SC-06-11

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Annual National Report:

Thailand Reports to the SIOFA Scientific Committee
Please note that National Reports and SC Working Group reports shall be classified as working papers

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

Delegation of Thailand

Abstract

Thailand has launched authorizing Thai-flagged overseas fishing vessels operated in SIOFA competence areas since May 2019. The main fishing grounds are distributed around Saya de Malha Bank, between latitude 9 to 11 S° and longitude 60 to 62 E°. The fishing gear used are otter board trawl and handline. Currently, there are no transshipments at sea by Thai carriers in the SIOFA competence area because there are still only few Thai fishing vessels operated in the area and they are required to unload fish at Thai ports.

The fishing information were recorded during January – December 2020. There were 924.51 tons of catch from otter board trawl and 379.39 tons of catch from handline. For trawl, 464 hauls were operated and the average CPUE was 476.92 kg/hr. The dominant caught species comprised of *Decapterus* spp., *Saurida* spp., *Nemipterus* spp., *Selar crumemophthalmus*, and *Sphyraena* spp. For handline, 133 fishing days were operated and the average CPUE was 2,852.59 kg/day. The major caught species consisted of *Carangoides* spp., *Lutjanus* spp., Serranid fish, *Aprion virescens*, and *Lethrinus* spp.

The incidental bycatch was also observed and reported by onboard observers. Seabirds and marine mammals were not caught by Thai fishing vessels in 2020, while three leatherback sea turtle, 560-kg hammerhead sharks (*Sphyrna* spp.), one mobulid ray, five bowmouth guitarfish (*Rhina ancylostoma*), 323-kg sponge, and 0.02-kg black coral (*Antipathes dichotoma*) were reported as incidental bycatch from trawl. Additionally, there were four kawakawa and 10-kg Staghorn Coral (*Acropora formosa*) reported as incidental bycatch from handline.

Contents

1. Description of fisheries

Thailand has launched fishing vessels to operate in the SIOFA competent area since May 2019. In 2020, there are four otter board trawlers with handline granted overseas fishing license for fishing in the SIOFA area. Only three vessels were operated during the year. These fishing vessels were operated in the Saya de Malha Bank at the depth of approximately 20-80 m. Fishing trips lasted two-three months and went back to Thai port for fish landing. Otter board trawl and handline were used alternately. For control and surveillance of the vessels, the process includes inspection of vessels before authorizing them to fish as well as continuously monitoring their fishing activities at sea until getting back to Thai port.

Fleet Structure

In the SIOFA competent area, Thailand had 62 fishing vessels operated during 2015 – 2017. However, there are only three fishing vessels operated in 2020. The number of fishing fleets was shown in Table 1 and catch and effort data by gear were presented in Table 2-9.

Table 1 Fleet composition

Year	Otter board trawl		Pair trawl		Trap	
	Number	Size (GT)	Number	Size (GT)	Number	Size (GT)
2015	56	158-1,125	-	-	1	199.8
2016	58	158-1,125	1	164-397.51	1	199.8
2017	11	182-721	1	164-397.51	1	199.8
2018	-	-	-	-	-	-
2019	2	230.22-312.73	-	-	-	-
2020	3	230.22-312.73	-	-	-	-

Table 2 Summary table of otter board trawl effort

Year	Sub-areas for reporting effort data								
	1	2	3.a	3.b	4	5	6	7	8
2015	-	-	-	-	-	-	-	-	N/A
2016	-	-	-	-	-	-	-	-	3,971 hauls
2017	-	-	-	-	-	-	-	-	719 hauls
2018	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	176 hauls
2020	-	-	-	-	-	-	-	-	464 hauls

Table 3 Summary table of otter board trawl catches (tons)

Year	Sub-areas for reporting catch data								
	1	2	3.a	3.b	4	5	6	7	8
2015	-	-	-	-	-	-	-	-	22,729.05
2016	-	-	-	-	-	-	-	-	8,435.24
2017	-	-	-	-	-	-	-	-	1,617.84
2018	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	358.12
2020	-	-	-	-	-	-	-	-	924.51

Table 4 Summary table of handline effort

Year	Sub-areas for reporting effort data								
	1	2	3.a	3.b	4	5	6	7	8
2015	-	-	-	-	-	-	-	-	N/A
2016	-	-	-	-	-	-	-	-	N/A
2017	-	-	-	-	-	-	-	-	N/A
2018	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	110 days
2020	-	-	-	-	-	-	-	-	133 days

Table 5 Summary table of handline catches (tons)

Year	Sub-areas for reporting catch data								
	1	2	3.a	3.b	4	5	6	7	8
2015	-	-	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	304.80
2020	-	-	-	-	-	-	-	-	379.39

Table 6 Summary table of pair trawl effort

Year	Sub-areas for reporting effort data								
	1	2	3.a	3.b	4	5	6	7	8
2015	-	-	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-	-	544 hauls
2017	-	-	-	-	-	-	-	-	75 hauls
2018	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-	-

Table 7 Summary table of pair trawl catches (tons)

Year	Sub-areas for reporting catch data								
	1	2	3.a	3.b	4	5	6	7	8
2015	-	-	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-	-	2,318.39
2017	-	-	-	-	-	-	-	-	416.18
2018	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-	-

Table 8 Summary table of trap effort.

