

Overexploitation of living marine resources

Fisheries production in the Bay of Bengal is six million tonnes per year, more than seven percent of the world's catch.

The eight Bay of Bengal countries have determined three major problems (or areas of concern) affecting the health of the Bay, that they can work on together.

The major issues

- A decline in the overall availability of fish resources
- Changes in species composition of catches
- High proportion of juvenile fish in the catch
- Changes in marine biodiversity, especially through loss of vulnerable and endangered species

The transboundary nature of the major issues

- Many fish stocks are shared between BOBLME countries, through the transboundary migration of fish, or larvae.
- Fishing overlaps national jurisdictions, both legally and illegally – overcapacity and overfishing in one location forces a migration of fishers and vessels to other locations.
- All countries (to a greater or lesser degree) are experiencing difficulties in implementing fisheries management, especially the ecosystem approach to fisheries.
- BOBLME countries contribute significantly to the global problem of loss of vulnerable and endangered species.

The main causes of the issues

- Open access to fishing grounds
- Government emphasis on increasing fish catches
- Inappropriate government subsidies provided to fishers
- Increasing fishing effort, especially from trawlers and purse seiners
- High consumer demand for fish, including for seed and fishmeal for aquaculture
- Ineffective fisheries management
- Illegal and destructive fishing



Degradation of critical habitats

The major issues

- Loss and degradation of mangrove habitats
- Degradation of coral reefs
- Loss of, and damage to, seagrasses

The transboundary nature of the major issues

- All three critical habitats occur in all BOBLME countries.
- Coastal development for several varying uses of the land and sea are common in all BOBLME countries.
- Trade in products from all the habitats is transboundary in nature.
- Climate change impacts are shared by all BOBLME countries.

The main causes of the issues

- Food security needs of the coastal poor
- Lack of coastal development plans
- Increasing trade in products from coastal habitats
- Coastal development and industrialization
- Ineffective marine protected areas and lack of enforcement
- Upstream development that affects water-flow
- Intensive upstream agricultural practices
- Increasing tourism

The Bay of Bengal is an area of high biodiversity, with a large number of endangered and vulnerable species.



Pollution and water quality

The major issues

- Sewage-borne pathogens and organic load
- Solid waste/marine litter
- Increasing nutrient inputs
- Oil pollution
- Persistent organic pollutants (POPs) and persistent toxic substances (PTSs)
- Sedimentation
- Heavy metals

The transboundary nature of the major issues

- Discharge of untreated/partially treated sewage is a common problem; sewage and organic discharges from the Ganges-Brahmaputra-Meghna River are likely to be transboundary.
- Plastics and derelict fishing gear can be transported long distances across national boundaries.
- High nutrient discharges from rivers could intensify large-scale hypoxia; atmospheric transport of nutrients is inherently transboundary.
- Differences between countries with regard to regulation and enforcement of shipping discharges may drive discharges across boundaries; tar balls are transported long distances.
- POPs/PTSs and mercury, including organo-mercury, undergo long-range transport.
- Sedimentation and most heavy metal contamination tend to be localized and lack a strong transboundary dimension.

The main causes of the issues

- Increasing coastal population density and urbanization
- Higher consumption, resulting in more waste generated per person
- Insufficient funds allocated to waste management
- Migration of industry into BOBLME countries
- Proliferation of small industries

With the support of the BOBLME Project, the eight countries are now developing responses to these issues and their causes, for future implementation as the Strategic Action Programme.

Nutrients transported by rivers into the northern Bay of Bengal are predicted to increase significantly.

In April 2009, the **Bay of Bengal Large Marine Ecosystem Project (BOBLME)** started work.

This five year project aims to improve the lives of the coastal populations through improved regional management of the Bay of Bengal environment and its fisheries.

The BOBLME countries have a combined total population of 1.78 billion people, equivalent to 25 percent of the world's population. The coastal population of the region is estimated to be 450 million people, equivalent to 50 percent of the world's coastal poor.

The BOBLME is rich in natural resources, including extensive mineral and energy resources; marine living resources that support major fisheries; and forest and land resources. Fisheries production is six million tonnes per year, more than seven percent of the world's marine catch.

The LME supports a wide range of habitats, including extensive tracts of mangroves, coral reefs and seagrass beds. It is an area of high biodiversity, with a large number of endangered and vulnerable species.

The LME and its natural resources are of considerable social and economic importance to the countries that border the Bay of Bengal. Activities such as fishing, marine farming, tourism and shipping contribute to food security, employment and national economies. Marine living resources are extremely important to the coastal poor, particularly as a source of food.

There are over 400 000 fishing boats operating in the Bay of Bengal and over 4.5 million people are employed in associated fisheries activities. But rapid population growth, high dependence on aquatic resources for food, trade and livelihoods, and changing land use patterns are having major impacts on the marine ecosystem. It is not clear how much longer the Bay of Bengal will be able to support the needs and aspirations of the many sectors that use its resources, most notably the large population of coastal poor that depends on them for survival.

The Transboundary Diagnostic Analysis (TDA)

A TDA identifies, quantifies and ranks water-related environmental transboundary issues and their causes according to the severity of environmental and/or socio-economic impacts.

The TDA of the BOBLME draws on numerous studies and extensive regional and national consultations with stakeholders. Importantly, the TDA provides the scientific basis for the development of the Strategic Action Programme that sets out a strategy for the countries to collectively deal with transboundary issues.

Main areas of concern

The TDA of the BOBLME identifies three main transboundary issues:

- Overexploitation of marine living resources
- Degradation of mangroves, coral reefs and seagrasses
- Pollution and water quality

A causal chain analysis was conducted on each of these areas of concern, resulting in the identification of priority issues and their underlying causes. A summary of the three areas is presented here. A transboundary issue is defined as an environmental problem in which either the cause of the problem and/or its impact is separated by a national boundary; or the problem contributes to a global environmental problem and finding regional solutions is considered to be a global environmental benefit.

The TDA also reviews the driving forces at work in the BOBLME, such as the socio-economic, institutional, legal, administrative circumstances and the projected impact of global climate change on the region. These forces all pose a range of constraints and challenges and have the potential to influence the success of actions implemented to address the three main areas of concern. This information is also considered to be important for the development of the Strategic Action Programme.

