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Annual National Report: China

Relates to agenda item: 03 Working paper √ Info paper ☐

Delegation of China

Abstract

In the SIOFA area, China used to engage in three different types of fisheries 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. Since 2018, China has no SIOFA fisheries in the Area. Based on accumulated data and statistics, this report summarizes the fishing activities of Chinese-flagged vessels in the area. It also deserves noting that China has been authorizing squid jigging since 2003 in the Indian Ocean, but there are no squid jiggers fishing in the SIOFA area. Hence, this report is not involved Chinese squid jigging in the Indian Ocean. Since 2019, China has been a Contracting Party to SIOFA.

Contents

1. Introduction

Authorized by the Chinese Government, from 2000 to 2017, three types of Chinese-flagged fishing vessels i.e. demersal trawlers, bottom longliners, light seiners were operating in the SIOFA area (Figure 1). The number of fishing vessels during this period was no more than 20. Before 2000, there were no Chinese-flagged fishing vessels operating in the SIOFA area for species under SIOFA management framework (Table 1).

China joined SIOFA in October, 2019. However, since 2018, China has authorized no Chinese-flagged fishing vessels to fish in the SIOFA area for species under the SIOFA management framework.

1.1 Demersal trawling

Chinese demersal trawling was operating in the area now under the SIOFA management from 2000 to 2002 (Fig.1). No more than two demersal trawlers had an annual catch of 179~931 tons in the adjacent waters to the Northern SW Indian Ridge (Fig.2). In 2000 and 2001, two vessels operated in 3a and 3b (Southern SW Indian Ridge and Northern SW Indian Ridge) before the establishment of SIOFA. In 2002, there was only one vessel operating in the area currently under the SIOFA management. Since 2003, there have been no Chinese-flagged demersal trawlers fishing in the 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 before the establishment of SIOFA. From 2007 to 2013, three to 20 vessels were annually operating in Area 1 and 4 (Fig.2, Table 1). The total catch ranges 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 Area 4, 5 and 7 under the SIOFA management (Fig.2, Table 1). In 2015, the catch of six vessels was 4672 tons and in 2016, that of eight vessels was 1877 tons. In 2017, five vessels operated in the SIOFA Area. The average fishing efforts were only six days per vessel and the catch was 150 tons.

Chinese fisheries authorities have authorized light seining to operate on the high seas of Indian Ocean but not in the SIOFA area.

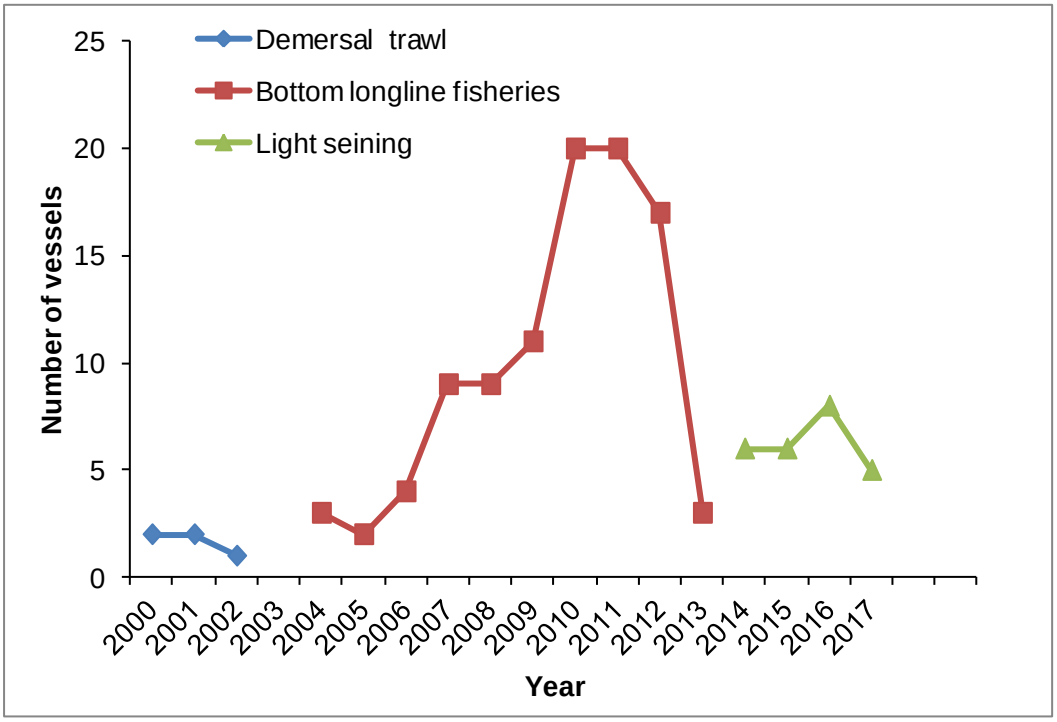

Fig.1 The Number of Chinese Vessels Operating in the Area Now under the SIOFA Management from 2000 to 2017