Year	Sub-areas for reporting effort data								
	1	2	3.a	3.b	4	5	6	7	8
2015	-	-	-	-	-	-	-	-	68 sets
2016	-	-	-	-	-	-	-	-	8 sets
2017	-	-	-	-	-	-	-	-	10 sets
2018	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-	-

Table 9 Summary table of trap catches (tons)

Year	Sub-areas for reporting catch data								
	1	2	3.a	3.b	4	5	6	7	8
2015	-	-	-	-	-	-	-	-	389.00
2016	-	-	-	-	-	-	-	-	2.53
2017	-	-	-	-	-	-	-	-	8.32
2018	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-	-

2. Catch, effort and CPUE summaries

In 2020, the main fishing ground was in the *Saya de Malha* Bank of the west Indian Ocean between latitude 9 to 11° S and longitude 60 to 62° E. (Figure 1). Fishing operations were done all year round, except in May 2020. There were 924.51 tons of catch from otter board trawl and 379.39 tons from handline.

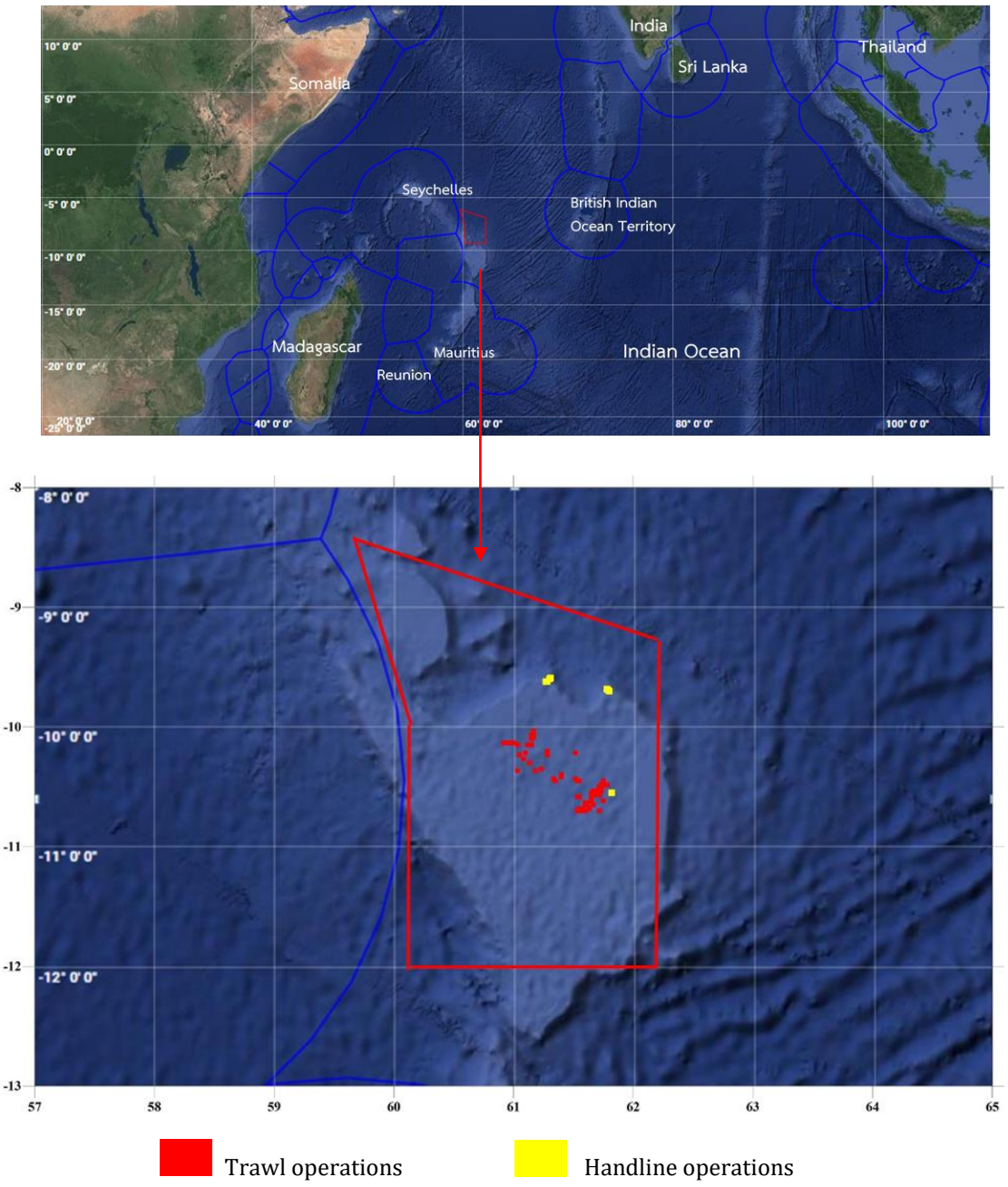

Figure 1 Fishing ground of Thai otter board trawlers in the Saya de Malha Bank in 2020

Otter board trawl

In 2020, the average CPUE of otter board trawl was 476.92 kg/hr. The major species consisted of *Decapterus* spp., *Saurida* spp., *Nemipterus* spp., *Selar crumenophthalmus*, and *Sphyraena* spp. (Table 10). The CPUE of the referred species was 122.02, 68.47, 60.64, 52.75, and 34.71 kg/hr respectively; while, the composition by weight was 25.58%, 14.36%, 12.71%, 11.06%, and 7.28% respectively (Figure 2).

