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Abstract

This document presents summary information about fisheries statistical data in Iran, according to IOTC resolutions and recommendations concerning mandatory minimum data submit to IOTC and basic actions to improving Data collection system with approvals and recommendations of the Scientific Committee and WPDCS.

In 2018 total fish production in Iran was 1,262,403 tonnes, including 489,205 tonnes, aquaculture and 773,198 tonnes, catch which comprised 731,161 tonnes (95%) from southern waters, and 42,036 tonnes (5%) from northern waters. Total catch in southern waters (by more than 10000 artisanal fishing vessels), which can be distribute as 558,758 tonnes (76%) attributed to Persian Gulf and Oman Sea as coastal fisheries, 172,404 tonnes (24%) from High seas (western Indian Ocean).

For better collaboration with IOTC, much effort have been carried out to extract all necessary outputs required to meet the concerned IOTC, Resolutions such as submission catch and effort data by gear, costal fishing ground and High seas fishery. Developing our data collection system and software is in progress to meet mandatory minimum statistics requirements and submission catch and effort data by gear, costal fishing ground and high seas fishery for recent 10 years. We have taken various actions to implement the Scientific Committee and IOTC Resolutions and Recommendations.

In complying with IOTC regulations, we are decreasing the fishing pressure on coastal species by substituting a number of gillnetters with logline fishery to meet IOTC mandates. In addition, data collection for offshore Fishery is ongoing, to this end, we are collecting and filling the data though logbooks. In addition, the species for which the size data reported include six tuna species comprised of: YFT, SKJ, BET, KAW, COM and LOT at 17 landing places. Size data collected by type of Fishery including: Gillnet Purse seine and Hook or Troll fishery. Tuna and tuna-like Species identification was improved in 2019 by holding training courses to differentiate BET from YFT, KAW from Bullet and frigate tuna, to identify billfishes, shark species and so forth. Historical catch & effort data (2008-2017) have been provided to standardize CPUE for neritic tuna. We have carried out many actions for reporting of gillnet fishery by-catch and discard species such as sharks, dolphins, sea turtles, etc.

1-Background/General Fishery Information

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. There are 4 coastal provinces in that areas about 11 thousand vessels consist of fishing boat, dhows and vessel which are engaged in fishing in the coastal and offshore waters. Gillnet and purse seine are two main fishing methods used by Iranian vessels to target large pelagic species (especially tuna and tuna-like species) in the IOTC area competency and some of small boats used trolling in coastal fisheries. Iran has taken various actions to implement the Scientific Committee recommendations and IOTC Resolutions.

One of them is national actions to improve data collection system for Tuna fishery since 2012 until now. We have implemented modification of logbook template for Iranian industrial purse seiners and artisanal gillnets to meet mandatory minimum statistic requirement, particularly concerning data recording of vessel position in IOTC area for target species, By-catch including 9 species of sharks and 5 species of billfish, non-targeted, associated and dependent species and discard.

In 2018 total fish catch & aquaculture production in Iran was 1,262,403 t, which has distributed as 58% from Persian Gulf, Oman Sea and overseas, 3% from Caspian Sea and 39% through Aquaculture. The total catch in 2018 was 731,161t; out of which about 277,189t was of Tuna &Tuna like Species; however, in the year 2006, the tuna and tuna-like species catch was 207,000t, that around 50 percent belonged to skipjack. Resultantly After this year due to Tsunami and phenomenon of piracy in the IOTC region, the vessels changed the fishing grounds and operated in coastal areas. This caused extreme decrease of skipjack catch at the ratio of 103,000t, in 2006 and 49,964t, in 2018 and inverse increase of longtail tuna catch at the ratio of 25,000t in 2006 and 61,168t, in 2018 and . The effort in coastal areas increased; as a result, an increase of longtail tuna in 2018, as compared with the data of 2006. As I mentioned before Tuna and tuna-like species fisheries is one of the most important activities in the Persian Gulf & Oman Sea. Those catch consist of Yellowfin tuna 58,650t, Skipjack tuna 49,964t, Bigeye tuna 3,700t, Longtail tuna 61,168t, Kawakawa 37,111t, Frigate tuna 9,180t, Billfish(contain 4 species)20,476t, Indo-pacific king mackerel 10,029t, Narrow- barred Spanish mackerel 25,195t, Sharks 2,967t, and other species 36,053t.

Figure1.1. Annual total production from 2009 *to* 2018 *(metric tonnes)*

Area	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Persian Gulf, Oman Sea & Indian Ocean	341,980	348,122	368,505	411,651	459,701	473,657	535,865	549,732	691,174	731,161
Caspian Sea	36,967	44,281	43,805	37,831	40,314	40,421	39,647	32,618	33,642	42,036
Aquaculture	207,353	251,374	285,351	338,877	370,876	371,717	401,548	459,521	477,269	489,205
TOTAL	586,300	643,777	697,661	788,359	870,891	885,795	977,060	1,041,871	1,202,085	1,262,403

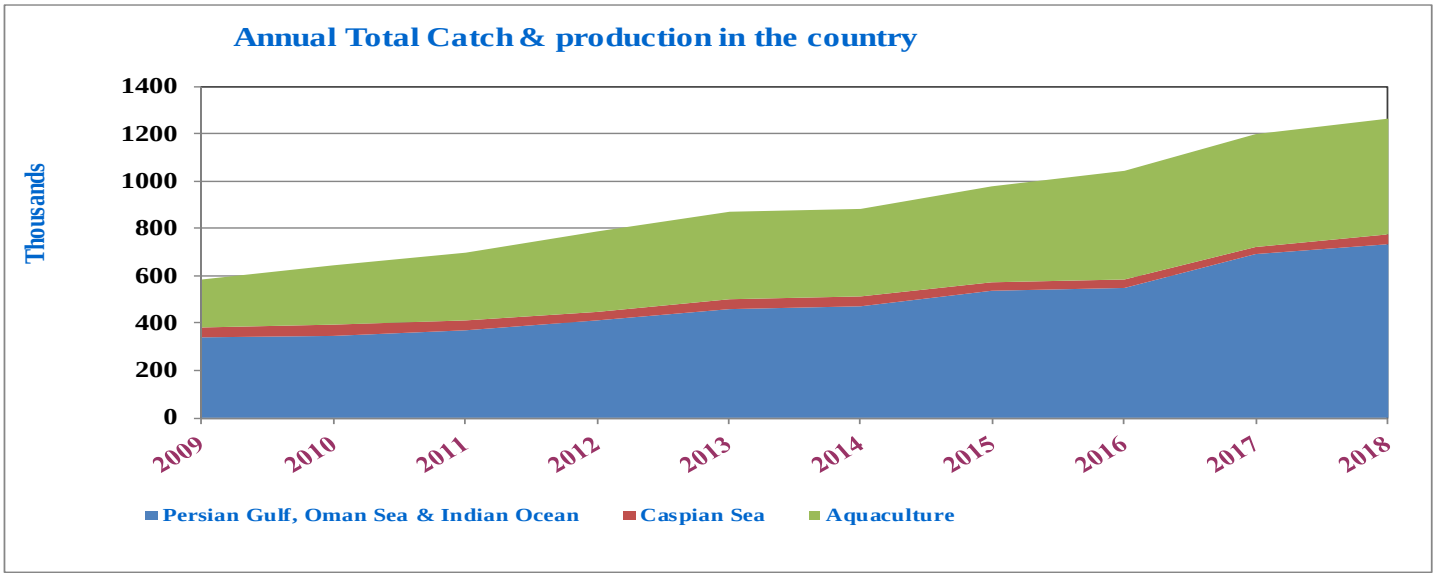
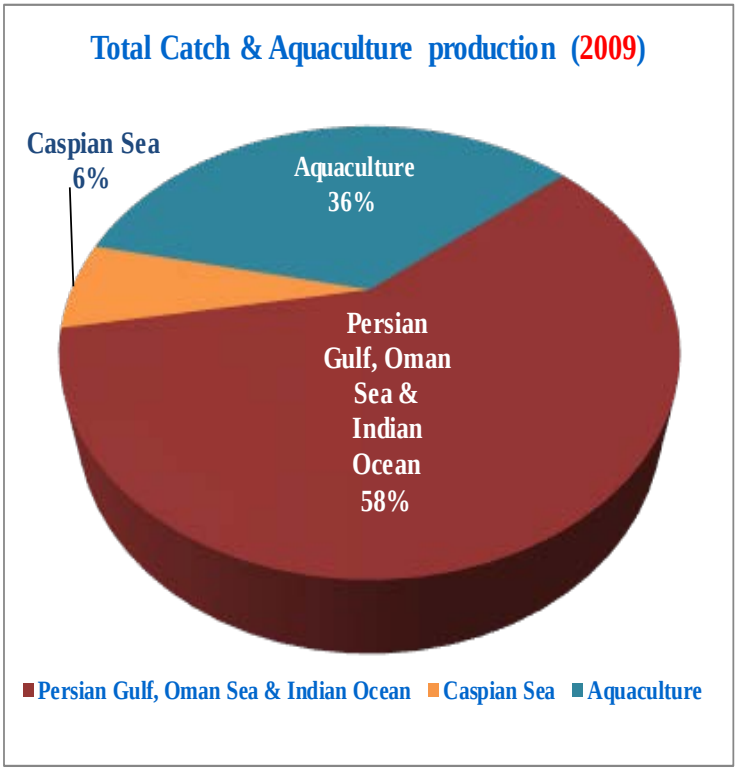


Figure1.2. a Comparison of total production between 2009 *and* 2018*(metric tonnes)*



