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[China] National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2016

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INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

In accordance with IOTC Resolution 10/02, final scientific data for the previous year was provided to the Secretariat by 30 June of the current year, **for all fleets other than longline** [e.g. for a National report submitted to the Secretariat in 2013 final data for the 2012 calendar year must be provided to the Secretariat by 30 June 2013)	Not applicable
In accordance with IOTC Resolution 10/02, provisional **longline data** for the previous year was provided to the Secretariat by 30 June of the current year [e.g. for a National report submitted to the Secretariat in 2013, preliminary data for the 2012 calendar year was provided to the Secretariat by 30 June 2013). **REMINDER:** Final longline data for the previous year is due to the Secretariat by 30 Dec of the current year [e.g. for a National report submitted to the Secretariat in 2013, final data for the 2012 calendar year must be provided to the Secretariat by 30 December 2013).	YES 28/06/2016
If no, please indicate the reason(s) and intended actions:	

Executive Summary [Mandatory]

Deep-frozen longline and ice fresh-longline are the only two fishing gears used by Chinese vessels to catch tuna and tuna-like species in the IOTC waters. The number of active deep-frozen longline vessels increased from 10 in 2011 to 46 in 2015, while the number of ice-fresh longline vessels increased to 7. Chinese longline fleet caught 6522 MT of tropical tunas (BET and YFT) in 2015, which is higher than the catch in 2014(4940 MT). The albacore tuna catch in 2015 was 1843 MT, which is higher than the catch in 2014 (1430 MT). Implementation of both the logbook and observer programs is going on for the Chinese longline fleet in the Indian Ocean. Catch and effort data collection of bycatch species have been improved. One scientific observer was dispatched in 2015.

1. BACKGROUND/GENERAL FISHERY INFORMATION [MANDATORY]

Longline has been the only fishing gear for the China mainland fleets in the IOTC waters since 1995. One hundred-twenty longline fishing boats were recorded at the peak time in 1998, which mainly consisted of small non-professional boats reconstructed from trawlers or gill-netters originally operated along China coastal waters. After 1998 the number of fishing boats began to reduce due to poor management, low economic performance and fishing ground shift to other oceans. The total number of tuna fishing boats registered in IOTC Secretariat reduced to 93 in 2001 and further cut down to 63 in 2002. The number of active fishing boats reduced from 46 in 2008 to 32 in 2009 due to the piracy activity, of which 27 belongs to the large-scale deep-frozen longliners. Before 2008 the deep-frozen tuna longliners usually operated in waters between 40 ºE ~ 90ºE and 20ºN ~ 40ºS. Since 2009, most of the deep-frozen fishing effort shifted to southern Indian Ocean owing to piracy effect. The number of deep-frozen longliners was 15 and 10 in 2010 and 2011, respectively. During 2012 and 2013, however, more deep-frozen longliners came back to tropical western Indian Ocean and reached a total of 31 active deep-frozen longliners (**Table 1**). The number of active deep-frozen longliners was 46 in 2015. Between 1996 and 2006, the ice-fresh longliners mainly targeted tropical tunas. Since 2007-2008, ice-fresh longliners switched to target albacore.

2. FLEET STRUCTURE [MANDATORY]

The Chinese tuna fleet consisted of deep frozen longliners (Deep LL) and ice-fresh longliners (Ice LL) in the Indian Ocean. The fleet structure is shown in **Table 1**. The number of deep-frozen longliners was 46 in 2015, while the number of ice-fresh longliners was only 7 in 2015.

Table 1: Number of vessels operating in the IOTC area of competence, by gear type and size

Year	Gear	Vessel size range	Number of vessel
2006	Deep LL	GRT over 400	41
	Ice LL	GRT 200- 400	26
2007	Deep LL	GRT over 400	41
	Ice LL	GRT 200- 400	26
2008	Deep LL	GRT over 400	31
	Ice LL	GRT 200- 400	15
2009	Deep LL	GRT over 400	27
	Ice LL	GRT 200- 400	5
2010	Deep LL	GRT over 400	15
	Ice LL	GRT 200- 400	5
2011	Deep LL	GRT over 400	10
	Ice LL	GRT 200- 400	5
2012	Deep LL	GRT over 400	31

	Ice LL	GRT 200- 400	5
2013	Deep LL	GRT over 400	31
	Ice LL	GRT 200- 400	5
2014	Deep LL	GRT over 400	22
	Ice LL	GRT 200- 400	16
2015	Deep LL	GRT over 250	46
	Ice LL	GRT 200- 350	7

3. CATCH AND EFFORT (BY SPECIES AND GEAR) [Mandatory]

Annual catch and effort of Chinese fleet by gear and primary species in the IOTC area of competence were shown in **Table 2**. The Deep LL effort (hooks deployed) in 2015 was 40% higher than that in 2014. The Ice LL effort in 2015 was 31% higher than that in 2014.

Table 2. Annual catch and effort by gear and primary species in the IOTC area of competence**. [Mandatory]**

Table 2a Albacore

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	Deep LL	31643	54
2007	Deep LL	27644	77
2008	Deep LL	22215	145
2009	Deep LL	14417	210
2010	Deep LL	15305	3946
2011	Deep LL	2858	972
2012	Deep LL	7310	7
2013	Deep LL	19992	18
2014	Deep LL	15262	22
2015	Deep LL	21437	359

Table 2b Albacore

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	ICE LL	3642	2
2007	ICE LL	2431	39
2008	ICE LL	3931	13
2009	ICE LL	621	179
2010	ICE LL	1689	803
2011	ICE LL	1278	442
2012	ICE LL	3985	1828
2013	ICE LL	3447	993
2014	ICE LL	3950	1409
2015	ICE LL	5178	1484

Table 2c Bigeye tuna

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	Deep LL	31643	8236
2007	Deep LL	27644	6974
2008	Deep LL	22215	4643
2009	Deep LL	14417	2657
2010	Deep LL	15305	1394
2011	Deep LL	2858	234
2012	Deep LL	7310	2404
2013	Deep LL	19992	4274
2014	Deep LL	15262	3723
2015	Deep LL	21437	4427

Table 2d Bigeye tuna

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	ICE LL	3642	466
2007	ICE LL	2431	193
2008	ICE LL	3931	320
2009	ICE LL	621	4
2010	ICE LL	1689	4
2011	ICE LL	1278	6
2012	ICE LL	3985	1
2013	ICE LL	3447	37
2014	ICE LL	3950	139
2015	ICE LL	5178	303

Table 2e Yellowfin tuna

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	Deep LL	31643	3592
2007	Deep LL	27644	2652
2008	Deep LL	22215	747
2009	Deep LL	14417	449
2010	Deep LL	15305	492
2011	Deep LL	2858	189
2012	Deep LL	7310	308
2013	Deep LL	19992	669
2014	Deep LL	15262	882
2015	Deep LL	21437	1552

