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Southern Indian Ocean Fisheries Agreement  
Accord relatif aux Pêches dans le Sud de l'Océan Indien

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## 8th Meeting of the Scientific Committee (SC8) Tenerife, Spain, 22-31 March 2023

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### Annual National Report: China

#### Delegation of China

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<b>Abstract</b>	
<p>In SIOFA Area, China was operating three different types of fisheries intermittently from 2000 to 2017: Light seining was targeting mackerel and bramidae family; bottom longlining was targeting ruby snapper, etc. and demersal trawling was targeting dories and orange roughy. Since 2018, China has not operated any SIOFA fisheries in the Area. Based on accumulated data and statistics, this report summarizes fishing activities by Chinese-flagged vessels not targeting highly migratory fish stocks in SIOFA Area. It is also deserving noting that China has been authorizing squid jigging since 2003 in the Indian Ocean, but there has no squid jigging vessels fishing in SIOFA area. Hence squid jigging is not included in this report. Since 2019, China has been a Contracting Party to SIOFA.</p>	

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## **1. Description of Fishing**

Under the authorization of 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 the fishing vessels during this period was no more than 20. Before 2000, there were 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 prior to China becomes Contracting Party to SIOFA and the relevant fishing vessels are listed on the RFV. Currently China has joined the SIOFA in October, 2019.

### **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 had caught 179~931 tons of fish annually in the adjacent waters to the Northern SW Indian Ridge (Fig.2). In 2000 and 2001, two vessels operated in 3a and 3b (Southwestern Indian Ridge) of the SIOFA Area. In 2002, there was only one vessel operating in the competence 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 in Area 1 and 4 (Fig.2, Table 1). The total catch 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 Area 4, 5 and 7 currently under SIOFA competence (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.



In addition, the Chinese fisheries authority has authorized more than 50 light seiners (55 in 2017) to operate on the high seas of Indian Ocean<sup>3</sup>, it is quite likely that such vessels may operate in SIOFA Area in the future under SIOFA CMMs.

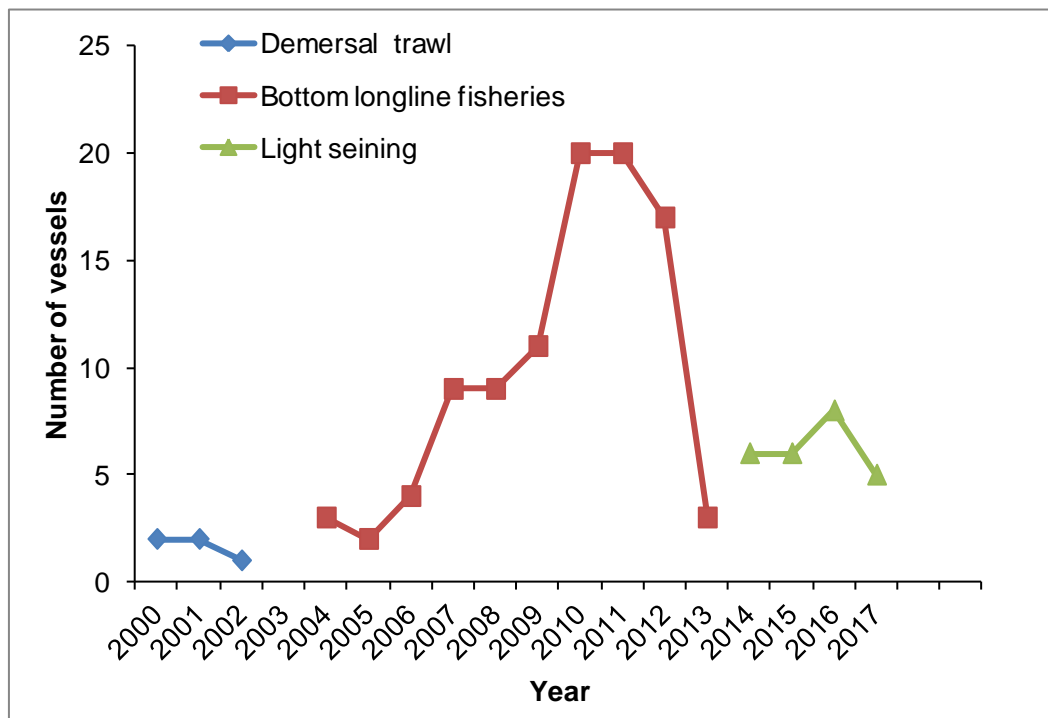


Fig.1 the number of Chinese vessels operating in the SIOFA Area from 2000 to 2017

<sup>3</sup> Most of such vessels operate in the area above the northern boundary of SIOFA Area, i.e. 12° ~20° N, 56° ~65° E.



