



[China] National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2017

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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 30/06/2017
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 fleets to catch tuna and tuna-like species in the IOTC waters. The total number of Chinese longline vessels operated in the IOTC waters in 2016 was 67. The number of active deep-frozen longline vessels increased from 46 in 2015 to 54 in 2016. The tropical tunas catch (bigeye and yellowfin tuna) of Chinese longline fleet in 2016 was estimated at 5,898 MT, 624 MT lower than that in 2015 (6,522 MT). The number of ice-fresh longline vessels increased from 7 in 2015 to 13 in 2016. The albacore longline catch for 2016 was estimated at 1,920 MT, about 4.2% higher than in 2015 (1,843 MT). Both the logbook and observer programs are being implemented for the Chinese longline fleets. In 2016, four scientific observers were deployed on board longline vessels, and collected the data for both targeted and bycatch species as required.

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 vessels were recorded at the peak time in 1998, which mainly consisted of small non-professional fishing vessels reconstructed from trawlers or gill-netters originally operated along China coastal waters. After 1998 the number of fishing vessels began to reduce due to poor management, low economic performance and shift of fishing ground to other oceans. The total number of tuna fishing vessels registered with the IOTC Secretariat was reduced to 93 in 2001 and further cut down to 63 in 2002. The number of active fishing vessels was reduced from 46 in 2008 to 32 in 2009 due to the piracy in the relevant areas, of which 27 belong to the large-size deep-frozen longliners. Before 2008 the deep-frozen tuna longliners usually operated in waters between 40 °E ~ 90°E and 20°N ~ 40°S. Since 2009, most of the deep-frozen fishing effort shifted to the southern Indian Ocean owing to the piracy. The number of deep-frozen longliners was 15 and 10 in 2010 and 2011, respectively. During 2012 and 2013, more deep-frozen longliners returned to the tropical western Indian Ocean and reached a total of 31 active deep-frozen longliners. The number of active deep-frozen longline vessels was 54 in 2016 (**Table 1**).

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 54 in 2016, while the number of ice-fresh longliners was 13 in 2016.

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
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
2016	Deep LL	GRT over 250	54
	Ice LL	GRT 250- 400	13

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

Annual catch by species 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 2016 was 11.7% lower than that in 2015. The Ice LL effort in 2016 was almost constant compared to the last year.

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

Table 2a Albacore caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	Deep LL	7310	7
2013	Deep LL	19992	18
2014	Deep LL	15262	22
2015	Deep LL	21437	359
2016	Deep LL	18929	210

Table 2b Albacore caught by Chinese ice-fresh longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	ICE LL	3985	1828
2013	ICE LL	3447	993
2014	ICE LL	3950	1409
2015	ICE LL	5178	1484
2016	ICE LL	5177	1709

Table 2c Bigeye tuna caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	Deep LL	7310	2404
2013	Deep LL	19992	4274
2014	Deep LL	15262	3723
2015	Deep LL	21437	4427
2016	Deep LL	18929	3770

Table 2d Bigeye tuna caught by Chinese ice-fresh longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	ICE LL	3985	1
2013	ICE LL	3447	37
2014	ICE LL	3950	139
2015	ICE LL	5178	303
2016	ICE LL	5177	316

Table 2e Yellowfin tuna caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	Deep LL	7310	308
2013	Deep LL	19992	669
2014	Deep LL	15262	882
2015	Deep LL	21437	1552
2016	Deep LL	18929	1569

Table 2f Yellowfin tuna caught by Chinese ice-fresh longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	ICE LL	3985	230
2013	ICE LL	3447	253
2014	ICE LL	3950	196
2015	ICE LL	5178	240
2016	ICE LL	5177	244

Table 2g Swordfish caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	Deep LL	7310	204

2013	Deep LL	19992	562
2014	Deep LL	15262	616
2015	Deep LL	21437	1328
2016	Deep LL	18929	1142

Table 2h Swordfish caught by Chinese ice-fresh longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	ICE LL	3985	<1
2013	ICE LL	3447	6
2014	ICE LL	3950	8
2015	ICE LL	5178	49
2016	ICE LL	5177	34

Table 2i Blue marlin caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	Deep LL	7310	89
2013	Deep LL	19992	226
2014	Deep LL	15262	88
2015	Deep LL	21437	270
2016	Deep LL	18929	915

Table 2j Blue marlin caught by Chinese ice-fresh longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	ICE LL	3985	<1
2013	ICE LL	3447	<1
2014	ICE LL	3950	23
2015	ICE LL	5178	28
2016	ICE LL	5177	11

Table 2k Striped marlin caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	Deep LL	7310	58
2013	Deep LL	19992	170
2014	Deep LL	15262	70
2015	Deep LL	21437	102
2016	Deep LL	18929	414

Table 2l Striped marlin caught by Chinese ice-fresh longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	ICE LL	3985	<1
2013	ICE LL	3447	<1
2014	ICE LL	3950	14
2015	ICE LL	5178	21
2016	ICE LL	5177	11

Table 2m Black marlin caught by Chinese deep-frozen longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	Deep LL	7310	9
2013	Deep LL	19992	10
2014	Deep LL	15262	8
2015	Deep LL	21437	27
2016	Deep LL	18929	8

Table 2n Black marlin caught by Chinese ice-fresh longliners

Year	Gear	Effort (1000 hooks)	Catch (MT)
2012	ICE LL	3985	3
2013	ICE LL	3447	1

2014	ICE LL	3950	2
2015	ICE LL	5178	16
2016	ICE LL	5177	5

Figure 1. Historical annual catch by gear and primary species in the IOTC area of competence (2007-2016).

