



Food and Agriculture
Organization of the
United Nations



Indian Ocean Tuna Commission
Commission des Thons de l'Océan Indien

Received: 16 October & 30 November 2017
IOTC-2017-SC20-NR20 Rev_1

Pakistan's National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2017

TUNA FISHERY IN PAKISTAN

by

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INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

<p>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 longline [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)</p>	<p style="text-align: center;">YES</p> <p>Communication letter No.MFD/IOTC/DR&A)/2016/ 117 dated 29-06-2017.</p>
<p>In accordance with IOTC Resolution 15/02, provisional longline 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).</p> <p>REMINDER: Final longline 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).</p>	<p style="text-align: center;">YES</p> <p>Communication letter No.MFD/IOTC/DR&A)/2016/ 117 dated 29-06-2017. No longline fishing vessel in operation in Pakistan since 2009.</p>
<p>If no, please indicate the reason(s) and intended actions: Not applicable.</p>	

Executive Summary

Tuna and tuna like fishes are one of the components of pelagic resources. In Pakistan, mainly neritic and oceanic species are encountered in the tuna fishery. Tuna fishing fleet comprises of about 709 gillnet boats. The total production of tunas and tuna-like fishes, including Neritic and Oceanic tunas, Billfishes and Seerfishes during the year 2016 was 101,225 m. tonnes.

There are no reported instances of sea bird interaction in any of the tuna fishing boat. Sea turtles, Marine mammals and Whale sharks are protected in Pakistan under various national and provincial fisheries and wildlife legislations. Data on tuna production is collected by provincial fisheries departments of maritime provinces of Sindh and Balochistan and compiled by Marine Fisheries Department, Government of Pakistan, Ministry of Ports & Shipping.

Tuna and allied resources called as large pelagic resources. The large pelagic resources contributed 101,225 ton, accounting for 26.9% of the marine capture fish production. Major share of the landing was by Tunas (70%) followed by Seerfishes (20.2%) and dolphinfish (5.4%) and billfish (4.4%). Among the tunas, yellowfin was dominating with 33.3%, followed by longtail (29.7), frigate (19.6%), tuna-nei (8.5%), kawakawa (7.6%) and skipjack (1.6%). There was some landings of bullet tuna and striped bonito as well. There is a change in the pattern over the years, the contribution of the skipjack was 21.5% in 1997 and decreased down to 1.6%. whereas the frigate tuna increased from 6.8% in 1997 to 19.6%. Main reason for decline in the catch of Skipjack is because of concentration of operation of Pakistani vessels along Pakistan coast. Prior to 1999 majority of Pakistani fleet was operating in the ABNJ of IOTC area.

Significant progress has been made during the year 2016, for the conservation of bycatch species which include promulgation of fisheries legislations by both provinces of Sindh and Balochistan. These legislations prohibited the catching of turtle, cetacean (whales & dolphins), whale shark, silky shark, oceanic whitetip shark, thresher shark, hammerhead sharks, all species of sawfishes of family Pristidae, all species of guitar fishes and wedge fishes of family Rhinidae, Rhinobatidae or Rhynchobatodae. To monitor the activities of local tuna boat, it is made mandatory to have VMS on all fishing vessel larger than 15 meters (in length overall). The contravention of these regulations is punishable with fine and imprisonment.

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1. BACKGROUND/GENERAL FISHERY INFORMATION

Large pelagic being caught in Pakistan consists of tuna, billfishes, dolphinfish, pelagic sharks and barracudas. The fishing fleet engaged in large pelagic species are mainly based mainly in four coastal cities i.e. Karachi, Gwadar, Pasni and Jiwani, although there are more than 60 coastal towns and settlements along the coast of Pakistan. It is estimated that large pelagic contribute more than 20 % in the total landings of fishes from marine origin. A major of catch of large pelagic is transported to Islamic Republic of Iran mainly through boats based in Gwadar area and to a lesser extent through land route. Small quantities are large pelagic (mainly Spanish mackerels) are consumed locally whereas smaller tuna species (kawakawa, frigate and bullet tuna) are also exported in salted dried form to Sri Lanka. Despite their importance large pelagic in Pakistan, there are a number of serious issues being faced by this fisheries mainly being non-compliant to the international instruments such as IOTC.

Neritic Tuna gillnet operations are primarily based in coastal villages of Pasni, Gwadar and Jiwani, however, there are few fishing boats based in Karachi, Gaddani and Ormara which are engaged (in some cases during specific fishing seasons). The boats engaged in this fishery have a size ranging between 7 to 11 m in length (locally known as Rachin in Balochistan and Hora in Sindh). Small scale neritic tuna fleet consists entirely of locally made wooden boats. Previously these boats used to undertake one day trip but most of these boats now undertake many day trips (maximum 5 days). Gill nets used in these boats have length ranging between 3 to 5 km with mesh sizes ranging between 5 to 14 cm (stretched). Most of these boats have inboard engine (33 to 200 hp) but a few still have longtail or outboard engines (7 to 33 hp).

These neritic tuna gillnet boats may not necessarily be targeting tuna or tuna like species but other demersal and pelagic species such as croakers, queenfish, Spanish mackerels, catfish, barracuda, seabreams and sharks may be targeted, however, still coastal tuna mainly longtail, kawakawa and frigate tuna are also main catch especially during January and February and October and November. No data of their contribution of tuna landings is available, however, it is estimated that this fisheries used to contribute about 20 % in total tuna landings, however, during the past 15 years their contribution in total tuna landings has been dropped to about less than 5 % as major part of this fleet is engaged in catching of Indian mackerel using monofilaments. In the recent past (since last two years), there is a recovery in this fishery because of decline in the catches of Indian mackerel and now the some of the boats which were previously engaged in fishery for Indian mackerel has started returning to Neritic tuna fishery. The area of operation of these Neritic tuna gillnet boats is shown in **Figure 1**.

