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Tuna and Tuna-like fishes catch in Iran with the emphasis on Tropical Tuna in Indian Ocean during 2001 to 2011

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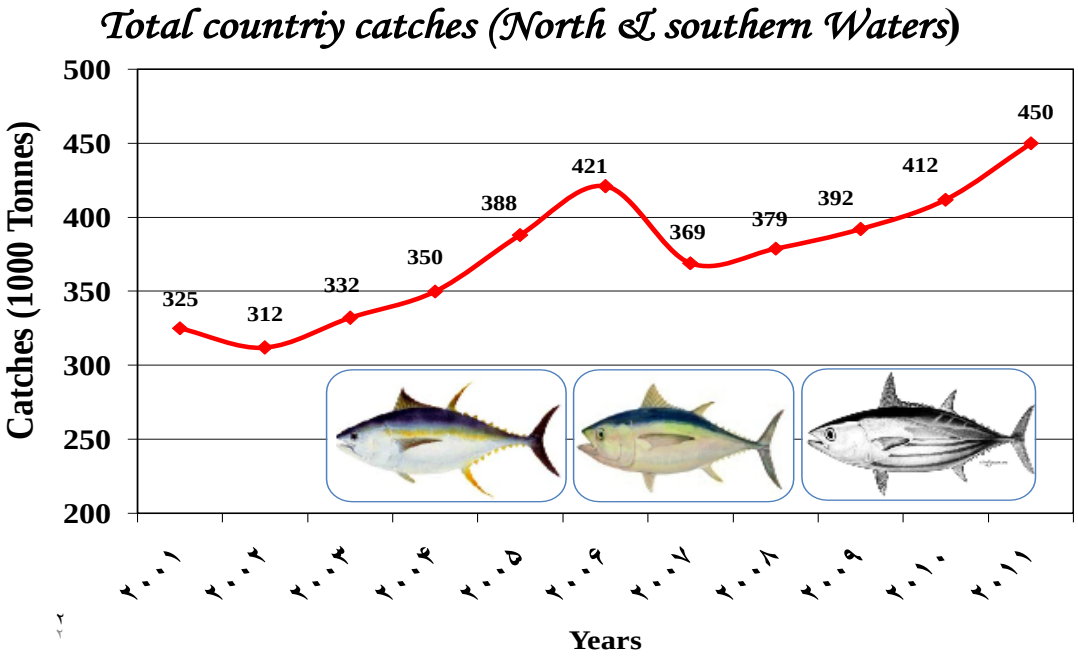
Tuna catches covers 6 percent of the world total catch, but in Iran more than 40 percent of the country catch belongs to tuna and tuna-like species. So tuna catch in Iran has attach-importance. Because 6500 out of 12000 fishing vessel with 60000 fishers are engaged in fishing activities and as the capture fishery in Iran is handled mainly small scale, so there are variety of socio-economic and management issues.

Figure1. Number of vessels operating in the IOTC area of competence, by gear type and size, for the history of the fleet (2006-2011)

GEAR	GRT	No. of vessels by year					
		2006	2007	2008	2009	2010	2011
No. of Active Purse Seiners	1000-2000	7	7	7	6	5	5
Gillnet	<3	4125	3966	3974	3828	3444	3340
	3-20	733	731	761	753	702	586
	20-50	715	725	730	667	911	941
	51-100	805	794	669	534	580	479
	>101	130	147	208	278	283	260
Trolling		214	397	417	426	634	854
Total		**6729**	**6767**	**6766**	**6492**	**6559**	**6465**

