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# Bangladesh National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2017

Compiled
by

*MI Golder, Director (Marine)*
*Suman Barua, Assistant Director*
*Mosammat Rashida Akter, Assistant Director*
*Bikramjit Roy, Scientific Officer*

**Marine Fisheries Office**
**&**
**Marine Fisheries Survey Management Unit**
**Agrabad, Chittagong**
**Under**
**Department of Fisheries (DoF)**
**Bangladesh**

## INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

| | |
|---|---|
| In accordance with IOTC Resolution 15/02, final scientific data for the previous year was provided to the IOTC Secretariat by 30 June of the current year, **for all fleets other than long line** [e.g. for a National Report submitted to the IOTC Secretariat in 2017, final data for the 2016 calendar year must be provided to the Secretariat by 30 June 2017) | YES |
| In accordance with IOTC Resolution 15/02, provisional **long line data** for the previous year was provided to the IOTC Secretariat by 30 June of the current year [e.g. for a National Report submitted to the IOTC Secretariat in 2017, preliminary data for the 2016 calendar year was provided to the IOTC Secretariat by 30 June 2017).<br><br>**REMINDER:** Final long line data for the previous year is due to the IOTC Secretariat by 30 Dec of the current year [e.g. for a National Report submitted to the IOTC Secretariat in 2017, final data for the 2016 calendar year must be provided to the Secretariat by 30 December 2017). | NO<br><br>Date of submission: 07/11/2017 |
| If no, please indicate the reason(s) and intended actions: There is no long-liner in our fishing fleet.<br>Recently, Bangladesh has taken initiative to introduce Long Liner and notification has been issued inviting proposal from Bangladeshi entrepreneurs in collaboration with foreign counterpart having related aptitude. | |

**Executive Summary**

Bangladesh is blessed with her vast coastal and marine resources. Coastal area of the country is known as one of highly productive aquatic areas of the world. One of its unique features is the influence of mangrove forests, which supports abundance of high number of fishes and commercially important aquatic flora and fauna. Substantial biological and ecological values of the Bay of Bengal have been pointed out by many researchers. Coastal and marine fisheries have been playing a considerable role in socio-economic development of the country along with the regional ecological balance. Ample number of commercially important fishes are exporting to different countries and also consuming by local people as a nutritional balance. Tuna and tuna like other highly migratory species have become in a high priority list to the government for last couple of years especially after having the newly established sea boundary with neighbouring countries which offers Bangladeshi fishers to the Area Beyond National Jurisdiction (ABNJ) of high seas. Although tuna and tuna like fishes are could be highly potential, Bangladesh is still lagged behind in exploring tuna fisheries. Proper attention and guidance are required exploring and building up a new era of deep sea fishing industry. Basically, there is no specific tuna fishery in Bangladesh. Tunas are by catch of industrial trawlers (about 2% of catch) and by artisanal gill netters (about 0.05%). Coastal and marine fisheries of Bangladesh are briefly reviewed in this report to provide a salient feature of available information for sustainable management and development of marine resources.

## CONTENTS



### 1. BACKGROUND/GENERAL FISHERY INFORMATION

As a littoral state of the Bay of Bengal, Bangladesh is endowed with a vast coastal and marine resource. This vast marine fisheries resource comprises with identified 475 species of fishes, 36 of shrimps, 5 lobsters, 12 crabs and 33 sea cucumbers and a lot of aquatic flora and fauna. Marine fisheries sector is divided into industrial and artisanal fisheries. Artisanal sector plays a vital role in marine fisheries production of Bangladesh. This sector contributes 87% of total production targeting Hilsa, Bombay duck, Ribbon fish, Croakers, catfish, sardines, thread fin breams etc as major groups. Industrial sector contributes 13% of marine production including demersal, pelagic fin fish and shrimp catches (DoF, 2015). Gradual Dwindling of some important species like grunters, threadfins, snapper, large croakers and cat fish is a sign of overfishing. Conservation of marine fisheries resources is a priority concern for government of Bangladesh and government has taken a number of measures such as conversion of bottom trawlers into mid water trawlers, moratorium on not to increase fishing trawlers and implementation of seasonal fishing bans.

The historic settlement of Maritime dispute with Myanmar and India through the verdicts of International Tribunal for the Law of Sea (ITLOS) established the sovereign rights of Bangladesh to explore, exploit and manage living and non-living resources of the Bay of Bengal in an area of 1,18,813 sq. km (DoF, 2015). A

number of surveys conducted during 1958 to 1984 and revealed the potentialities of bottom dweller fish, pelagic fish and shrimp stocks. Recognising the importance of stock assessment in the Bay of Bengal a multipurpose survey and research vessel *R.V. Meen Sandhani* has been added into country's fishing fleet in 2016.

## 2. FLEET STRUCTURE

In Bangladesh, as elsewhere, traditional fisheries exist side by side with commercial fisheries. A number of 201 industrial trawlers were active in fishing out of 247 industrial fishing trawlers in the year of 2016-17. At the same time 67,669 mechanized and non-mechanized boats were engaged in traditional fishing in the Bay of Bengal. These traditional mechanized and non-mechanized fishing boats are involved in use of relatively simpler gears such as gillnets, set bag nets, trammel nets by the array of boats. Non-mechanized boats are engaged in daily fishing by nature in a very low depth close to coastline involving 3 -5 fishermen. Mechanized boats typically fish for 5 to 7 days within 40 m depth of contour carrying ice cubes in their boats. Number of fishermen varies from 10 to 25 based on size and gear used.

Based on preservation capacities, industrial trawlers are of two kinds including freezer trawlers those have freezers inside and wooden body trawlers those have chilling facilities with ice cubes. Freezer trawlers are divided into shrimp and fish trawlers. Fish trawlers are also of two types like demersal and mid-water trawlers. The industrial fishing fleet has a capacity of gross tonnage ranged between 56 to 148MT for wooden body and 251 to 668MT for steel hulled freezer trawlers. Wooden body trawlers are mostly 18.5 to 26.50 meters in length and steel hulled are about 34 to 54 meters in average. Engine power also varies from 420-600 BHP for wooden body and 716-1850 BHP for steel hulled. Though industrial trawlers are mainly engaged in harvesting demersal fish and shrimp, in recent years mid-water trawlers are added to the fishing fleet for catching pelagic fishes. They are often called white fish trawlers use mostly high opening bottom trawls from the stern side with 60 mm mesh size at the cod-end.

Almost each trawler is equipped with modern navigations, communication and fish finding equipment. Trawl fishing has been restricted to operate beyond 40 meters depth contour by the ordinance. Smaller wooden trawlers usually sail for 14 days and steel hulled vessels for 30 days in one trip. They usually complete 5-6 hauls in a day taking 3-3.5 hours per haul (Barua et al., 2014). But the number of hauling and fishing days substantially depends on weather, sea worthiness and functioning of trawler itself. Particularly, shrimp trawler engaged in fishing in the EEZ of Bangladesh beyond 40 meter depth contour.

Shrimp trawlers are usually with 150-250 gross tonnage capacity, main engine power 500-900 BHP and usually sail for 30 days in a trip.