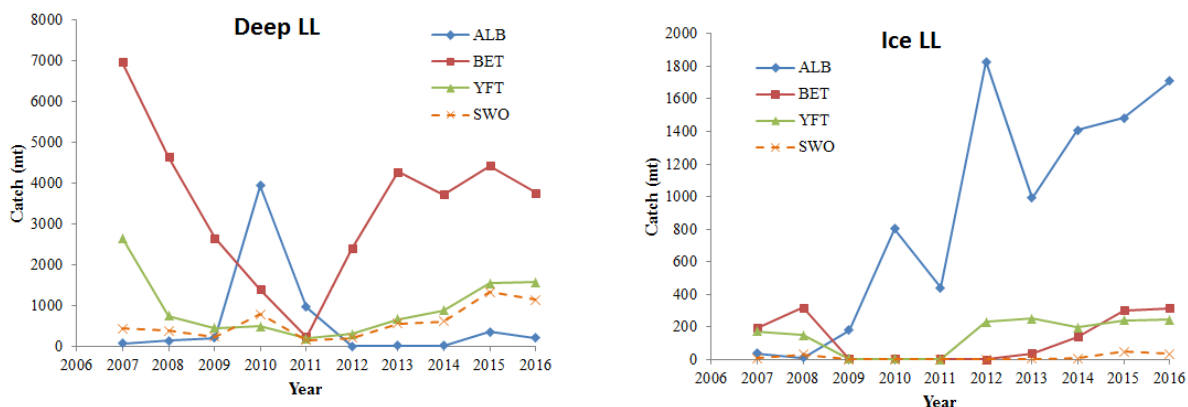


Figure 2a. Distribution of fishing effort by gear type in the IOTC area of competence in 2016

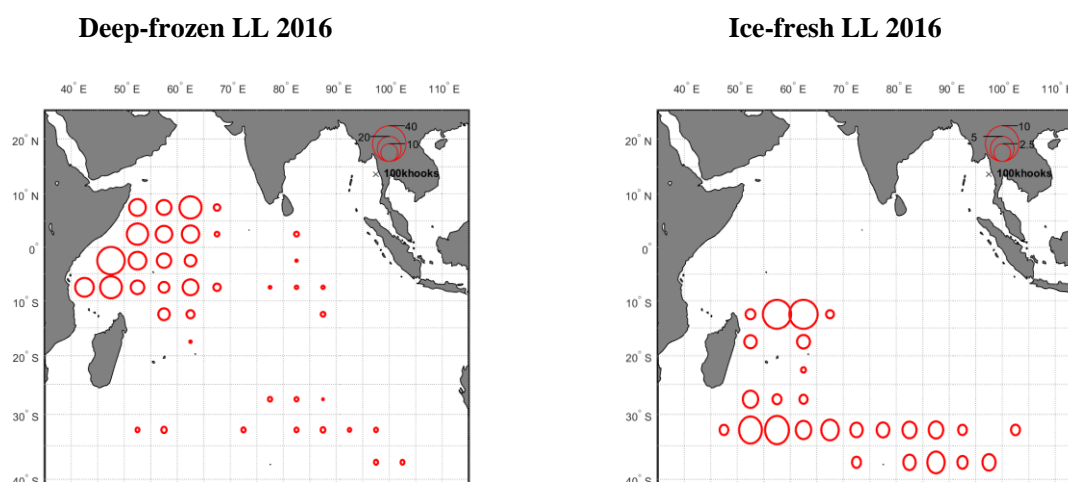


Figure 2b. Distribution of average fishing effort of 2012-2016 by gear type in the IOTC area of competence

Deep-frozen LL 2012-2016

Ice-fresh LL 2012-2016

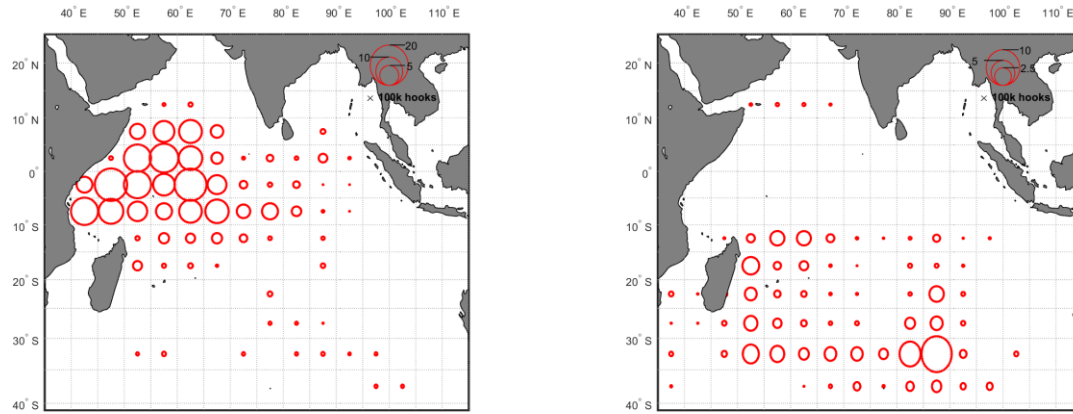
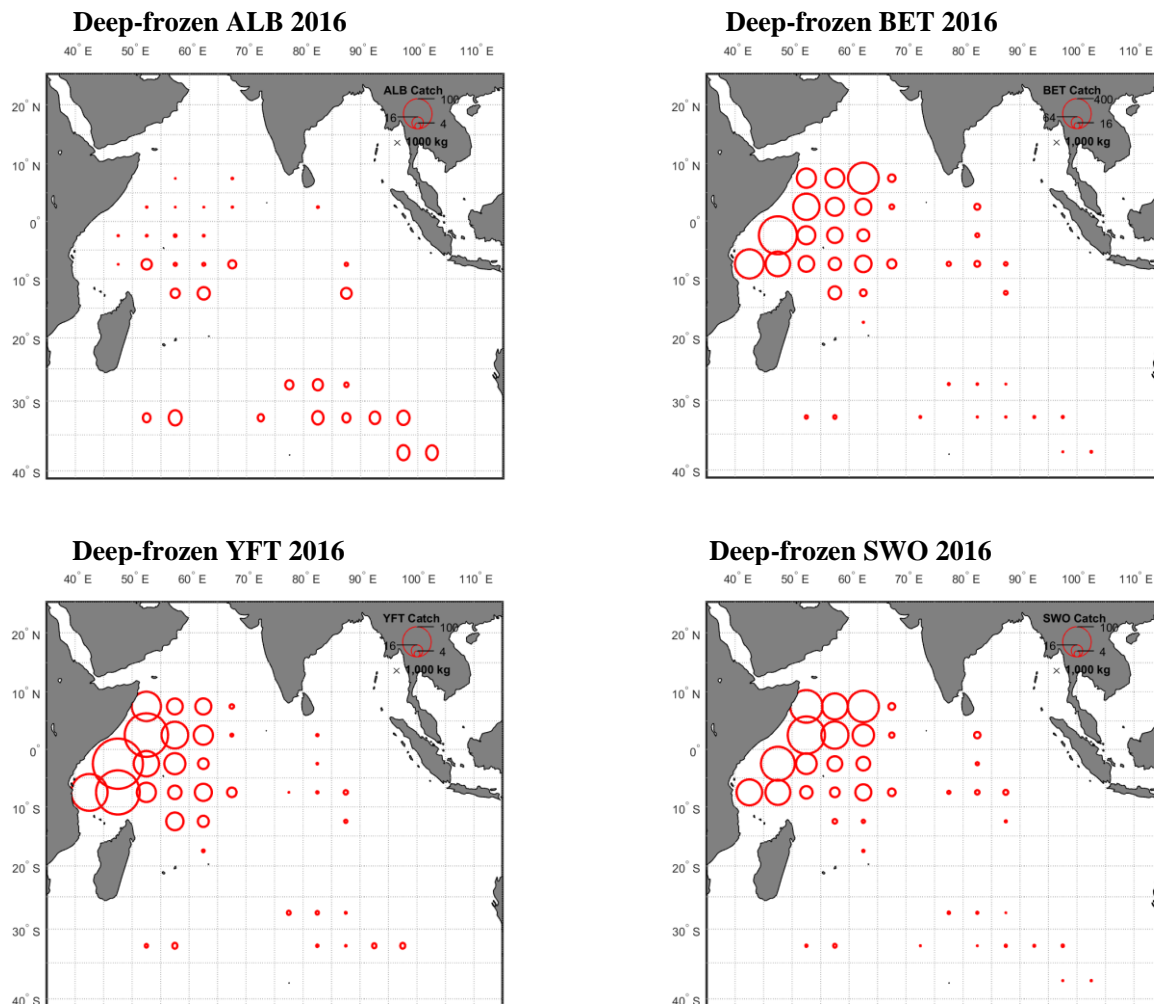


