

# Addressing Pollution in the Bay of Bengal: A Strategy for Regional Ocean Governance

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The vast Bay of Bengal (BoB), which is situated in the northeastern section of the Indian Ocean, is significant both environmentally and commercially. Over 2.2 million square kilometers in size, the BoB shares borders with multiple nations, such as Bangladesh, India, Myanmar, Thailand, and Sri Lanka. This vast body of water serves as a center for fishing and maritime trade in addition to being home to a wide variety of marine species (Blasco, 2002). It is well known for its rich marine biodiversity, which consists of a wide variety of marine life, colorful coral reefs, and extensive mangrove ecosystems. These habitats are essential for the survival of many fish species and are the backbone of the fisheries in the area (Sen & Ghorai, 2019). In addition to its biological significance, the BoB has significant economic worth. It is a vital trading route through its many ports, supports sizable commercial fishing companies, and makes a major tourist contribution. The Bay's waters serve as a pivot point in the worldwide commercial network,

linking Southeast Asia and South Asia. But beneath the surface of this supposedly unspoiled water, pollution is posing a serious threat. Large amounts of silt and pollutants from the higher catchments are carried by the Ganges, Brahmaputra and Meghna River System, which is one of the busiest river systems in the world. These are eventually combined with soil and water and discarded into the BoB (Sen & Ghorai, 2019).

In the BoB's east coast, sewage-borne diseases, persistent organic pollutants, and high heavy metal concentrations are prevalent, and they damage oysters and seashells. A significant amount of plastic reach the BoB from Bangladesh. Most of Bangladesh's industries release untreated wastewater and solid waste into the Karnaphuli River, which empties into the Bay of Bengal. The Bay receives a lot of untreated sewage, plastics, industrial wastes and other effluents from the agricultural and aquaculture sectors through several big rivers that have their sources in India (Kaly, 2004).

The implications of pollution in the Bay of Bengal are far-reaching. Diesel pollution damages sea stars and sea urchins, sometimes to the point of extinction. Oil refinery effluents contain phenol, which irritates the gills, produces copious secretion and mucus membrane breakdown, and impacts the endocrine and central nervous systems of fishes. Fish that feed on the bottom close to an oil refinery are observed displaying changes in their cells caused by hydrocarbons, which eventually lead to cancer (Albers, 2002). The Bay's contaminated waters have the potential to cause dead zones, which are areas where marine life cannot survive and oxygen remains at a very low level. Furthermore, the existence of marine species like seabirds and turtles is directly threatened when they consume plastics.

Since the BoB is a trans-boundary body of water, a coordinated regional strategy for ocean governance is necessary to successfully manage pollution. The term "Regional Ocean Governance" describes the coordinated efforts of adjacent nations to safeguard and manage their common marine resources and deal with shared issues. To enable coordinated responses to pollution incidents, cooperative monitoring, and information exchange, effective governance systems are required. There are several approaches towards the resolution of disputes and conflicts in international ocean governance.

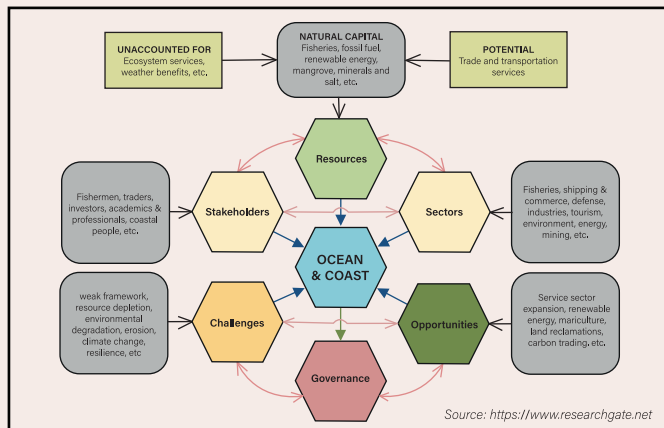


Figure 01: Ocean Governance Framework

Subsets of international agreements that concentrate on environmental issues are called Multilateral Environment Agreement, or MEAs. A few of these are: the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972), Ramsar Convention (1971), International Convention for the Prevention of Pollution from Ships (MARPOL) (1973), and United Nations Conference on Environment and Development (UNCED) (1992), and International Law Commission (ILC), (2006).

It should be noted that the five coastal states (Bangladesh, India, Myanmar, Thailand, and Sri Lanka) along the BoB are all common law countries with essentially the same legal agreements. The obligation to preserve and protect the environment is underlined in Article 18A of Bangladesh's Constitution, Article 48A of the Indian Constitution, as well as Articles 22 and 67 of the Maldives Constitution. Also, it is important to mention that these states have accepted the

International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978, (MARPOL 73/78) and the UNCLOS III (1982).

Although regional ocean governance has great potential, there are drawbacks and obstacles to consider (Hossain, 2020). First of all, effective collaboration in combating pollution is hampered by political tensions and disputes among neighboring countries. One of the biggest obstacles to regional governance is resolving these disagreements. Secondly, adequate data and information sharing are necessary for good governance. Some nations may oppose sharing the data as they fear issues about resource allocation or issues of the sovereign territory. Thirdly, the allocation of funds to the initiatives to address the issues of pollution and prevent new cases can be quite a controversial issue. A fair allocation is the most appropriate approach.

The BoB has optimism despite these obstacles because there are instances of effective regional ocean governance schemes. Despite facing its own set of environmental issues, the Southeast Asian region has benefited from cooperative efforts led by institutions such as the Association of Southeast Asian Nations (ASEAN). The efforts within ASEAN agreements, like the ASEAN Agreement on Transboundary Haze Pollution, have been put in place to tackle air pollution from forest fires that cross borders. Similar regional initiatives could help in controlling pollution in the BoB. Exploring how ocean governance is managed in seas like the Mediterranean, Black, Baltic, and Caspian Seas could benefit the framework for managing resources in this region. Key agreements such as the 1995 Mekong River Basin Agreement, the 1973 Itaipu Treaty between Brazil and Paraguay, and the 1998 International Commission for the Protection of the Danube play important roles in transboundary pollution management (Hossain, 2022). The EU Strategy for the Baltic Sea Region (EUSBSR) and Mediterranean Science Commission (CIEM) demonstrate collaborations across regions, which was commended in the 3rd International Conference on Marine/Maritime Spatial Planning, November 22-23, 2022.

To effectively prevent pollution in the BoB and get the benefits of ocean governance, it is crucial for the nations surrounding the bay to establish a framework for ocean management. This framework should outline strategies for handling pollution, information sharing, and coordinating responses to pollution events (*World Bank Group, 2014*). The first goal should be to enhance the region's ability to control and reduce pollution by providing training initiatives, technical assistance, and sharing approaches among countries. Secondly, international collaboration and diplomatic engagement are critical to overcoming any political barriers to regional ocean governance. Thirdly, appropriate practices and behaviors can be promoted via educational programs aimed at the general public, businesses, and coastal communities. Finally, the nations around the BoB should establish regional accords regarding pollution control, sustainable resource management, and disaster relief.

The BoB has reached a critical point due to its unique ecological richness and economic importance. The crucial issue of pollution is putting all of these in danger: the region's economic prosperity, the people's lives on the coast, and the health of the marine ecosystem. For such a precious resource, a regional ocean governance approach is necessary in order to protect it. Because there are no regional legally binding instruments, no significant advancements have been made to combat marine pollution in the BoB region. A sub-regional regulation and monitoring mechanism which makes significant contributions to a sustainable ocean ecosystem and a habitable coastal living environment for the livelihoods of the people should be developed.

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