National Report of JAPAN (2010)

National Research Institute of Far Seas Fisheries (NFIFSF),
Fisheries Research Agency (FRA)
and
Fisheries Agency, Government of Japan

December, 2010

In accordance with IOTC Resolution 10/02, scientific data was provided to the IOTC by 30 June [Current Year] for all fleets other than longline. Longline data was provided on 30 Dec [Previous Year] for final data from longline fleets operating in the high seas, and 30 June [Current Year] for provisional data.	YES
If no, please indicate the reason(s) and intended actions:	

1) ABSTRACT

This national report (Japan) describes following 8 issues in recent years (up to 2010), i.e., (a) tuna fishery, (b) catch and effort by species and gear, (c) fleet structure, (d) implementation of Scientific Committee recommendations, (e) ecosystem and bycatch, (g) data collection and processing systems and (h) national research programs.

2) GENERAL FISHERY INFORMATION

Longline and purse seine fisheries are two types of Japanese tuna fisheries currently operating in the Indian Ocean. Longline fishery started its operation in 1952 when the limitation of operational area imposed by the GHQ*, was removed. On the other hand, commercial purse seine fleet commenced fishing in the Indian Ocean in 1991 after several years of experimental fishing.

The total fishing effort (the number of hooks) of Japanese longliners in the Indian Ocean has been kept at similar levels since 1971, i.e., around 100 million hooks. Percentage of effort used in this Ocean in the total effort in all oceans fluctuated around 20% until 2003 after when it increased to 35% in 2006 and 2007. Thereafter it has decreased to 30% and 27.5% in 2008 and 2009, respectively.

As for the purse seine fishery, fishing took place mainly in the tropical western Indian Ocean until 1993 after when fishing effort shifted almost completely to the eastern Indian Ocean mainly because of economical problem derived from rise of Japanese Yen during that time.

** GHQ (General Headquarters) of the occupying forces of the Allies after the World War II*

3) CATCH AND EFFORT (BY SPECIES AND GEAR)

3)-1 LONGLINE FISHERY

The latest available longline data is that of 2009.

Fishing effort

Yearly distributions of longline effort from 2004 to 2009 are shown in Fig. 1. Although the geographical distributions of the effort are basically similar, the effort at African offshore area from off Somalia to off Cape Town and Tanzania seems relatively large and the effort in the eastern Indian Ocean decreased in the latest four years (2004 and after) probably by aggregation of longliners due to high yellowfin catch (formation of good yellowfin fishing ground). However, the effort off Somalia has decreased since 2008 because of the expanded activity of piracy in this area and the effort of the western Indian Ocean has become totally sparse in 2009 because of very low yellowfin CPUE in addition to piracy problem.

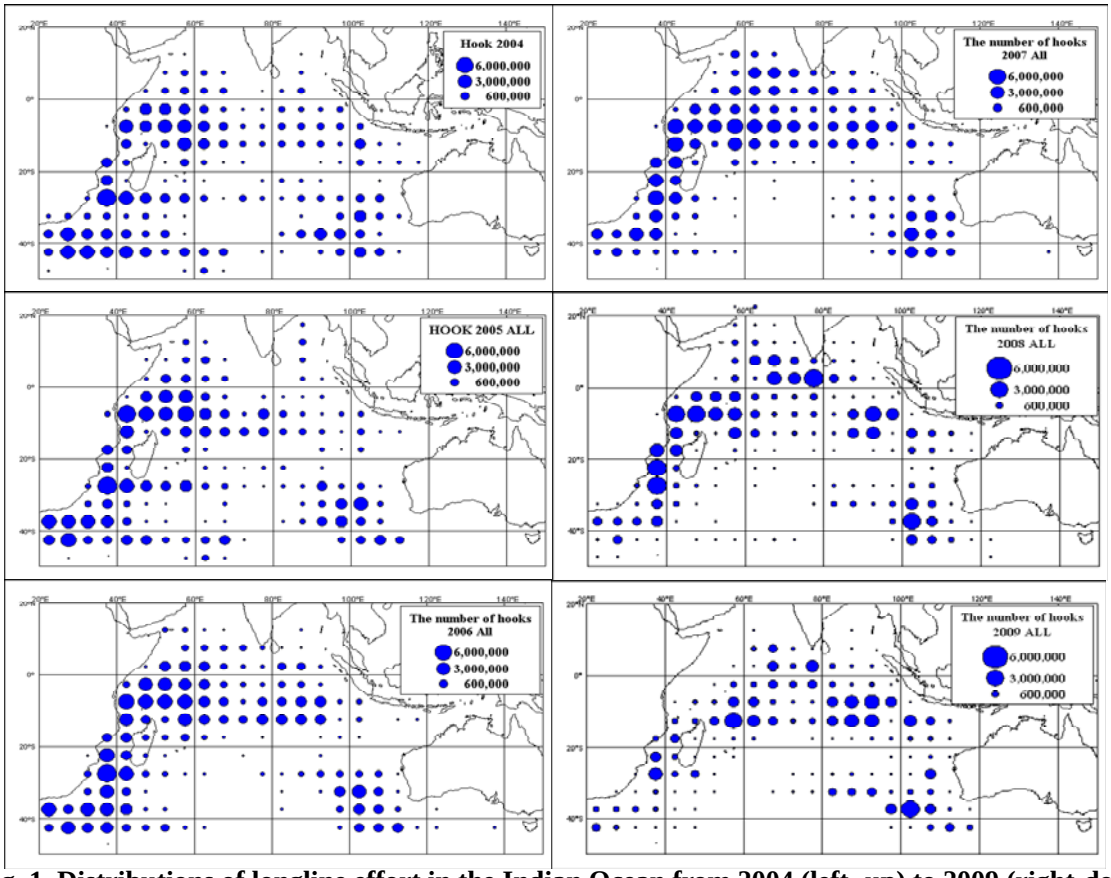

Fig. 1. Distributions of longline effort in the Indian Ocean from 2004 (left- up) to 2009 (right-down).

