While making people literate about the ocean requires investment from the government and non-government organizations, for resource exploration, on the other hand, requires Ocean Literacy and bold venture from the stakeholders of the relevant sectors.

Currently, Bangladesh encompasses a maritime area of about 1,18,813 sq. km, which is approximately the same as the area of Bangladesh's landmass. We have a 710 km coastline, 12 NM of territorial water, and a 200 NM Exclusive Economic Zone (EEZ), where we have the sovereign right to explore and sustainably extract both biotic and abiotic resources from the water column, sea floor, and subsoil.

Blue Prospects and Areas of Investment

So far twenty six sectors of Blue Economy in Bangladesh have been identified by the Maritime Affairs Unit, Ministry of Foreign Affairs. Among them, the most viable fields for Bangladesh at this moment are discussed below:

Fisheries and Aquaculture: Currently, fish catch from the sea contributes only 20% of the total fish production of Bangladesh.

The fishers of the country can go only up to a 40 meter depth with their conventional wooden trawlers. The rest of the sea is remaining untapped due to the lack of modern and efficient fishing trawlers and ships; in a word, it can be represented as a dearth of investment. Besides, there is a huge opportunity for mariculture and sea ranching in the water of our maritime boundary. While many of the foreign investors seeking the opportunity of mariculture and sea ranching in Bangladesh, the local investors don't even know the terms, and the main reason is a lack of Ocean Literacy.

Tourism and Recreation: Tourism is a rising industry in Bangladesh. According to Khondkar et al. (2014), tourism in Bangladesh was employing over 1 million people and generated a total value of 8.4 million USD. Again, Tourism Satellite Account 2020 of the Bangladesh Bureau of Statistics stated that tourism contributed 3.08% of the GDP of Bangladesh and also accounted for 8.07% of total employment. Bangladesh possesses a distinctive coast with many popular tourist destinations, including one of the world's largest sea beaches, Cox's Bazar as well as the largest compact mangrove forest. Proper management and investment are required to make the tourism industry a dominant one in Bangladesh. Coastal tourism, recreational water sports, yachting and marinas, cruise tourism etc., can be some potential tourism industries in Bangladesh. While investment in the tourism sector will be supported by Ocean Literacy, it is possible to reshape the tourism industries into ecotourism that will help Blue Economy as well as the health of the ocean.

Port and Shipping: Over 90% of Bangladesh's external freight is carried out by sea. Being the lifeline of the growing economy of the country, Chittagong Sea Port handles about 92% of the country's total import and export trade according to the report of Chittagong Port Authority (2021-22). Besides, Mongla and Payra ports combined to conduct 8-9 percent of the import and export of the country, facing the challenges of dredging and depth, rail and road links, infrastructure, and equipment. Meanwhile, the Matarbari Deep Sea Port, which is under construction, is expected to be a regional hub and a milestone for the shipping and port industry of Bangladesh. Investment from the Public Private Partnership for the hinterland connectivity, infrastructural development, dredging, and improvement of efficiency could add huge possibility to the industries as well as the economy of our country.

Seaweed Farming: According to a report of the Food and Agricultural Organization (FAO), the global market of seaweed was worth 9.9 billion USD in 2021, with a predictable growth rate of 2.3% from 2022 to 2030. Seaweeds are usually taken as a food item in different forms in many countries of the world. Besides, seaweed extracts like Agar, Alginate, and Carrageenan are highly sought-after thickening and gelling agents in a variety of industries, including pharmaceuticals, food processing, bio-stimulants, cosmetics, and even the production of substitute polymers for packaging. The top seven seaweed producing countries are located in Asia however Bangladesh is far behind in reaping the benefit of seaweed from the coastal water.

The Maritime Affairs Unit of the Ministry of Foreign Affairs has identified 220 species of seaweed available in the marine realm of Bangladesh. According to their study, currently, Bangladesh produces 400 tons of seaweed which is valued about BDT 55 million. The study also speculated that seaweed production in Bangladesh could be increased to 50 million tons by 2050. However, knowledge sharing, hands-on training of the seaweed farmers, guidelines, regulations, and proper monitoring are inevitable to reach the above point.

Oil and Gas: Although oil is rare, geo-physically Bangladesh is rich in natural gas. However, Shetol et al. (2019) claimed that Bangladesh is likely to reach the end of its land-based gas reserves by 2030. However, some of Bangladesh's offshore blocks are anticipated to have potential oil and gas reserves because of their proximity to Myanmar's recently discovered gas deposits. So, it has become an urgency to reveal the potential offshore gas fields as early as possible. However, a good fact is that recently, in March 2024, after a revised model, a Production Sharing Contract (PSC) has been approved, and Petrobangla (Bangladesh Oil, Gas and Mineral Corporation) launched an international tender for offshore oil and gas exploration where seven International Oil Companies (IOCs) have acquired bid documents (May 08, 2024, The Business Standard). Bangladesh is optimistic about the outcome of this offshore bidding round as significant oil companies worldwide are participating there.

