

Utilization of marine resources for the benefit of Bangladesh



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paints. However, looking ahead to the mid-century, meeting the needs for food, jobs, energy, raw materials, and economic growth will be essential to sustain an anticipated population level of between 9 and 10 billion people.

Bangladesh is endowed with a vast marine ecosystem. Following an international legal ruling, led by Prime Minister Sheikh Hasina, on

rich reserves of both living and non-living resources in its extended coastal and maritime areas, presenting significant opportunities for development. The United Nations Sustainable Development agenda prioritizes the conservation, sustainability, and utilization of oceans, seas, and marine resources, particularly for the benefit of least developed countries. This

areas encompass oil, gas, sea salt, and freshwater. Renewable resources, vital for sustainable development, include wind, water current, and solar energy. These resources support various sectors such as maritime transport, tourism, industries, ports, shipyards, shipbreaking, agriculture, aquaculture, islands, coastal protection, carbon storage, and waste disposal. Among living

plant species of 245 genera, with significant economic value. Additionally, the mangrove habitat supports a diverse array of wildlife, including 53 species of pelagic fish, 124 species of demersal fish, 24 shrimp species, 58 wildlife species, and 270 bird species.

Saint Martin's Island, covering approximately 7.5 square kilometers, stands as Bangladesh's sole coral-bearing island. Researchers have identified four coral species belonging to the Acropora genus and documented 66 coral species in total. Furthermore, the island boasts a rich diversity of seaweeds, with around 20-22 species present, the most abundant being Hypnea.

The nearshore and offshore regions along Bangladesh's coast hold potential reserves of oil, gas, and commercially important heavy minerals. Notably, 17 deposits containing valuable minerals such as Zircon, Rutile, Ilmenite, Leucosene, Kyanite, Garnet, Magnetite, and Monazite have been discovered in beach sands stretching from Patenga to Teknaf. Sea salt production through solar evaporation techniques presents another economic opportunity, with approximately 67,757 hectares utilized for salt cultivation in coastal areas. Despite this, Bangladesh still imports salt, indicating the potential for further increasing domestic production to meet demand.

Bangladesh's coastal areas boast unique attractions, including Cox's Bazar, the world's longest sea beach, and the Sundarbans, the largest mangrove forest globally. However, the potential of coastal and marine tourism remains largely untapped, as reflected in Bangladesh's tourism and recreation performance score, currently standing at only 8%. Additionally, the country's commercial use of marine waters is facilitated through four international ports: Chittagong, Payra, Matarbari, and Mongla.

A comprehensive assessment of all marine resources in Bangladesh is hindered by data limitations. The total marine fish catch reached 564,687 tons during 2017-18, accounting for 16% of the total fish production. Both inland and marine

fish catches have shown a long-term increase. Over 0.8 million individuals are directly and indirectly involved in the marine fisheries sector for their livelihoods. Presently, there are 225 industrial trawlers, including 24 mid-water trawlers, and approximately 38,000 mechanized and non-mechanized boats operating in marine waters. However, deep-sea and tuna fishing are nonexistent. Bangladesh boasts the world's largest shipbreaking industry, employing over 200,000 people. Currently, 10,000 inland and coastal ships, along with 102 foreign-going vessels, transport more than 90% of total oil products, 80% of cargo, and 35% of passengers domestically and internationally. The country also hosts over 10 shipyards constructing ships of international standards.

In Cox's Bazar, approximately 263 square kilometers of land and around 20 square kilometers in Chittagong are dedicated to sea salt production. This sector generates over 5 million jobs and contributes approximately \$35,313,000 to \$41,198,500 annually to the national economy. A target of producing 1.8 million tons of salt annually from a 247 square kilometer area in Cox's Bazar has been set, sufficient to meet domestic demand. Salinity in salt pans provides an ideal environment for artemia culture and cyst production, with a current market price ranging from \$50 to \$100 per kilogram.