Historically, fishing effort exerted to each of the eastern and western Indian Ocean has been at the same level, that is, roughly 50% each until 2002 (Fig. 2). The effort in the western Indian Ocean has been greater than 70% since 2003 and about 80% in 2004 through 2007. However it has rapidly declined to 68% and 52% in 2008 and 2009, respectively. This abrupt decrease of effort in the western Indian Ocean seems to be caused by expanded activity of piracy off Somalia and quick drop of yellowfin CPUE. Quarterly distributions of fishing effort in 2008 and 2009 are shown in Fig. 3.

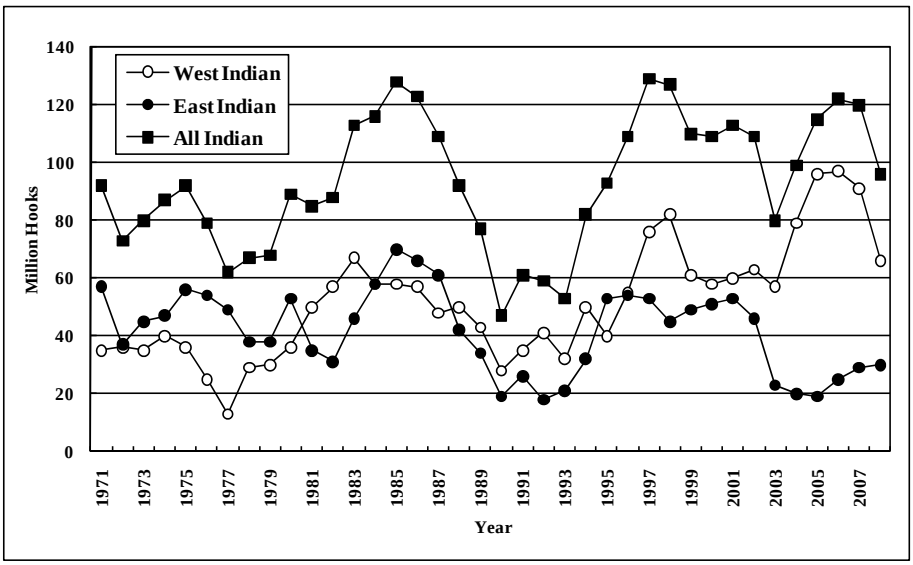

Fig. 2. Historical change of effort exerted into each of West and East Indian Ocean.

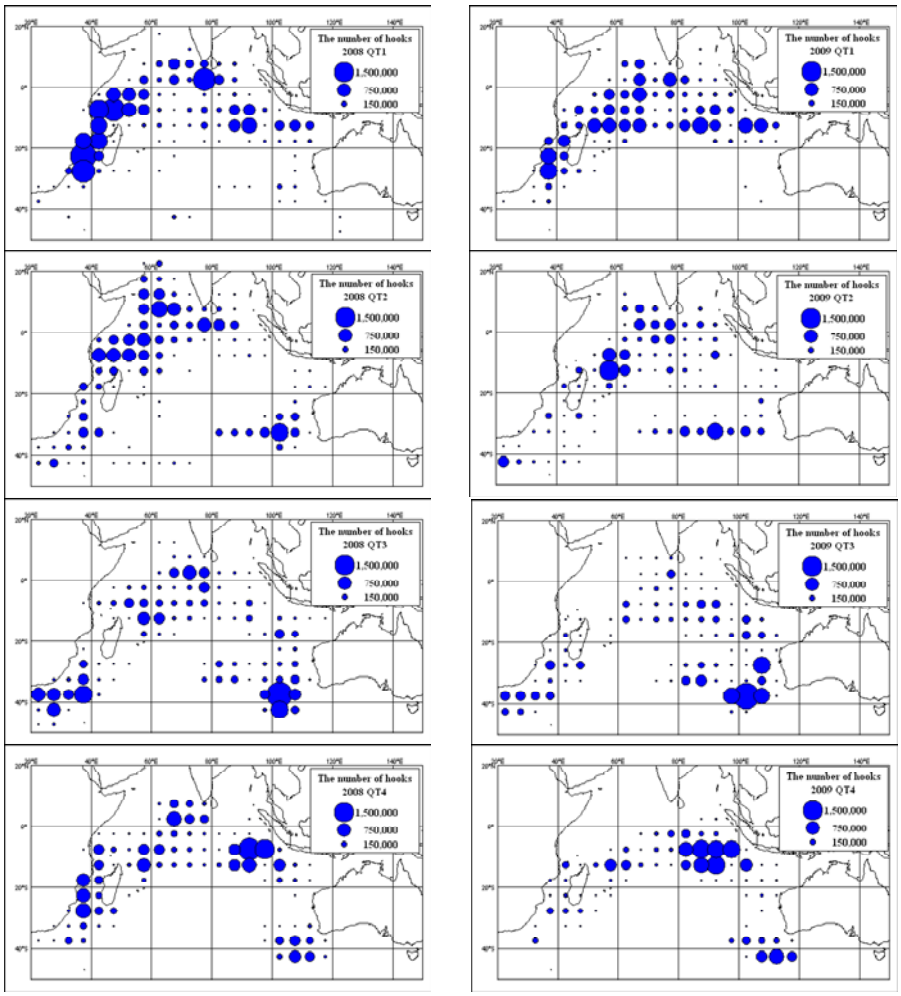

Fig. 3. Quarterly longline effort distributions in the Indian Ocean in 2008 (left) and 2009 (right).

Catch

Catch statistics in weight from 2005 to 2009 by Japanese longliners in the Indian Ocean is shown in Table 1 and geographical quarterly distributions of catch in 2008 and 2009 for major tuna and billfish species are

shown in Fig. 4 and Fig. 5, respectively**.** Total catch includes the catch of southern bluefin tuna, albacore, bigeye, yellowfin, swordfish, striped marlin, blue marlin, black marlin, sailfish, shortbill spearfish, and skipjack. Catches of each species in 2009 (2007) were 1,911MT (1,621MT) of southern bluefin, 3,573MT (4,812MT) of albacore, 9,019MT (13,835MT) of bigeye and 4,900MT (10,363MT) of yellowfin. It should be noted that the catch of yellowfin in 2008 decreased to about half of that in 2005 and 2006 in spite of the catch of bigeye, albacore being roughly at the same level during this period. Furthermore, yellowfin catch in 2009 was historically low, 4,900MT although this decrease was partly derived from decrease of effort.