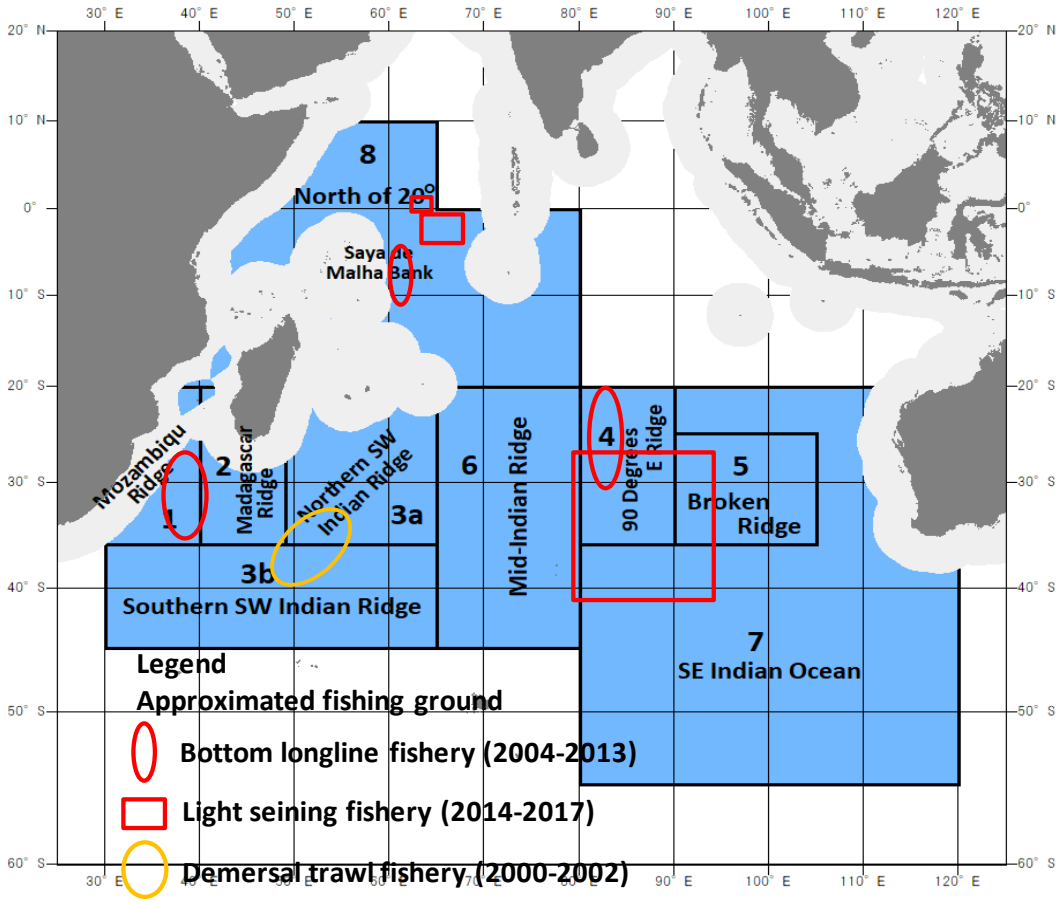

Fig.2 Map of Chinese Fisheries in the Area Now under the SIOFA Management from 2000 to 2017

Table 1 The Number of Vessels and Total Catch of Chinese Fisheries in the Area Now under the SIOFA Management from 2000 to 2020 (Metric Ton)

	Light Seining		Bottom Longlining		Demersal Trawling	
Year	Number of Vessels	Total Catch	Number of Vessels	Total Catch	Number of Vessels	Total Catch
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	/	/	/	/	/	/
2020	/	/	/	/	/	/

2. Catch, Effort and CPUE Summaries

2.1 Demersal Trawling

The fishing effort of Chinese demersal trawling has sharply decreased from 600 hours to 120 hours from 2000 to 2003 (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 catch ranged from 179 tons to 931 tons (Table 2). Orange roughy accounts for the highest percentage of catch composition: 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).