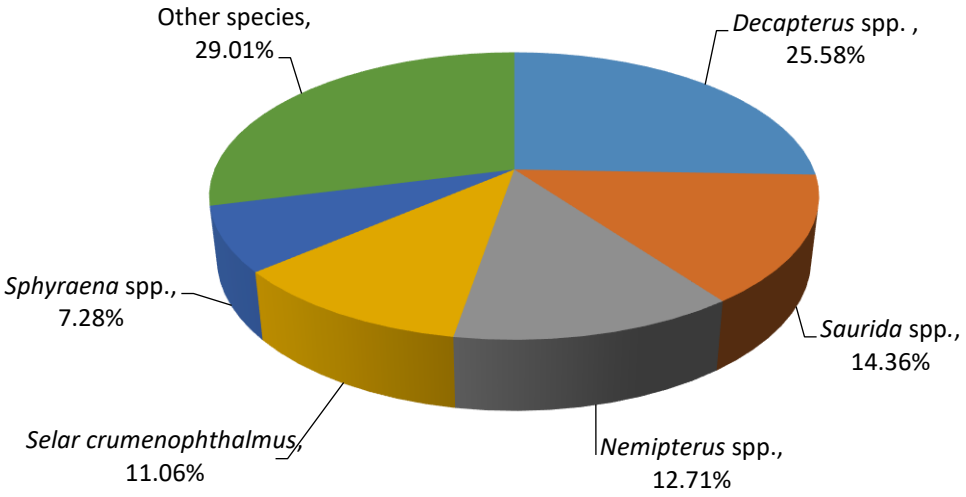

Figure 2 Catch composition of otter board trawl in the Saya de Malha Bank in 2020

Handline

In 2020, the average CPUE of handline was 2,852.59 kg/day. The major species consisted of *Carangoides* spp., *Lutjanus* spp., Serranidae, *Aprion virescens,* and *Lethrinus* spp. (Table 11). The CPUE was 2,570.76, 130.03, 83.13, 21.95, and 15.61 kg/day respectively; while, composition by weight was 90.19%, 4.77%, 2.91%, 0.76%, 0.55% respectively (Figure 3).

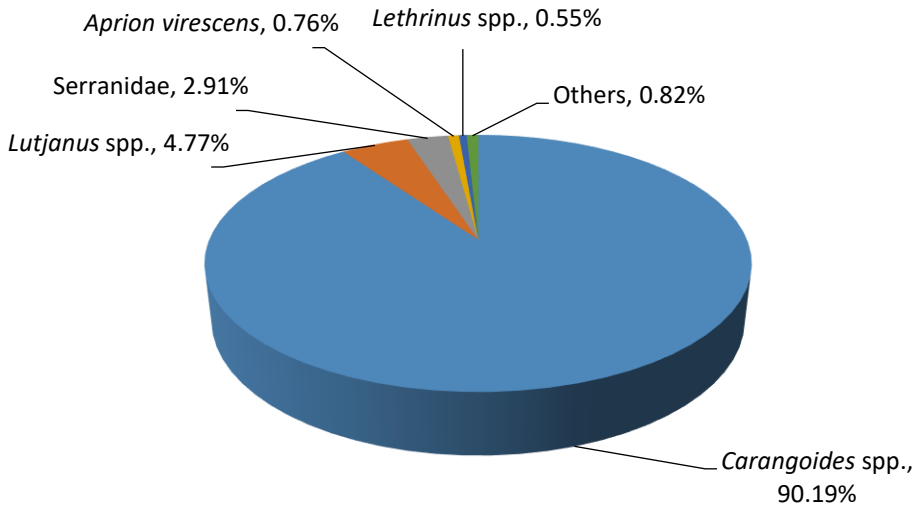

Figure 3 Catch composition of fish in the Saya de Malha Bank caught by handline in 2020

Table 10 Catch (Kg) by species for main target species from otter board trawl (R-retained and D-discarded)

Year	*Decapterus* spp.		*Saurida* spp.		*Nemipterus* spp.		*Upeneus* spp.		*Sphyraena* spp.		Others		Total	
	R	D	R	D	R	D	R	D	R	D	R	D	R	D
2019	111,168	400	98,492	0	50,616	0	28,216	0	19,610	0	50,018	19,745	358,120	20,145
2020	236,534	6,350*	132,731	0	117,546	0	89,098	0	67,286	0	281,317	24,193	924,512	30,543

Note * Most of discarded *Decapterus* spp. are kept as bait for handline

Table 11 Catch (Kg) by species for main target species from handline (R-retained and D-discarded)

Year	*Carangoides* spp.		*Gnathanodon speciosus*		*Epinephelus spp*		*Aprion virescens*		*Lutjanus* spp.		Others		Total	
	R	D	R	D	R	D	R	D	R	D	R	D	R	D
2019	228,660	0	25,130	0	18,394	0	9,552	0	8,602	0	14,461	159	304,799	159
2020	341,911	0	0	0	5,813	0	2,919	0	17,294	0	11,457	10	379,394	10

3. Biological sampling and length of catches

The data of fish size was derived from onboard observers of the fishing vessels in Jan - Dec 2020 .The data collection was designed as measuring the length of some economic fish which are classified to species level.

For this assessment, length of eight important economic species were analysed. Average, minimum and maximum length of the species is presented in Table 14, and size distribution is presented in Figure 4-7.

Table 12 Length of some economic species caught in 2020

Species	Gear	Length type	Minimum	Maximum	Mean ± SD
Saurida undosquamis	Trawl	TL	5.25	48.25	21.62 ± 7.43
Nemipterus bipunctatus	Trawl	TL	5.25	35.75	16.40 ± 3.68
Decapterus russelli	Trawl	TL	7.25	26.25	16.21 ± 2.24
Decapterus macrosoma	Trawl	TL	12.25	34.75	18.33 ± 2.66
Carangoides fulvoguttatus	Handline	FL	34.50	99.50	71.00 ± 9.25
Lutjanus bohar	Handline	TL	30.50	86.50	58.36 ± 8.90
Aprion virescens	Handline	TL	44.50	97.50	72.39 ± 11.13
Plectropomus punctatus	Handline	TL	42.50	80.50	55.01 ± 8.54