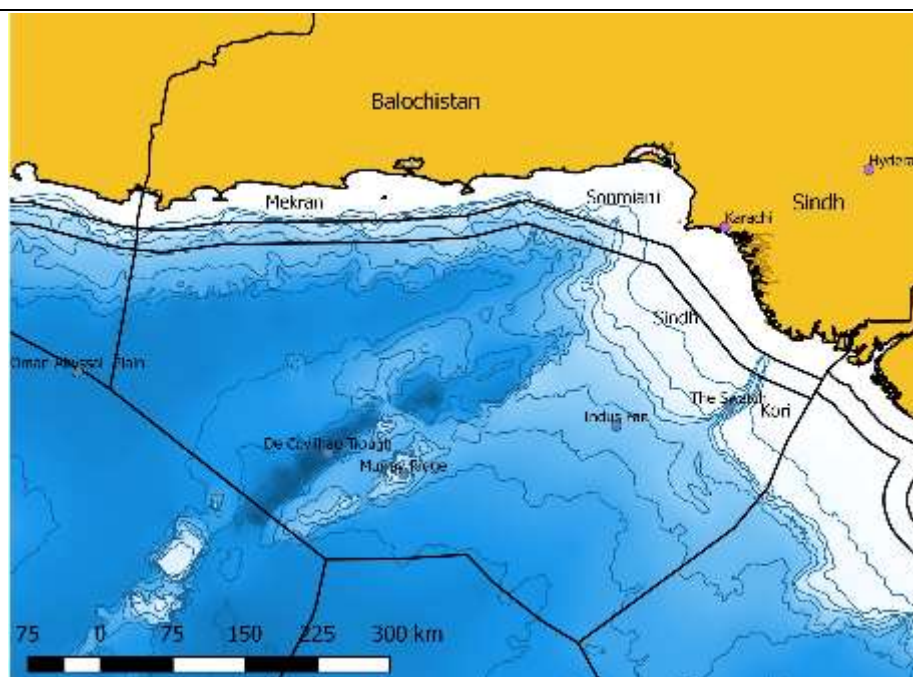


Figure 1 Area of operation of Neritic tuna gillnet vessels.

2. FLEET STRUCTURE

Large scale offshore tuna fleet consists of entirely locally made wooden boats. Majority of these boats are operating from Karachi, Gwadar and Jiwani. These boats are large; exceeding more than 18 m LOA and less than 24 m LOA. Almost all tuna fishing boats operating from Karachi have transom at the stern whereas almost all tuna boats of Balochistan are double keeled. A survey of the tuna boats operating from Karachi was carried out in 2005 and again in 2012 which revealed that most tuna boats have an average length of about 12 to 15 m. All tuna boats both operating from Karachi or from Balochistan coast have inboard engine with 50 hp to 500 hp.

The boats are well equipped as these have latest GPS, fish finder and shortwave or VHF radios. Usually these boats have one or two hydraulically operated net hauler. Most of these boats have fish hold consisting of 6 compartments (larger boats have 8) each having capacity to hold about 1 ton of fish. Fish holds in almost all vessels of these categories are now lined with fiberglass sheet and insulated with polyurethane. Ice is carried on fishing trips and prime catch is placed with crushed ice. Previously salt used to be taken and fish catch is eviscerated and cut open and then salt is sprinkled and fish is allowed to drain excess water. Such wet salted catch used to be kept in hold and excess is piled on deck. Use of salt as preservatives is now totally discontinued.

Surface gillnetting using nylon and polyamide nets are used by large scale offshore tuna gillnet fleet. The net stretched mesh size of 15 cm with a hanging ratio of 0.5. Length of head rope varies between 5,500 m. to a maximum of 17,000 m. The breadth of the net has about 8 to 20 m. Both stone and lead weights are used as sinkers whereas various types of

floats (Styrofoam, plastic, HDP floats as well as recycled plastic cans) are used in the head rope.

Fishing boats engaged in tuna fisheries are mainly based in Karachi but Gwadar is being used as operational base. Tuna fishing boats are also based in Pasni, Ormara and Jiwani. Tuna fishing boats undertake fishing voyage usually of about 10 to 40 days. Gillnets for catching tuna are laid in the afternoon and retrieved in early morning. Nets haulers are used for heaving the nets. Fish is removed from the net and after its complete heaving the catch is stored in the fish holds with ice.

Tuna is harvested throughout the year; however, because of rough seas during southwest monsoon (Mid May to Mid August) tuna fishing activities are totally stopped. Major fishing season for tuna is between November and April with peak season in March. The number vessels operating in Exclusive Economic Zone (EEZ) of Pakistan is given in Table-1a, whereas, tuna targeting fishing vessels in Table-1b.

Table 1a: Number of vessels operating in EEZ of Pakistan, by gear type and size

Type of fishing boats	2012	2013	2014	2015	2016
Gillnetters	3,324	3,538	3,459	3,624	3,935
Pelagic gillnet	618	638	667	683	709
Long-liners	0	0	0	0	0
Total	3,942	4,176	4,126	4,307	4,644

Table-1b: Types of Tuna Fishing vessels being Operated in Pakistan

Type of Vessel	Balochistan	Sindh	Total	Remarks
Small scale Neritic Tuna Gillnet Fishing vessels	120	80	200	
Larger Scale Offshore Tuna Fishing vessels	139	300	439	About 80 are double registered in Iran and Pakistan
Large Scale Offshore Vessels with onboard freezing facilities	70	0	70	Most of these vessels are double registered in Iran and Pakistan
Large scale tuna longlining	Nil	Nil	Nil	Since May 2009, no tuna longlining operation in Pakistan
Total	329	380	709	

Data is based on estimate as exact information about registration is not available.