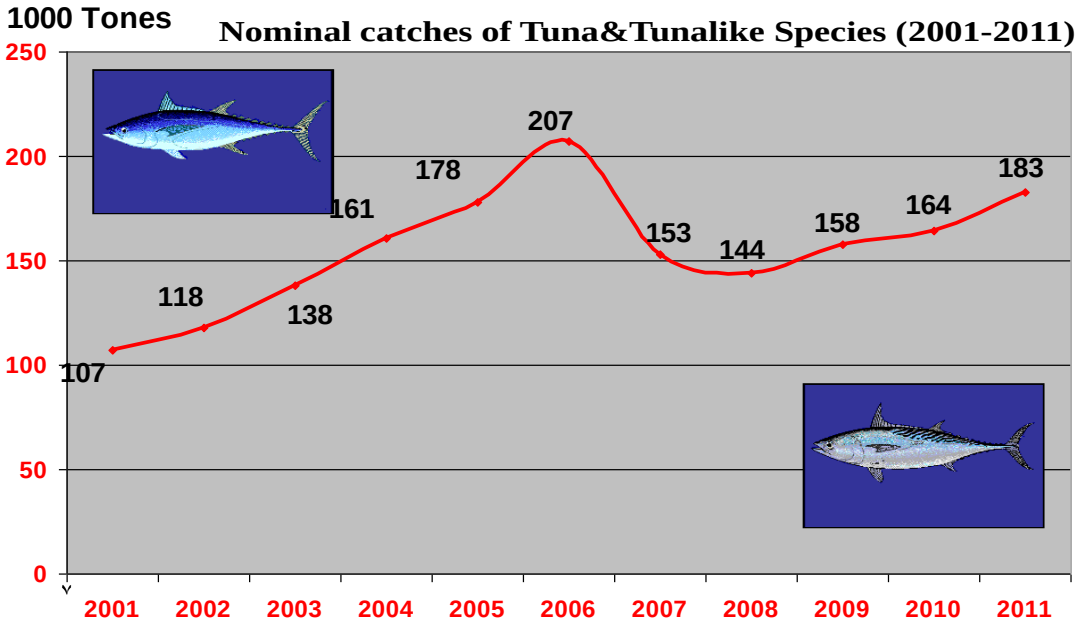
In 2011 tuna and tuna-like catch was 183000 tonnes (41% of country total catch) and in 2006 it was 207000 tonnes (49% of country total catch). The tropical tuna catch in 2006 was 144000 tonnes (34% of country total catch) which decreased by 68% in 2011 to 46000 tonnes. In fact, after the phenomenon of piracy, tropical tuna catch dropped sharply. Much of this decline was caused by catch reduction of Yellowfin and Skipjack tuna.

Figure2.Total countriy catches (North & southern Waters) (2001-2011)



Although the total catch in 2011 increased by 7% in compare to 2006, in contrast, tuna and tuna-like species catches declined by 11.6% and for the same time tropical tuna catches decreased by 68%.

Figure3. Nominal catches of Tuna&Tunalike Species (2001-2011)



The main issue for this decline was the phenomenon of piracy which leads to sharp decline of skipjack from 103000 tonnes in 2006 to 17000 tonnes in 2011 (83%) and also yellowfin tuna catch decreased from 41000 tonnes in 2006 to 29000 tonnes in 2011 (29%).

In 2011 about 105 tonnes Bigeye tuna catch was reported by purse seine method. The proportion of tropical tuna catch to total country catch was 34% in 2006 which was deceased by 10% in 2011.

Figure3. Nominal catches of Tropical Tuna (2001-2011)