Note: TL = Total length, FL = Fork length

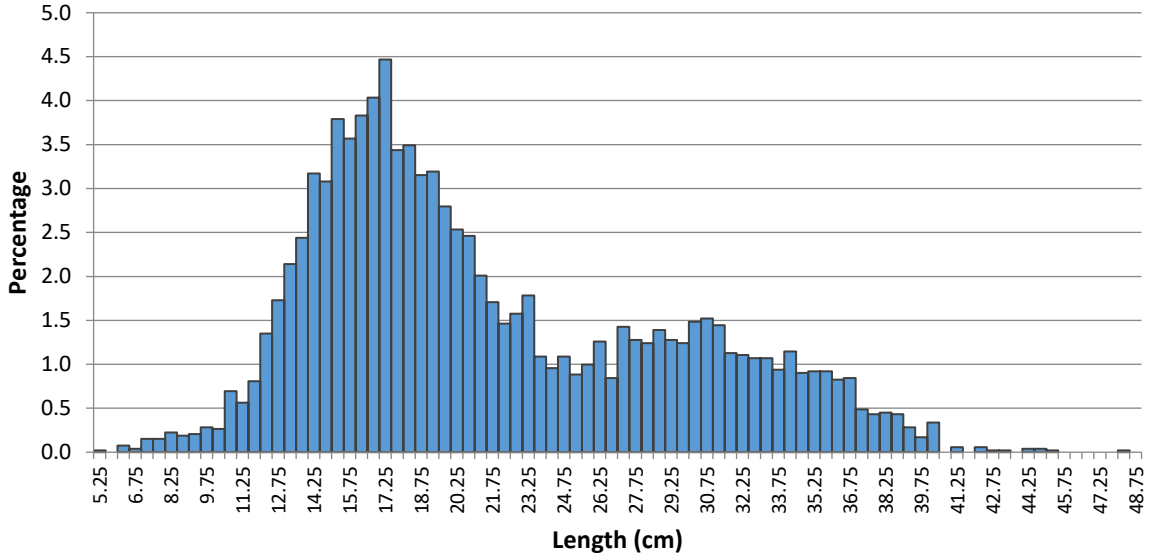

Figure 4 Size distribution of *Saurida undosquamis* caught by otter board trawl in 2020

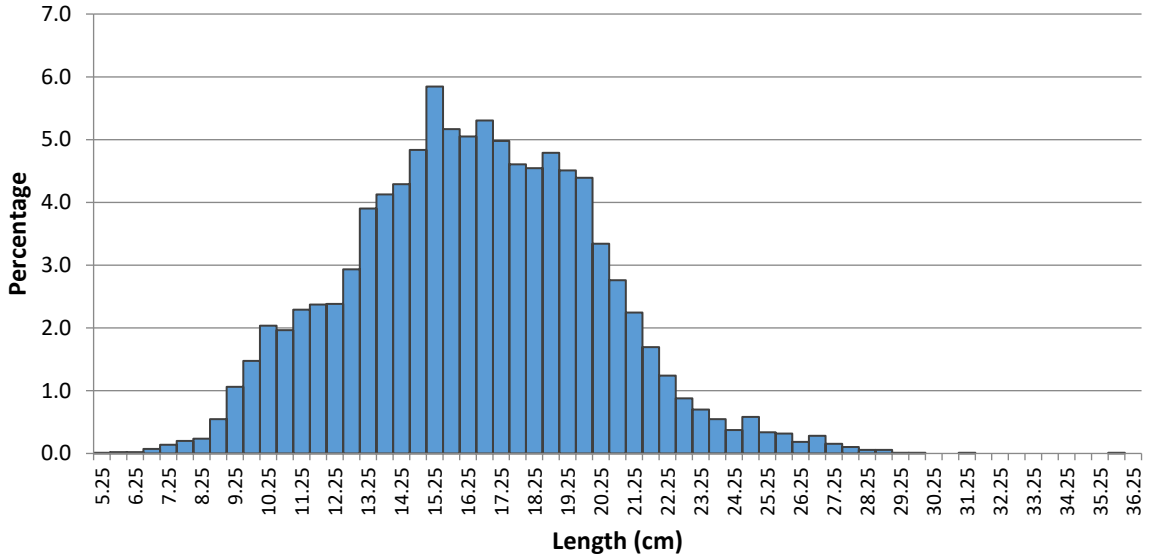

Figure 5 Size distribution of *Nemipterus bipunctatus* caught by otter board trawl in 2020