Figure 3a. Distribution of longline catch by gear type and species in the IOTC area of competence in 2016



Ice-fresh ALB 2016

Ice-fresh BET 2016

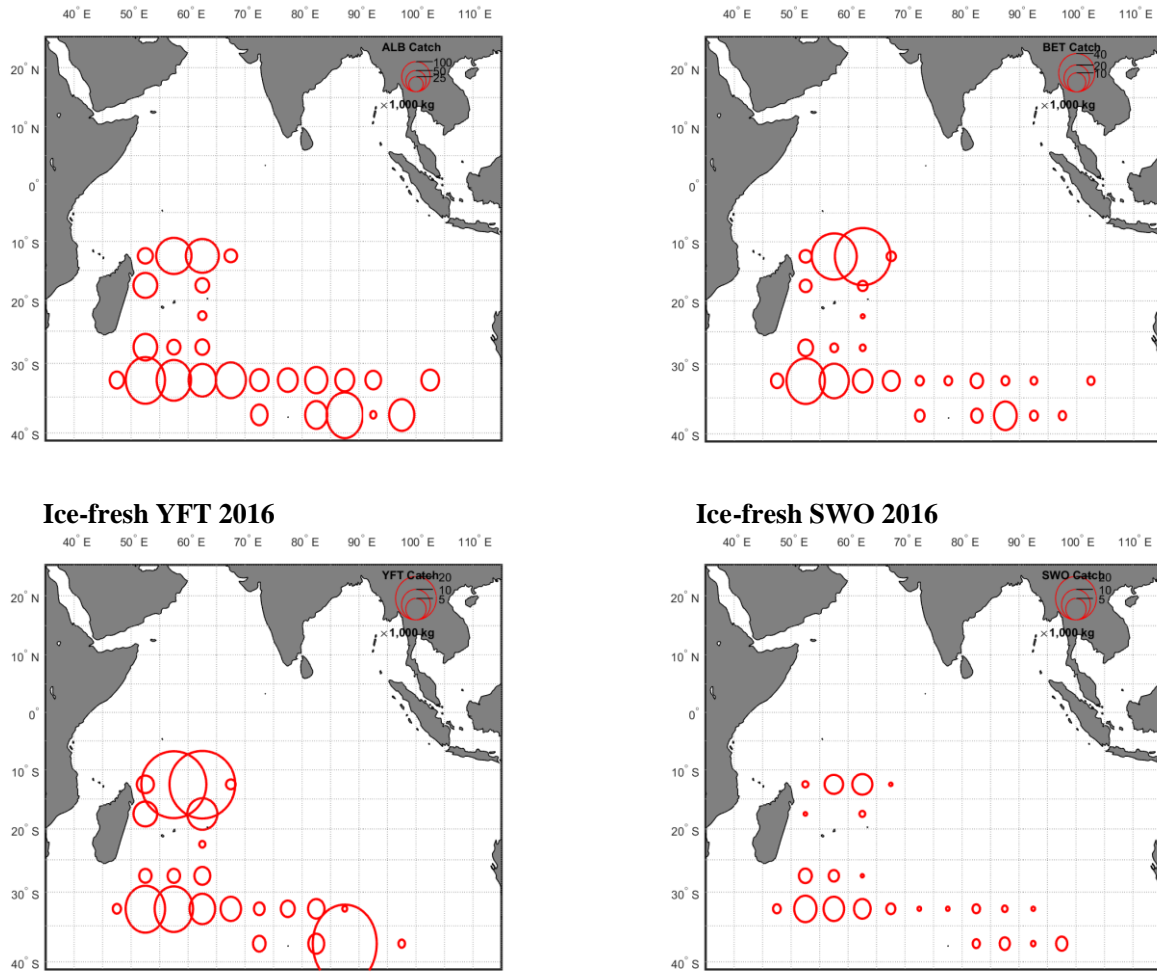
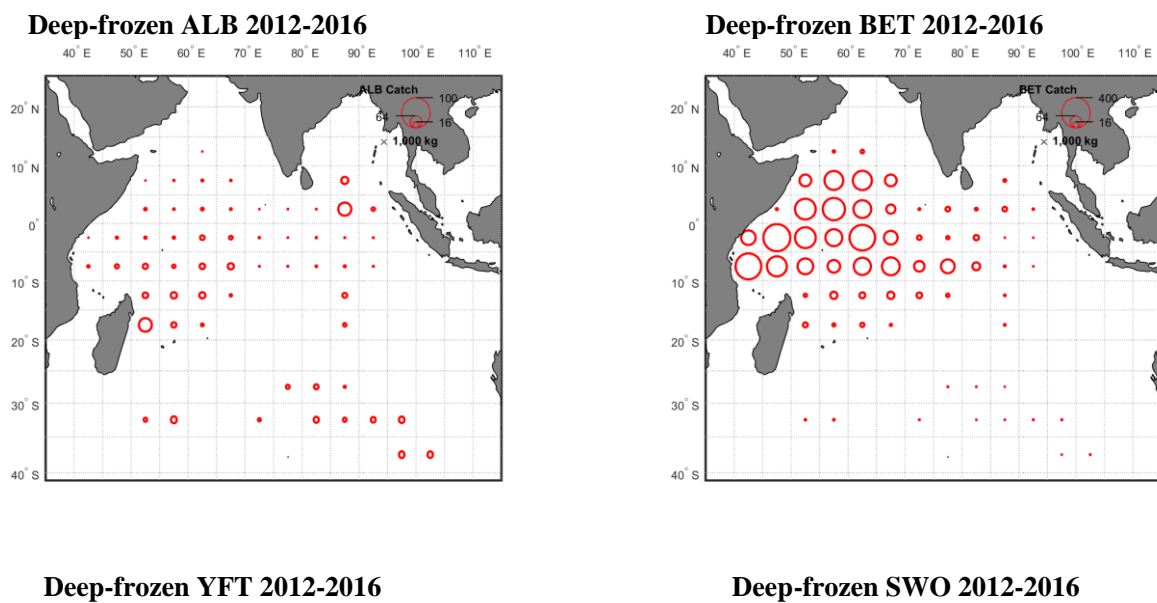
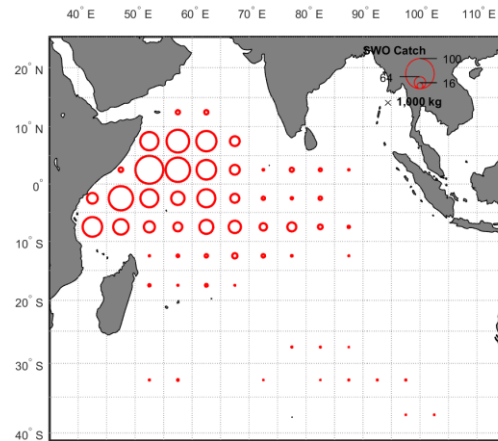
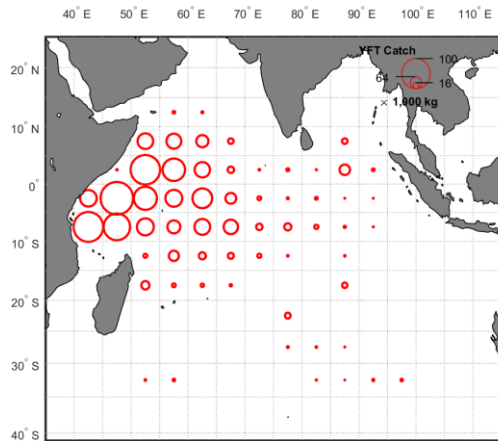
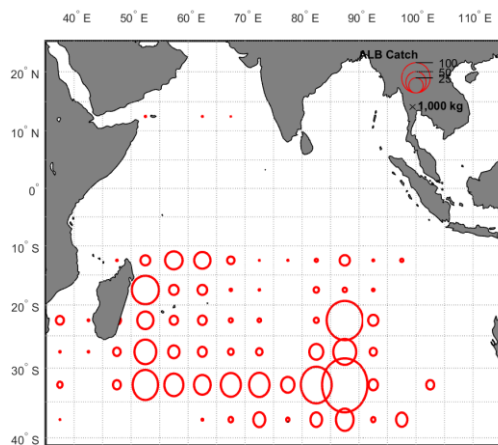