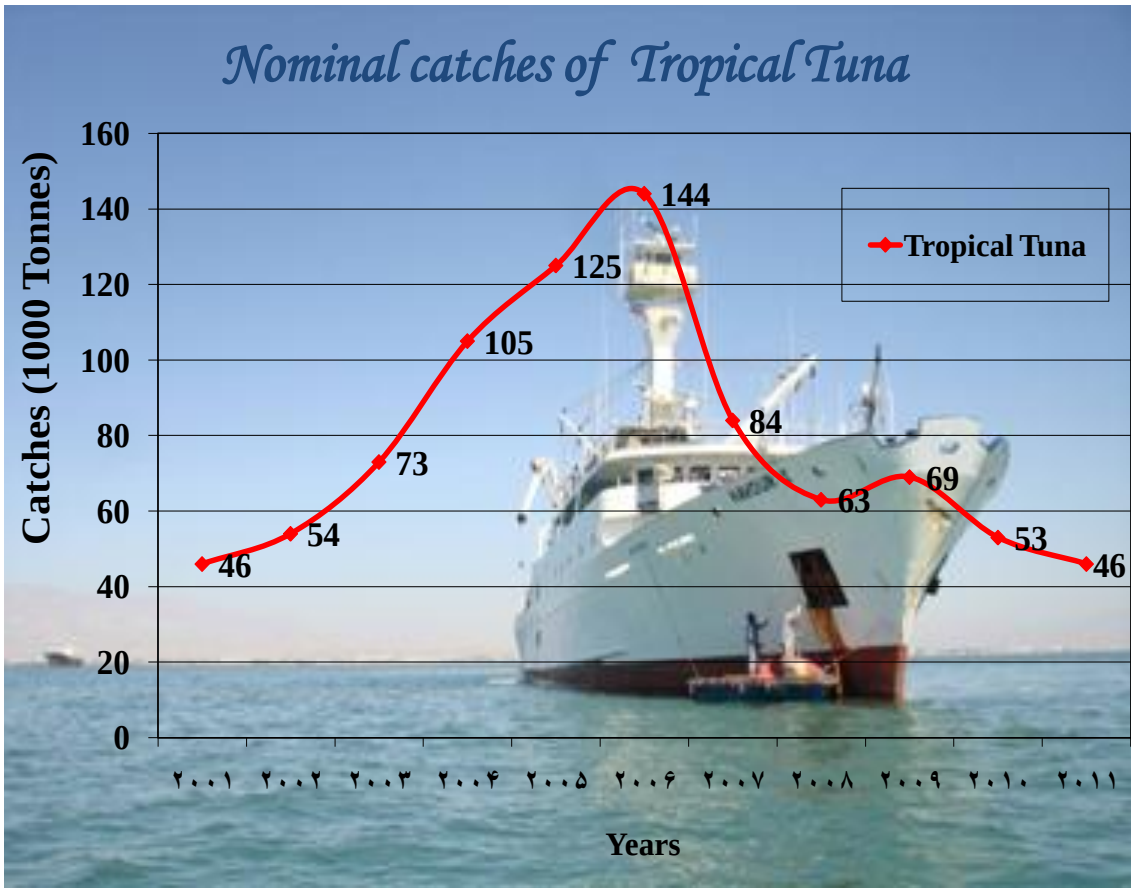
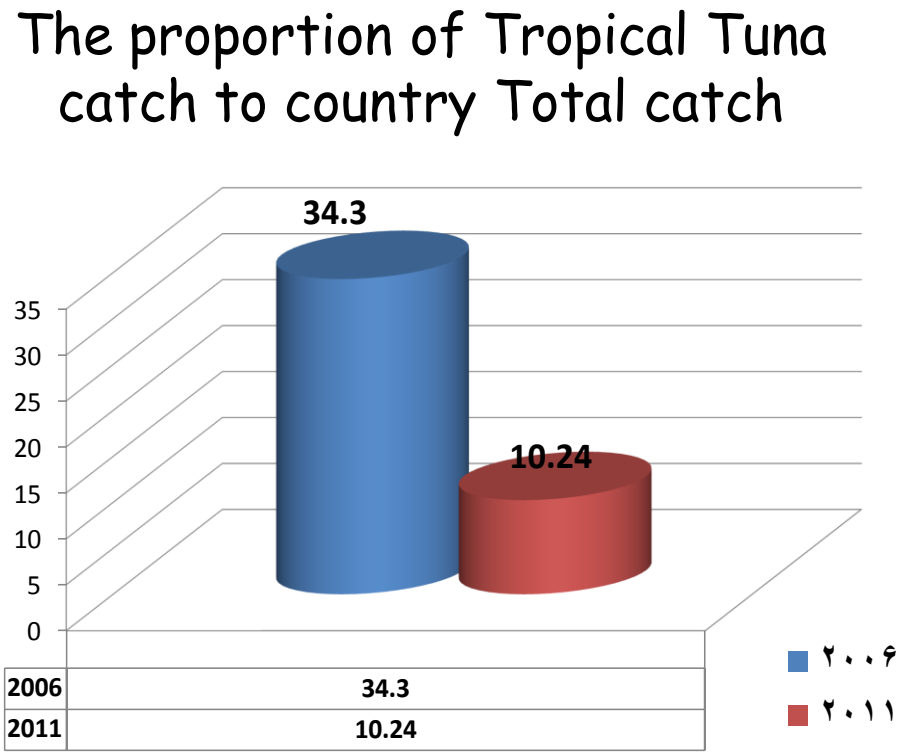


Figure4. The proportion of Tropical Tuna catches to country Total catch



Following the decline of tropical tuna catch which was caused by the phenomenon of piracy, fishers relocate their fishing grounds from offshore to coastal fishing grounds. This shifting of fishing grounds caused increase in fishing efforts in coastal areas and leads to increase in longtail catch from 25000 tonnes in 2006 to 81000 tonnes in 2011. (224%)

Of 183000 tonnes tuna and tuna-like catches, 4621 tonnes caught by 4 purse seiners, 177000 tonnes by 5606 gillnetters (boat & Dhow) and 1500 tonnes caught by 854 fishing boat by trolling method. As it shows, the main fishing method in the country is gillnetting.

In 2011, fishing efforts for tuna and tuna-like fishes was 1060000 day. (920000 days belongs to gillnet, 450 days purse seine and 139000 days allocated to trolling)

Figure5. Fishing effort by different vessel categories (days)

Gear	GRT	Fishing effort by gear(days)					
		2006	2007	2008	2009	2010	2011
Purse seine	1000-2000			728	675	880	450
Gill net	<3	482625	563172	520594	486156	501402	515372
	3-20	96023	103071	115672	118974	113740	100809
	21-50	115115	115275	118990	116058	165640	176132
	51-100	134435	106396	90984	81168	83754	82837
	>101	19630	17346	34528	50040	38810	45020
Total fishing effort (Gill net)		847828	905260	880768	852396	903346	919970
Trolling	Non-mechanised	25038	56374	54627	54102	96822	139161
Total		**872866**	**961634**	**936123**	**907173**	**1001048**	**1059581**