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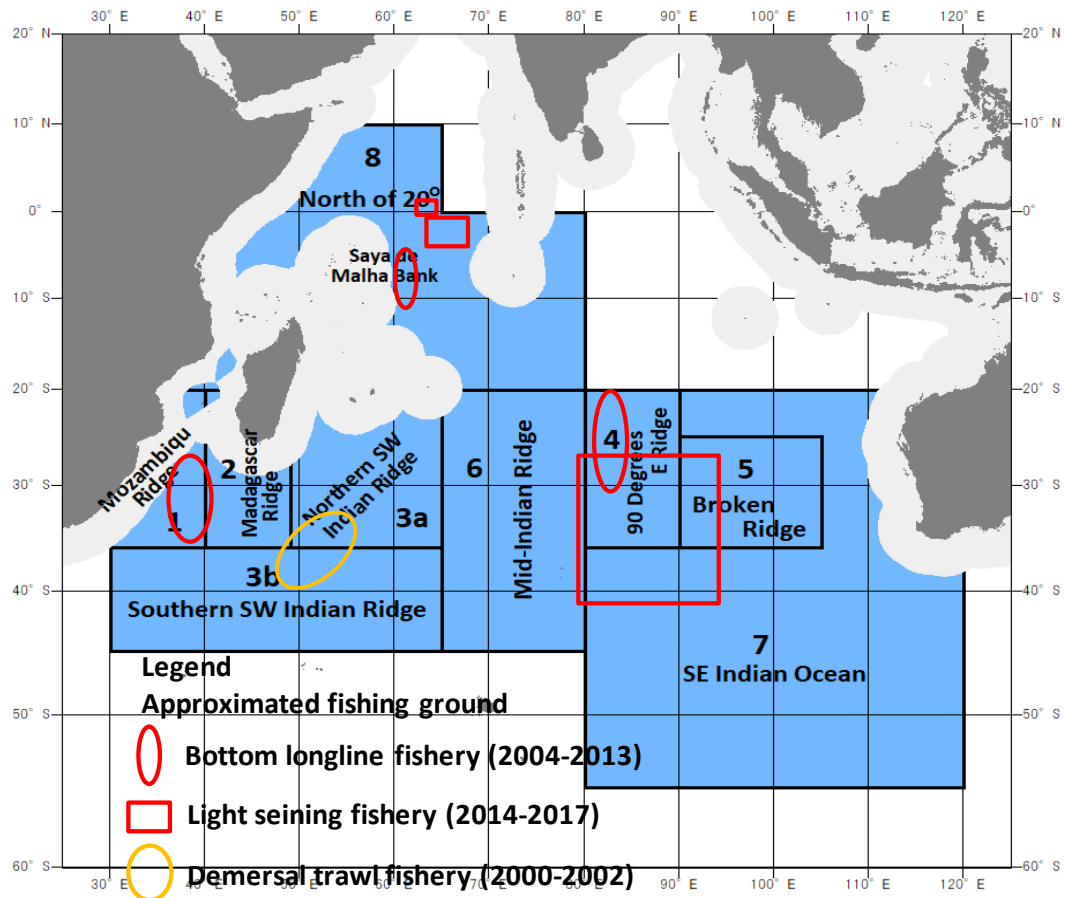


Fig.2 the map of Chinese fisheries in the SIOFA Area from 2000 to 2017



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Table 1 Number of vessels and total catch of Chinese fisheries in the SIOFA Area from 2000 to 2021

Year	Light Seining		Bottom Longlining		Demersal Trawling	
	Number of vessels	Total Catch (tons)	Number of vessels	Total Catch (tons)	Number of Vessels	Total Catch (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	/	/	/	/	/	/
2020	/	/	/	/	/	/
2021	/	/	/	/	/	/
2022	/	/	/	/	/	/

## 2. Catch, Effort and CPUE Summaries

### 2.1 Demersal trawling

The fishing effort of the Chinese demersal trawling had 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).



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From 2000 to 2002, the total catch ranged from 179 tons to 931 tons (Table 2). Orange roughy accounted for the highest percentage of catch composition: The catch of the species was 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).