Table 2f Yellowfin tuna

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	ICE LL	3642	265
2007	ICE LL	2431	173
2008	ICE LL	3931	150
2009	ICE LL	14417	4
2010	ICE LL	1689	4.2
2011	ICE LL	1278	2
2012	ICE LL	3985	230
2013	ICE LL	3447	253
2014	ICE LL	3950	196
2015	ICE LL	5178	240

Table 2g Swordfish

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	Deep LL	31643	742
2007	Deep LL	27644	441
2008	Deep LL	22215	387
2009	Deep LL	14417	240
2010	Deep LL	15305	790
2011	Deep LL	2858	160
2012	Deep LL	7310	204
2013	Deep LL	19992	562
2014	Deep LL	15262	616
2015	Deep LL	21437	1328

Table 2h Swordfish

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	ICE LL	3642	33
2007	ICE LL	2431	9
2008	ICE LL	3931	32
2009	ICE LL	621	1
2010	ICE LL	1689	2
2011	ICE LL	1278	1
2012	ICE LL	3985	<1
2013	ICE LL	3447	6
2014	ICE LL	3950	8
2015	ICE LL	5178	49

Table 2i Blue marlin

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	Deep LL	31643	Not available
2007	Deep LL	27644	Not available
2008	Deep LL	22215	Not available
2009	Deep LL	14417	75
2010	Deep LL	15305	105
2011	Deep LL	2858	38
2012	Deep LL	7310	89
2013	Deep LL	19992	226
2014	Deep LL	15262	88
2015	Deep LL	21437	270

Table 2j Blue marlin

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	ICE LL	3642	Not available
2007	ICE LL	2431	Not available
2008	ICE LL	3931	Not available
2009	ICE LL	621	1
2010	ICE LL	1689	<1
2011	ICE LL	1278	1
2012	ICE LL	3985	<1
2013	ICE LL	3447	<1
2014	ICE LL	3950	23
2015	ICE LL	5178	28

Table 2k Striped marlin

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	Deep LL	31643	Not available
2007	Deep LL	27644	Not available
2008	Deep LL	22215	Not available
2009	Deep LL	14417	87
2010	Deep LL	15305	89
2011	Deep LL	2858	31
2012	Deep LL	7310	58
2013	Deep LL	19992	170
2014	Deep LL	15262	70
2015	Deep LL	21437	102

Table 2l **Striped marlin**

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	ICE LL	3642	Not available
2007	ICE LL	2431	Not available
2008	ICE LL	3931	Not available
2009	ICE LL	621	0
2010	ICE LL	1689	1
2011	ICE LL	1278	1
2012	ICE LL	3985	<1
2013	ICE LL	3447	<1
2014	ICE LL	3950	14
2015	ICE LL	5178	21

Table 2m **Black marlin**

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	Deep LL	31643	Not available
2007	Deep LL	27644	Not available
2008	Deep LL	22215	Not available
2009	Deep LL	14417	33
2010	Deep LL	15305	16
2011	Deep LL	2858	11
2012	Deep LL	7310	9
2013	Deep LL	19992	10
2014	Deep LL	15262	8
2015	Deep LL	21437	27

Table 2n **Black marlin**

Year	Gear	Effort (1000 hooks)	Catch (MT)
2006	ICE LL	3642	Not available
2007	ICE LL	2431	Not available
2008	ICE LL	3931	Not available
2009	ICE LL	621	0
2010	ICE LL	1689	<1
2011	ICE LL	1278	<1
2012	ICE LL	3985	3
2013	ICE LL	3447	1
2014	ICE LL	3950	2
2015	ICE LL	5178	16

Figure 1. Historical annual catch for the national fleet, by gear and primary species, for the IOTC area of competence for the entire history of the fishery/fleet. **[Mandatory]**

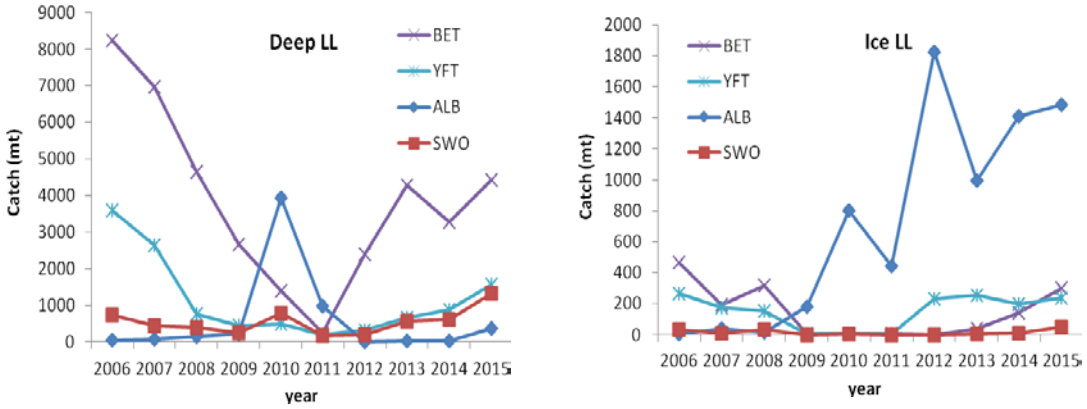
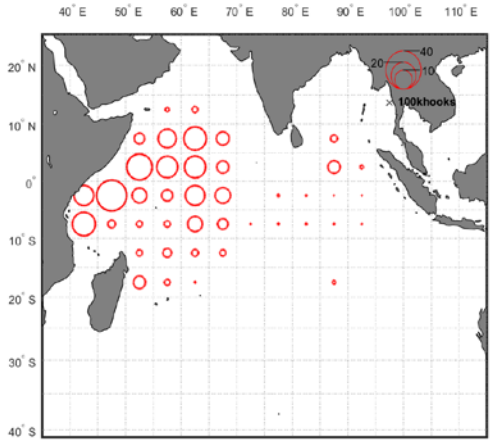


Figure 2a. Map of the distribution of fishing effort, by gear type for the national fleet in the IOTC area of competence (most recent year e.g. 2015). [Mandatory]