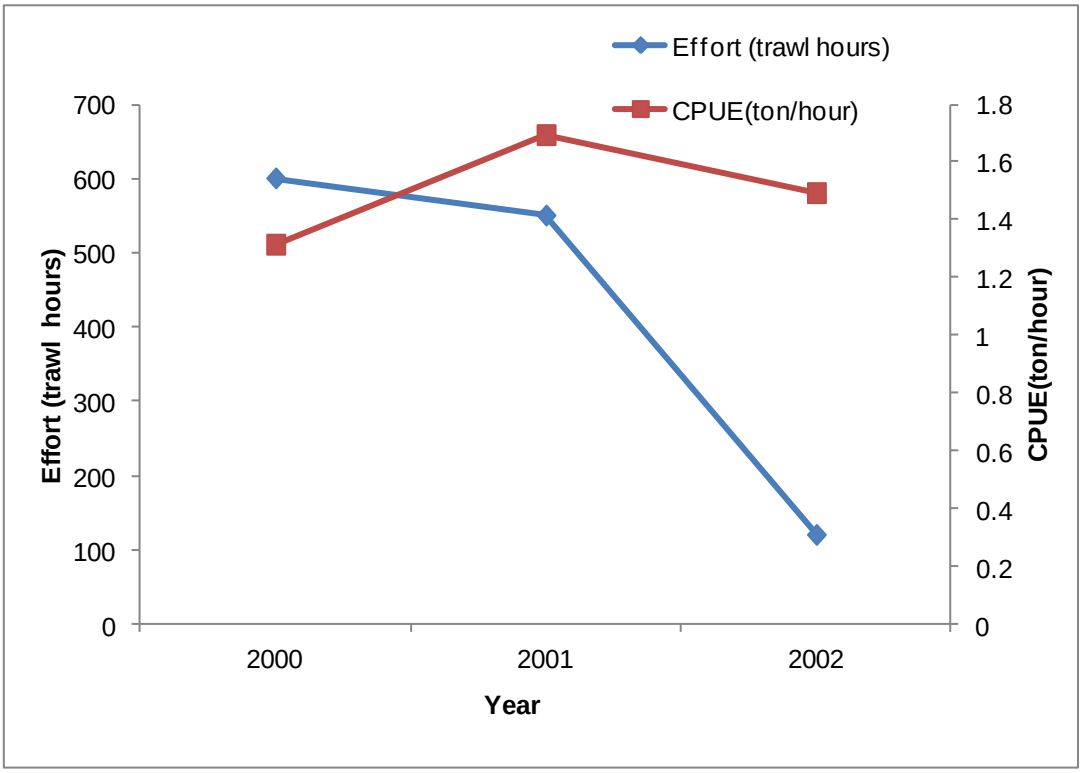

Fig.3 The Effort and CPUE of Demersal Trawling in the Area Now under the SIOFA Management from 2000 to 2002

Table 2 Annual Catch of Demersal Trawling in the Area Now under the SIOFA Management from 2000 to 2002 (Metric Ton)

Year	Total Catch	Chinese Name	大西洋胸棘鲷	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

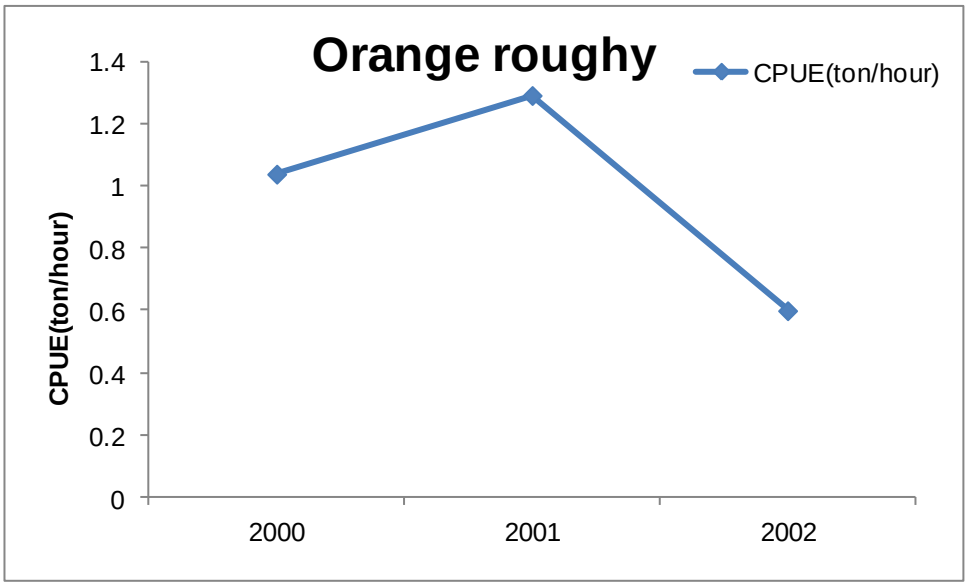

Fig.4 The CPUE of Orange Roughy in Demersal trawling in the Area Now under the SIOFA Management from 2000 to 2002

2.2 Bottom longlining

The number of Chinese bottom longliners operated in the SIOFA area ranged from 2 to 20 from 2004 to 2013. Snappers were the main target. The total catch ranged from 126 to 2290 tons as in Table 3. The fishing effort of bottom longlining in the SIOFA area from 2004 to 2013 was from 995×1000 hooks (lowest in 2005) to 12375×1000 hooks (highest in 2011) (Fig.5).

