SC-05-08

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Annual National Report: China
Delegation of [China]

Abstract

In the SIOFA Area, China used to operate three different types of fishing intermittently from 2000 to 2017: Light seining targeting mackerel and Bramidae family, bottom longlining targeting ruby snapper, etc. and demersal trawling targeting dories and orange roughy. According to the regulation issued by the fisheries authority, no Chinese-flagged fishing vessels targeting SIOFA species have operated in SIOFA area since 2018. Based on the historical data and statistics, this report summarizes fishing activities by Chinese-flagged vessels in the area from 2000 to 2017. China has also been authorizing the squid jigging since 2003 in the Indian Ocean, but since then there has been no squid jigging vessels fishing in the SIOFA area. Hence, this report does not include the data and statistics on squid jigging in the Indian Ocean. In 2019 China acceded to SIOFA as PARTY. But so far the fisheries authority in China has not approved any fishing vessel that may target SIOFA species to operate in the SIOFA area.

Contents

1. Introduction

Under the authorization of the Chinese Government, from 2000 to 2017, three types of Chinese-flagged fishing vessels i.e. demersal trawlers, bottom longliners and light seiners were operating in the SIOFA Area (Figure 1). The number of the fishing vessels during this period was no more than 20. Before 2000, there had been no Chinese-flagged fishing vessels in the SIOFA Area (Table 1).

Since 2018, China has permitted no Chinese-flagged fishing vessels to fish in the SIOFA Area for species under SIOFA competence. In October, 2019, China acceded to the SIOFA as Party, but so far the Chinese fisheries authority is still conducting the preliminaries and has not authorized any Chinese-flagged fishing vessels to operate in the Area targeting SIOFA species.

1.1 Demersal Trawling

Chinese demersal trawling was operating in the area now covered by the SIOFA from 2000 to 2002 (Fig.1). No more than two demersal trawlers were fishing and the catches amounted to 179~931 tons annually in the adjacent waters to the Northern SW Indian Ridge (Fig.2). In 2000 and 2001, two vessels were operating in 3a and 3b (Southwestern Indian Ridge) in the Area. In 2002, there was only one vessel operating in the Area. Since 2003, there have been no Chinese-flagged demersal trawlers fishing in the SIOFA Area (Table 1).

1.2 Bottom Longlining

In terms of bottom longlining, two to four longliners were operating in the area now under the competence of SIOFA from 2004 to 2013. From 2004 to 2006, two to four vessels were annually operating in Area 1, 4 and 8. From 2007 to 2013, three to 20 vessels were annually operating Areas 1 and 4 (Fig.2, Table 1). The total catches ranged from 126 to 2290 tons. Since 2014, there has been no Chinese bottom longlining in the SIOFA Area.

1.3 Light seining

In 2014, six light seiners started operating in Areas 4, 5 and 7 now under the competence of SIOFA (Fig.2, Table 1). In 2015 the catches of six vessels were 4672 tons and in 2016 those of eight vessels were 1877 tons. In 2017, five vessels were operating in the area. The average fishing efforts were only six days per vessel and the catches were 150 tons.

The Chinese fisheries authority has authorized 55 light seiners in 2017, 77 in 2018 and

109 in 2019 to operate on the high seas of Indian Ocean[1], it is quite likely that such vessels may operate in SIOFA area in the future under SIOFA CMMs.
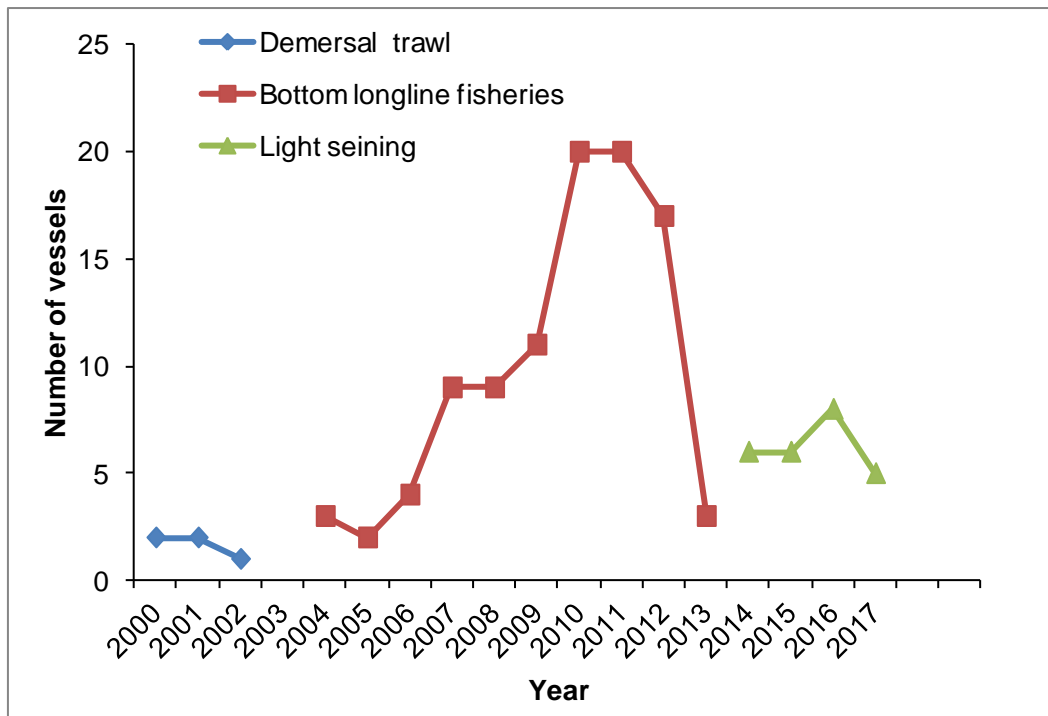