Table 1. Fishing effort and catch in weight (MT) by the Japanese longline fishery in the Indian Ocean (IOTC statistical area), 2005-2009. Sets and hooks are in thousand.

Year	Sets	Hooks	Total	SBF	ALB	BET	YFT	SWO	MLS	BLZ	BLM	SFA	SPF	SKJ
2005	37	113861	46598	6165	4079	12544	21492	1487	74	462	91	165	37	3
2006	38	118365	49644	3822	6198	13920	22310	1805	115	746	199	394	123	12
2007	37	117665	48690	2751	5264	18168	18592	2197	79	770	204	545	109	13
2008	28	89613	33699	1621	4812	13835	10363	1568	159	585	140	446	137	35
2009	20	65034	21309	1911	3573	9019	4900	1029	56	417	107	161	93	44

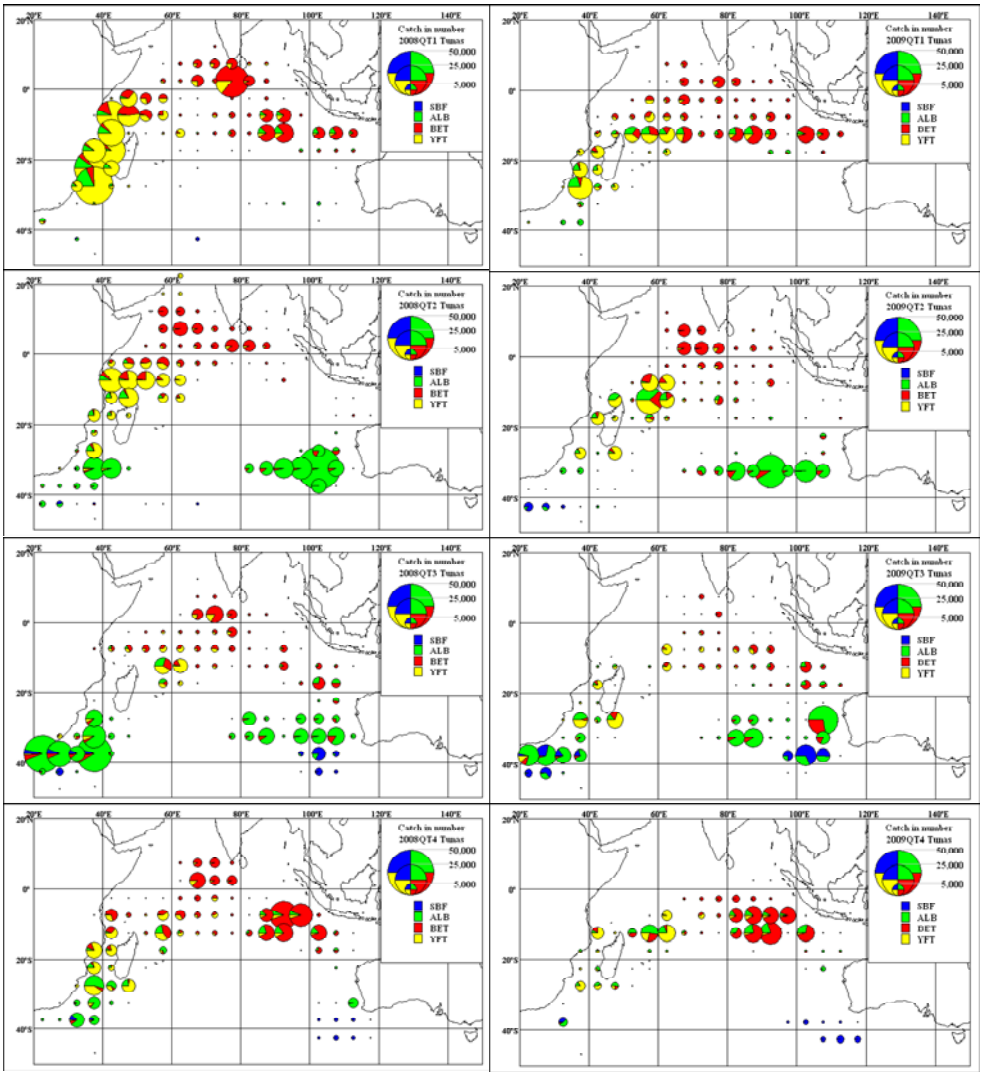

Fig. 4. Geographical quarterly distributions of catch in number of major tuna species caught by Japanese longline fishery in 2008 (left) and 2009 (right). SBF: southern bluefin, ALB: albacore, BET: bigeye, and YFT: yellowfin.