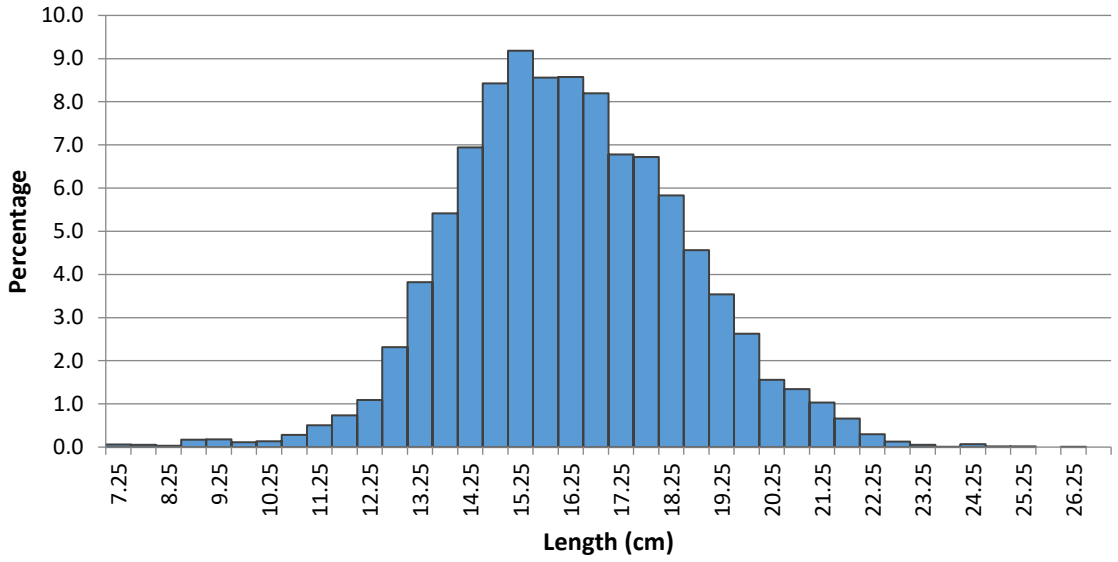

Figure 6 Size distribution of *Decapterus russelli* caught by otter board trawl in 2020

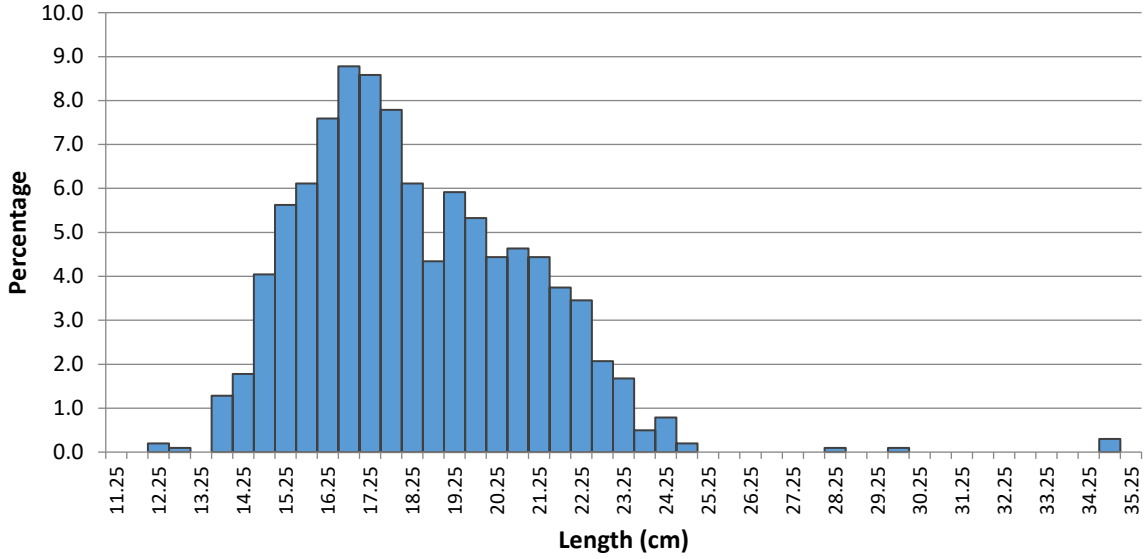

Figure 7 Size distribution of *Decapterus macrosoma* caught by otter board trawl in 2020

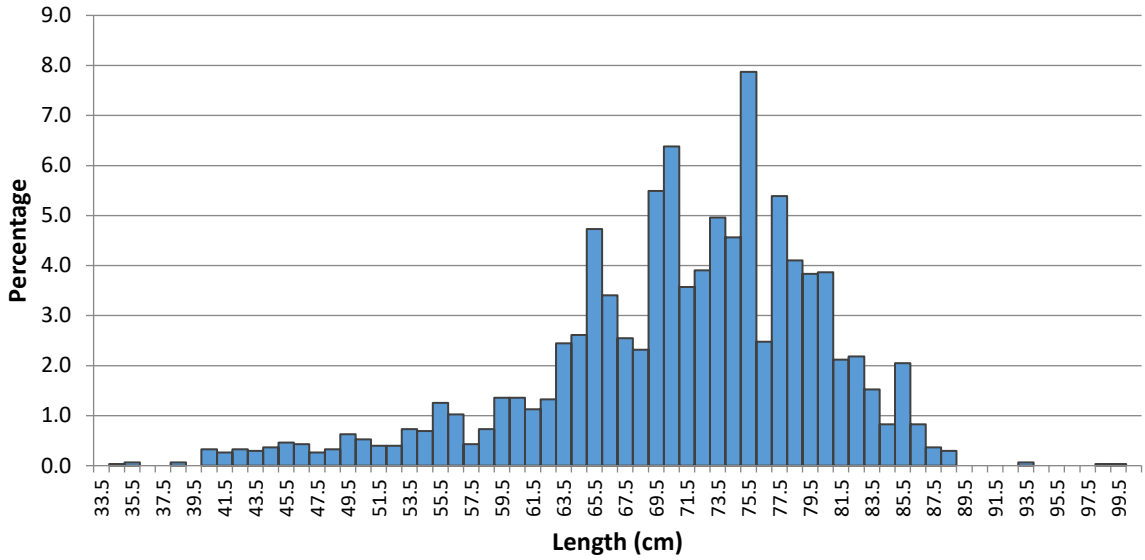

Figure 8 Size distribution of *Carangoides fulvoguttatus* caught by handline in 2020