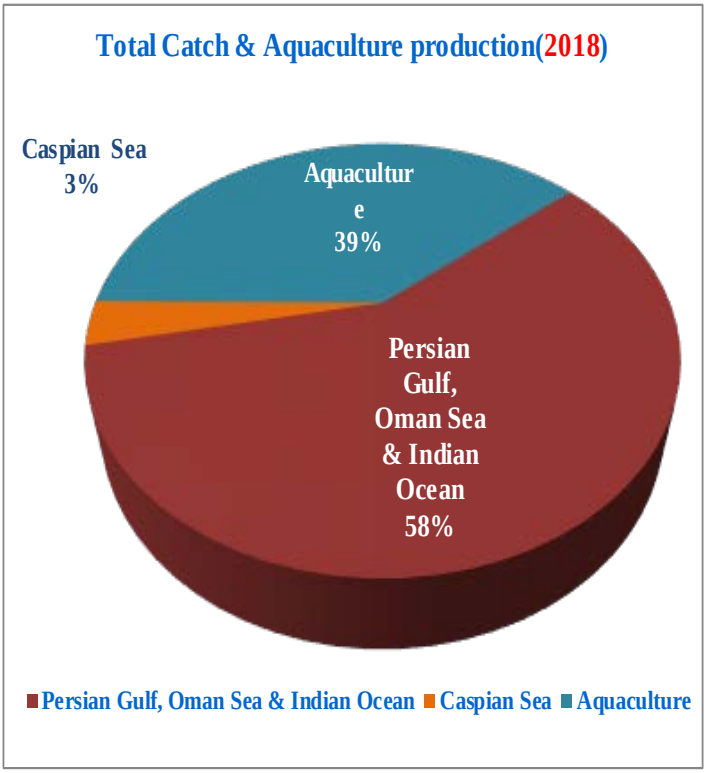
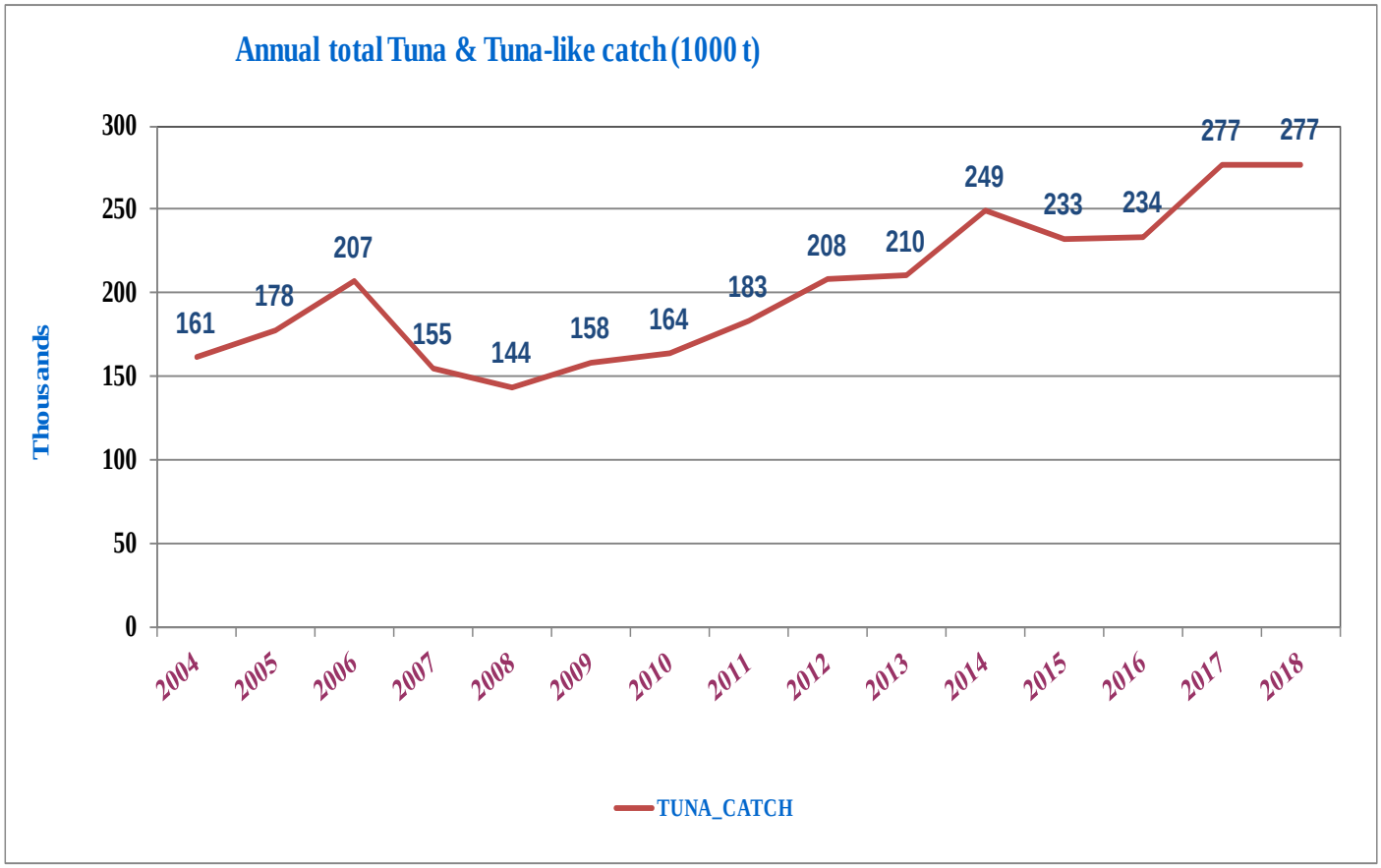


Figure1.3. Annual total Tuna & Tuna-like catch from 2004 *to* 2018*(metric tons)*

Species Group	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TUNA_CATCH	161	178	207	155	144	158	164	183	208	210	249	233	234	277	277



2-Fleet Structure

Fisheries activities in the southern waters of Iran by 10,546, vessels are ongoing. Around 5,992 vessels of this fleet are engaged in large pelagic species fishing in 2018, which seven of them are industrial purse seiners, 3,199 Artisanal vessels (Dhows) and 7,224 fishing boats. Around 1200 vessels are active in tuna and tuna like fishing in the Oman Sea, and offshore waters. This means more than 80 percent of crafts operate in the coastal areas and about 20% of the fishing vessels operating in distant waters. Those fishing crafts and GT of purse seiners is up to1000 t and GT of Gillnetters ranges from less than 3 t to more than 100 t. Gillnet and purse seine are two main fishing gears for catching tuna and tuna-like species in the IOTC area and also some of small boats used trolling method in coastal fisheries. Table 2.1 shows the fishing fleet disaggregated into the following (GT) categories during 2009 to 2018.

Table 2.1: Number of vessels operating in the IOTC area of competence, by gear type and size (2009-2018)

GEAR GROUP	Capacity GT	No. Crafts by year									
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Purse seine	500 - 1000	2	2	3	3	3	2	2	2	2	2
	1000 - 2000	7	6	5	4	4	5	5	5	5	5
Total Purse seine fishing Craft		9	8	8	7	7	7	7	7	7	7
Coastal_Artisanal_ Longline	< 3				0	0	0	0	300	324	324
	21 to 50				0	0	0	0	80	165	165
	101 up				0	0	0	0	14	14	14
	0	0	1	0	1	1	1	1	1	0	1
Total Coastal_Artisanal_Longline fishing Craft		0	1	0	1	1	1	1	395	503	504
Gillnet	< 3	3,974	3,828	3,444	3,784	3,741	3,155	3,630	3,319	2,758	3,168
	3 - 20	761	753	702	282	270	271	266	258	239	226
	21 - 50	730	667	911	1,021	1,060	825	364	391	318	271
	51 - 100	669	534	580	527	534	480	181	171	316	297
	101 - up	208	278	283	329	338	275	293	283	326	377
Total Gillnet fishing Craft		6,342	6,060	5,920	5,943	5,943	5,006	4,735	4,422	3,957	4,339
Trolling	< 3	417	426	634	810	805	1,914	2,019	2,190	1,820	1,645
Total Trolling fishing Craft		417	426	634	810	805	1,914	2,019	2,190	1,820	1,645
Total all Gear fishing Craft		6,768	6,495	6,562	6,761	6,756	6,928	6,762	6,620	5,784	5,992

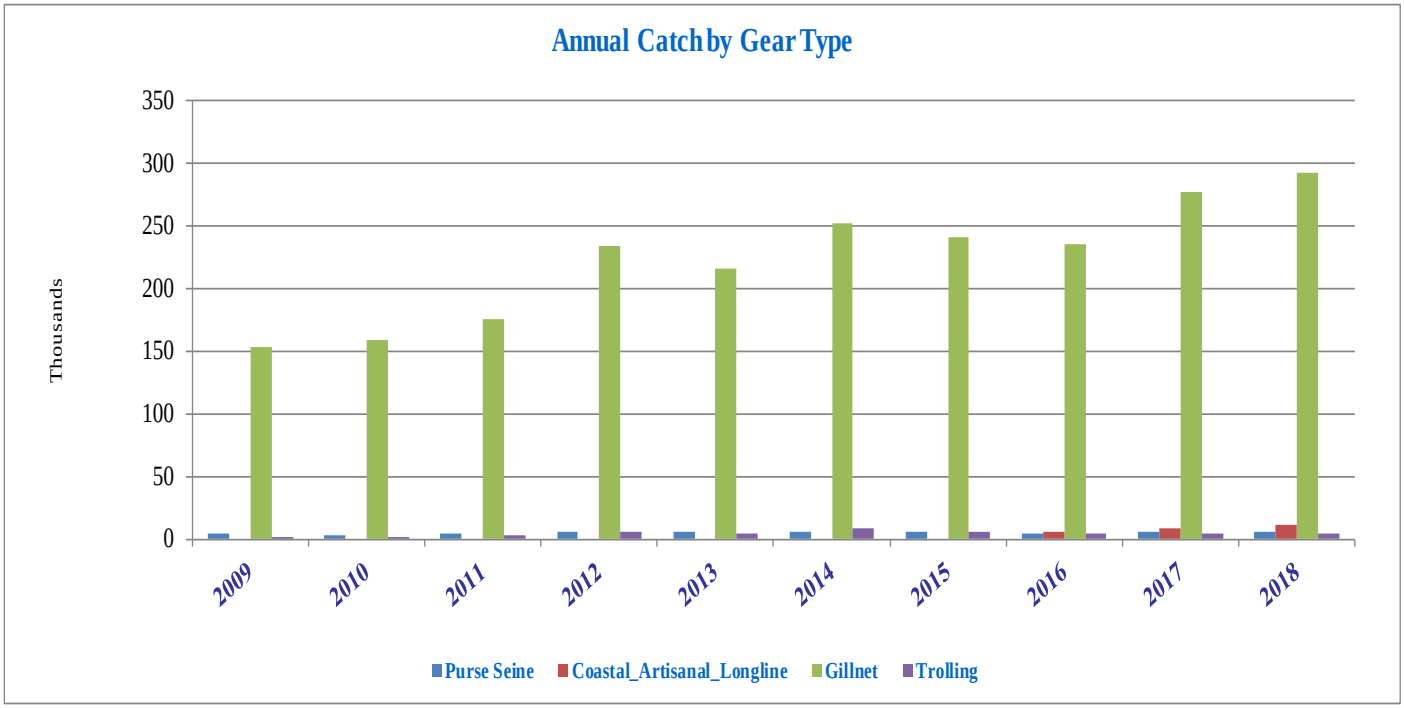
3- Catch and Effort (by Species and Gear)

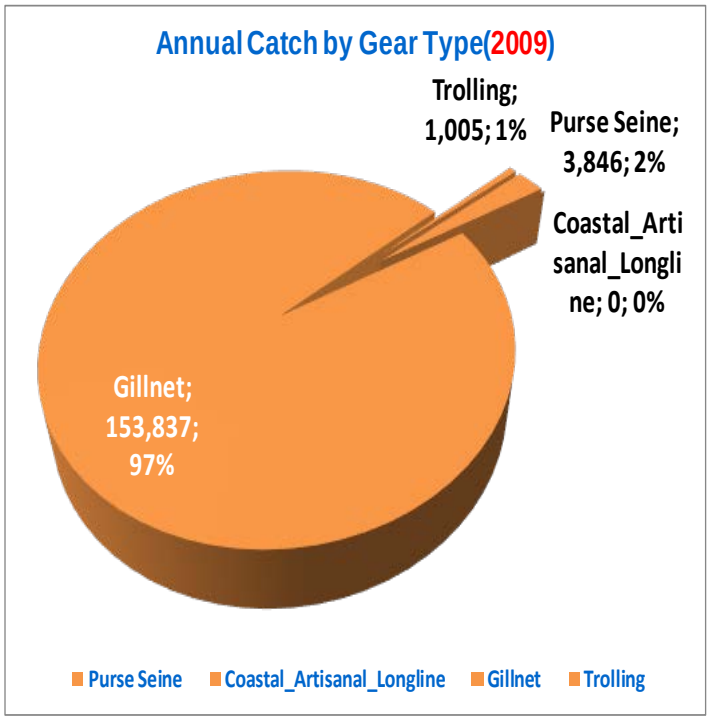
Table 2.1 and figure 3.1 to figure 3.4 shows the total annual catch and effort by gear type and species reported for the all fleet. The Catch quantity of tuna and tuna-like species in 2018 was equal to 277,189 t, of which 172,404 t, belongs to coastal waters and the rest (t,) belongs to offshore fishery. In 2005 and 2006, the amount of catch from offshore fishery were exceeded the coastal waters catch, but in recent years due to the piracy and insecurity related to this issue, the trend has completely reversed and Since 2007, the tropical tuna catch declined and the neritic tuna catch has increased. This decline of tropical tuna catch which has caused by the phenomenon of piracy; fishermen relocate their fishing grounds from offshore to coastal areas in Persian Gulf and Oman Sea and concentrate on traditional coastal fishing grounds. This shift of fishing grounds caused fishing effort increasing in coastal areas, as a result increasing in longtail catch from 25,000 t, in 2006, to 61,168 t, in 2018 (120%). Figure3.1. shows the amount of catch for different fishing methods of purse seine, Gillnet and trolling was estimated 5,292 t, 292,537 t and 4,690 t, respectively.

