Limited extraction of mangroves for fuelwood and poles is an old practice. However, in the revenue areas, the destruction of mangroves is conspicuous and at places the area has been reclaimed for agriculture as well as for settlement. The extent and condition of the crop and the threat to such mangrove areas need to be assessed. The problems of marine and estuarine fisheries in the Sundarbans can be categorized into the following groups:

- **Indiscriminate seed collection and bycatch.** Thousands of untrained workers who collect shrimp fry from the sea, channels, and rivers cause significant losses to the fry of other fishes. Frequently, collectors discard non-shrimp fry, perhaps one of the main causes of a gradually declining supply of different natural fish (Baer 2001). In a study in the SBR, it was found that to catch 1 tiger prawn seed in the Sundarbans, collectors destroyed juveniles of 161 other prawns, 7 fishes, 30 crabs, 1 mollusc, and 8 unidentified meroplanktons (Das and Nandi 1999).
- **Lack of post-harvest and other infra-structure.** Proper storage, preservation, and prompt disposal or transport service are essential (Yadava 2004).
- **Water pollution.** The current environmental status of the Sundarbans water systems is relatively poor. A mixture of domestic sewage and industrial waste is discharged into the canal systems of Kolkata and these waters eventually reach the Sundarbans and are responsible for the accumulation of heavy metals and the presence of organic pollutants in the tissue of fish (ADB 2003). The river channels of the Sundarbans have experienced high rates of deterioration largely due to this sewage discharge. Choudhury and Choudhury (1994) note that the Bidhadhari and Piali Rivers have been transformed into dead water bodies and these waters have experienced the knock-on impact of affecting the Matla River. The same review notes the steady degradation of fisheries resources in the Ichhamati, Bidyadhari, Kalagachia, Matla, Moni, Satumukhi, and Hataniadoania waterways. Agricultural runoff and effluents from fish farms are thought to be responsible for increased levels of eutrophication in the Indian Sundarbans and are also thought to be the cause of dinoflagellate blooms that are now a common phenomenon in the coastal waters of West Bengal (Mukherjee et al. 2007).
- **Impact of coastal aquaculture (*bheri* fishing).** Local fishermen have converted many coastal swamps into *bheries*, that is, artificial enclosures for taking the tidal saline water in and out through sluices from nearby rivers for commercial pisciculture. Sinha (1998) reports that 1,392 *bheries* covering 43,000 ha are operative in the Sundarbans.

Fig.5 - Collection of prawn seeds

Table 6: Magnitude of commercial coastal fishing in southern Sundarbans

Police Station	Total production in Kgs (1997-'98)	No. of Vessels	Distance of Fishing trips	No. of Trips/ months	Capacity Of Vessels
Canning	50,40, 000	Trawlers-10 Mechanized Boats-12	60 kms (monsoon), 100 kms (winter).	7 days x 4 trips(monsoon), 15 days x 2 trips (winter).	8000 kgs.
Diamond Harbour	151,60,000	Trawler-100 Mechanized boats-60	25 kms. (monsoon), 180 kms (winter).	7 days x 4 trips (monsoon), 10 days x 3 trips(winter).	18,000 kgs.
Kakdwip	435,40,000	Trawlers-100 Mechanized boats-2000.	80 kms. (monsoon) 180 kms (winter)	7 days x 4 trips (monsoon), 15 Days x 2 trips (winter).	12,000 kgs.
Roydighi	62,22,400	Trawlers-200 Mechanized boats-600	100 kms (monsoon), 180 kms (winter)	7 days x 4 trips (monsoon) 15 days x 2 trips(winter).	8000 kgs
Namkhana	1,49,200,00	Trawler-200 Mechanized boat-500	70 kms (monsoon), 200 kms (winter).	10 days x 4 trips (monsoon), 15 days x 2 trips(winter).	8000 kgs.

Source: Primary data from field survey at Namkhana, Kakdwip, Diamond Harbour, Roydighi & Canning on 30.4.99, 25.4.99, 23.4.99, 1.4.99 & 14.4.99 respectively (Das, 2009).

ANNEXURE

Family/ Species	Common name	Habitat
CLASS CHONDRICHTHYES		
ORDER ORECTOLOBIFORMES		
Family Hemiscyllidae	**Bamboo sharks**	**Pelagic**
Chiloscyllium indicum (Gmelin)		
Chiloscyllium griseum Muller and Henle		
Family Stegostomatidae	**Zebra sharks**	**Pelagic**
Stegostoma fasciatum (Hermann)		
Family Rhincodontidae	**Whale sharks**	**Pelagic**
Rhincodon typus Smith		
Order Carcharhiniformes		
Family Proscylliidae	**Finback catsharks**	**Pelagic**
Eridancis radcliffei Smith		
Family Carcharhinidae	**Requim sharks**	**Oceanic/Pelagic/semi pelagic/ littoral**
Carcharhinus dussumieri (Valenciennes)		
Carcharhinus hemiodon (Valenciennes)		
Carcharhinus leucas (Valenciennes)		
Carcharhinus melanopterus (Quoy and Gaimard)		
Carcharhinus limbatus (Valenciennes)		
Glyphis gangeticus (Muller and Henle)		
Lamiopsis temmincki (Muller and Henle)		
Rhizoprionodon acutus (Ruppell)		
Scoliodon laticaudus (Muller and Henle)		
Family Sphyrnidae	**Hammerhead sharks**	**Semi pelagic and littoral**
Eusphyrna blochii (Cuvier)		
Order Rajiformes		
Family Pristidae	**Sawfishes**	**Demersal**
Anoxypristes cuspidata (Latham)		
Pristis microdon Latham		
Pristis pectinata Latham		
Family Torpedinidae	**Electric Rays**	**Benthic and semi pelagic**
Bengalichthyes impennis Annandale		

Family/ Species	Common name	Habitat
Narke dipterygia (Schneider)		
Narcine timlei (Schneider)		
Narcine brunnea Annandale		
Family Rhinobatidae	**Guitar fishes**	**Demersal**
Rhina ancylostoma Schneider		
Rhina grannulatus Cuvier		
Rhina lionotus Norman		
Rhinobatos obtusus Muller and Henle		
Rhinobatos annandalei Norman		
Rhynchobatus djeddensis (Forsskal)		
Family Dasyatidae	**Sting Rays**	**Demersal**
Dasyatis microps (Annandale)		
Himantura bleekeri (Blyth)		
Himantura fluviatilis (Hamilton-Buchanan)		
Himantura marginata (Blyth)		
Dasyatus zugei (Muller and Henle)		
Himantura imbricata (Schneider)		
Himantura uarnak (Forsskal)		
Family Gymnuridae	**Butterfly Rays**	**Demersal**
Aetoplatea tentaculata (Valenciennes)		
Gymnura (Gymnura) poecilura (Shaw)		
Family Myliobatidae	**Eagle Rays**	**Benthic littoral and semi pelagic**
Aetobatus narinari (Blainville)		
Aetomylaeus nichofii (Schneider)		
CLASS: ACTINOPTERYGII		
Family Elopidae	**Lady fishes**	**Pelagic**
Elops machnata (Forsskal)		
Family Megalopidae	**Tarpons**	**Demersal/Pelagic**
Megalops cyprinoides (Broussonet)		
Family Anguillidae	**Freshwater Eels**	**Demersal**
Anguilla bengalensis bengalensis (Gray)		
Angilla bicolor bicolor Mc Clelland		
Family Moriguidae	**Worm Eels**	**Demersal**