

Marine Fisheries in Bangladesh

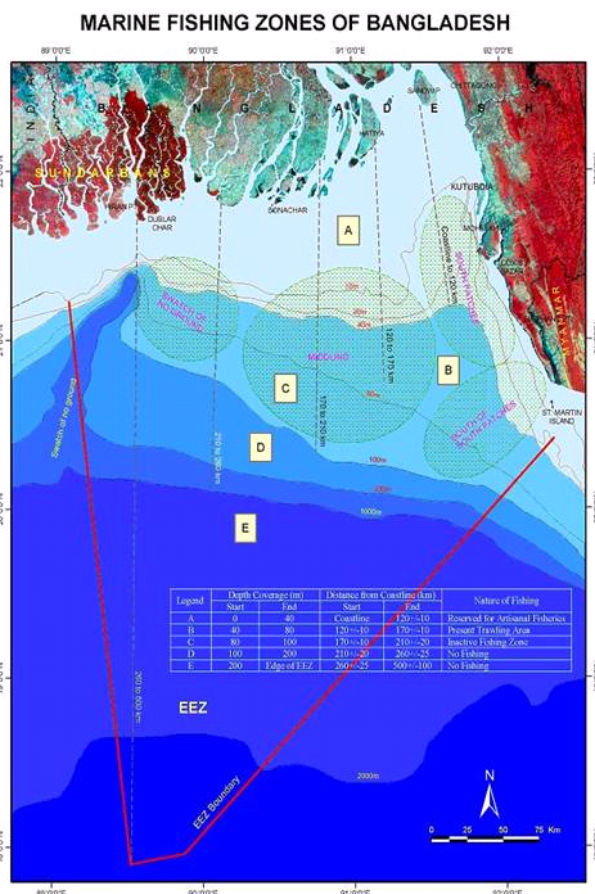
An Overview

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1. An Overview of Fisheries Sector

Bangladesh has extensive and huge water resources all over the country as small ponds, ditches, lakes, canals, small and large rivers, and estuaries covering about 4.34 million hectares. The culture fisheries include freshwater ponds of 0.15 million ha, and coastal shrimp farms of 0.14 million ha. The country has a coastal area of 2.30 million ha and a coastline of 714 km along the Bay of Bengal, which supports a large artisanal and coastal fisheries. In addition to this, the country has 166,000 km² EEZ in the Bay of Bengal. The fisheries sector of Bangladesh is highly diverse in recourse types and species. There are about 795 (including 12 exotic species) species of fish and shrimp available in the both fresh and marine waters of Bangladesh. Exports were valued at USD 307 million. In 2000, the fisheries sector contributed about 6% to its national GDP, involving a full-time equivalent of at least 5.2 million people, or 9% of the labour force. Moreover, the sector functions as a safety net for income and food for the rural poor, provides an important source of animal protein and essential elements for all consumers, and is particularly important for poor in both rural and urban areas.

Total production was estimated at 750,000 mt from inland capture fisheries, 850,000 mt from inland aquaculture, 95,000 mt from coastal aquaculture (on shore aquaculture; major species is shrimp and a few finfish) and 589,000 mt from marine fisheries. Both inland and marine capture fisheries are in declined by around 5% and 1% per annum. Current levels of marine fisheries production are only being maintained by significant increases in fishing effort, which if not contained will contribute to greater reductions in production in the long term. However, aquaculture has a major impact, growing by +/- 14% per annum over the decade. Specific areas of growth include carp (20% per annum) and shrimp (3% per annum). By contrast, it is essential to explore the incremental fish production from initiating off-shore Mariculture in the Bay of Bengal.



2. Marine Resources:

Bangladesh is one of the resourceful countries with its wide range of marine aquatic bio-diversities. There are about 1093 marine aquatic organisms where 44.35% are finfish, 32.23% shellfish, 15.10% seaweeds and only 8.32% are other organisms including shrimps. The details in number of species and their percentages are shown in the table below:

Group of the Organisms		Nos. of Species	%
1	Finfish	486	44.35
2	Sharks, Rays, Skates and Dolphin	21	1.92
3	Shrimps	36	3.30
4	Lobster	6	2.01
5	Crabs	16	
6	Sea Turtle	3	0.27
7	Crocodiles	3	0.27
8	Squid and Cuttle Fish	7	0.64
9	Shellfish (Univalves and bivalves)	350	32.23
10	Seaweeds	165	15.10
Total		1093	100

3. Status of Marine Aquaculture

This sub-sector of fisheries has mainly one type of culture system like on-shore aquaculture. The on-shore aquaculture is generally called in Bangladesh as Coastal Aquaculture.