Figure 3b. Distribution of longline catch by gear type and species for the national fleet in the IOTC area of competence (average of 2012-2016)

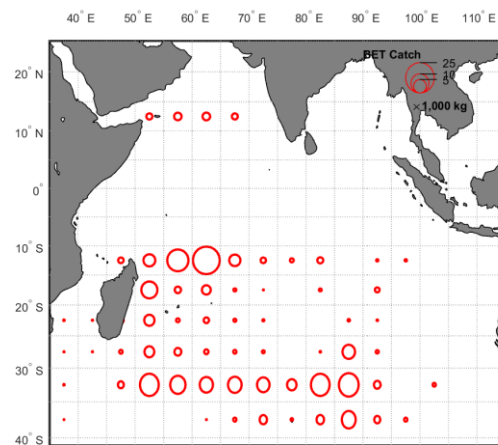




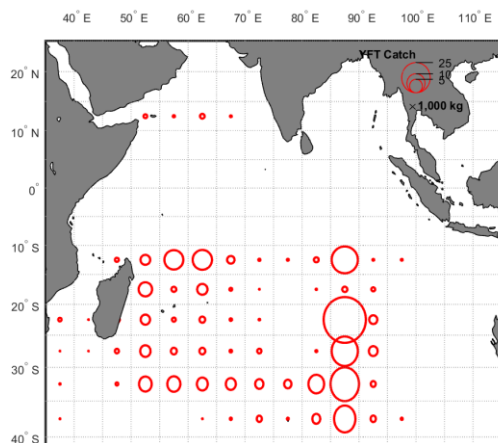
Ice-fresh ALB 2012-2016



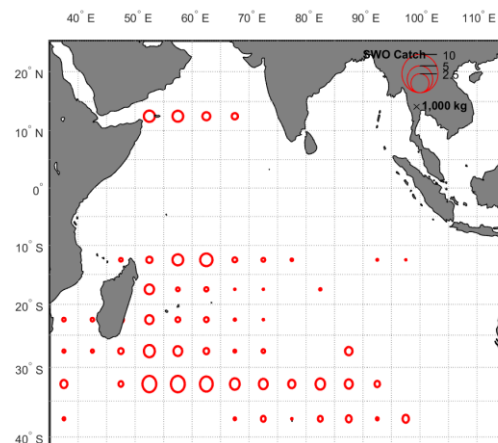
Ice-fresh BET 2012-2016



Ice-fresh YFT 2012-2016



Ice-fresh SWO 2012-2016



4. RECREATIONAL FISHERY

No recreational fishing activities.