Deep-frozen LL 2015



Ice-fresh LL 2015

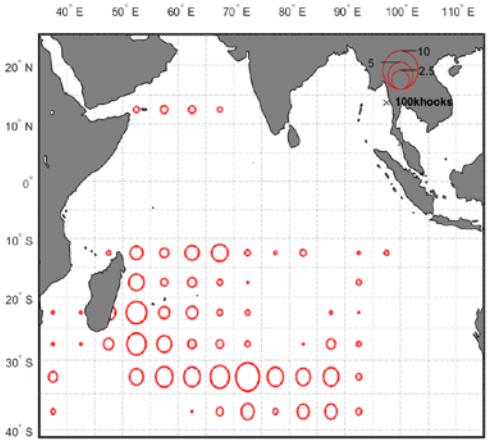
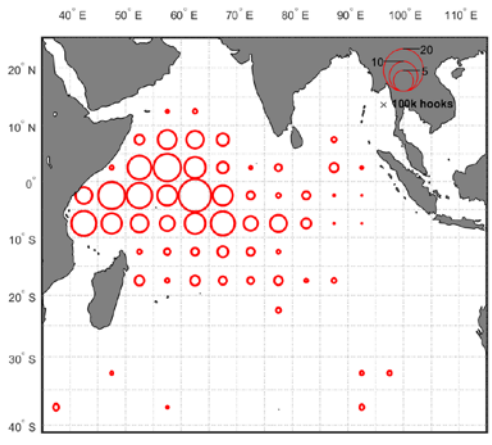


Figure 2b. Map of the distribution of fishing effort, by gear type for the national fleet in the IOTC area of competence (average of the 5 previous years e.g. 2011–2015). **[Mandatory]**

Deep-frozen LL 2011-2015



Ice-fresh LL 2011-2015

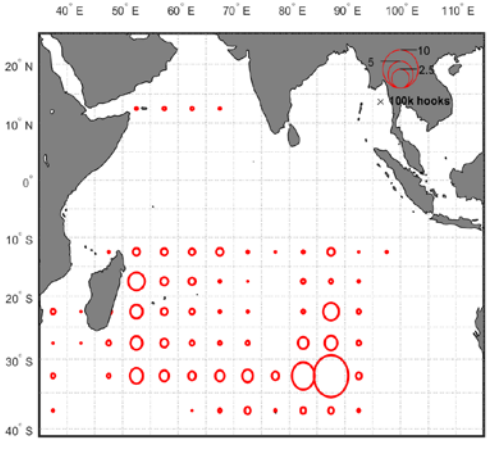
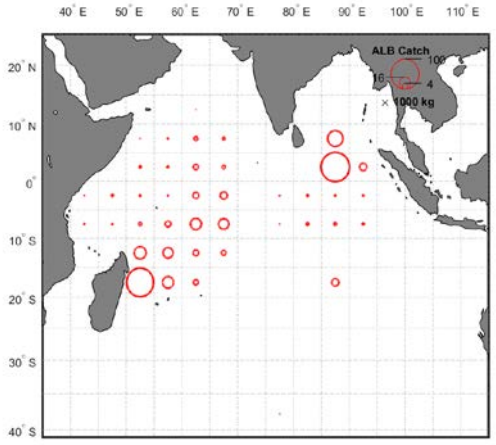
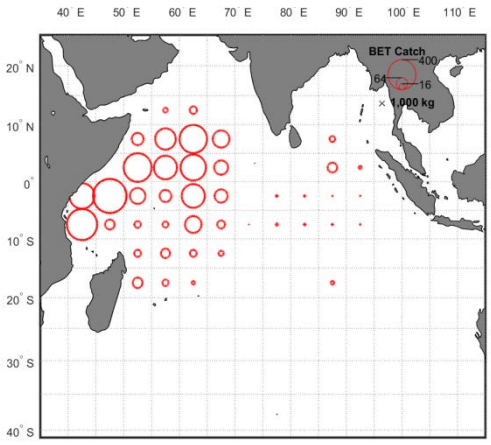


Figure 3a. Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence (most recent year e.g. 2015). **[Mandatory]**

