

"Present status of Tropical tuna fisheries in Iran"

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Abstract

Iran fishing grounds in Northern and southern waters of the country are located in the Caspian Sea and Persian Gulf and Oman Sea. Fishery for tuna and tuna-like species is a major component in large pelagic fisheries in Iran and one of the most important activities in the Persian Gulf, Oman Sea and offshore waters. The long Iranian coastline about 193 port and landing places and about 142 thousand fishermen individuals which are directly engaged in fishing activities and Around 11500 thousand fishing crafts consist of fishing boats, Dhows and vessels using different fisheries including: Gillnet, Purse seine, Trolling, Trawl and Wire-trap which are engaged in fishing operation according to a time schedule during different fishing seasons in the coastal and offshore waters. Gillnet and purse seine are two main fishing methods used by Iranian vessels to target large pelagic species in the IOTC area competency and also some of small boats used trolling and traditional longline in coastal fisheries.

The Catch quantity of large pelagic in Iran was 251215 tons in 2016 reported to the IOTC Secretariat and around 234000 tons belongs to tuna and tuna-like fishes in the Indian Ocean areas. Those catch consist are mainly comprised of Tropical tuna with 34.8% (87337t), Neritic tuna 52% (130639 t) and billfish species with 5.9% (14841t), 1.9% (4797t) different species of shark and around 5.4% (13601t) other species.

In this paper also it will be pointed out all actions carried out by the Iran during the previous year regarding to modify fishing methods from gillnet to longline, Size frequency, training course and implementation of IOTC resolutions which lead to promotion of compliance to IOTC provisions and regulations.

1. GENERAL FISHERY INFORMATION:

Marine aquatic species in Iran consists of two parts: aquaculture activities and marine fisheries activities. Each part of the activities appropriate to their specific requirements has social and technical considerations of its own. People involving in fishing community include large percentage of the population in coastal areas of the northern water (Caspian Sea) and Persian Gulf, Oman Sea which has always been the center of attention and sensitivity in fishing management plan.

Total volume of national aquatic production in 2016 was 1094 thousand Mt, which can be distributed as 58% (601 thousand Mt) of the total catch and production contributed to the southern water of country are located in the Persian Gulf, Oman Sea and offshore waters, about 3% (33 thousand Mt) of production from northern water (Caspian Sea) and 42% (460 thousand Mt) through inland water and aquaculture.

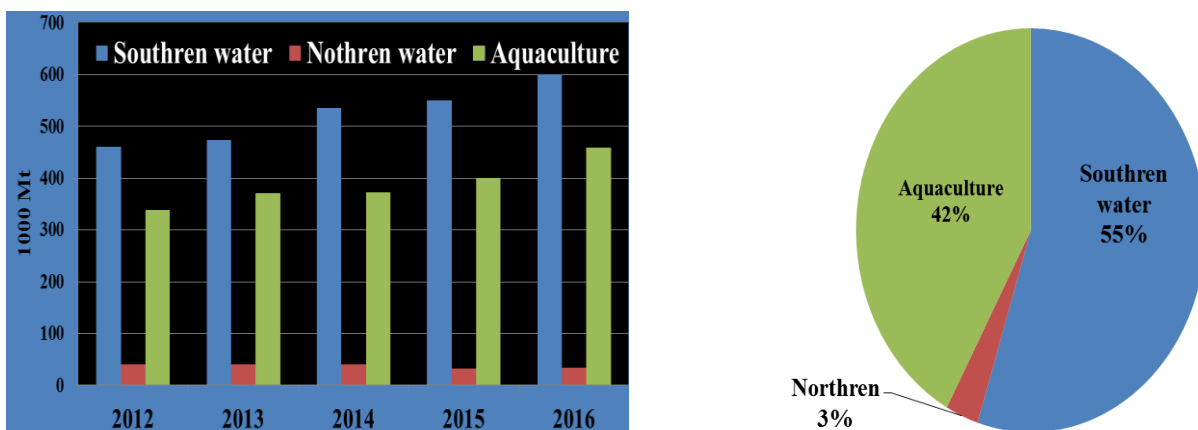


Figure1: Total Catch & production in the country during 2012-2016

Large pelagic; tuna and tuna-like species are important fishery resources for food and also have valuable contribution to the Iran's economy. The main fishing grounds for large pelagic species in southern of the country are located in the coastal sectors of Persian Gulf and Oman Sea and total volume of production in the coastal and offshore waters in 2016 around 601 thousand Mt, which consist of large pelagic 275000 Mt (45.8 % of total catch) Small Pelagic 79000 Mt, Demersal species 224000 Mt, Shrimp 9000 Mt and Myctophids 15000Mt. Figure2.shows the catches quantity of different aquatic species group in the southern waters of Iran.