The total catch recorded by the purse seine fleet during 2018, estimated at 5,292t, the amount of catch for purse-seiners showed an ascending trend in 2018, comparing to recent 10 years.

Figure3.1. Annual Catch by Gear Type (2009-2018)

GEAR GROUP	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Purse Seine	3,846	3,377	4,621	5,154	5,735	5,794	5,308	4,879	6,206	5,292
Coastal_Artisanal_Longline	0	0	0	0	0	0	0	5,760	8,574	11,975
Gillnet	153,837	159,286	175,318	233,585	215,795	252,729	241,121	235,668	277,035	292,537
Trolling	1,005	1,328	2,902	5,169	4,879	8,002	5,122	4,908	4,378	4,690
TOTAL	158,688	163,991	182,842	243,907	226,410	266,524	251,551	251,215	296,192	314,494





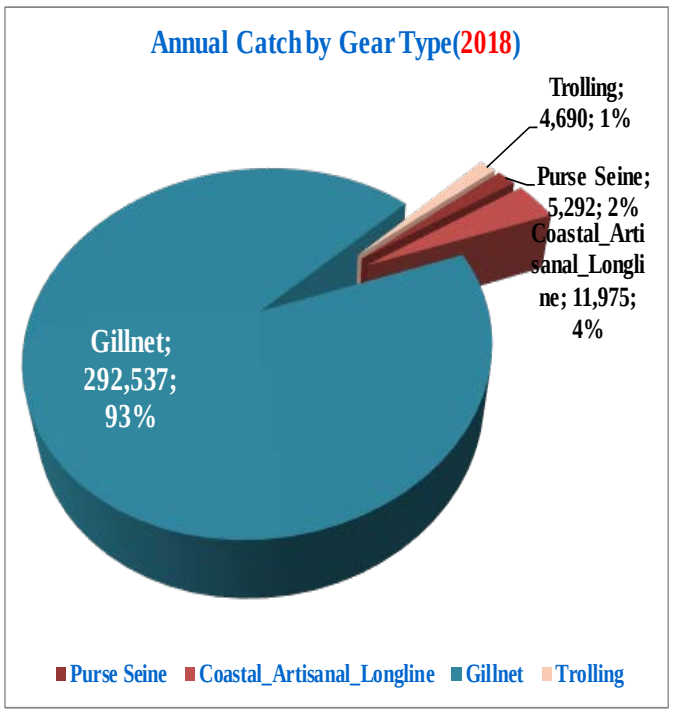
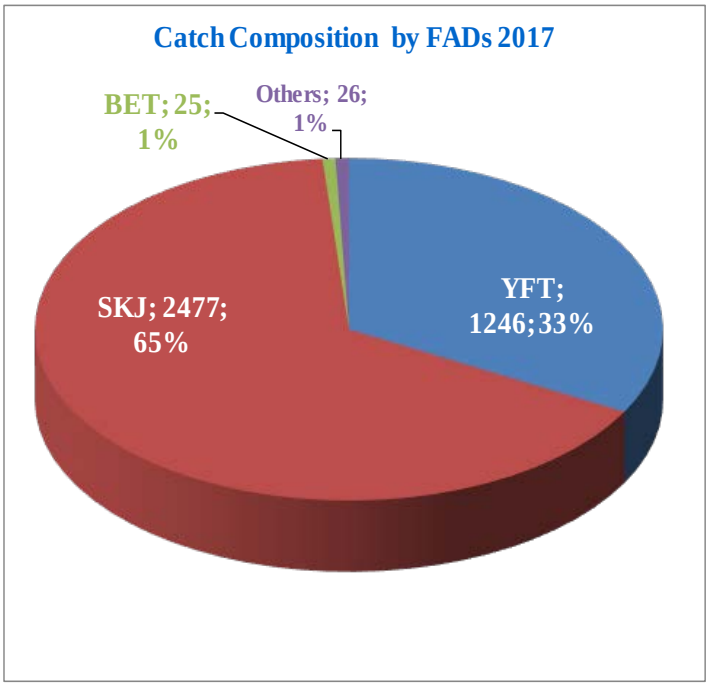
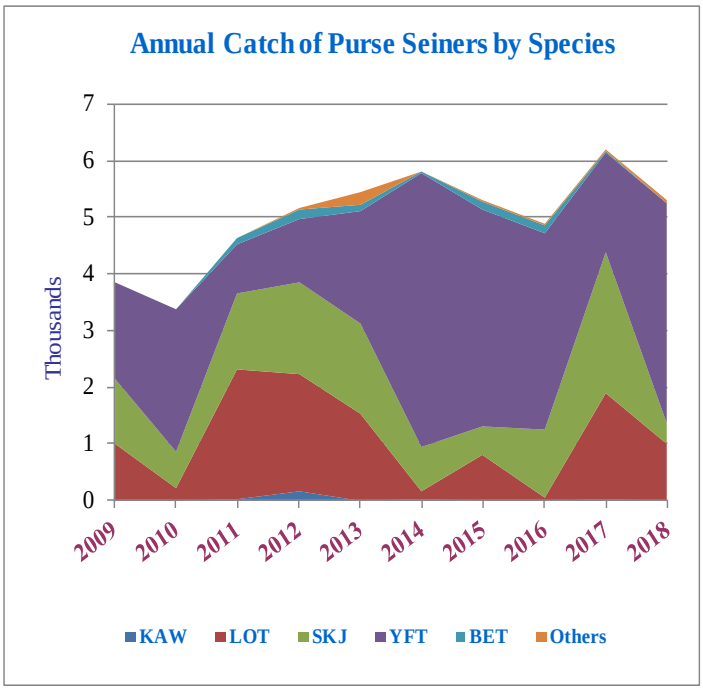
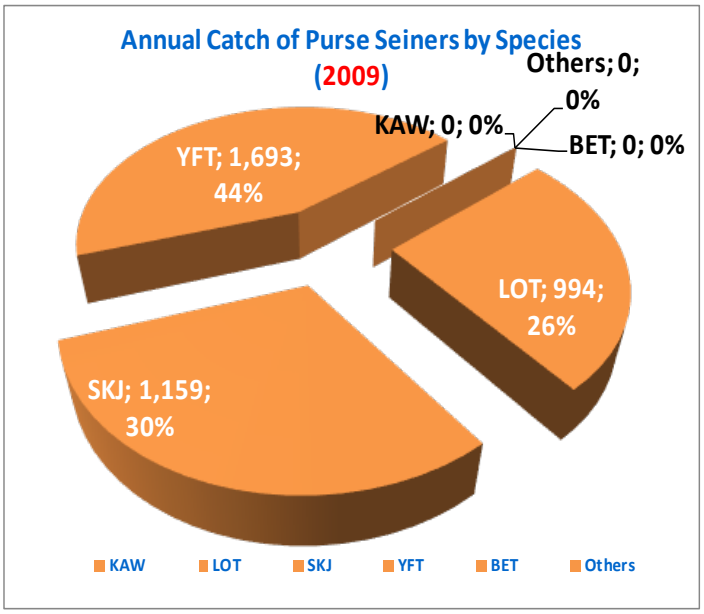


Figure3.2. Annual Catch of Purse Seiners by Species (2009-2018)

SPECIES	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
KAW	0	0	24	162	0	11	0	0	5	0
LOT	994	220	2,280	2,074	1,520	140	814	50	1,891	998
SKJ	1,159	628	1,336	1,621	1,605	798	489	1,202	2,477	356
YFT	1,693	2,529	876	1,103	1,980	4,832	3,842	3,465	1,764	3,898
BET	0	0	105	161	100	10	135	138	29	0
Others	0	0	0	34	242	3	29	24	39	40
TOTAL	3,846	3,377	4,621	5,154	5,447	5,794	5,308	4,879	6,206	5,292







