

# Marine & Coastal Fisheries Resources, Activities and Development in Bangladesh: Relevance to BOBLME Project



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# Introduction

- Bangladesh having the 3<sup>rd</sup> largest aquatic biodiversity in Asia behind China & India
- About 800 species of fresh, brackish & marine waters
- Having world's largest flooded wetland (Bengal Delta) & three main river systems
  - Ganges, Brahmaputra & Megna ➡
- Vast water resources offer the best possibilities for food security & income generation ➡
- In inland fisheries, Bangladesh's position is 2nd among the top ten fish producing countries of the world (FAO 2009) ➡
- Among the top ten aquaculture producing countries Bangladesh's position is sixth (FAO 2009). ➡

- The country has about 710 km long coastal belt
- Continental shelf is about 37,000 km<sup>2</sup> having up to 50 m depth
- Area of EEZ is about 1,64,000 km<sup>2</sup>, which is larger than land area (1,44,000 km<sup>2</sup>) of the country
- Fisheries sector contributes 5.71% of total export earning and 4.92% to the GDP
- The sector contributes 22% of the total agricultural production & 63% of the total animal protein intake of the country



## Country Production in Brief

- **Present fish production (2007): 2.56 million tons**
- **Total Marine catch : 497,573 t (19.4%)**
  - Industrial : 34156 t (1.3%)
  - Artisanal : 463414 t (18.1%)
- **Total Inland catch : 2,065,723 t (80.59%)**
  - Capture : 1060181 t (41.36%)
  - Aquaculture : 1005542 t (39.23%)
- **Hilsa (*Tenualosa ilisha*), as a single species, accounts for 12-13% of the total fish production of the country.**
  - **Inter-ministerial cooperation succeeded in implementation of the HMAP**
  - **Juvenile hilsa abundance recorded 35% more than previous years**
  - **Over all hilsa production increased 40% more than previous years**
  - **Govt. allocated more money (US\$ 0.29 million) for alternate livelihood i.e. cage culture and other activities of hilsa fishers during fishing ban period**



# Marine & Coastal Environment of Bangladesh

- The Bay of Bengal of Bangladesh is a semi-enclosed tropical basin
- Bangladesh shelf area covers 66,000 km<sup>2</sup> & coastal waters are very shallow (< 10 m depth) covering about 24,000 km<sup>2</sup>, and (up to 200 m depth) covers about 70,000 km<sup>2</sup>
- Marine fisheries contributes 19.4% of total fish production (2.56 million tons) of Bangladesh
- Marine fisheries divided into industrial and artisanal fisheries
- Industrial fishery based on trawl fishery (shrimp & fish) contributes only 6.6% and artisanal fisheries contributes 93.4% of the total marine landings
- Declining CPUE (650 kg/ day/ boat in 2001-2002 to under 100 kg/ day/ boat in 2005-2006) targeting hilsa, skipjack tuna and mackerel is in alarming situation



# Management and development issues

- Old fashioned fisheries management, regulation and rules, ie. Marine Fisheries Ordinance 1983, which needs to be updated
- Low level of monitoring, control and surveillance (MCS) of DoF
- Inadequate management of Fisheries & Ecosystem needs to be updated as per the requirement of NFP (1998) & MF-Sub Sec-Strategy Policy 2006
- Resource allocation and access rights to poor fishermen
- Co-management of small-scale fisheries ie. CBFM (Dof/WFC) & ECFC (FAO) Projects
- Inadequate research on Marine Fisheries, ie. FRSS-DoF needs upgrading



# Legal instruments, policies, strategies, and plans, related to fisheries, environment, and coastal & marine resources

Following Acts, Rules made by various Ministries of Govt. of Bangladesh over the decades supporting coastal & marine fisheries resources:

- The Marine Fisheries Ordinance, 1983
- The Marine Fisheries Rules, 1983
- The Environmental Conservation Act, 1995
- The Territorial Waters & Maritime Zones Act, 1974 Territorial Waters and Maritime Zones Rules, 1977
- Bangladesh Merchant Shipping Ordinance, 1983
- Bangladesh Code of Conduct for Responsible Fishing drafted (in the line with FAO's CCRF) for immediate implementation
- Bangladesh Coastal Zone Policy, 2005 by Min. of Water Resources