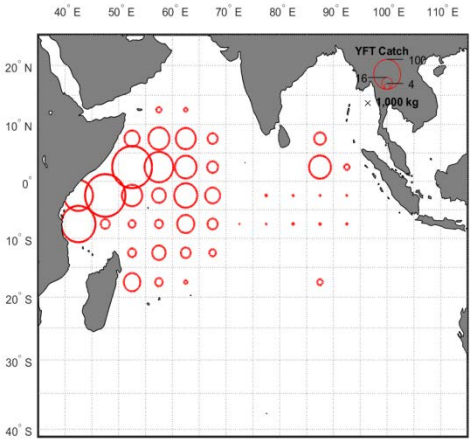
Deep-frozen ALB 2015



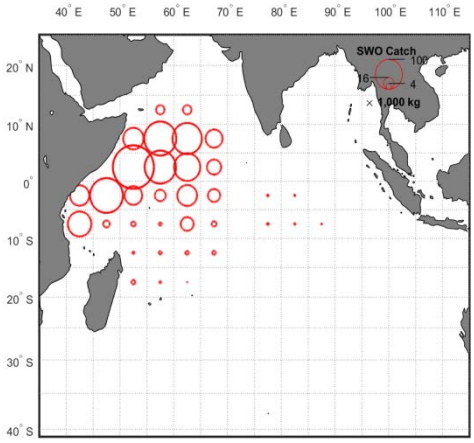
Deep-frozen BET 2015



Deep-frozen YFT 2015

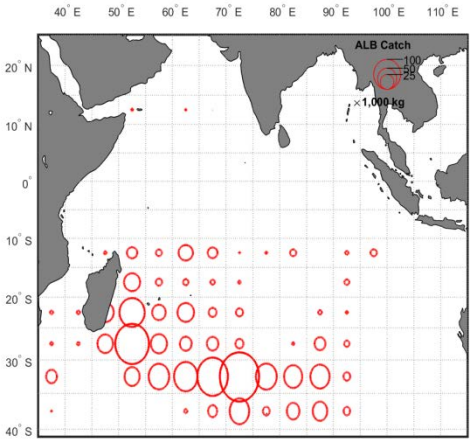


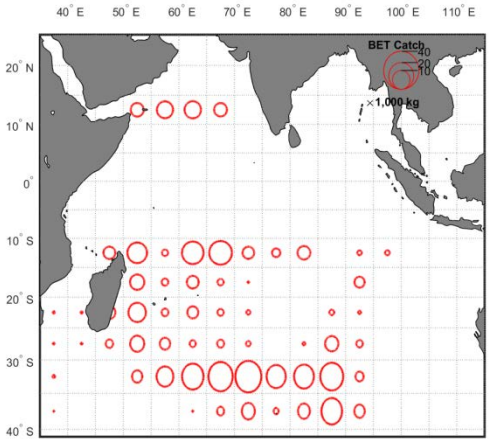
Deep-frozen SWO 2015



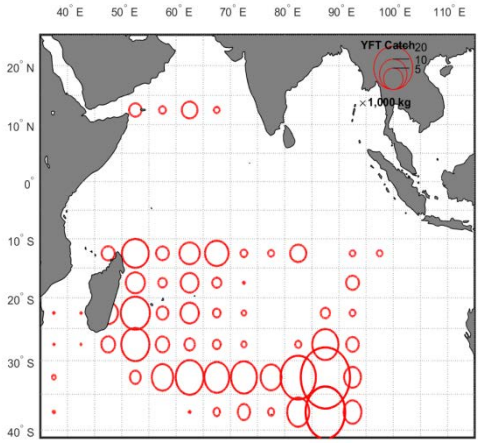
Ice-fresh ALB 2015

Ice-fresh BET 2015





Ice-fresh YFT 2015



Ice-fresh SWO 2015

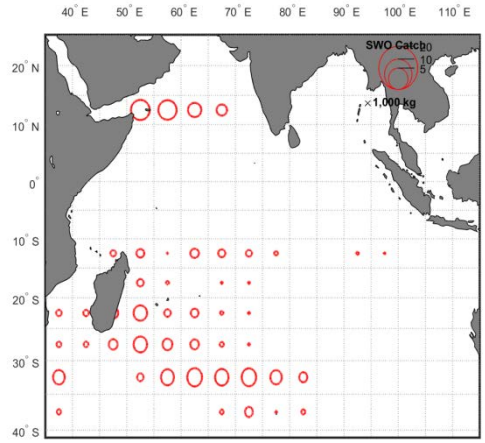
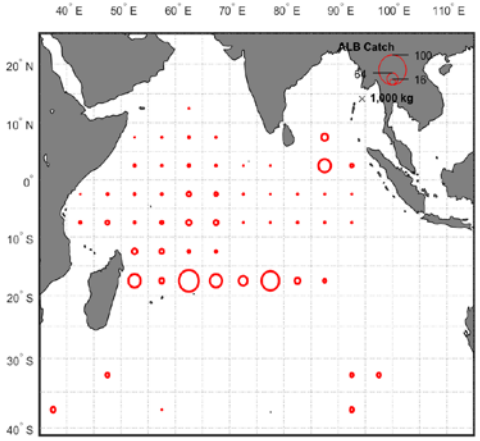


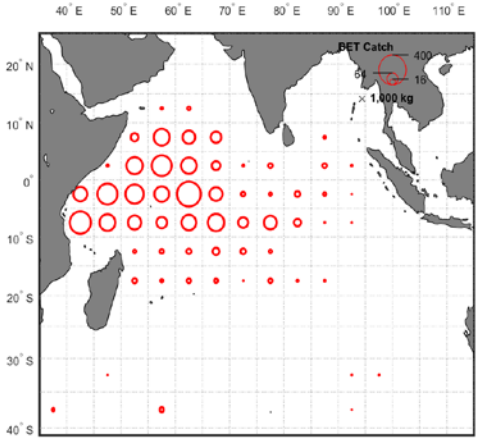
Figure 3b. Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence (average of the 5 previous years e.g. 2011–2015). **[Mandatory]**

Deep-frozen ALB 2011-2015

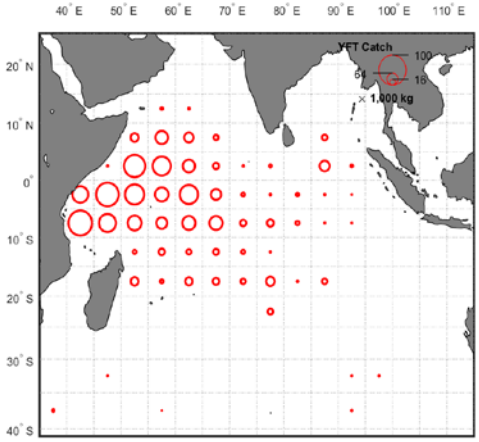
Deep-frozen BET 2011-2015



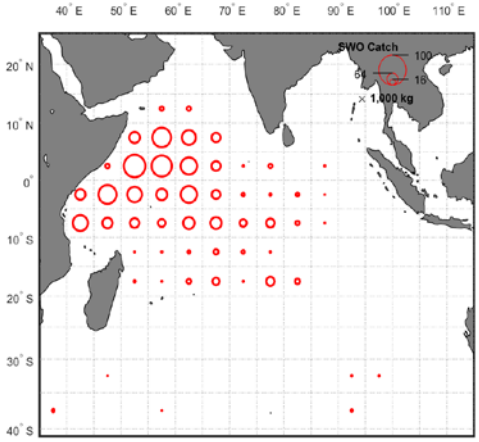
Deep-frozen YFT 2011-2015



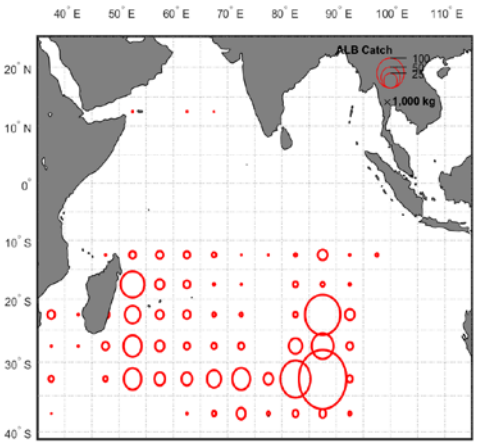
Deep-frozen SWO 2011-2015



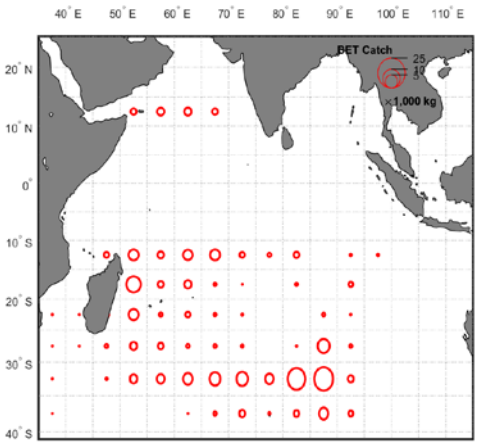
Ice-fresh ALB 2011-2015



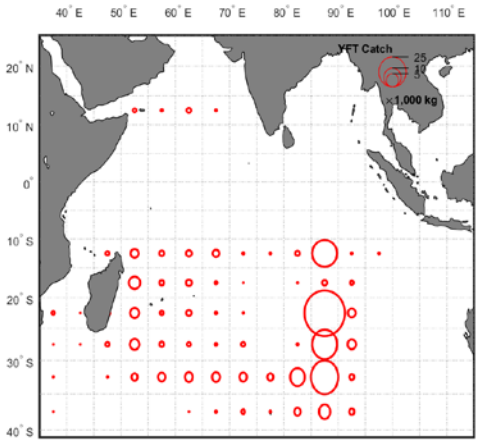
Ice-fresh BET 2011-2015

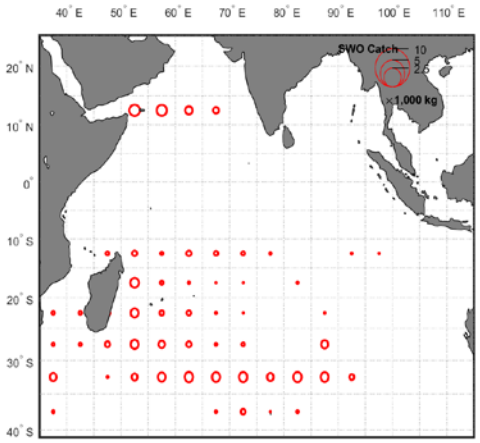


Ice-fresh YFT 2011-2015



Ice-fresh SWO 2011-2015





4. RECREATIONAL FISHERY [Mandatory]

No recreational fishing activities.