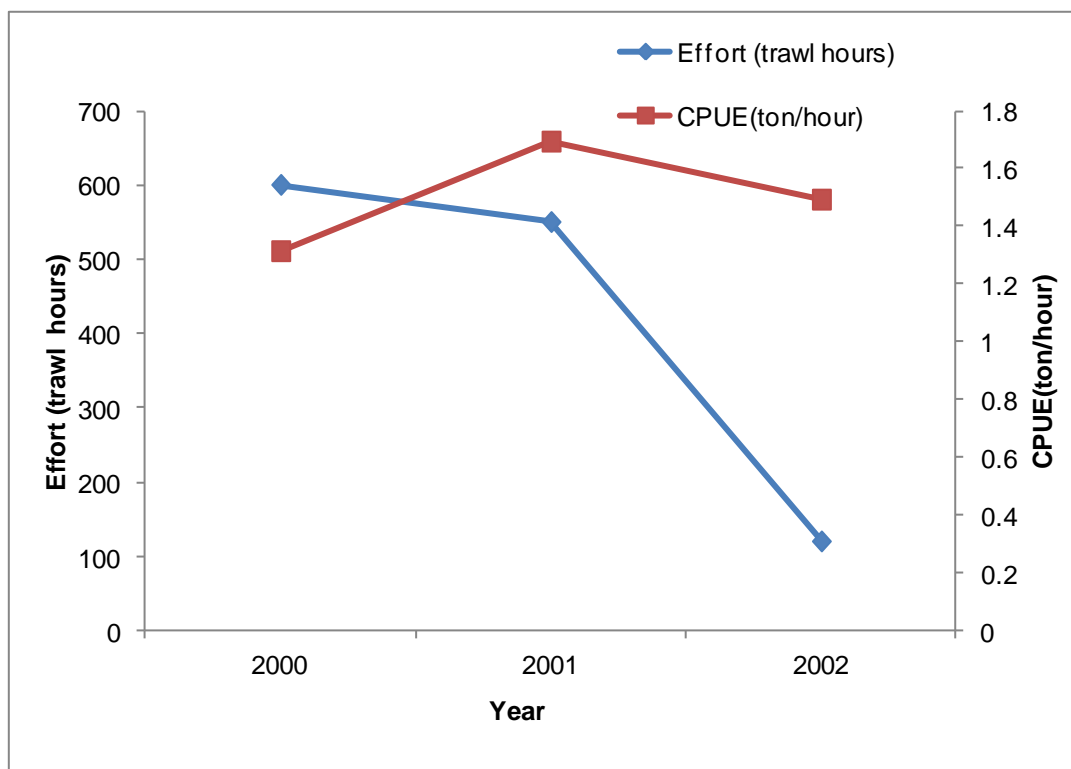


Fig.3 the effort and CPUE of demersal trawling in the SIOFA Area from 2000 to 2002

Table 2 annual catch of demersal trawling in the SIOFA Area from 2000 to 2002

Year	Total Catch (tons)	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	<i>Hoplostethus Atlanticus</i>	<i>Beryx Splendens</i>	Genus <i>Neocyttus</i> and Genus <i>Allocyttus</i>	<i>Epigonus Telescopus</i>	<i>Pentaceros Richardsoni</i>	
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

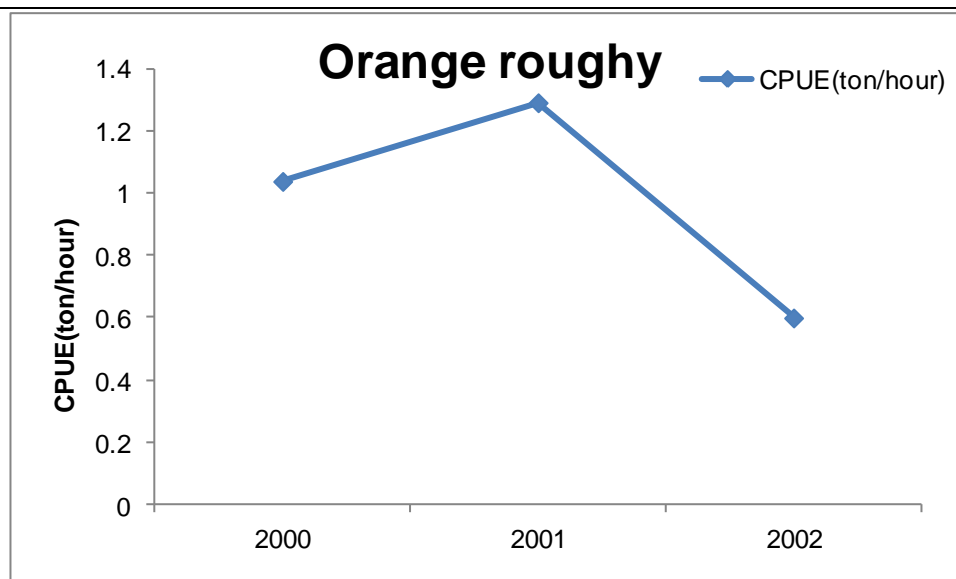


Fig.4 the CPUE of orange roughy in demersal trawling in the SIOFA Area from 2000 to 2002

## 2.2 Bottom Longlining

The number of Chinese bottom longliners operating in the SIOFA Area ranged from 2 to 20 from 2004 to 2013. Snapper dominated in the catch composition. The total catch ranged from 126 to 2290 tons 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 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) Based on calculation according to the proportion of orange roughy in the total catch in the logbooks of the sampling vessels, the historical total catch data of orange roughy from 2004 to 2013 indicated in Table 3 is estimated; and
- 2) The species was mainly identified and recorded by the sailors 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).





