REVIEW OF INDIAN OCEAN SKIPJACK TUNA STATISTICAL DATA, 1950-2025

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Introduction

Global skipjack tuna catches have shown a long-term increasing trend, although recent years have been characterized by fluctuations across regions. In 2024, global catches increased markedly, particularly in the Pacific Ocean, reaching a record level of approximately 3.5 million tonnes, compared with less than 3 million tonnes in 2023. The WCPFC remains the largest contributor to global skipjack tuna catches, accounting for approximately 48%. of worldwide production, followed by the IOTC, which contributes around 17% (**Fig. 1**). Across these two principal tuna-producing regions, purse seine fisheries constitute the dominant fishing method, accounting for approximately half of all reported skipjack tuna catches.

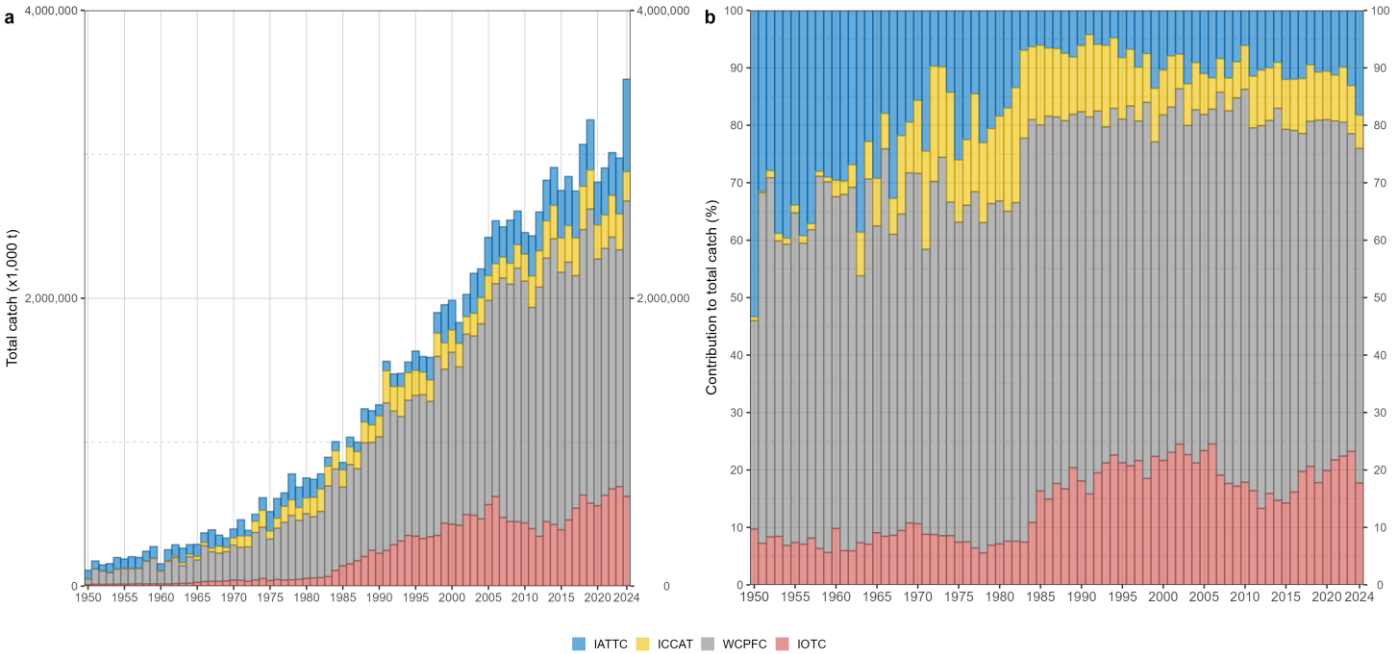

Figure 1: Annual time series of cumulative retained catches (metric tonnes; t) of skipjack tuna by ocean basin for the period 1950-2024. Source: Global Tuna Atlas

This paper aims to provide participants of the 28th Session of the IOTC Working Party on Tropical Tunas (WPTT28) with updated information on Indian Ocean skipjack tuna (Katsuwonus pelamis; SKJ) and its fisheries. It presents an overview of temporal and spatial catch trends, recent fishery developments, and the quality of reported datasets. A detailed description of the data compiled and curated by the Secretariat is available in document IOTC-2026-WPTT28-06.

Retained catches

Historical trends (1950-2025)

The catch trend of skipjack tuna has varied considerably over time, reflecting changes in fishery development, fleet structure, management measures, and environmental conditions. The time series between 1950-2025 is characterized by several periods of rapid expansion and decline (**Table 1 & Figs. 2**). During the early 1950s, catches were relatively low, averaging around 95,000 tonnes and originating primarily from coastal fisheries. Skipjack catches increased progressively with the development of industrial fisheries, particularly purse seine and baitboat fleets, and reached a first peak in 2006, at 622,000 tonnes. Subsequently, catches declined substantially, falling below 350,000 tonnes in 2012 before recovering in subsequent years. The highest catch on record was observed in 2025, when skipjack catches reached approximately 730,000 tonneS (**Table 2**).

Historical decadal catch series illustrate the evolution of skipjack tuna fisheries in the Indian Ocean since the 1950s. With the exception of industrial longline fisheries, catches from all major fishery groups have shown a general increasing trend between the 1950s and the 2020s. This growth reflects the expansion of fishing capacity, the development of new fisheries, and the increasing importance of tropical tuna resources in the region.

Recent catch trends indicate a recovery in both purse seine and pole-and-line fisheries in 2025 following the decline observed in 2024. Conversely, gillnet fisheries have maintained a generally increasing trend during the period 2021-2025, while catches from other fisheries have gradually decreased (**Figs. 2**).

Table 1: Best scientific estimates of average annual retained catches (t) of skipjack tuna by decade and fishery for the period 1950-2019. The background intensity color of each cell is directly proportional to the catch level. Data source: raised time-area catches

Fishery	1950s	1960s	1970s	1980s	1990s	2000s	2010s	2020s
Purse seine | Other	931	1,599	3,572	9,427	17,137	26,232	35,153	40,424
Purse seine | FS			137	15,252	31,733	25,688	9,657	19,822
Purse seine | LS			415	34,735	128,665	172,935	181,548	282,212
Longline | Other				45	625	1,812	859	1
Longline | Fresh	0	0	1	2	8	36	383	705
Longline | Deep-freezing	277	521	381	895	2,103	3,177	71	77
Line | Coastal longline	6	29	78	223	446	1,236	10,324	10,155
Line | Trolling	740	1,442	3,494	8,946	17,753	24,607	25,239	22,880
Line | Handline	115	193	924	1,872	3,448	4,033	10,830	26,092
Baitboat	10,099	15,303	24,965	42,041	78,036	111,033	93,231	124,072
Gillnet	1,439	5,305	8,665	12,522	41,569	113,006	93,648	117,923
Other	160	371	569	1,094	2,245	3,335	4,653	7,150
Total	13,768	24,763	43,201	127,055	323,768	487,129	465,597	651,512

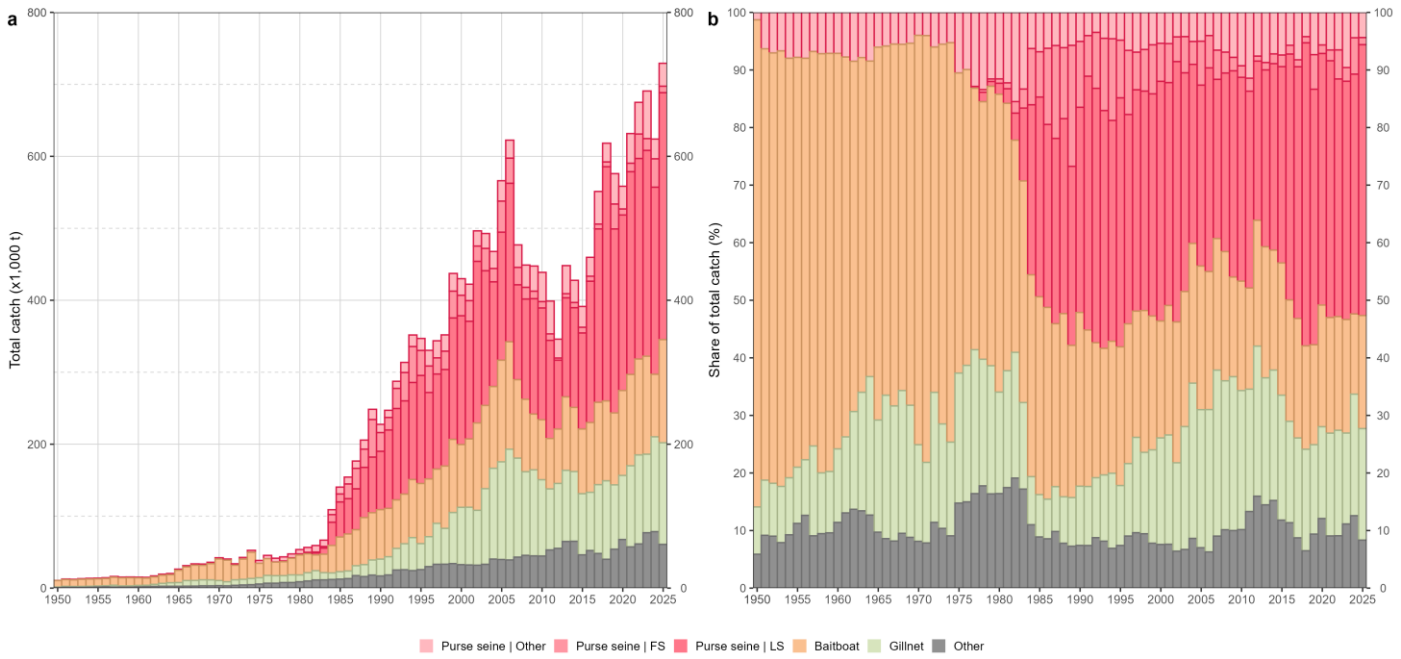

Figure 2: Annual time series of cumulative retained absolute (a) and relative (b) catches (t) of skipjack tuna by fishery for the period 1950-2025. LS = schools associated with floating objects; FS = free-swimming schools. Data source: raised time-area catches

Table 2: Best scientific estimates of annual retained catches (t) of skipjack tuna by fishery for the period 2016-2025. The background intensity color of each cell is directly proportional to the catch level. Data source: raised time-area catches

Fishery	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Purse seine | Other	26,252	45,392	26,094	42,296	31,606	41,302	44,044	66,178	27,500	31,913
Purse seine | FS	7,024	6,706	6,626	34,593	8,285	11,753	34,014	16,431	39,447	9,001
Purse seine | LS	196,344	241,014	325,418	255,647	243,946	281,752	278,623	285,937	259,923	343,092
Longline | Other	6	1	0	1	1	0	0	0	4	1
Longline | Fresh	280	424	457	334	231	192	471	478	604	2,253
Longline | Deep-freezing	135	64	59	60	65	45	54	87	125	82
Line | Coastal longline	8,013	7,448	5,954	10,327	10,836	8,598	7,331	9,981	13,699	10,482
Line | Trolling	26,866	17,955	21,495	23,298	21,583	23,063	29,061	35,549	16,334	11,689
Line | Handline	13,472	16,883	9,347	15,624	28,816	19,837	18,747	23,769	40,734	24,652
Baitboat	96,912	114,366	111,008	99,953	118,042	126,822	133,267	136,172	86,874	143,256
Gillnet	80,915	95,602	109,021	89,407	88,982	112,767	123,677	109,086	131,779	141,246
Other	3,454	5,354	2,765	4,419	5,997	5,505	5,705	7,106	6,967	11,617
Total	459,672	551,210	618,246	575,959	558,389	631,638	674,994	690,775	623,992	729,283

Catch trend by fishery category

The catch composition of skipjack tuna in the Indian Ocean has shifted markedly over time, from predominantly coastal fisheries in the early decades to a fishery increasingly dominated by industrial fleets. Since the development of purse seine fisheries in the 1980s and the expansion of offshore gillnet and pole-and-line operations, industrial fisheries have become the principal source of skipjack catches. In recent years, they have consistently accounted for more than 70% of total skipjack tuna catches in the Indian Ocean. (**Figs.3**).