Fig.1 Number of Chinese Vessels Operating in the SIOFA Area from 2000 to 2017

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[1] Most of such vessels operate in the area above the northern boundary of SIOFA Area, i.e. 12°~20°N，56°~65°E.
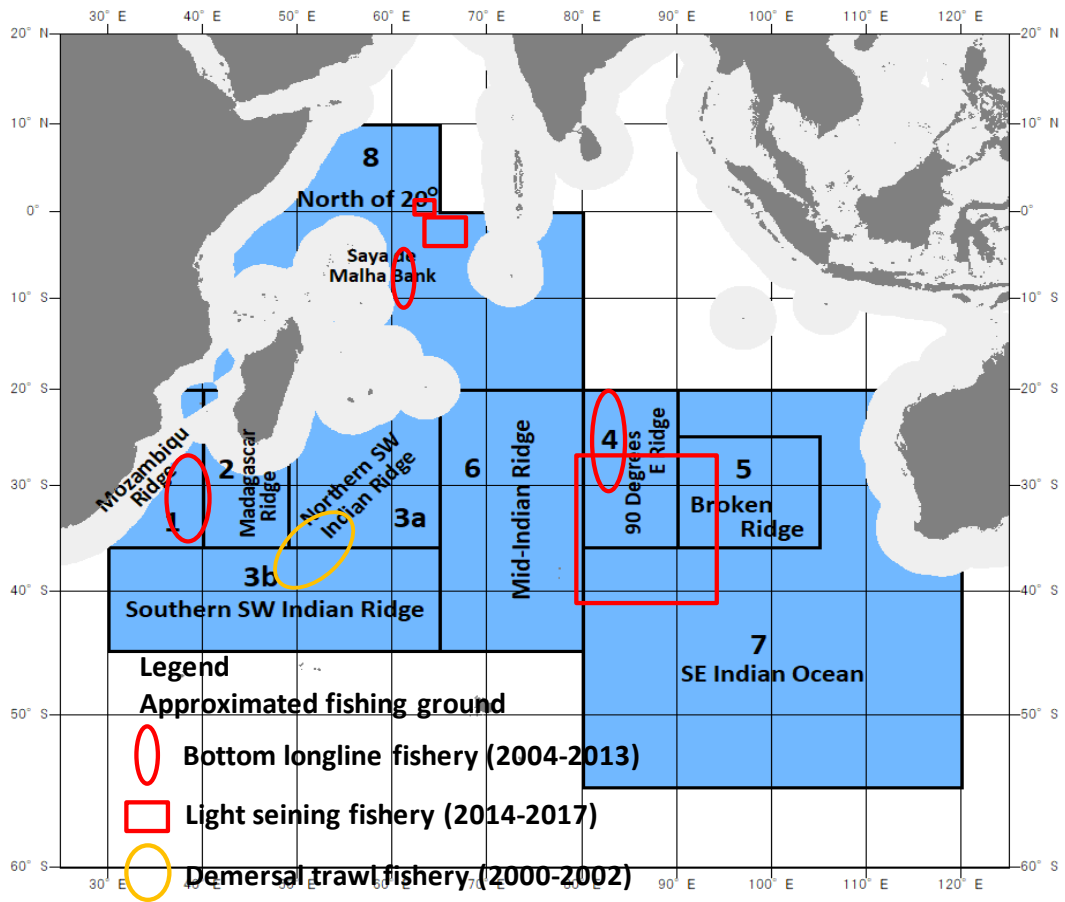
Fig.2 Map of Chinese Fishing in the SIOFA Area from 2000 to 2017

Table 1 Number of Vessels and Total Catches of Chinese Fisheries in the SIOFA Area
from 2000 to 2019

Year	Light Seining		Bottom Longlining		Demersal Trawling	
	Number of Vessels	Total Catches (Tons)	Number of Vessels	Total Catches (Tons)	Number of Vessels	Total Catches (Tons)
2000					2	788
2001					2	931
2002					1	179
2003						
2004			3	360		
2005			2	126		
2006			4	615		
2007			9	1202		
2008			9	1100		
2009			11	1420		
2010			20	2290		
2011			20	1680		
2012			17	974		
2013			3	370		
2014	6	2125				
2015	6	4672				
2016	8	1877				
2017	5	150				
2018						
2019						

2. Catches, Efforts and CPUE Summaries

2.1 Demersal Trawling

The fishing efforts of the Chinese demersal trawling has sharply decreased from 600 hours to 120 hours from 2000 to 2002 (Fig.3). The CPUE of demersal trawling in 2000 was 1.3 ton/hour, then increased to 1.7 ton/hour and decreased to 1.5 ton/hour (Fig.3).