5. ECOSYSTEM AND BYCATCH ISSUES [Mandatory]

China is making its effort in contribution of data collection for ecosystem and bycatch issues in the Indian Ocean, based on our observer and logbook programs. Scientists and analysts from Shanghai Ocean University (SHOU) take a majority of work in China's tropical tuna and bycatch research in the Indian Ocean. Although not conducted yet, national plans of action for sharks and seabirds are under developments. China is also planning stock assessments using data-poor approaches for sharks. China has provided scientific data from its observer program and the data was used for biological study and ecological risk analysis for sharks. In accordance with various management resolutions, China is now enhancing its management and conservation measures for important bycatch species (i.e. sharks, seabirds and marine turtles), and involved in bycatch mitigation initiatives from ISSF and other international organizations. Sea turtle and seabird mitigation workshops have been held at Shanghai Ocean University in recent years.

5.1 Sharks [Mandatory]

China is developing a national plan of action for sharks. China is also collecting biological and ecological information based on longline observer program. Now, species-specific catch and effort data are being recorded in the logbook data collection. However, in consideration of fishermen's poor knowledge in species identification and workload onboard, complete recording species on the recommended list is hardly finished for them at least for the current years. And in this year, Key Sharks Species Posters were sent to each vessel to facilitate fisherman to identify shark species. With the development of species identification cards and manuals, this issue will be solved in the near future.

Table 3: Total number and weight of sharks, by species, retained by the national fleet in the IOTC area of competence (for the most recent five years at a minimum, e.g. 2011–2015). **[Mandatory]**

Table 3a Blue shark

Year	Gear	Catch (number)	Catch (kg)
2011	Deep LL	716	31547
2012	Deep LL	439	17560
2013	Deep LL	2120	72906
2014	Deep LL	2311	83401
2015	Deep LL	2533	93662

Table 3b Blue shark

Year	Gear	Catch (number)	Catch (kg)
2011	ICE LL	58	2529
2012	ICE LL	1630	48484
2013	ICE LL	1210	48825
2014	ICE LL	1005	36748
2015	ICE LL	1656	54041

Table 3c Oceanic whitetip shark

Year	Gear	Catch (number)	Catch (kg)
2011	Deep LL	1044	33559
2012	Deep LL	No data(unclassified)	No data(unclassified)
2013	Deep LL	No data (discarded)	No data (discarded)
2014	Deep LL	No data (discarded)	No data (discarded)
2015	Deep LL	1372(discarded)	41483(discarded)(est.)

Table 3d Oceanic whitetip shark

Year	Gear	Catch (number)	Catch (kg)
2011	ICE LL	13	501
2012	ICE LL	Not available	7768
2013	ICE LL	No data (discarded)	No data (discarded)
2014	ICE LL	No data (discarded)	No data (discarded)
2015	ICE LL	782 (discarded)	26317 (discarded)(est.)

Table 3e Shortfin mako shark

Year	Gear	Catch (number)	Catch (kg)
2011	Deep LL	910	34297
2012	Deep LL	132	6004
2013	Deep LL	928	36781
2014	Deep LL	239	10771
2015	Deep LL	231	11950

Table 3f Shortfin mako shark

Year	Gear	Catch (number)	Catch (kg)
2011	ICE LL	37	1108
2012	ICE LL	9932	66886
2013	ICE LL	1742	63574
2014	ICE LL	144	5268

2015	ICE LL	5	297

Table 4: Total number of sharks, by species, released/discarded by the national fleet in the IOTC area of competence (for the most recent five years at a minimum, e.g. 2011–2015). Where available, include life status upon released/discard. **[Desirable]**

This information was only available from observer data and has been submitted to IOTC Secretariat.

5.2 Seabirds [Mandatory]

Most of China tuna longline vessels are operating in the tropical areas of IOTC waters and there are no interactions with seabirds. No seabird mortality in the tropical water was observed by longline observers onboard. The ice-fresh longliners operated in the water south of 25° S might interact with seabirds, as observed by observers in previous years. Our observer trip reports contain the seabird interaction data and have been submitted to IOTC Secretariat. However, seabird interaction and mortality data have not been fully recorded in logbook due to the difficulty of species identification, although fishermen are required to record this information. Therefore, the total mortality is not estimable right now. All Chinese longline vessels operating in the water south of 25°S have been equipped with tori-line and most of fishing vessels set hooks at night.

5.3 Marine Turtles [Mandatory]

Observers are responsible for recording species specific interactions of marine turtles in longline fisheries, including number of caught, fate, and release status. No national plan of action for marine turtles is under development. No turtle mortality was observed by the observer in 2015. Similar to seabird, total mortality and interaction of sea turtles was not able to be estimated due to the lack of complete logbook data from the whole fleet. However, since 2008 each LL vessel has been equipped with sea turtle release devices, e.g., line cutters and de-hookers. Fishermen are required to handle carefully and release hooked or entangled turtles.

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

Observers are responsible for recording species specific interaction of marine mammals in longline fisheries, including number of caught, fate, and release status. No national plan of action for marine turtles is under development.