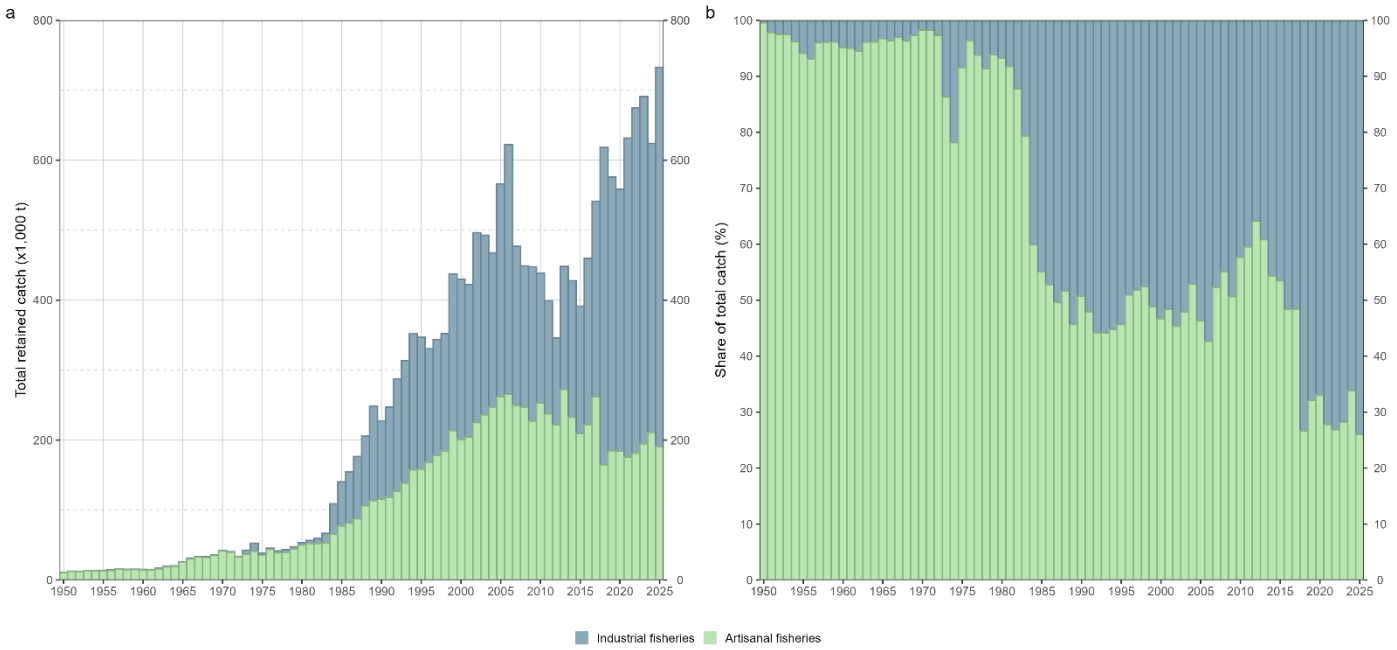

Figure 3: Annual time series of cumulative retained absolute (a) and relative (b) catches (t) of skipjack tuna by type of fishery for the period 1950-2025. Data source: best scientific estimate of retained catches

Purse seine catch trends

The development of purse seine fisheries in the Indian Ocean has resulted in a substantial increase in skipjack tuna catches. Purse seine vessels target tuna schools either associated with floating objects (FOBs) or occurring as free-swimming schools (FS). Given the strong association of skipjack tuna with FOBs, purse seine fisheries have become the principal source of skipjack catches, supplying high-volume canning markets (Dagorn et al. 2013). FOBs may consist of natural or anthropogenic floating objects and are often equipped with satellite or radio buoys to facilitate fishing operations and fleet monitoring. Historically, catches of skipjack tuna from purse seine sets on FOB-associated schools averaged approximately 173,000 tonnes during the 2000s and continued to increase, reaching an average of 282,000 tonnes during the 2020s. In comparison, average catches from free-school sets and other purse seine fisheries were substantially lower, averaging approximately 20,000 tonnes and 40,000 tonnes, respectively (**Table** 1). Total skipjack catches from all purse seine fisheries combined continued to reached a record level of around 387,000 tonnes in 2025 (**Table 2 & Figs. 2**).

Trends in skipjack tuna catches from purse seine fisheries have generally reflected changes in fleet capacity, catch reporting practices, and fishing strategies.

The Spanish purse seine fleet has been one of the principal contributors to skipjack tuna catches in the Indian Ocean. Although the fleet size declined from approximately 20 vessels prior to 2008 to an average of 13 vessels from 2009 onwards, reported skipjack catches increased substantially in 2018, reaching approximately 132,000 tonnes, 57% higher than the level recorded in 2017. The increase coincided with the introduction of yellowfin tuna catch limits, which prompted changes in both catch estimation methodologies and fishing behaviour within the fleet, including:

- *Modification of catch estimation procedures*: Prior to 2018, catches were estimated using species-specific conversion factors, whereas subsequent estimates were derived from sales slips to improve quota monitoring and accounting at the vessel level(Báez et al. 2020).
- *Changes in fishing behaviour*: Fishers increasingly shifted from free-school sets, which are more likely to target larger yellowfin tuna, towards FAD-associated sets that typically yield higher proportions of skipjack tuna and juvenile tropical tunas (Báez et al. 2020).

Following the increase observed after 2018, catches reported by the Spanish purse seine fleet subsequently declined and remained below 100,000 tonnes for several years, reaching approximately 66,000 tonnes in 2024. Similar

reductions were observed in other purse seine fisheries and may have been influenced by changes in environmental conditions affecting skipjack availability and distribution. In 2025, however, catches reported by the Spanish fleet increased slightly, reaching approximately 88,000 tonnes (**Fig.** 4).

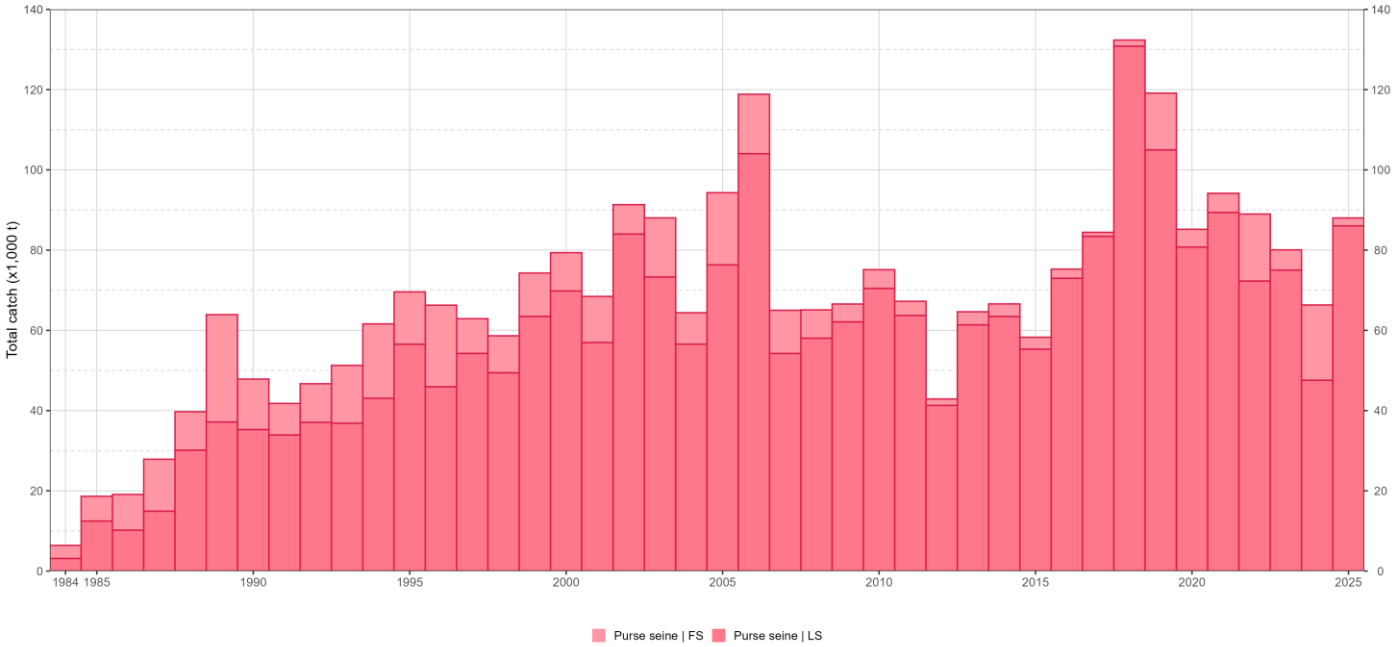

Figure 4: Annual time series of cumulative retained absolute catches (t) of skipjack tuna by fishery mode of EU-Spain purse seine for the period 1950-2025. LS = schools associated with floating objects; FS = free-swimming schools. Data source: raised time-area catches

The Seychelles-flagged purse seine fleet exhibited a catch trend broadly similar to that of the Spanish purse seine fleet, although at lower catch levels. Fleet size averaged approximately 10 vessels prior to 2011, before declining to around seven vessels between 2011 and 2014. The marked reduction in catches observed in 2012 coincided with the impacts of piracy in the western Indian Ocean, which resulted in a decrease in the number of purse seine vessels licensed under the Seychelles flag and prompted shifts in fishing grounds and fishing strategies. During this period, vessels increasingly targeted free-swimming schools to catch larger yellowfin tuna (Assan & Lucas 2012).

From 2015 onwards, the increase in the number of purse seine vessels operating under the Seychelles flag contributed to higher reported skipjack catches. Although the number of fishing days and fishing sets declined in subsequent years, skipjack catches increased by around 16% in 2018, while catches of yellowfin and bigeye tuna decreased. Given the close operational links between the Seychelles and Spanish-flagged purse seine fleets, the changes in catch estimation procedures and fishing practices associated with the implementation of yellowfin tuna catch limits may also have influenced the catch in 2018 reported by the Seychelles fleet.

Skipjack catches from the Seychelles purse seine fleet continued to increase thereafter and reached a record level of approximately 92,000 tonnes in 2025 (**Fig. 5**).

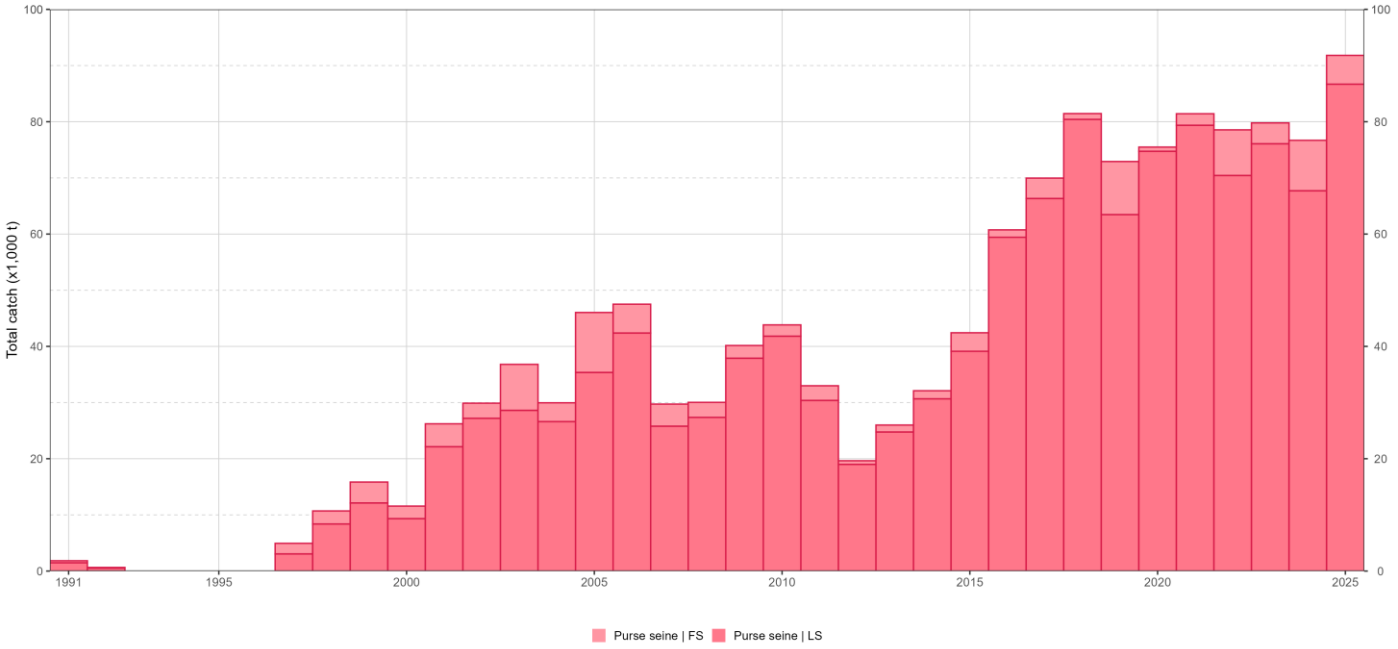

Figure 5: Annual time series of cumulative retained absolute catches (t) of skipjack tuna by fishery mode of Seychelles purse seine for the period 1950-2025. LS = schools associated with floating objects; FS = free-swimming schools. Data source: raised time-area catches

The French purse seine fleet displayed a somewhat different trajectory, with catches declining in recent years. Historically, catches dropped very low in 2012, which reflect a reduction in the number of French-flagged purse seine vessels operating in the Indian Ocean due to piracy. However, operation picked up from 2014, reaching a peak of 50,000 tonnes in 2018, representing an increase of about 54% compared to 2017. Floch et al. (2020) reported that approximately 90% of fishing sets in 2018 were conducted on floating objects, representing the highest proportion observed in the time series, although this proportion declined in subsequent years. Contrary to EU-Spain and Seychelles, catches from the EU-France purse seine show a declining trend in recent years, with 20025 catches reduced to 33,000 tonnes (**Fig. 6**).

