



Editorial

Unlocking the potential of the Blue Economy in Bangladesh

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Abstract

The Blue Economy offers Bangladesh a transformative pathway for sustainable development by leveraging its extensive 710-kilometer coastline and 118,813 square kilometers of Exclusive Economic Zone (EEZ) in the Bay of Bengal. Key sectors such as fisheries, hydrocarbons, maritime trade, renewable energy, and coastal tourism present significant opportunities for economic growth, employment, and environmental conservation. Marine resources, including the culturally and economically vital hilsa fish, and untapped offshore energy reserves, highlight the untapped potential of this sector. Despite these opportunities, challenges such as institutional capacity limitations, environmental degradation, insufficient research and technology, and geopolitical dynamics hinder progress. Addressing these requires a multi-sectoral approach, including establishing a dedicated Blue Economy authority, enhancing marine research, fostering public-private partnerships, and promoting regional cooperation under frameworks like BIMSTEC. Environmental sustainability and capacity building for coastal communities are critical to achieving long-term benefits. Aligning the Blue Economy with global Sustainable Development Goals (SDGs) further ensures its role in diversifying the economy, ensuring energy security, and uplifting communities. With strategic investments, visionary leadership, and sustainable practices, Bangladesh can harness its maritime potential, positioning itself as a model for sustainable ocean governance and a thriving maritime economy. The Bay of Bengal holds the promise of a brighter future, waiting to be navigated wisely.

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Bangladesh, a nation blessed with an extensive coastline of 710 kilometers along the Bay of Bengal, holds immense potential in harnessing its maritime resources for sustainable development (Islam *et al.*, 2018; Bir *et al.*, 2020). The concept of the "Blue Economy," which emphasizes the sustainable use of ocean resources for economic growth, improved livelihoods, and ocean ecosystem health, is particularly relevant for Bangladesh (Islam *et al.*, 2024a; Luna, 2024; Liza *et al.*, 2025). With strategic planning, sound policy implementation, and regional cooperation, the Blue Economy can serve as a transformative force, addressing the nation's socio-economic challenges and contributing significantly to its development trajectory (Cisneros-Montemayor *et al.*, 2019; Mondal *et al.*, 2024). The Bay of Bengal, one of the world's largest and most resource-rich marine ecosystems, is a treasure trove of opportunities for Bangladesh. Following the resolution of maritime boundary disputes with Myanmar in 2012 and India in 2014, Bangladesh gained sovereign rights over 118,813 square kilometers of Exclusive Economic Zone (EEZ) (Mostofa *et al.*, 2018). This marine domain offers diverse resources, including fisheries, hydrocarbons, renewable energy potential, and avenues for maritime trade and tourism.

The fisheries sector plays a pivotal role in the country's economy, contributing approximately 3.6% to the GDP and employing millions directly or indirectly (Islam *et al.*, 2024b). Marine fish production accounts for about 20% of the country's total fish production, with species like Hilsa being a cultural and economic mainstay (Shamsuzzaman *et al.*, 2017). However, unsustainable fishing

practices, overfishing, and habitat degradation threaten this vital resource (Andersen *et al.*, 2024). Implementing scientific fishery management and enforcing sustainable harvesting practices are imperative to secure long-term benefits.

The EEZ is believed to harbor significant reserves of hydrocarbons, including natural gas and oil. While onshore gas fields have been a backbone of the country's energy supply, exploration of offshore reserves remains in its infancy (Shetol *et al.*, 2019). With appropriate technological investment and international partnerships, the country can potentially reduce its reliance on imported fossil fuels and ensure energy security. Bangladesh's strategic location along the Bay of Bengal positions it as a critical hub for regional and global maritime trade. Ports like Chattogram, Mongla, and the emerging Payra Port are vital arteries for international trade, connecting South and Southeast Asia (Saha, 2022). Modernizing port infrastructure, improving logistics, and fostering transshipment capabilities can further enhance Bangladesh's economic integration with the global supply chain (Ibrahim and Xuefeng, 2023). The ocean's waves, tides, and offshore wind hold immense potential for renewable energy generation. While Bangladesh is in the early stages of exploring marine renewable energy, leveraging international expertise and investing in research can accelerate progress in this domain, contributing to the country's green energy aspirations (Majumder *et al.*, 2024). Bangladesh's pristine beaches, such as Cox's Bazar and Kuakata, alongside its diverse marine biodiversity, provide substantial opportunities for eco-tourism. Developing sustainable tourism infrastructure can generate significant revenue while conserving natural habitats and promoting community participation (Nobi and Majumder, 2019).