The Chinese bottom longliners also claim for 2.3 to 38.7 tons of orange roughy. Regarding the data, the following is deserving noting:

1) The historical total catch 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 in those fishing logbooks of the sampling vessels';

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

In terms of ruby snapper, the CPUE of 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 Catch of Bottom Longlining in the Area now Under the SIOFA Management from 2004 to 2013 (Metric Ton)

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	金眼鲷属	海鲂类	鲹科	鲯科	其它	
		English Name	Orange Roughy	Arabian Pandora	Ruby Snapper	Snapper	Sharptooth Jobfish	Grouper	Alfosino	Dories	Family Carangidae	Family Serranidae	Others	Total
		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

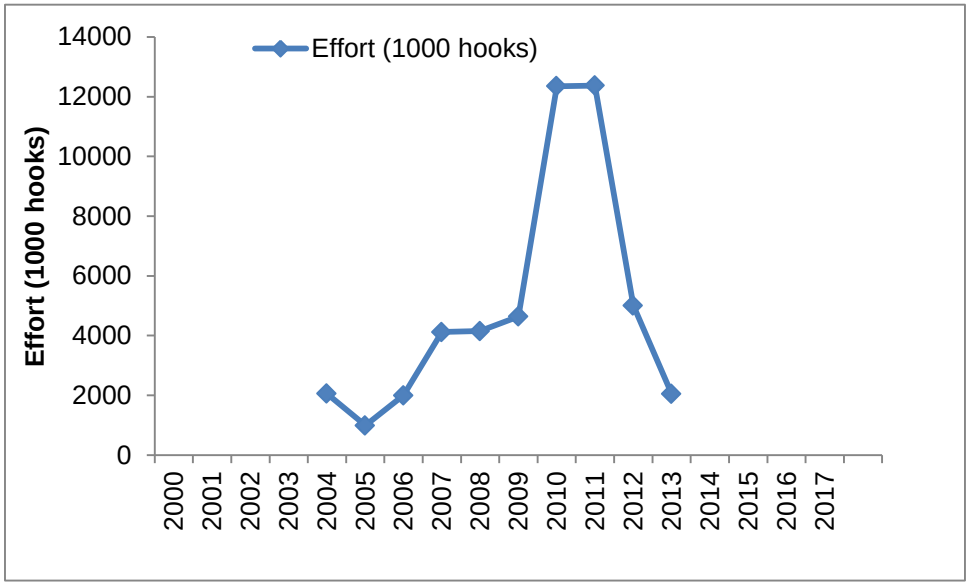

Fig.5 The Effort of the Bottom Longlining in the Area Now under the SIOFA Management from 2004 to 2013

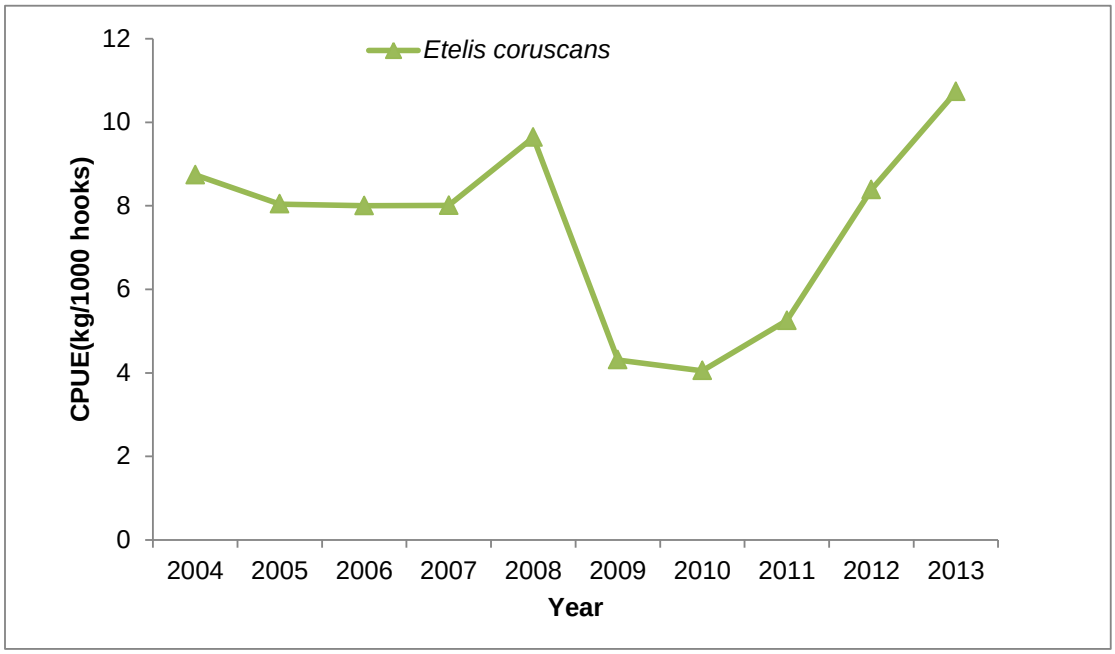

Fig.6 The CPUE of Ruby Snapper of the Bottom Longlining in the Area Now under the SIOFA Management from 2004 to 2013

