



9th Annual Meeting of the Scientific Committee (SC9)

Bangkok, Thailand, 18-27 March 2024

SC-09-11-Rev1

Annual National Report

Delegation of Thailand

Document type	working paper <input checked="" type="checkbox"/> information paper <input type="checkbox"/>
Distribution	Public <input checked="" type="checkbox"/> Restricted ¹ <input type="checkbox"/> Closed session document ² <input type="checkbox"/>
Abstract	<p>This report provides a comprehensive update on the operations of Thai overseas fisheries within the SIOFA competence area in 2023. Two vessels were actively fished in the Saya de Malha bank, spanning from latitude 9.00° to 11.00° S and longitude 60.00° to 62.00° E, consistent with the previous year's fishing grounds. The primary fishing gear employed was bottom otter board trawl, and handline as a secondary gear. There was dramatically decline in trawl fishing efforts compared to 2022, resulting in trawl catch reduction. Handline effort was slightly decreased but the catch was significantly increased due to rising domestic demand. The trawl catch was 1,667.52 tons dominated by lizardfishes, scads, and threadfin breams, while the handline catch was 308.33 tons dominated by trevallies.</p> <p>Throughout the year, the surveillance system for Thai overseas vessels was vigorously implemented, with no illegal activities reported. Onboard observers were presented on every fishing trip in 2023, 100% coverage for both fishing gears. The total of 61.35 kg of vulnerable marine species (VMEs) and 658.35 kg of incidental bycatch were reported. No VME thresholds were triggered during the year and no report on gear interaction with seabirds or marine mammals during fishing.</p>

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Description of fisheries

Thailand has been fishing in SIOFA competence area since 2015. Thai fisheries in SIOFA can be separated into 2 periods. During 2015 to 2017, Thailand deployed 62 fishing vessels with different fishing gears including pair trawl, otter board trawl, and fish trap, fished in the Saya de Malha Bank area. The fishing was paused in 2018 caused by national fisheries reformation, which aimed to fighting IUU (Illegal, Unreported, and Unregulated) fishing and enhance sustainable marine fisheries management. All Thai overseas fishing vessels were called back to ports for inspection and installed control and surveillance system for at sea activity monitoring. The validated fishing vessels resumed fishing in SIOFA area in 2019 and fishing until present. Currently only vessels authorized by the Thai government are allowed to operate in the SIOFA area.

Since 2019 Thai fishing vessels are using 2 different fishing gears to fish in SIOFA area, bottom otter board trawl as the main fishing gear and handline as the secondary gear. The average bottom depth of the fishing ground is 75 meters. Trawl operation was done only in daytime at depth ranged 52-114 meters. Handline is usually operated in shallow submerged rocky areas in the northern part of the bank at depth 19-34 meters.

After fisheries reformation in 2015, the number of Thai fishing fleet operating in the SIOFA area has dramatically reduced from 62 vessels in 2015 to 2 vessels in 2023. Thai fishing vessels were regulated to fish in the Saya de Malha Bank, located at 9° - 11° S latitude and 60° - 62° E longitude, however, the main fishing area is the south bank of Saya de Malha bank (Figure 1). The fishing activities were confined in this area throughout the year.