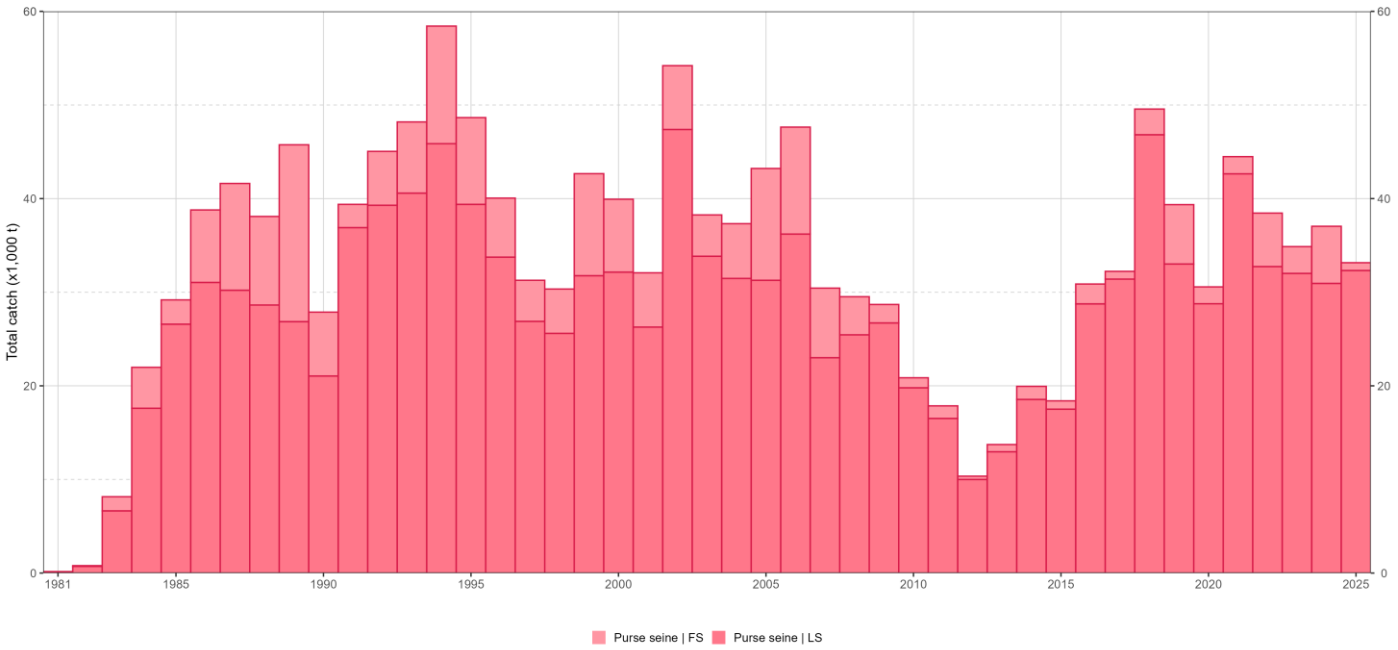

Figure 6: Annual time series of cumulative retained absolute catches (t) of skipjack tuna by fishery mode of EU-France purse seine for the period 1950-2025. LS = schools associated with floating objects; FS = free-swimming schools. Data source: raised time-area catches

Baitboat fisheries catch trends

The Maldives has remained the dominant pole-and-line fleet targeting skipjack tuna since the 1950s, accounting for more than 86% of total pole-and-line catches of the species. Relatively low catches prior to the 1980s were largely associated with limited fishing capacity, with small vessels of approximately 10-12 m operating primarily within areas under national jurisdiction (Jauharee 2022). Subsequent investments by the Government of Maldives in fisheries infrastructure and vessel construction modernized the fleet and increased fishing capacity. These developments are reflected in the marked increase in catches from the mid-1980s onwards, with average skipjack catches rising from approximately 18,000 tonnes during the 1970s to around 68,000 tonnes during the 1990s. The introduction of anchored fish aggregating devices (FADs) during the 1980s further enhanced fishing efficiency by increasing catch rates and reducing the time and fuel required to locate tuna schools (Naeem & Latheefa 1994).

The long-term catch trend is characterized by substantial fluctuations, including a peak of approximately 138,000 tonnes in 2006, followed by a sharp decline to around 58,000 tonnes in 2011. The increase leading up to the 2006 peak was partly associated with the post-tsunami rebuilding of the fleet. Following the 2004 Indian Ocean tsunami, replacement vessels were constructed using the third-generation dhoni design, which provided greater fishing capacity than the vessels lost during the disaster. Improved access to export markets also contributed to increased catches during this period (Linton & Shareef 2011).

In 2011, skipjack catches declined substantially as fishing effort by Maldivian pole-and-line vessels decreased. Several factors have been proposed to explain this decline, including oceanographic variability, changes in skipjack abundance and distribution, reduced availability of larger fish, and modifications to data collection and processing systems. Between 2011 and 2019, skipjack catches averaged approximately 60,000 tonnes annually. The fishery showed signs of gradual recovery from 2020 onwards, despite reduced fishing effort during the COVID-19 pandemic. Catches declined again in 2024, coinciding with reductions in both fleet size and fishing effort. The factors underlying this decline remain uncertain; however, industry reports have suggested that warmer ocean conditions, rising fuel costs, and changes in government fish purchasing arrangements may have contributed to the reduced catches (Moosa 2026). In 2025, however, skipjack catches rebounded by approximately 46%, reaching 117,000 tonnes (**Fig.7**).

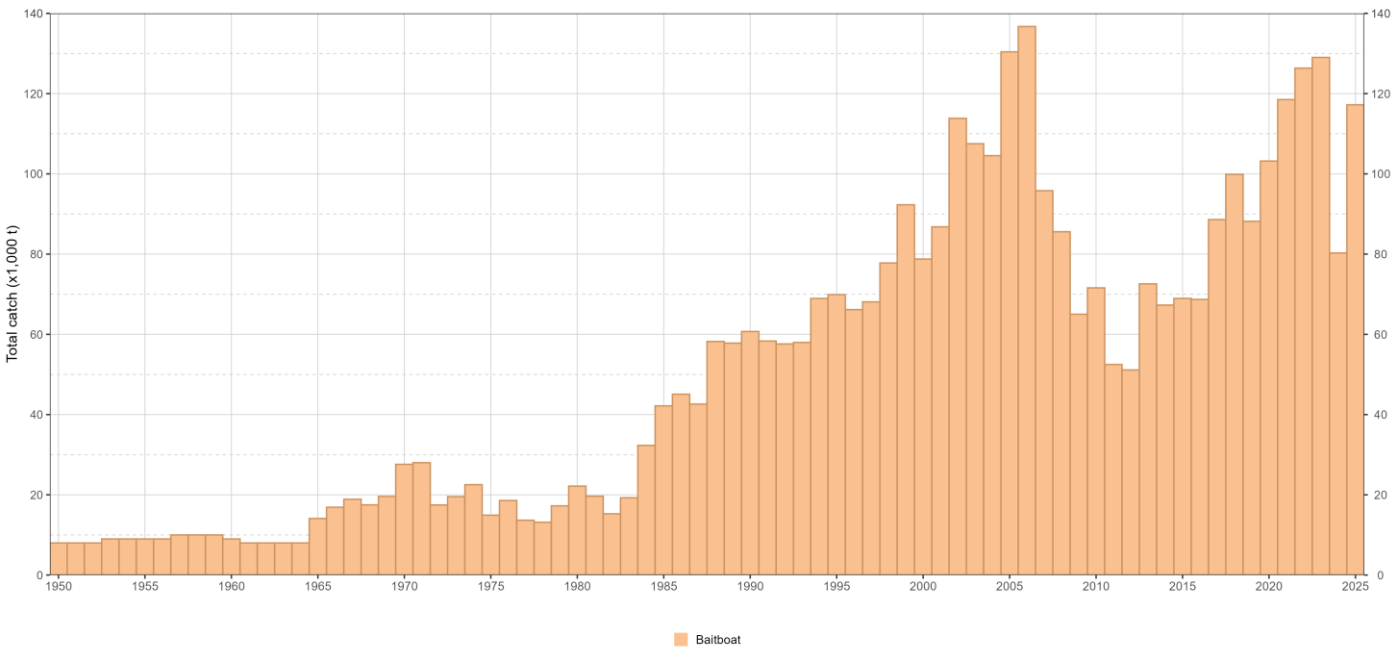

Figure 7: Annual time series of cumulative retained absolute catches (t) of skipjack tuna from Maldives pole and line fisheries for the period 1950-2025 Data source: raised time-area catches

Gillnet fisheries catch trends

Skipjack catches from gillnet fisheries have exhibited considerable interannual variability over the historical time series. The highest catch was recorded in 2006, reaching approximately 154,000 tonnes, after which catches declined steadily to around 80,000 tonnes by 2016. Since 2019, however, catches from gillnet fisheries have shown a gradual recovery.

Skipjack tuna are caught by a range of coastal gillnet fisheries throughout the Indian Ocean, although fishing practices, vessel characteristics, and gear configurations vary considerably among fleets. Historical catch trends have been driven primarily by the Iranian and Sri Lankan gillnet fisheries, which account for approximately 37% and 42% of total skipjack catches from gillnet fisheries, respectively (**Fig. 8**).

Iranian skipjack catches peaked at approximately 99,000 tonnes in 2006 following a substantial expansion in fleet capacity. From 2005 onwards, more than 100 large gillnet vessels exceeding 100 gross tonnes entered the fishery, contributing to the rapid increase in catches. However, piracy-related disruptions in the western Indian Ocean from 2009 onwards significantly affected fishing operations, with catches declining to approximately 20,000 tonnes in 2011. Catches subsequently recovered from 2014 and reached a secondary peak of approximately 80,000 tonnes in 2022. Since around 2016, part of the Iranian fleet has seasonally converted from gillnet to longline operations to target yellowfin tuna for high-value fresh tuna markets. This shift in fishing effort may have contributed to fluctuations in skipjack catches in recent years (Khorshidi 2024). In 2025, reported skipjack catches from the Iranian gillnet fleet were approximately 80,000 tonnes.

Similarly, skipjack catches from the Sri Lankan gillnet fleet peaked at approximately 63,000 tonnes in 2010, following a decline in 2005 associated with the impacts of the 2004 Indian Ocean tsunami. The disruption caused by the tsunami affected fishing operations during the early recovery period, resulting in reduced catches from coastal fisheries (Fisheries Sri Lanka 2006). Historically, the multi-gear nature of the Sri Lankan fishing fleet, whereby vessels commonly operated more than one fishing gear, complicated the allocation of catches among fisheries. Prior to 2014, this may have affected the accuracy of gear-specific catch estimates. The subsequent implementation of an electronic fisheries management system from 2014 (Gunawardane 2016) and data collection improvements, led to changes in the reporting of catches by species and gear type , which may partly explain the observed shifts in reported skipjack catches. Thereafter, catches declined steadily and reached an average of around 23,000 tonnes between 2020 and 2025.

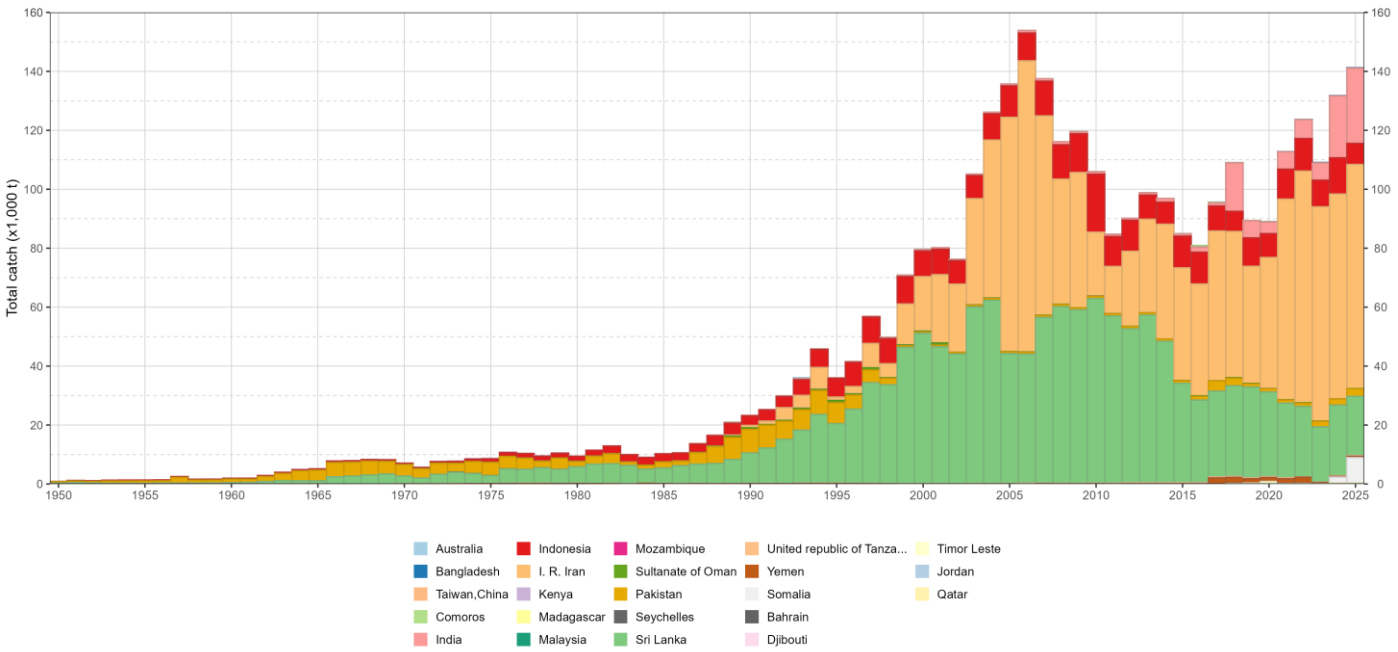

Figure 8: Annual time series of cumulative retained absolute catches (t) of skipjack tuna from gillnet fisheries for the period 1950-2025 Data source: raised time-area catches

Recent main fishery features (2021-2025)

During the period 2021-2025, purse seine fisheries have dominated the exploitation of skipjack tuna in the Indian Ocean. The extensive use of sets on floating-object-associated schools (FOBs), which typically yield high proportions of skipjack tuna, resulted in purse seine fisheries accounting for approximately 43% of total skipjack catches. Over the same period, pole-and-line and gillnet fisheries contributed approximately 19% and 18% of total catches, respectively (**Table 3**).