**Table-1(a): Number of vessels operating in the IOTC area of competence, by gear type and size**

| Type of fishing | **2009-10** | **2010-11** | **2011-12** | **2012-13** | **2013-14** | **2014-15** | **2015-16** | **2016-17** |
|---|---|---|---|---|---|---|---|---|
| 1.Industrial | | | | | | | | |
| a) Shrimp Trawler | 37 | 35 | 33 | 32 | 30 | 32 | 30 | 32 |
| b) Fish Trawler | 117 | 123 | 132 | 152 | 169 | 175 | 174 | 169 |
| Total | 154 | 158 | 165 | 184 | 199 | 207 | 204 | 201 |
| 2.Artisanal (Craft) | | | | | | | | |
| a) Mechanized boat (MB) | 21726 | 21726 | 21726 | 21726 | 30164 | 33859 | 32859 | 32859 |
| b) Non-Mechanized boat (NMB) | 23651 | 23651 | 23651 | 23963 | 27699 | 33810 | 34810 | 34810 |
| Total | 45377 | 45377 | 45377 | 45689 | 57863 | 67669 | 67669 | 67669 |
| 3. Artisanal (Gear) | | | | | | | | |
| a) Gill net | 108040 | 108040 | 131326 | 131326 | 114353 | 115028 | 119958 | 118353 |
| b) Set Bag net (SBN) | 51522 | 51522 | 52824 | 52824 | 40824 | 40824 | 40824 | 42429 |
| c) Long line | 25538 | 25538 | 25538 | 25538 | 12538 | 11863 | 11863 | 11863 |
| d) Trammel net | 7122 | 7122 | 7122 | 7122 | 422 | 422 | 422 | 422 |
| e) Other gear | 31636 | 31636 | 25644 | 25640 | 15640 | 15640 | 15640 | 15640 |
| Total | 223858 | 223858 | 242454 | 242450 | 183666 | 183777 | 188707 | 188707 |

**Table 1(b): National fleet structure based on 2016-17 report**

| **Industrial Fishing vessel over 24 m** | | | | | **Artisanal Fishing vessel below 24 m** | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Trawler type | Number | Gear used | Species caught | Tuna and Tuna like fish caught | Vessel type | Number | Gear used | Species caught | Tuna and Tuna like fish caught |
| Shrimp trawler<br>(steel hull of 30-43 LOA, 450-750 BHP) | 37 | shrimp trawl | Shrimp and fish as by catch | no | Non mechanized | 34,810 | ESBN[1], Gillnet, Stake net | Mixed species mainly shrimp, young stages of different fishes , Hilsa | no |
| Fish trawler<br>( Steel and Wooden hull 24-54 m LOA, 520-1450 BHP ) | 98 | fish trawl | Mixed species mainly sardines, croakers, catfish , redfish, ribbon fish etc | about 2-3 % of tuna and tuna like fishes | Mechanized | 32,859 | Gill net , MSBN[2]<br>Bottom hook and line for Jew fish | Hilsa, different species of shrimp jew pomfret, anchovies , ribbon etc | Some tuna & tuna like fish is also caught in Hilsa gillnet |
| Mid water trawler<br>( steel hull, 36-45 LOA, 1050-1850 | 112 | Mid water trawl | Mixed species mainly sardines, croakers, catfish , redfish , | about 2-3 % of tuna and tuna like fishes | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BHP) | | | ribbon fish etc | | | | | | |

[1] Estuarine Set bag net [2] Marine Set bag net

**Table 1(c): Gear and their operation**

| Name | Species caught | Depth of operation |
|---|---|---|
| Trawl | Tiger and other peneied shrimps, Catfish, Jew fish , ribbon fish, mackerels, scads etc | 40-100 m |
| Gill net | Hilsa , Indian salmon, mackerels , pama croaker, grunters etc | 8-10m (fixed) ,up to 30m (drift nets) up to 80 m (bottom set gill net) |
| ESBN | Mostly pre-adult stages of fresh water and marine shrimp.jew, bombay ducks, gobies, croakers etc | 5-10 m |
| MSBN | Peneied shrimps ,anchovies, bombay duck, clupeids, sea perch | 10-30m |
| Bottom long line | Sciaenieds | 10 -30m |
| Beach seine | Small peneied shrimps clupeids ,anchovies, sciaenids | 8-10m |

### 3. CATCH AND EFFORT (BY SPECIES AND GEAR)

Historically, fishermen of this country used to fish in the sea (not too far from the sea shore) with the help of paddle (oar) and sail boats. Fishing at sea was more of artisanal rather than commercial practice by traditional fishermen and carried out mainly for subsistence. Technology-based fishing which leads to a capital intensive commercial fishing was literally unknown to our fishermen until Bangladesh won the victory of independence in 1971. After the independence, use of motorized boats was initially introduced to the marine fisheries sector. With the advent of newer and sophisticated technologies in fishing fleet a sharp distinction has emerged in between traditional and commercial fishers.

Marine fisheries sector is governed by the Marine Fisheries Ordinance, 1983, Marine Fisheries Rules, 1983 followed by subsequent rules. No fishing vessel is allowed to fishing without a valid license in Bangladesh

marine waters. All industrial trawlers and mechanized fishing boats are required to have license for fishing. Trawlers are allowed to catch fish/shrimp in an area of not shallower than 40 meter depth. Mechanized fishing boats are allowed to fishing within 40 meter depth. Industrial fishing trawlers are mandatorily to take sailing permission (SP) from Marine Fisheries Office under the Department of fisheries (DoF). Submission of catch log sheets of previous trip is a prerequisite of application for sailing permission of next trip. Vessels are randomly inspected by personnel of Marine Fisheries Office of DoF before and after trips, randomly as a shore based inspection. The MCS activities of industrial fishing fleet are well monitored by the patrolling vessel of Bangladesh NAVY and Bangladesh Coast guard. Recently, personnel of Marine Fisheries Office of DoF are observing from on-board as observers in patrolling vessels of Bangladesh NAVY and working in concert with them.

As the demersal fishes are under pressure, the focus of fishing towards pelagic resources are increasingly being observed after conversion of bottom fish trawlers into mid water trawlers.

**Table 2(a): Fish Production 2009-10 to 2016-17**

| Year | Marine production (MT) | No of trawlers | Industrial (MT) | No of Boats | Artisanal (MT) |
|---|---|---|---|---|---|
| 2009-10 | 517282 | 154 | 34182 | M-2100<br>NM -2200 | 483100 |
| 2010-11 | 546333 | 158 | 41665 | M-2100<br>NM -2200 | 504668 |
| 2011-12 | 578620 | 165 | 73386 | M* 27761<br>NM* 24753 | 505234 |
| 2012-13 | 588988 | 184 | 73030 | M 30164<br>NM 27699 | 515958 |
| 2013-14 | 595385 | 199 | 76885 | M 32859<br>NM 34810 | 518500 |
| 2014-15 | 599846 | 207 | 84846 | M 33859<br>NM 33810 | 515000 |
| 2015-16 | 626528 | 204 | 105348 | M 32859<br>NM 34810 | 521180 |
| 2016-17 | 637477 | 201 | 108480 | M 32859<br>NM 34810 | 528997 |