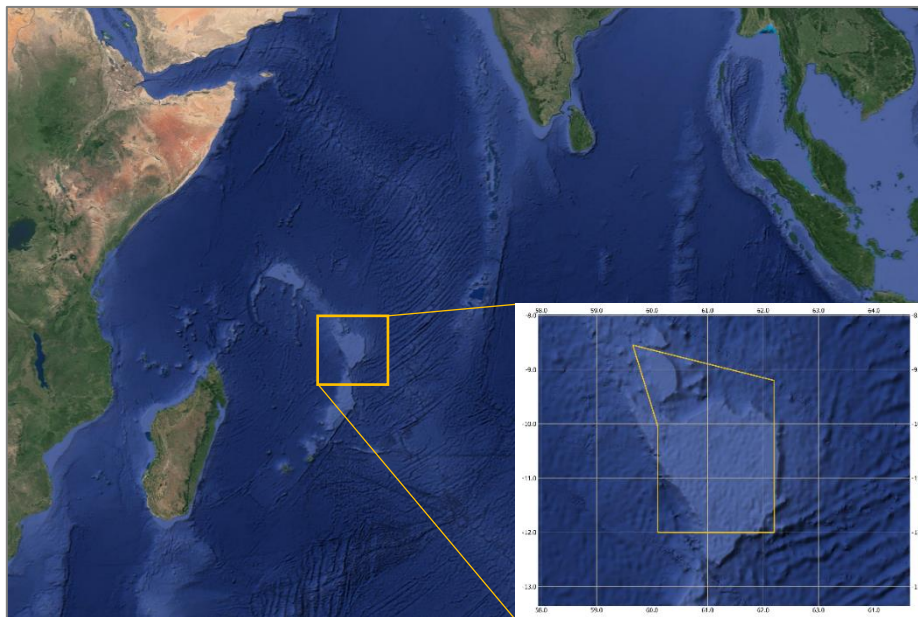


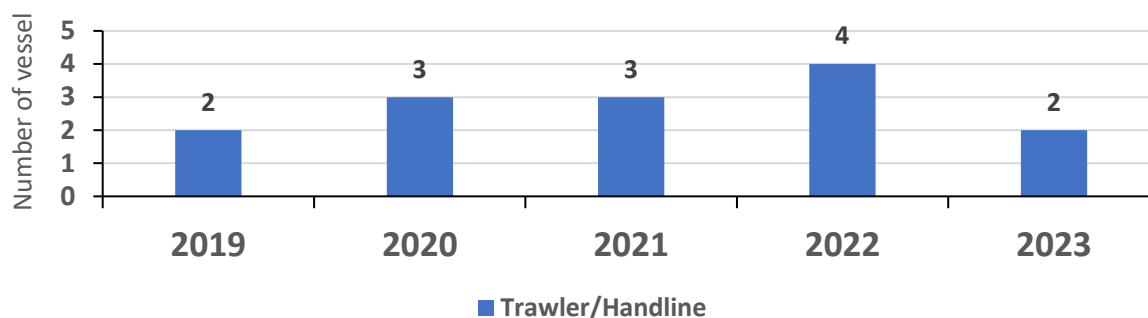
Figure 1 The designated area of Thai fishing vessels in SIOFA area of competence

The number of vessels has been stable since 2019 with 2-4 vessels. All Thai vessels are operated in SIOFA sub-area 8. The number of Thai fishing vessel operating in SIOFA area in last five years is shown in Table 1 and Figure 2.

Table 1: Number of Thai fleet composition by gear in the last five years

Year	Vessels that actively fished	
	otter board trawl*	handline*
2019	2 (230.22 - 312.73 GT)	2 (230.22 - 312.73 GT)
2020	3 (230.22 - 312.73 GT)	3 (230.22 - 312.73 GT)
2021	3 (230.22 - 312.73 GT)	3 (230.22 - 312.73 GT)
2022	4 (230.22 - 312.73 GT)	4 (230.22 - 312.73 GT)
2023	2 (230.22 - 312.73 GT)	2 (230.22 - 312.73 GT)

Remark: *Otter board trawl and handline are operated on the same vessel

**Figure 2** Number of Thai fishing vessel operating in SIOFA area in 2019-2023

Thai vessels primarily use otter board trawl as the main fishing gear, with handline as an alternate gear. Trawl effort was sharply increase in 2021 then gradually declined in following years, whereas handline effort and catch were dramatically increased in the same year. This caused by vessels owners shifted their target species to catch more demersal fishes to compensate for reduced demand of handline fishes in 2020-2021 (affected from COVID19 pandemic). The catch and effort by gear in latest five years are presented in Table 2-5.

Table 2 Summary table of otter board trawl effort in the last five years (hauls)

Year	Sub-areas for reporting effort data								8	
	1	2	3.a	3.b	4	5	6	7		
2019	-	-	-	-	-	-	-	-	-	176 hauls
2020	-	-	-	-	-	-	-	-	-	464 hauls
2021	-	-	-	-	-	-	-	-	-	1,003 hauls
2022	-	-	-	-	-	-	-	-	-	984 hauls
2023	-	-	-	-	-	-	-	-	-	476 hauls

Table 3 Summary table of otter board trawl catches (tons) in the last five years

Year	Sub-areas for reporting catch data								8	
	1	2	3.a	3.b	4	5	6	7		
2019	-	-	-	-	-	-	-	-	-	358.12
2020	-	-	-	-	-	-	-	-	-	924.51
2021	-	-	-	-	-	-	-	-	-	2,922.31
2022	-	-	-	-	-	-	-	-	-	2,525.87
2023	-	-	-	-	-	-	-	-	-	1,667.52

Table 4 Summary table of handline effort in the last five years (days)

Year	Sub-areas for reporting effort data								
	1	2	3.a	3.b	4	5	6	7	8
2019	-	-	-	-	-	-	-	-	110
2020	-	-	-	-	-	-	-	-	133
2021	-	-	-	-	-	-	-	-	52
2022	-	-	-	-	-	-	-	-	49
2023	-	-	-	-	-	-	-	-	45

Table 5 Summary table of handline catches (tons) in the last five years

Year	Sub-areas for reporting catch data								
	1	2	3.a	3.b	4	5	6	7	8
2019	-	-	-	-	-	-	-	-	304.80
2020	-	-	-	-	-	-	-	-	379.39
2021	-	-	-	-	-	-	-	-	38.34
2022	-	-	-	-	-	-	-	-	193.00
2023	-	-	-	-	-	-	-	-	308.33

Catch, effort and CPUE summaries

Footprint

In 2023, two Thai fishing vessels were operated in the south bank of Saya de Malha Bank. Bottom trawl had mainly fished in central of the south bank, and handline had fished at the specific spots in northern part of the south bank. The 2023 fishing footprint is shown in Figure 3.