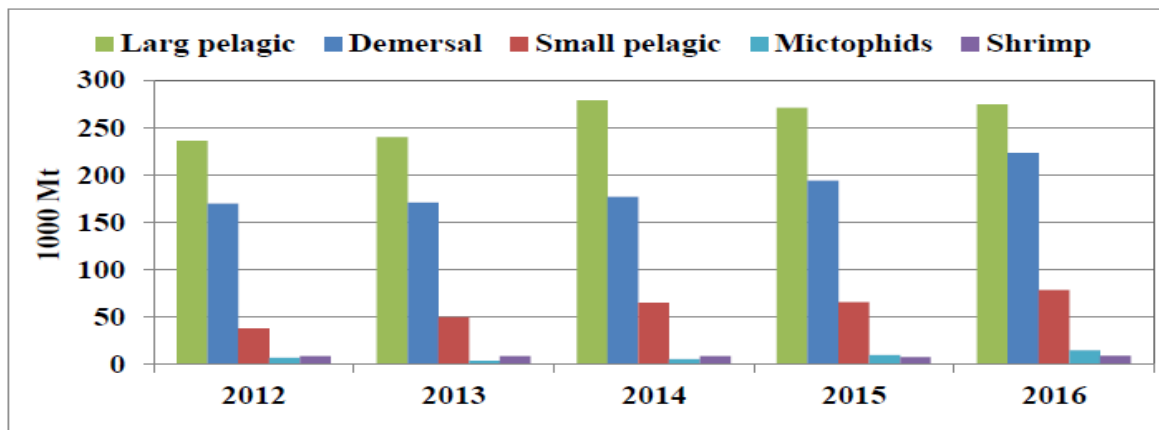


Figure 2: the catches quantity of different aquatic species group in the southern waters of Iran during in 2012-2016

2: Fishing gear and fleet structure:

There are many fishing methods targeting large pelagic species which include gillnet, purse seine, long line by traditional boats and also some of small boats use trolling in coastal fisheries. The gillnet fleet consists totally of locally made wooden and fiberglass.

In 2016, there are about 6620 fishing crafts were engaged in large pelagic species and around 1243 are active in the Oman Sea and offshore waters, of which five active Purse seiners more than 1000GT, 283 gillnet Dhows of more than 100 GT, 171 gillnet Dhows of 51 < GT < 100, 649 gillnet Dhows of less than 50 GT, 3319 gillnet,

2190 trolling boats of less than 3GT which have Out board engine, operate one day fishing in coastal waters. Artisanal vessels (Dhows) with GT> 30 t around 15-30 m LOA and industrial purse- seiners with GT> 1000 t generally operate multiday fishing in the offshore and beyond EEZ in the IOTC area. In 2016 around 394 gillnet with different class are active as a long liner and this figure is not included in total vessels number, because they are active seasonal and temporal during a year.

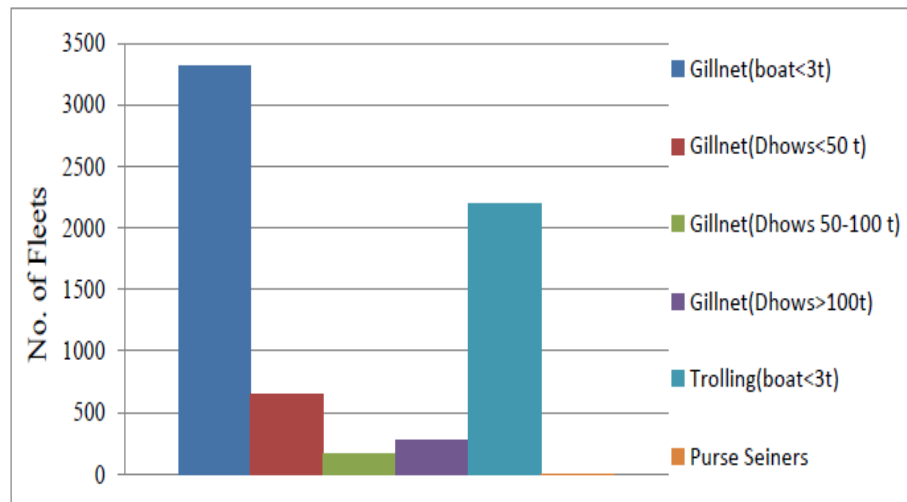


Figure 3: Iranian fishing active vessels in Southern waters by gear type and size in 2016