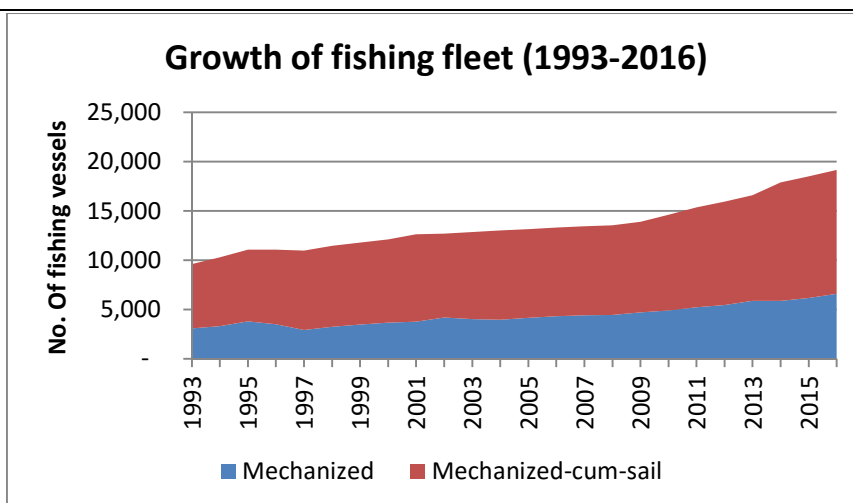


Figure 2A Growth of fishing fleet

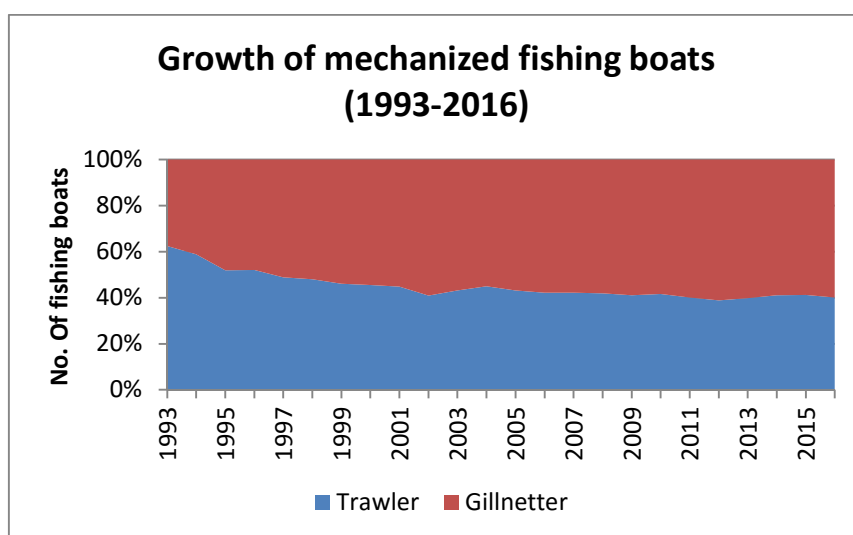


Figure 3B Growth of fishing fleet

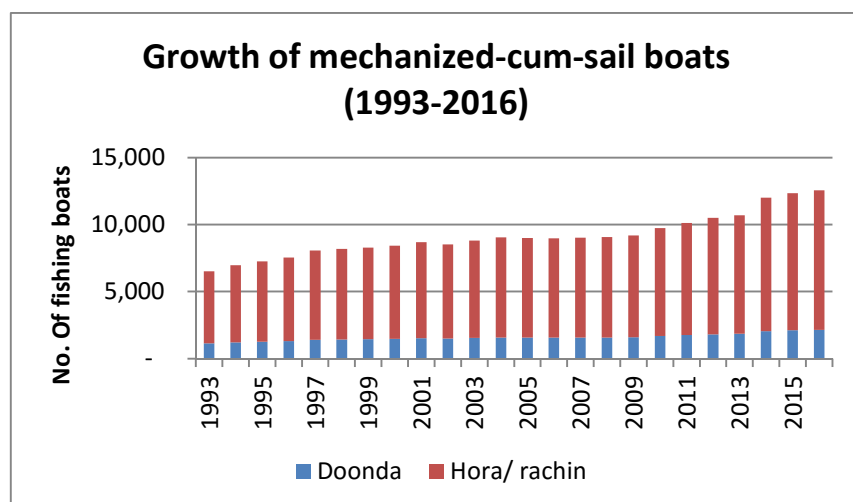


Figure 4C Growth of fishing fleet

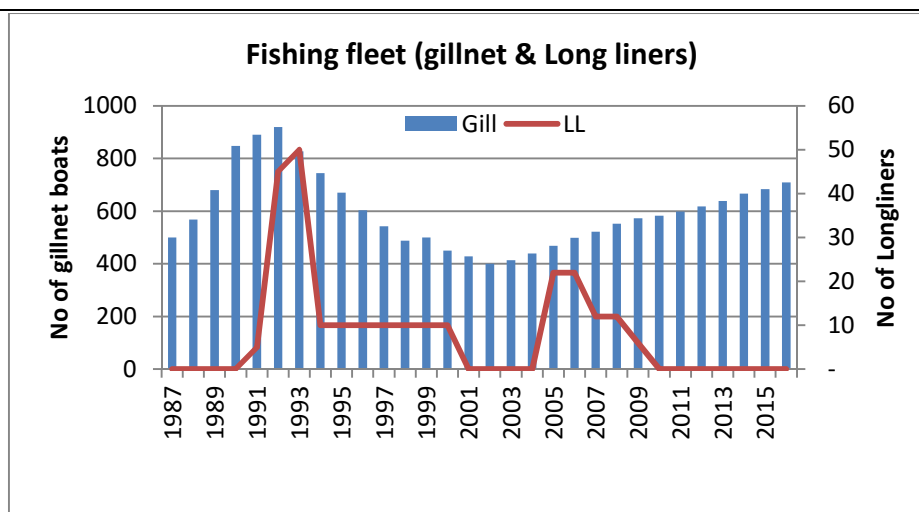


Figure 2D Tuna fishing fleet

3. CATCH AND EFFORT (BY SPECIES AND GEAR)

The nominal fish landing during last five years (2012 to 2016) is given in Table 2a. It appears that total fish production increase from 550,927 tons to 588,581 tons during the reporting period, the overall increase is 8.63%. The production from marine capture fisheries increased from 349,050 tons to 376,266 tons, with an increase of 7.80% during the same period. The landing of tuna species increased from 45,072 ton to 70,845 tons, with an increase of 57.18% during the same period. The increase is 11.44% per annum. Similarly, the landing of bycatch species in tuna fleet also increased from 19,105 ton to 30,380 ton, with an increase of 59.02% during the same period. This increase is 11.80% per annum. The increase in tuna fish species and bycatch in tuna fleet is due to the fact that more statistics is being recorded due to crew-based observer programme being implemented by WWF-Pakistan under ABNJ project.

Table-2a Annual Nominal catch of tuna & allied fishes (2012-2016)
(Quantity in m.ton)

English name	Gear	2012	2013	2014	2015	2016
Total fish production		550,927	556,552	563,392	568,151	588,581
Marine capture fisheries		349,050	351,747	355,900	359,534	376,266
Combined tunas	Gill	45,072	43,701	45,567	52,152	70,844
Combined billfish	Gill	2,830	3,756	4,128	4,204	4,500
Combined Seerfish	Gill	12,866	17,074	18,767	19,111	20,459
Dolphinfish	Gill	3,409	4,524	4,972	5,064	5,421
Grand Total		64,177	69,055	73,435	80,530	101,224
No longline vessel was in operation	LL	0	0	0	0	0

Tuna and allied resources called as large pelagic resources. The large pelagic resources contributed 101,225 ton (Table-2b), accounting for 26.9% of the marine capture fish production. Major share of the landing was by Tunas (70%) followed by Seerfishes (20.2%) and dolphinfish (5.4%) and billfish (4.4%). Among the tunas, yellowfin was dominating with

33.3%, followed by longtail (29.7), frigate (19.6%), tuna-nei (8.5%), kawakawa (7.6%) and skipjack (1.6%). There was some landings of bullet tuna and striped bonito as well. There is a change in the pattern over the years, the contribution of the skipjack was 21.5% in 1997 and decreased down to 1.6%. whereas the frigate tuna increased from 6.8% in 1997 to 19.6%. Main reason for decline in the catch of Skipjack is because of concentration of operation of Pakistani vessels along Pakistan coast. Prior to 1999 majority of Pakistani fleet was operating in the ABNJ of IOTC area.