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Table 3 the catch (tons) 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	鲷科	其它	
		English Name	Orange Roughy	Arabian Pandora	Ruby Snapper	Snapper	Sharptooth Jobfish	Grouper	Alfosino	Dories	Carangidae Family	Serranidae Family	Others	Total Tons
		scientific Name	<i>Hoplostethus Atlanticus</i>	<i>Pagillus Affinis</i>	<i>Etelis Coruscans</i>	Lutjanidae Family	<i>Microcanthus Strigatus</i>	<i>Epinephelus</i>	Genus <i>Beryx</i>	Genus <i>Neocyttus</i> and Genus <i>Allocyttus</i>	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

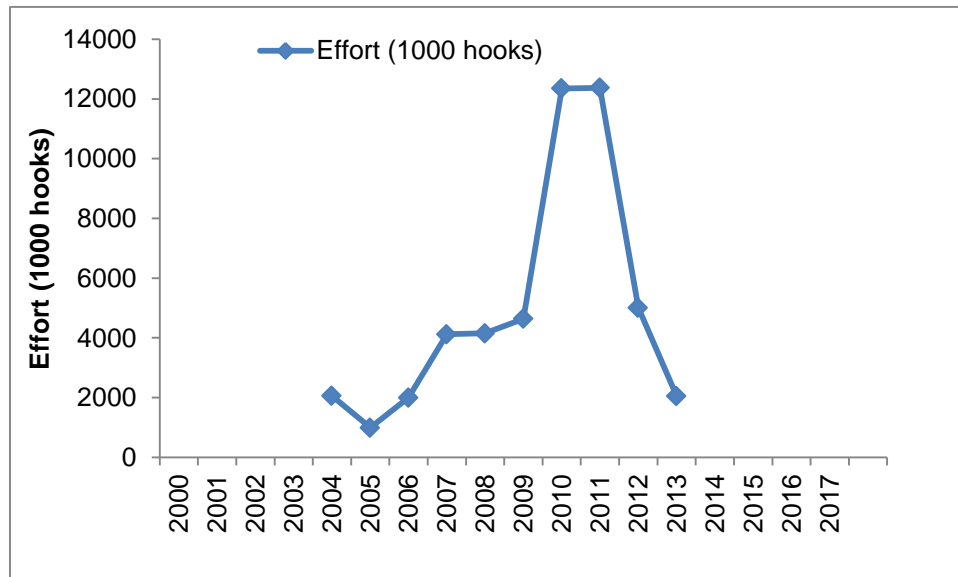


Fig.5 the effort of the bottom longlining in the SIOFA Area from 2004 to 2013

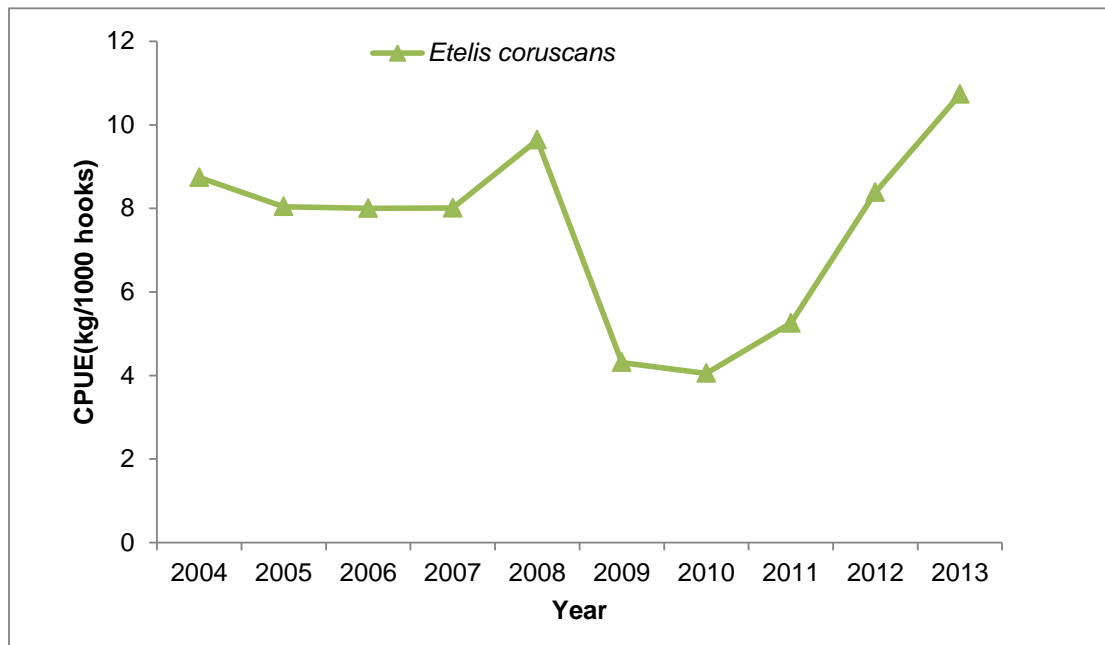


Fig.6 the CPUE of ruby snapper (*etelis coruscans*) of the bottom longlining in the SIOFA Area from 2004 to 2013