*M-Mechanized, *NM-Non mechanized

**Table 2(b): Industrial Fisheries species wise catch (MT)**

| SL | Species/Group | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | Hilsa | - | 23 | - | 2,205 | 2,004 | 1,815 | 3,694 | 6948 |
| 2 | Sardine | - | - | 11,105 | 20,906 | 20,680 | 30,385 | 42,576 | 46104 |
| 3 | Bombay duck | 890 | 267 | 1,042 | - | - | - | - | 4320 |
| 4 | Indian Salmon | - | - | - | - | - | - | - | - |
| 5 | Pomfret | 334 | 362 | 487 | 428 | 505 | 487 | 292 | 686 |
| 6 | Croaker | 365 | 1,340 | 2,653 | 2,817 | 3,657 | 3826 | 2888 | 3033 |
| 7 | Cat fish | 589 | 977 | 2,254 | 2,122 | 2,259 | 2866 | 2245 | 2001 |
| 8 | Sharks and Rays | - | - | - | 546 | 843 | 918 | 621 | 645 |
| 9 | Others | 29,508 | 35,911 | 53,633 | 40,922 | 43,138 | 41,816 | 50448 | 41524 |
| 10 | Shrimp | 2,496 | 2,785 | 2,212 | 3,083 | 3,799 | 2,733 | 2583 | 3219 |
| | Total | 34,182 | 41,665 | 73,386 | 73,030 | 76,885 | 84,846 | 1,05,347 | 1,08,480 |

**Table-2(c) Historical annual catch by industrial fish trawlers, by primary species (%)**

| SL | Species | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 |
|---|---|---|---|---|---|---|
| 1 | Sardine | 30.75 | 29.06 | 36.58 | 41.43 | 42.5 |
| 2 | Croaker | 3.81 | 4.55 | 4.33 | 2.81 | 2.79 |
| 3 | Ribbon | 6.23 | 6.60 | 6.45 | 4.65 | 4.70 |
| 4 | Grunter | 0.41 | 0.32 | 0.26 | 0.26 | 0.06 |
| 5 | Scads | 4.09 | 4.46 | 3.85 | 5.18 | 3.64 |
| 6 | Mackerel | 8.68 | 8.55 | 10.17 | 11.3 | 9.77 |
| 7 | Sole/flat fish | 0.81 | 1.63 | 1.41 | 1.12 | 0.89 |
| 8 | Catfish | 3.02 | 3.08 | 3.38 | 2.18 | 1.84 |
| 9 | Red snapper | 0.37 | 0.45 | 0.43 | 0.24 | 0.28 |
| 10 | Small tuna | 2.34 | 4.97 | 3.18 | 1.75 | 0.85 |
| 11 | Hilsa | 3.24 | 2.94 | 2.19 | 3.6 | 6.40 |
| 12 | Pomfret | 0.63 | 0.70 | 0.59 | 0.28 | 0.63 |
| 13 | Red fish / threadfin breams | 10.42 | 13.23 | 7.16 | 4.86 | 3.65 |
| 14 | Eel | 0.71 | 0.66 | 0.52 | 0.36 | 0.39 |
| 15 | Shark/rays | 0.8 | 1.18 | 1.11 | 0.61 | 0.59 |
| 16 | Cuttle | 1.06 | 2.13 | 1.31 | 0.69 | 0.63 |
| 17 | Bombay duck | - | - | - | - | 3.98 |
| 18 | Shrimp | 0 | 0.60 | 3.29 | 2.45 | 2.96 |
| 19 | Others | 22.92 | 13.42 | 13.81 | 18.62 | 13.40 |

**Table-2(d): Artisanal Fisheries Species-wise catch (MT)**

| SL | Species/Group name | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | Hilsa | 2,32,037 | 2,50,370 | 203500 | 250000 | 250500 | 272000 |
| 2 | Sardine | 9,082 | 8,730 | 6910 | 2450 | 1810 | 2600 |
| 3 | Bombay duck | 61,775 | 71,745 | 103795 | 53950 | 58545 | 64910 |
| 4 | Indian Salmon | 3,030 | 2,445 | 1960 | 1020 | 895 | 775 |
| 5 | Pomfret | 39,050 | 29,265 | 22850 | 10950 | 10300 | 10000 |
| 6 | Jew fish | 35,276 | 27,782 | 34195 | 28000 | 29005 | 31000 |
| 7 | Cat fish | 17,446 | 6,472 | 7460 | 6610 | 6450 | 6560 |
| 8 | Shark & Ray | 3,865 | 4,471 | 4805 | 4175 | 4000 | 3850 |
| 9 | Other fish | 48,225 | 71,193 | 90838 | 114845 | 114675 | 90902 |
| 10 | Shrimp | 55,448 | 43,485 | 42187 | 43000 | 45000 | 46400 |
| | Total | 5,05,234 | 5,15,958 | 518500 | 515000 | 521180 | 528997 |

**Table-2(e): Species Composition (%) of Estuarine Set Bag Net (ESBN) Fisheries**

| Sl. No. | Species/Group name | Local name | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1 | *Harpadon nehereus* | Loittya | 21.03 | 22.04 | 27.03 | 28.56 | 22.91 | 37.04 |
| 2 | *Arius sp.* | Kata machh | 3.65 | 3.12 | 3.22 | 3.53 | 2.41 | 2.84 |
| 3 | *Protonibea diacanthus* | Kala poa | 0.20 | 0.25 | 0.49 | 0.31 | 0.53 | 0.83 |
| 4 | *Otolithes cuvieri* | Sada poa | 3.81 | 4.76 | 4.86 | 5.57 | 2.69 | 2.20 |
| 5 | *Johnius argentatus* | Lal poa | 0.24 | 0.43 | 0.56 | 0.62 | 0.38 | 0.40 |
| 6 | *Escualosa thoracata* | Hischiri machh | 0.72 | 0.67 | 0.58 | 0.80 | 0.68 | 0.70 |
| 7 | *Coilia dussumieri* | Olua | 2.53 | 2.20 | 2.20 | 2.21 | 1.31 | 0.72 |
| 8 | *Thryssa mystax* | Faisha | 0.92 | 1.31 | 1.00 | 1.67 | 0.76 | 1.34 |
| 9 | *Setipinna taty* | Taila faisha | 0.74 | 0.12 | 0.21 | 0.33 | 0.27 | 0.36 |
| 10 | *Apocryptes spp.* | Green(Dorakata) chewa | 4.93 | 6.67 | 1.34 | 1.41 | 1.54 | 0.27 |
| 11 | *Gobioides rubicandus* | Chewa | 8.69 | 3.60 | 3.29 | 1.50 | 1.93 | 1.95 |
| 12 | *Trypauchen vagina* | Lal chewa | 5.70 | 6.66 | 3.14 | 6.02 | 1.81 | 2.23 |
| 13 | *Bregmaceros spp.* | Puiya | 0.77 | 0.42 | 0.63 | 0.53 | 0.73 | 2.11 |
| 14 | *Lepturacanthus savala* | Churi/Ribon Fish | 1.58 | 1.79 | 1.68 | 2.30 | 1.58 | 2.24 |
| 15 | *Muraenesox talabonoides* | Kamila/Eel (baim ) | 0.07 | 0.12 | 0.25 | 0.33 | 0.19 | 0.11 |
| 16 | *Platycephalus indicus* | Mur/Sara baila | 0.06 | 0.14 | 0.36 | 0.42 | 0.37 | 0.69 |
| 17 | *Polynemus paradiseus* | Tapsi | 1.34 | 1.88 | 2.32 | 2.34 | 1.27 | 0.77 |
| 18 | *Leiognathus brevirostris* | Tak chanda | 0.03 | 0.07 | 0.16 | 0.09 | 0.72 | 0.54 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 19 | *Cynoglossus lingua/bilineatus* | Kukurjib/Bansh pata | 0.76 | 1.00 | 1.21 | 1.89 | 1.77 | 1.26 |
| 20 | *Loligo spp.* | Nuilla | 0.03 | - | 0.02 | 0.01 | 0.02 | 0.02 |
| 21 | *Sepia spp.* | Nua Chaai | - | - | 0.02 | - | - | 0.08 |
| 22 | *Crab* | Kakra | 3.78 | 2.45 | 2.88 | 3.42 | 2.53 | 4.26 |
| 23 | *Acetes spp.* | Gura Icha | 27.02 | 27.98 | 25.20 | 14.06 | 19.44 | 21.95 |
| 24 | *Nematopalaemon tenuipes* | Kuikka Chingri | 0.75 | 0.56 | 3.10 | 1.09 | 3.63 | 2.32 |
| 25 | *Penaeus semisulcatus* | Bagatara Chingri | 1.53 | 1.70 | 1.93 | 3.25 | 2.04 | 2.42 |
| 26 | *Parapenaeopsis sculptilis* | Ruda Chingri | 1.69 | 1.96 | 2.42 | 5.42 | 3.63 | 4.25 |
| 27 | *Metapenaeus brevicornis* | Loilla Chingri | 2.13 | 2.75 | 3.14 | 4.24 | 3.16 | 1.28 |
| 28 | *Squillla mantes* | Chingri Poka | 0.23 | 0.14 | 0.55 | 0.74 | 0.36 | 0.28 |
| 29 | *Sillago domina* | Tular Dandi/Hundra | 0.31 | 0.23 | 0.27 | 0.84 | 0.64 | 1.00 |
| 30 | *Lutjanus spp/Liza sp.* | Ranga Chowkka | 0.19 | - | 0.03 | 1.33 | 0.07 | 0.06 |
| 31 | *Tenualosa ilisha* | Ilish | 0.10 | 0.37 | 0.25 | 0.22 | 0.21 | 0.27 |
| 32 | Glob fish | Potka | 0.01 | 0.29 | 0.13 | 0.06 | 0.11 | 0.04 |
| 33 | Others | Others | 4.73 | 4.76 | 5.41 | 5.83 | 3.84 | 3.19 |