Despite its promising prospects, the development of the Blue Economy in Bangladesh faces several challenges that must be addressed to unlock its full potential. Effective governance and management of marine resources require robust institutional

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frameworks and technical expertise. Currently, institutional capacity to regulate and monitor activities within the EEZ is limited (Shamsuzzaman and Islam, 2018; Shampa *et al.*, 2023). Marine pollution, habitat destruction, and climate change pose significant threats to the sustainability of oceanic resources. Rising sea levels and increased salinity in coastal areas exacerbate vulnerabilities for both ecosystems and coastal communities (Das and Swain, 2024). Scientific research and technological capabilities in marine exploration and resource management are underdeveloped in Bangladesh. Collaboration with international organizations and investing in marine research institutions are critical for addressing this gap (Hussain *et al.*, 2019; Islam *et al.*, 2024a). The Bay of Bengal region witnesses significant geopolitical competition among regional and extra-regional powers. Ensuring maritime security and safeguarding national interests in this contested space are crucial for Bangladesh's Blue Economy aspirations (Hossain *et al.*, 2023).

To harness the potential of the Blue Economy effectively, Bangladesh must adopt a holistic and multi-sectoral approach. The following strategies can serve as a roadmap, creating a dedicated ministry or authority to oversee Blue Economy activities can ensure focused governance. This entity should work in tandem with existing maritime agencies, promoting policy coherence and coordination (Benzaken *et al.*, 2022). Investing in marine research and establishing partnerships with global institutions can provide the scientific basis for sustainable resource management. Specialized programs in universities focusing on oceanography, marine biology, and maritime technology should be encouraged (Pace *et al.*, 2023; Simanjuntak *et al.*, 2024). Engaging private sector stakeholders in port development, renewable energy, fisheries, and eco-tourism can bring in much-needed investment and innovation. PPPs can also facilitate the transfer of technology and best practices (Lomonico *et al.*, 2021). The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) offers a platform for regional collaboration in maritime affairs. Joint initiatives in maritime security, resource management, and disaster response can create mutual benefits and foster goodwill (Sinthuphan, 2024). Stringent regulations to control pollution, manage waste, and protect marine habitats must be enforced. Adopting ecosystem-based management approaches can balance economic activities with conservation goals (Olaniyi *et al.*, 2024). Training programs for coastal communities, fishermen, and maritime workers can enhance their skills and create employment opportunities. Awareness campaigns on sustainable practices can further empower local populations (Stacey *et al.*, 2021).

Bangladesh's journey toward becoming a maritime powerhouse hinges on its ability to align national aspirations with global sustainable development goals (SDGs). The Blue Economy directly contributes to several SDGs, including Goal 14 ("Life Below Water"), Goal 7 ("Affordable and Clean Energy"), and Goal 8 ("Decent Work and Economic Growth"). Integrating these goals into national development plans can ensure long-term benefits (Baker *et al.*, 2023). Moreover, the government's commitment, as reflected in the Perspective Plan 2021-2041 and the 8th Five-Year Plan, provides a strategic framework for advancing the Blue Economy. Translating these plans into actionable projects with measurable outcomes will be crucial (Husain and Kamruzzaman, 2020).

The Blue Economy represents a unique opportunity for Bangladesh to diversify its economy, enhance resilience against environmental challenges, and uplift millions from poverty. However, realizing this potential requires visionary leadership, strategic investments, and a commitment to sustainable practices. By embracing its maritime heritage and forging a path of innovation and collaboration, Bangladesh can not only achieve national prosperity but also emerge as a global model for sustainable ocean governance. The waves of the Bay of Bengal, if navigated wisely, hold the promise of a brighter and more sustainable future for the nation.

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Conflict of interest

The authors declare no competing interests.

Authors' contribution

Md. Atiqul Islam Mondal contributed to the conceptualization and writing of this editorial. The author has read and approved the final version of the published editorial.