From 2000 to 2002, the total catches ranged from 179 tons to 931 tons (Table 2). Orange roughy accounted for the highest percentage of catches: 623 tons in 2000 and 710 tons in 2001. But in 2002, the total catch of orange roughy decreased to 72 tons. The CPUE of orange roughy ranged from 0.6 to 1.3 ton/hour in 2000 and 2001. In 2002, the CPUE of orange roughy decreased to 0.6 ton/hour (Fig.4).
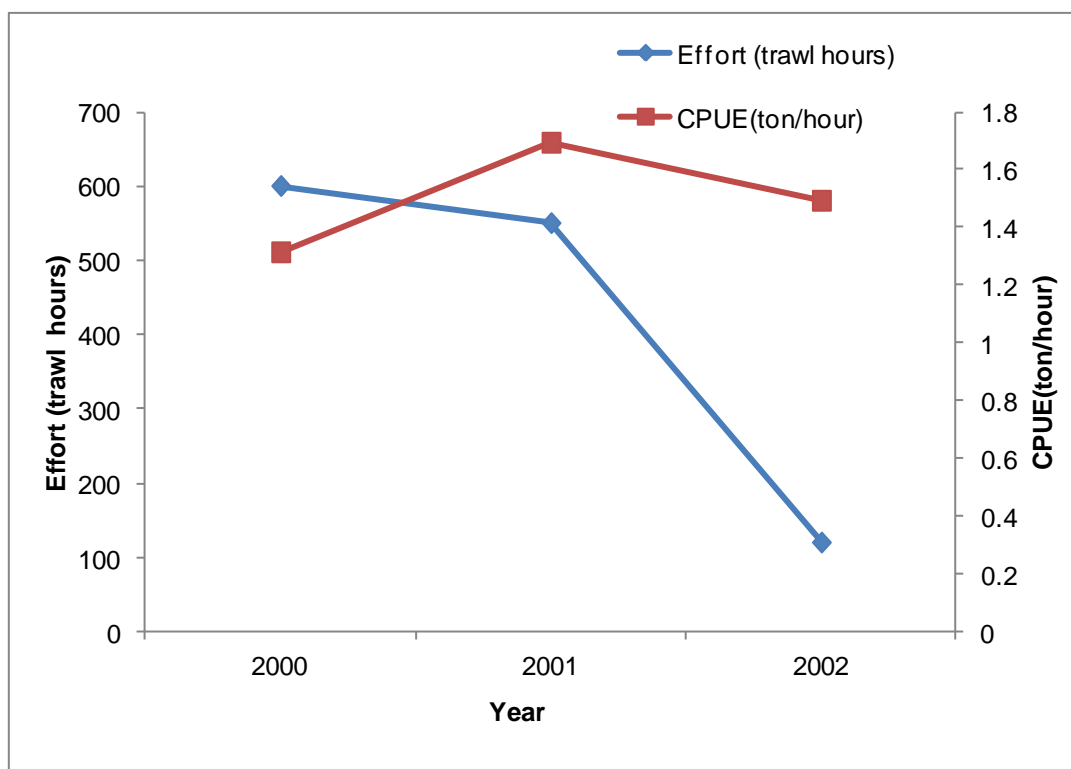
Fig.3 the Efforts and CPUE of Demersal Trawling in the SIOFA Area from 2000 to 2002

Table 2 Annual Catches of Demersal Trawling in the SIOFA Area from 2000 to 2002

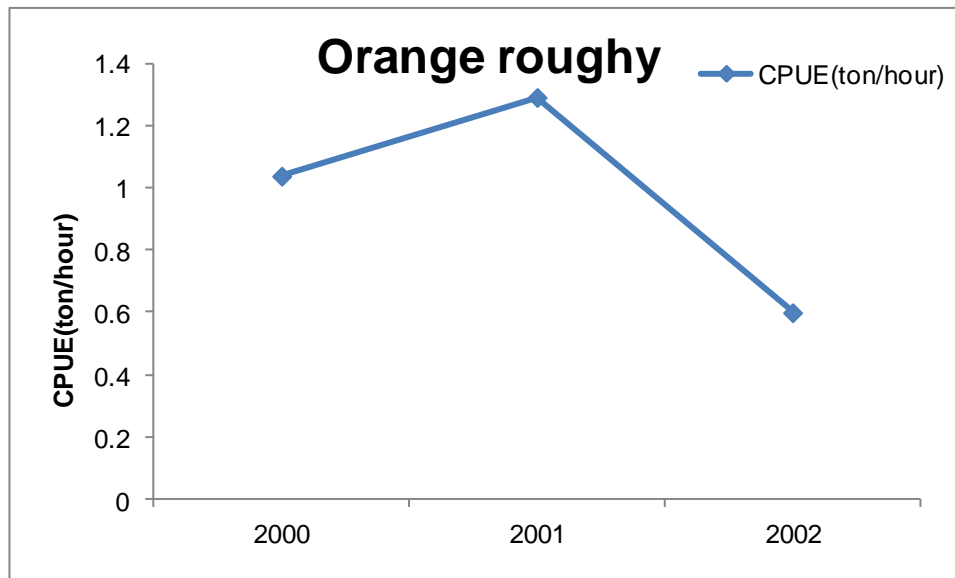| Year	Total catch （tons）	Chinese Name	大西洋胸棘鯛	红金眼鲷	新（异）海鲂属	少耙后竺鲷	大洋拟五棘鲷	其它
		English Name	Orange Roughy	Alfonsino	Dories	Cardinal Fish	Boarfish	Others
		Scientific Name	*Hoplostethus Atlanticus*	*Beryx Splendens*	Genus *Neocyttus* and Genus *Allocyttus*	*Epigonus Telescopus*	*Pentaceros Richardsoni*	
2000	788		623	8	148	5	2	2
2001	931		710	7	180	18	9	7
2002	179		72	6.678	96.5	2.84		1

Fig.4 the CPUE of Orange Roughy in Demersal Trawling in the SIOFA Area from 2000 to 2002

2.2 Bottom Longlining

The number of Chinese bottom longliners were operating in the SIOFA Area ranged from 2 to 20 from 2004 to 2013. Snapper dominated in the catches. The total catch ranged from 126 to 2290 tons in table 3. The fishing efforts from 2004 to 2013 were from 995×1000 hooks (lowest in 2005) to 12375×1000 hooks (highest in 2011) (Fig.5).