Table 5. Observed annual catches of species of special interest by species (seabirds, marine turtles and marine mammals) by gear for the national fleet, in the IOTC area of competence (for the most recent five years at a minimum, e.g. 2011–2015 or to the extent available). **[Mandatory]**

Table 5a Marine turtles

Year	Gear	Species	Catch (number)	Species	Catch (number)
2011	Deep LL		No mortality		
2012	Deep LL		No mortality		
2013	Deep LL		No mortality		
2014	Deep LL		No mortality		
2015	Deep LL		No mortality		

Table 5b Marine turtles

Year	Gear	Species	Catch (number)	Species	Catch (number)
2011	ICE LL		No mortality		
2012	ICE LL		No mortality		

2013	ICE LL	No mortality	
2014	ICE LL	olive ridley sea turtle1	
2015	ICE LL	No mortality	

Table 5c Marine mammals

Year	Gear	Species	Catch (number)	Species	Catch (number)
2011	Deep LL		No mortality		
2012	Deep LL		No mortality		
2013	Deep LL		No mortality		
2014	Deep LL		No mortality		
2015	Deep LL		No mortality		

Table 5d Marine mammals

Year	Gear	Species	Catch (number)	Species	Catch (number)
2011	ICE LL		No mortality		
2012	ICE LL		No mortality		
2013	ICE LL		No mortality		
2014	ICE LL		No mortality		
2015	ICE LL		No mortality		

6. NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS [Mandatory]

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

China started the pilot logbook data submission system in 2005 in order to obtain more detailed information about catch and fishing effort as required by the IOTC. In 2008 the Bureau of Fisheries, Ministry of Agriculture, required that all tuna fishing boats need to fill logbook and return to the Bureau of Fisheries. The Bureau also announced that implementation of logbook work will be considered as one of the main factors for renewing fishing permission and licenses. Under the support of China Overseas Fisheries Association (COFA) and cooperation of the tuna fishing companies, China's logbook system has been carried out smoothly as a normal data collection work. Since 2009, 100% logbook coverage for the longline fishery has been realized. So far about 85% of the logbooks have been returned to SHOU through the Bureau of Fisheries and Law Enforcement, Ministry of Agriculture. All the information of those logbooks has entered the national tuna fishery database in SHOU and is being processed by the tuna technical working group at SHOU. Preliminary analysis showed that the data quality of some logbook needs to be further improved. As indicated above, records of bycatch species in particular the low-value species are not of high quality.

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

All the Chinese longline vessels operating in the Indian Ocean have been equipped with VMS system. We started VMS on LL vessels since Oct 2006.

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

Under authorization by the Bureau of fisheries and Law Enforcement, Ministry of Agriculture, the SHOU has been in charge of the national tuna observer program in the Pacific Ocean, Atlantic Ocean and Indian Ocean. China began to implement tuna Scientific Observer programme in IOTC in 2002. The program has been carried out normally under the support of COFA. Observers have been dispatched each year since then, except for the year 2011 due to the piracy activity (the observer has been selected and trained). One observer was sent in 2015. Graduate/Senior students majoring in marine fisheries science & technology or marine fisheries resources from SHOU are chosen to take the task as scientific observers. Since 2016, China government has put much more funding to support the national observers program, which make recruit and train observers from other sources beyond SHOU. With the development of candidate observer database, it is predictable that more observers will be dispatched in the Indian Ocean. In 2015, the Bureau of Fisheries and Law Enforcement

approved the establishment of National Data Centre for Distant-water Fisheries of China in SHOU, which will greatly enhance the data quality and communication.

Table 6. Annual observer coverage by operation, e.g. longline hooks, purse seine sets (for the most recent five years at a minimum, e.g. 2011–2015 or to the extent available). **[Mandatory]**

Year	Gear	Hooks deployed	Number of observers	Hooks observed	Coverage (%)
2011	-	4,136,000	0	0	0
2012	Deep LL	11,295,050	1	218,520	2
2013	Deep LL	23,439,470	1	216,640	1
2014	ICE LL	19,212,540	2	178,413	1
2015	Deep LL	26,616,190	1	105,201	0.4%

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

There was only one observer trip conducted in 2015. The distribution of observed set location is shown in Figure 4. The observer worked on onboard longliner from November 2015 to February 2016. Details were described in the observer trip report submitted to the Secretariat.

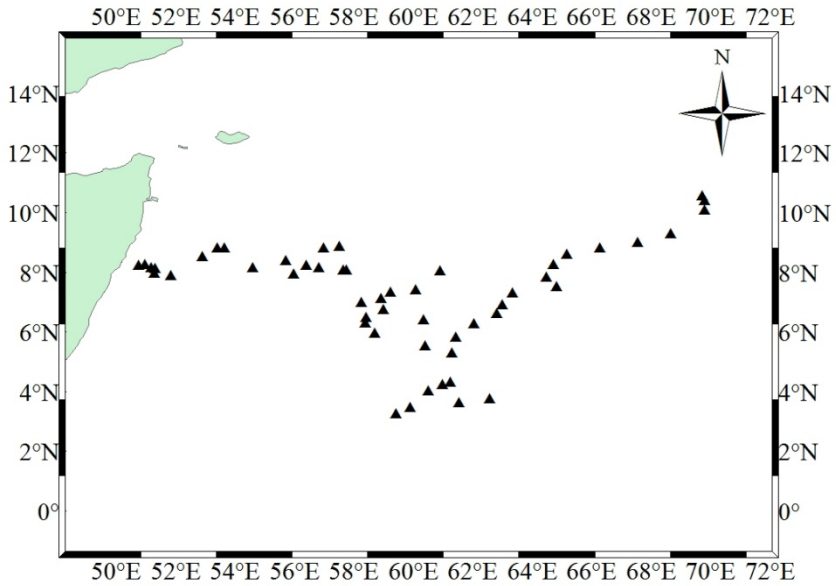


Figure 4 The longline operating sites during the 2015 observer trip

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

China has set up a port sampling program in early 2012. The program was designed for vessels which return and unload catch in domestic ports in China. Size and species composition are the main information to be collected from the program. The most difficult challenge is that pooled catch unloaded in port are lack of detailed capture information (e.g. catch date and position). In 2015, about 3500 individuals were measured from port sampling（Table 7）.

Table 7. Number of individuals measured, by species and gear from the port sampling in 2015 **[Mandatory]**

Species	Number of individuals measured	Fishing gear

Albacore	3387	Ice-fresh longline
Yellowfin tuna	58	Ice-fresh longline
Blue shark	88	Ice-fresh longline
Dolphinfish	35	Ice-fresh longline

6.5. Unloading/Transhipment [including date commenced and status of implementation] **[Mandatory]**

Table 8 Transhipment of China fleet in 2015 (at sea and in port)