Figure6. Annual catch by gear type and species (tons)

Gear Group	Species Group	2006	2007	2008	2009	2010	2011
Purse Seine	Bigeye tuna	1	55	23	0	0	105
	Longtail tuna	2303	2321	1205	994	220	2280
	Skipjack tuna	3909	450	1489	1159	628	1336
	Yellowfin tuna	8353	2330	2141	1693	2529	876
Total Purse Seine catch		14566	5156	4858	3846	3377	4621
Gill net	Frigate tuna	2444	5197	7164	5178	6172	5969
	Kawakawa	12596	15556	20439	17827	16336	22208
	Longtail tuna	22840	25900	31186	46486	63762	78080
	Skipjack tuna	98759	67618	42411	45404	21657	16137
	Yellowfin tuna	32064	13615	17085	20585	28522	27647
	Narrow- Barred Spanish mackerel	8339	8860	9975	7279	10556	14248
	Indo-Pacific King mackerel	4049	3747	4026	2633	3106	3801
	Billfish*	10578	6243	5634	7976	9209	8866
Total Gillnet catch		191669	146736	137920	153368	159320	176956
Trolling	Longtail tuna	-	375	229	239	469	523
	Yellowfin tuna	305	338	256	318	434	277
	Narrow- Barred Spanish mackerel	440	535	317	412	361	546
	Indo-Pacific King mackerel	-	35	52	36	64	99
Total Trolling catch		745	1283	854	1005	1294	1522
Total		**206980**	**153175**	**143632**	**158219**	**163991**	**183099**

Actions carried out concerning improvements of 13th working party approvals for tropical tuna in Iran:

- Design and duplicate of 400 logbooks for semi-industrial fishing vessels
- Training on how to fill out Logbook and other IOTC requirements to Skippers & Captain of fishing vessels.

  In 2011 for the first time a number of 50 logbooks distributed among coastal gillnet fishing vessels. After gathering logbooks and verifying the data from all 50 fishing vessels, we observed there are too many mistakes in completing the forms. We reviewed the logbook in 2012 and designed a new one in compliance with IOTC regulation and convened many training sessions in different fishing ports in Sistan & Bluchestan Province on how to fill out logbooks and other IOTC requirement to Skippers & Captain of fishing vessels. Now we are planning to distribute approximately 400 logbooks between different kinds of fishing vessels and hope this time we achieve better results. At the moment we have 4 active purse seiners who fill out the logbook and hand it over.

- Picking up observers from fishing vessels crew and train them. With the aim of performing IOTC resolutions, about 70 gillnet

fishing Dhows have been selected and some of their crew members trained on how to fill out observer trip forms.

- Amendment and completing of AMAR software to meet IOTC & FAO demanded outputs with a suitable reporting. There is a good collaboration between Iran and IOTC-OFCF to enhance and improve Iran fishery data collection system. Now the AMAR Software is running under SQL SERVER2008 and WEB (partially done) and Software outputs defined in proportion with IOTC and OFCF demands. Mean while tuna fish measuring boards and Scale are distributed in sample landing centers.

We added two more landing centers in Sistan and Bluchestan Province to measure length frequency for tuna fishes. We have collected a valuable size data in 2011 and for the first time we measured Bigeye tuna and bulky size data for other tuna which have been caught by gillnet fishery. This measures carried out under a joint-project with IOTC-OFCF and hereby we gratitude their kind efforts. Mean length for some species are presented in power point. As you see from the diagram mean length for Narrow-barred Spanish mackerel had always steady trend during the mentioned years. Minimum and maximum size for this species is between 25 to 157 cm. for other species minimum and maximum size for 2011 is as follows:

- Longtail tuna: 30 to 117 cm.
- Yellowfin tuna: 39 to 141 cm
- Skipjack tuna: 30 to 74 cm

- *Vessel Monitoring System (*VMS)

  Regarding Vessel Monitoring System (VMS) Iran has some experiences from 2006. IFO has been equipped 50 vessels by on line VMS system. Also at this time we equipped 300 vessels by offline system which all of them are active in the Persian Gulf and Oman Sea. In order to develop these experiences in 2010 we started a study to choose the best available system in our country. According to the results we are going to equip all the vessels to On-line or Off-line VMS. We also have done feasibility study on some cases to remove the probability problems. Base on our plan all the active vessels in Tuna fishing activities must will equipped from 2013.

- A guideline was translated in Persian for among port samplers and fishers to identify Bigeye tuna and Yellowfin tuna.

  A guideline to identify Bigeye and Yellowfin tuna has been translated and for among port samplers and fishing vessels Captains to enhance the validity of identifying the mentioned species.