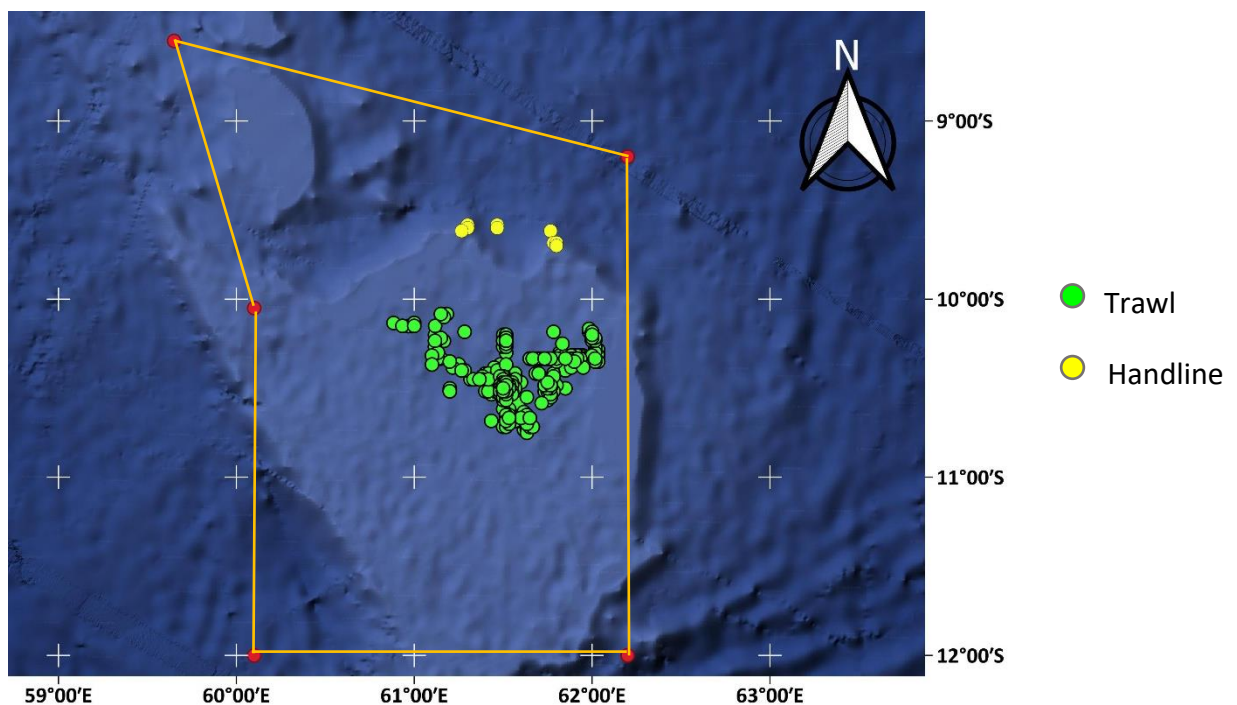


Figure 3 Thai fishing footprint by gear in 2023

Otter board trawl

The total catch of bottom otter board trawlers in 2023 was 1,667.52 tons, decreased from the previous year, meanwhile catch rate was slightly increased from 623.25 kg/day in 2022 to 887.92 kg/day in 2023, accordingly to number of trawlers decreased from 4 vessels in 2022 to 2 vessels in 2023. The catch and effort of trawl fishing are presented in Table 6 and Figure 4.

Regarding to catch composition, the catch composition was similar to 2022 catch which dominant with lizardfishes (*Saurida* spp.) and round scads (*Decapterus* spp.) accounted for 56.42% and 21.51% of the total catch, respectively. Threadfin bream (*Nemipterus* spp.) contributed 10.68%, followed by goatfish (*Upeneus* spp.) of 1.71%, barracudas (*Sphyraena* spp.) of 1.03%, and other demersal species (8.65%) of the catch (Figure 5). It is noted that lizardfishes, round scads (*Decapterus* spp.), and threadfin bream are the majority of the trawling catch. The species catch quantities may vary and fluctuated each year.

Table 6 Catch (tons) by main target species from otter board trawl in 2023

Year	<i>Saurida</i> spp.		<i>Decapterus</i> spp.		<i>Nemipterus</i> spp.		<i>Upeneus</i> spp.		<i>Sphyraena</i> spp.		Others		Total	
	R	D	R	D	R	D	R	D	R	D	R	D	R	D
2019	98.49	0	111.17	0.4	50.62	0	28.22	0	19.61	0	50.02	19.75	358.12	20.15
2020	132.73	0	236.53	6.35	117.55	0	89.1	0	67.29	0	281.33	24.19	924.51	30.54
2021	712.56	0	871.06	0.84	367.9	0	356.97	0.43	124.55	0	489.27	61.21	2,922.31	62.48
2022	853.74	0	767.87	4.38*	332.67	0	140.28	0.12	88.12	0	343.2	73.89	2,525.87	78.39
2023	940.70	0	358.54	5.95*	178.09	0	28.57	0	17.24	0	144.38	88.41	1,667.52	94.36