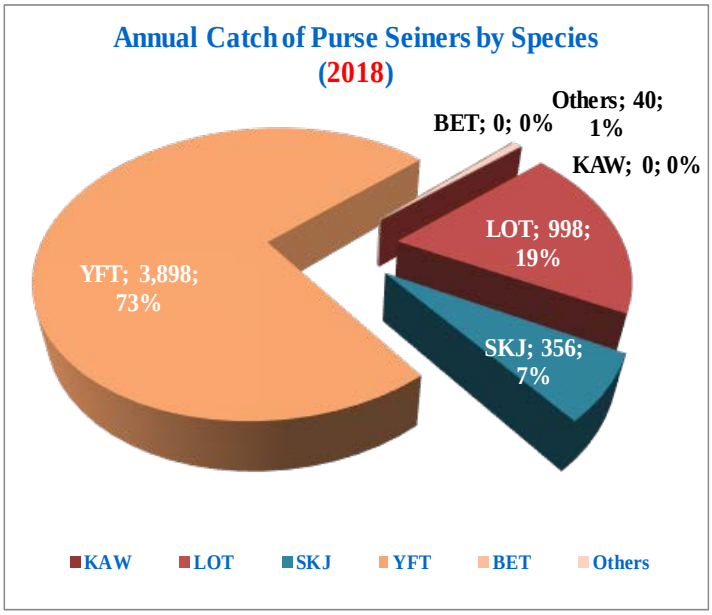
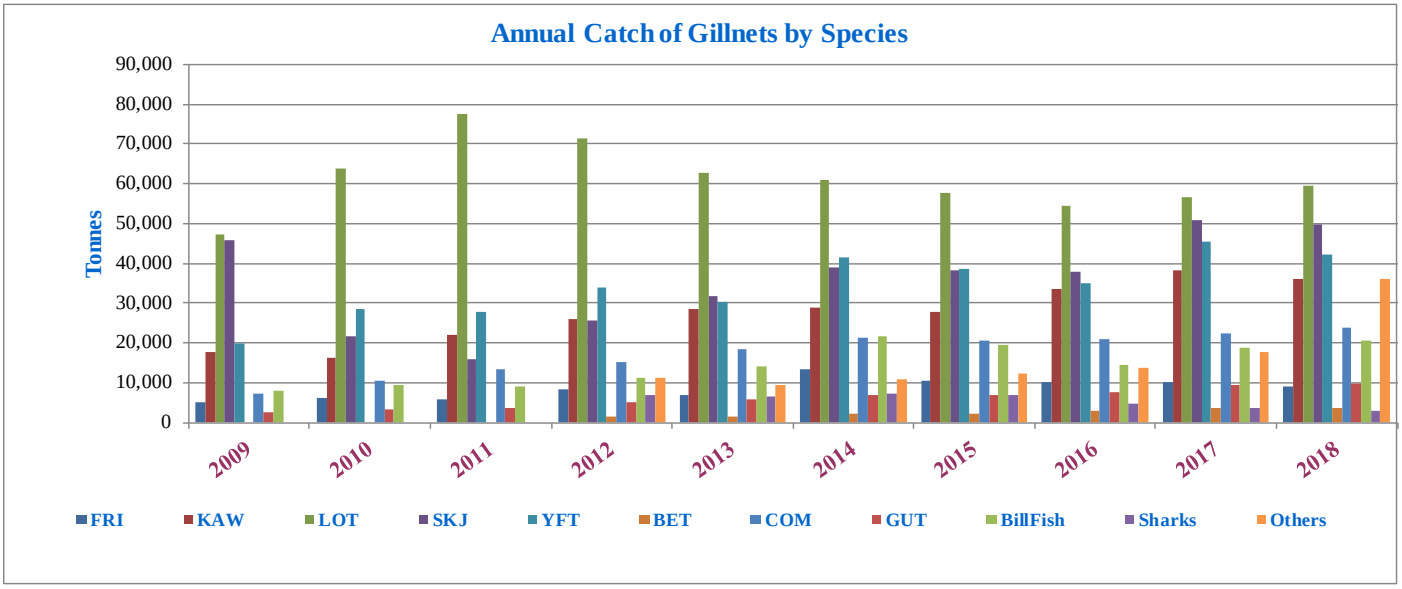
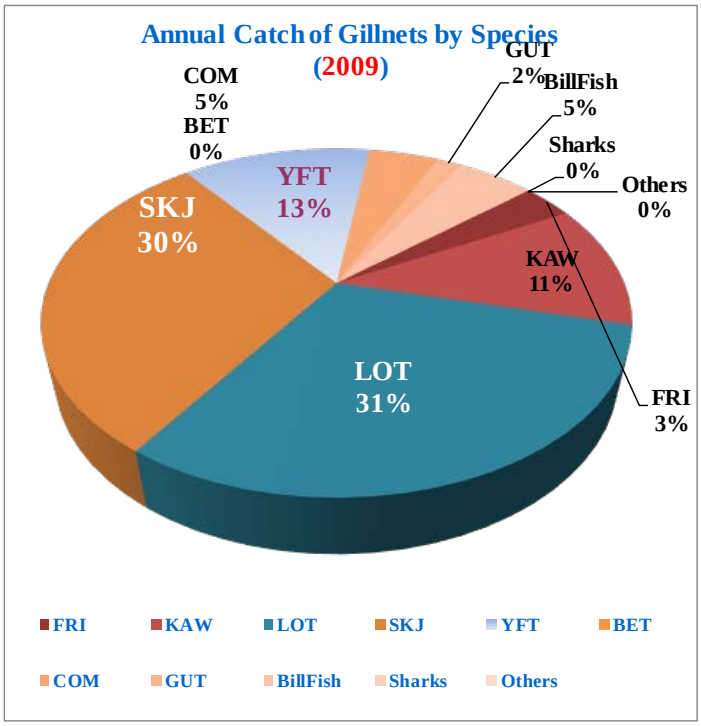


Figure3.3. Annual Catch of Gillnet by Species (2009-2018)

SPECIES	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
FRI	5,178	6,172	5,876	8,175	6,848	13,265	10,422	10,238	10,251	9,135
KAW	17,827	16,336	22,091	25,984	28,377	28,936	27,877	33,677	38,311	36,006
LOT	47,260	63,761	77,408	71,242	62,704	60,771	57,555	54,596	56,658	59,503
SKJ	45,935	21,657	16,028	25,430	31,722	38,931	38,232	37,956	50,822	49,608
YFT	19,749	28,522	27,924	33,834	30,421	41,326	38,412	35,110	45,551	42,071
BET	0	0	0	1,483	1,549	2,259	2,309	2,931	3,577	3,700
COM	7,279	10,523	13,375	14,980	18,324	21,218	20,617	20,759	22,529	23,675
GUT	2,633	3,106	3,750	5,127	5,638	6,705	6,997	7,501	9,326	9,581
BillFish	7,976	9,209	8,866	11,297	14,056	21,455	19,479	14,585	18,747	20,473
Sharks	0	0	0	6,736	6,624	7,132	6,930	4,737	3,443	2,772
Others	0	0	0	11,262	9,533	10,731	12,292	13,577	17,819	36,013
TOTAL	153,837	159,286	175,318	215,551	215,795	252,729	241,121	235,668	277,035	292,537





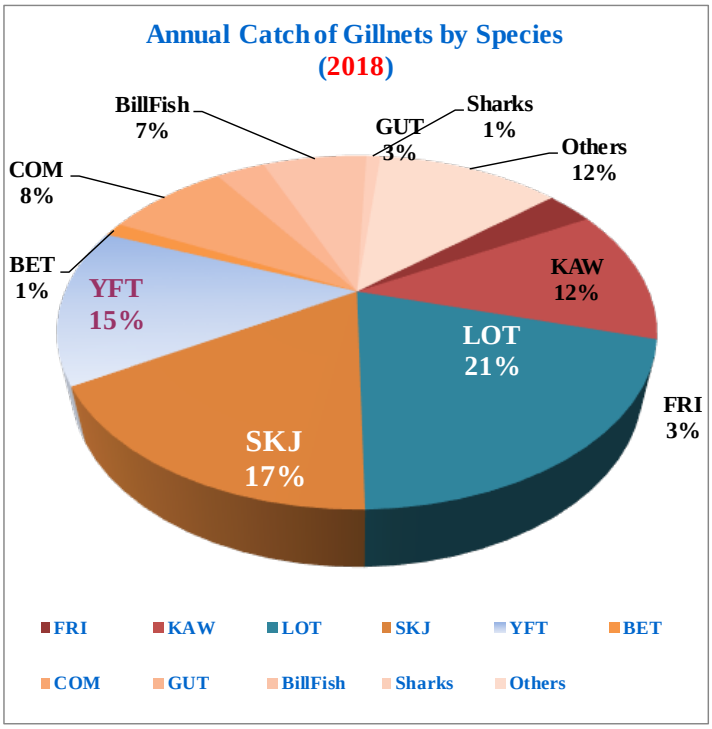
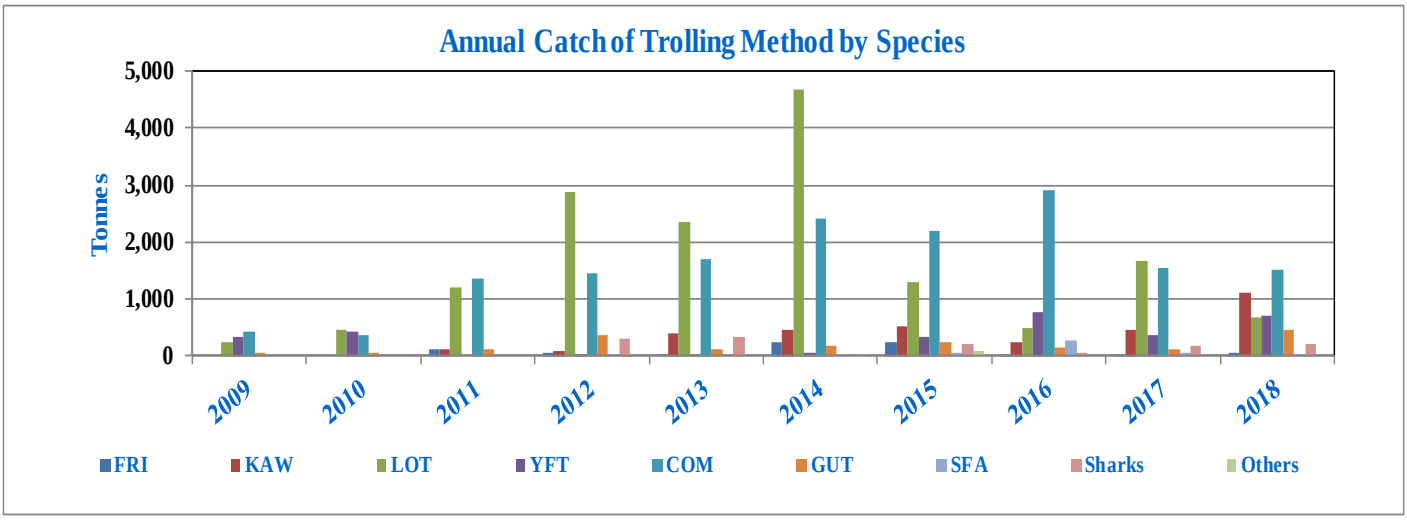
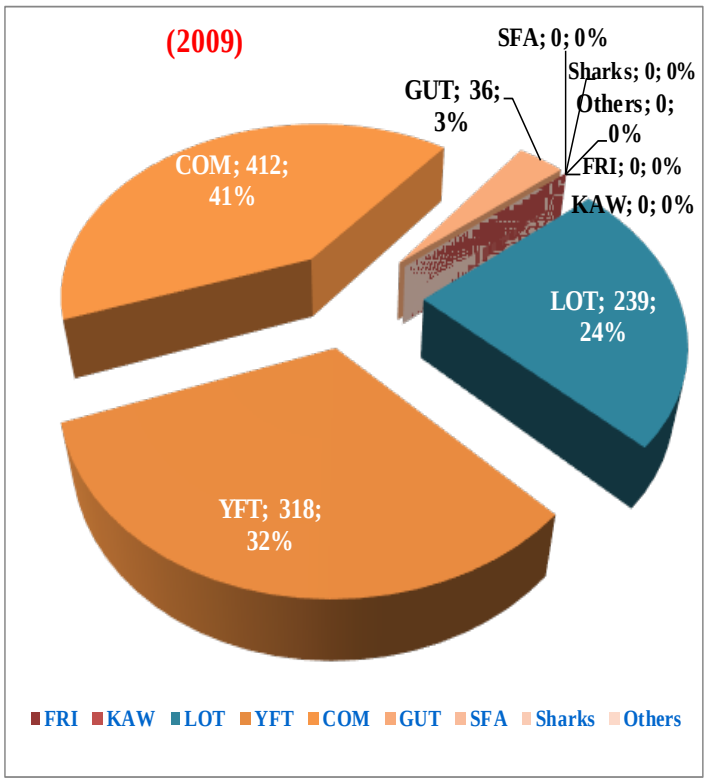


Figure3.4. Annual Catch of Trolling Method by Species (2009-2018)

SPECIES	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
FRI	0	0	119	35	25	228	233	6	14	45
KAW	0	0	109	76	387	452	516	231	458	1,105
LOT	239	469	1,189	2,884	2,348	4,672	1,278	501	1,665	667
YFT	318	434	0	28	2	57	345	775	354	707
COM	412	361	1,368	1,461	1,687	2,420	2,181	2,922	1,538	1,519
GUT	36	64	117	371	114	162	245	158	120	448
SFA	0	0	0	18	0	3	53	257	48	3
Sharks	0	0	0	295	317	0	205	59	180	195
Others	0	0	0	0	0	7	68	0	0	0
TOTAL	1,005	1,328	2,902	5,169	4,879	8,002	5,122	4,908	4,378	4,690