**Table: 2(f) Production of artisanal long line (hook) fishery**

| Type of fishing ( Long Line Fishing) | Production (MT) | | | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | |
| a) Mechanized | 13946 | 11463 | 14629 | 14880 | 17000 | 15350 | In long lines fishing, mainly exploited Jew fish or Croakers, Catfish (*Arius* spp), some sharks and other fishes in Artisanal fishing. |
| b) Non Mechanized | 633 | 1015 | 965 | 720 | 700 | 500 | |
| c) Other Long Line | 388 | 560 | 460 | 385 | 300 | 200 | |
| **TOTAL** | 14967 | 13038 | 16054 | 15985 | 18000 | 16050 | |

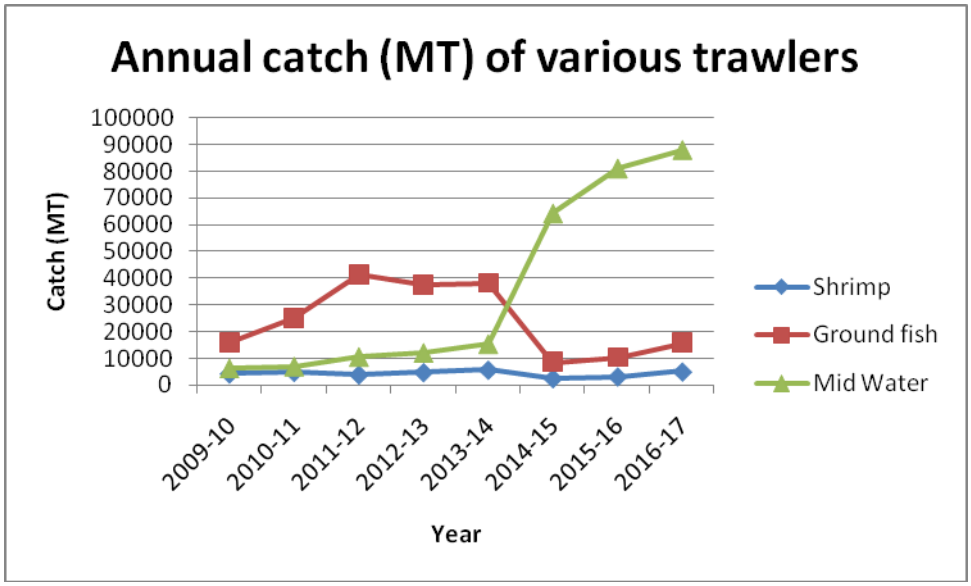


**Figure 1a:** Historical annual catch by industrial trawler fleet (gear-wise), for the IOTC area of competence from 2009-10 to 2016-17.

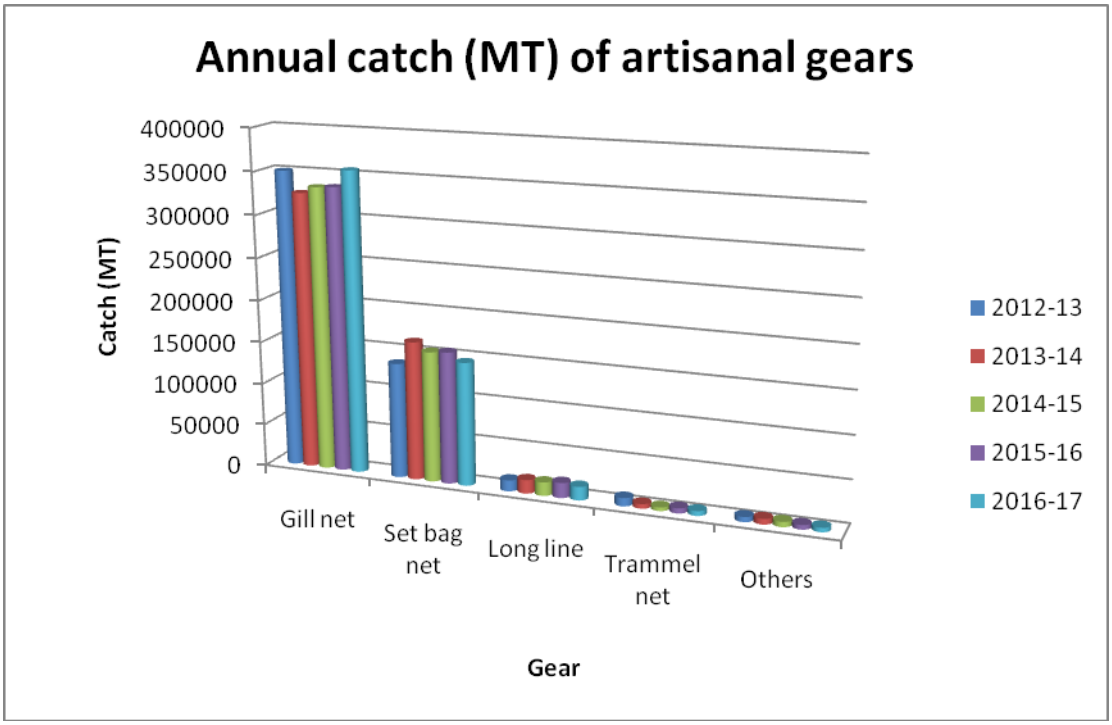


**Figure 1b:** Historical annual catch by artisanal fleet (gear-wise), for the IOTC area of competence from 2012-13 to 2016-17.