Remark R = retained catch, D = discarded catch, catch excluded incidental bycatch

*Fishes are kept as bait fish for handline

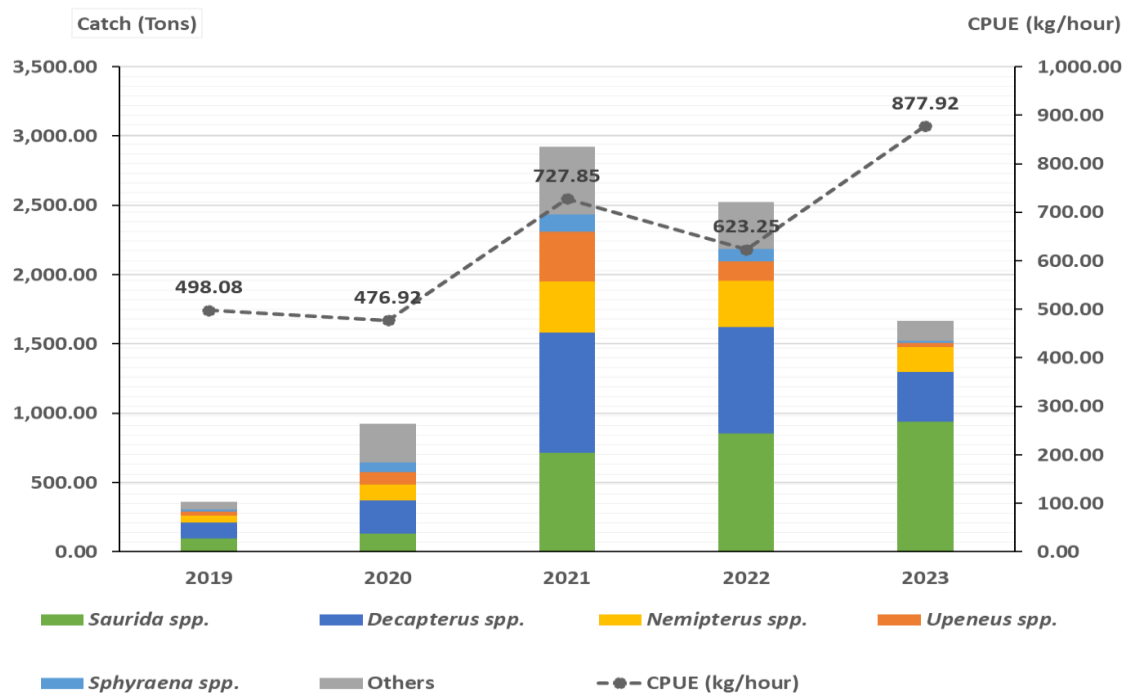


Figure 4 Catch and Catch per Unit Effort (CPUE) of Thai Otter Board Trawlers from 2019 to 2023

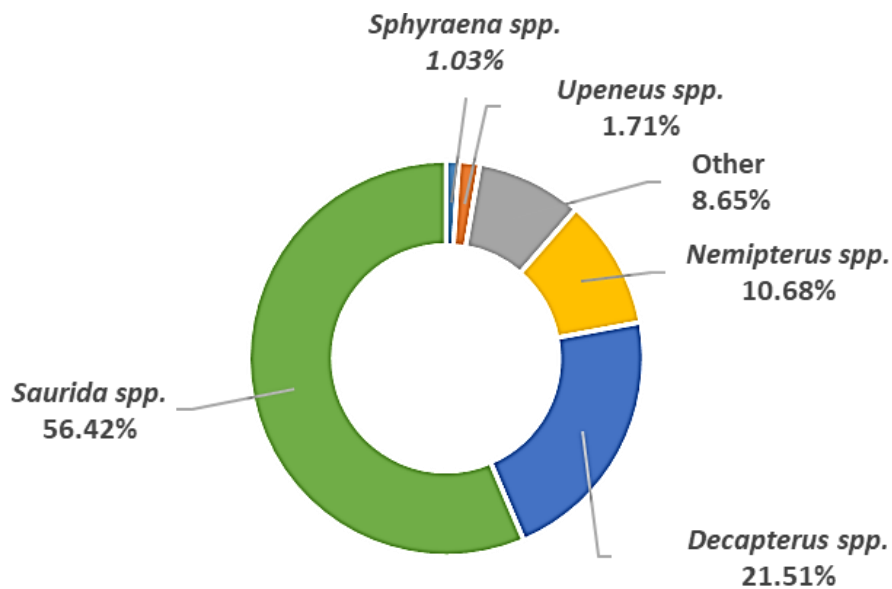


Figure 5 Catch composition of otter board trawl in 2023

Handline

In 2023, handline fishing yielded 308.33 tons, increased 60% from the previous year. The catch rate was double increased from 3,938.73 kg/day in 2022 to 6,851.78 kg/day in 2023. This is because the vessels changed their target from small demersal fish to catch more large-high valued fishes. The catch and effort of handline fishing are presented in Table 7 and Figure 6.