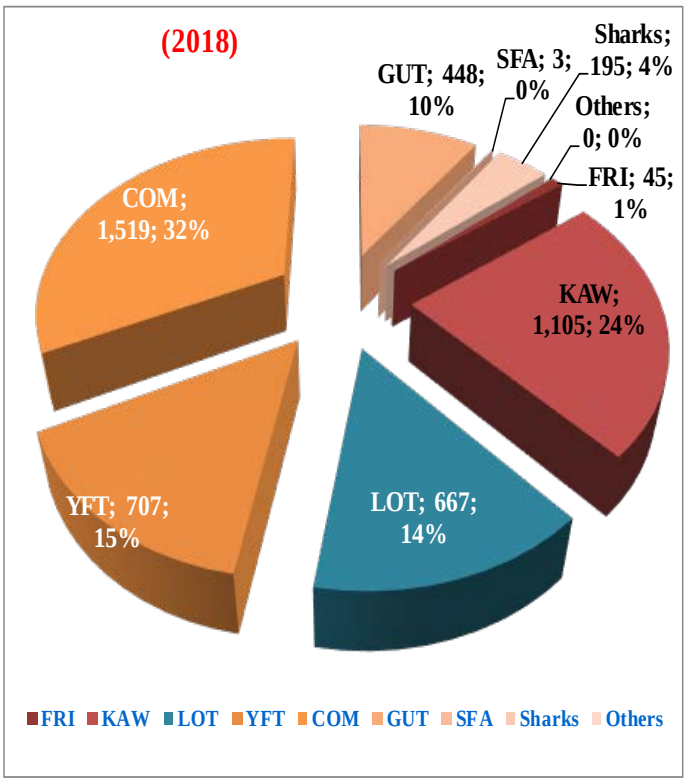
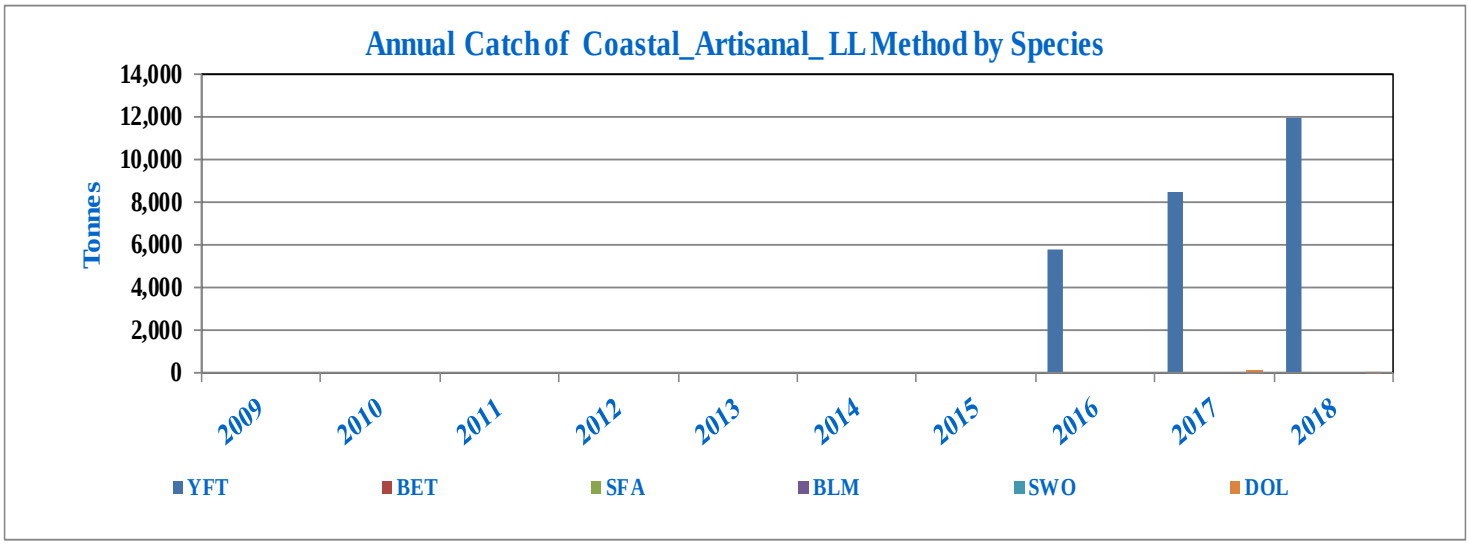
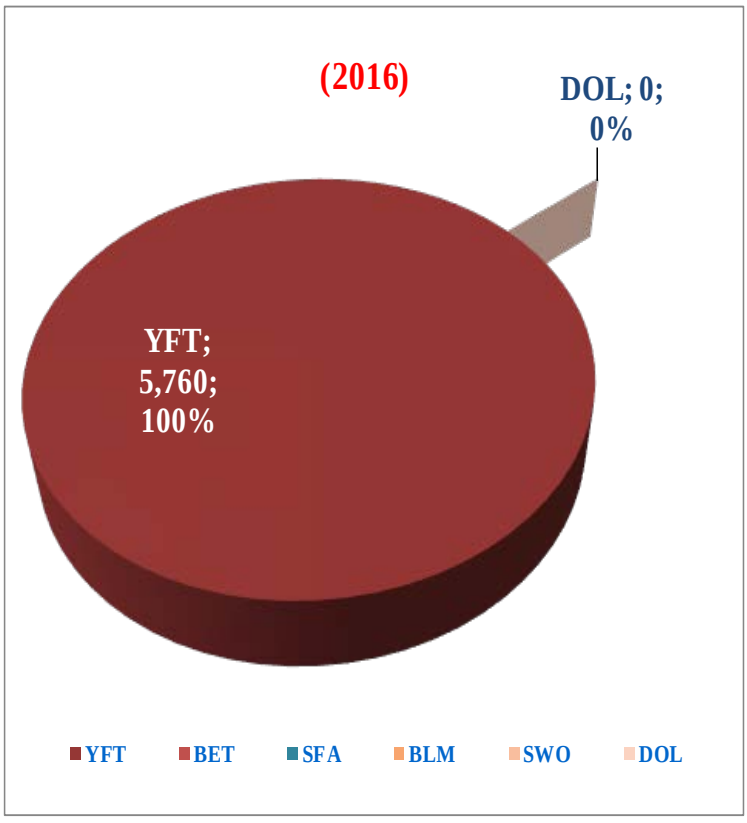


Figure3.5. Annual Catch of Coastal_Artisanal_Longline Method by Species (2009-2018)

SPECIES	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
YFT								5,760	8,452	11,974
BET								0	0	0
SFA								0	0	0
BLM								0	0	0
SWO								0	0	0
DOL								0	122	0
TOTAL	0	0	0	0	0	0	0	5,760	8,574	11,975





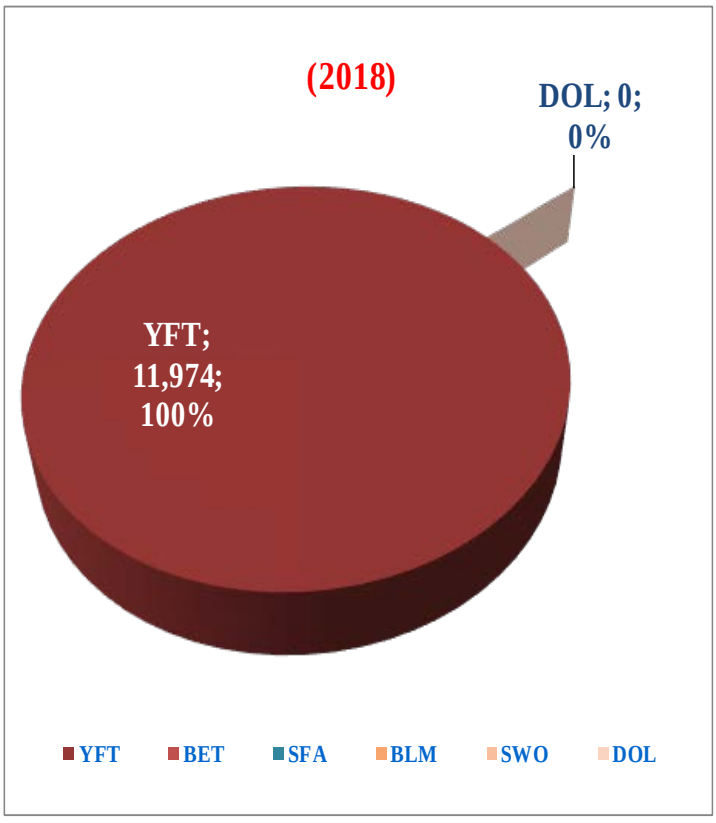
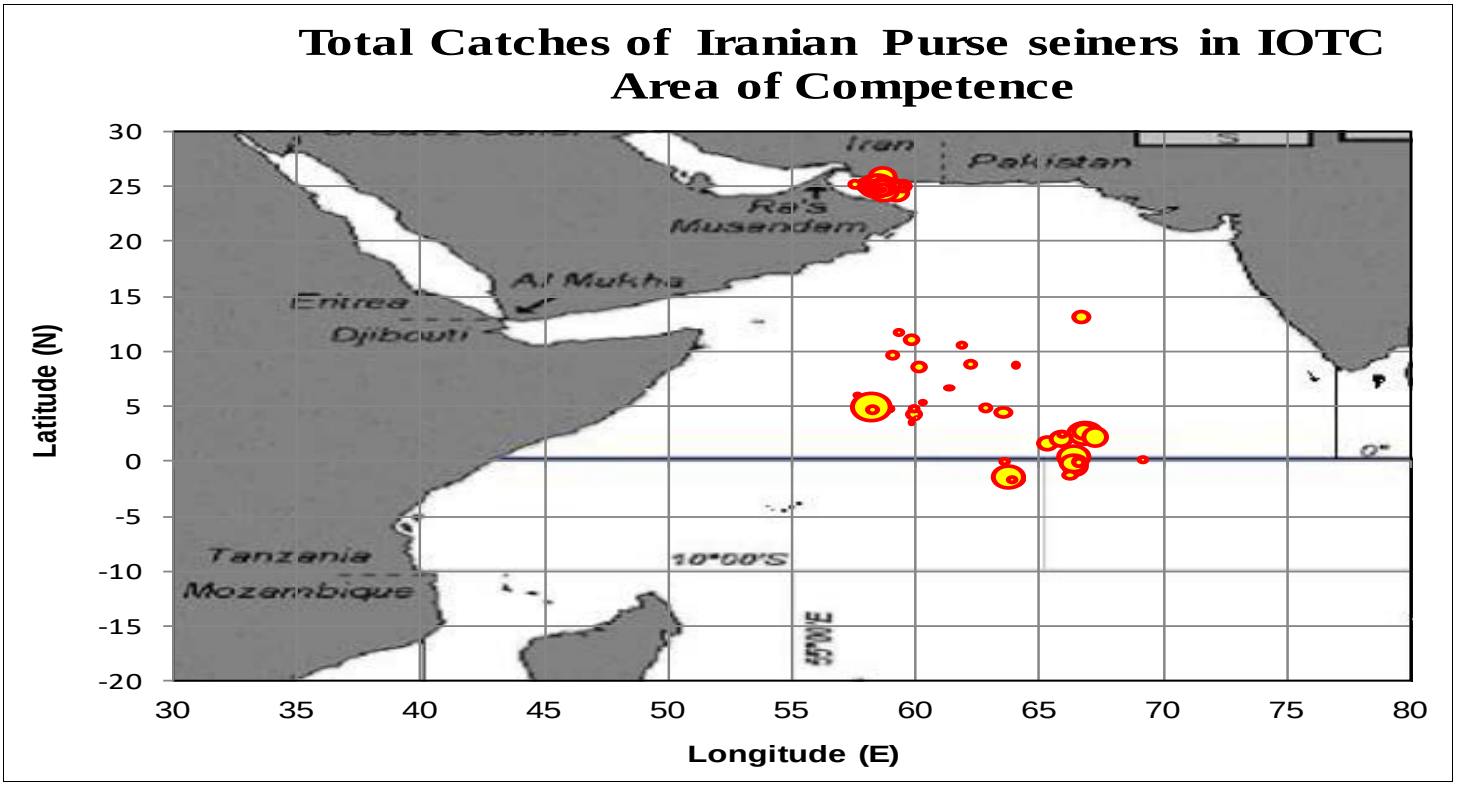