Date of Transshipment	Species Transhipped at sea (Unit: metric ton)						
	Bigeye Tuna	**Yellowfin Tuna**	**Swordfish**	**MLS**	**ALB**	**SHARK**	**Others**
2015/1/10	37	15					
2015/1/10	35	15					
2015/1/5	48	9	3.7	0.15			
2015/1/4	45	11	4	1			
2015/1/2	67.639	17.155	5.967	0.171			
2015/1/3	74.354	12.023	6.645	0.075			
2015/1/6	75	17	4	0.2			
2015/1/4	50	11	4				
2015/1/11	37	9	4	1			
2015/1/9	33.675	21.918	2.132	0.04			
2015/1/9	34.239	14.107	3.499	0.27			
2015/1/13	35.19	4.95	0.68				
2015/1/18	46.663	3.821	0.619				
2015/1/14	40.881	4.376	0.631				
2015/1/14	38.57	5.129	0.727				
2015/1/12	32.698	3.062	1.261				
2015/1/15	31.995	4.663	1.239				
2015/1/22	73.63	25.507	5.918	0.361			
2015/2/15	83	12					
2015/2/13	101.968	19.147					
2015/2/12	45.867	15.58					
2015/1/23	59.078	18.692	5.075	0.225			
2015/1/24	53.851	18.12	5.891	0.288			
2015/4/17	50	19	43	2.5		4.727	29.341
2015/4/22	18.588	8.49	31.142	1.653			1.095
2015/4/19	32	14	40	1.6			0.203
2015/4/21	19.911	20.045	11.906	1.463			11.365
2015/4/20	30	25.33	11	1.184			0.69
2015/4/18	33	28	13	1.8			1.261
2015/4/24	50	17.699	8	2.023	0.25		
2015/4/23	43	25	9	1.6			4.7

2015/4/25					1.03	21.486	11.176
2015/4/24					1.51	23.975	7.828
2015/4/26	104.296	38.884	18	1.688	0.15	4.05	2.033
2015/4/25	39	12	10	1	0.33		14.123
2015/4/27	48.978	45.904	13.367	2.402			
2015/5/3	39.375	15.625					
2015/5/1	6.271	4.036	16.873	0.42	0.33		
2015/5/2	43.93	26.297	9.439	0.334			
2015/5/1	30.012	34.699	14.427	1.282			
2015/5/2	4.583	31.865	7.419	1.285			
2015/4/28	36.494	18.518					
2015/4/28	43.036	21.964					
2015/4/28	38.557	16.955					
2015/4/30	31.088	24.369					
2015/4/30	27.843	12.157					
2015/4/29	38.055	21.873					
2015/5/28	49.363	29.006	63.98				
2015/5/21	36.755	16.776	35.05	2.124	1.68		1.818
2015/5/21	25.953	15.305	12.685	0.644	0.49		0.696
2015/5/29	55.987	11.505	35.014	2.25			
2015/5/27	24.698	7.436		0.17			
2015/6/4	46	5.6	16	1			
2015/6/3	45	9	12	1			
2015/6/3	42	8	12	0.5			
2015/6/1	29	4	32	1.214			
2015/6/2	33	10	15	2			
2015/6/1	42	8	20	2			
2015/5/31	24.982	15.152	11.958	1.527			2.128
2015/9/9	36	1.328	11	0.186			1.492
2015/9/4	64	2.814	16	0.225	0.12		0.224
2015/9/5	63	4	13	0.8			0.66
2015/9/11	52	5.369	14	0.899	0.58		
2015/9/12	66	3	13	0.147	0.93		1.323
2015/9/17	56	5.618	15	0.324			3.114
2015/9/6	65	3.966	13	0.61			3.389
2015/9/9	32	7	8	0.345			1.596
2015/9/1	73.106	15.66	33.386	1.346	1.43		3.997
2015/9/21	117.977	26.981	25.439	1.3	3.99		
2015/9/19	125.687	33.441	11.563	0.215	0.38		0.974
2015/9/7	141.227	41.18	19.563	1.371	0.3		0.179
2015/9/23	129.041	21.128	15.404	0.135			28.184
2015/9/20	152.702	18.027	13.112	0.386	1.53		
2015/9/24	147.591	16.893	12.968	0.38	0.67		0.561
2015/9/16	30						
2015/9/13	61.798	19.231	39.361	2.735	0.32		1.496
2015/9/16	15		15				

2015/9/14	55.107	19.959	46.577	0.752	0.89		2.656
2015/9/15	61.009	14.587	23.187	1.084	0.65		0.838
2015/9/12	40	20					
2015/12/8	55	27					
2015/12/10	43	12					
2015/12/11	34	16					
2015/12/10	49	15					
2015/12/9	38	20					
2015/12/12	32	18					
2015/12/12	30	20					
2015/12/12	45	10					
2015/12/27	41.441	4	1.2				8.061
42363	21.765	1.215	5.163	0.556			12.773
2015/12/26	23.023	16.976	7.49	0.55			0.539
2015/12/25	32.114	1.413	6.186				6.988
2015/12/27	15.672	17.068	5.952	0.099			0.02
2015/12/26	33.911	16.407	0.53				
2015/12/28	38.274	12.968	3.554	0.404			
2015/12/28	51.036	9.982					
2015/12/29	16	6					
2015/12/30	61.89	35.856	47.704	1.575			18.197
2015/12/31	66.279	22.745	33.933	1.719			
2016/1/1	59.647	24.371	59.71	0.481			3.604
2016/1/3	45.95	24.85	14.2				
2016/1/2	58.147	29.186	3.8	0.207			5.508
2015/12/28	41	26.5	13.2	3.6			5.7

Date of Transshipment	**Port Name**	**Species Transshipped in port (Unit: metric ton)**						
		BET	**YFT**	**MLS**	**SWO**	**ALB**	**Sharks**	**Others**
2015/5/18	SINGAPORE	22.108	32.056	1.795	9.82	1.087		3.698

7. NATIONAL RESEARCH PROGRAMS [Desirable]

China has launched a couple of domestic research projects regarding tuna fisheries and stock status of key species in the Indian Ocean, which are funded by different sources (e.g. Shanghai Municipal Education Commission, and Bureau of Fisheries and Fishery Law Enforcement, Ministry of Agriculture). **Table 9** shows a representative project. Besides of these specific projects, scientists from Shanghai Ocean University are collecting and analyzing biological and size composition data based on national longline observer program.

Table 9. Summary table of national research programs, including dates.

Project title	Period	Countries involved	Budget total	Funding source	Objectives	Short description
Research on population dynamics for bycatch species in the Indian Ocean	2014-2017	China	5,000 $	Bureau of Fisheries and Fishery Law Enforcement	Evaluate population dynamics of sharks using data poor approaches, with focus on blue shark	On going, paper being prepared

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

Table 10. Respond with progress made to recommendations of the SC and specific Resolutions relevant to the work of the Scientific Committee [to be updated annually to include most recent Conservation and Management Measures adopted by the Commission].