References

- Andersen NF, Cavan EL, Cheung WWL, Martin AH, Saba GK and Sumaila UR, 2024. Good fisheries management is good carbon management. *Npj Ocean Sustainability*, 3: 17. <https://doi.org/10.1038/s44183-024-00053-x>
- Baker S, Constant N and Nicol P, 2023. Oceans justice: Trade-offs between Sustainable Development Goals in the Seychelles. *Marine Policy*, 147: 105357. <https://doi.org/10.1016/j.marpol.2022.105357>
- Benzaken D, Voyer M, Pouponneau A and Hanich Q, 2022. Good governance for sustainable Blue Economy in small islands: Lessons learned from the Seychelles experience. *Frontiers in Political Science*, 4: 1040318. <https://doi.org/10.3389/fpos.2022.1040318>
- Bir J, Golder MR, Zobayer FA, Das KK, Chowdhury SZ, Das LM and Paul PC, 2020. A review on blue economy in Bangladesh: prospects and challenges. *International Journal of Agricultural Research, Innovation and Technology*, 7(4): 21–29. <https://doi.org/10.5281/zenodo.4270719>
- Cisneros-Montemayor AM, Moreno-Báez M, Voyer M, Allison EH, Cheung WWL, Hessing-Lewis M, Oyinlola MA, Singh GG, Swartz W and Ota Y, 2019. Social equity and benefits as the nexus of a transformative Blue Economy: A sectoral review of implications. *Marine Policy*, 109: 103702. <https://doi.org/10.1016/j.marpol.2019.103702>
- Das A and Swain PK, 2024. Navigating the sea level rise: Exploring the interplay of climate change, sea level rise, and coastal communities in India. *Environmental Monitoring and Assessment*, 196(11): 1010. <https://doi.org/10.1007/s10661-024-13191-z>
- Hossain D, Morsalin SS and Siddiquee MA, 2023. Understanding the emerging strategic rivalries in the Bay of Bengal: Actors and associated policies. *Journal of Bangladesh and Global Affairs*, 2(2): 21–51. <https://doi.org/10.55875/JBGAV2N2A2>
- Husain T and Kamruzzaman K, 2020. Priority areas for Bangladesh: Roadmap to 2041 as Developed Country. *Archives of Community Medicine and Public Health*, 6(2): 277–280. <https://doi.org/10.17352/2455-5479.000121>
- Hussain MG, Failler P and Sarker S, 2019. Future importance of maritime activities in Bangladesh. *Journal of Ocean and Coastal Economics*, 6(2): 3. <https://doi.org/10.15351/2373-8456.1104>
- Ibrahim M and Xuefeng W, 2023. Development of port logistics center: Bangladesh perspective. *International Journal of*