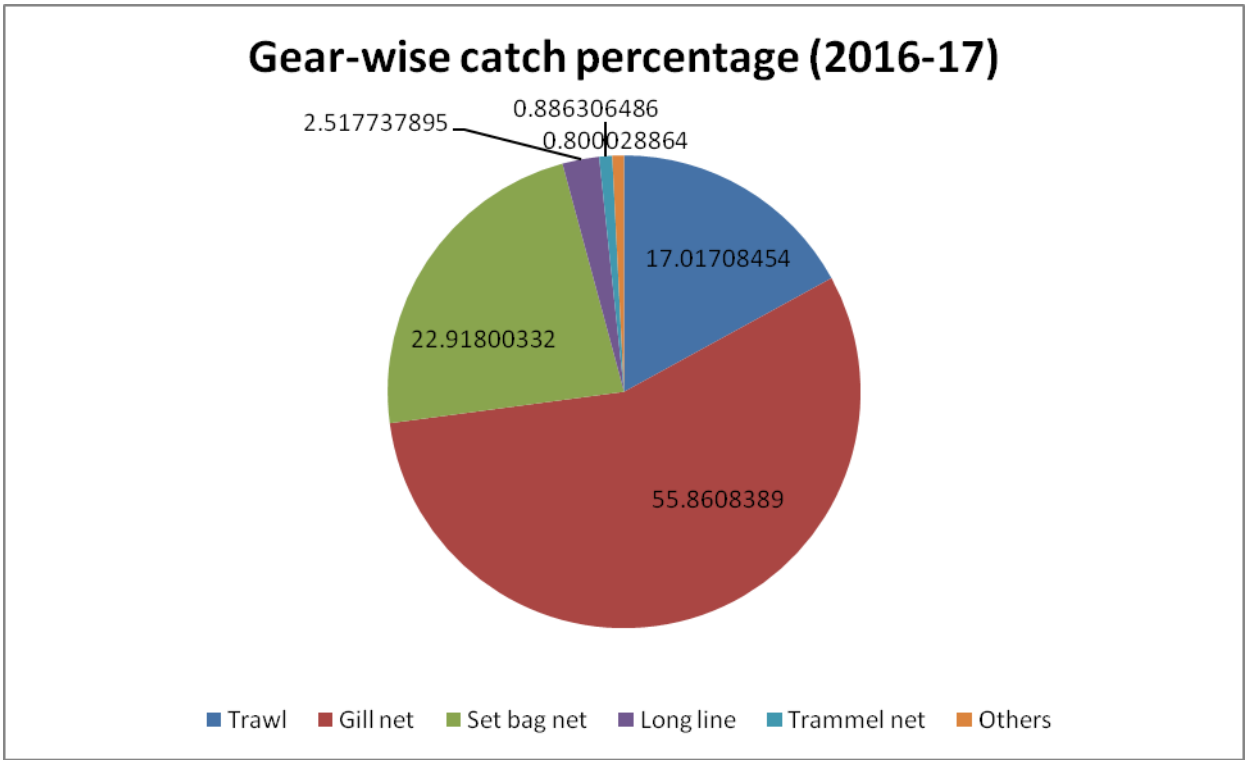


**Figure 1c:** National marine catch by Gear in the year 2016-17

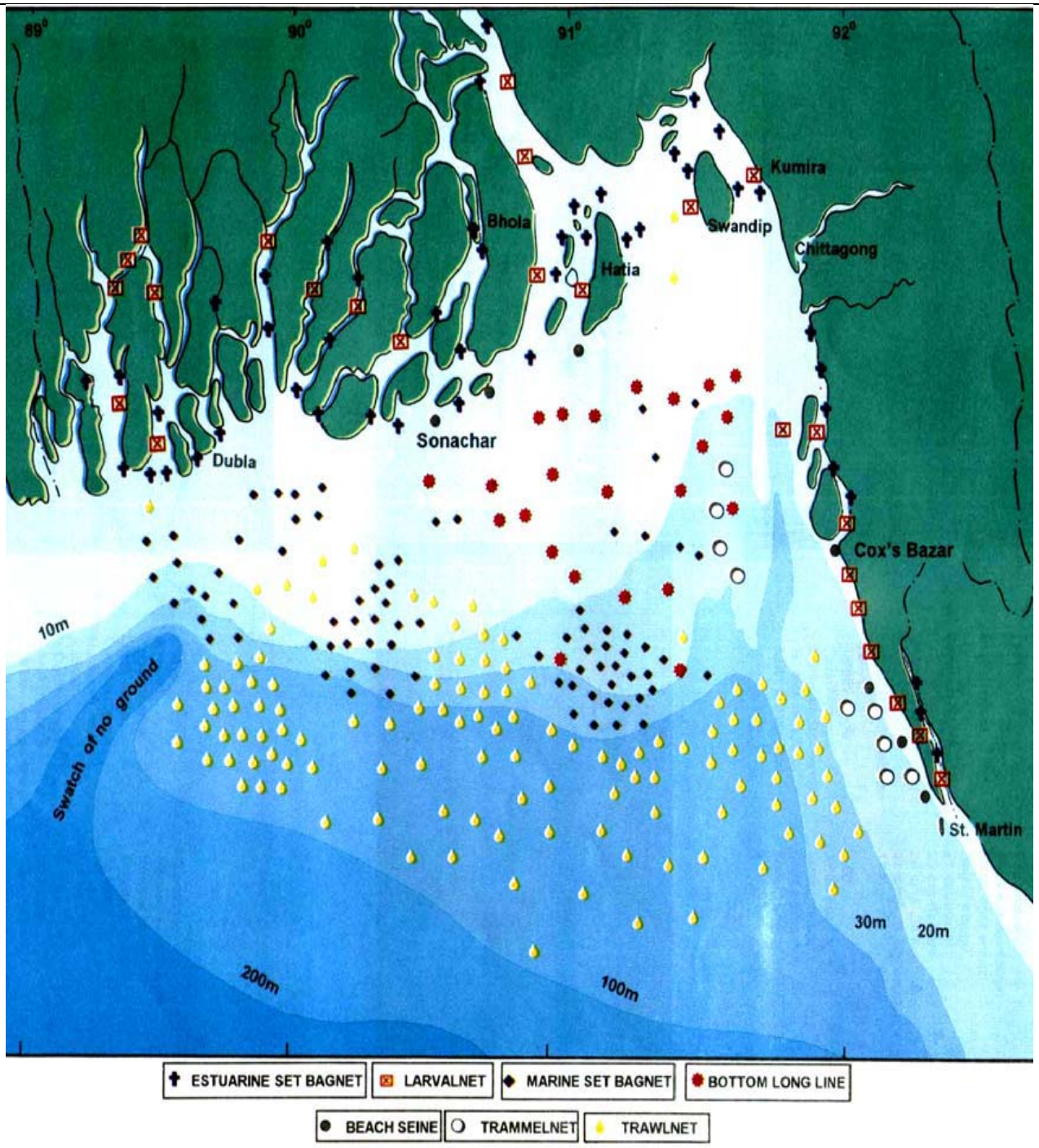


**Figure 2a:** Map of the distribution of fishing effort, by gear type for the national fleet in the IOTC area of competence.