At the fleet level, skipjack tuna catches have been dominated by the diverse fisheries of Indonesia. Although historical catches from Indonesian fisheries were relatively modest, reported catches increased substantially from 2010 onwards and have remained higher than those of any other fleet in the Indian Ocean. This increase followed a comprehensive review and reconstruction of Indonesia's fisheries statistics covering the period 1950-2022 (Marine Affairs and Fisheries 2024). While catch levels have varied among diverse fisheries in recent years (**Fig. 9**), Indonesia has consistently remained the largest contributor to skipjack tuna catches in the Indian Ocean.

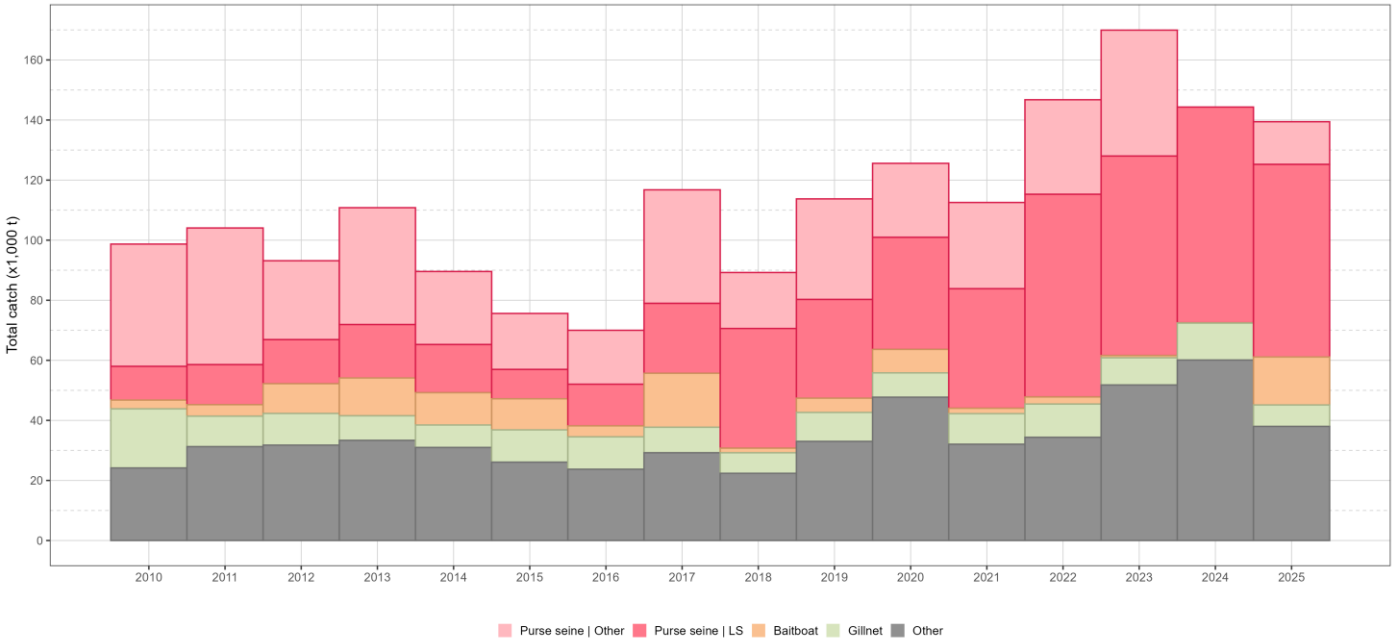

Figure 9: Annual catch data of skipjack tuna by Indonesia fishery between 2010 and 2025

The Pareto analysis highlights the importance of Indonesian fisheries in the skipjack tuna fishery, accounting for approximately 21% of total skipjack catches during the period 2021-2025. The Maldives ranked second, contributing around 17% of total catches, derived predominantly from pole-and-line (baitboat) fisheries. Industrial purse seine fleets operating under the flags of Spain (EU), France (EU), and Seychelles collectively contributed approximately 30%. of total skipjack catches during the same period. Iran, which operates the largest gillnet fishery in the Indian Ocean, accounted for approximately 11% of total skipjack catches in recent years (**Fig. 10**).

Table 3: Mean annual catches of skipjack tuna (t) by fishery between 2021 and 2025. LS = schools associated with floating objects; FS = free-swimming schools. Data source: raised time-area catches

Fishery	Fishery code	Catch	Percentage
Purse seine | LS	PSLS	289,865	43.3
Baitboat	BB	125,278	18.7
Gillnet	GN	123,711	18.5
Other	OT	66,965	10.0
Purse seine | Other	PSOT	42,187	6.3

Fishery	Fishery code	Catch	Percentage
Purse seine | FS	PSFS	22,129	3.3

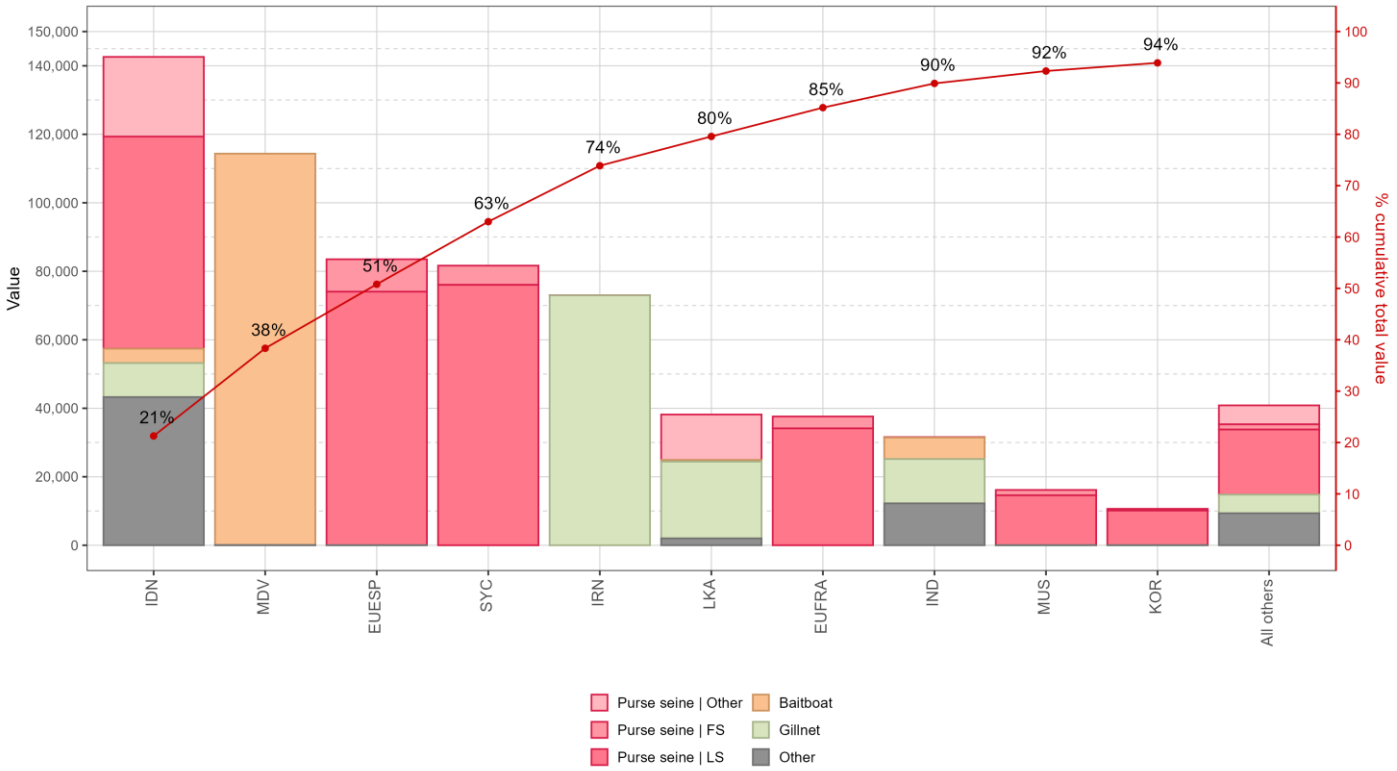

Figure 10: Mean annual catches of skipjack (t) tuna by fleet and fishery between 2021 and 2025, with indication of cumulative catches by fleet. FS = free-swimming schools; LS = schools associated with floating objects. Data source: raised time-area catches

Recent catch trends highlight contrasting dynamics among the principal fisheries. Both purse seine and pole-and-line fisheries recorded higher catches in 2025 compared with 2024, indicating a recovery following lower catches in the preceding year. Conversely, gillnet fisheries displayed a consistent upward trend throughout the period 2021-2025 (**Fig. 11**)

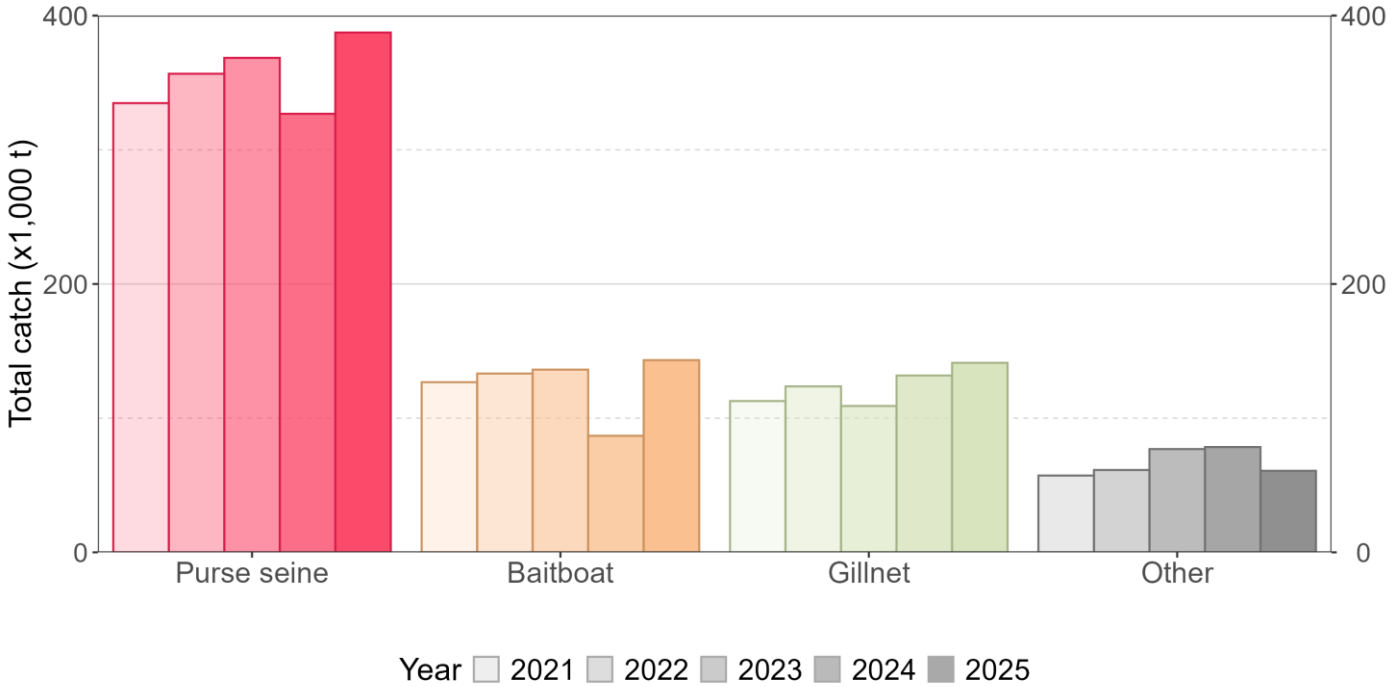

Figure 11: Annual catch (t) trends of skipjack tuna by fishery group between 2021 and 2025. Data source: best scientific estimate of retained catches

Catches from purse seine fisheries during the period 2021-2025 were dominated by several major fleets, with trends varying according to fishing mode and fleet composition. In the floating-object-associated (FOB) fishery, both the Seychelles- and Spanish (EU)-flagged fleets showed strong recoveries in 2025 following the decline observed in 2024, with catches increasing by approximately 28% and 81%, respectively. The increase in catches by these principal fleets can be attributed to different factors.

For the Seychelles fleet, fishing capacity increased with the addition of two purse seine vessels in 2025. The number of sets on FOBs increased by approximately 5%, while the number of unsuccessful sets also increased by around 30%. In contrast, the Spanish (EU) fleet reduced its fleet size by two vessels; however, the number of sets on FOB-associated schools increased by approximately 21%, contributing to the substantial increase in catches reported in 2025 (**Fig. 12a**).

Catches from free-school purse seine fisheries, however, declined markedly in 2025 across most fleets following the peak observed in 2024. The higher number of free-school sets recorded in 2024 relative to 2025 likely contributed to the reduction in skipjack tuna catches from this fishing mode. The decline was particularly evident among the principal fleets, with catches reported by the Spanish (EU) and Seychelles purse seine fleets decreasing by approximately 89% and 43%, respectively (**Fig. 12b**).

Similarly, catches from other purse seine fisheries, comprising primarily coastal purse seine operations, declined among several major fleets. No catches were available for the Indonesian coastal purse seine fishery in 2024; however, approximately 14,000 tonnes were reported in 2025. As such, the apparent increase relative to 2024 likely reflects improved data availability rather than a genuine increase in catches. Nevertheless, reported catches in 2025 remained substantially below the 42,000 tonnes recorded in 2023. In Sri Lanka, catches from coastal purse seine fisheries, which encompass several surrounding-net gear types, declined by approximately 36% in 2025 (**Fig. 12c**).