3. Catch and Effort (By Gear and Species):

Data collection system:

Catch and effort data and size frequency were collected in 43 landing centers scattered along the coast in southern coastal waters by stratified random sampling by the samplers, in this way, 10% of total fishing crafts for different vessel classes of fishing dhows and boats are picked out randomly and their fishing data will be collected in the form of questionnaire. Also number of fishing days at Sea will be recorded in the Data Collection Software for all active fishing vessels and based on total fishing efforts; these data will then be raised. There is specific Scientific Committees (SC) both in provincial and national level and fishery research experts

and administration officers are members of these committees. In these committees, trends of data collection and rising will be evaluated and finally approved.

Catch quantity:

The Catch quantity of large pelagic in Iran was 251215 Mt in 2016 reported to the IOTC Secretariat and around 234000Mt belongs to tuna and tuna-like fishes in the Indian Ocean areas. Those catch consist are mainly comprised of 6 tuna species with 74% (186635Mt) of tunas, 2 Seerfish species 12.4% (31340 Mt) and 5 billfish species with 5.9% (14841Mt), 1.9% (4797Mt) different species of shark and around 5.4% (13601Mt) other species of the total large pelagic landings in southern waters of Iran. Figure4 shows the nominal catch by species reported for the all fleet during 2012-2016.

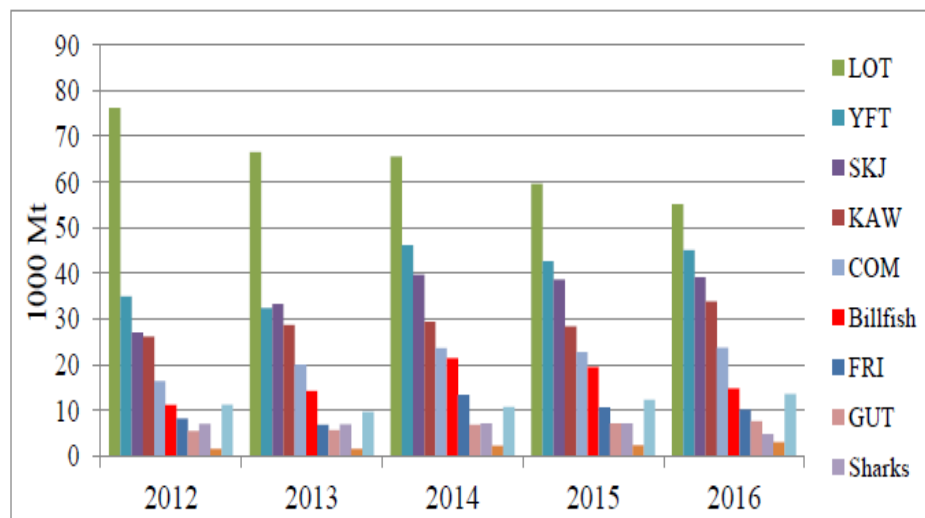


Figure 4: Nominal catch by species reported for the all fleet during 2012-2016

Neritic tuna species are very important and have special ranking in coastal waters of Iran (Figure 5). In 2016 the amount of neritic tuna catches were about 128000 Mt and average five- years of it was about 132000 Mt that means 54% dominant group of total volume of large species reported to IOTC, followed by tropical (32%), billfish (6%) and shark (3%).