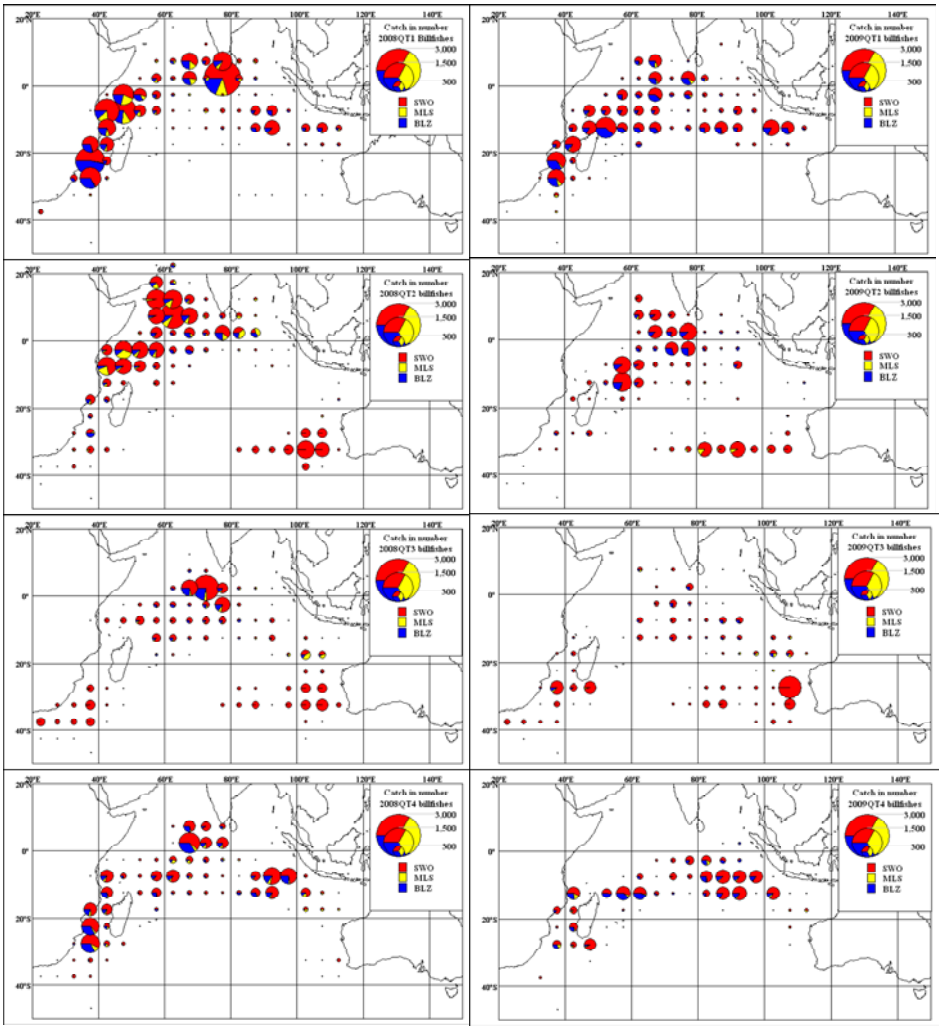

Fig. 5. Geographical quarterly distributions of catch in number of major billfish species caught by Japanese longline fishery in 2008 (left) and 2009 (right). SWO: swordfish, MLS: striped marlin, and MLZ: Indo-Pacific blue marlin.

In Fig. 6, historical change in species composition in the eastern and western Indian Ocean is shown. In the eastern Indian Ocean, the percentage of bigeye has increased and that of yellowfin, which was about 30-40% in the total catch of tunas and billfishes excluding southern bluefin before 1991, has decreased to about 10% in recent five years. The opposite trend is observed in the western Indian Ocean where the ratio of yellowfin was around 30% before 1992 and it has increased to about 50% or more since 1999. As a result, the total catch in weight of yellowfin in the Indian Ocean has exceeded that of bigeye since 1999.

The ratio of yellowfin catch in weight in the total of yellowfin and bigeye catch has been larger than 60% since 2003. This high yellowfin ratio in recent years seems to be derived from decrease of fishing effort in the eastern Indian Ocean, and the concentration of the fishing effort along the African coastal region from Equator to 30˚S where yellowfin is abundant, especially in the 1st and 3rd quarters (Fig. 3). By this shift of the distribution of fishing effort, total catch of tuna species in the western Indian Ocean from 2005 to 2007 was around 46,000 - 49,000 MT which is highest in the period from 1970 to 2008. This total catch decreased remarkably to 33,000 MT in 2008 and 21,000MT in 2009 because of piracy activity and low yellowfin CPUE as described above.