Table.3.6.Annual fishing effort by different vessel categories per days (2009-2018)

GEAR GROUP	Capacity GT	Fishing effort by gear(days)									
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Purse seine	500 - 1000	0	0	0	0	0	0	0	0	0	0
	1000 - 2000	728	675	880	981	727	1,080	1,005	1,164	1,085	715
Total Purse seine fishing effort		728	675	880	981	727	1,080	1,005	1,164	1,085	715
Coastal_Artisanal_Longline	< 3				0	0	0	0	18,000	19,440	24,300
	21 to 50				0	0	0	0	3,200	6,600	14,025
	101 up				0	0	0	0	560	560	1,190
	Mechanised				0	0	0	0	0	0	0
Coastal_Artisanal_Longline fishing		0	0	0	0	0	0	0	21,760	26,600	39,515
Gillnet	< 3	520,594	486,156	501,402	557,434	538,550	476,632	552,367	487,646	438,046	516,149
	3 - 20	115,672	118,974	113,740	43,303	40,985	44,679	44,374	41,682	43,035	44,779
	21 - 50	118,990	116,058	165,640	195,643	184,070	137,860	72,121	74,870	58,114	51,045
	51 - 100	90,984	81,168	83,754	91,293	91,790	84,658	33,749	30,337	54,873	52,410
	101 - up	34,528	50,040	38,810	57,662	60,400	53,020	51,260	50,530	59,746	69,535
Total Gillnet fishing effort		880,768	852,396	903,346	945,335	915,795	796,849	753,871	685,064	653,815	733,918
Trolling	< 3	54,627	54,102	96,822	125,446	123,450	226,770	254,934	229,190	196,440	224,708
Total Trolling fishing effort		54,627	54,102	96,822	125,446	123,450	226,770	254,934	229,190	196,440	224,708
Total all Gear fishing effort		936,123	907,173	1,001,048	1,071,762	1,039,972	1,024,699	1,009,810	937,178	877,940	998,856

Figure3.7. 1° grid area for Purse Seiners Catch-and-Effort data year 2017


Total Catches of Iranian Purse seiners in IOTC Area of Competence
Iran
Pakistan
Ra's Musandam
Al Mukha
Eritrea
Djibouti
Tanzania
Mozambique
10°00'S
Latitude (N)
Longitude (E)
30
25
20
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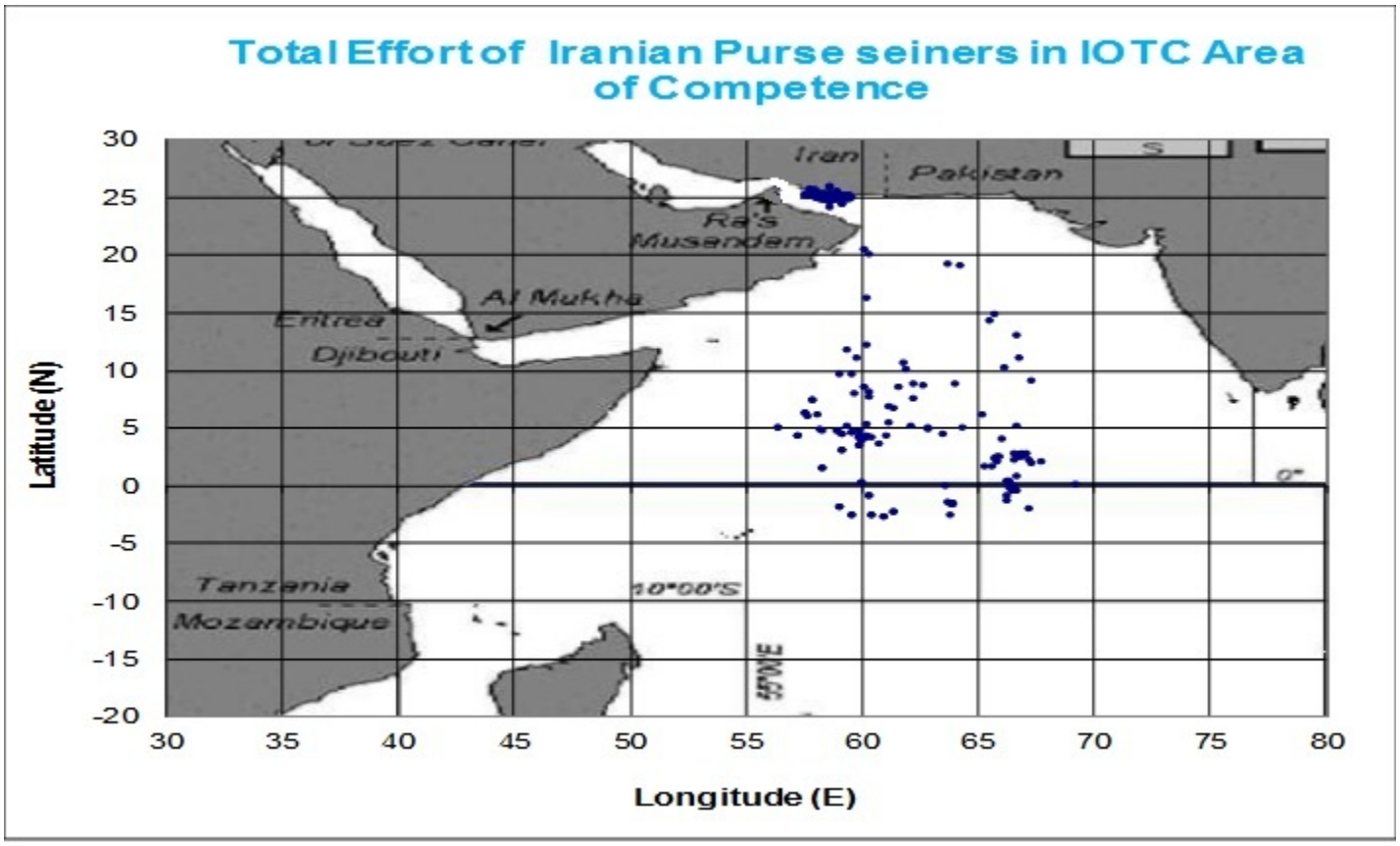

Total Effort of Iranian Purse seiners in IOTC Area of Competence
Iran
Pakistan
Ra's Musandam
Al Mukha
Eritrea
Djibouti
Tanzania
Mozambique
10°00'S
Latitude (N)
Longitude (E)
30
25
20
15
10
5
0
-5
-10
-15
-20
30
35
40
45
50
55
60
65
70
75
80

4. National Data Collection and Processing System

Iran's fisheries activities consists two parts that their fishing methods and fishing geographical features are quite distinct from each other:

1-Northern coastal provinces (Caspian Sea)

2- Southern coastal provinces (Persian Gulf & Oman Sea & Overseas)

4.1. Caspian Sea

There are three coastal provinces in northern waters, which are fishing in their territorial waters with around 42,036 tonnes and 803 vessels and with three different fishing methods (Figure 4.1.1, 4.1.2.):

4.1.1. Sturgeon Fishing

Around 796 fishermen with 153 fishing boats in 33 fishing ground by gill net method are engaged in sturgeon fishing (five major species) and total enumeration carried out by field sampler (observers)

Note: Iran voluntarily has banned commercial fishing of sturgeon species since March 2012.

4.1.2. Kilka (anchovy) Fishing

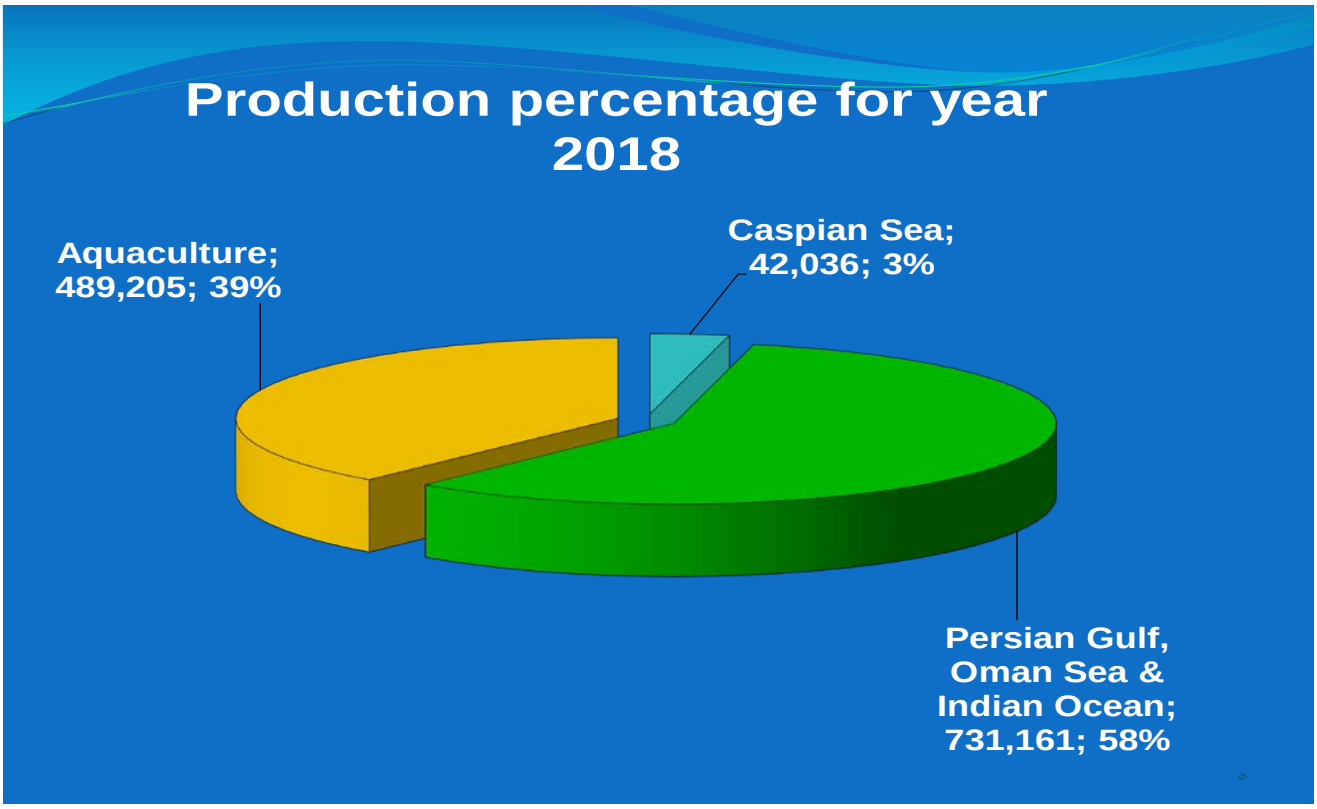
Around 643 fishermen with 74 fishing vessels in 4 fishing ground by Light-Conical Nets(funnel-shaped net) are engaged in anchovy fishing(3 major species) and total enumeration carried out by field sampler(observers)

4.1.3. Bony Fishing

Around 9,106 fishermen within 121 fishing cooperatives in 121 sites by beach seine method are engaged in 15 bony species fishing (three major species) and total enumeration carried out by field samplers (observers) per each shot.