The bottom longlining also claimed for the catch of 2.3 to 38.7 tons of orange roughy. Regarding the bottom longlining data, the following is deserving noting:

1) The historical total catch data of orange roughy from 2004 to 2013 indicated in Table 3 is estimated based on calculation according to the proportion of orange roughy in the total catch of the species in the logbooks of the sampling vessels; and

2) The species was mainly identified and recorded by the fishing crew on board, mistake in identification maybe as result.

In terms of ruby snapper *Etelis Coruscans*, the CPUE in the bottom longlining in the SIOFA Area from 2004 to 2013 was from 4.1 kg/1000 hooks to 10.7 kg/1000 hooks (Fig.6).

Table 3 the Catches of Bottom Longlining in the SIOFA Area from 2004 to 2013

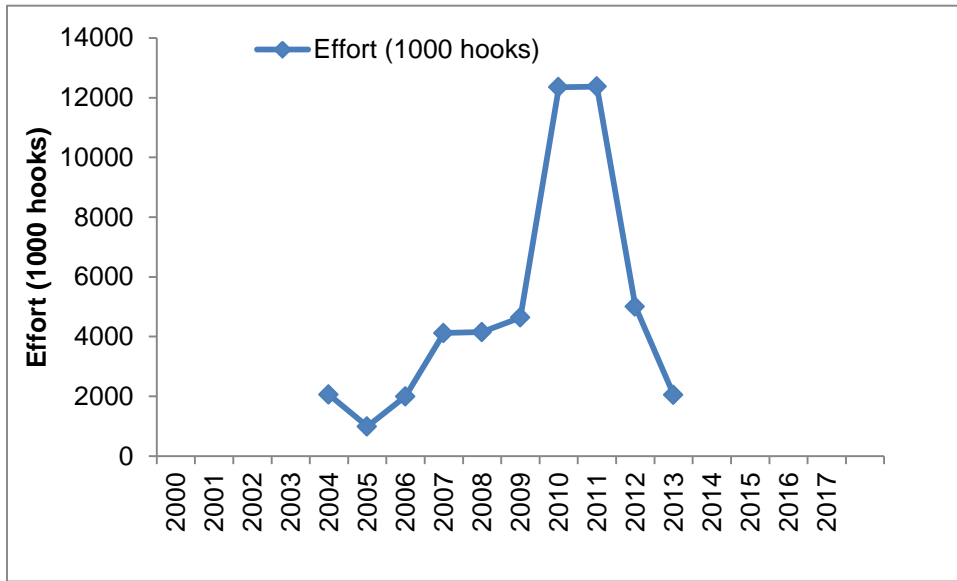| Year	No. of Vessels	Chinese name	胸棘鲷	阿拉伯小鲷	丝尾红钻鱼	笛鲷类	紫鱼	石斑鱼属	金眼雕属	海鲂类	鲹科	鮨科	其它	
		English Name	Orange Roughy	Arabian Pandora	Ruby Snapper	Snapper	Sharptooth Jobfish	Grouper	Alfosino	Dories	Family Carangidae	Family Serranidae	Others	Total Tons
		Scientific Name	*Hoplostethus Atlanticus*	*Pagillus Affinis*	*Etelis Coruscans*	Lutjanidae Family	*Microcanthus Strigatus*	*Epinephelus*	Genus *Beryx*	Genus *Neocyttus* and Genus *Allocyttus*	Carangidae	Serranidae		
2004	3		7.2	10	18	240	5	2	11	16	18	16	16	360
2005	2		2.3	6	8	64	4	0.4	1.6	5	24	2	8	126
2006	4		13.5	1	16	485	6	1	18	18	25	10	22	615
2007	9		21.4	3	33	994	9	2	25	12	56	15	32	1202
2008	9		22.8	9	40	890	15	2	28	18	25	20	31	1100
2009	11		19.2	18	20	1050	15	3	25	30	43	42	42	1420
2010	20		35	16	50	1560	18	4	32.1	200	88	68	68	2290
2011	20		38.7	26	65	1232	21	5	30	36	95	78	54	1680
2012	17		29.3	2	42	672	11	5	36	16	70	58	33	974
2013	3		7	4	22	210	3	2	11.1	20	60	10	21	370

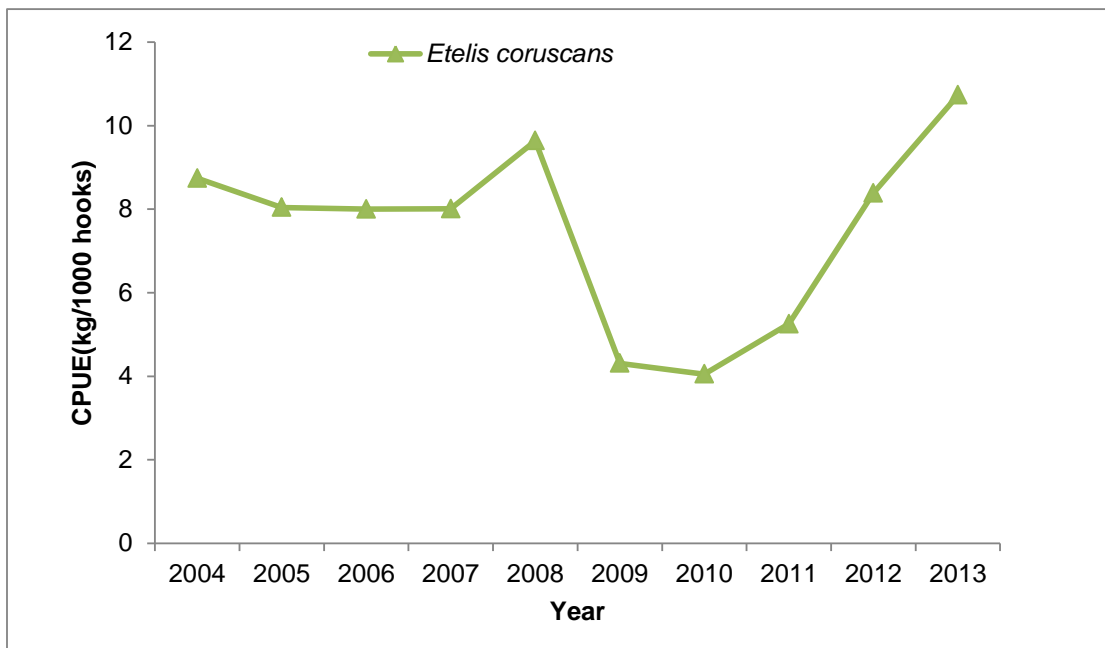Fig.5 the Efforts of the Bottom Longlining in the SIOFA Area from 2004 to 2013