# Key management measures related to fisheries in BoB

- **Limiting the fishing days for industrial trawlers:** The freezer trawlers are permitted for 30 days, non-freezer trawlers are permitted for up to 15 days
- **Measure to limit discard of bi-catch:** Shrimp trawlers must have at least 30 percent fish in the total catch
- **Control of mesh size:** Mandatory 45 mm mesh size at the cod end for the shrimp trawl nets. Since 2003, massive drive against catching of jatka (hilsa fry) by small mesh nets called “Current Jaal” during November to May
- **Depth zone restriction of 40 m:** Restricting shrimp and fish trawling within the 40 m depth zone
- **Declaration of hilsa sanctuary:** Four sites in the coastal area have been established as hilsa sanctuaries
- **Restrictions on industrial trawler license:** Restricted the issue of license for industrial trawler till conducted proper survey of the EEZ
- **Encouragement to fish beyond 500 m isobaths of EEZ:** Encourage industrial fishing fleet to fish outside 500 m isobaths within EEZ
- **Restriction on post larvae collection:** Restricted PL collection in coastal areas in 2000, which was later reinforced in 2002
- **Ban on throwing any fish into the sea:** Imposed restriction on throwing any catch except turtle in the sea
- **Declaration of marine reserve:** Declared Middle Ground & South Patches as marine reserve ➡

# Fisheries management, resource conservation & critical habitat protection

- Fisheries management in the Sundarbans- the most important nursery area for the Bay of Bengal (Sundarbans Biodiversity Project of MoEF)
- Protection of coastal breeding & nursery areas
- Integrated Coastal Resource Management by Integrated Coastal Zone Management (ICZM)
- Project conservation of marine biological resources
- Protection of IUU fishing in BD waters



## Protected areas in the coastal zone of Bangladesh

Type	Name	Area (ha)	Location	Effects of 1-m SLR
National Park	Himchari	1,729	Cox's Bazar	No
	Nijhum dweep	4,232	Hatiya, Noakhali	Yes
Ramsar Site	Sundarbans	601,700	Khulna, Satkhira, Bagerhat	Yes
Environmental Critical Areas	Sonadia	4,916	Cox's Bazar	Yes
	Teknaf	10,465	Cox's Bazar	Yes
	St. Martin Island	590	Cox's Bazar	Yes
World Heritage Site	Wildlife sanctuaries of the Sundarbans		Khulna, Satkhira, Bagerhat	Yes
Marine Reserve		69,800	Bay of Bengal	Yes

Source: Islam (2004)

# Land-based pollution affecting the Bay of Bengal area

- Pollutants discharged from ship breaking and their impacts
- Other sources of pollutants ie. Surface runoff & colossal discharge of pollutants from many sources



# Major national/donor assisted projects in the BOBLME area that are relevant to the BOBLME Project

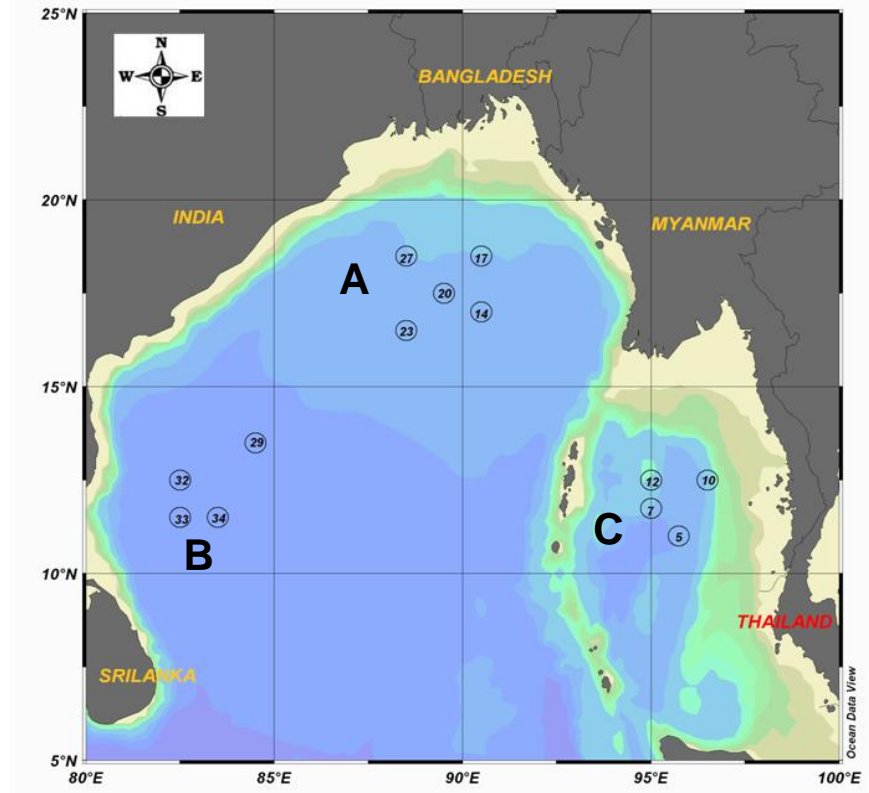
- In recent years a very survey has been conducted in Bangladesh waters
- “Bangladesh Marine Fisheries Capacity Building Project” under financial assistance from OIC (US\$ 17.07 million; ie.Tk. 1194.60 million) is on-going to be implemented by the DoF. The major objectives of the project is:
  - Assess the standing stock & MSY of estuarine & coastal fisheries for management of the artisanal fisheries
  - Develop a catch assessment program for routine maintaining of the coastal & marine fisheries as to changes due to the dynamics of fishing
  - Develop mechanism to implement Monitoring, Control & Surveillance (MCS) system to oversee & manage the resources.
- Main task is to collect a modern equipped survey (research) vessel and survey equipments to assess the standing stock & MSY and to develop an integrated database. The purchase of a survey vessel is under way.