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## 2.3 Light Seining

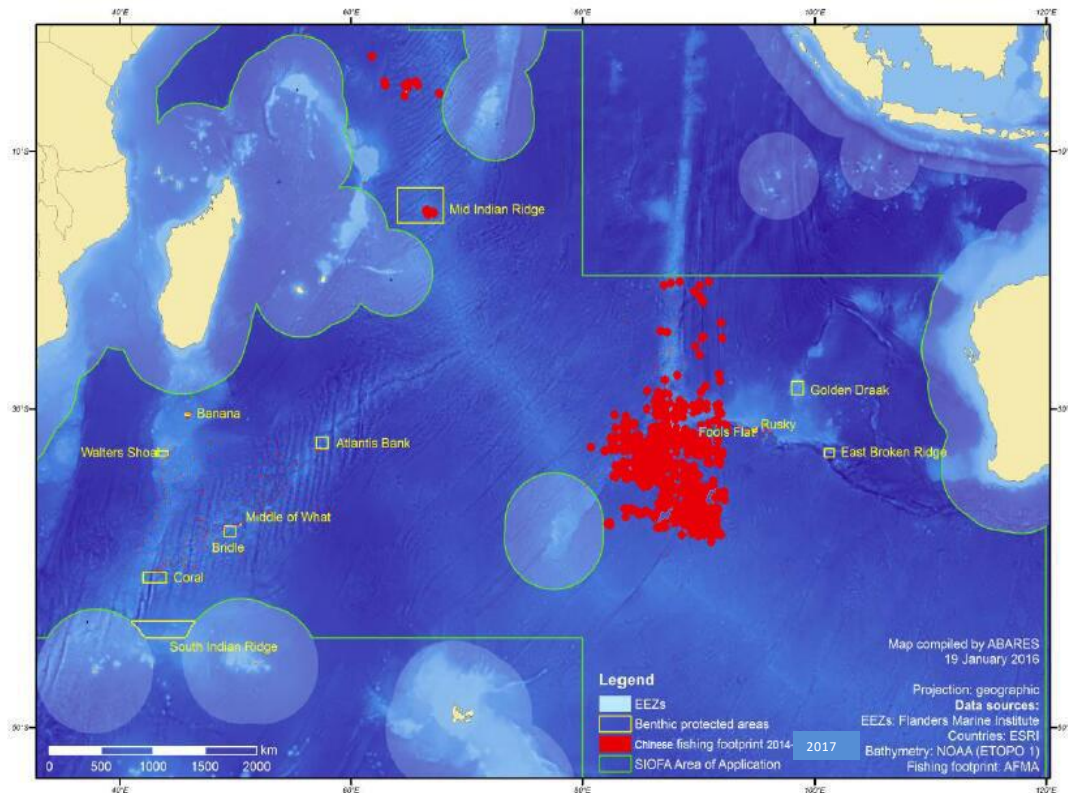


Fig.7 the mainly distribution (red circle ●) of light seining in the SIOFA Area from 2014 to 2017

The total effort 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 competence area. The CPUE (tons/net) had increased from 4.6 to 7.6 from 2014 to 2016, and decreased to 4.8 in 2017 (Fig.9). In terms of all catch composition, pomfret (bramidae family) 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 in the agreement area 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).



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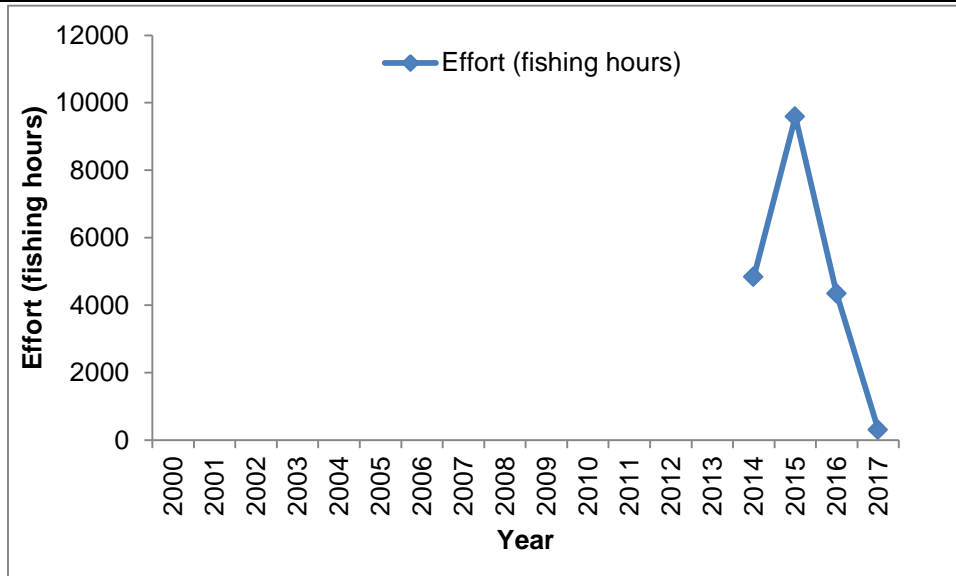