Composition of handline catch in 2023 was similar to the previous year. The catch dominated with trevallies (*Carangoides spp.*) of 92.51%, red snappers (*Lutjanus spp.*) of 3.03%, and groupers (Serranidae) of 2.38%, and other species of 2.08% (Figure 7). In 2023, there was a noticeable shift in the fishing practices of handline fishing, which increasingly targeted trevallies and large, high-value fish for filleting, responding to the growing market demand.

Table 7 Catch (tons) by main target species from handline in 2023

Year	<i>Carangoides spp.</i>		<i>Gnathanodon speciosus</i>		<i>Lutjanus spp.</i>		Serranidae*		<i>Aprion virescens</i>		Others		Total	
	R	D	R	D	R	D	R	D	R	D	R	D	R	D
2019	228.66	0	25.13	0	8.6	0	18.39	0	9.55	0	14.47	0.16	304.80	0.16
2020	341.91	0	0	0	17.29	0	5.81	0	2.92	0	11.46	0.01	379.39	0.01
2021	22.96	0	0	0	3.12	0	3.84	0	1.08	0	7.35	0.02	38.34	0.02
2022	175.26	0	0	0	6.48	0	3.87	0	2.86	0	4.52	0	193.00	0.00
2023	285.24	0	0	0	9.35	0	7.33	0	2.07	0	4.35	0	308.33	0.00

Remark R = retained catch, D = discarded catch, catch excluded incidental bycatch

*main species are *Plectropomus spp.* and *Epinephelus spp.*

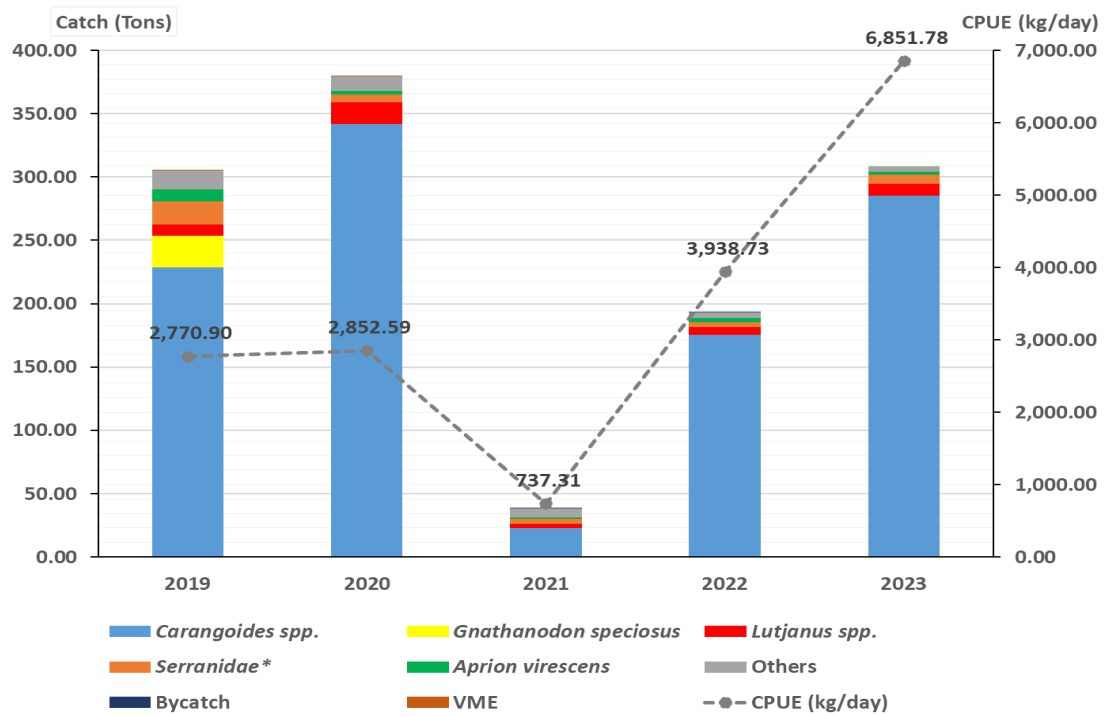


Figure 6 Catch and Catch per Unit Effort (CPUE) of Thai Handline fishing from 2019 to 2023

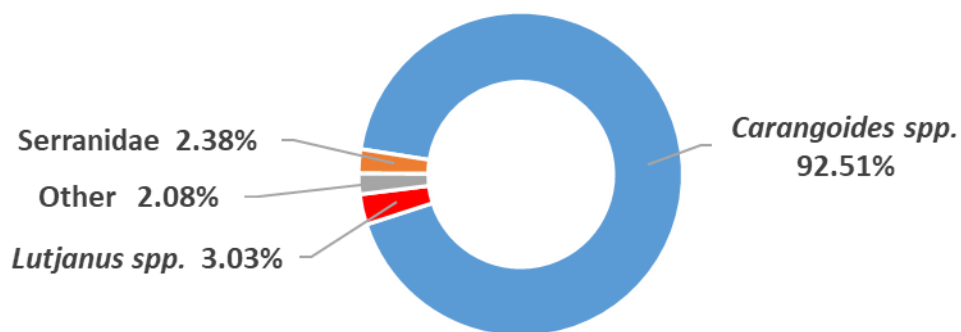


Figure 7 Catch composition of handline fishing in 2023

Fisheries data collection and research activities

Since 2019, Thailand has implemented a fishery data collection system for trawl and handline fishing operated in SIOFA area. It is required by Thai regulation that any overseas fishing vessels need to record every fishing activity in fishing logbook and present them to the inspection officers when landing at ports, and any trawlers operating in SIOFA area are needed to have the scientific observers onboard every fishing trip.