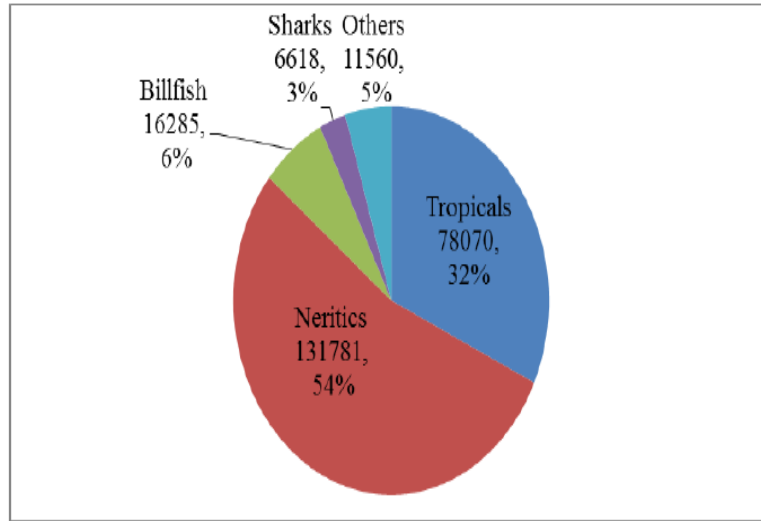


Figure 5: Average five- years catches of Iran reported to the IOTC (2012-2016)

In 2016 total catch for purse seine, Gillnet, long line by traditional boats and trolling was estimated 4,879 Mt, 235,668 Mt, 5,760 Mt and 4,908 Mt respectively. Gillnet with 94% of Catch is the dominant fishing gear followed by Purse seiners 2%, long line with 2% and around 2% comes from Trolling vessels.

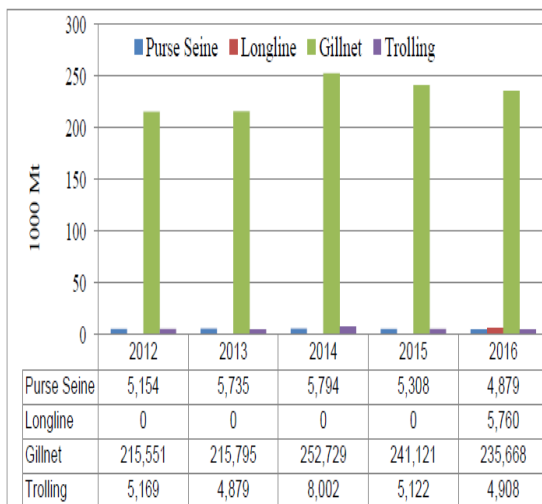


Figure 6: Annual Catch by Gear Type

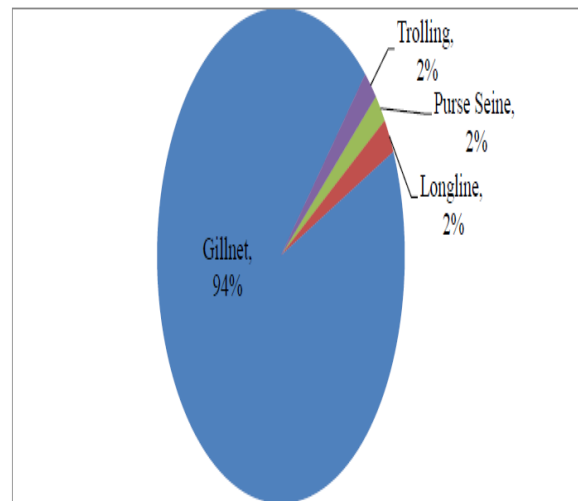


Figure 7: Annual Catch by Gear Type in 2016

Fishing effort:

Table1. Shows the trend fishing effort for large pelagic species for the all fleet consists of purse seine, gillnet, long line by traditional boats and trolling. In 2016,

for tuna and tuna-like catches more than 900 thousand days fishing efforts was Carried out, of which 685000 days was operated by Gillnet, 1164 days by purse seine, 21760 days by seasonal and temporal longline and 229000 days done by trolling fisheries.

Fleet	Number of Fishing Craft and fishing effort				2016	
GEAR GROUP	TYPE	FROM	TO	Units	vessels	Effort (per Day)
Purse seine	GT	500	1000	t	2	0
		1000	2000	t	5	1,164
	Total Gear Group				7	1,164
Longline	GT	< 3		t	300	18,000
	GT	21 to 50		t	80	3,200
	GT	101 up		t	14	560
	GT	0		t	1	0
	Total Gear Group				1	21,760
Gillnet	GT		< 3	t	3,319	487,646
		3	20	t	258	41,682
		21	50	t	391	74,870
		51	100	t	171	30,337
		101	up	t	283	50,530
	Total Gear Group				4,422	685,064
Trolling	GT		< 3	t	2,190	229,190
	Total Gear Group				2,190	229,190
TOTAL					6,620	937,178

Table 1: Fishing effort for large pelagic species by different vessel categories in 2016

Tropical Tuna:

Catches of tuna and tuna-like species have increased by 11%, from 196 thousand tonnes in 2006 to around 218 thousand tons in 2016.