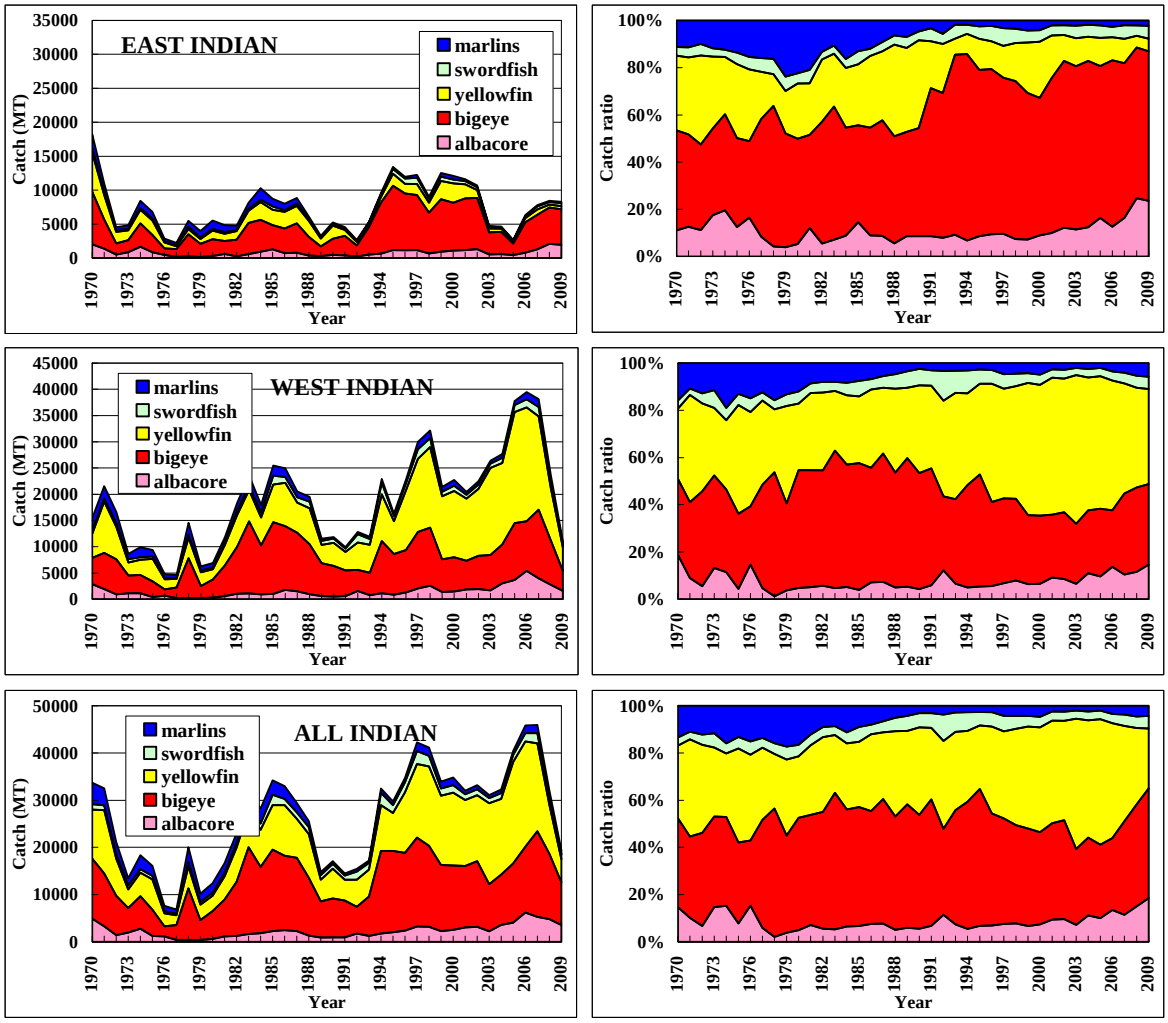

Fig. 6. Historical change of species composition of major tunas, swordfish and marlins in the Indian Ocean.

3)-2 PURSE SEINE FISHERY

The latest available data for Japanese purse seine fishery is that for 2009.

Fishing Effort

Total fishing effort (operation days + searching days) was 294 days in 2008 and 263 days in 2009 (Table 2). Geographical distribution of Japanese purse seine effort in 2009 was shown in Fig. 7.

Table 2. Catch and effort statistics for the Japanese purse seine fishery in the Indian Ocean from 2005 to 2009. The unit of catch and effort are metric ton and days (search and operation days), respectively.

Year	Days F.	Total	SKJ	YFT	BET
2005	182	4892	3149	894	849
2006	76	2795	1982	266	547
2007	319	6312	4362	963	987
2008	294	5317	3133	1175	1009
2009	263	5562	3434	557	1571

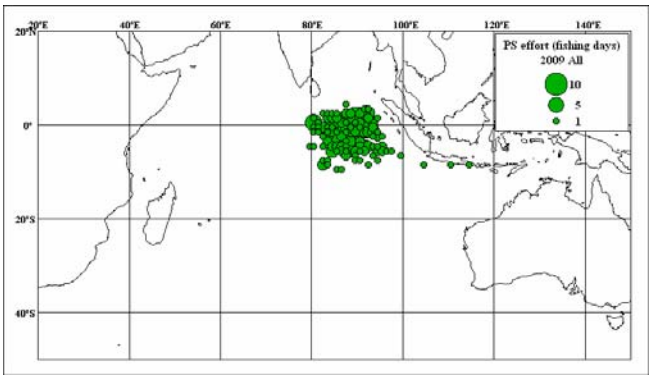

Fig. 7. Distribution of Japanese purse seine effort (days) in the Indian Ocean in 2009.

Catch

Total catch increased rapidly to about 44 thousand MT in 1992 and 1993 after when it decreased to 10 thousand MT in 1997 and 7 thousand MT in 1999 (Fig. 8). Thereafter it has fluctuated between 2.3 and 6.3 thousand MT and total catch in 2009 was 5.5 thousand MT. Catch in weight of skipjack, yellowfin and bigeye in 2009 (2008) was 3,434 (3,133) MT, 557 (1,175) MT and 1,571 (1,009) MT, respectively. Geographical distribution of Japanese purse seine catch in 2009 is shown in Fig. 9.

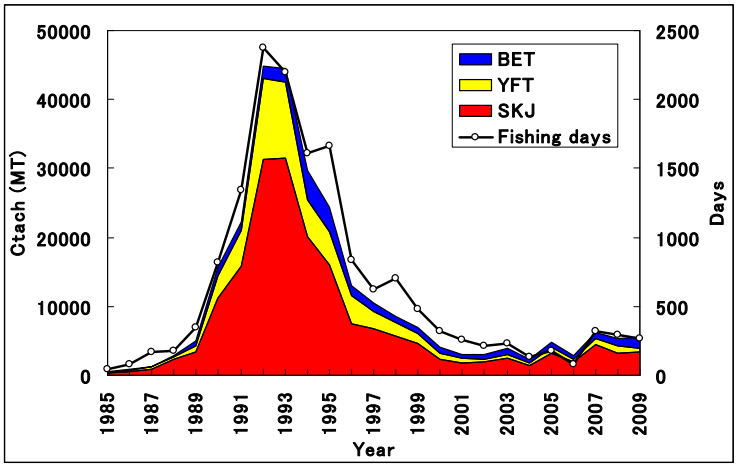

Fig. 8 Historical change in Japanese purse seine catch by species.
SKJ: skipjack, YFT: yellowfin, and BET: bigeye.

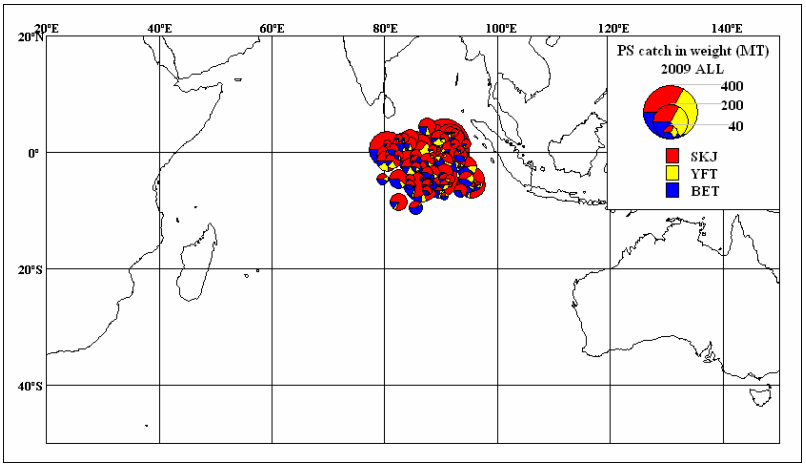

Fig. 9. Distribution of Japanese purse seine catch (MT) in the Indian Ocean in 2009.
SKJ: skipjack, YFT: yellowfin, and BET: bigeye.