2.3 Light seining

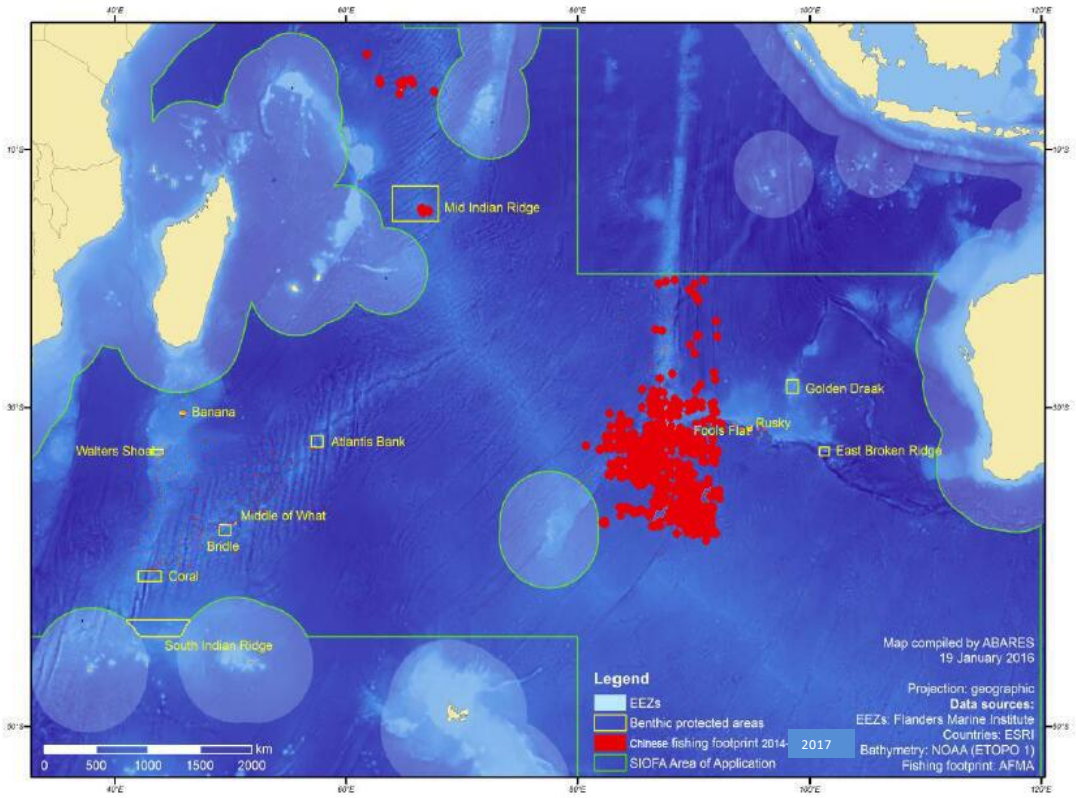

Fig.7 The Mainly Distribution (Red Point) of Light Seining in the SIOFA Area from 2014 to 2017

The total effort of light seining in the SIOFA area before China joined the organization 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 competence 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 catch composition, 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 kgs/hour to 451 kgs/hour in light seining in the competence area from 2014 to 2016 (Fig.10). In 2017, due to the change of fishing ground, the CPUE of pomfret was 40 kgs/hour (Fig.10).