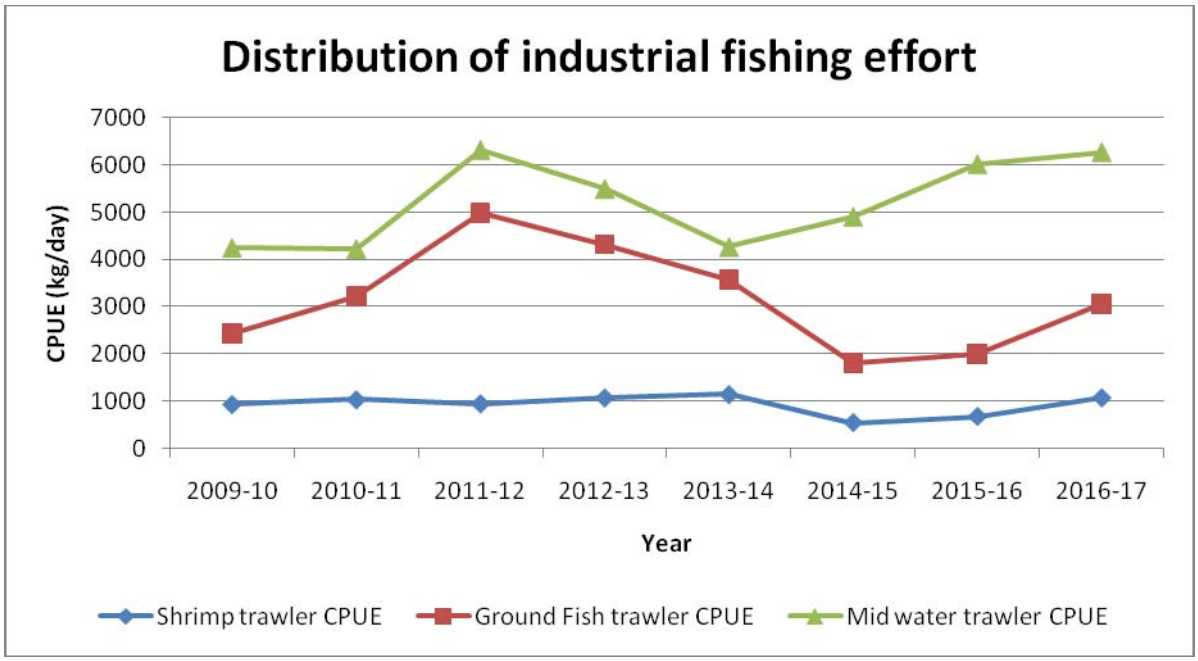


**Figure 2b.** Map of the distribution of industrial fishing effort, by gear type for the national fleet in the IOTC area of competence.