5. ECOSYSTEM AND BYCATCH ISSUES

China is making its effort in making contribution of data collection for ecosystem and bycatch issues in the Indian Ocean, based on our observer and logbook programs. Scientists and analysts from the Shanghai Ocean

University (SHOU) take a major responsibility in China's tropical tuna and bycatch research in the Indian Ocean. A national plan of action for sharks and seabirds is currently under development. China is also planning stock assessments using data-poor approaches for sharks. China has provided scientific data from its observer program and the data were 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 the Shanghai Ocean University in recent years.

5.1 Sharks

China is developing a national plan of action for sharks. China is also collecting biological and ecological information based on longline observer program. Species-specific catch and effort data are currently being recorded in the logbook. However, in consideration of fishermen's poor knowledge in species identification and workload onboard, complete recording species on the recommended list is hardly finished at least for the recent years. In the current 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 resolved in the very near future.

Table 3: Total number and weight of sharks by species retained in the IOTC area of competence (2007-2016).

Table 3a Blue shark			
Year	Gear	Catch (number)	Catch (kg)
2007	Deep LL	No data	108000
2008	Deep LL	6965	314552
2009	Deep LL	5009	239394
2010	Deep LL	2410	100282
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
2016	Deep LL	406	13821

Table 3b Blue shark			
Year	Gear	Catch (number)	Catch (kg)
2007	ICE LL	No data	4000
2008	ICE LL	452	26743
2009	ICE LL	64	2060
2010	ICE LL	56	1818
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
2016	ICE LL	968	35214

Table 3c Oceanic whitetip shark			
Year	Gear	Catch (number)	Catch (kg)
2007	Deep LL	No data(unclassified)	No data(unclassified)
2008	Deep LL	No data(unclassified)	No data(unclassified)
2009	Deep LL	1346	55839

2010	Deep LL	5125	160026
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)
2016	Deep LL	293(discarded)	No data (discarded)

Table 3d Oceanic whitetip shark

Year	Gear	Catch (number)	Catch (kg)
2007	ICE LL	No data(unclassified)	No data(unclassified)
2008	ICE LL	No data(unclassified)	No data(unclassified)
2009	ICE LL	0	0
2010	ICE LL	7	282
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)
2016	ICE LL	257 (discarded)	No data (discarded)

Table 3e Shortfin mako shark

Year	Gear	Catch (number)	Catch (kg)
2007	Deep LL	Not available	32414
2008	Deep LL	1705	57177
2009	Deep LL	1969	72072
2010	Deep LL	3100	120826
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
2016	Deep LL	1047	40410

Table 3f Shortfin mako shark

Year	Gear	Catch (number)	Catch (kg)
2007	ICE LL	Not available	2341
2008	ICE LL	148	7716
2009	ICE LL	80	3246
2010	ICE LL	47	1996
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
2016	ICE LL	135	3638

Table 4: Total number of sharks, by species, released/discarded in the IOTC area of competence (2012-2016). Where available, include life status upon released/discard.

We are unable to provide estimates of total discard and release status since this information was not routinely recorded in the current logbook.

5.2 Seabirds

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 operating in the water south of 25°S might interact with seabirds, as observed by observers in previous years. However, seabird interaction and mortality data have not been fully recorded in logbook, although fishermen are required to record this information. Therefore, the total mortality is not estimable at present. Mitigation measures on Chinese longline fleet are being implemented according to the management measures, bird-scaring lines, night-setting, and line weighting.

5.3 Marine Turtles

Observers are responsible for recording species-specific interactions of marine turtles in longline fisheries, including number of turtles caught, their fates, and release status. No national plan of action for marine turtles is under development. Five sea turtles were observed by the observers in 2016. Similar to seabird, total mortality and interaction of sea turtles cannot be estimated due to the lack of the complete information for the whole fleet.

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

Observers are responsible for recording species-specific interaction of marine mammals in longline fisheries, including number of species caught, their fate, and release status. No national plan of action for marine mammals 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 (2012-2016).

Table 5a Marine turtles

Year	Gear	Species	Catch (number)	Species	Catch (number)	Species	Catch (number)
2012	Deep LL		No mortality				
2013	Deep LL		No mortality				
2014	Deep LL		No mortality				
2015	Deep LL		No mortality				
2016	Deep LL	Leather back	2	Olive Ridley	2	Green turtle	1

Table 5b Marine turtles

Year	Gear	Species	Catch (number)	Species	Catch (number)	Species	Catch (number)
2012	ICE LL		No mortality				
2013	ICE LL		No mortality				
2014	ICE LL	olive ridley	1				
2015	ICE LL		No mortality				
2016	ICE LL		No mortality				

Table 5c Marine mammals

Year	Gear	Species	Catch (number)	Species	Catch (number)	Species	Catch (number)
2012	Deep LL		No mortality				
2013	Deep LL		No mortality				
2014	Deep LL		No mortality				
2015	Deep LL		No mortality				
2016	Deep LL		No mortality				

Table 5d Marine mammals

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

2014	ICE LL		No mortality				
2015	ICE LL		No mortality				
2016	ICE LL		No mortality				

6. NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS

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 2006 the Bureau of Fisheries, Ministry of Agriculture, required all tuna fishing vessels to fill logbook and return to the Bureau of Fisheries. The Bureau also announced that implementation of logbook program would 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 developed and implemented smoothly as a regular monitoring program. Since 2009, 100% logbook coverage for the longline fishery has been achieved. So far about 85% of the logbooks have been returned to the SHOU through the Bureau of Fisheries and Law Enforcement. All the information of those logbooks has entered into the national tuna fishery database at SHOU and is being processed by the Tuna technical working Group located at SHOU. Preliminary analyses showed that the data quality of some logbook needs to be further improved. As indicated above, records for bycatch species, low-value species in particular, 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 the VMS system.