There are 2 approaches to get fishery data, fishing logbook recorded by vessel captains and scientific data collected by onboard observers. The fishery data is recorded in the finest details as possible. However, the data quality of fishing logbook is slightly different from which recorded by the observers. The details of resolution of collected data are shown in Table 8.

Table 8 Details on the scales and resolutions of the fishery data collection for trawl and handline

Trawl and handline data collection items								
Year	tow / set <i>(individual or some aggregation)</i>		time scale <i>(set-tow hauling time, daily, etc.)</i>		spatial scale <i>(tow/set exact position or grid, please provide grid resolution)</i>		species details <i>(any aggregation or species grouping)</i>	
	Commercial (Logbook)	Observer	Commercial (Logbook)	Observer	Commercial (Logbook)	Observer	Commercial* (Logbook)	Observer**
2020	set by set	set by set	set-tow hauling time (hours and minutes)	set-tow hauling time (hours and minutes)	exact position	exact position	species grouping	species grouping
2021	set by set	set by set	set-tow hauling time (hours and minutes)	set-tow hauling time (hours and minutes)	exact position	exact position	species grouping	species grouping
2022	set by set	set by set	set-tow hauling time (hours and minutes)	set-tow hauling time (hours and minutes)	exact position	exact position	species grouping	species grouping
2023	set by set	set by set	set-tow hauling time (hours and minutes)	set-tow hauling time (hours and minutes)	exact position	exact position	species grouping	species grouping

Remark: *species grouping in logbook is roughly at genus/family levels

**target species reported by observers are identified into species level, while non-targets are reported as grouped species at genus/family level

VME threshold

Thailand has recognized that fishing practice must have least impact on the vulnerable marine ecosystems (VMEs). The threshold limits for VMEs catch were set for all Thai bottom fisheries within SIOFA area. The vessels are required to cease fishing and relocate if they accidentally capture living corals, sponges, or other VMEs exceeding the thresholds. The protocols for thresholds and relocation are detailed in Table 9.

Table 9: Threshold levels for encounters with VMEs and move-on protocols

Gear	Threshold (kg)	Move-on protocols
Trawls	corals > 60 kg sponges > 300 kg	move at least 2 nautical miles
Longlines	corals or sponges > 10 units* per 1,000 hooks or per mainline of 1,200 meters, whichever is the shorter	move at least 1 nautical mile
Traps	corals or sponges > more than thresholds to be assigned by SIOFA secretariat	move at least 1 nautical mile from the radius or midpoint of mainline**
Other bottom fishing gears	corals or sponges > more than thresholds to be assigned by SIOFA secretariat	move at least 1 nautical mile

Remark: *unit of corals and sponges means either one liter of those VME indicator organisms that can be placed in a 10-litre container, or one kilogram of those VME indicator organisms that do not fit into a 10-litre container

**mainline length of 1,200 meters

Following the move-on rule specified in CMM 2021/01 and CMM (01)2023, **there was no threshold triggered in 2023**. The average VMEs reported was 0.13 kg/haul. The detail of VME quantities is presented in Table 10 and 11.

Table 10: Recorded quantities (kg) of VME from logbooks, 2019-2023

Gear	VME group	Year				
		2019	2020	2021	2022	2023
Trawl	Sponges	590	308	710.7	1,251.4	60.35
	Corals + other VMEs	6.5	0.02	21	54.1	1
Handline	Sponges	0	0	0	0	0
	Corals + other VMEs	27.5	10	0	0	0

Table 11: VME taxa bycatch quantities (kg) per gear from logbooks data (specify taxa and units) in 2023

Taxa	Gear	Trawl	Handline
	total set/tow number	476 hauls	45 days
DMO	Demospongiae	60.35 kg	0
GGW	Gorgonacea	1 kg	0

Biological sampling and length/age composition of catches

Since 2019 biological and size composition data are collected by scientific observers. The scientific observers are responsible to collect scientific data including catch composition, length of target species, biological information of marine organisms, and other data requested by the Department of Fisheries. However, only length measurement is available due to the trawl catch characteristic and onboard working condition in vessels. The size measurement was conducted only for target species. Table 12 shows the number of sampled fish from 2019 to 2023 which more than 20,000 fishes were sampled for length measurement annually. The length of target species sampled in 2023 are shown in Table 13.