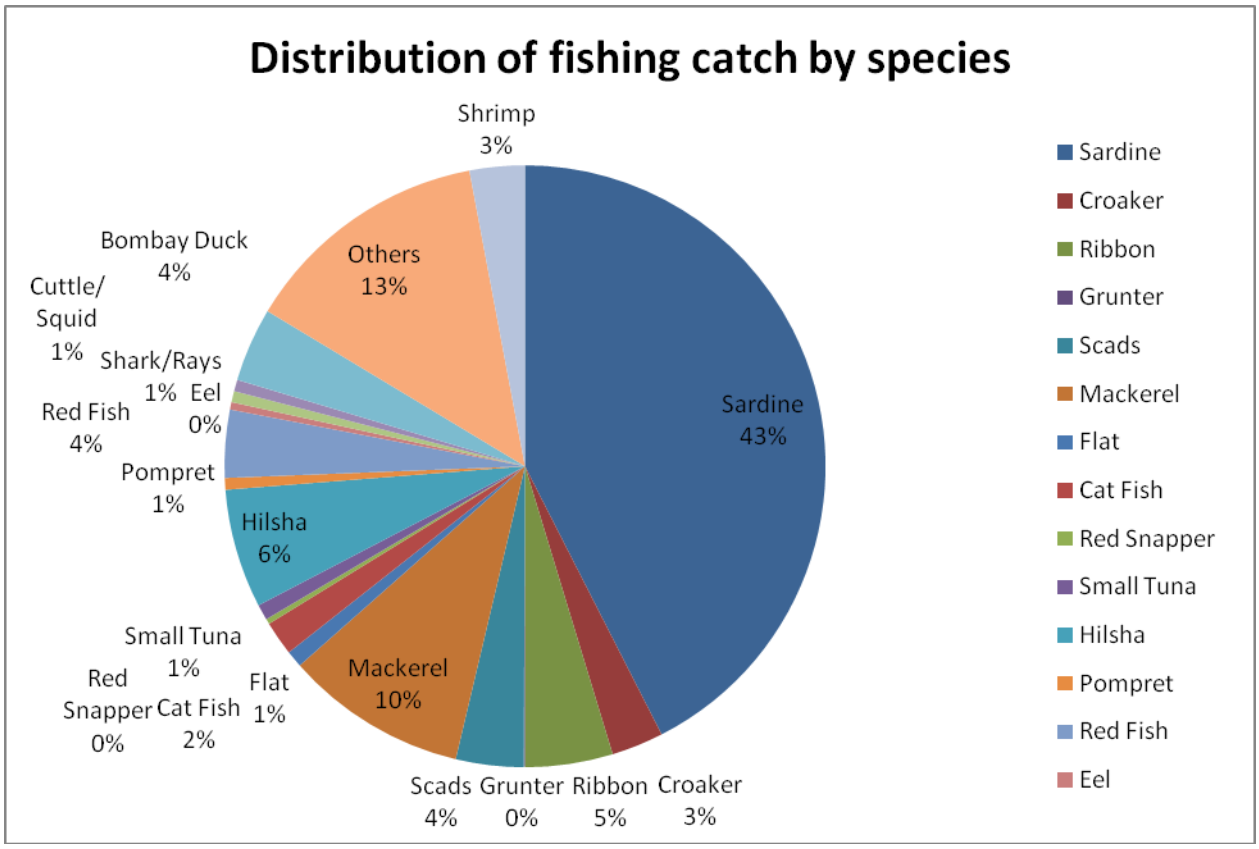


**Figure 3a.** Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence of 2016-17.

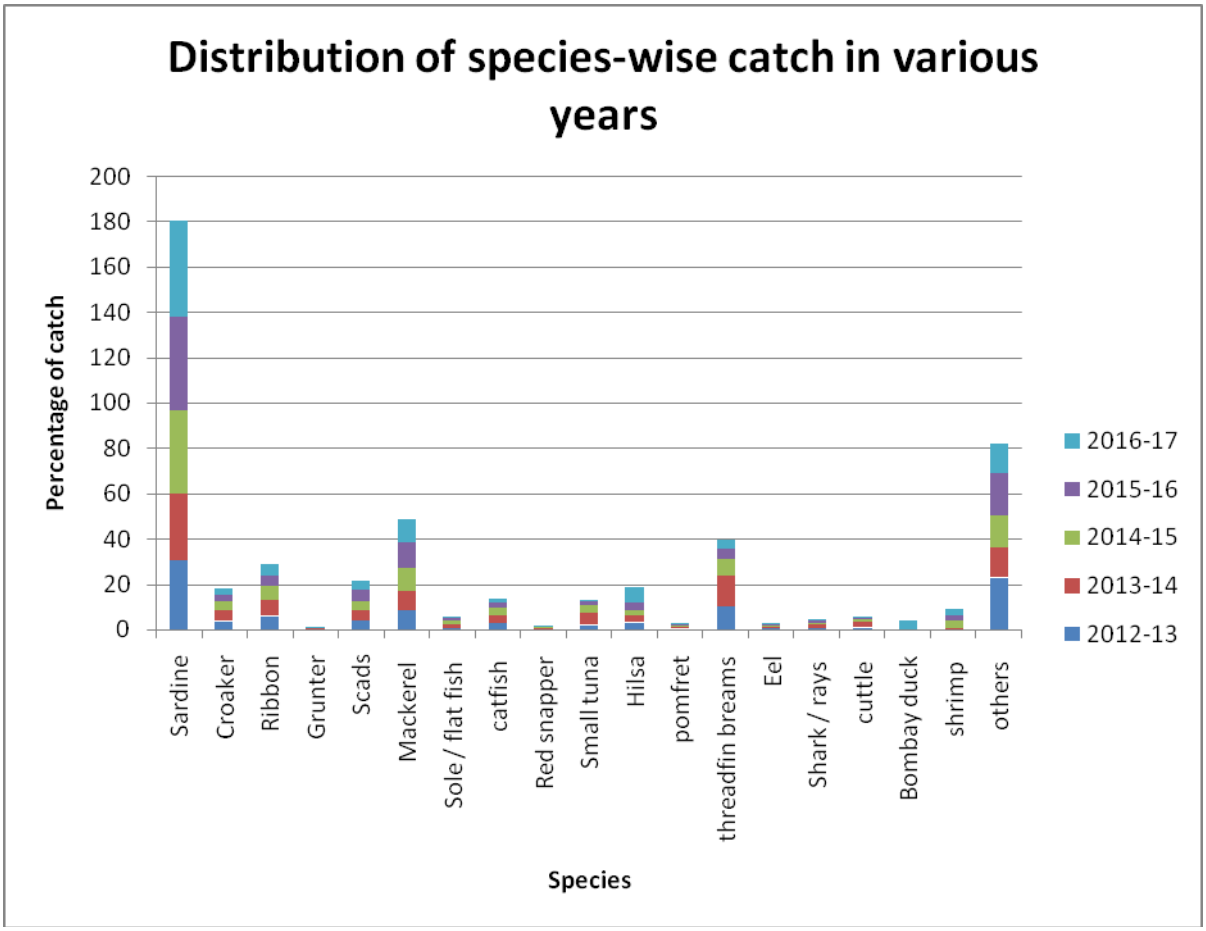


**Figure 3b.** Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence of last four years.

## 4. RECREATIONAL FISHERY

There is no recreational fishery in Bangladesh marine waters.

## 5. ECOSYSTEM AND BY-CATCH ISSUES

The coastal zone of Bangladesh is categorized as tropical maritime climate. Four distinct seasonal weather patterns including dry-winter, pre-monsoon, rainy season and the post-monsoon periods prevail. Precipitation continues from late May up to mid October. The protection of the environment is to key to mitigation of climate change relating planning. The marine environment is a huge carbon store. It will continue to be a carbon store provided that the integrity of the ocean environment is maintained in a way that enables bio diversity and all the endemic flora and fauna to survive. In this way it can absorb shocks and changes to its ecosystem. Pollution controls, maintaining the unique composition of flora and fauna at all levels and depth are imperative to maintain these conditions. Responsible ecosystem based fisheries management is the key climate change adaptation and mitigation measure in the Bangladesh fisheries sector. Fin fish species are non-target species in the by-catch catch composition of the shrimp trawl, which now accounts for approximately 35% to 40% of total catch (Hoq et al. 2013). Historically, high levels of discarded fin fish were reported and rose to approximately 70% of total catch (Khan & Latif 1997; Lamboeuf 1987). Subsequent regulation has been framed banning discarded by-catch at sea, prescribing the mesh size for trawlers, gillnets and set bag nets. There is no by catch in true sense as almost all fish caught are brought ashore as for alternate uses of fishes, even though they are not consumed directly. Discarding of trash fish/by-catch at sea is forbidden by Rule 7 of the Marine Fisheries Rules, 1983 (The Bangladesh Gazette, 1983). The main reason is that dried low-priced trash fish became a high valued market for as a protein source for the established poultry and aquaculture industry.

### 5.1 Sharks

No sharks under the IOTC list are present in the Bay of Bengal. NPOA for shark is being developed which may incorporate the IOTC requirements to introduce of key national strategies related to sharks, including the status of the NPOA-sharks. However, very little amount of shark and rays in industrial catch (0.59% in 2016-17), is reported. The artisanal landing of shark and rays are listed as follows-

**Table 3: Total Landing and Species Wise percentage (%) of Sharks and Rays**

| Sl.No. | Scientific Name | 2011-12 (MT) | 2012-13 (MT) | 2013-14 (MT) | 2014-15 (MT) | 2015-16 (MT) | 2016-17 (MT) |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | **Total landing MT)** | **3865.00** | **4471.00** | **5648.00** | **5017.00** | **4000.00** | **3850.0** |
| 1. | *Scoliodon laticaudus* | 853.78 | 1004.19 | 2053.05 | 1134.34 | 959.20 | 2790.09 |
| 2. | *Rhizoprionodon acutus* | 56.04 | 99.26 | 110.70 | 166.06 | 86.0 | 28.49 |
| 3. | *R. oligolinx* | 0.19 | 162.74 | 1.69 | - | - | - |
| 4. | *Sphyrna lewini* | 273.64 | 458.28 | 433.20 | 595.02 | 363.60 | 224.07 |
| 5. | *Sphyrna mokarran* | - | - | 3.95 | - | - | - |
| 6. | *Chiloscyllium indicum* | 48.70 | 23.70 | 29.93 | 25.09 | 79.60 | 20.02 |
| 7. | *Galeocerdo cuvier* | 51.79 | 96.13 | 128.21 | 51.68 | 59.60 | 28.11 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 8. | *Carcharhinus melanopterus* | 47.54 | 67.96 | 105.05 | 47.66 | 81.20 | 19.64 |
| 9. | *C. leucas* | 11.60 | 60.36 | 158.71 | 115.39 | 82.70 | 122.05 |
| 10. | *C. falciformis* | 34.01 | 12.07 | 98.28 | 61.20 | 101.20 | 0.77 |
| 11. | *C. sorrah* | 0.12 | 33.98 | 35.58 | 314.57 | 117.20 | - |
| 12. | *Stegostoma fasciatum* | | | | | | 5.39 |
| **Subtotal wt. of Shark 's species** | | **1377.41** | **2018.66** | **2550.07** | **2511.01** | **1907.60** | **3239.39** |
| 13. | *Himantura uarnak* | 1660.79 | 105.96 | 139.51 | 10.54 | 17.20 | 63.53 |
| 14. | *H. undulata* | 8.89 | 92.10 | 198.81 | 430.46 | 179.60 | 46.59 |
| 15. | *H. gerrardi* | 7.73 | 21.01 | 16.38 | 56.19 | 11.60 | 0.77 |
| 16. | *H. uarnacoides* | 336.255 | 1482.13 | 1033.58 | 1048.55 | 1145.60 | 312.24 |
| 17. | *Gymnaura japonica* | 100.88 | 153.80 | 262.07 | 197.17 | 272.80 | 52.36 |
| 18. | *Rhinoptera javanica* | 3.092 | 25.04 | 46.31 | - | 1.20 | 2.31 |
| 19. | *Aetomylaeus nichofii* | 34.01 | 59.91 | 37.28 | 47.16 | 139.60 | 10.78 |
| 20. | *Mobula japonica* | 17.39 | 89.87 | 167.18 | 150.51 | 120.80 | 67.76 |
| 21. | *Rhynchobatus granulatus* | - | 2.68 | - | - | - | - |
| 22. | *Rhina ancylostoma* | 0.77 | 0.45 | 31.63 | - | - | 0.39 |
| 23. | *Aetobatus narinari* | 1.16 | - | - | - | - | - |
| 24. | *Urogymnus asperimus* | 6.96 | - | 24.29 | - | - | - |
| 25. | *Rhynchobatus djeddensis* | 23.19 | 133.68 | 33.32 | 33.61 | 3.6 | 0.04 |
| 26. | *Rhinobatos typus* | 274.42 | 285.70 | 476.69 | 383.80 | 200.40 | 53.52 |
| 27. | *Himantura walga* | 11.98 | - | 22.59 | 83.78 | - | - |
| 28. | *Narcine timlei* | - | | | 64.22 | | - |
| **Subtotal wt. of Ray's species** | | **2487.52** | **2452.34** | **3097.93** | **2505.99** | **2092.40** | **610.61** |