Table-2b Species wise Annual catch of tuna & allied fishes

			(Quantity in m.ton)				
English name	Scientific name	Gear	2012	2013	2014	2015	2016
Yellowfin tuna	<i>Thunnus albacares</i>	Gill	14,898	13,958	14,452	16,791	23,392
Skipjack	<i>Katsuwonus pelamis</i>	Gill	712	667	691	802	1,118
Longtail	<i>Thunnus tonggol</i>	Gill	13,405	12,558	13,003	15,107	21,047
Kawakawa	<i>Euthynnus affinis</i>	Gill	3,434	3,217	3,331	3,870	5,392
Frigate tuna	<i>Auxis thazard</i>	Gill	8,842	8,283	8,577	9,965	13,882
Bullet tuna	<i>Auxis rochei</i>	Gill	1	1	1	1	2
Striped Bonito	<i>Sarda orientalis</i>	Gill	1	1	1	1	2
Tuna like nei		Gill	3,779	5,016	5,513	5,614	6,010
Sub-total			45,072	43,701	45,567	52,152	70,844
Billfish			2,830	3,756	4,128	4,204	4,500
Spanish Mackerel	<i>Scomberomorus spp.</i>	Gill	12,866	17,074	18,767	19,111	20,459
Dolphinfish	<i>Coryphaena hippurus</i>	Gill	3,409	4,524	4,972	5,064	5,421
sub-total- bycatch		Gill	19,105	25,354	27,867	28,379	30,380
Grand Total			64,177	69,055	73,436	80,530	101,225

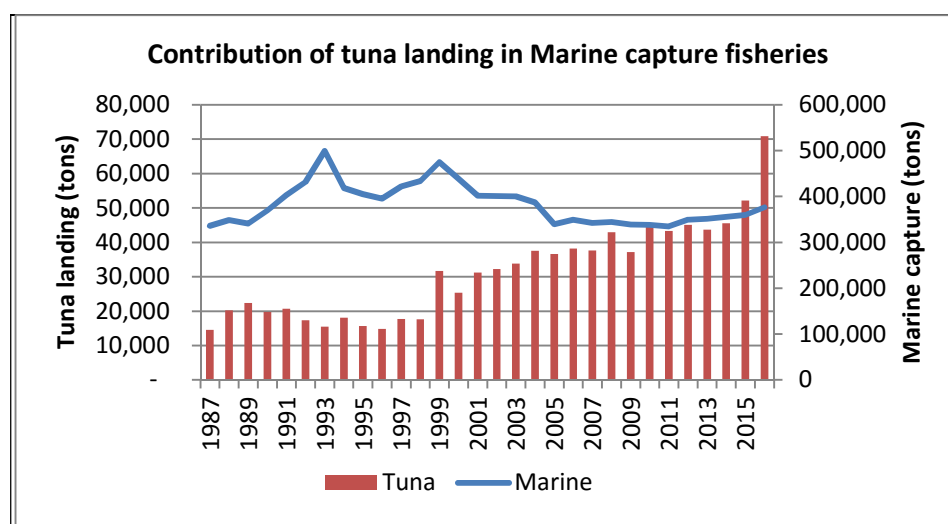


Figure 3A Nominal fish production & tuna landing (1987-2016)

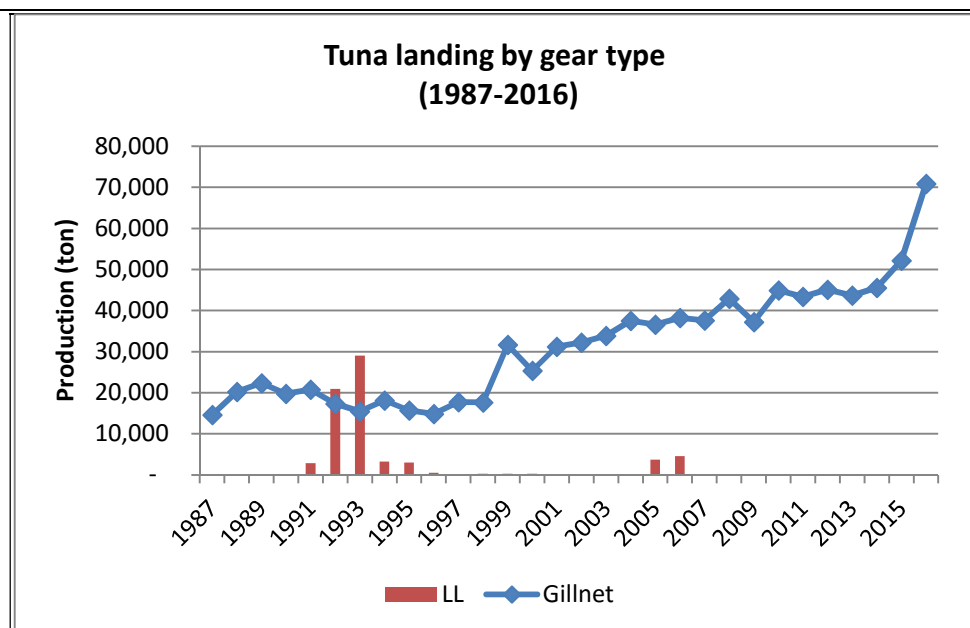


Figure 5B: Annual nominal catch of tunas by gear type (1987-2016)