Fig.8 the total effort of the light seining in the SIOFA Area from 2014 to 2017

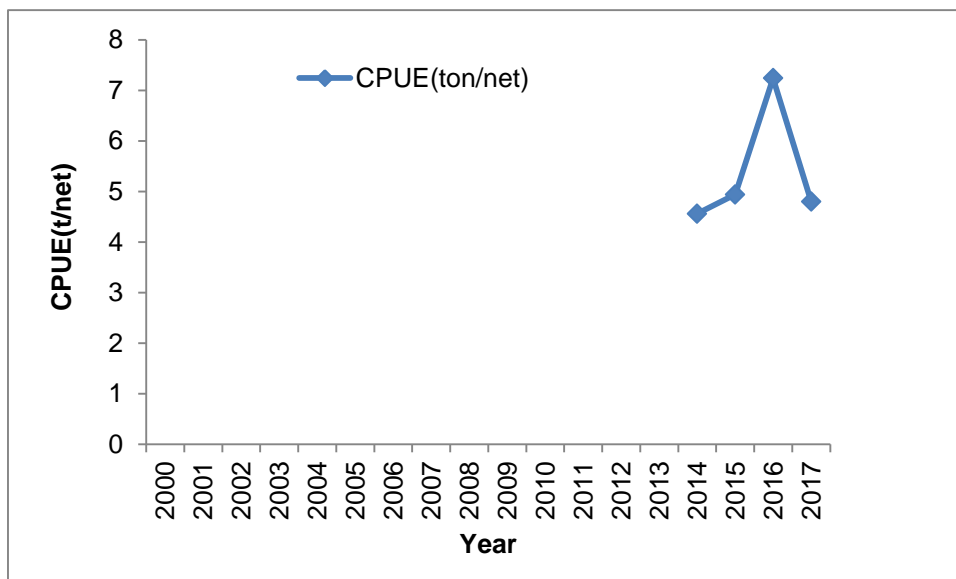


Fig.9 the CPUE (ton/net) of the light seining in the SIOFA Area from 2014 to 2017



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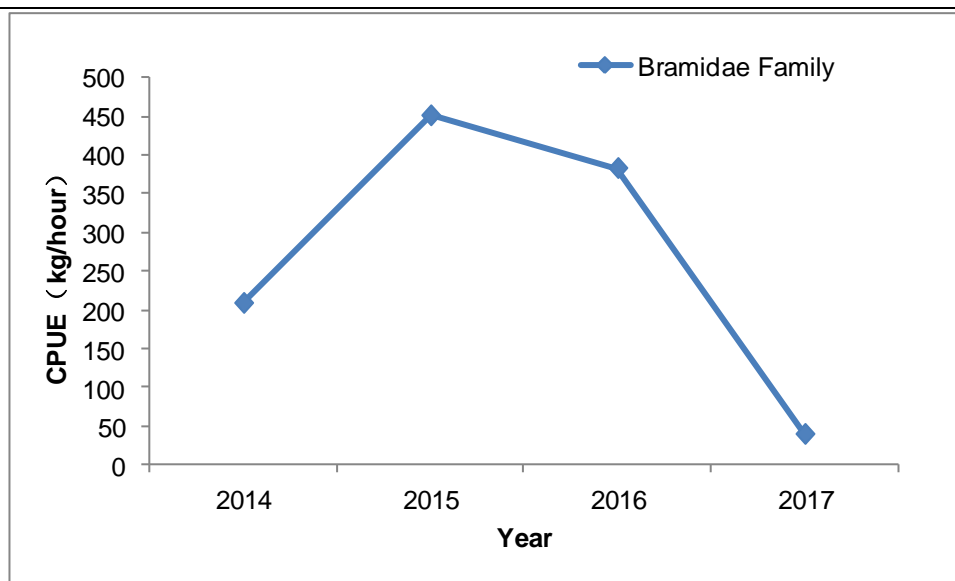