Fig.6 the CPUE of Ruby Snapper *Etelis Coruscans* of the bottom longlining in the SIOFA Area from 2004 to 2013
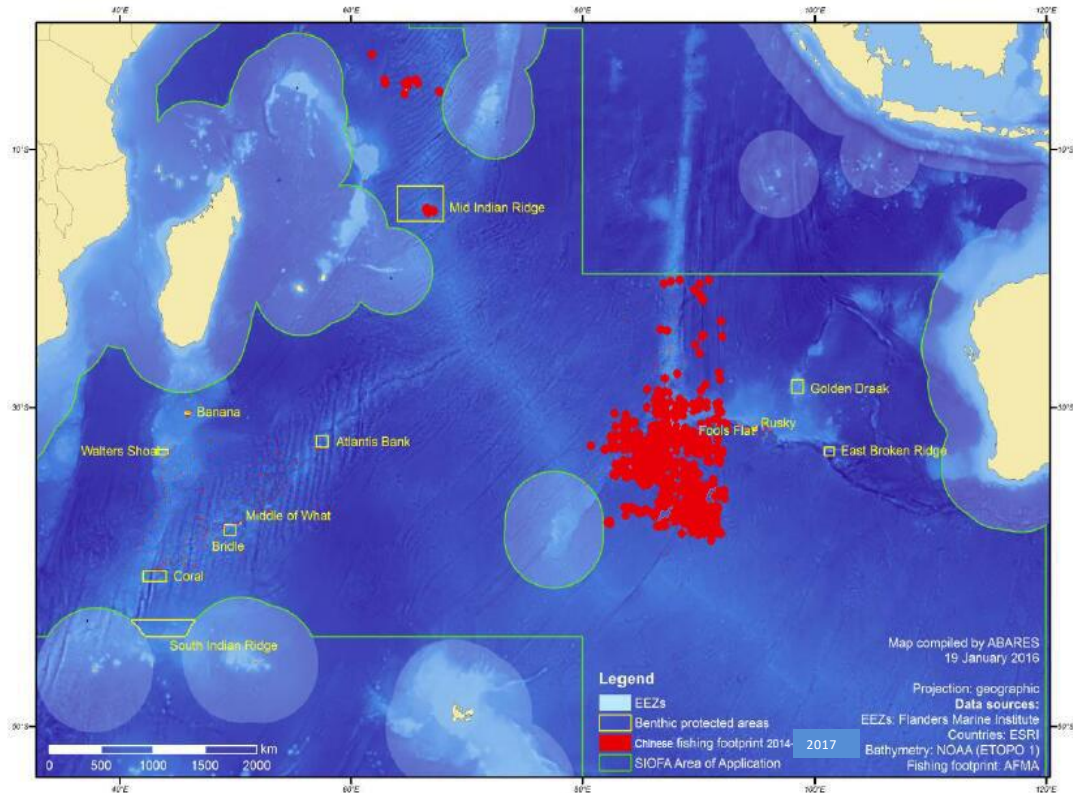
2.3 Light Seining

Fig.7 the Main Distribution (Red Circle ●) of Light Seining in the SIOFA Area from 2014 to 2017