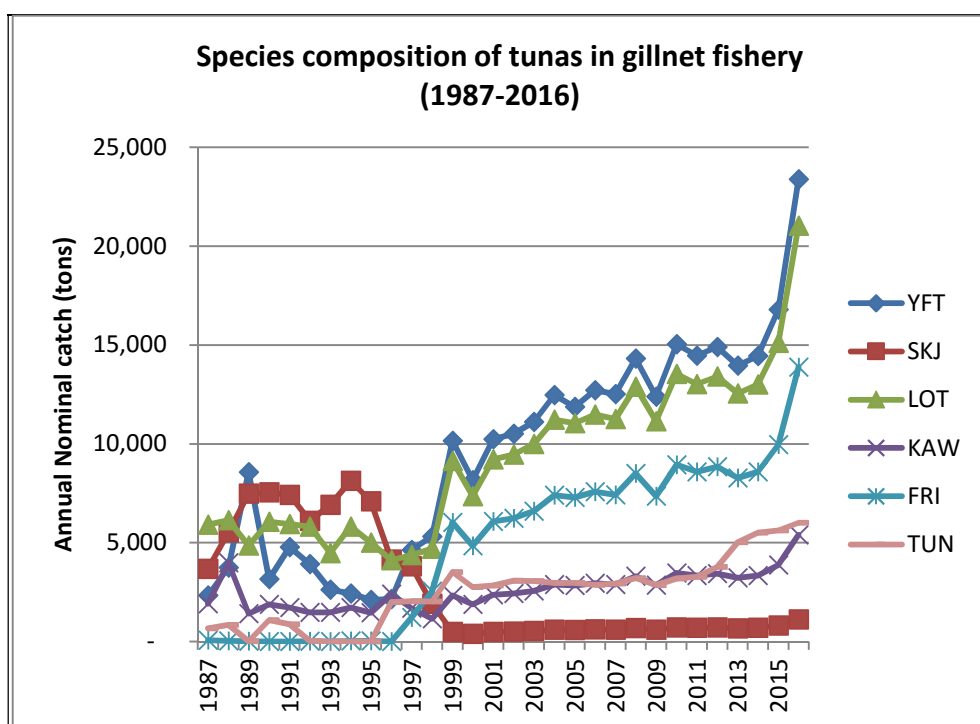


Figure 3C: Annual nominal catch of tuna species by gillnet fishery

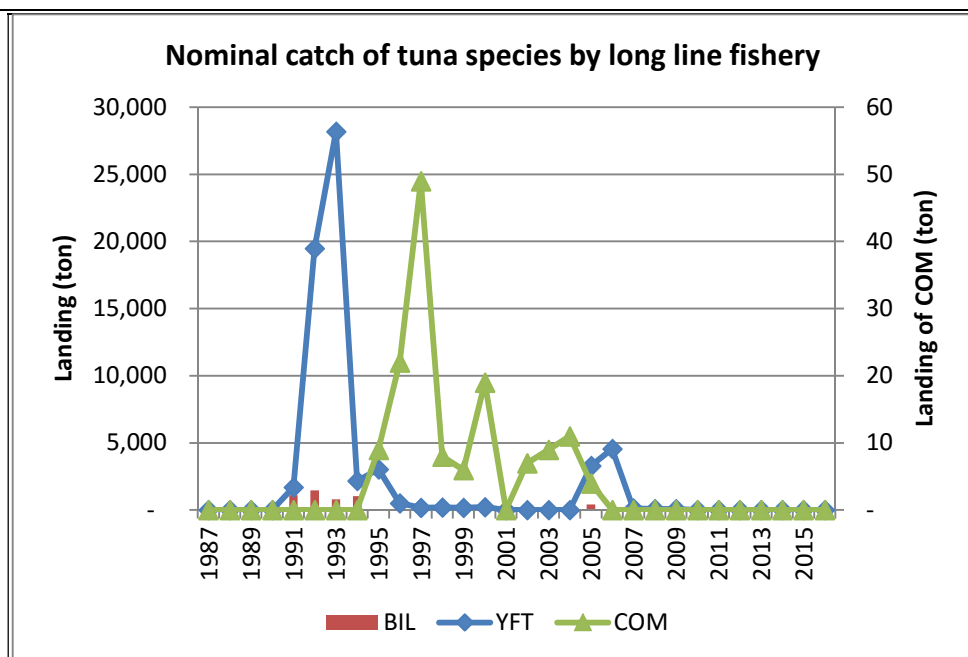


Figure 3D: Annual nominal catch of tuna fishes by Longline fishery

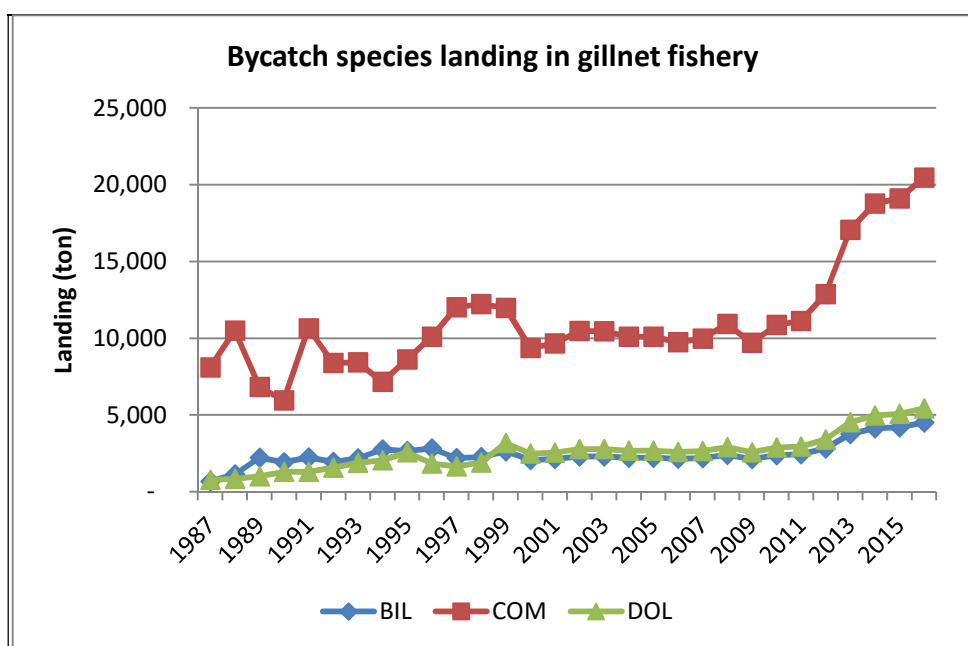
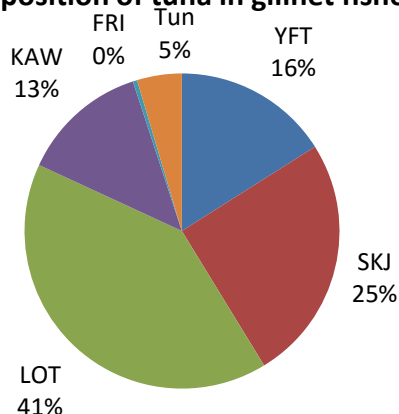


Figure 3E: By species landing in gillnet fishery (1987-2016)

Species composition of tuna in gillnet fishery (1987)



Species composition of tunas (1999)

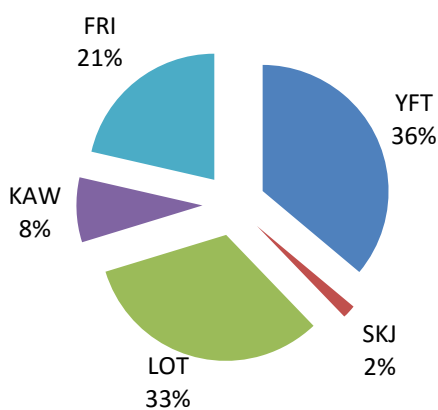


Figure 3b: Species composition of tunas in gillnet fishery (2016)

Percentage composition tuna species in gillnet fishery (2016)