Catches of Tropical tuna have decreased by 39%, from 144 thousand tonnes in 2006 to around 87 thousand tonnes in 2016. Although the peak amount of catch in 2006 was equivalent to 144 thousand tons.

The average annual catch of tropical tuna fishes in Iran during the past 10 years Was 76,311 tonnes and its catch in 2016 was equivalent to 87,337 tonnes which shows 14.4% increase in compare to mentioned 10-years average catch.

The share of tropical tuna catch from total marine capture production in 2006 was around 34% which has fallen to 14% in 2016.

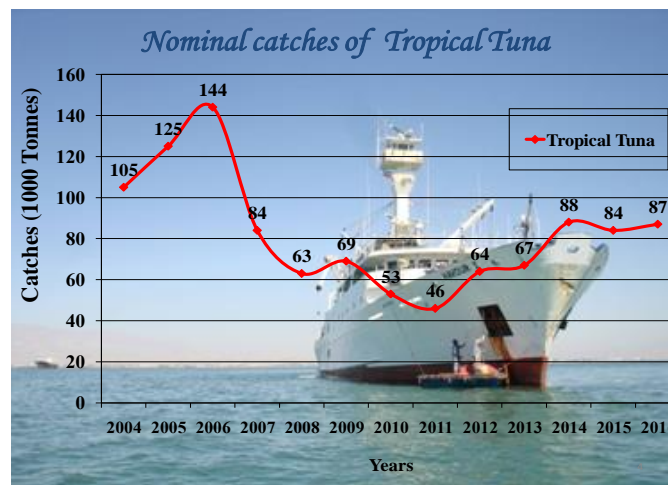


Figure 8: nominal Catch of tropical tuna

Skipjack 10-years average catch was 44,021 tonnes and its' catch in 2016 was 39,158 tonnes which shows a drop of 11% compared with 10-years average catch. Although the peak amount of Skipjack catch in 2006 was equivalent to 103 thousand tons.

Yellowfin tuna 10-years average catch was 31,471 tonnes and its' catch in 2016

Was 45,110 tonnes which shows 43.3% increase compared with 10-years average catch. Although the peak amount of Yellowfin catch in 2004 was equivalent to 51 thousand tons.

The maximum catches of skipjack was 103,000 t in 2006 but after phenomenon of piracy it declined sharply to its minimum amount of 17,000 t in 2011, after that it increased slightly to 39,000 t in 2016.

The maximum catch amount of yellowfin tuna was reported 51,000 t in 2004 but After phenomenon of piracy it declined to 16,000 t in 2007, after that it increased slightly to 45,000 t in 2016.

Catches of Bigeye tuna was 3069 tonnes in 2016. About 138 tonnes of catch in 2016 was caught by purse seine fishery and 2931 tonnes by gillnet fishery.