The total efforts of the light seining in the SIOFA Area from 2014 to 2017 ranged from 300 to 9,583 fishing hours (Fig.8). Special heed shall be given to 2017 with almost 300 hours, i. e. no more than six fishing days, in the Area. The CPUE (tons/net) has increased from 4.6 to 7.6 from 2014 to 2016, and decreased to 4.8 in 2017 (Fig.9). In terms of catches, pomfret (Bramidae) was dominating. Australia mackerel also accounted for a high percentage from 2014 to 2017 (Table 4). The CPUE of pomfret ranged from 209 kg/hour to 451 kg/hour in light seining from 2014 to 2016 (Fig.10). In 2017, due to the change of fishing ground, the CPUE of pomfret was 40 kg/hour (Fig.10).
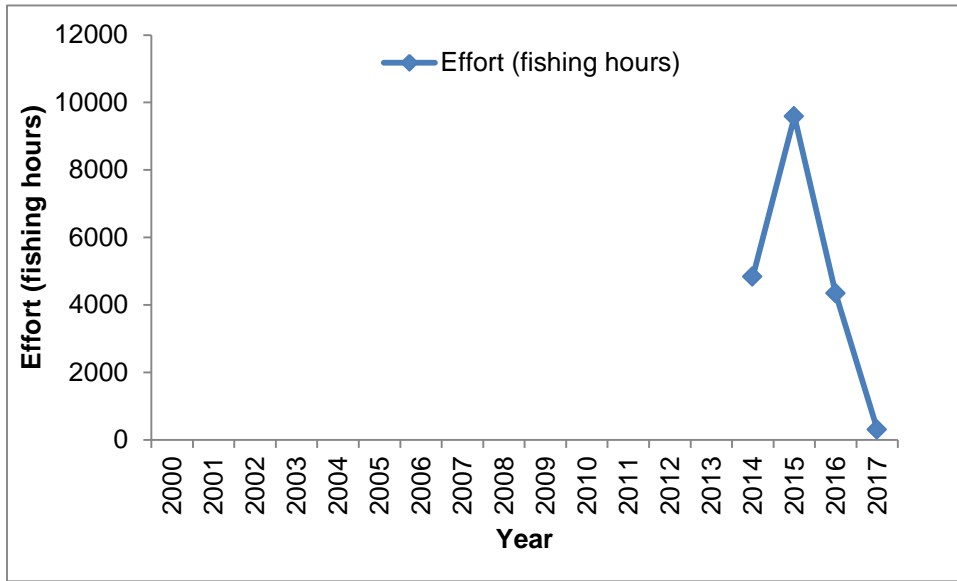
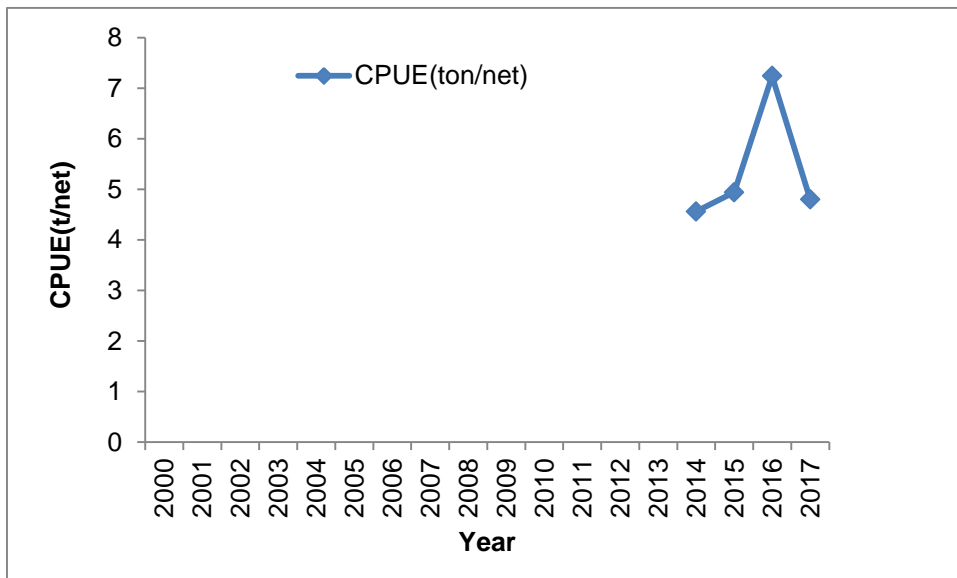Fig.8 the Total Efforts of the Light Seining in the SIOFA Area from 2014 to 2017

Fig.9 the CPUE (ton/net) of the Light Seining in the SIOFA Area from 2014 to 2017
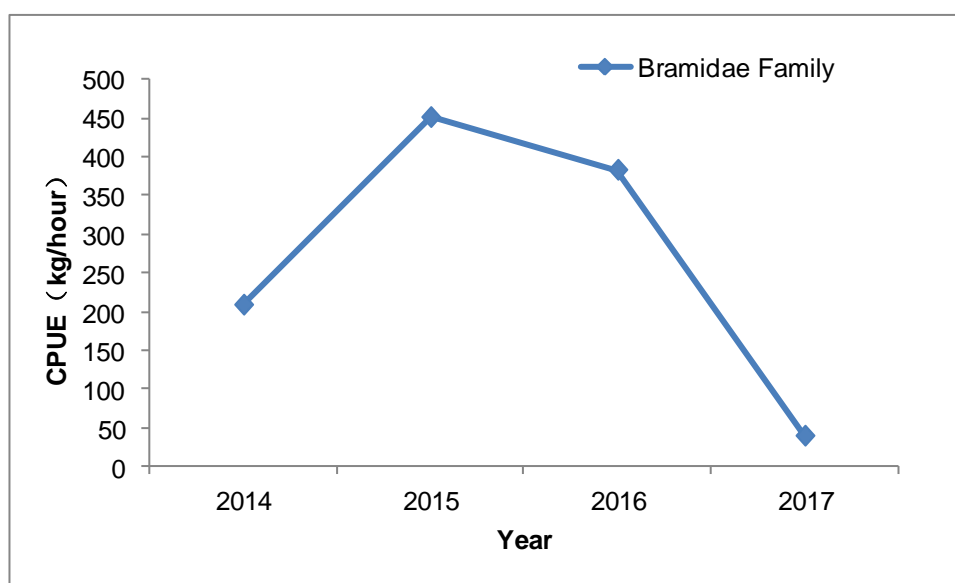
Fig.10 the CPUE (kg/hour) of Bramidae in the Light Seining in the SIOFA Area from 2014 to 2017

Table 4 the Catch of the Light Seining in the SIOFA Area in from 2014 to 2019

Year	Total Catch (Tons)	Chinese Name	澳洲鲐	日本鲐	鸢乌贼	乌鲂科	沙丁鱼	鰤属	竹筴鱼	鳀鱼	
		English Name	Australia Mackerel	Japanese Mackerel	Squid	Pomfret	Sardine	Amberjack	Mackerel	Anchovy	Others
		Scientific Name	*Scomber Australasicus*	*Scomber Japonicus*	*Sthenoteuthis Oualaniensis*	Bramidae *Falmily*	*Sardinella* and *Sardina* Genus	*Seriola*	*Trachurus*	Engraulidae Family	
2014	2125		500	18	0	1008	0	76	482	0	41
2015	4671		174	48	8	4321	8	40	0	0	72
2016	1877		153	12	0	1659	0	18	0	3	32
2017	150		132	2	6	12	0	0	1	0	7
2018	0										
2019	0										

3. Fishing Data Collection and Research Activities

3.1 Fishing Data Collection

China has established a scientific data collection system. East China Sea Fisheries Research Institute, Chinese Academy of Fishery Sciences (ECSFRI) and Shanghai Ocean University (SHOU) are responsible for fisheries data collection, data analysis and scientific research.