4) FLEET STRUCTURE

All Japanese longline vessels operating in the Indian Ocean have been the distant water category (120-500GRT). In the last fifteen years, the number of vessels operated in this Ocean was around 170-250 vessels per year until 2008. Although the number of operating vessel was relatively large in number (224-251) during 1995-1999, after when it decreased to less than 200 except for 228 in 2002. Although the number of vessel in 2007 increased to 249 vessels, it decreased rapidly to 172 vessels in 2008 and historically low level, 127 vessels in 2009 (Table 3).

Table 3. Number of Japanese vessels operated in the Indian Ocean.

Fleet/Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Longliner	272	235	245	216	184	181	206	206	224	251	243	242	223	192
Purse seiner	1	1	3	4	11	12	11	11	8	5	3	4	3	2

Fleet/Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Longliner	199	228	172	189	184	188	249	172	127
Purse seiner	2	1	1	1	1	3	3	3	2

Japanese purse seine vessels operating in the Indian Ocean are 350-700 GRT class (700-1000 carrying capacity). Historical change in the number of purse seine vessels from 1987 to 2009 was shown in Table 3. Although more than 10 Japanese purse seiners operated during 1991-1994, it decreased year by year and the last commercial purse seiner retreated from the Indian Ocean in 2001 leaving only one vessel “Nippon-Maru”, the research vessel of Fisheries Research Agency (FRA). The number of purse seine vessels in 2009 was two.

5) IMPLEMENTATION OF SCIENTIFIC COMMITTEE RECOMMENDATIONS

Progress on the implementation of recommendations of the past Scientific Committees relating to Japan is as below:

5)-1 COLLECTION OF MORE SIZE DATA

Tuna longline fisheries industries in Japan have been collecting size data based on the request made by the Fisheries Agency of Japan. As it is not mandatory, tuna longline fishers have been collecting size data on a voluntary basis in the past. This is because collecting the size data is extra work loads for skippers who are already occupied by busy fishing operations with limited man powers.

For the Indian Ocean, the size data have been collected mainly by the high school training vessels off Java Island, Indonesia. For example as for bigeye tuna, its coverage of size data was 10-20% of the total catch in the Indian Ocean before 1992, but afterwards it sharply decreased to only a few percents. This is mainly because these training vessels shifted their operation to the Pacific Ocean due to the pirate problems in the Strait of Malacca. Under such situation, size data sampled are limited to the particular waters and not from the whole area. Therefore, they are not effective for the stock assessments.

In accordance with the Resolution 10/02, Japan started to deploy observers from July 1, 2010, covering 5% of the fishing operations by 18 observers to collect size data.

5)-2 MODIFICATION OF LOG-SHEET COLLECTION SYSTEM

The owners of fishing vessels larger than or equal to 10 GRT are required to submit the logbook on their operations and catch information to the Japanese government within three months after each cruise was finished. As the duration of one cruise for distant water longliners is long, sometimes longer than one year, it used to take about two years to complete compiling statistics of longline fishery. Starting in August 2008, distant water longliners are required to submit it every ten days. It is expected that this change in submission rule of logbook would facilitate the compilation of tuna statistics.

5)-3 IMPROVEMENT TO SPEED UP TO SUBMIT FISHERIES DATA TO THE IOTC

From August 1, 2008 Japan started to mandate all the long-distance longline vessels to submit the logbook in quick manner by revising the current law.

5)-4 IMPROVEMENT OF THE CPUE STANDARDIZATION (2008-2010)

[2008]

One study has been accomplished, i.e., "Japanese longline CPUE for yellowfin tuna in the Indian Ocean up to 2007 standardized by GLM (IOTC-2008-WPTT10-19) by Okamoto *et al*. During the 10th tropical tuna working group (WPTT10) meeting in October 2008 in Thailand this Japanese CPUE played a key role in the stock assessments conducted by MULTIFAN-CL, SS2 PM and ASPM.

[2009]

Four studies (papers) have been made, i.e., (i) "Japanese longline CPUE for yellowfin tuna in the Indian Ocean up to 2008 standardized by Okamoto *et al*. (ii) "Japanese longline CPUE for bigeye tuna in the Indian Ocean up to 2008 standardized by Okamoto *et al*. and (iii) "Fine scale bigeye tuna CPUE standardization" by Satoh et al. During the 11th tropical tuna working group (WPTT11) meeting in October 2009 in Kenya. These three Japanese CPUE series played key roles in the stock assessments conducted by MULTIFAN-CL, SS3, PROFIT, ASPM, ASPIC and PROCEAN. The last work is (iv) CPUE paper for swordfish by Nishida and Wang which was also used as the key CPUE data for its stock assessments by SS3, ASIA, ASPM and ASPIC in the 5th WPB in July in Seychelles.

[2010]

Seven studies to improve CPUE standardizations have been made, i.e., (1)IOTC-2010-WPB8-09 :Estimation of the Abundance Index (AI) of swordfish in the Indian Ocean based on the fine scale catch and effort data in the Japanese tuna longline fisheries (1980-2008) (Nishida and Wang), (2) IOTC-2010-WPB8-11: CPUE standardization of swordfish caught by Taiwanese longline fishery in the Indian Ocean during 1995-2008 (Wang and Nishida), (3) IOTC-2010- WPTT-29: Japanese longline CPUE for bigeye tuna in the Indian Ocean up to 2009 standardized by GLM (Okamoto and Shono), (4) IOTC-2010- WPTT-30: Japanese longline CPUE for yellowfin tuna in the Indian Ocean up to 2009 standardized by general linear model (Okamoto and Shono), (5) IOTC-2010- WPTT-32: Searching comparable standardized YFT CPUE between Japanese and Taiwanese tuna longline fisheries in the common fishing grounds in the Indian Ocean (Nishida and Chang), (6) IOTC-2010- WPTT-33: Yellowfin tuna CPUE standardization of the Korean tuna longline fisheries in the Indian Ocean (1980-2009) (Hwang and Nishida) and (7) IOTC-2010-WPTT-44: Comparisons of STD YFT

CPUE of tuna longline fisheries among Japan, Korea and Taiwan (Nishida). These CPUE studies played key roles in the stock assessments conducted by MULTIFAN-CL, SS3 and ASPIC for yellowfin tuna, swordfish and bigeye tuna.