**Table 4:** Total number of sharks, by species, released/discarded by the national fleet in the IOTC area of competence (for the most recent five years at a minimum, e.g. 2012–2016). Where available, include life status upon released/discard.

Not available

### 5.2 Seabirds

Not available

### 5.3 Marine Turtles

Turtle Extruder Device (TED) is used in shrimp trawlers. Demarsal Fish trawlers are being modified to Mid-water trawlers gradually. It is necessary to introduce provision of reporting the catch of turtle in fish trawl and gillnet fisheries and take measures to reduce catch and survival of turtle.

**5.4 Other ecologically related species (e.g. marine mammals, whale sharks)**

Other ecologically related species (e.g. marine mammals, whale sharks) shall not be hunted, killed or captured according to the Bangladesh wildlife preservation order-1973. Moreover NPOA is being developed which may incorporate the other ecologically related species (e.g. marine mammals, whale sharks) including the status of the NPOA.

**Table 5.** Observed annual catches of species of special interest by species (seabirds, marine turtles and marine mammals) by gear for the national fleet, in the IOTC area of competence (for the most recent five years at a minimum, e.g. 2012–2016 or to the extent available).

Not available

**6. NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS**

**6.1. Log sheet data collection and verification** (including date commenced and status of implementation)

IOTC species have been included to the fishing log sheet and it is mandatory to submit to the Marine Fisheries Office for each trawler to take sailing permission for next trip.

**6.2. Vessel Monitoring System** (including date commenced and status of implementation)

Bangladesh Government has now been initiated Vessel Monitoring System (VMS) to trace dynamics of trawler. There are already 133 trawlers are under VMS out of 201 and hopefully, every vessel will come under VMS system within short time.

**6.3. Observer programme** (including date commenced and status; number of observer, include percentage coverage by gear type)

No conventional observer system is practicing on board to monitor sea fishing. The national fishing fleet is fully dependent on Bangladesh Navy and Coast guard.

Table 6: Long line, hooks and purse seine are not operating in the trawler fleet.

**Figure 4 .** Map showing the spatial distribution of observer coverage.

Not applicable

**6.4. Port sampling programme** [including date commenced and status of implementation]

**Table7.** Number of individuals measured, by species and gear] **[Mandatory]**

**6.4. Unloading/Transhipment** [including date commenced and status of implementation

- No transhipment or unloading from industrial vessels at sea in Bangladesh marine waters.

**7. NATIONAL RESEARCH PROGRAMS [Desirable]**

*[A description of research activities covering target and non-target species e.g. biological studies supporting stock assessments; composition of the catch according to length, weight and sex; research on environmental factors, abundance/biomass surveys, oceanographic and ecological studies, etc.]*

**Table 8.** Summary table of national research programs, including dates. [The following program is currently underway]

| Project title | Period | Countries involved | Budget total | Funding source | Objectives | Short description |
|---|---|---|---|---|---|---|
| Marine Fisheries Capacity Building project (MFCBP) | 2007-2019 | | | IDB and Govt. of Malaysia | Capacity Building of Marine Fisheries sector | Land based catch & biological data of artisanal fisheries data are being collected; Stock assessments, abundance/biomass surveys and various biological and oceanographic data are being collected using research and survey vessel RV Meen Sandhani . |

**8. IMPLEMENTATION OF SCIENTIFIC COMMITTEE RECOMMENDATIONS AND RESOLUTIONS OF THE IOTC RELEVANT TO THE SC.**

**Table 9**. Scientific requirements contained in Resolutions of the Commission, adopted between 2005 and 2015.

| Res. No. | Resolution | Scientific requirement | CPC progress |
|---|---|---|---|
| 15/01 | On the recording of catch and effort by fishing vessels in the | Paragraphs 1–10 | Have records of the industrial fishery as group, no species wise tuna catch in |

| Res. No. | Resolution | Scientific requirement | CPC progress |
|---|---|---|---|
| | IOTC area of competence | | recorded. |
| 15/02 | Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs) | Paragraphs 1–7 | Have statistical report of industrial and artisanal fishing. |
| 15/05 | On conservation measures for striped marlin, black marlin and blue marlin | Paragraph 4 | No deep sea long lining vessels |
| 13/04 | On the conservation of cetaceans | Paragraphs 7– 9 | No purse seine, so not applicable |
| 13/05 | On the conservation of whale sharks (*Rhincodon typus*) | Paragraphs 7– 9 | No purse seine or FAD, so not applicable |
| 13/06 | On a scientific and management framework on the conservation of shark species caught in association with IOTC managed fisheries | Paragraph 5–6 | NPOA for shark is being developed which may incorporate the IOTC requirements |
| 12/09 | On the conservation of thresher sharks (family alopiidae) caught in association with fisheries in the IOTC area of competence | Paragraphs 4–8 | No thresher sharks caught in Bangladesh marine waters |
| 12/06 | On reducing the incidental bycatch of seabirds in long line fisheries. | Paragraphs 3–7 | No tuna long liners |
| 12/04 | On the conservation of marine turtles | Paragraphs 3, 4, 6–10 | TED is used in shrimp trawler. Demersal Fish trawlers are modifying to Mid-water trawlers gradually. It has planned introduce provision of reporting the catch of turtle in fish trawl and gillnet fisheries and take measures to reduce catch and survival of turtle |
| 11/04 | On a regional observer scheme | Paragraph 9 | No regional observer scheme |
| 05/05 | Concerning the conservation of sharks caught in association with fisheries managed by IOTC | Paragraphs 1–12 | NPOA for shark is being developed which may incorporate the IOTC requirements |
| | Bangladesh government has keen interest to explore its marine resources. | | |

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