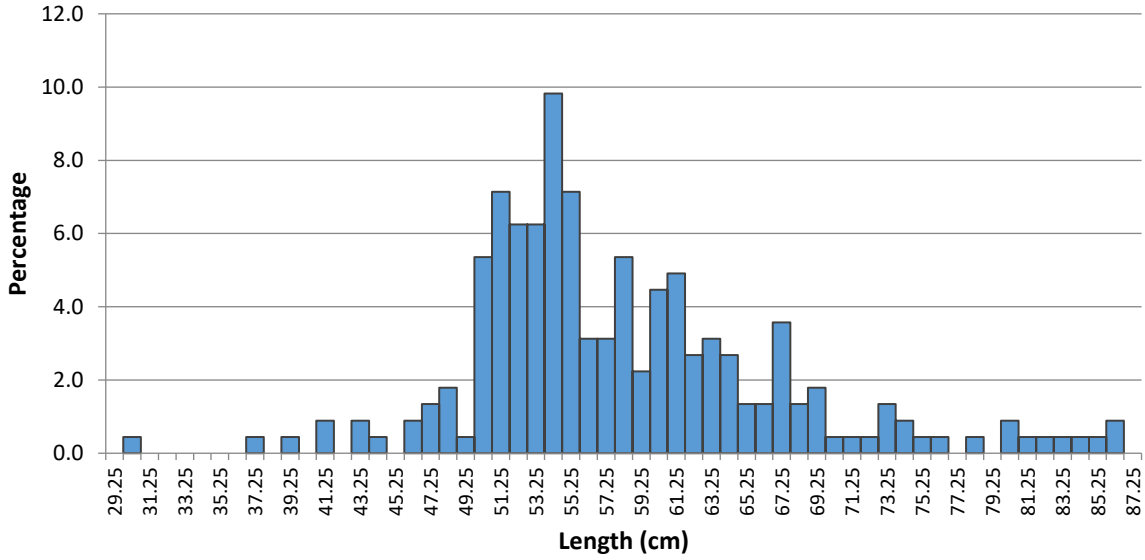

Figure 9 Size distribution of *Lutjanus bohar* caught by handline in 2020

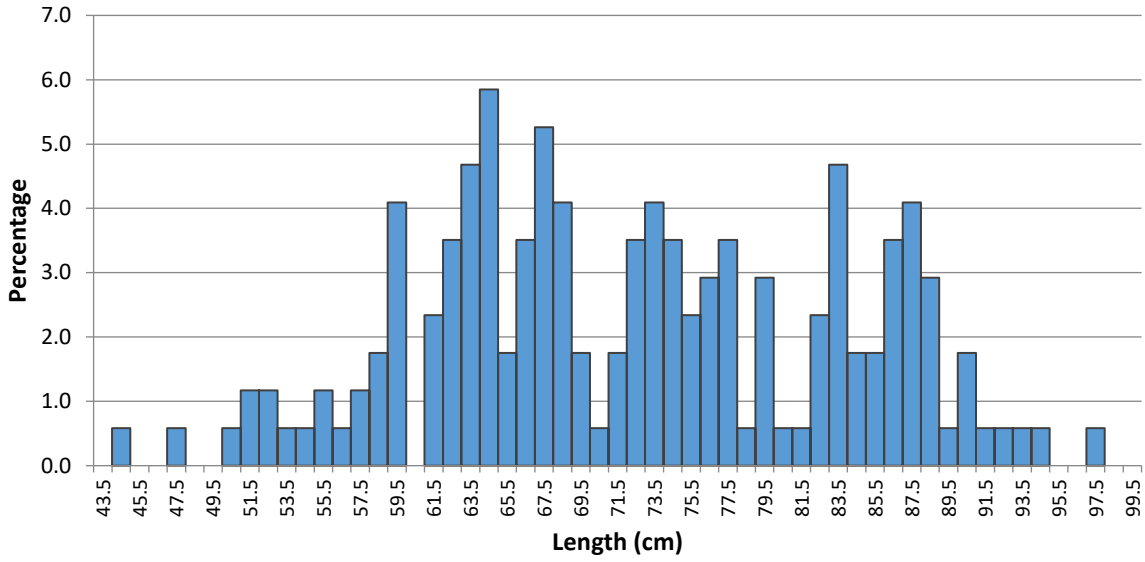

Figure 10 Size distribution of *Aprion virescens* caught by handline in 2020

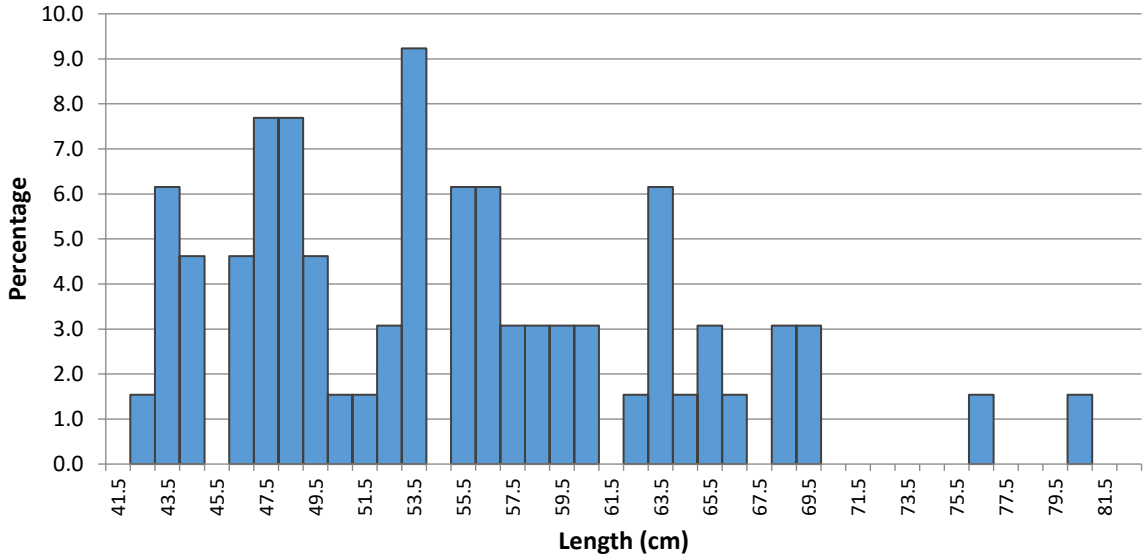

Figure 11 Size distribution of *Plectropomus punctatus* caught by handline in 2020

4. VME Thresholds

Thailand has set the regulations for Thai fishing vessels when detect corals or sponges in the area which are likely to be a vulnerable ecosystem. These include stop fishing when catching living corals or sponges more than the defined benchmarks and take actions following the rules which classified by gear type as follows;

Trawler

Stop fishing when catching living corals more than 60 kg of corals or 300 kg of sponges per one time of operation and move at least 2 nautical miles from that area.