6) ECOSYSTEM AND BYCATCH ISSUES

The catch of major three shark species by Japanese longliners in 2009 is shown in Table 4. The catch data were collected through the logbook and compiled in the National Research Institute of Far Seas Fisheries (NRIFSF). In August2008, the Japanese government obliged Japanese distant water longliners to land all the parts of sharks (although heading, gutting and skinning are allowed) , and the quantities given in Table 4 represent the whole weight including the weight of fins.

The Japanese scientific observers on the longliners have been collecting information about bycatch species (Tables 5). Many observes in IOTC area were planned to collect information of fishing operations targeting southern bluefin tuna especially in earlier years, but observers also started to cover the bigeye tuna operations in the tropical Indian Ocean since 2006, as some operations with observers have shifted targeted species from southern bluefin tuna to bigeye tuna due to the low CPUE. The observers take photo of bycatch species according to the procedures given in the observer manual, and NRIFSF conducted species identification of bycatches using these photos. The observed information is being processed and will be reported in due course.

Table 4. Reported catch of major sharks species caught by Japanese longliners in the Indian Ocean in 2009.

	2009	
	Number	Weight (Kg)
Blue Shark	73,221	1,523,469
Porbeagle	1,082	17,225
Mako Shark	3,107	116,070

Table 5. Number of vessels, operation and hooks observed by the Japanese scientific observer program in IOTC (almost CCSBT water) water in 2004 – 2008.

Year	Number of vessels observed	Number of operation observed
2004	12	616
2005	15	815
2006	15	1,006
2007	10	520
2008	3	162

7) NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS

7)-1 LOGBOOK DATA COLLECTION AND VERIFICATION

Longline

In the logbook of longline, set by set data on catch number and weight in each species, and other information data such as fishing date and location, fishing effort (the number of basket and hooks used), water temperature are included. The number of hooks per basket is important information as it suggests the depth of the gear and target species. As tuna and tuna-like fishes, six tunas (Pacific bluefin, southern bluefin, albacore, bigeye, yellowfin and skipjack), and six billfishes (swordfish, striped marlin, blue marlin, black marlin, sailfish and shortbill spearfish) are separately recorded in the logbook. Additionally, information on the cruise (date and port of departure and arrival of the cruise), vessel (name, size, license number and call sign), number of crew and the configurations of the fishing gear (material of main line and branch line) are asked to fill on the top part of the sheet by each cruise.

Submitted logbooks are processed into electronic data files. Various error checks, such as date, location, range of weight, CPUE, are conducted before these data are finalized. Vessel characteristics (call sign, name, license number, etc) are verified with a register.

Purse seine

The logbooks of purse seiners are required to be submitted every month to the Japanese government. The reported catch by species could be verified by comparing with the landing data, which were obtained from market receipts of three major unloading ports (Yaizu, Makurazaki, and Yamagawa).

7)-2 VESSEL MONITORING SYSTEM

VMS installation on all distant water and offshore longline and distant water purse seine vessels is obligated since 1st August in 2007.

7)-3 Scientific Observer programme (including date commenced and status; number of observer, include percentage coverage by gear type)

Japan started to deploy observers in 2006. In July 1, 2010 Japan started the IOTC regional observer program. 18 observers for longliners and 1 for purse seiner dispatched, which covered more than 5% of the total operations.

7)-4 PORT SAMPLING PROGRAMME

Because catch in the Indian Ocean is mainly unloaded abroad the conducted sampling was very few, one and zero time in 2008 and 2009, respectively.

7-5) UNLOADING/TRANSHIPMENT (INCLUDING DATE COMMENCED AND STATUS OF IMPLEMENTATION)

Unloading

The owners of fishing vessels are required to submit relevant documents to the Japanese Government 10 days before the planned landing date. In case of unloading abroad the owner of fishing vessels are required to obtain approval from the Government of Japan in advance. To apply for unloading abroad, fishers have to submit relevant documents to the Government of Japan 10 days before the planned date.

Transshipment

The owners of fishing vessels are required to obtain approval from the Government of Japan for at port transhipments in advance. To apply for at port transhipment, fishers have to submit relevant documents to the Government of Japan 10 days before the planned transhipment date. Fishers shall complete the IOTC transshipment declaration and transmit it to the Government of Japan not later than 15 days after the transshipment. Japan controls at sea transhipments by its vessels in accordance with the Resolution 08/02 on establishing a programme for transhipment by large-scale fishing vessels.

7-6) OTHER

None

8) NATIONAL RESEARCH PROGRAMS

8)-1 RESEARCH CRUISES BY NIPPON MARU (JAMARC, FISHERIES RESEARCH AGENCY) (2009-2010)

[2009-2010]

RV Nippon-maru conducted the experimental purse seine fishing in the eastern Indian Ocean in order to develop the methods mitigating by-catch of juvenile yellowfin and bigeye tuna. RV Nippon-maru collected the basic data for identifying fish size by species using echo sounders. RV Nippon-maru also investigated by-catch ratios by area and season. In addition RV Nippon-maru attempted to develop by-catch mitigation techniques by light stimulus.

8)-2 TAG AND RELEASE RESEARCH FOR TUNAS AND SKIPJACK IN THE EASTERN INDIAN OCEAN.