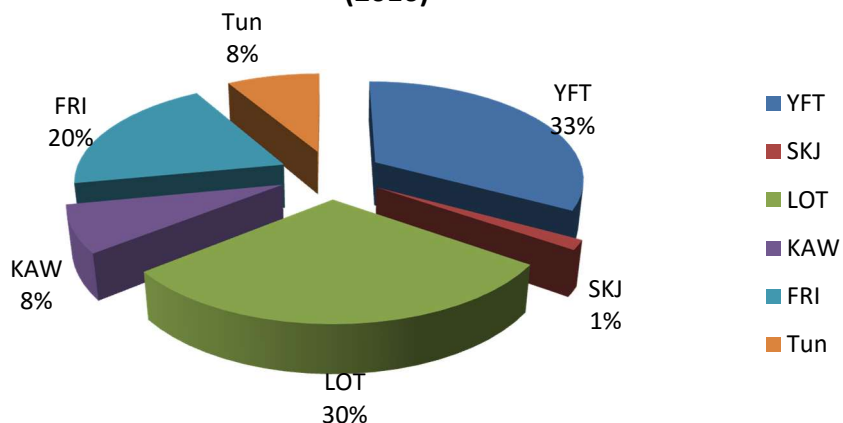


Figure 3c: Species composition of bycatch in gillnet fishery (2016)

**Percentage composition of bycatch species in
tuna gillnet fishery (1987)**

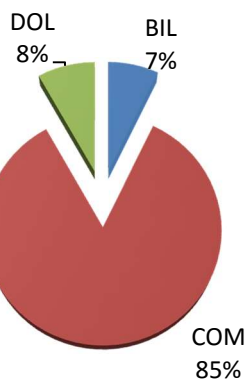


Figure 3d: Species composition of bycatch in gillnet fishery (1987)

Species composition of bycatch in gillnet fishery (1999)



Figure 3E: Species composition of bycatch in gillnet fishery (1999)

Species composition of bycatch in gillnet fishery (2016)

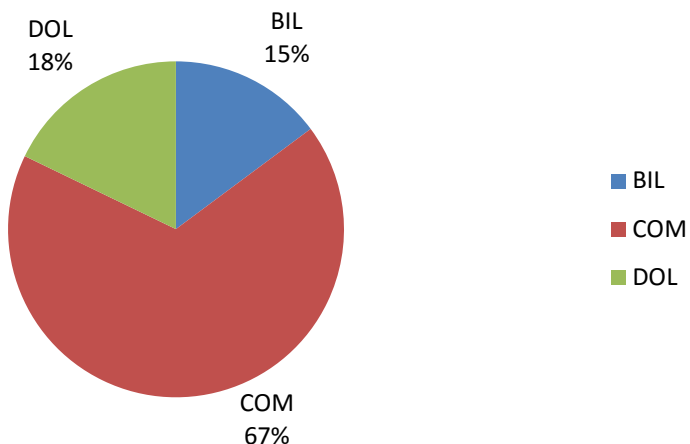


Figure 3E: Species composition of bycatch in gillnet fishery (2016)

4. RECREATIONAL FISHERY

In Pakistan recreational fisheries was started in mid 1980's and getting popularity gradually. This activity is under taken by individual as well as group. Generally this fishing activity is taking place in zone-I. They are targeting billfishes, tuna and demersal fishes (grouper, barracuda, snappers, trevally, cobia, queenfish & croaker etc.). The rough estimate of the catch by this activity is about 130 metric ton. It has no contribution to the gross production of the fish in the country. The fish caught is being use by the people for their subsistence. So far it has no impact on the resources or other user of these resources. The area of operation is shown as RED Circle in Figure-4.



Figure 4. Geographical location Recreational fishery

5. ECOSYSTEM AND BYCATCH ISSUES

5.1 Sharks

Fishes of Pakistan have been compiled by several workers (Jaleel & Khalil 1972, 1981; Ahmed & Niazi, 1975; Bianchi, 1985; Bilquees, 1985; Hoda, 1985; Majid *et al.* 1992 and Psomadakis, et al., 2015). Sharks are currently used as dried salted products (fin, skin, meat), liver and fins of sharks can be used for high value added products. These are not consumed locally, however, fins are dried for export or consumed in fishmeal production. The oil extracted from liver is used in smearing local fishing boats because of their low quality. Generally sharks and rays are recorded as a group i.e. sharks, rays, with the support of WWF-Pakistan observer program, catches of sharks and rays have been separated which includes four (04) species of sharks i.e. shortfin mako (*Isurus oxyrinchus*), pelagic thresher shark (*Alopias pelagicus*), silky shark (*Carcharhinus falciformis*) and shark nei; whereas species of Mobulidae has been identified which includes Spinetail mobula (*Mobula japonica*) and *Mobula nei*. Nominal annual catch of sharks species in gillnet fishery is given in Table3 and historical trend of different species of sharks in gillnet fishery (1999-2016) is shown in Figure-5. None of the shark species or any other fish species is discarded at sea.

Table 3: Nominal catch of shark species caught by gillnet fishery (2012-2016)
Quantity (m. tons)

Species	2012	2013	2014	2015	2016
Shortfin mako	333	354	372	412	526
Pelagic thresher shark	232	247	275	301	375
Silky shark	198	211	214	244	310
Sharks nei	142	146	143	152	217
<i>Mobula japonica</i>	66	87	75	87	101
<i>Mobula nei</i>	12	22	17	21	43

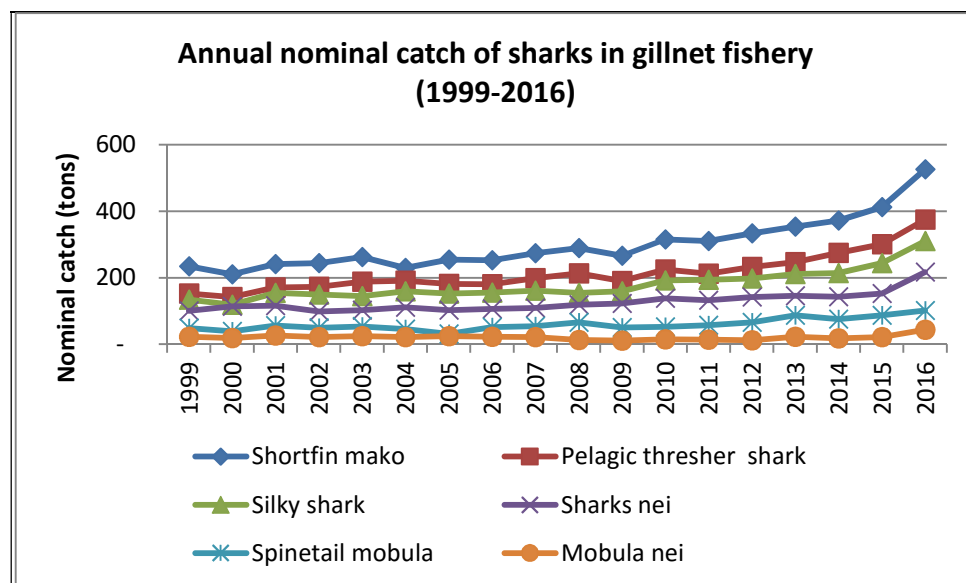


Figure 5: Annual nominal catch of sharks in gillnet fishery

For the conservation of shark following steps have been take by the federal and provincial governments:

- An act titled "Pakistan Trade Control of Wild Fauna and Flora Act 2012" has been promulgated vide Notification No.F.22(18)/2008-Legis dated 08 May, 2012 to ensure implementation the provisions of the Conservation on International Trade in Endangered Species of Wild Fauna and Flora. It was an obligation as Pakistan is a party to the United Nations Conservation on International Trade on Endangered Species of Wild Fauna and Flora. The Article-3 of this act, prohibiting the export, re-export and import of such species of fauna and flora included in any Appendix of the Convention.
- Government of Sindh promulgated regulation Notification NO.5(3)SO(Fish)L&F/16/092 dated 18-05-2016 prohibition of catching of whale sharks, silky shark, Oceanic whitetip shark, thresher sharks, hammerhead sharks, sawfish of family Pristidae and mobulid rays throughout the year. This regulation also restricting the catching of guitarfishes, wedge fishes of families Rhynchobatidae, Rhinidae and Rhinobatidae of less than 30 cm.

- c) Government of Balochistan also promulgated regulation Notification Mo.SO(Coord)Fish/2-1/2013/3148-58 dated 08-09-2016 prohibiting the catching, retention, marketing and trade of whale sharks, silky shark, oceanic whitetip shark, thresher sharks, hammerhead sharks, mobulid rays, all species of sawfishes of family Pristidae and all species of guitar fishes and wedge fishes of family Rhinidae, Rhinobatidae or Rhynchobatidae.
- d) Balochistan(Wildlife Protection, Preservation, Conservation and Management) Bill 2014 (Bill No.15 of 2014) published vide No.PAB/Legis: V(15)2014 dated 28-03-2014, prohibiting the catching of turtle, whale, dolphins, sharks etc under Clause 14 (1). The contravention of any provision of this act is also punishable.

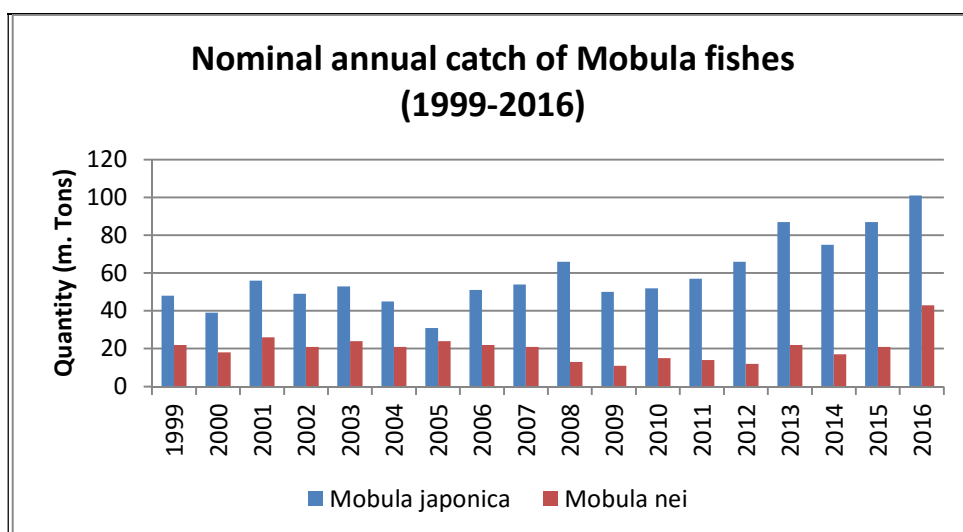


Figure 6: Nominal annual catch of mobula fishes during 1999-2016 by gillnet fishery

5.2 Seabirds

There is no longline fishery in Pakistan and no longliner is in operation in EEZ of Pakistan since 2009, therefore, this resolution is not applicable to Pakistan. No seabirds are reported to be entangled in tuna gillnets.

5.3 Marine Turtles

- a. Government of Sindh promulgated regulation Notification NO.5(3)SO(Fish)L&F/16/092 dated 18-05-2016 under Sindh Fisheries Ordinance 1980, prohibition of catching of turtle (S.No.17) through the year. Contravention of any provision of the regulation is punishable which include fine as well as imprisonment.
- b. Government of Balochistan also promulgated regulation Notification Mo.SO(Coord)Fish/2-1/2013/3148-58 dated 08-09-2016 prohibiting the catching, retention, marketing and trade of turtle (clause 2(a) i). Contravention of any provision of the regulation is punishable which include fine as well as imprisonment.

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- c. An act titled "Pakistan Trade Control of Wild Fauna and Flora Act 2012" has been promulgated to ensure implementation the provisions of the Conservation on International Trade in Endangered Species of Wild Fauna and Flora. It was an obligation as Pakistan is a party to the United Nations Conservation on International Trade on Endangered Species of Wild Fauna and Flora. The Article-3 of this act, prohibiting the export, re-export and import of such species of funa and flora included in any Appendix of the Convention.
 - d. The clause 5(c) of Pakistan Fish Inspection and Quality Control Rules, 1998 notified vide S.R.O. No.739(I)/98 dated 30-06-1998 promulgated under section 18(1) of the Pakistan Fish Inspection and Quality Control Rules, 1997 (XXXV of 1997), prohibiting the export of turtle.
 - e. Balochistan(Wildlife Protection, Preservation, Conservation and Management) Bill 2014 (Bill No.15 of 2014) published vide No.PAB/Legis: V(15)2014 dated 28-03-2014, prohibiting the catching of turtle, whale, dolphins, sharks etc under Clause 17 of Schdule-II. The contravention of any provision of this act is also punishable.

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

- i. Government of Sindh promulgated regulation Notification NO.5(3)SO(Fish)L&F/16/092 dated 18-05-2016 under Sindh Fisheries Ordinance 1980, prohibition of catching of whale sharks, marine and freshwater cetaceans (whales and dolphins) through the year. Contravention of any provision of the regulation is punishable which include fine as well as imprisonment.
- ii. Government of Balochistan also promulgated regulation Notification Mo. SO (Coord) Fish/2-1/2013/3148-58 dated 08-09-2016 prohibiting the catching, retention, marketing and trade of whale sharks, all species of marine cetaceans (dolphins and whales). Contravention of any provision of the regulation is punishable which include fine as well as imprisonment.
- iii. An act titled "Pakistan Trade Control of Wild Fauna and Flora Act 2012" has been promulgated to ensure implementation the provisions of the Conservation on International Trade in Endangered Species of Wild Fauna and Flora. It was an obligation as Pakistan is a party to the United Nations Conservation on International Trade on Endangered Species of Wild Fauna and Flora. The Article-3 of this act, prohibiting the export, re-export and import of such species of funa and flora included in any Appendix of the Convention.
- iv. The clause 5(c) of Pakistan Fish Inspection and Quality Control Rules, 1998 notified vide S.R.O. No.739(I)/98 dated 30-06-1998 promulgated under section 18(1) of the Pakistan Fish Inspection and Quality Control Rules, 1997 (XXXV of 1997), prohibiting the export of mammals including dugongs, dolphins, porpoises and whales.