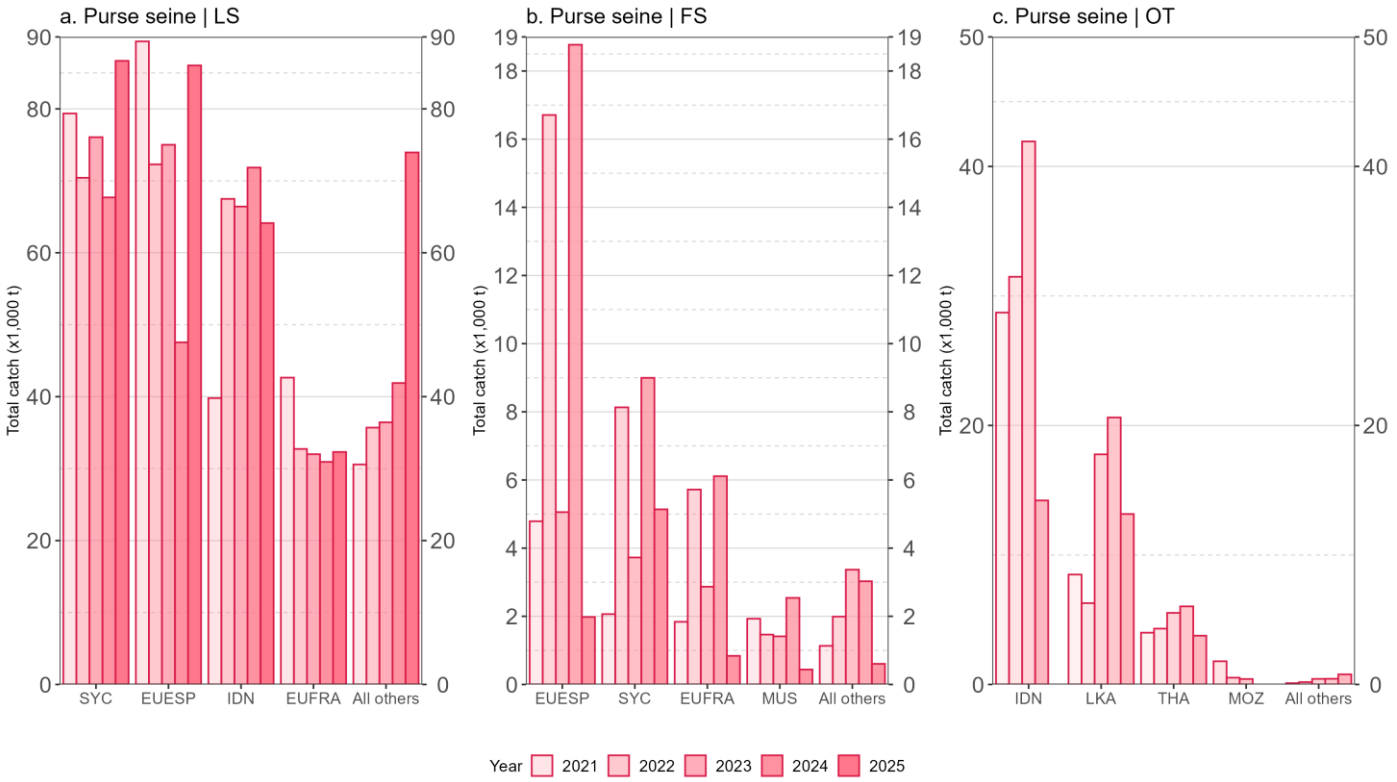

Figure 12: Annual purse seine catch (t) trends of skipjack tuna by fishing mode and fleet between 2021 and 2025. FS = free-swimming schools; LS = schools associated with floating objects. Data source: raised time-area catches

As noted previously, skipjack tuna catches from the Maldivian pole-and-line fishery recovered in 2025, increasing by approximately 46% relative to 2024, although catches remained below the levels observed during 2021-2023. Reported catches from the Indian baitboat fishery also increased, rising from approximately 6,000 tonnes to 9,000

tonnes. In Indonesia, approximately 16,000 tonnes of skipjack catches were reported in 2025, compared with no reported catches in 2024, likely reflecting improved data reporting rather than the absence of fishing activity in the previous year (**Fig. 13**).

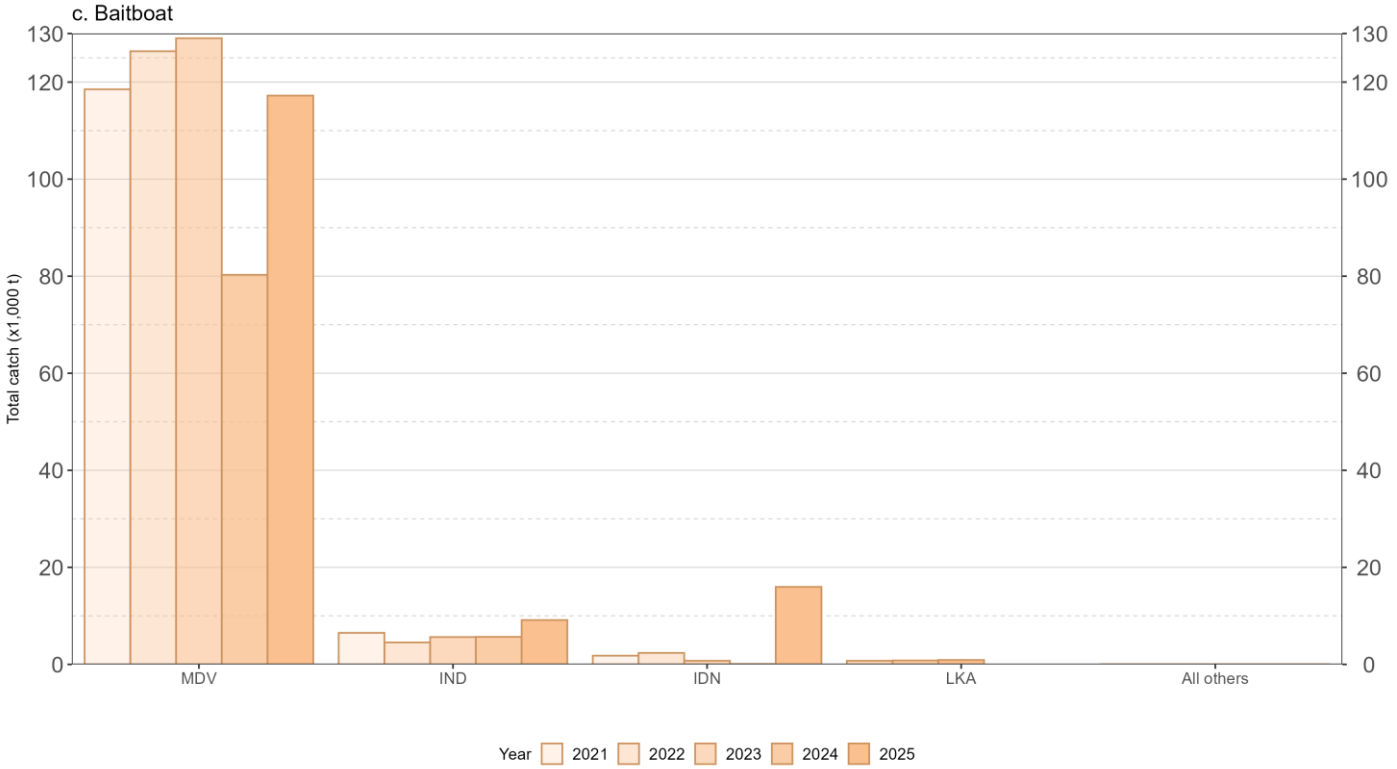

Figure 13: Annual baitboat fisheries catch (t) trends of skipjack tuna by fleet between 2021 and 2025. Data source: raised time-area catches

Gillnet catches of skipjack tuna have generally maintained an increasing trend over time, although considerable variability has been observed among the principal fleets during the past five years. Skipjack catches from the Iranian gillnet fishery increased slightly in 2025 following two consecutive years of decline, reaching approximately fleets. Iranian skipjack catch level from gillnet fisheries increased slightly in 2025, compared to two consecutive years of dropping. Catches reach 76,000 tonnes. Nevertheless, catches remained below the levels recorded during 2022-2023. Similarly, catches from the Sri Lankan gillnet fishery exhibited considerable interannual variability and declined further in 2025.

In contrast, catches from the Indian gillnet fishery increased markedly from 2024 onwards. Average skipjack catches increased from approximately 6,000 tonnes during 2021-2023 to around 23,000 tonnes during 2024-2025. India has recently reported the development and implementation of digital tools, including the Fish Catch Survey and Analysis (FCSA) system, to strengthen the collection and processing of artisanal fisheries data (Mini et al. 2023, Varghese et al. 2025). Improvements in fisheries monitoring and reporting may have contributed to changes in the estimation and reporting of species-specific catches. Following the increase recorded in 2024, reported skipjack catches from the Indonesian gillnet fishery declined by approximately 42% in 2025, falling from around 12,000 tonnes, to 7,000 tonnes (**Fig. 14**).

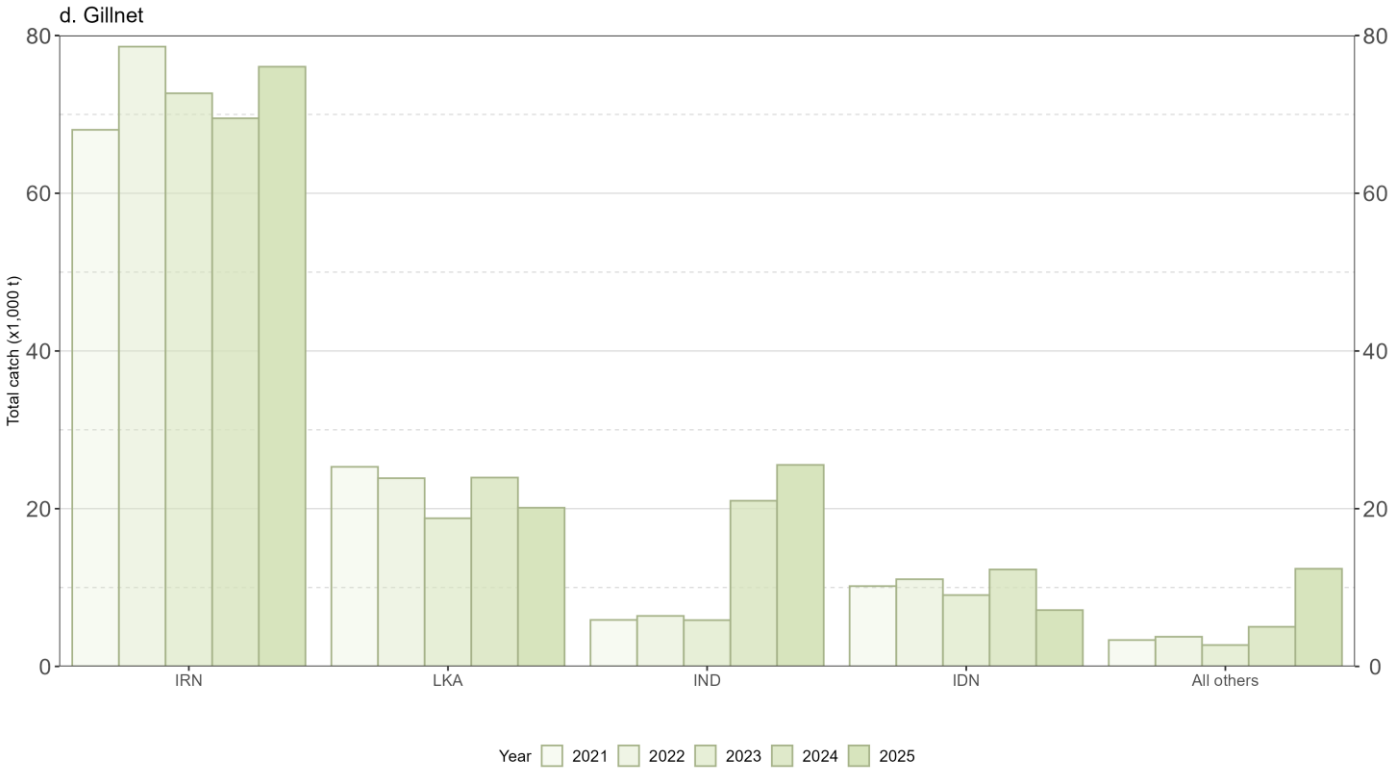

Figure 14: Annual gillnet fisheries catch (t) trends of skipjack tuna by fleet between 2021 and 2025. Data source: raised time-area catches

Substantial catches of skipjack tuna are also reported from other fisheries. As illustrated by the Pareto analysis, Indonesian line fisheries make an important contribution to the skipjack fishery. Catches from these fisheries averaged approximately 43,000 tonnes during the period 2021-2025 and reached a maximum of around 60,000 tonnes in 2024.

Similarly, catches from other Indian fisheries increased markedly in 2025, approximately doubling relative to 2024. Despite this increase, catch levels remained below those estimated during the period 2021-2023 (**Fig. 15**).