Res. No.	Resolution	Scientific requirement	CPC progress
05/01	On Conservation and Management Measures for Bigeye tuna		
05/05	Concerning the conservation of sharks caught in association with fisheries managed by IOTC	Paragraphs 1, 3, 4, 7, 9	Paragraph 1- China is reporting bycatch estimates for commonly captured sharks. Paragraph 3- China is requiring full utilisation of sharks captured by all longline vessels operation in the IOTC areas. Most vessels have no problem with this CMM. Paragraph 4- The 5 % ratio strategy was being implemented on Chinese longline vessels. Paragraph 7- China is encouraging fishermen to release any sharks captured. Paragraph 9- China is making effort to collect biological (in particular reproductive info.) data through its observer program. However, sample size from IO was small, compared with the Pacific Ocean.
11/04	On a regional observer scheme	Paragraph 2, 5, 10-11	Paragraphs 2, 5, 10-11- China is implementing the observer program and trying to fulfil the 5% coverage in the coming years. The template of data collection of the observer program is consistent with this CMM. Detailed data of each observer trip has been submitted to IOTC secretariat.
12/04	On the conservation of marine turtles	Paragraphs 3, 4, 6–8	Paragraph 3-4- Interactions with marine turtles have been recorded and reported by observers. Paragraph 6- Fishermen are required to help recover marine turtle captured and release. De-hooking techniques and guideline have been equipped onboard fishing vessels. Paragraph 8- Line cutters and de-hookers are in place onboard longliner. The fishing operators are required to hand and promptly release marine turtles caught or entangled, in accordance with IOTC Guidelines. Marine Turtle Identification Cards were distributed among fleet.
12/06	On reducing the incidental bycatch of seabirds in longline fisheries	Paragraphs 1,3,5–7	Paragraph 1- Seabird interactions are recorded by observers, but not on species levels. Paragraph 3-Implementation of seabird conversation measures is documented in the national report. Paragraphs 5-7, All the Chinese longline vessels operating in the area south of 25 degrees South latitude are required to comply with this CMM, most vessels using tori-line and night-setting. The design of tori-line follows the standard

Res. No.	Resolution	Scientific requirement	CPC progress
			of this measure.
12/09	On the conservation of thresher sharks (family alopiidae) caught in association with fisheries in the IOTC area of competence	Paragraphs 4,6,7–8	Paragraph 4- Fishermen are required to record and report incidental catches of thresher sharks in logbooks. Paragraph 6- This kind of information are required to be collected in observer program. Paragraph 7- Specific project or biological sampling for tissues (vertebrae, reproductive tracts, stomachs, etc.) has not been set up for thresher sharks by now. Paragraph 8- China has submitted partial catch data on sharks.
14/06	On establishing a programme for transhipment by large-scale fishing vessels	Paragraphs 2,4,6,7,9,10,17,19,20	Paragraph2-Chinese LSTVs comply with the required notification obligations when transhipping in port. Paragraph4-China authorised their LSTLV to transhipat sea in accordance with the required procedure. Paragraph 6- China has submitted required information to the secretariat for the carrier vessels that are authorised to receive at-sea transhipments from its LSTLVs in the IOTC area of competence. Paragraph 7- China has notified the IOTC Executive Secretary of any addition to, any deletion from and/or any modification of the IOTC Record at any time such changes occur. Paragraph 9-China does not have carrier vessel in IOTC. Paragraph 10- China takes the necessary measures to ensure that LSTLVs have obtained prior authorization, notify the required information to China at least 24 hours in advance of an intended transshipment. Paragraph 17-China does not have carrier vessel in IOTC. Paragraph 19-China takes the Statistical Document programs to ensure the effectiveness of the IOTC CMM. Paragraph 20-China has submitted the report to the IOTC Executive Secretary before 15 September 2016.
15/01	On the recording of catch and effort by fishing vessels in the IOTC area of competence	Paragraphs 2,3,4,10	Paragraph 2-3-China has its data collection program including aggregated catch and effort, logbook, observer data based on minimum standard required by the CMM. Paragraph 4-The template of logbook has been submitted. Paragraph 10-China has provided aggregated catch and effort data by 30th June as required by the CMM. The data was based on the catch statistics reported by each fishing company, rather than the standard logbook, which is still being improved in quality.
15/02	Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs)	Paragraphs 2,3,4,5,7	Paragraph 2- China has provided total catch by species and gear for tunas, billfishes, two shark species (BSH, SMA), and others. Paragraph 3- China has provided information about interaction with its longline fishery based on observer data. Paragraph 4- China has provided catch and effort by species and gear (Deep LL and Ice LL) for tunas, billfishes, and common shark species (BSH, SMA) by 5° area grid on monthly base. Paragraph 5- China has provided size data for main species based on observer data, although the current observer coverage is less than 5%. Paragraph 7- Data has been submitted before deadline.
15/04	Concerning the IOTC record of vessels authorised to operate in the IOTC area of	Paragraphs 2,3,5,7-10,12-16	Paragraph 2-China has submitted required registration information to the secretariat for AFVs that are authorised

Res. No.	Resolution	Scientific requirement	CPC progress
	competence		to operate in the IOTC area of competence. Paragraph 3-China has submitted an updated template of the official authorisation to fish outside National Jurisdictions with information concerning these ATF. Paragraph 5-China has notified the IOTC Executive Secretary of any addition to, any deletion from and/or any modification of the IOTC Record at any time such changes occur. Paragraph 7- China takes necessary measures to ensure our AFVs comply with all the relevant IOTC CMMs. Paragraph 8- China reviews our AFVs performance yearly and takes necessary punitive actions and sanctions to vessels and owners violating the relevant IOTC CMMs according to our domestic law. Paragraph 9-China takes measures to prohibit the fishing for, the retaining on board, the transshipment and landing of tuna and tuna-like species by the vessels which are not entered into the IOTC Record. Paragraph 10-China will notify the IOTC Executive Secretary of any factual information showing that there are reasonable grounds for suspecting vessels not on the IOTC Record to be engaged in fishing for and/or transshipment of tuna and tuna-like species in the IOTC area of competence. Paragraph 12-China has communicated with the Commission and the other CPCs to develop and implement appropriate measures. Paragraph 13-All Chinese fishing vessel carry on board documents issued and certified by the competent authority license, including information like vessel name, registered port, registered number, international call sign, names and addresses of owners, overall length and engine power. Paragraph 14- All Chinese fishing vessels authorised to fish in the IOTC area of competence are marked in accordance with FAO Standard Specification for the Marking Identification of Fishing vessels. Paragraph 15- China takes necessary measures to ensure that each gear used by its fishing vessels authorised to fish in the IOTC area of competence is marked appropriately Paragraph 16- A bound fishing national logbook has been kept on board the Chinese vessel for a period of at least 12 months.
15/11	on the implementation of a limitation of fishing capacity of contracting parties and cooperating non-contracting parties	Paragraphs 1,5,7	Paragraph1-China has notified to the IOTC Secretariat the lists of vessels which have actively fished for tropical tunas during the year 2006 and for albacore during the year 2007. Paragraph5-All vessels transferred to IOTC area under the limitation of fishing capacity of China are on the IOTC Record of Vessels. Paragraph7-China has introduced and implemented the Fleet Development Plan accordingly.

9. LITERATURE CITED [Mandatory]

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