Table 12 Summary numbers of fish sampled per species and year

Species (FAO code)	Years				
	2019	2020	2021	2022	2023
LIB	L/F: 5,740	L/F: 5,327	L/F: 9,721	L/F: 9,690	L/F: 5,096
	BS: -	BS: -	BS: -	BS: -	BS: -
KZJ	L/F: 4,793	L/F: 8,558	L/F: 11,894	L/F: 12,427	L/F: 4,490
	BS: -	BS: -	BS: -	BS: -	BS: -
DCC	L/F: 2,341	L/F: 1,014	L/F: 6,952	L/F: 5,455	L/F: 4,237
	BS: -	BS: -	BS: -	BS: -	BS: -
RUS	L/F: 7,213	L/F: 13,511	L/F: 19,751	L/F: 14,582	L/F: 4,411
	BS: -	BS: -	BS: -	BS: -	BS: -
NGU	L/F: 231	L/F: 3,306	L/F: 200	L/F: 751	L/F: 2,163
	BS: -	BS: -	BS: -	BS: -	BS: -
LJB	L/F: 205	L/F: 225	L/F: 32	L/F: 93	L/F: 120
	BS: -	BS: -	BS: -	BS: -	BS: -
EMN	L/F: 96	L/F: 65	L/F: 128	L/F: 65	L/F: 57
	BS: -	BS: -	BS: -	BS: -	BS: -
AVR	L/F: 515	L/F: 171	L/F: 65	L/F: 59	L/F: 68
	BS: -	BS: -	BS: -	BS: -	BS: -
Total	L/F: 21,134	L/F: 38,417	L/F: 48,743	L/F: 43,122	L/F: 20,642
	BS: -	BS: -	BS: -	BS: -	BS: -

Remark: L/F: length/frequency counts, BS: complete individual biological sampling

Table 13: Sampling length of each species from scientific observers in 2023

FAO Code	Species	Number	Min	Max	Mean
LIB	<i>Saurida undosquamis</i>	5,096	8	51	37 ± 8.15
KZJ	<i>Nemipterus bipunctatus</i>	4,490	7	116	20 ± 5.24
DCC	<i>Decapterus macrosoma</i>	4,237	15	30	21 ± 1.88
RUS	<i>Decapterus russelli</i>	4,411	12	32	20 ± 2.41
NGU	<i>Carangoides fulvoguttatus</i>	2,163	40	93	77 ± 9.49
LJB	<i>Lutjanus bohar</i>	120	30	78	60 ± 11.25
EMN	<i>Plectropomus punctatus</i>	57	36	80	56 ± 10.19
AVR	<i>Aprion Virescens</i>	68	55	111	80 ± 13.26
Total		20,642			

Description of data verification mechanisms

Fishing activities of vessels

Fishing activities are recorded in paper base (fishing logbook) and digital recorded via Electronic Reporting System (ERS). The details are including date and time of fishing, fishing efforts, catch, fishing locations. The vessel masters are required to record fishing activities on haul by haul basis in fishing logbook and submit these records upon docking at Thai ports.

Additionally, the captains are also requested to report every fishing operation daily through the ERS, which is currently available for trawl and handline fishery. The Electronic Monitoring System (EM), video recording format, is also in place to cross-check the actual fishing activities with reported data in logbook and ERS. The logbook, ERS reported data and video records are verified by Department of Fisheries.

Position verification through VMS

All authorized fishing vessels operating in SIOFA area are required to install Vessel Monitoring System (VMS) which transmitting signals every hour. A VMS backup unit is reserved on board to ensure continuous monitoring in the event of a primary VMS signal disruption. The real-time monitoring is monitored by Department of Fisheries.

Scientific observer programs

Scientific onboard observer program is implemented to collect scientific details on fishing operation, catch and discard, catch composition at finest taxonomic level, biological data of important species, observing incidental bycatch and vulnerable species. The observers are also assigned to observe and record transshipment activities at sea. These are to ensure that the information is consistently with the data recorded by vessel masters or captains. The scientific onboard observer program and scientific data verification is in responsible of Department of Fisheries.

Port sampling

Department of Fisheries is responsible for port inspection at ports upon departure and landing. Port inspectors are tasked to verify documents and conducting physical inspections for port entry and exit permission. Landed catch is inspected and crosscheck with the fishing logbook to ensure the reliability and accuracy of information regarding the catch before it is integrated into the supply chain. This procedure involves the verification of catch weight against landing declaration documents, such as the fishing logbook, fishing gear details, and the Marine Catch Transshipment Document (MCTD) in cases of transshipment. Data verification mechanism diagram is presented in Figure 8.