Longliner

Stop fishing when catching living corals or sponges more than 10 kg per 1,000 hooks or per 1,200 meters of longline and move at least 1 nautical mile from the center of the line segment.

Fish trap vessel

Stop fishing when catching living corals or sponges more than 10 kg per single trap or 1,200 meters of main line and move at least 1 nautical mile from that area .

In addition, onboard observers are required to record and report species and quantities of coral and other marine organisms derived from each fishery and area. The data will be used to analyse the abundance and diversity of benthic marine organisms. This for further define VMEs in the SIOFA area.

Table 13 Threshold levels for encounters with VMEs and move-on protocols

Gear/fishery	Threshold (kgs)	Move-on protocols
Trawl	corals > 60 kg sponges > 300 kg	move at least 2 nautical miles
Longline	corals or sponges > 10 kg per 1,000 hooks or per 1,200 meters main line	move at least 1 nautical mile
Trap	corals or sponges > 10 kg per single trap of 1,200 meters main line	move at least 1 nautical mile

Table 14 VME taxa bycatch quantities per gear from logbooks data

Year			Trawl	Handline
2019	Taxa	Total effort	176 hauls	110 days
		sponges	590 kg	0
		corals	6.5 kg	27.5 kg
2020	Taxa	Total effort	464 hauls	133 days
		sponges	308 kg	0
		corals	0.02 kg	10 kg

5. Fisheries data collection and research activities

5.1 Data report during their fishing / transshipment activity outside Thai waters

Fishing information from logbook and e-logbook

Fisheries data are collected from logbook and e-logbook which provided by the Department of Fisheries (DOF), Thailand. The data include information related to fishing trips and fishing operation. The trip data include details about the vessel to the dates and ports of departure and return, number and weight of catch and effort, and fishing position (latitude and longitude). The operational data include the date and time of the operation, fishing position, retained of target species and other information relating to the operation. The master of fishing vessel shall record every fishing operations in the fishing logbook and send a copy when landing at Thai port. The master must report the e-fishing logbook to the authority via an application on

a daily basis as required by law. Data from logbook are used to estimate annual catches, nominal catch by species and effort which are analyzed by Excel. Currently, e-logbook system is available only bottom trawl.

Transshipment activities

The oversea fishing vessel must request and report transshipment activity with designated timeframe via the electronic reporting system (ERS). With the request function in the application, the fishing master can request for transshipment and landing activities. The responses from the authorities, whether authorize or not authorize, will be electronically sent to the vessel via the application. With the report function, the fishing master can declare their activities following those of authorizations which include transshipment declaration. However, there was no transshipment activity in 2020.

Daily report from observer onboard

Observer onboard must report daily to DOF via application. The report includes information about fishing operations, the amount of fish caught, the amount of fish released and discarded, as well as the details of fishing gears and fishing support equipment.

5.2 Data collection from landing site

Port inspector will inspect the documentation and physical checks on board for port in –port out permission and the video recorded by the EM will be inspected by port inspector prior to authorize to unloading. Besides, the Thai authorities will also carry out the catch landing inspection when porting in for reliability and accuracy of information on landed fish before entering the supply chain. During this process, catch weight is verified with landing declaration documents, such as fishing logbook, fishing gears and Marine Catch Transshipment Document (MCTD) in the case of transshipments.

6. Description of data verification mechanisms

Data collection on Thai overseas fisheries has been categorized into two themes. The first theme is information collection from daily report while the vessels have fishing activity / transshipment activity outside Thai waters. These information are transmitted via satellite system. Second one is data collection from landing sites. These data are in consistent with the data recorded in the Thai-flagged database system. Furthermore, these data are submitted to SIOFA secretariat to monitor and analyze the status of fisheries resources for sustainable management in long term.