# BIMSTEC Deep-sea Resource Survey (2007)

- Survey period- 25 October-21 December 2007
- Scientists- 16 Thai and 10 (2 from each of the 5 foreign countries including 2 Bangladeshi Scientists)
- Objective- ecosystem based management of the deep sea large pelagic resources



Area 'A'-closest to BD  
got highest YFT



# Institutions involved in activities relevant to BOBLME Project

## Ministry of Fisheries and Livestock

- Department of Fisheries (DOF)- extension activities, implementation of fish conservation laws & regulations, and development & management of fisheries resources. '**Marine Fishery Resource Survey Unit (MFRSU)**',
- Bangladesh Fisheries Research Institute (BFRI)- Marine Fisheries & Technology Station' of BFRI in Cox's Bazar
- Bangladesh Fisheries Development Corporation (BFDC)- promoting fishing industry, landing, preservation & processing facilities
- Marine Fisheries Academy- Fishing Trawler Cadet Training Institute

## Academic institutions

- Institute of Marine & Fisheries Science, Chittagong University
- Fish. & Marine Resources Technol. Discipline, Khulna University
- Bangladesh Agricultural University

Govt. ministries and agencies like environment, shipping, water resource, commerce, communication, tourism are involved in activities relating to marine resources

Defense and security agencies like Bangladesh Navy and Coast Guard are actively involved in protection of marine resources

# Development on implementing the BOBLME Project in Bangladesh

- MoFL is in process to activate the **NTForce** which was formed during the inception phase of BOBLME project (2003)
- National Coordinator also is in process to select a **National Technical Advisor**
- As NTF and NTA are made available, the other bodies (advisory panel, consultant) will be set as per demand.
- Under co-financing arrangement a TA project “Support to Sustainable Development of the BOBLME” funded by GoB is now operational (GOB contribution of US\$ 712,000).





Thank you all

**Table 1. Statement of water resources in Bangladesh**

<b>Water resources</b>	<b>Area (hectare)</b>
Inland fisheries	
a. Open water bodies	2, 83 ,2792
Floodplains	1, 011, 563
River & tributaries	114, 161
Natural depressions	68, 000
<b>Total open water bodies</b>	<b>4, 047, 316</b>
a. Closed water bodies	
Ponds	146,890
Oxbow lakes	5,488
Shrimp farms	140, 000
<b>Total closed water bodies</b>	<b>292,378</b>
<b>Total inland water bodies (a+b)</b>	<b>4,339,694</b>
<b>Marine fisheries</b>	<b>16,606,600</b>



**TABLE 2. TOP TEN COUNTRIES IN INLAND CAPTURE FISHERIES PRODUCTION (FAO 2009)**

<b>Country</b>	<b>Production (<i>Thousand tonnes</i>)</b>	<b>Percentage of world production</b>
China	2,544	25.3
Bangladesh	957	9.5
India	858	8.5
Myanmar	631	6.3
Cambodia.	422	4.2
Uganda	367	3.6
Indonesia	301	3.0
Tanzania	293	2.9
Egypt	256	2.5
Brazil	251	2.5



**TABLE 3. TOP TEN COUNTRIES IN AQUACULTURE PRODUCTION (FAO 2009)**

<b>Producer</b>	<b>2004</b> <i>(Tonnes)</i>	<b>2006</b>	<b>APR</b> <i>(Percentage)</i>
<b>Top ten producers in terms of quantity, 2006</b>			
China	30 614 968	34 429 122	6.05
India	2 472 335	3 123 135	5.71
Viet Nam	1 198 617	1 657 727	17.6
Thailand	1 172 866	1 385 801	4.84
Indonesia	1 045 051	1 292 899	11.23
<b>Bangladesh</b>	<b>914 752</b>	<b>892 049</b>	<b>-1.25</b>
Chile	776 421	802 410	9.81
Japan	776 421	733 891	-2.78
Norway	636 802	708 780	5.50
Philippines	512 220	623 369	10.32



A satellite image of the Bay of Bengal, showing the surrounding landmasses of South Asia and Southeast Asia. The water is a deep blue, and the land is a mix of green and brown. The text "Bay of Bengal" is overlaid in white. A blue arrow points to the southern tip of the Indian subcontinent.

**Bay of Bengal**



# Major River Systems in Bangladesh



# National data collection strategies and/or activities

- Department of Fisheries- FRSS
- Local fishermen & communities
- Private sector exporters & traders
- NGOs
- Ministry of the Environment
- Ministry of Water Resources/BWDB
- Ministry of Commerce