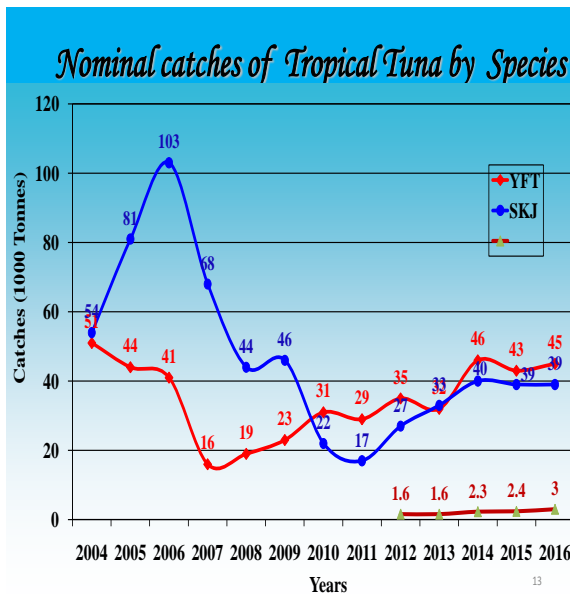


Figure 9: nominal Catch of tropical tuna by species

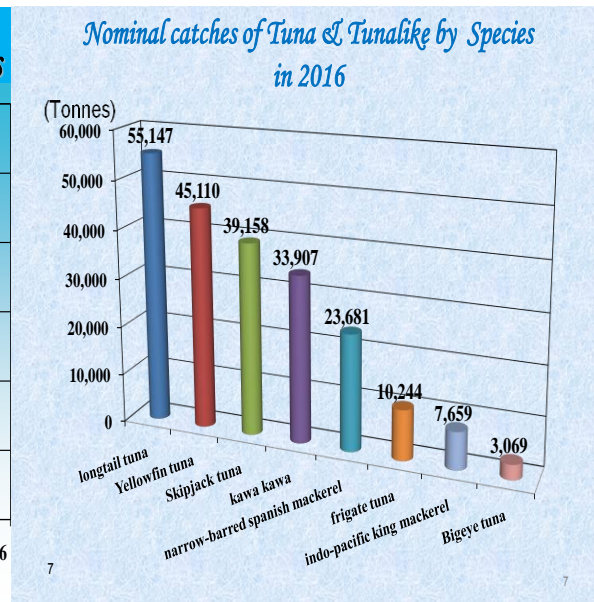


Figure 10: nominal Catch of tuna & tuna like by species

Tropical tuna catch in 2016 was around 87 thousand tons which shows 4.3% increase compared to the same period last year. Of 87 thousand tons, around 39 thousand

tones (45%) attributed to SKJ, 45 thousand tons (52%) YFT and 3 thousand tons (3%) was the BET.

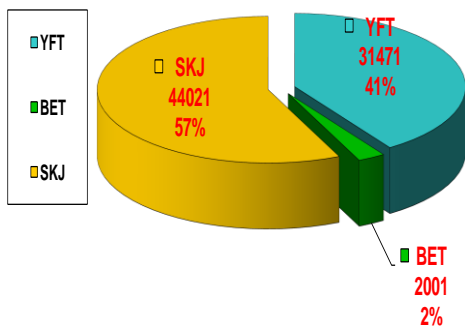
Catches of all three species of tropical tunas has increased in compare to the previous year. (YFT 5.9% BET 25.6% and SKJ1.1%).

During recent years, the peak of tropical tuna catch in Iran in 2006 was equivalent to 144 thousand tons. The catch for 2016 shows 39% decline compared to 2006.

Tropical tuna catch account for 40% of tuna and tuna-like species, 14% of total country catch and 8% of total aquatic production.

In 2016, around 13.1% of tropical tuna catch in Iran carried out by using purses seine, trolling and traditional longline fishing gear and 86.9% by gillnet fishery.

Average catch for tropical tuna during recent 10 years in Indian Ocean by species, operated by Iranian fishing fleet (2006 – 2015)



Tropical tuna catch in Indian Ocean by species, operated by Iranian fishing fleet (2016)

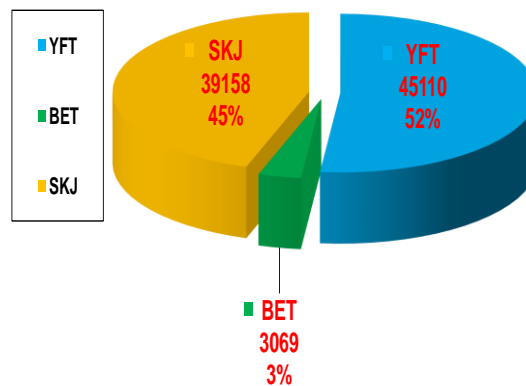


Figure 11: Average Catch of tropical tuna (2006-2015)

Figure 12: Percentage Catch of tropical tuna in 2016

4. Iran has taken following action to implement IOTC resolutions:

- Increasing the number of tropical tuna size frequency from 1,801 in 2010 to 56275 in 2016, also increasing the number of tuna and tuna-like species from 33,877 in 2011 to 103,938 in 2016.
- In 2016, numerous training courses were held, inter alia:
 - Training courses for fishing enumerators on how to enhance accurate data collection, identifying different fish species and how to fill in Questionnaire on data collection.
 - Training courses for fishing vessels captains and stakeholders in order to make them familiar and implement the IOTC resolution and regulations.
 - Training courses for stakeholders to be familiar with Loglines fishery and changing the gillnet method.

By taking appropriate actions during recent years, Iran's compliance with IOTC resolutions and regulations has increased from 11% in 2010 to 76% in 2016.