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- v. Balochistan(Wildlife Protection, Preservation, Conservation and Management) Bill 2014 (Bill No.15 of 2014) published vide No.PAB/Legis: V(15)2014 dated 28-03-2014, prohibiting the catching of turtle, whale, dolphins, sharks etc under Clause 14 (1). The contravention of any provision of this act is also punishable.

6. NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS

6.1. Logsheet data collection and verification (including date commenced and status of implementation)

Under Clause 13 of Exclusive Fishery Zone (Regulation of Fishing) Rules, 1990 it is mandatory for the licensed fishing vessel to provide furnish to the licensing authority or the Fishery Officer, in the first week of each month on prescribed form regarding the activities of his fishing craft during the previous month. No log sheet is maintained by tuna gillnetters

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

i) As per Clause 7 (k) of Deep sea Fishing Policy 2009, it is mandatory requirement for the licensed tuna longliner (foreign flag vessel having joint venture with Pakistani company) to have satellite-based VMS on board. Contravention of any provision of the regulation is punishable under Exclusive Fishery Zone (Regulation of Fishing) Act, 1975 (XXXII of 1975) and Exclusive Fishery Zone (Regulation of Fishing) Rules, 1990 notified vide No. S.R.O. DD-60(I)/90 dated 04-02-1991 is punishable.

ii) On experimental basis VMS has been installed on four fishing vessels (With collaboration with WWF-Pakistan and Pakistan Maritime Security Agency). Another four vessels have been installed with satellite based AIS (with Collaboration with WWF-Pakistan). A plan is being developed with the collaboration of Provincial Governments to make it mandatory to install VMS on all vessels longer than 15 m. New Deep Sea Fishing Policy also make it mandatory to have all vessels operating in EEZ of Pakistan to have VMS.

iii) Government of Balochistan also promulgated regulation Notification No.SO (Coord) Fish/2-1/2013/3148-58 dated 08-09-2016 and Clause 2(b, c, d, e, f, g, and h), it is made mandatory that all fishing vessels larger than 15 meters (in length overall) licensed under Balochistan Sea Fisheries Ordinance, 1971 and engaged in catching tuna and tuna like species by any methods/gear operating drift net/ gillnet in territorial waters of Balochistan shall have a satellite-based vessel monitoring system (VMS) on board. Contravention of

any provision of the regulation is punishable which include fine as well as imprisonment.

6.3. Observer programme

Table 4. Annual observer coverage by operation

Type of gear	No of vessels monitored in 2016	Coverage in (%)		
		2014	2015	2016
Purse seine	No Purse seine was in operation in Pakistan	Not applicable		
Longline	No longliner was in operation in Pakistan during 2016	Not applicable		
Gillnet	There are estimated 700 tuna gillnetters in operation in Pakistan. No Government observer on any gillnetters.	No observers on gillnetters by Government of Pakistan.		
		WWF-Pakistan has placed 4 crew based observers in 2014 (0.6%)	35 boats (5%)	85 boats (12.1)
Bait boat	No bait boat was in operation	Not applicable		
Hand line	No tuna hand line fishing in Pakistan	Not applicable		

6.4. Port sampling programme

Tuna landings are being recorded at the port on regularly. The length frequency was recorded for different species as per frequencies given in Table 7 below.

Table 5. Number of individual measured by species of gillnet fishery

Name of species	2012	2013	2014	2015	2106
Skipjack	54	73	54	90	195
Yellowfin tuna	28	631	473	154	249
KAWAKAWA	49	568	197	102	250
Frigate tuna	30	156	27	19	84
Longtail tuna	10	553	226	115	261
Saurida orientalis	0	26	02	04	28

6.4. Unloading/Transshipment

No large scale tuna vessel operating in Pakistani waters since 2009. Transshipment at mid-sea is not allowed under Clause 29 of Exclusive Fishery Zone (Regulation of Fishing) Rules, 1990. The Resolution 14/06 did not applicable at present.

7. NATIONAL RESEARCH PROGRAMS

At present there is no research program with any foreign country

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

Table 6. Scientific requirements contained in Resolutions of the Commission, adopted between 2005 and 2017.

Res. No.	Resolution	Scientific requirement	CPC progress
15/01	On the recording of catch and effort by fishing vessels in the IOTC area of competence	Paragraphs 1–10	List of active fishing vessel has been provided to IOTC on time.
15/02	Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs)	Paragraphs 1–7	Mandatory statistical data has been provided to IOTC on time.
15/05	On conservation measures for striped marlin, black marlin and blue marlin	Paragraph 4	Statistics being collected for making conservation regulation.
13/04	On the conservation of cetaceans	Paragraphs 7–9	New regulations are in place for conservation of cetacean as explain above at relevant paragraph.
13/05	On the conservation of whale sharks (<i>Rhincodon typus</i>)	Paragraphs 7–9	New regulations are in place for conservation of whale sharks as explain above at relevant paragraph.
13/06	On a scientific and management framework on the conservation of shark species caught in association with IOTC managed fisheries	Paragraph 5–6	New regulations are in place for conservation of sharks species as explain above at relevant paragraph.
12/09	On the conservation of thresher sharks (family alopiidae) caught in association with fisheries in the IOTC area of competence	Paragraphs 4–8	New regulations are in place for conservation of thresher sharks as explain above at relevant paragraph.
12/06	On reducing the incidental bycatch of seabirds in longline fisheries.	Paragraphs 3–7	There is no longline fishery in Pakistan, therefore, this Resolution did not applicable
12/04	On the conservation of marine turtles	Paragraphs 3, 4, 6–10	New regulations are in place for conservation of marine turtle as explain above at relevant paragraph.
11/04	On a regional observer scheme	Paragraph 9	Observer program is being implemented in collaboration with WWF-Pakistan, the percentage coverage is 15%.
05/05	Concerning the conservation of sharks caught in association with fisheries managed by IOTC	Paragraphs 1–12	Now data on shark species is being recorded under WWF-Pakistan observer program. Historical data is being provided in this report.

16/06	On measures applicable in case of non-fulfilment of reporting obligations in the IOTC	Paragraph 1	Efforts are being made to improve the fulfilment of reporting obligations in the IOTC. Recently, Compliance Coordinator from IOTC has visited Pakistan to conduct three days (26-28 Sep., 2017) training workshop for the improvement of compliances of IOTC.
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