JAMARC (Fisheries Research Agency) tagging by Nippon maru (2004-2006)

[2004-2005]

Nippon-Maru (JAMARC, Fisheries Research Agency) cooperated the IOTC tagging from 2004 to 2006 using the spaghetti tags provided by the IOTC in the eastern Indian Ocean. In 2004, 2005 and 2006 (until end of March), 214 (39 SKJ, 89 YFT and 86 BET), 368 (154 SKJ, 10 YFT and 204 BET), and 258 (99 SKJ, 48 YFT and 111 BET) fishes were tagged and released from her purse seine catch.

[2006]

After the new Nippon maru started her operation in the late 2006 no tagging has been conducted because it is very difficult to capture individual fish without damage as the new vessel does not have the skiff boat.

Small-scale tagging activities based on the Japanese fund (2005-2009)

There have been tagging activities in 3 areas using the Japanese funds to the IOTC, i.e., in the waters off west Sumatra, in the waters around the Andaman Sea and in the Maldivian waters. 1 or 2 Japanese tagging staff from National Research Institute of Far Seas Fisheries (Asakawa, temporal survey staff and Nishida, scientist) have participated in these tagging activities.

[Off West Sumatra (2006-2007)]

The tagging off western Sumatra was conducted in October- November, 2006, but due to the strong El Nino effect, tuna and skipjack were not caught at all due to the cold surface temperature. Thus the tagging was ceased in November after the first leg was over. Then in September, 2007, the second and third legs were resumed. In the 5 days before ending the leg 3, it was stopped due to the large earthquake off southern Sumatra. In the 2nd and 3rd legs about 300 tags were released.

[Andaman Sea (2008)]

The tagging in Andaman waters were conducted from January 19 to February 28, 2008 based in the port of Barmananla, south of Port Blair City in the Andaman Islands. During this period, 28 tagging trips were achieved including 16 live-bait stockings and 18 separate tagging operations.

[Maldives (2007-2009)]

In 2007 the tagging in the Maldivian waters was held for 2 weeks in October 2007 and tagged 750 fish. One Japanese staff (Asakawa, temporal survey staff in the NRIFSF) participated. Due to the bad weather and oceanographic conditions, planned later tagging cruises in 2007-2008 were cancelled. During 2008-2009, the last tagging experiments were contacted from December, 2008- April, 2009.

IOTC tagging workshops (2008-2009)

[2nd workshop (2008)]

The second workshop was held in May, 2008 Indonesia. The tagging activities off Sumatra, in the Andaman Sea and Maldives were reviewed, As a result, (a) tagging in the Andaman waters would not be conducted any more as it was expected that not enough fish could be released, (b) last tagging activities off Sumatra and Maldives would be implemented in the beginning of 2008 using the remaining fund.

[3rd workshop (2009)]

The third (final) workshop was held in May, 2009, Add atoll, Maldives in May 4-5, 2009. In this workshop the review of the past tagging experiments funded by Japan (2005-2009) were reviewed and recommendation for the future tagging activities were made.

8)-3 IOTC-OFCF PROJECTS (2002-2010)

The IOTC-OFCF joint project to improve tuna fisheries statistics in the IOTC water have been implemented for last 9 years in three phases (5 years in 2002-2006, 3 years in 2007-2009 respectively and 1st year in 2010-2012).

Along with the IOTC-OFCF joint project, 2 additional activities on capacity buildings for fisheries officers and scientists in developing counties have been also implemented by OFCF and NRIFSF staff, i.e., (a), one month training course on tuna fisheries statistics (phase 1-2) and on fisheries managements (phase 3) in Japan (2002-2010) and (b) the atlas project to create tuna fisheries and resources atlas in Indonesian, Thai, Maldives and Sri Lanka using Marine Explorer (GIS) developed by Environmental Simulation Laboratory for 3 years in the 2nd phase (2007-2009).

8)-4 WORKING PAPERS (2009-2010) (20 documents)

Following documents were submitted and presented in the various IOTC meetings between SC12 (2009) and SC13 (2010):

SC12 (Scientific Committee) (Victoria, Seychelles) (December, 2009) (4 documents)

Document	Title
IOTC-2009-SC12-10	Impact of piracy threats on LL and PS fisheries. *F. Marsac , Y. Yeh , T. Nishida , J. Dorizo ,J. Ariz and E Chassot*
IOTC-2009-SC12-INF03	Atlas of Tuna Fisheries and Resources in Maldives. (2009). *R. Jauharee. A.R, Fujiwara S., Adam M. S., Itoh K., Nishida T., and Anderson R. C.*(Hard copy only)
IOTC-2007-SC12-INF07	National Report of JAPAN (2009) National Research Institute of Far Seas Fisheries (NFIFSF), Fisheries Research Agency (FRA) and Fisheries Agency, Government of Japan
IOTC-2009-SC12-INF18	The potential role of pelagic Marine Protected Areas for Tropical species in the Indian Ocean. *C. Mees; A. Fonteneau; T. Nishida; L. Dagorn; J. Robinson; I. Mosquiera; H. Murua; M. Goujon*

Technical Meeting on the IOTC Regional Observer Scheme (Victoria, Seychelles) (May, 2010) (1)

Document	Title
IOTC-2010-ROS-INFO01	TOP of the WORLD: Tuna Observer Program (TOP) in the world. T. Nishida.

WPB8 (Working Party on Billfish) (Victoria, Seychelles) (July, 2010) (4)

Document	**Title**
IOTC-2010-WPB8-09	Estimation of the Abundance Index (AI) of swordfish (Xiphias gladius) in the Indian Ocean (IO) based on the fine scale catch and effort data in the Japanese tuna longline fisheries (1980-2008). *Nishida, T and SP Wang*
IOTC-2010-WPB8-11	CPUE standardization of swordfish (Xiphias gladius) caught by Taiwanese longline fishery in the Indian Ocean during 1995-2008. *Wang, S.P. and T. Nishida.*
IOTC-2010-WPB8-12	Stock assessment of swordfish (Xiphias gladius) in the Indian Ocean by ASPIC (1980-2008). *Nishida, T and S.-P. Wang*
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9) RECREATIONAL FISHERIES

None

10) LITERATURE REFERENCES

None