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. So far, the program has been implemented successfully with the support of COFA. Observers have been dispatched each year since then, except the year 2011 due to the piracy activity (even though the observer had been selected and trained). In 2016, in order to further promote the normalization, institutionalization and reutilization of the national distant water fisheries observers, the Ministry of Agriculture formulated the implementation rules of national distant-water fisheries observer management. Since then, the government of China has put much more funding to support the implementation of national observers program and a series of reforms has taken place in recruitment, training, and dispatching and management of the observers. The development of national observer database and open recruitment of the observers from the general public guarantee the numbers required to meet the coverage. Four observers were sent in 2016. It is expected that more observers will be dispatched in the Indian Ocean in the future.

Table 6. Annual observer coverage by operation, e.g., longline hooks, purse seine sets (2012-2016).

Year	Gear	Hooks deployed	Number of observers	Hooks observed	Coverage
2012	Deep LL	11,295,050	1	218,520	1.93%
2013	Deep & ICE LL	23,439,470	1	216,640	0.92%
2014	Deep & ICE LL	19,212,540	2	178,413	0.93%
2015	Deep & ICE LL	26,616,190	1	105,201	0.40%
2016	Deep & ICE LL	24,107,147	4	1,206,736	5.01%

Figure 4. Map showing the spatial distribution of observer coverage.

There were four observer trips conducted in 2016, here the observed longline sets were shown (Figure 4). The observers worked onboard longliners from March 2016 to May 2017. Details were described in the observer trip report submitted to the Secretariat.

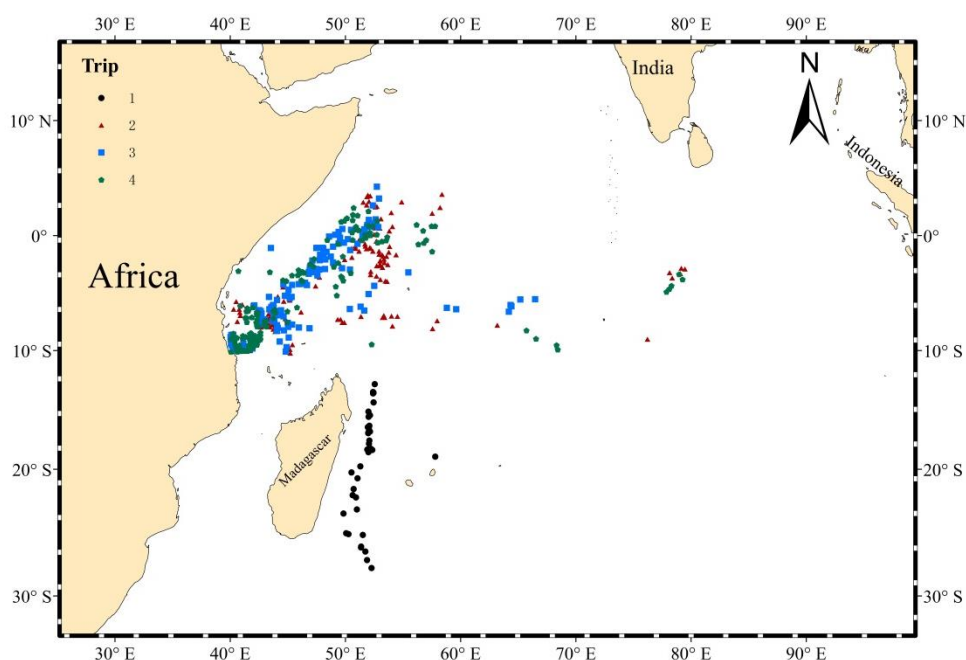


Figure 4 Geographical distribution of longline operating sets observed during the 2016 observer trips

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

China 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 challenge is the lack of detailed capture information (e.g. catch date and position) for the pooled catch unloaded in port. In 2016, about 3500 individuals were measured from port sampling (Table 7).

Table 7. Number of individuals measured, by species and gear in the port sampling program in 2016

Species	Number of individuals measured	Fishing gear
Albacore	232	Ice-fresh longline
Yellowfin tuna	114	Ice-fresh longline
Bigeye tuna	363	Ice-fresh longline
Skipjack	40	Ice-fresh longline
Swordfish	36	Ice-fresh longline
Striped marlin	34	Ice-fresh longline
Blue shark	48	Ice-fresh longline
Dolphinfish	35	Ice-fresh longline

6.5. Unloading/Transshipment [including date commenced and status of implementation]

Table 8 Transshipment of China fleet in 2016 (at sea and in port)

Date of Transshipment	Species Transhipped (Unit:metric ton)						
	Bigeye Tuna	Yellowfin Tuna	MLS	Swordfish	ALB	SHARK	OTHER
2016/1/4	16	11	1.394	19			2.88
2016/1/4	20	10.902	0.746	13			
2016/1/5	26	13.6	1.8	25.6			2.8