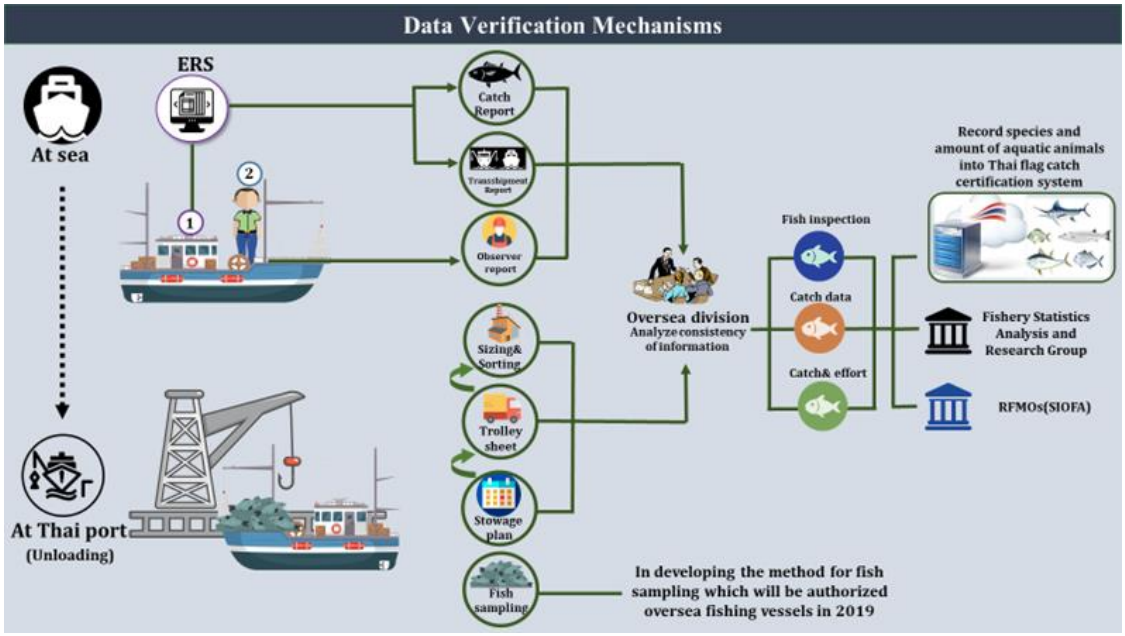

Figure 8 Data verification mechanism for Thai-flagged oversea fishing vessel

The improved activities related to achieve the effective MCS and data verification mechanism

6.1 Port Out Controls

At Port in – Port out Control Centers (PIPO), it is important to note that the Thai authorities have set clear targets for port in and port out inspections, i.e. documentation and physical checks of vessels and labor. This is carried out by PIPO officers and inspectors of relevant competent authorities.

6.2 Vessel Monitoring System (VMS)

The VMS of fishing vessels must be active all-time and transmit signals every one hours. The real-time system can be monitored by online application and navigation data of fishing vessel can be traced back to analyze behavior of fishing vessel. For overseas fishing vessel, a spare VMS set is available in case the main VMS signal is lost.

6.3 Electronic Reporting System (ERS) and Electronic Monitoring System (EM) installation.

A new electronic surveillance system has been developed, comprising of two main components: Electronic Reporting System (ERS) and Electronic Monitoring System (EM).

6.4 Onboard observer coverage for fishing vessel

- Vessels using trawl gear must have onboard observer coverage for the entire duration of the trip (100% coverage).
- Vessels using any other bottom fishing gear types must have onboard observer for 20% of operation in any calendar year.
- 100% transhipment observer coverage.

7. Summary of observer program

Thailand has 4th batch of observers. There are totally 98 observers. The training course for observer contained 11 modules of essential fisheries observer principle based on the FAO Guidelines for Developing an at-Sea Fisheries Observer Program. These included the Basic Training of Seaman, Fisheries Management, Legal and Policy Framework, Health and Safety, Code of Conduct for Observers, Fishing Vessels and Gears, Data Collection, Recording Forms and Documents, Navigation, Radio Communication and Shipboard Training.

Notification of the Department of Fisheries related to onboard observer.

- Vessels using trawl gear must have onboard observer coverage for the entire duration of the trip (100% coverage).
- Vessels using any other bottom fishing gear types must have onboard observer for 20% of operation in any calendar year.
- 100% transhipment observer coverage.

Duties of observer

- Observe and collect biological information, including catch composition sampling of the transhipped aquatic animal, and other activities such as sorting, processing, or observe several parts onboard the vessel, fish hold, wheel house and technology of fishing gears.
- Record biological information or data related to the conduct of the conservation and management measures in the format defined by the Department of Fisheries, composition, number of bycatch or discard, type of fishing gear, mesh size, fishing logbook, transhipment, etc. as well as co-signing in the transhipment report by observer, fishing vessel and transhipment vessel

Table 15 Observer program design and coverage summary in 2020

Fishing gears	Trip coverage (%)	Total no of sets/hauls	No of sets/hauls covered	Within set/haul coverage (%)	Incidental bycatch (bird, mammal), observation coverage (%/haul)
Trawl	100%	464 hauls	161 samplings	100% observed, 34.70% sampling	100%
Handline	20%	134 days	118 samplings	99.25% observed, 88.06% sampling	99.25%

Table 16 Reporting of observed bycatch from otter board trawl in 2020

bycatch	Trawl	Handline
seabird	0	0
mammal	0	0
Dermochelys coriacea	350.0 kg, 3 individuals *	0
Sphyrna spp.	560 kg	0
Mobula spp.	5.0 kg, 1 individual	0
Rhina ancylostoma	230.5 kg, 5 individuals *	0
Euthynnus affinis	0	11.0 kg, 4 individuals
Porifera (PFR)	323.0 kg	0
Acropora formosa	0	10.0 kg
Antipathes dichotoma (ADQ)	0.02 kg	0

Remark * estimated weight

8. Relevant social and economic information

Marine fisheries are important both socially and economically for Thailand. Fish are very important to food security and self-sufficiency of Thailand. Based on the recent survey in 2020, a total number of 10,392 Thai commercial fishing vessels was licensed. In 2019, the total catch in Thai waters was 1.41 million tonnes. This catch supports the livelihoods, incomes and employment for fishers and employed in supporting industries (e.g. fish processing industry, ship building industry, canned and frozen fisheries product factories, fish meal factories). For rural Thailand, fish constitutes a generally affordable source of protein, contributing significantly to dietary health and food security, particularly more than 2,500 villages of artisanal fishing communities along the coasts. Thailand is also a major seafood producer and exporter. In 2019, the total quantity of exports of fisheries products was 1.38 million tonnes, valued around USD 5,500 million and total quantity of imports was 1.68 million tonnes, valued around USD 3,000 million.