Fig.10 the CPUE (kg/hour) of pomfret (*bramidae family*) in the light seining in the SIOFA Area from 2014 to 2017

Table4 the catch of the light seining in the SIOFA Area in from 2014 to 2022

Year	Total Catch (tons)	Chinese Name	澳洲 鲈	日本 鲈	鳶乌贼	乌 鲂 科	沙丁鱼	鰺属	竹筴鱼	鯷鱼	
		English Name	Australia Mackerel	Japanese Mackerel	Squid	Pomfret	Sardine	Amberjack	Mackerel	Anchovy	others
		Scientific Name	<i>Scomber Australasicus</i>	<i>Scomber Japonicus</i>	<i>Sthenoteuthis Oualaniensis</i>	Bramidae Family	<i>Sardinella and Sardina</i> Genus	<i>Seriola</i>	<i>Trachurus</i>	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										
2021	0										
2022	0										



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### **3. Fisheries Data Collection and Research Activities**

#### **3.1 Fisheries Data Collection**

China has established a scientific data collection system. 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, the Chinese fisheries authority has been requiring the fishing companies to record the daily catch and fishing effort data in the logbooks of the Chinese-flagged fishing vessels under their control. Since 2014 in light seining, the fishing hours, number of the fish aggregation bulbs, timespan for net setting, catch of every net set, and number of by-catch, etc have been required to be recorded. Every fish logbook shall be submitted to ECSFRI and SHOU to analyze the 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)**

An automatic location communicator (ALC) is compulsory for each Chinese-flagged fishing vessel and the Chinese vessel owners choose those meeting international standards. The fishing vessels have been required to report their positions at least once an hour since January, 2020. Every year, ECSFRI and SHOU scientists and technicians check the accuracy of vessel position of logbooks through the VMS.

#### **3.3 Research Activities**

ECSFRI and SHOU have been conducting research for Chinese commercial fisheries in the Indian Ocean since 2000. ECSFRI and SHOU are also responsible for collecting all the logbooks and other available information for the fisheries: ECSFRI studies light seining including CPUE standardization, the relationship between environmental factors and the abundance, etc. while SHOU focuses on the fishing ground for bottom longlining and the related scientific project was implemented in the current SIOFA Area in 2005.

From 2016 to 2017 and at the end of 2019 and 2020, China was also conducting the studies on light seining for four times to collect more detailed data in the Indian Ocean (outside the SIOFA Area).



#### 4. VME Thresholds and Ecological Impacts

No significant adverse impact by Chinese bottom fishing on VMEs has been found, and no interactions with threatened, endangered and protected species have been reported by Chinese bottom fishing.

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

#### 5. Biological Sampling and Length/Age Composition of catches

Length frequency of Australia mackerel by Light seiners is reflected in Fig. 11. That of ruby snapper by bottom longlining in Fig. 12.

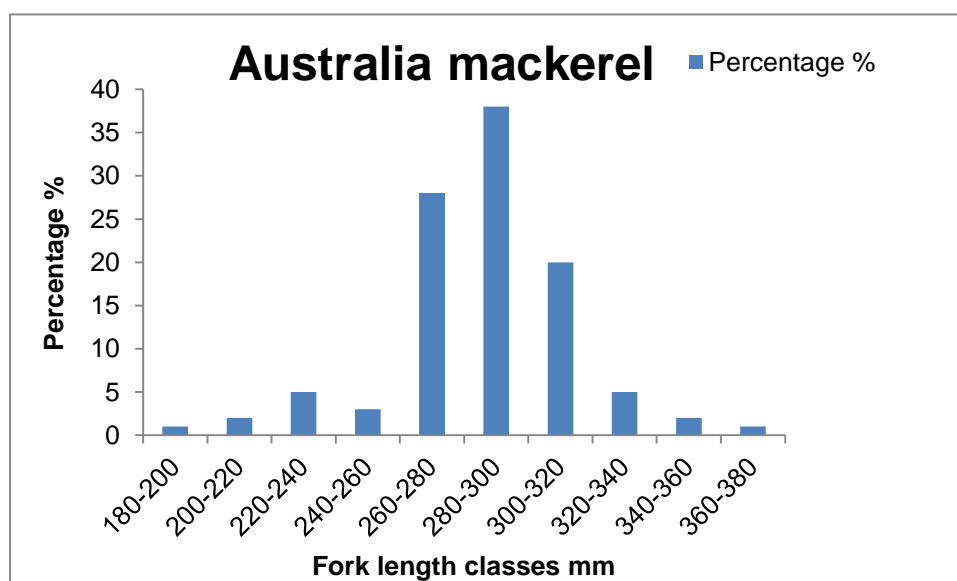


Fig.11 length frequency (%) of Australia mackerel by Chinese light seiners in the SIOFA Area