2016/1/5	15	12	1.126	15		10.279	12.444
2016/1/6	14.2	7	1	12			
2016/1/6	17	6.197	1.945	13			31.452
2016/1/7	17	9.47	1.117	9.5			15.774
2016/1/7	18	19	2	18			18.515
2016/1/9	23	19	1.5	5.6			
2016/1/8	56.784	32.613	1.157	5.782			
2016/1/9	61	24.189	0.593	10			
2016/1/9	25	15	2.043	15			
2016/1/1	59.647	24.371	0.481	59.71			3.604
2016/1/3	45.95	24.85		14.2			
2016/1/2	58.147	29.186	0.207	3.8			5.508
2016/2/9	62	28					
2016/4/3/	35	35	15	15			
2016/3/27	14	32.5	3	9.5			9
2016/3/26	22	37	13	8.5			26.5
2016/3/25	34	14.5	6	20			46.5
2016/4/3	14	12	8	17			
2016/4/1	16.7	17.3	14.5	15			4.5
2016/3/29	16	19	9.5	19	0.2		5.8
2016/3/30	17	24	9.5	22			13.7
2016/4/2	17	30	10	16			5
2016/3/28	18	15	17.5	7			3.8
2016/3/29	20	17	14	12			12.5
2016/4/2	13	23	7.5	16			7
2016/3/31	15	28	11	10			20
2016/2/25	5.66	18.556					
2016/2/25	40.591	27.515	1.898	9.368			
2016/3/23	27.25	36.5	2.4	3.4	0.2		0.25
2016/3/23	27.3	28.4		12.7			
2016/3/21	14.7	9.6		3.5			5.2
2016/3/20	32	22.5	1.9	9.5			
2016/3/20	21.75	17.5	0.3	1.5	0.15		
2016/3/21	42	10.5	1.7	3.5	0.2		0.4
2016/4/7	50.5	19.3		41.2			25
2016/4/11	18	18	18	27.5			3
2016/4/6	38.5	15	13.5	11.5			9
2016/4/11	16	36.5	10	30.5			6.5
2016/4/8	26.5	20	12.5	14			6.5
2016/4/12	13.5	5	10.5	17.5			1
2016/4/12	9	10.5	10	13.5			1
2016/5/2	16.343	27.612		16.315			
2016/5/1	13.034	24.371		8.691			
2016/5/1	11.747	17.824		6.792			
2016/5/2	11.272	33.597		13.45			

2016/5/3	19.207	35.312		6.609			
2016/5/3	17.969	32.204		6.349			
2016/4/9	29	22	3	8			35
2016/4/9	2.6	3	0.7	0.7			17.432
2016/5/21					26		
2016/5/19					26		
2016/5/13					45		
2016/5/13					37		
2016/5/13					55		
2016/5/12					49.5		
2016/5/15	30.011	22.062	12.529	38.057		20.799	0.312
2016/5/16	25.763	21.197	8.977	26.457		12.106	7.745
2016/5/14	14.734	17.615	7.17	13.738		17.403	0.793
2016/5/11	9.15	13	6.6	5.1		10.87	3.54
2016/5/15	14.045	8.382	3.432	5.616		14.729	0.158
2016/5/11	9.5	9.8	10.8	6.25		12	5.4
2016/5/7	13.964	11.319	4.161	5.555		17.29	0.646
2016/5/14	7.216	7.618	2.657	6.381		6.172	0.313
2016/5/29	9.381	3.746		2.578			
2016/5/29	11.44	7.166		2.526			
2016/5/29	9.725	4.157		2.309			
2016/5/29	10.663	5.137		2.242			
2016/5/29	8.688	9.646		2.179			
2016/5/29	14.996	8.114		2.844			
2016/6/16	39	12	6.5	21			1.5
2016/6/21	5.5	0.6	0.168	1.2			0.56
2016/6/21	17.4	0.8	2	7			
2016/6/16	36	16	9	10			0.2
2016/6/21	10.016	0.162	0.15	1.378			0.535
2016/6/21	7	0.132	0.1	0.56			1.29
2016/6/15	48	12	9	21			0.5
2016/7/13	63.782	11.716	15.43	27.285			6.054
2016/7/12	74.948	22.096	6.559	14.813			7.072
2016/7/15	60	15	13.858	32			12.835
2016/7/11	68.393	15.384	19.822	33.822			13.64
2016/7/16	59	12	16	30			2.758
2016/7/14	46	9	8.212	28			0.481
2016/7/7	15.989	4.432	8.482	12.5			1.241
2016/7/6	9.202	4	2.786	10.1			9.5
2016/7/8	18.406	2.848	7.177	8.031			2.829
2016/7/6	12.4	13.5	7.2	12			18
2016/7/7	11.512	5.837	6.743	20.422			3.93
2016/7/8	11.776	1.688	4.691	10.589			1.822
2016/7/8	16.132	2.972	4.238	10.349			2.856
2016/7/9	3.211	0.685	0.927	7.566			1.637

2016/7/21	48.287	22.003	8.613	8.845			0.119
2016/7/21	49	22.696	8.704	10.688			0.888
2016/7/17	34.9	26.64	6.728	9.47			0.06
2016/7/17	37.975	37.5	6.5	7.5			1.349
2016/10/4	19.52	6.416	2.316	9.96			5.856
2016/9/22	9.5	2.2	0.384	3.3			5.293
2016/10/4	18	4.5	2.512	8.5			1.975
2016/9/22	18.5	4.5	0.65	10			1.555
2016/9/27	12.8	2.4	1.382	6.85			4.279
2016/9/28	12.082	5.073	1.334	6.029			11.6
2016/9/28	11.069	3.604	0.352	1.658			3.414
2016/9/29	12.588	3.605	0.864	7.465			5.662
2016/9/27	10.807	3.361	1.234	5.29			6.813
2016/10/6	16.129	5.042	0.401	5.645			2.184
2016/10/1	11.515	2.073	0.262	2.583			0.386
2016/9/30	12.938	2.709	0.543	3.252			0.721
2016/9/30	14.66	2.407	0.299	4.292			0.44
2016/9/30	13.946	2.05	0.37	2.766			0.425
2016/12/8	31.78	5.717	3.073				
2016/12/8	28.899	7.887	2.184				
2016/12/16	73	11		8			7.203
2016/12/16	61.807	15.699		8.841			14.878
2016/12/17	48	13		6			10.034
2016/12/24	40.514	11.569	1.974	4.844		6.579	8.75
2016/12/21				7		11.053	9.134
2016/12/25	44.779	15.556	2.873	6.537		6.859	7.335
2016/12/21				6.862		7.465	8.837
2016/12/25	14.06	5.267	0.901	2.14			7.244
2016/12/26	46.46	11.4		5.165		7.223	12.352
2016/12/22	39.369	11.639	2.428	4.697	0.297	5.245	5.639
2016/12/23	24.026	4.878	1.319	1.781		3.88	2.88
2016/12/29	49.29	17.409	2.553	3.771			1.997
2016/12/29	60.022	22.873	1.218	4.137			2.254
2016/12/28	37.963	6.271		2.856			6.3
2016/12/28	33.142	7.306	1.151	2.097			3.223
2016/12/31	36.953	15.521	2.076	3.47			
2016/12/30	46.853	11.539	1.34	3.85			1.853