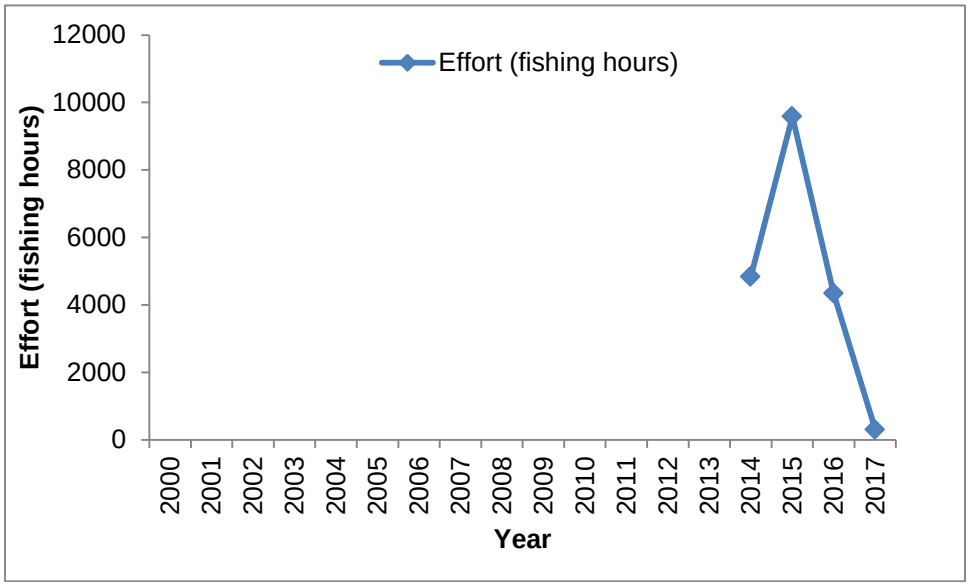

Fig.8 The Total Effort of the Light Seining in the SIOFA Area from 2014 to 2017

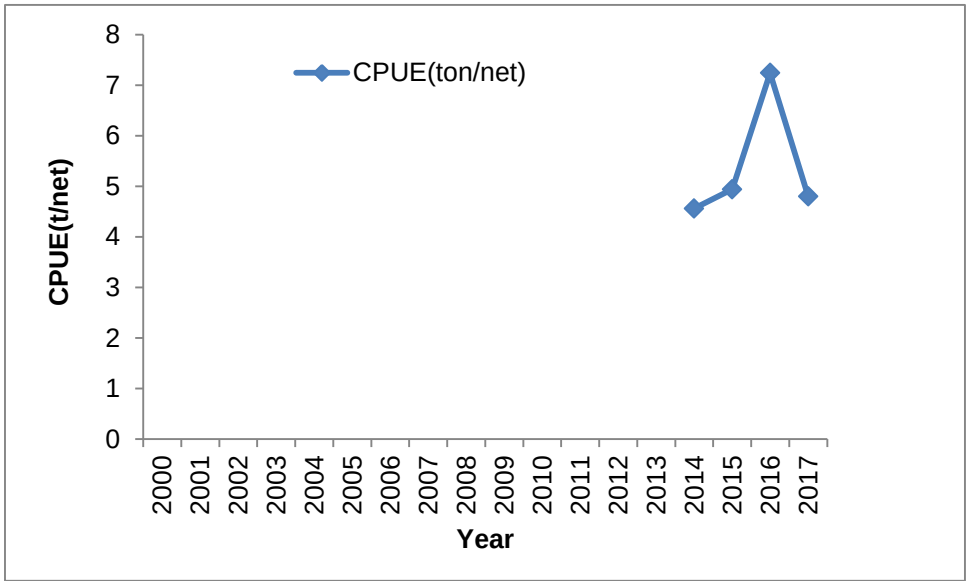

Fig.9 the CPUE (tons/net) of the Light Seining in the SIOFA Area from 2014 to 2017

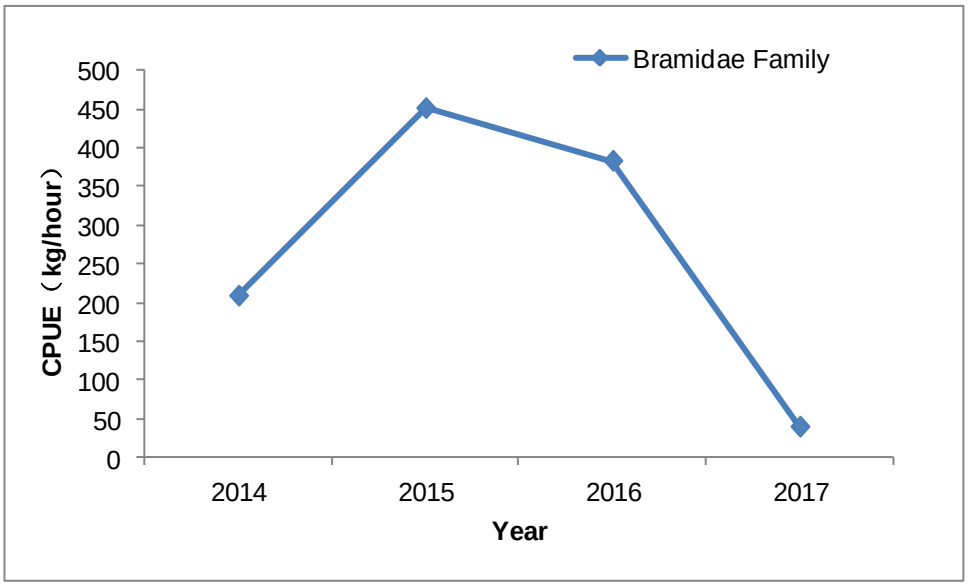

Fig.10 the CPUE (kgs/hour) of Bramidae in the Light Seining in the SIOFA Area from 2014 to 2017

Table 4 the Catch of the Light Seining in the SIOFA Area in from 2014 to 2020 (Metric Ton)

Year	Total Catch	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										
2020	0										

3. Fisheries Data Collection and Research Activities

3.1 Fisheries Data Collection

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

data analysis and scientific research.

Since 2000, Chinese fisheries authorities have been requiring the fishing companies to record the daily catch and fishing efforts data in the fishing logbooks of the Chinese-flagged fishing vessels under their control, including the location of fishing operation. Since 2014 in terms of light seining, the fishing hours, number of the fish aggregation lights, information on every net-setting, including the starting and ending time, catch and by-catch, etc. have been compulsory to be recorded. Every fishing logbook shall be submitted to ECSFRI and SHOU for analysis of fisheries dynamics. All these light seiners are required to submit its monthly fishing/non-fishing activities, catch data and relevant information to China Overseas Fisheries Association (COFA) since 2016.