3.1 The Coastal Aquaculture

The coastal aquaculture has been developed significantly in the last decade particularly the shrimps (*monodon* and *indicus* sp.) culture in medium to high saline water and prawn (*machrobrachium* sp.) culture in less saline areas. In addition, a small production of mangrove crabs, and varied quantities of brackish and marine water fish species like sea bass and mullet, most of which are produced as by-crops or fallow crops in the shrimp ponds. This constitutes the major export oriented sub-sector, and is increasingly shaped by international trade conditions and by national responses to these. Its relatively high value places considerable importance for upstream inputs such as seed and feeds, and for downstream elements such as transport and processing.

3.1.1 Seed Supply

This sub-sector comprises both capture and culture elements, supplying both finfish and shrimp seed. Both groups still depend to varying degrees on wild caught stocks, though fish (carp) culture is increasingly dominated by hatchery supply and shrimp/prawn culture is steadily increasing its demands for cultured stock. The supply of wild seed has important interactions with artisanal fishing in coastal areas. Whatever, the source of seed, considerable national (and cross border) networks have built up to transport and distribute seed from points of origin to producers. The government has banned catching of wild post larvae from the coastal zone to conserve its biodiversity. Accordingly, the supply of hatchery produced seed has been increased significantly in last 4 years and the seed transportation system also modernized as well. Still farmers are depending upon nature for finfish (sea bass, mullet, etc) seeds.

3.1.2 Post harvest and Market

The gradual shift from local consumption within rural areas and the growth in urban markets and their service infrastructures has increased the role of market intermediaries and service suppliers for the coastal aquaculture. However, as many markets are still based on wet fish sale the scope for value addition is minimal to date. More particularly, the production of shrimp and the export in frozen tailed form has created a significant production sub-sector, with commercial investment and notable employment impacts.

Demand for shrimp is increasing in the US and Europe. Though the Japanese market has slowdown, new markets have emerged in Asia such as the Republic of Korea, Singapore and Hong Kong. In 2001, Bangladesh achieved its ever highest export earnings of USD 32 million by exporting 29,719 mt shrimp. The growth in exports has been consistent since the early 1970s, but the problems associated with identified health and food safety in 1997 - 2000.

3.1.3 General Support to the Sub-sector

A range of associated functions - products and services, can be recognized, serving as the primary multiplier elements for the sub-sector. However, as most forms of output are relatively under or undeveloped. Elements include aquaculture seed, feed, equipment and their maintenance and other supplies for post-harvest needs. Particular changes are occurred in more commercialising subsector. The provision of extension and research services and of financial and management services can also be further developed and modernized in this subsector.

3.2 Off-shore Mariculture

Bangladesh is exploring its marine resources by only capturing the fishes from the sea. It has about 714 km long coast line with 166,000 km² EEZ with 1093 aquatic marine organisms including finfish, shellfish, shrimps, seaweeds, etc. The marine capture fish is declining about 5% per annum. If it is continued, the total fish production will be held back in near future. So, it is the right time to think about how to increase the marine production, and the Mariculture initiatives should be taken now. Among the marine fishes, only shrimps are cultured in on-shore ponds. Some other species like sea bass, mullet and mud crab are also started to culture in the ponds in saline water traditionally in a limited scale. However, it has huge potentiality of off-shore Mariculture. In contrast, it could be concluded that there is no Mariculture exist in Bangladesh.

4. The Constraints

The following constraints to be addressed to increase the marine production in a sustainable manner by reducing capture in the sea which will have tremendous and long-term impact on livelihoods of the coastal people and, where the regional cooperation will be essential to lessen the constraints:

- a. Lack of awareness about Mariculture like cage culture
- b. Lack of appropriate technology for Mariculture which will be best fit in Bangladesh
- c. Inadequate infrastructures in relation to information & communication, transportation, hatcheries for seeds, market, etc
- d. Lack of skill human resources in this field
- e. The areas for Mariculture not yet demarcated by the government
- f. Lack of finance to the sector

5. Way forward

The initiatives have to be taken by the government and private sector for developing the Mariculture and its market in a better coordinated way in collaboration with the regional and international networks. These are to:

- A. Capacity building relating to the Mariculture, in terms of-
 - Develop appropriate technologies for Mariculture which will be best fit in Bangladesh considering its climatic, market and social conditions
 - Develop knowledge, and appropriate technical and management skills of the human resources who are/will be involved in Mariculture.
 - Plan to Demarcate areas for Mariculture (zoning) using GIS

- B. Development of infrastructures
 - Road for transportation of both inputs and outputs
 - Develop and update the educational or training infrastructures
 - Develop information communication system to rapid access to information
 - Develop and modernize the market including landing centres and the marketing channels both for inputs and outputs relating to the Mariculture

- C. Development of networks
 - Develop producers organizations and networks for information, better management, and access to finance
 - Develop and coordinate with the regional and international networks for update technological, markets and other relevant information and support

Reference:

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