Date of Transhipment	Port Name	Species Transhipped (Unit: metric ton)						
		BET	YFT	SWO	ALB	Marlin	Sharks	Others
2016/8/25	Port Louis	1.292	1.208	0.5				
2016/8/25	Port Louis	1.528	1.11	0.712				
2016/8/25	Port Louis	1.772	1.312	0.645				
2016/8/17	Port Louis	1.133	1.085	0.852				

2016/8/17	Port Louis	1.148	1.463	1.233				
2016/8/17	Port Louis	1.333	1.449	0.862				
2016/11/15	Port Louis	9.81	15.136					
2016/11/16	Port Louis	16.869	17.816					
2016/11/15	Port Louis	13.45	19.08					
2016/11/16	Port Louis	12.599	18.061					
2016/11/17	Port Louis	15.55	24.53	0.9				
2016/11/17	Port Louis	23.598	17.85	1.3				

7. NATIONAL RESEARCH PROGRAMS [Desirable]

China has launched several 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. In addition to these specific projects, scientists from the 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.

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
05/05	Concerning the conservation of sharks caught in association with fisheries managed by IOTC	Paragraphs 1, 3, 4, 7, 9	<p>Paragraph 1- China is reporting bycatch estimates for commonly captured sharks.</p> <p>Paragraph 3- China is encouraging full utilisation of sharks captured by all longline vessels operating in the IOTC areas. Most vessels have no problem with this CMM.</p> <p>Paragraph 4- The 5 % ratio strategy was being implemented on Chinese longline vessels.</p> <p>Paragraph 7- China is encouraging fishermen to release all sharks captured.</p> <p>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 that for the Pacific Ocean.</p>
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. The template of data collection of the observer program is consistent with this CMM. Detailed data of each observer trip has been submitted to the IOTC secretariat.

Res. No.	Resolution	Scientific requirement	CPC progress
12/04	On the conservation of marine turtles	Paragraphs 3, 4, 6–8	<p>Paragraph 3-4- Interactions with marine turtles have been recorded and reported by the observers.</p> <p>Paragraph 6- Fishermen are required to help recover marine turtle captured and release. De-hooking techniques and guideline have been equipped onboard fishing vessels.</p> <p>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 the IOTC Guidelines. Marine Turtle Identification Cards were distributed to all the fishing vessels.</p>
12/06	On reducing the incidental bycatch of seabirds in longline fisheries	Paragraphs 1,3,5–7	<p>Paragraph 1- Seabird interactions are recorded by observers, but not on species levels due to difficulty of species identification.</p> <p>Paragraph 3- Implementation of seabird conservation measures is documented in the national report.</p> <p>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 of this measure.</p>
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	<p>Paragraph 4- The bycaught thresher sharks were released directly onboard; and the fishermen are required to record and report incidental catches of thresher sharks in logbooks.</p> <p>Paragraph 6- This information is required being collected in the observer program.</p> <p>Paragraph 7- Specific project or biological sampling for tissues (vertebrae, reproductive tracts, stomachs, etc.) has not been set up for thresher sharks by now.</p> <p>Paragraph 8- China has submitted partial catch data on sharks.</p>
ks13/06		Paragraphs 3-5	<p>Paragraphs 3-4 by caught Oceanic whitetip sharks were released onboard by fishermen.</p> <p>Paragraphs 5- The fishermen made records of the incidental catch of oceanic whitetip shark and the data have been submitted to IOTC.</p>
14/06	On establishing a programme for transshipment by large-scale fishing vessels	Paragraphs 2,4,6,7,9,10,17,19,20	<p>Paragraph 2-Chinese LSTVs comply with the required notification obligations when transshipping in port.</p> <p>Paragraph 4-China authorised their LSTLV to tranship at sea in accordance with the required procedure.</p> <p>Paragraph 6- China has submitted required information to the secretariat for the carrier vessels that are authorised to receive at-sea transshipments from its LSTLVs in the IOTC area of competence.</p> <p>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.</p> <p>Paragraph 9-VMS has been installed and operated onboard Chinese carrier vessels.</p> <p>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.</p> <p>Paragraph 17-All Chinese carrier vessels transhipped at sea have an IOTC observer on board.</p> <p>Paragraph 19-China takes the Statistical Document programs to ensure the effectiveness of the IOTC CMM.</p>

Res. No.	Resolution	Scientific requirement	CPC progress
			Paragraph 20-China has submitted the report to the IOTC Executive Secretary before 15 September 2017.
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 30 th 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. The observer coverage for 2016 has reached 5%. Paragraph 7- Data have been submitted before the deadline.
15/04	Concerning the IOTC record of vessels authorised to operate in the IOTC area of competence	Paragraphs 2,3,5,7-10,12-16	Paragraph 2-China has submitted required registration information to the secretariat for AFVs that are authorised 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 that have violated 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 has notified 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 including license, vessel name, registered port, registered number, international call sign, names and addresses of owners, overall length and engine power.

Res. No.	Resolution	Scientific requirement	CPC progress
			<p>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.</p> <p>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</p> <p>Paragraph 16- A bound fishing national logbook has been kept on board the Chinese vessel for a period of at least 12 months.</p>
15/11	on the implementation of a limitation of fishing capacity of contracting parties and cooperating non-contracting parties	Paragraphs 1,5,7	<p>Paragraph 1-China has notified of 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.</p> <p>Paragraph 5-All vessels transferred to IOTC area are on the IOTC Record of Vessels.</p> <p>Paragraph 7-China has introduced and implemented the Fleet Development Plan accordingly.</p>
16/01	On an Interim Plan for Rebuilding the Indian Ocean Yellowfin tuna Stock in the IOTC area of competence	Paragraphs 5	Paragraphs 5-China's longline yellowfin catch in 2014 was less than 5000 MT.

9. LITERATURE CITED [Mandatory]

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