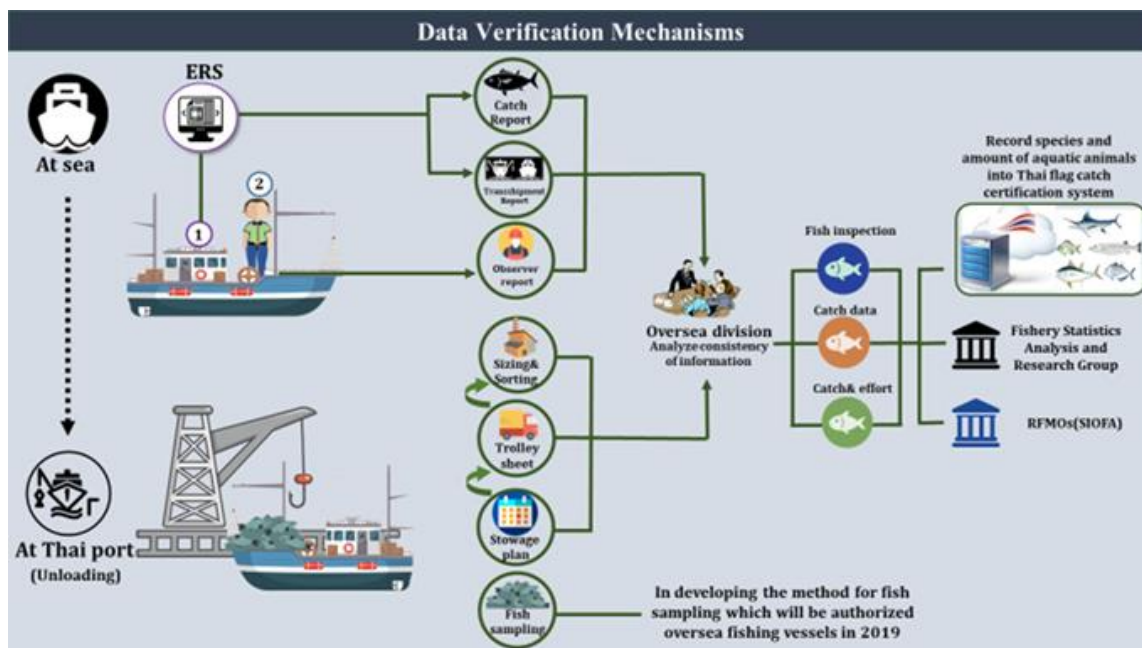


Figure 8 Mechanism for Verifying Data from Thai-Flagged Overseas Fishing Vessels

Summary of observer and port sampling programs

Thailand has implemented scientific observer program since 2019. The scientific observers are trained by Department of Fisheries, covered basic training of seaman, fisheries management, legal and policy framework, health and safety, observer code of conduct, fishing gears, fishery data collection and related topics e.g. navigation and radio communication.

The onboard observers are responsible to collect scientific data including fishing gear details, fishing effort, catch and discard, catch composition, incidental bycatch, VMEs, length of target species, and other scientific data requested by the Department of Fisheries. In 2023, eleven (11) active scientific onboard observers are available.

All Thai oversea fishing vessels operating in SIOFA area are requested to have onboard observers observe fishing and transshipment activities on the conditions that

- trawlers must have onboard observers cover for the entire duration of the trip (100% coverage)
- For other bottom fishing gears including handline must have onboard observer cover at least 20% of operations in any calendar year.
- Every transshipment activity must be observed by onboard observers

The scientific observer program had run smoothly in 2023. The observer program summary in 2023 is in Table 14.

Table 14: The scientific observer program summary in 2023

description /gear	Trip coverage (%)	Total number of sets/hauls	Number of sets/hauls covered	Observing coverage (%)		Incidental bycatch observation coverage (seabirds and mammals) (%)
				observed	sampling	
Trawl	100%	476 hauls	Covered 476 hauls	100% observed	33.33% sampling	100%
Handline	100%	45 Fishing days	Covered 45 Fishing days	100% observed	100% sampling	100%

In 2023, the total of 658.35 kg (65 individual bycatches) were reported which most of bycatch were reported from trawl. There is one sea turtle caught by trawl but it was released alive and no report of seabird caught or had interaction with the fishing gears, both trawl and handline. The detail of reported bycatch is shown in Table 15.

Table 15: Reporting of observed bycatch from otter board trawl in 2023

Group	Taxon	Trawl	Handline
Seabirds	-	-	-
Marine mammals	-	-	-
Turtles	<i>Dermochelys coriacea</i>	230.00 kg* (1 individual)	-
Sharks, rays and skates,	<i>Alopias pelagicus</i>	15.00 kg (1 individual)	-
	<i>Galeocerdo cuvier</i>	5.70 kg (1 individual)	-
	<i>Mobula kuhlii</i>	20.00 kg (1 individual)	-
	<i>Rhina ancylostoma</i>	70.00 kg (2 individuals)	-
	<i>Sphyrna lewini</i>	64.15 kg (21 individuals)	-
	<i>Sphyrna spp.</i>	139.00 kg (34 individuals)	-
	<i>Bathytoshia lata</i>	30.00 kg (1 individual)	-
	<i>Taeniurops meyeri</i>	80.00 kg (1 individual)	-
Tuna & tuna like species	<i>Euthynnus affinis</i>	2.5 kg (1 individual)	2 kg (1 individual)
Total		656.35kg (64 individual)	2 kg (1 individual)

Remark - no encounters

* estimated weight