Gas Hydrates: Gas hydrates are crystalline solid lattices of water that encompass methane in its physical structure. About 98% of gas hydrates are usually found on the ocean floor at the outer continental shelf, and 2% beneath the permafrost (Birchwood et al., 2010). One cubic meter of gas hydrate can generate 164 cubic meters of natural gas when it is lifted to the surface. So, they can be a major source of energy for the future generations. Once assumed to be rare, gas hydrates are now found to occur in vast volumes on the continental shelf of Bangladesh with a potential to produce about 17 to 103 trillion cubic feet of natural gas. Although sustainable extraction of gas hydrate is a challenging task, and there is a lack of technology for commercial extraction of gas hydrate, countries like China and Japan are initially exploiting it on small scales besides testing their equipment and methods (Hao et al., 2017; Oyama et al., 2017). Concerned organizations in Bangladesh may collaborate with China, Japan, and other developed countries for collaborative research, skill development, and technology sharing in this field.

Ocean Renewable Energy: Bangladesh Government has committed to producing 15% of its required energy from renewable sources by 2030, and rising it to 40% by 2041 (Abdulrazak et al., 2021). The major ocean renewable energy sources include coastal wind, tidal currents, ocean currents, tidal range, ocean waves, ocean temperature, and salinity gradient. Within this time, Bangladesh has made significant strides in wind power generation. Recently, the Khurushkul Wind Power Plant in Cox's Bazar launched operations on March 08, 2024, with a 60MW electricity generation capacity as well as three other wind power plants

in Kutubdia and Feni are running successfully with 11 other projects under construction (https://ndre.sreda.gov.bd/).

However, no progress is found in harnessing tidal, wave, and ocean thermal energy resources. A comprehensive energy resource mapping is inevitable to convert potential tidal, wave, and thermal energy into electricity which is yet to be done in Bangladesh where the national and international stakeholders have a huge opportunity for research, investment, and mobilize the benefits.

Apart from the resources discussed above, heavy minerals, ship breaking and building, marine genetic resources, biotechnology and pharmaceuticals as well as sea salt production are highly promising industries for the growing economy of Bangladesh. The author believes, government incentives can play a significant role in generating bold investment in Blue Economy. Again, the necessity of Ocean Literacy comes first. A logically customized series of chapters on ocean morphology, resources, and conservation approaches can be included in the curricula. A ministry dedicated to ocean exploration and conservation can help all the aspects including management of the blue resources, maintaining ocean health, human resource development, rising investment, and ensuring practical withdrawal of capitals.

Ocean Literacy

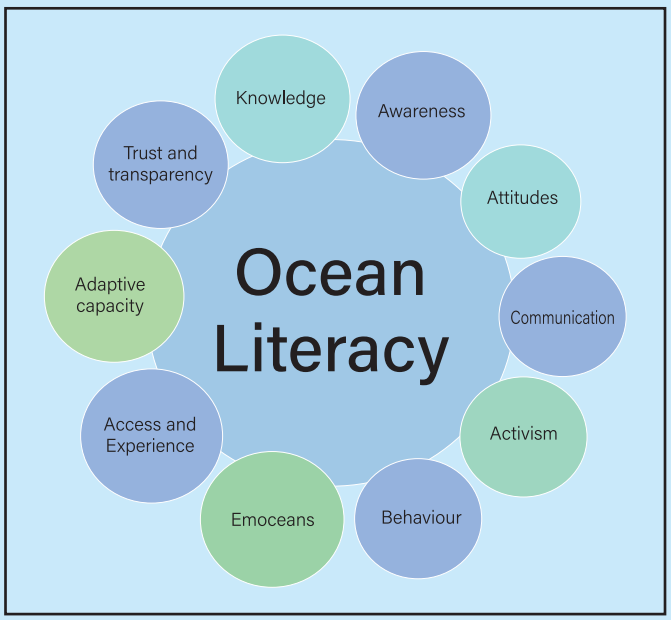

Figure 01: Key Components of Ocean Literacy (McKinley et al., 2023)

The knowledge of the ocean in our country is limited to a few small groups. For example, the navy personnel work on the safety, security, and surveillance of the ocean. Some students and teachers, at the university level, study Oceanography and Marine Science. A few of them conduct discrete researches which rarely get the attention of the concerned authorities. Even, the people of the 19 coastal districts living on the lap of the ocean aren't aware of the scientific use and conservation of the coastal resources. The people of 36 other districts of middle and northern Bangladesh have little knowledge about the seas. So, to achieve inclusive socio-economic development, the knowledge gap must be bridged through Ocean Literacy.

Bangladesh can be considered an ocean-literate nation when a person from Dinajpur is aware of seaweed as a food item, and mindful of the potential harm that a plastic packet could cause to a dolphin in the Bay of Bengal. Not only will Ocean Literacy support the Blue Economy, but it will also aid in the processes of climate change adaptation and mitigation. Thus, if studying the land is vital, gaining knowledge about the seas is more crucial as it makes up three times the land on earth.

The land-based resources are almost depleted. For the very survival, an alternative approach to the blue resources is existential to this hour. The extraction process of these resources must be sustainable as mentioned above in the definition of Blue Economy. Here, Ocean Literacy can play a vital role in increasing bold investment for Blue Economic Growth of Bangladesh. Knowledge sharing among the researchers, investors, seagoing fishers, seaweed farmers, salt producers, non-government organizations, and the government can play the most effective role in achieving the goal of a developed Maritime Bangladesh.

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