- Engineering and Management Research, 13: 68–74. <https://doi.org/10.31033/ijemr.13.1.8>
- Islam MK, Rahaman M and Ahmed Z, 2018. Blue Economy of Bangladesh: Opportunities and challenges for sustainable development. *Advances in Social Sciences Research Journal*, 5(8): 168–178. <https://doi.org/10.14738/assrj.58.4937>
- Islam MS, Ahmed Z, Habib MA and Masud O, 2024a. Blue economy of Bangladesh and sustainable development goals (SDGs): a comparative scenario. *Discover Sustainability*, 5: 349. <https://doi.org/10.1007/s43621-024-00551-5>
- Islam S, Hossain PR, Braun M, Amjath-Babu TS, Mohammed EY, Krupnik TJ, Chowdhury AH, Thomas M and Mauerman M, 2024b. Economic valuation of climate induced losses to aquaculture for evaluating climate information services in Bangladesh. *Climate Risk Management*, 43: 100582. <https://doi.org/10.1016/j.crm.2023.100582>
- Liza JI, Majumder SC and Rahman MH, 2025. Scrutinizing the impact of blue economy factors on the economic growth in Bangladesh: An empirical study. *Marine Policy*, 173: 106542. <https://doi.org/10.1016/j.marpol.2024.106542>
- Lomonico S, Gleason MG, Wilson JR, Bradley D, Kauer K, Bell RJ and Dempsey T, 2021. Opportunities for fishery partnerships to advance climate-ready fisheries science and management. *Marine Policy*, 123: 104252. <https://doi.org/10.1016/j.marpol.2020.104252>
- Luna F, 2024. Harnessing Blue Economy potential for sustainable development: Navigating opportunities and challenges. *Global Disclosure of Economics and Business*, 13: 21–30. <https://doi.org/10.18034/gdeb.v13i1.768>
- Majumder MZH, Shampa MTA, Islam MA, Deowan SA and Hafiz F, 2024. Marine renewable energy harnessing for sustainable development in Bangladesh: A technological review. *Energy Reports*, 11: 1342–1362. <https://doi.org/10.1016/j.egy.2024.01.001>
- Mondal MAI, Abit LY Siddiqui AAM and Al-Asif A, 2024. Fish to finance: unraveling the economic threads of Bangladesh's Blue Economy. *Asian Journal of Medical and Biological Research*, 10: 9–41. <https://doi.org/10.3329/ajmbr.v10i1.71034>
- Mostofa M, Al-Amin DM and Bint-E-Basar KT, 2018. Delimitation of maritime boundary with india and Bangladesh's rights over the Sea. *American International Journal of Social Science Research*, 2: 108–113. <https://doi.org/10.46281/aijssr.v2i1.172>
- Nobi MN and Majumder MA, 2019. Coastal and marine tourism/eco-tourism in the future. *Journal of Ocean and Coastal Economics*, 6(2): 12. <https://doi.org/10.15351/2373-8456.1120>
- Olaniyi EO, Solarte-Vasquez MC and Inkinen T, 2024. Smart regulations in maritime governance: Efficacy, gaps, and stakeholder perspectives. *Marine Pollution Bulletin*, 202: 116341. <https://doi.org/10.1016/j.marpolbul.2024.116341>
- Pace LA, Saritas O and Deidun A, 2023. Exploring future research and innovation directions for a sustainable blue economy. *Marine Policy*, 148: 105433. <https://doi.org/10.1016/j.marpol.2022.105433>
- Saha RC, 2022. Chattogram port: A dedicated service institution to evolve the country boldly. *Maritime Technology and Research*, 5: 258294. <https://doi.org/10.33175/mtr.2023.258294>
- Shampa MTA, Shimu NJ, Chowdhury KMA, Islam MM and Ahmed MK, 2023. A comprehensive review on sustainable coastal zone management in Bangladesh: Present status and the way forward. *Heliyon*, 9(8): e18190. <https://doi.org/10.1016/j.heliyon.2023.e18190>
- Shamsuzzaman MM and Islam MM, 2018. Analysing the legal framework of marine living resources management in Bangladesh: Towards achieving Sustainable Development Goal 14. *Marine Policy*, 87: 255–262. <https://doi.org/10.1016/j.marpol.2017.10.026>
- Shamsuzzaman MM, Islam MM, Tania NJ, Al-Mamun AM, Barman PP and Xu X, 2017. Fisheries resources of Bangladesh: Present status and future direction. *Aquaculture and Fisheries*, 2(4): 145–156. <https://doi.org/10.1016/j.aaf.2017.03.006>
- Shetol MH, Rahman MM, Sarder R, Hossain MI and Riday FK, 2019. Present status of Bangladesh gas fields and future development: A review. *Journal of Natural Gas Geoscience*, 4(6): 347–354. <https://doi.org/10.1016/j.jnggs.2019.10.005>
- Simanjuntak MB, Rafli Z and Utami SR, 2024. Enhancing maritime education for ocean sustainability: A multidisciplinary approach. *BIO Web of Conferences*, 106: 02006. <https://doi.org/10.1051/bioconf/202410602006>
- Sinthuphan J, 2024. Reconnecting the Bay of Bengal: a socio-cultural vision of BIMSTEC. *Australian Journal of Maritime and Ocean Affairs*, 16(3): 349–362. <https://doi.org/10.1080/18366503.2024.2386877>
- Stacey N, Gibson E, Loneragan NR, Warren C, Wiryawan B, Adhuri DS, Steenbergen DJ and Fitriana R, 2021. Developing sustainable small-scale fisheries livelihoods in Indonesia: Trends, enabling and constraining factors, and future opportunities. *Marine Policy*, 132: 104654. <https://doi.org/10.1016/j.marpol.2021.104654>

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