3.2 Vessel Monitoring System (VMS)

The VMS system has been established in China. An automatic location communicator (ALC) is compulsory for each Chinese-flagged fishing vessel to report their positions, speed and bearings to the VMS. Most of the ship owners adopt the INMARSAT-C while a few choose Argos. The scientists and technicians from ECSFRI and SHOU verify the vessels' positions in the logbooks through the VMS. The Chinese VMS has been strengthened recently, especially since 2020, the fishing vessels are obligatory to report the above-mentioned information to the VMS once an hour.

3.3 Research Activities

ECSFRI and SHOU have been conducting scientific research for the commercial fisheries in the Indian Ocean since 2000. ECSFRI and SHOU are also responsible for collecting all the logbooks and other available fisheries information. ECSFRI engages in light seining research including CPUE standardization, the relationship between environmental factors and the abundance, etc. SHOU focuses on the fishing ground study for bottom longlining and such study was started in 2005 before the establishment of SIOFA.

From 2016 to 2017 and at the end of 2019, China was also conducting 3 scientific projects for light seining to collect more detailed information in the Indian Ocean (all outside the SIOFA area).

4. VME Thresholds and Ecological Impacts

No significant adverse impacts by Chinese bottom fishing on VMEs have been found, and no interaction has been reported between the Chinese bottom fishing vessels and threatened, endangered and/or protected species.

Currently, China does not engage in bottom fishing in SIOFA Area.

5. Biological Sampling and Length/Age Composition of Catches

Length frequency of Australia mackerel by the Chinese-flagged light Seiners are presented in Fig. 11. That of ruby snapper by the Chinese-flagged bottom longliners are presented in Fig. 12.

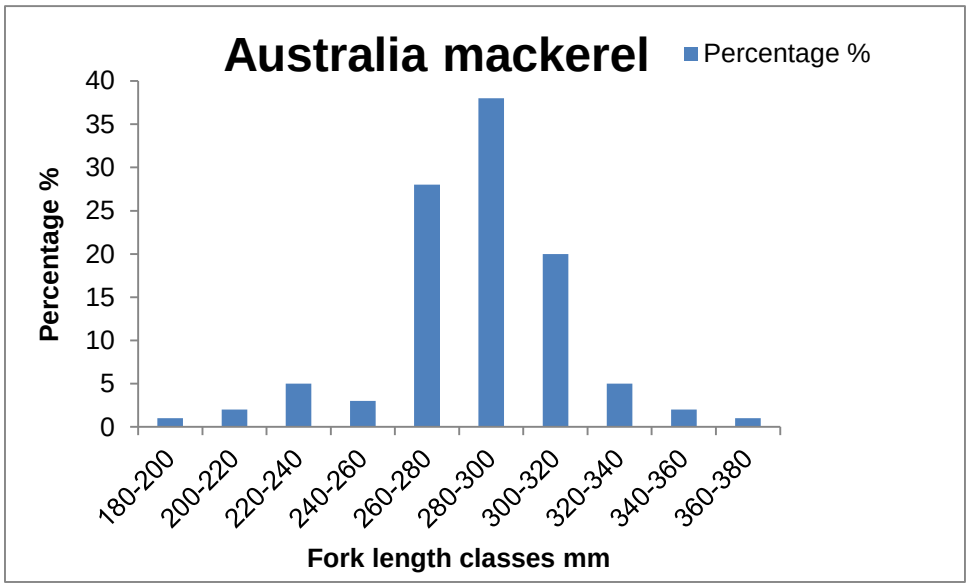

Fig.11 Length Frequency (%) of Australia Mackerel by the Chinese Light Seiners in the SIOFA Area