Since 2000, the Chinese fishing companies are obligatory to record the daily catches and fishing efforts of their vessels in the logbooks by the officers on board. Since 2014, in light seining, the fishing hours, number of the fish aggregation bulbs, timespan for net setting and catches of every net-setting, etc. have been required to be recorded. Every logbook shall be submitted to ECSFRI and SHOU to analyze the fisheries dynamics and abundance. All the light seiners are required to submit its monthly fishing/non-fishing activities, catch data and relevant information to China Overseas Fisheries Association (COFA), a designated organization by fisheries authority of China, since 2016, who would transmit the data to scientific organizations mentioned above.

3.2 Vessel Monitoring System (VMS)

China have also established a VMS. An automatic location communicator (ALC) is compulsory for each officially approved Chinese-flagged fishing vessel. INMARSAT-C and Argos, these two types of internationally accepted ALC, are the most chosen by the fishing companies. The fishing vessels are obligatory to report their positions every four (4) hours and once an hour since January, 2020 to China VMS. Provided the ALC fails to report, the vessels owners are required to report manually. Every year, the scientists and technicians from ECSFRI and SHOU check the accuracy of vessel position recorded in the logbooks through the VMS.

3.3 Research Activities

ECSFRI and SHOU conduct research for the commercial fisheries in the Indian Ocean since 2000. ECSFRI and SHOU are also responsible for collecting all the logbooks and all the other available information concerned. In terms of light seining, the research by ECSFRI covers CPUE standardization, the interaction between the environmental factors and abundance, and fishing technology, etc. SHOU focuses on the fishing ground study for bottom longlining and such study was made in area now under the competence of SIOFA in 2005.

In 2016, 2017 and 2019, China conducted three research projects for light seining to collect more detailed information in the Indian Ocean (outside the SIOFA Area).

4. VME Thresholds and Ecological Impacts

No significant adverse impact by Chinese bottom fishing on VMEs are found and no interactions with threatened, endangered and protected species are reported against the past bottom fishing.

Currently, there is no bottom fishing by officially approved Chinese-flagged vessels in SIOFA Area that may be detrimental to the VMEs.

5. Biological Sampling and Length/Age Composition of Catches

Fig. 11 reflects the length frequency of Australia mackerel by light seiners while Fig. 12 shows that of ruby snapper by bottom longliners. These data include the catches by Chinese-flagged fishing vessels before 2018.
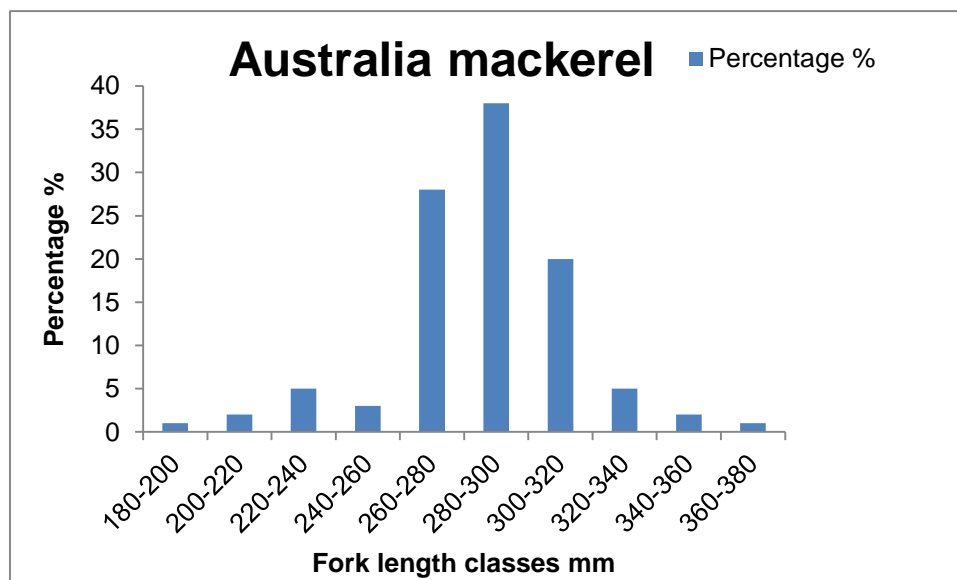