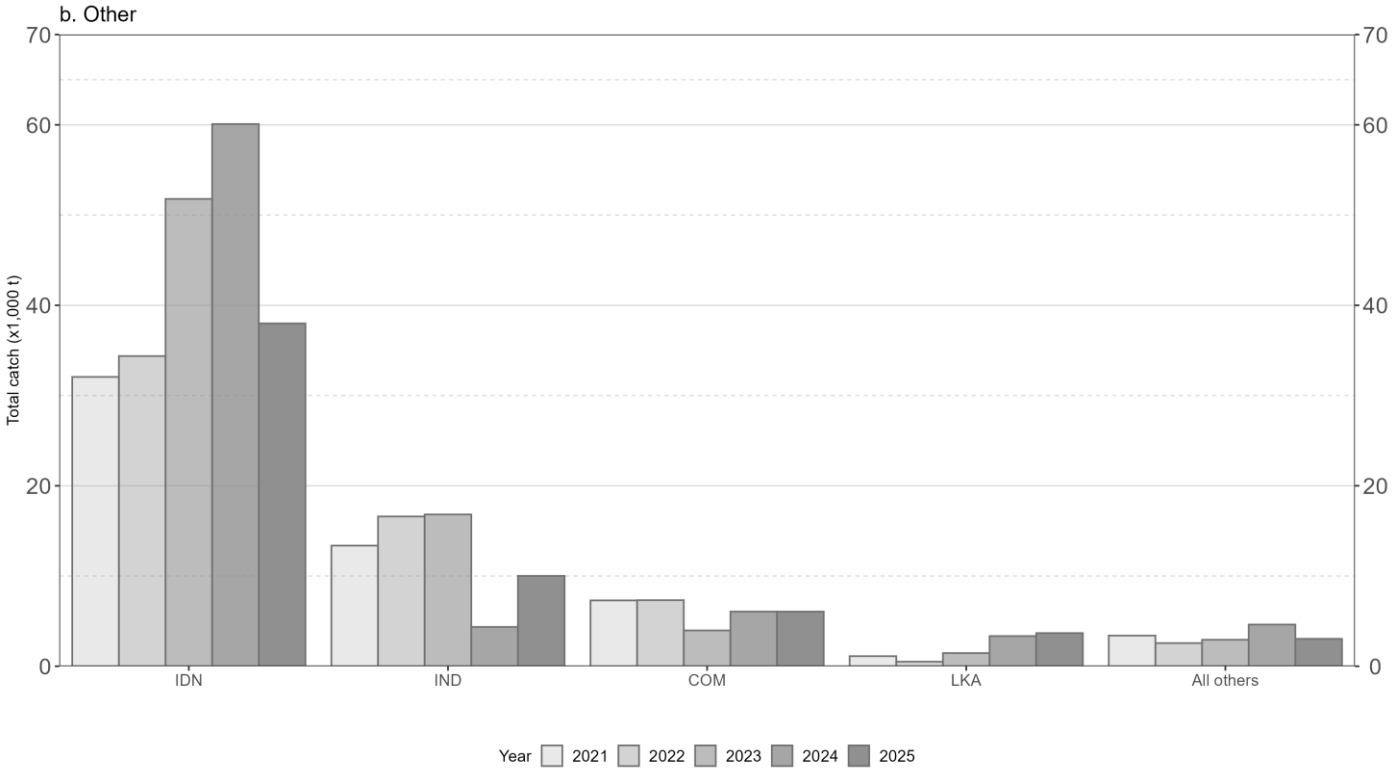

Figure 15: Annual other fisheries catch (t) trends of skipjack tuna by fleet between 2021 and 2025. Data source: raised time-area catches

Changes from previous WPTT

Only minor changes were made to the time series of best scientific estimates of skipjack tuna catches between the WPTT25 assessment meeting (October 2023) and the current WPTT28 assessment meeting (October 2026).

A comparison was made between the skipjack tuna catches used in the 2023 stock assessment and those incorporated into the current assessment for the period 1950-2022. Overall, the revised catch series resulted a net increase of approximately 130,100 tonnes, although revisions varied among years, with both upward and downward adjustments observed throughout the time series.

The most substantial revisions occurred between 1995 and 2014, during which estimated catches increased by an average of approximately 13,000 tonnes per year. In contrast, catch estimates for the period 2015-2022 were revised both upward and downward depending on the year. Notably, the estimated catch for 2021 was revised downward by approximately 23,000 tonnes relative to the catch series used in the 2023 assessment (**Fig. 16**).

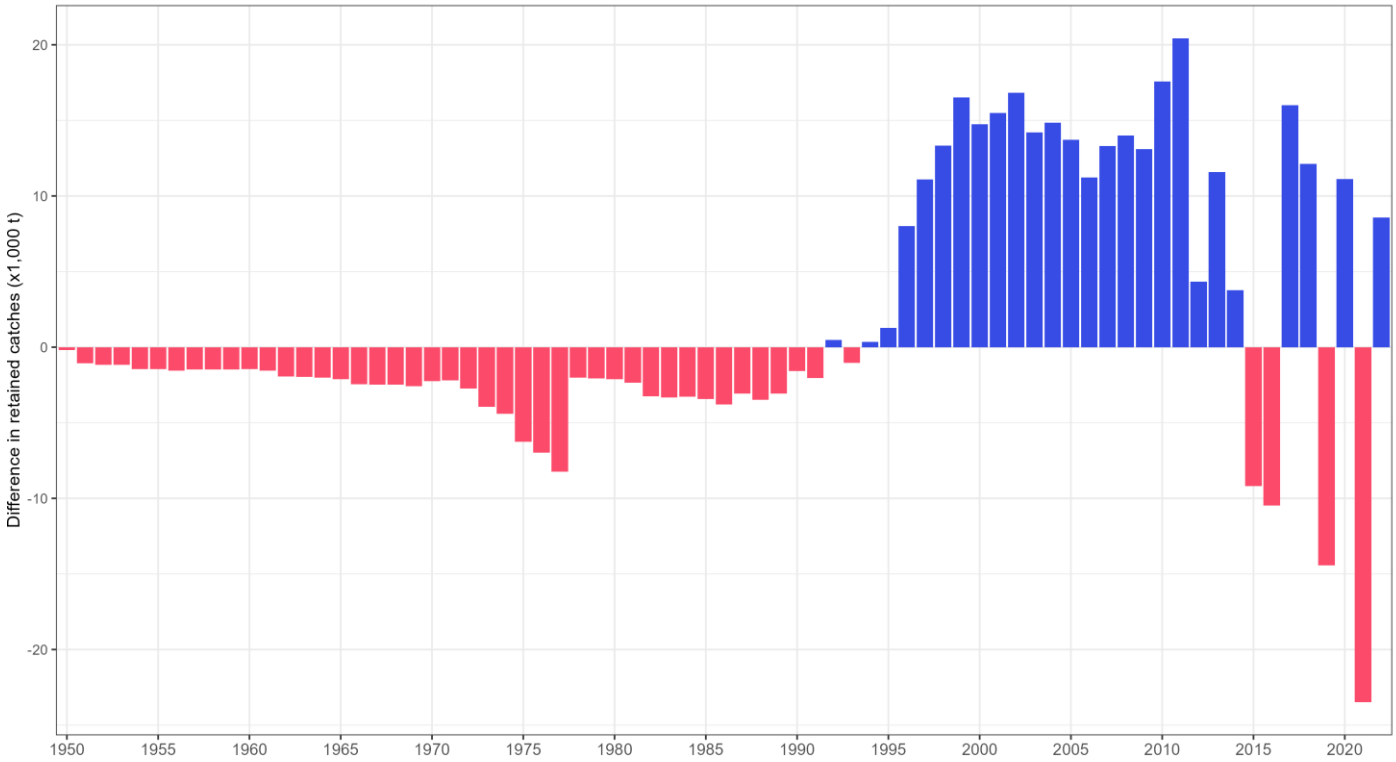

Figure 16: Differences in the available best scientific estimates of retained catches (t) of skipjack tuna between this WPTT and data used for previous skipjack assessment in 2023 session (WPTT25 October 2023)

The revisions to the historical catch series were driven primarily by the re-estimation of Indonesian catch data for the period 1950-2022, resulting in a net increase of approximately 125,300 tonnes. Beyond increasing the overall catch series, the revision substantially altered the distribution of catches among fisheries. In particular, significant quantities of skipjack tuna were reassigned to the large-scale purse seine fishery, for which no catches had previously been reported prior to 2017. As a result, catch estimates attributed to gillnet and line fisheries were revised downward, leading to a revised interpretation of the historical development of the Indonesian skipjack fishery (**Fig. 17**).

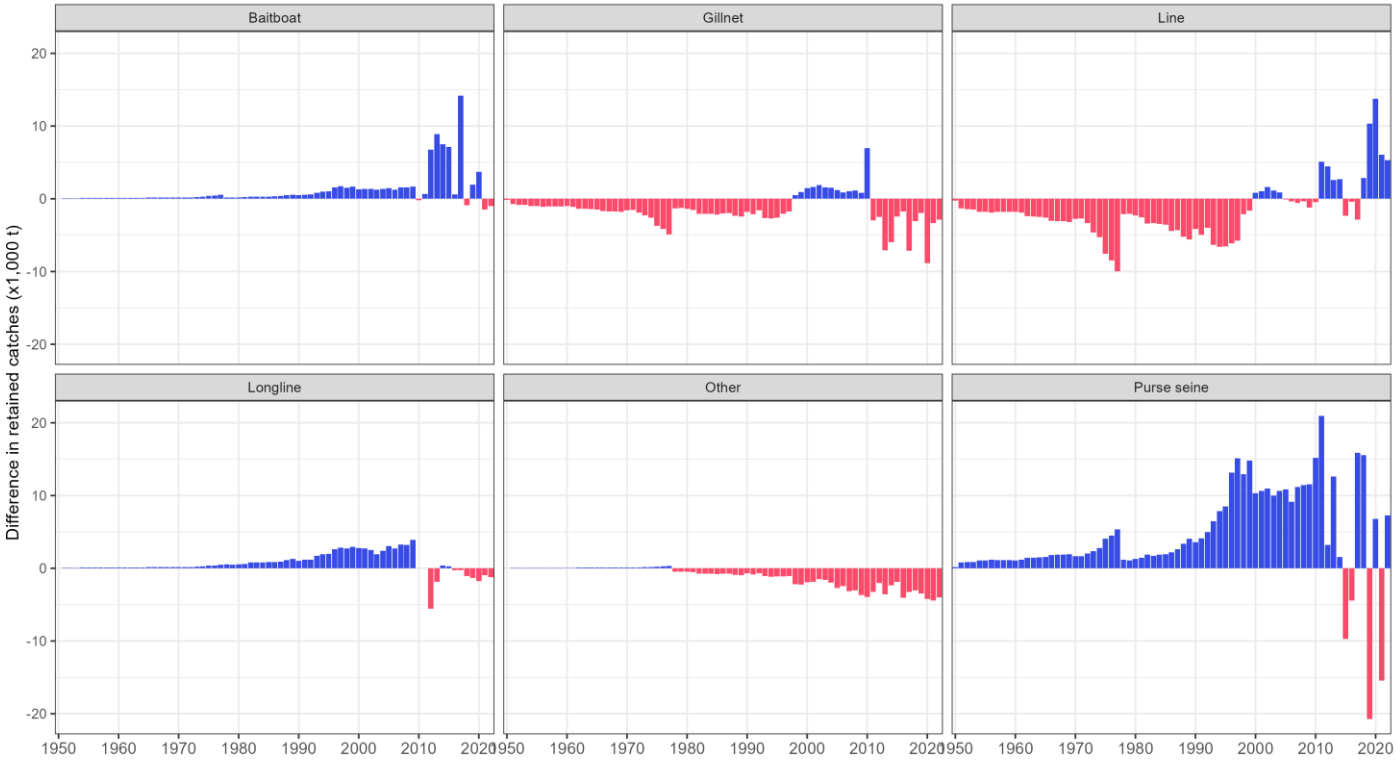

Figure 17: Differences in the available best scientific estimates of retained catches (t) of skipjack tuna from Indonesian between this WPTT and data used for previous skipjack assessment in 2023 session (WPTT25 October 2023)

In addition to Indonesia, adjustments were made to the catch series of several other fleets (see Appendix I):

- Bangladesh: Catch estimates for 2021-2022 were revised downward. This revision likely reflects the reassignment of previously aggregated catches based on improved species composition estimates derived from recent catch information.
- Italy (EU): Catches reported for the period 2015-2022 were revised in 2023, resulting in updated species-specific catch estimates.
- Spain (EU): Catch estimates for 2018 were revised to address anomalies associated with changes in catch estimation methodology.
- India: Catch estimates for 2022 were updated following the submission of national statistics that were unavailable at the time of the previous assessment and had therefore been sourced from alternative data providers.
- Oman: Purse seine catches for 2022 were re-estimated using information derived from landing certificates.
- FAO-derived catches: Catch estimates for CPCs that do not submit data directly to the IOTC, and for which data are obtained from FAO statistics, were also revised. As recent FAO datasets are routinely updated, corresponding revisions affected the catch series of several IOTC species, including skipjack tuna. The most notable revisions were associated with Timor-Leste and Yemen.

Uncertainties in retained catch data

Reporting quality

The quality of reported retained skipjack tuna catches submitted to the IOTC Secretariat varies over time (**Fig. 18**) and is largely influenced by the contribution of coastal fisheries. As a major contributor, Indonesia's historical data revisions since the 1950s reflect improved availability of coastal fisheries data. Although data quality was lower in the mid-2000s due to non-reporting, coverage has improved to near 99.83% in recent years. However, uncertainty estimates do not capture all underlying data limitations, including differences in data collection, sampling, and coverage.

Historical catch estimates for some CPCs remain uncertain due to incomplete or missing data, and in some cases have been repeated. Several coastal countries are currently undertaking efforts to re-estimate historical catches using available fisheries information.