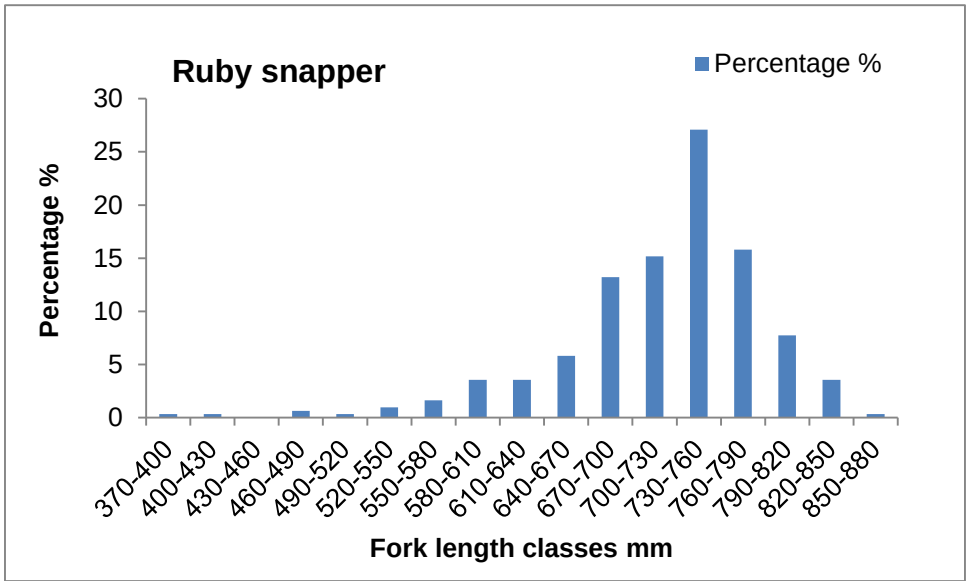

Fig.12 Length Frequency (%) of Ruby Snapper by the Chinese Bottom Longliners in the Area Now under The SIOFA Management

6. Data Verification Mechanisms

6.1 Trawling Data

Trawling data, both demersal and pelagic, have been verified by Chinese scientific team and fisheries authorities through the fishing logbooks. Monthly catch of every vessel is reported to COFA.

6.2 Bottom Longlining Data

Both the fishing logbooks and observer data have been verified by Chinese scientific team and fisheries authorities. Monthly catch of every vessel is reported to COFA.

6.3 Light Seining Data

The fishing logbooks have been verified by ECSFRI and monthly catch of every vessel is reported to COFA. ECSFRI also verifies locations of vessels through the Chinese VMS.

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 2017. Since 2005 China has been conducting an observer program for bottom longlining.

7.2 Port Sampling Program

China does not have a regular port sampling program for the vessels operating in the Indian Ocean except for tuna fishery. However from 2015 to 2019, China has sampled the catch by the Chinese-flagged light seiners at random.

8. Relevant Social and Economic Information (Optional)

No particular information is reported.

9. Fisheries Management of China

Fishing in the Indian Ocean are one of the priorities for Chinese overseas fisheries and as such the strict measures have been adopted to ensure legal and sustainable development of marine resources in the Indian Ocean. These measures include but not

limited to: fishing authorization, data reporting, fishing logbook, VMS, and annual review on the performance of the fishing companies in the previous year, etc.

9.1 Fishing Authorization

Each fishing vessel operating in the waters outside the jurisdiction of China must be approved by the Ministry of Agriculture and Rural Affairs (MOARA). Through strict inspection, the qualified fishing vessels are authorized to fish on the high seas.

9.2 Data Reporting

As the central fisheries authority, the Bureau of Fisheries, MOARA, pays a high heed to the quality of data collection. An annual industrial meeting is held for reviewing the performance of the related fishery in the previous year in line with the requirement of the Bureau of Fisheries.

Besides each overseas fishing vessel is required to submit the fishing data (such as catch and fishing effort by species, gear and area, etc.) to COFA before the due date every year. Data coverage of catch and efforts is 100%. The data are also collected through port sampling jointly organized by COFA, ECSFRI and SHOU. All of these data are subject to verification by COFA, ECSFRI and SHOU.

Based on the data, scientific activities are conducted by the fisheries scientists from ECSFRI and SHOU.

9.3 Fishing Logbook

Each fishing vessel is required to precisely fill in the fishing logbooks and the fishing logbooks are submitted to the institutes designated by the Bureau of Fisheries. The monthly catch for main target species is reported to COFA.

9.4 VMS

An ALC is compulsorily installed on each overseas fishing vessel. A technical team verifies the locations of vessels through the Chinese VMS to monitor the vessels on a real time basis for fisheries management. Provided any vessel lacks automatically reported positions or enters into the prohibited area, the VMS sends warnings to the vessel owners concerned and fisheries authorities.

9.5 National Observer Program

China has established an observer program for the overseas fisheries. The observers are

trained by SHOU and coordinated by COFA to dispatch them on board each year. With reference to the conservation and management measures (CMM) of some regional fisheries management organization (RFMO), the regulations are adopted to ensure the safety of observer and smooth collection of data.

9.6 Lectures on CMMs and Policies

Every year COFA, under the instruction from the Bureau of Fisheries, organizes the lectures on the CMMs by RFMOs and/or policies by the Bureau of Fisheries for the purpose of fishing in compliance with the accepted international regulations and domestic fisheries rules. On such occasion, the CMMs and policies are clarified to the participating fishing companies and, where appropriate, processing plants. The lecturing materials are also conveyed to the companies or organizations concerned through email, telephone, fax, or other possible means.

9.7 Annual Review by the Government

According to the Chinese Regulation of Distant Water Fisheries issued in 2003, an annual review on the performance by all the Chinese 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, *inter alia*, data reporting, VMS, acceptance of national observer, fishing logbook submission, data quality, and compliance of other requirements by either RFMOs or Chinese fisheries authorities, etc.

Those companies with faults in the performance review are subject to different penalties by the government based on the degree of severity. The most serious is revoking the fishing authorization.

Appendix 1 Common, Scientific and Chinese Names of 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