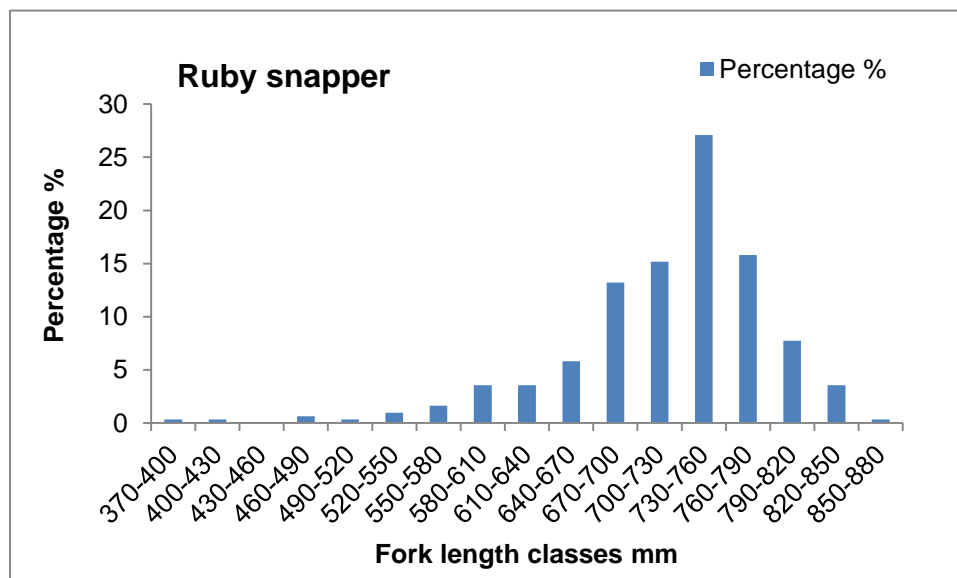Fig.11 Length Frequency (%) of Australia Mackerel by Chinese Light Seiners

Fig.12 Length Frequency (%) of Ruby Snapper by Chinese Bottom Longliners

6. Data Verification Mechanisms

6.1 Demersal Trawling Data

China conducted such fishery from 2000 to 2002, and the logbooks had been verified by Chinese scientific team under the authorization by China fisheries authority.

6.2 Bottom Longlining Data

China conducted such fishery from 2004 to 2013. Both the logbooks and observer data have been verified by Chinese scientific team. Monthly catch report of every vessel including total catch, species, location and number of hooks were sent to COFA and verified by the scientific organizations.

6.3 Light Seining Data

The logbooks have been verified by ECSFRI. Monthly catch report of every vessel including total catch and location shall be sent to COFA and verified by the scientific organizations. The record in the logbooks includes the net setting time, species and catch, and location.

7. Summary of Observer and Port Sampling Program
7.1 Observer Program

China did not conduct an observer program for demersal trawling from 2000 to 2002 in the Indian Ocean. Neither did China for light seining from 2014 to 2019. Since 2005 China has been conducting an observer program for bottom longliners.

7.2 Port Sampling Program

China has established a regular port sampling program for tuna fishing. From 2015 to the present, port sampling of catch by light seining is also conducted at random.

8. Relevant Social and Economic Information (Optional)

No special information is presented and the new development concerned is to be updated in case of any.

9. Fisheries Management of China

The Indian Ocean is one of the most important fishing grounds for the world fishing fleets. China is a not an exception and as such a series of strict measures have been adopted by the Chinese fisheries authority to ensure legal operation of Chinese-flagged

fishing vessels. These measures include but not limited to: fishing authorization, VMS, data reporting, logbook, observer and annual review on the performance of the fishing companies in the previous year, etc.

9.1 Fishing Authorization

Each Chinese-flagged fishing vessel operating in the waters beyond the jurisdiction of China must be approved by the Bureau of Fisheries, the Ministry of Agriculture and Rural Affairs (BOF, MOARA). Through strict inspection, the qualified are authorized to fish in the overseas waters and an officially issued Fishing License of the People's Republic of China (High Seas) is on board at any time for inspection.

9.2 Data Reporting

BOF pays a high heed to the quality of data collection. Each fishing company is required to submit fishing data of the owned Chinese-flagged fishing vessels (such as catch and fishing effort by species, month, gear, area, etc.) to BOF or organization(s) designated by it. The data would be transmitted to the scientific organizations for study and verification. Data covers 100% of the catches and efforts.

An annual meeting at industry level is held to review fishing performance of the previous year. Data reporting is always one of the priorities to be discussed.

9.3 Logbook

Each Chinese-flagged fishing vessel is required to fill in the logbook precisely and the logbook shall be submitted to organization(s) designated by BOF.

9.4 VMS

Each fishing vessel is obliged to be equipped an ALC. A technical team verifies the locations of vessels through the VMS platform to monitor the vessels on a real time basis for fisheries management.

9.5 National Observer Program

China has established an observer program for the overseas fisheries. The observers are trained and dispatched by the organizations authorized by BOF each year. The observers collect catch data on board. Each vessel owner is obliged to provide necessary assistance for those observers.

9.6 Communication and Distribution

Measures adopted by RFMOs and/or required by the BOF are communicated to each fishing company and, where appropriate, processing plant in due course by the relevant authorities of the Chinese Government and COFA under BOF's authorization. Information relating to compliance and safety issues are communicated from time to time by COFA through email, telephone, fax, written documents or other possible means.

9.7 Annual Review by the Government

According to the Regulation on Distant Water Fisheries issued in 2003, an annual review on the performance by overseas fishing companies in the previous year is conducted by the MOARA at the beginning of each year.

The review is mainly based on performance of the fishing companies in terms of data reporting, VMS, acceptance of national observer, logbook submission and data quality, and compliance of other requirements by either RFMOs or Chinese fisheries authority, etc.

Those companies with confirmed faults in the performance review are subject to different penalties by the Government based on the severity of their faults. The most serious is revoking the fishing permit.

Appendix 1 List of Target Species

Common Name	Scientific Name	Chinese Name
Australia mackerel	*Scomber australasicus*	澳洲鲐
Japanese mackerel	*Scomber japonicus*	日本鲭
Orange roughy	*Hoplostethus atlanticus*	大西洋胸棘鲷
Patagonian toothfish	*Dissostichus eleginoides*	小鳞犬牙南极鱼
Ruby snapper	*Etelis coruscan*	丝尾红钻鱼，又叫长尾滨鲷