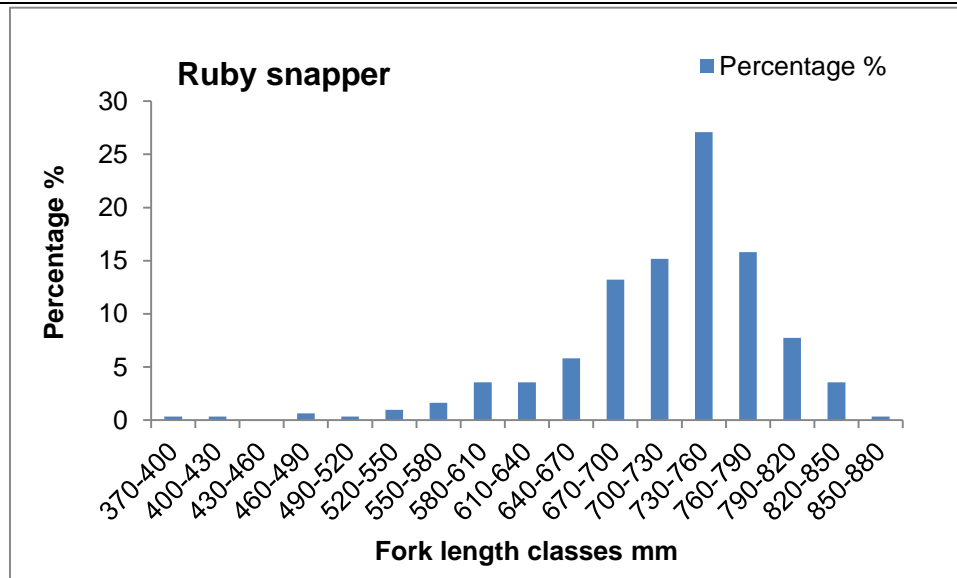


Fig.12 length frequency (%) of ruby snapper by Chinese bottom longlining in the SIOFA Area

## 6. Description of Data Verification Mechanism

### 6.1 Trawling Data

Commercial fishing data (logbooks) have been verified by Chinese scientific team and fisheries authority. Monthly catch report of every vessel including total catch, location and net times shall be sent to COFA.

### 6.2 Bottom Longlining Data

Both the logbooks and observer data have been verified by Chinese scientific team and fisheries authority. Monthly catch report of every vessel including total catch, location and number of hooks shall be sent to COFA.

### 6.3 Light Seining Data

The logbooks for light seining have been verified by COFA and ECSFRI. Monthly catch report of every vessel including total catch and location shall be sent to COFA. The record in the logbooks includes the net setting time, species and catch, and location, etc. ECSFRI also verifies locations of vessels through VMS.





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## **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 fishery 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 fishing. However from 2015 to 2019, China has sampled the catch by light seining.

## **8. Relevant Social and Economic Information (Optional)**

No particular information is reported.

## **9. Fisheries Management of China**

The fisheries in the Indian Ocean are one of the priorities of Chinese overseas fishing and as such the serious measures have been taken to ensure compliance. These measures include but not limited to: fishing permit, VMS, data reporting, logbook, and annual review on the performance of the fishing companies in the previous year, etc.

### **9.1 Fishing Permit**

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 are approved and a high-seas fishing permit is issued to the vessels.

### **9.2 Data Reporting**

Bureau of Fisheries, MOARA pays a high heed to the quality of data collection. An industrial meeting is held under the fisheries authority annually for summarization for the performance of the previous year.



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Additionally each overseas fishing vessel is required to submit their fishing data (such as catch and fishing effort by species, month, gear, area, etc.) to COFA, a non-governmental organization, before the deadline every year. Data coverage of catch and effort is 100%.

For overseas fisheries, China has organized different scientific teams responsible for the data collection and verification, sampling, and research, etc.

### **9.3 Logbook**

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

### **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 SHOU and ECSFRI 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 Bureau of Fisheries are communicated to each fishing company and, where appropriate, processing plant in due course either by official order by the central government or by the COFA. 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



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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 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 faults in the performance review are subject to different administrative sanctions by the government in line with the officially adopted standards, including but not limited to fine, suspension of fishing licenses, and disqualification of business, etc.

## Appendix 1 Common, scientific and Chinese names of fishes

Common Name	Scientific Name	Chinese Name
Australia Mackerel	<i>Scomber Australasicus</i>	澳洲鲈
Japanese Mackerel	<i>Scomber Japonicus</i>	日本鲭
Orange Roughy	<i>Hoplostethus Atlanticus</i>	大西洋胸棘鲷
Patagonian Toothfish	<i>Dissostichus Eleginoides</i>	小鳞犬牙南极鱼
Ruby Snapper	<i>Etelis Coruscan</i>	丝尾红钻鱼，又叫长尾滨鲷