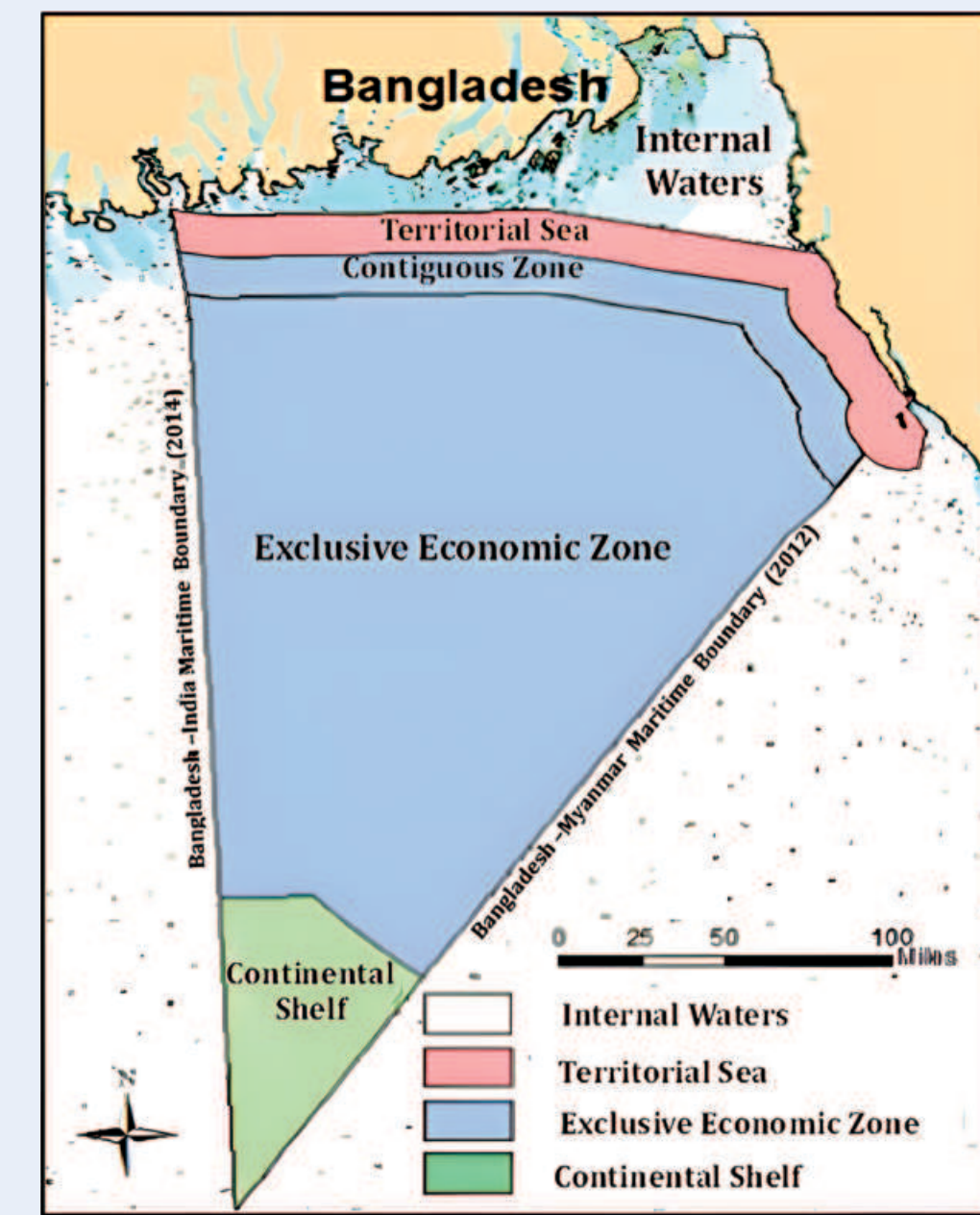
In Bangladesh, it is projected that 40% of productive land in the southern region could be lost due to a 65cm sea-level rise by the 2080s, affecting approximately 20 million people already grappling with saline water intrusion impacting their drinking water supply. Moreover, approximately 1 million hectares of land in southern coastal areas are at risk from saline water intrusion.

Seaweed cultivation costs \$2.4 per square meter, with cultivated seaweed selling at \$7.8 per square meter, yielding a net profit of \$5.4 per square meter. Hence, only 34 square meters of seaweed cultivable area would suffice to cover the monthly expenses of a typical family. Non-target marine fish species like goby fish can be

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Oceans, covering 71% of the planet's surface and containing 97% of its water, serve as a sanctuary for 2.2 million species. The utilization of marine resources, encompassed by the Blue Economy, aims to bolster economic growth by sustainably harnessing oceanic resources to foster social inclusion, enhance livelihoods, and meet increasing job demands while ensuring the environmental sustainability of ocean and coastal waters. This approach supports food security, the management and protection of marine environments, the creation of high-value employment opportunities, and diversification to exploit new resources such as energy, pharmaceuticals, protein sources, deep-sea minerals, security services for human welfare, and measures to combat climate change resilience. The estimated value-added output of the ocean-based Blue Economy exceeds 1.5 trillion USD, representing approximately 2.5% of the world's gross economic value.

Overall, the marine fisheries sector contributes a substantial \$230 billion to the global economy, directly or indirectly supporting the livelihoods of 9% of the world's population. Additionally, oceans serve as vital transportation routes, facilitating approximately 80% of global trade in goods. Coastal tourism plays a pivotal role in driving economic growth for numerous coastal and island nations, generating an annual revenue of about \$161 billion globally. Furthermore, the emerging field of "ocean energy," including aquatic biofuels and renewable energies, holds promise as a significant future source to meet the world's energy demands. The ocean also harbors potential for various valuable industrial products such as pharmaceuticals, antibiotics, antifreeze, and



Maritime boundary of Bangladesh

disputed maritime areas with neighboring countries India and Myanmar, Bangladesh's maritime territory is estimated to cover 118,813 sq. km, including a continental shelf spanning approximately 37,000 sq. km with depths of up to 50m. Bangladesh boasts

agenda emphasizes sustainable management practices for fisheries, aquaculture, and tourism, aiming to maximize economic benefits while preserving marine ecosystems for future generations.

Non-living resources in Bangladesh's coastal

coastal resources, mangroves stand out as the second most important in Bangladesh. The coastal region boasts an impressive 531,000 hectares of mangroves, with 99,000 hectares designated as 'the Sunderbans'. These ecosystems harbor 345

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