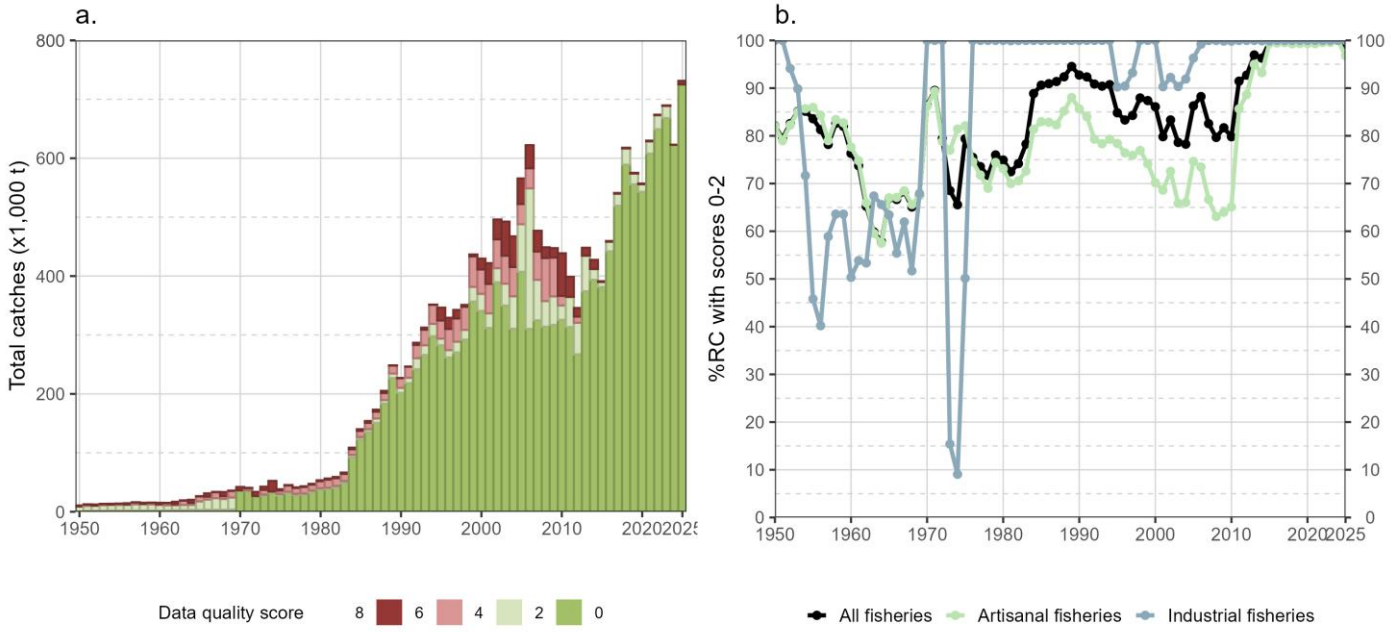

Figure 18: Annual retained catches (t) of skipjack tuna estimated by quality score (barplot) and percentage of nominal catch fully/partially reported to the IOTC Secretariat (lines with dots) for all fisheries (a) and by type of fishery (b), in the period 1950-2025

Discard levels

The total amount of skipjack tuna discarded at sea remains unknown for most fisheries and time periods despite the obligation to report these data as per IOTC Res. 15/02.

Discard data available to the Secretariat are derived primarily from logbook and observer programmes and are compiled in Form 1DI, which records discards by fishery, species, IOTC statistical area, and associated metadata used for discard estimation. In addition, the Secretariat is undertaking the compilation and standardization of data submitted through the Regional Observer Scheme (ROS).

Discard information submitted through regular reporting forms, which have evolved over time, contains records dating back to 1998. In contrast, ROS data have only become available more consistently since approximately 2015. Discarding of tropical tunas is generally considered to be limited in coastal fisheries and negligible in pole-and-line fisheries (Miller et al. 2017).

Furthermore, except under specific circumstances, such as when fish are unfit for human consumption or when insufficient storage capacity remains following the final fishing set of a trip, tropical tunas caught by purse seine fisheries are required to be retained on board under (IOTC Res. 24/06).

Discard data are reported either in numbers of fish or in weight, depending on the fishery and source of information. Records expressed in numbers are derived primarily from longline, line, and other fisheries, as well as from purse seine observer programmes. However, discard data remain incomplete, with substantial gaps in temporal and fleet

coverage. Consequently, the reported quantities are unlikely to fully represent actual discard levels across fisheries and fleets.

Several industrial longline fleets have reported discard information; however, reporting has generally been sporadic rather than continuous. Among these fleets, Australia has provided discard data more consistently than most other longline fleets (**Fig. 19**). The most frequently reported reason for discarding skipjack tuna in longline fisheries was that the fish were considered “too difficult to land”.

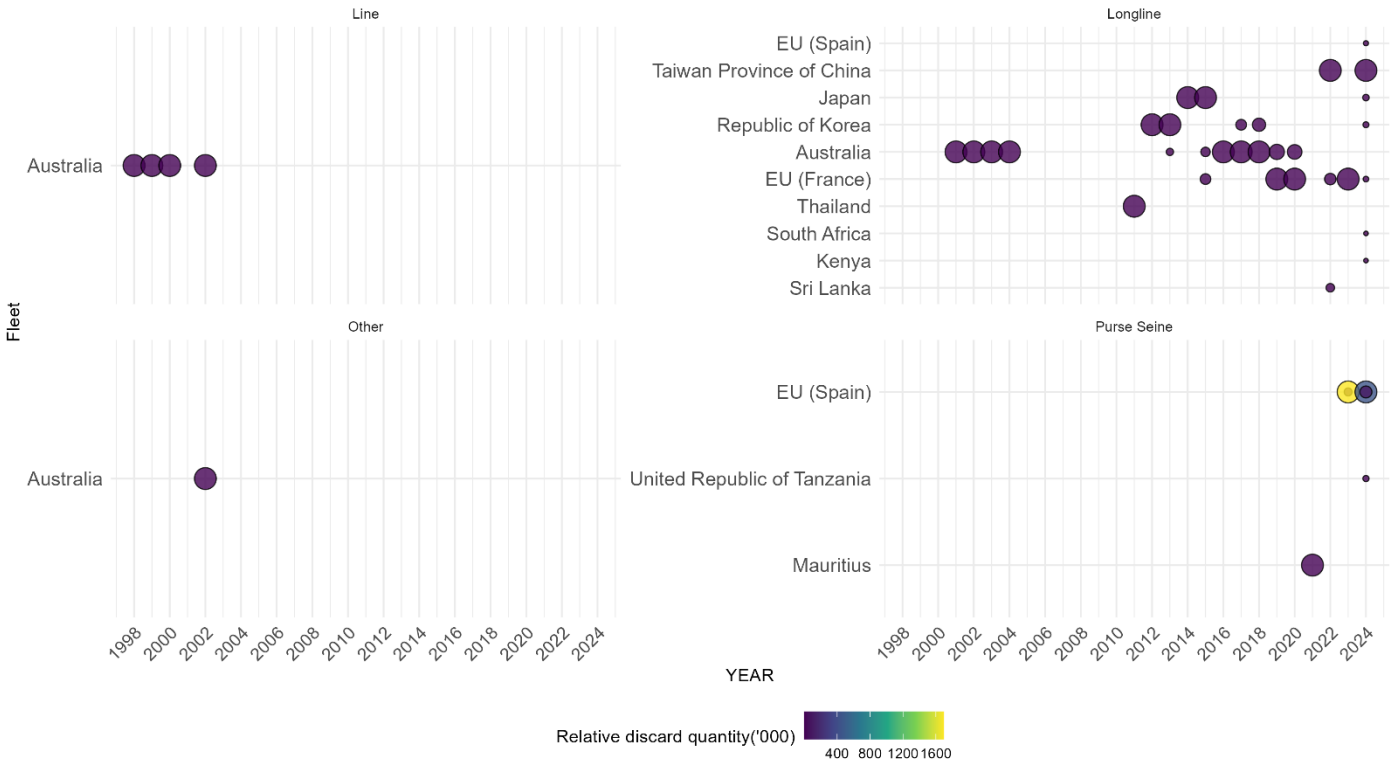

Figure 19: Discarded data of skipjack by fisheries (in number of fish). Data source: IOTC ROS database

Discard data reported in metric tonnes are available primarily from industrial purse seine fisheries. The highest levels of reported skipjack discards were recorded by the French (EU) fleet, followed by the Spanish (EU) and Republic of Korea fleets (**Fig. 20**). For some fleets, discard estimates reported in round weight may have been extrapolated or raised from observed samples. Reported reasons for discarding skipjack tuna in purse seine fisheries varied from fish being considered unfit for human consumption to having insufficient commercial value due to their small size. However, for the majority of reported discards, no reason was specified.

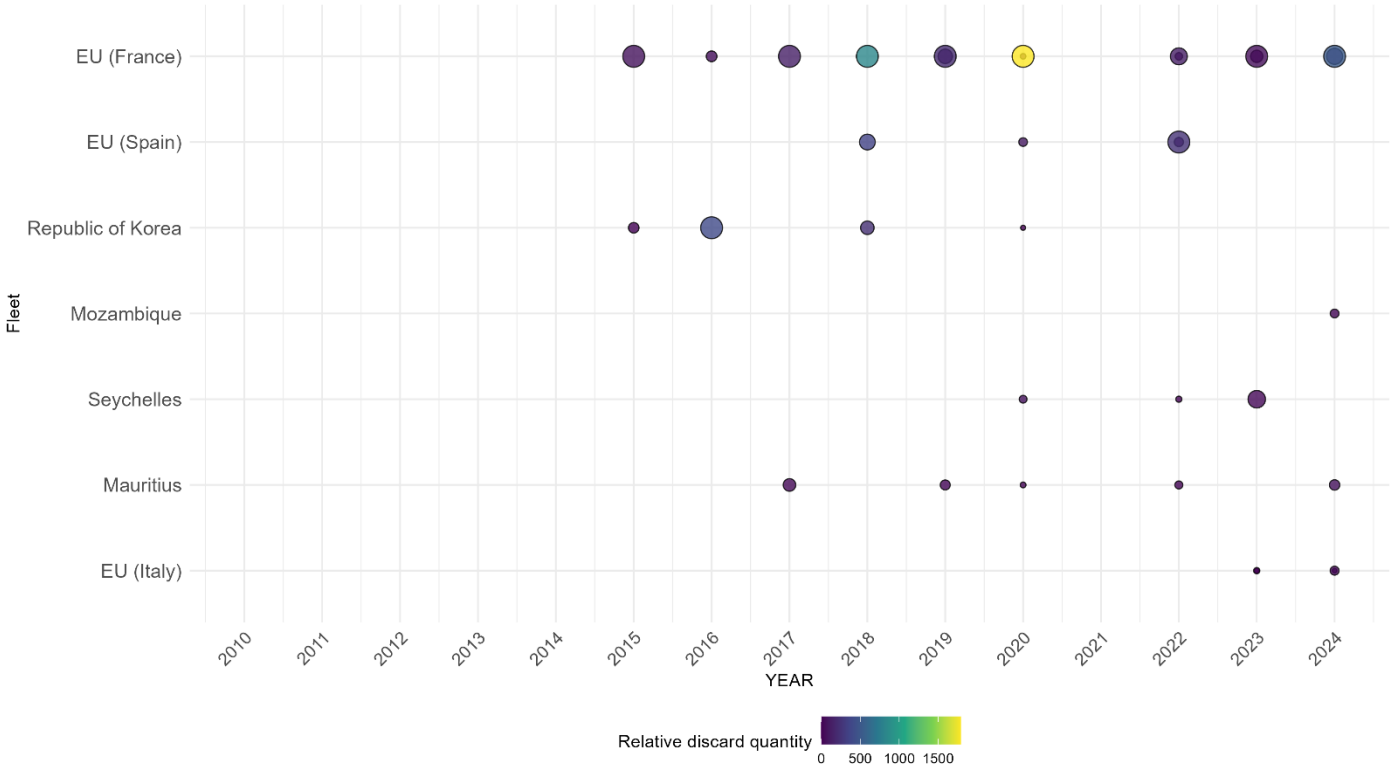

Figure 20: Discarded data of skipjack by fisheries (in weight). Data source: IOTC ROS database

Geo-referenced catch

Spatial distribution of catches

Historical geo-referenced catch data indicate that pole-and-line fisheries were the dominant source of skipjack tuna catches in the western Indian Ocean from the 1950s through the 1980s, prior to the expansion of industrial purse seine fisheries (**Fig. 21**). The data also illustrate the emergence and development of gillnet and line fisheries in the eastern Indian Ocean during the 1980s (**Fig. 21d**).

The limited spatial distribution of skipjack tuna catches observed in the south-eastern Indian Ocean, despite substantial catches reported by Indonesia, largely reflects the limited availability of geo-referenced data from Indonesian fisheries prior to the 2020s.

During the 1990s and 2000s, purse seine and pole-and-line fisheries expanded both their catches and spatial extent in the western Indian Ocean, while gillnet and line fisheries continued to develop in the north-eastern Indian Ocean (**Fig. 21e-f**).