Figure4.1.1.Caspian Sea Fishing Method & Active Fleet (2018)

Figure4.1.1.Caspian Sea Catch by Categories (2018)



4.2. Persian Gulf & Oman Sea & High Seas

There are four coastal provinces in southern waters, which are fishing in their territorial waters with about 10,546 vessels.

- **Gillnet fishing** method is used by fishing Boats and Dhows for Large Pelagic
- **Mid-Water Trawl fishing** method is used by ship for Cuttlefish, lantern fish (mictophids) and Hair tail (Ribbon) in time-area closure.
- **Shrimp Trawl fishing** method is used by Artisanal boats, dhows, and industrial vessels for Shrimp in time-area closure.
- **Trap** (Gargoor) **fishing** method is used by boats and Dhows for Grouper, Cuttlefish and other Demersal species
- **Trolling, pole & line fishing** method is used by boats for Tuna species, Mackerel, Long tail Tuna,yellowfin Tuna and some Demersal species.
- **Coastal Longline** method is used by boats and Dhows for Tuna species, specially yellowfin Tuna
- **Purse-seine(pair-boats) fishing** method is used by boats for Sardine and Industrial vessels Tuna

All of them needs fish license (permit) when they are going to sea for fishing operation. There are 66 basic landing centers in southern coastal waters. All of 66 basic landing, issue, fishing permit for vessels. Fishing permits form, also used for total enumeration in all landing sites for statistics on total effort of active fleet. And also following fishing methods and total enumeration carried out by fishermen fishing cooperatives:

- **Beach-seine fishing** method is used by fishermen in limited area of Hormozgan province for Sardine
- **Set net** fishing method is used In tidal regions of Hormozgan province for shrimp, crap, …

4.3. Logbook program for artisanal gillnets and industrial purse seiners

In 2011, logbook program has implemented for Iranian artisanal gillnets and industrial purse seiners and designed a new logbook template according to IOTC Resolutions and Four Iranian purse seiners were active in 2018, and their fishing operations reported in logbook format.

In complying with IOTC regulations, we are decreasing the fishing pressure on coastal species by substituting a number of gillnetters with longline fishery to meet IOTC mandates. A lot of effort carried out to complete logbook but there are still a number weak points in some recorded data of logbooks. Unfortunately, we have not yet succeeded in implementing the Logbook program for gillnet fisheries in spite of the follow up actions and training courses held for fishermen.

Figure4.1. Logbook template for Gill net vessels (active in overseas for tuna and tuna-like species)

LOGBOOK TEMPLATE FOR GILLNET VESSELS لاگ بوک شناورهای گوشگیر				
شماره سفر No. trip	بندر ورود(Port Arrival)	بندر خروج(Port Departure)	۱۳۹۹۵	شماره سریال(Serial No):
نام و نام خانوادگی ناخدا Capt. Name	تاریخ ورود(Date Arrival)	تاریخ خروج(Date Deprture)		شماره ثبت (Reg No):
نام و امضای تکمیل کننده فرم Name&Sign		طول تور به آب انداخته شده - متر(Length net set):		کد IOTC(IOTC No):

تاریخ Date	شروع توررزی Start set			خاتمه تورکشی End set			وزن و تعداد(Weight&quantity)	Tuna & Tuna Like fishes تون و شبه تون ماهیان							منقار/ نیزه ماهیان Billfishes			Sharks کوسه ماهیان					سایر گونه ها Other Species			صید دورریز از قبیل لاک پشت ، دلفین و... Discards		
	عرض جغرافیایی Lat	طول جغرافیایی Long	زمان Time	عرض جغرافیایی Lat	طول جغرافیایی Long	زمان Time		تون چشم درشت Bigeye tuna	گیدر Yellowfin tuna	هوور مسقطی Skipjack tuna	هوور دم دراز Longtail tuna	زرده Kawakawa	تون منقوش Frigate tuna	شیر commerson Scomberomorous	شمشیر ماهی Sword fish	مارلین marlin	بادبان ماهی Sailfish	کوسه آبی Blue shark	کوسه ماکو Mako shark	کوسه پوربیگل Porbeagle Shark	کوسه دم دراز Thresher Shark	کوسه سرچکشی Hammerhead shark	۱-	۲-	۳-	۱-	۲-	۳-
							تعداد No.																					
							وزن -kg																					
							تعداد No.																					
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							تعداد No.																					
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							تعداد No.																					
							وزن -kg																					
							تعداد No.																					
							وزن -kg																					

5- Size Data (by Species and Gear)

There are 13 important commercial species in Iranian southern waters, which their size frequency data compiled. The species comprised of,

1. Tigertooth croaker (*Otolithes ruber*),
2. Silver pomfret (*Pampus argenteus*),
3. Black pomfret (*Parastromateus niger*),
4. Javelin grunter (*Pomadasys kaakan*),
5. Fourfinger threadfin (*Eleutheronema tetradactylum*),
6. Grouper(Serranidae)
7. Emperor(Lethrinidae
8. Longtail tuna (*Thunnus tonggol*),
9. Narrow-barred Spanish mackerel (*Scomberomorus Commerson*),
10. Kawakawa (*Euthynnus affinis*),
11. Yellowfin tuna (*Thunnus albacores*),
12. Skipjack tuna (*Katsuwonus pelamis*),
13. Bigeye tuna (*Thunnus obesus*

There are the length and weight frequency data of species since 2001. Sampling in southern waters carried out in 17 landing centers consist of: Choebdeh and Hendijan in Khozestan Province, Daylam, Dayer, Jofreh & Bandargah in Bushehr Province, Bandar abbass, Jask, Javad'el'aemeh, Salakh ,Bostaneh, Kong & Gogsar in Hormozgan Province, - Ramin, Pozm, Beris & Pasabandar in Sistan & Bluchestan Province.

At each landing center, there are fish measuring board and precise Balance (scales). A number of biometry equipments have been provide by the IOTC-OFCF project and disseminated among the nominated landing centers and size data compilation is in progress.

All of Port samplers are training on how to measure different fishes. Fishing vessels catches were irregular for all species, but biometry carried out on-board from time to time to get precise data. The raw data will be process with some statistical Software like SPSS, Excel, MiniTab and FiSat. The output results are in the form of some indicators, which show the present status of fish exploitation.

Figure 5.1 to figure 5.3 shows the total yearly size data by gear type and species reported for the all fleet including length frequencies, Mean for Tuna and Tuna-like species from 2009 until 2018. These figures show an increase in the collection of size data, and developing data collection system for coverage another gear type like trolling.

Figure5.1.Length Frequency of Tuna species by Gillnet fishery (2009-2018)

SPECIES	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
FRI	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
KAW	10,944	8,255	7,553	20,299	15,467	6,036	13,765	14,678	26,088	32,721
LOT	14,576	12,802	12,232	25,481	24,680	11,174	18,116	21,889	19,449	30,985
SKJ	Nil	97	5,156	3,761	13,212	10,857	19,574	23,410	30,577	24,177
YFT	Nil	Nil	1,215	4,070	11,146	11,261	22,161	26,287	25,885	16,684
BET	Nil	Nil	Nil	655	435	630	724	888	2,639	1,782
COM	18,060	11,019	14,586	20,907	16,435	18,283	21,087	29,315	39,753	37,591
TOTAL	43,580	32,173	40,742	75,173	81,375	58,241	95,427	116,467	144,391	143,940

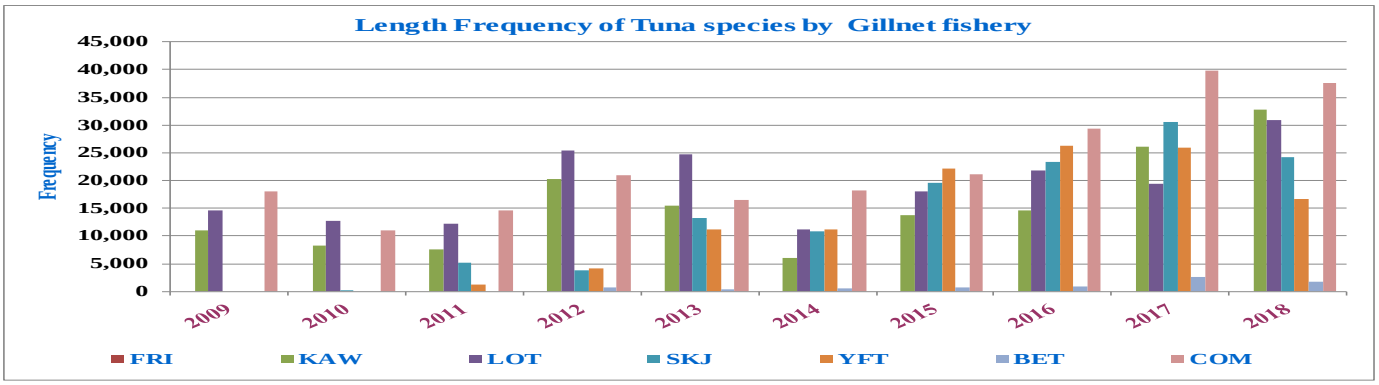


Figure5.2. Length Frequency of Tuna species by Purse seine fishery (2009-2018)

SPECIES	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
KAW	Nil	Nil	420	416	0	0	0	0	0	0
LOT	2,315	Nil	2,358	2,822	433	0	1,158	125	0	0
SKJ	359	484	424	964	957	1,010	416	797	1,576	2,152
YFT	2,113	1,220	727	445	1,296	3,682	1,892	4,333	1,923	6,995
BET	Nil	Nil	442	424	777	523	629	560	716	708
TOTAL	4,787	1,704	4,371	5,071	3,463	5,215	4,095	5,815	4,215	9,855

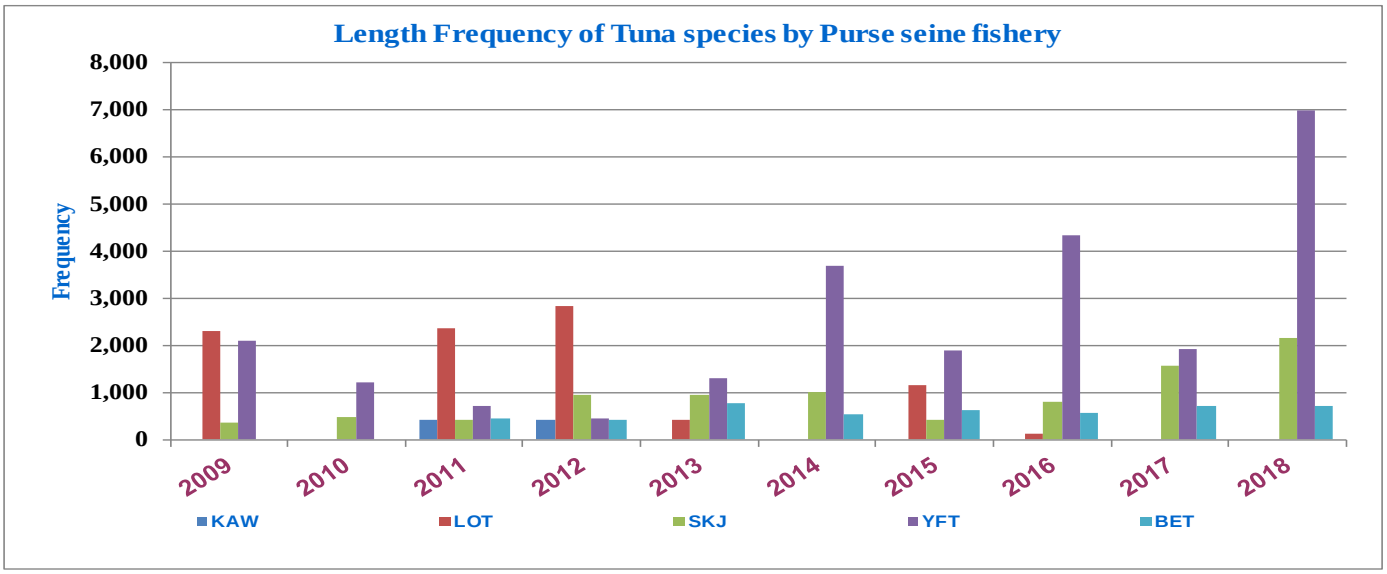
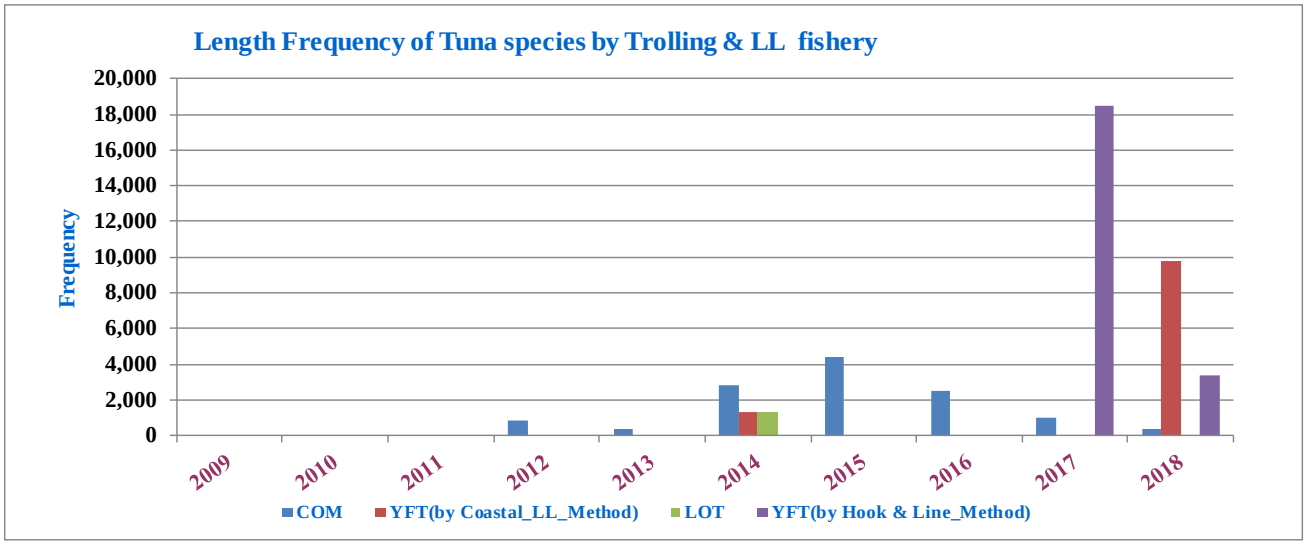


Figure5.3. Length Frequency of Tuna species by Trolling & LL fishery (2009-2018)

SPECIES	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
COM	Nil	Nil	Nil	821	407	2,808	4,416	2,511	980	335
LOT	Nil	Nil	Nil	Nil	Nil	1,289	0	0	0	0
YFT(by Coastal_LL_Method)	Nil	Nil	Nil	Nil	Nil	1,289	0	0	0	9,813
YFT(by Hook & Line_Method)	0	0	0	0	0	0	0	0	18,457	3,371
TOTAL	0	0	0	821	407	5,386	4,416	2,511	19,437	13,519



6. Fishing Dhows Catch Composition

We have collected fishery data since 2012 for a few fishing dhows in sample fishing port by total enumeration to determine catch composition for tuna and tuna-like species and identify by-catch species. In the way we could identify bigeye tuna in yellowfin catch composition, of course, identification of small bigeye tunas (BET) of size below 50 cm was very difficult but we could enumerate a number of bigeye tuna (BET) in whole catch. In addition, we could differentiate between various species of sharks and billfishes in total catch.

The identified species are as follows:

Billfish species comprised of Swordfish (SWO), Black marlin (BLM), Indo-Pacific Sailfish (SFA), Striped marlin (MLS), Shortbill spearfish

Main shark species: Silky shark (FAL), Mako sharks, Oceanic whitetip shark (OCS), Hammerhead shark…

Discards information has been collected by self-declaration by interviewing the caption of fishing vessels.

Discard species: Manta ray, Stingray, Dolphins, Sea turtle (release to sea – some alive and some dead)

This pilot plan will be continued in future to improve and enhance the data collection on port by field samples.

7. to Promote Coastal Tuna Longline Fishing

Iran is the largest fishery producer in the region, with over 3,100 km of coastline. Sistan and Baluchestan due to the wide range of water resources has two fisheries departments in the north and south of the province. The Sistan and Baluchestan Fisheries Department (Inland waters) based in Zabul, north of the province, is responsible for controlling and protecting domestic water resources, Sistan, and Baluchistan Fishery Department located in Chabahar Port, south of the province is active in Oman Sea and Indian Ocean.

There are 11 fishing ports, including Tis, Konarak, Pozm, Tang, Zarabad (Galak), Chabahar, Ramin, Bris, Pasabandar, and Govatr, are active in fishing.Also six industrial districts and over 100 fishery production/processing units are active in Sistan and Baluchestan.

Sistan and Bluchestan is of a prominent fishing area with 45% of the country's southern catch and 42% of total country catch, made it rank second in the Indian Ocean after Indonesia, rank first in the western Indian Ocean and supplies over 66 percent of the country's tuna catch (2018).

During recent years, Chabahar is ranked last in terms of human development index in comparison with other provinces of Iran. It is characterized by high unemployment, lack of investment and economic opportunities, scattered population centers, and a shortage of skilled manpower and infrastructure. It is with a view to overcoming the challenges that the United Nations Industrial Development Organization (UNIDO) and Japan have collaborated to develop the fishery value chain in Chabahar, Iran's only port on the Indian Ocean coast.
To do this, a pilot project was conducted in 2017, and in 2018, two specialized groups of Iran comprised of processing and fishing sector accompanied by a group of experienced fishermen from private sector, fishery cooperatives, and fishery experts at national and provincial level were designated to visit the Japan tuna longline fishery capacity in Wakayama Prefecture (Katsura city).
In the second phase, Japanese delegation planned to visit the Chabahar port, but due to bad weather condition and rough sea, they canceled their mission to Iran.
In the 3rd phase, in 2019, the Japanese delegation had their third visit from Chabahar port. They also visited the Konarak fishing facilities with the aim of exploring the possibility of launching super-cold freezers.

The main purpose of the project was to find an alternative fishery method for gillnet fishery to ensure the conservation and management of tunas and ensure their long-term sustainable use. In this way, they organized a training workshop on rapid methods of qualitative evaluation of tuna fish with particular reference to yellowfin tuna, sea voyage and practical training of longline fishing and proper handling, processing methods, cooling and preserving tuna fish.

Finally, to develop and promote the tuna longline fishery to mechanical system by purchasing a Longline vessel as the start of Phase 3 of the UNIDO office in Vienna, which is being pursued.

The Japanese delegation and UNIDO believe that, the 3rd phase visit to Chabahar was quite a fruitful and the most prominent activity in terms of developing tuna longline fishery in the region, which eventually led to purchasing a tuna Longline vessel with advanced mechanical system as a start of phase 3 coordinated by UNIDO headquarter in Vienna as a follow-up action.

Note: Now above-mentioned project is conducted for yellow fin tuna in Iranian waters of Oman Sea and may compass other tuna species in upcoming years.

8. Implementation of IOTC Recommendation & Resolution Relevant to Data Collection System

1. Submission of historical catch and effort data by fishing ground, gear, vessel, and species for each trip based on all questionnaires and license permits since 2007.
2. Submission of historical catch and effort data for neritic tuna by gear and species since 2008
3. Submission of historical catch and effort data for high seas by gear and species since 2011.
4. In complying with IOTC regulations, we are decreasing the fishing pressure on coastal species by substituting a number of gillnet fisheries with longline fishery to meet IOTC mandates.
5. We have carried out many actions for reporting of gillnet fishery by-catch and discards such as sharks, dolphins, sea turtles, etc.
6. Data collection system including species identification for Bigeye tuna (BET), Wahoo tuna (WAH), Sharks, Billfish has been carried out.
7. Various training courses for port samplers has been held.(in this way Identification cards for billfishes, sharks and Bigeye tuna (BET), Wahoo tuna (WAH), have been translated in Persian language and disseminated among port samplers and fishermen to identify different fish species).
8. Database include both fleet data and vessel permit data was upgraded to generate reports according to IOTC standards (it's ongoing and will be finished in the upcoming year)

9. Main Issues

1. Multi-species fisheries in the region
2. Illegal Catch
3. Lack of trained personnel & budget deficit in data collection section such as port enumerators, field samplers, observers, etc.
4. Species identification for some oceanic species
5. Implementation of logbook, VMS for gillnetters, and on-board observers scheme for both gillnetters and purse seiners
6. Failure to correctly Identify some species

10. Suggestions

1. To maintain a pilot project by each member country to determine offshore fishery by-catch species by identifying the billfishes, sharks, tuna and other species and percentage of discard.(It's already ongoing in Iran).
2. Coordinating measures to exchange necessary technical and expertise consultation among member countries by IOTC secretariat.
3. Preparing Workshops and Training Courses Regarding tuna & tuna-like species for member countries for observers & field samplers on data collection and statistics based on IOTC relevant resolutions & recommendations.
4. To conduct Research projects and studies related to the state of marine fish stocks and Conservation and management of tuna fishery in member coastal countries.