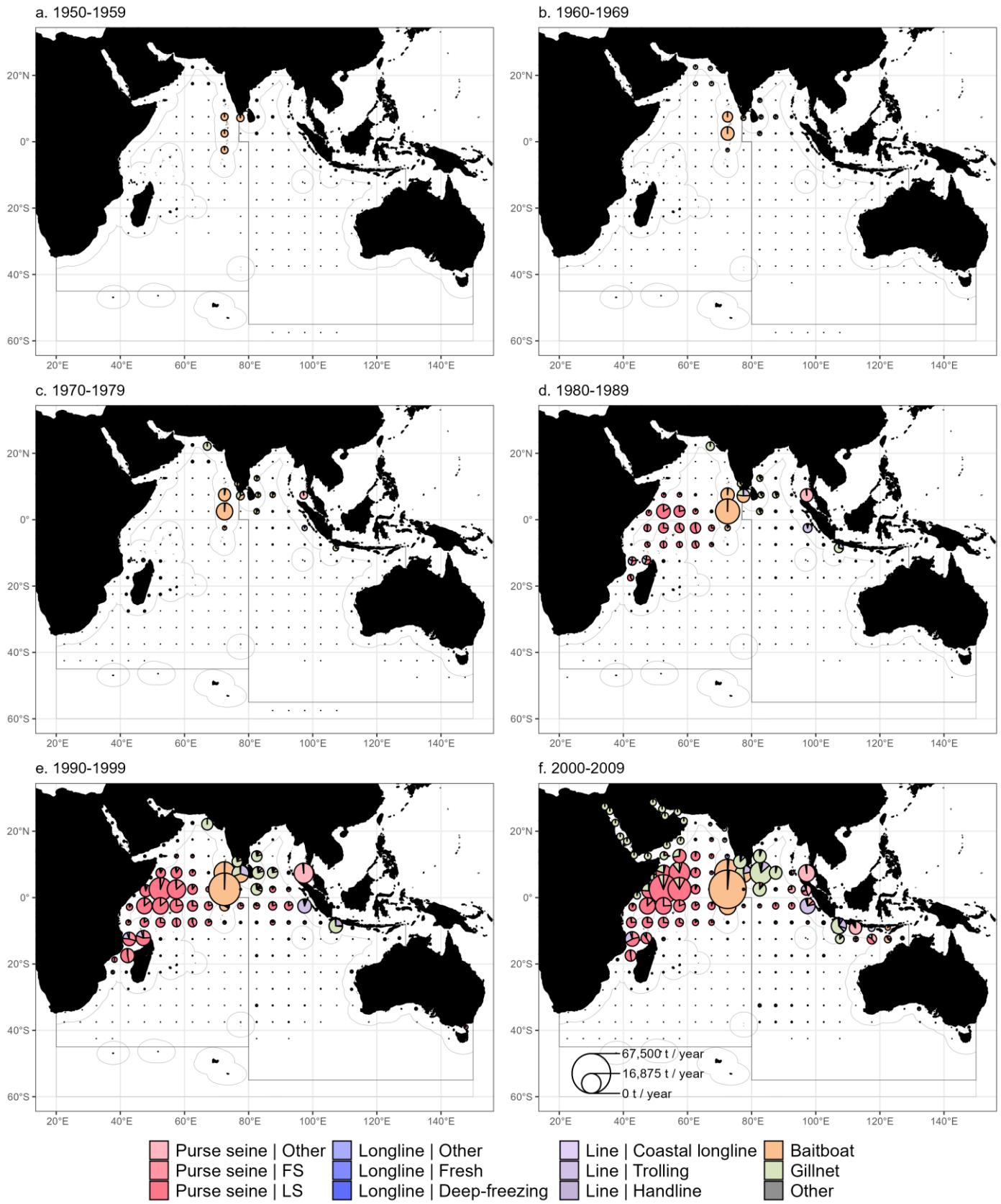

Figure 21: Estimated mean annual time-area catches (t) of skipjack tuna, by decade, 5x5 grid, and fishery. Data source: raised time-area catches

In recent years, the spatial distribution of skipjack tuna catches has shifted, with industrial purse seine fleets increasingly operating in the north-western Indian Ocean, particularly in the Persian Gulf, Gulf of Oman and the Caspian Sea. Concurrently, gillnet fisheries, especially those of Iran and Sri Lanka, have expanded their operations across parts of the western Indian Ocean.

Recent spatial catch distributions also indicate changes in the purse seine fishery. In 2025, purse seine catches were less widely distributed in waters surrounding Madagascar compared with previous years. Similarly, lower catches were reported from areas surrounding the Indonesian EEZ than in recent years. However, 2025 marked the first year in which geo-referenced catches from Indonesian pole-and-line fisheries were reported, improving the representation of these fisheries in the regional spatial dataset. At the same time, spatially resolved catches reported by Indonesian line fisheries declined relative to previous years (**Fig. 22**).

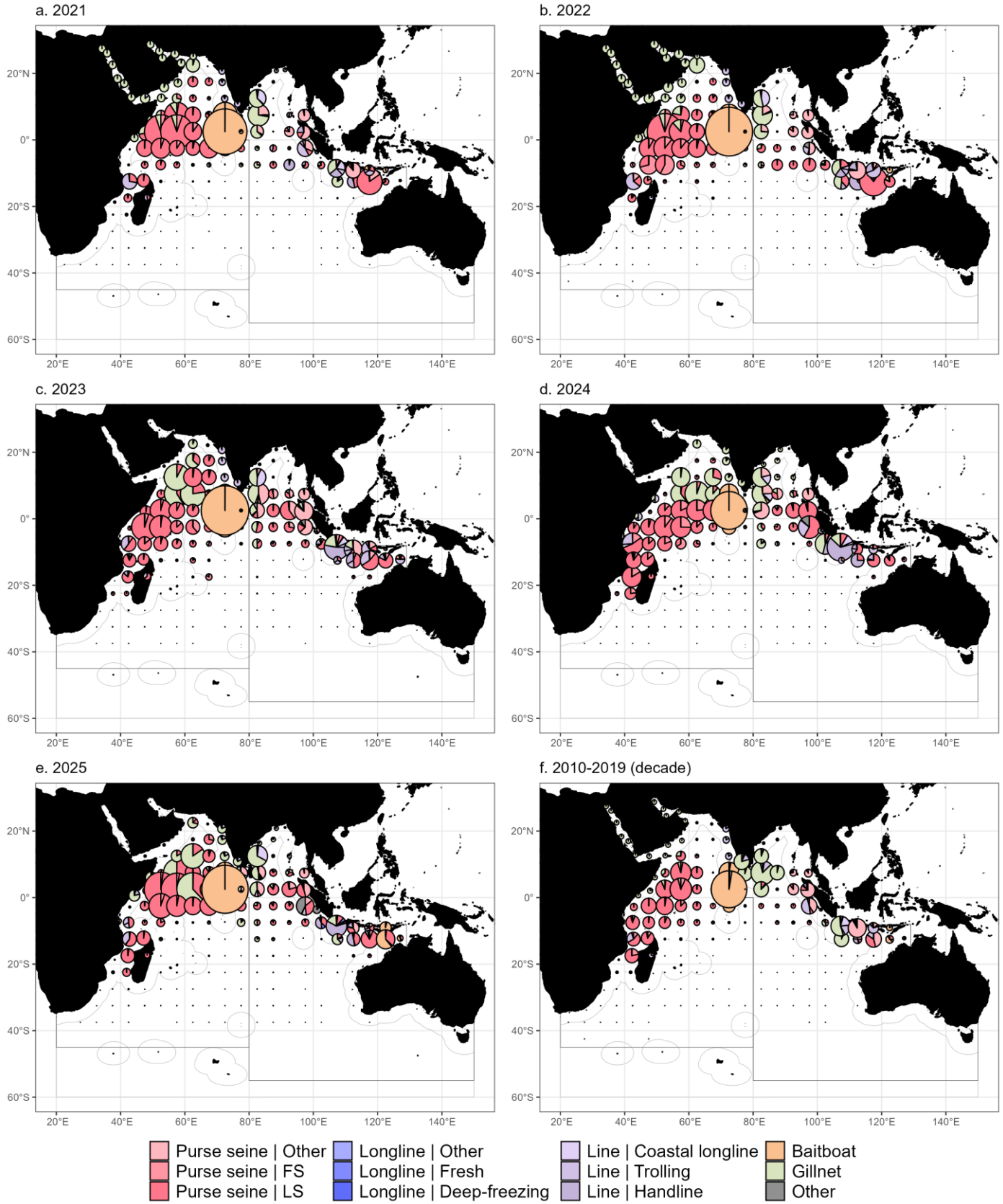

Figure 22: Estimated average annual time-area catches (t) of skipjack tuna, by year / decade, 5x5 grid, and fishery. Data source: raised time-area catches

During the last three years, Iran has improved the spatial allocation of its catch data, particularly for catches taken by gillnet vessels operating in areas beyond national jurisdiction (ABNJ). Previously, catches from gillnet vessels operating both within and beyond national jurisdiction were assigned predominantly to grids in NJAs. The revised spatial allocation introduced from 2023 onwards indicates that only a limited proportion of skipjack tuna catches originated within Iranian waters, with the majority being taken in areas beyond national jurisdiction (ABNJ) (**Fig. 23**).

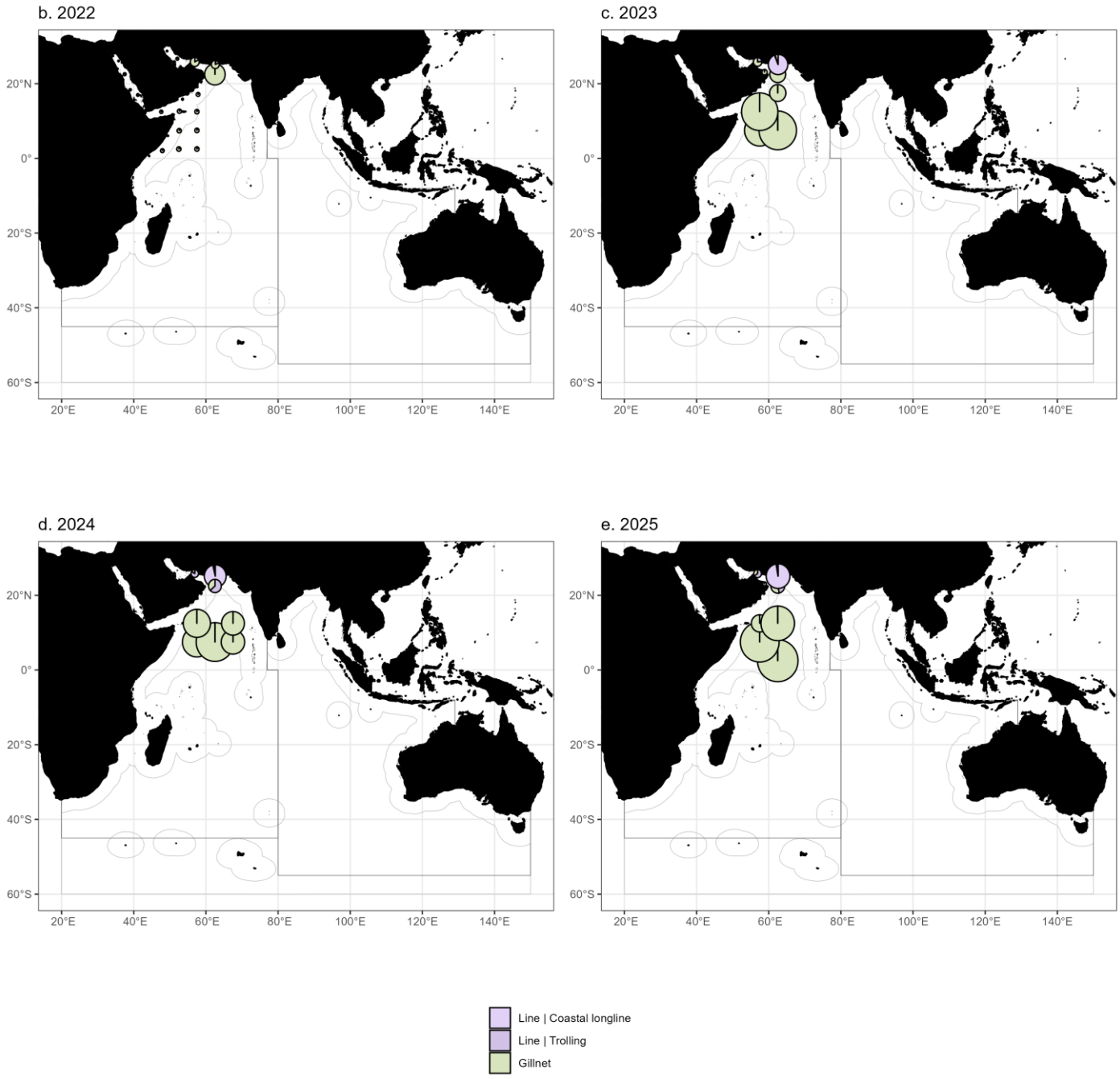

Figure 23: Estimated mean annual time-area catches (t) of Iranian skipjack tuna, by year (2022-2025), 5x5 grid, and fishery. Data source: raised time-area catches

Uncertainties in catch and effort data

The availability of geo-referenced catch data for skipjack tuna has continued to exhibit considerable variability in recent years, consistent with historical patterns. The recovery and reconstruction of historical geo-referenced datasets remain challenging, resulting in persistent gaps in spatial coverage (**Fig. 24**).

Nevertheless, the availability of geo-referenced catch data from industrial fisheries has improved steadily over the past five years. Emerging purse seine fleets have increasingly strengthened their data collection and reporting systems, although some gaps remain. Key challenges include the allocation of catches by fishing mode and the reconciliation of geo-referenced catch data with retained catch statistics through appropriate raising procedures. In 2025, geo-referenced catch data were available for approximately100% of industrial fisheries catches (**Fig. 24b**).

By contrast, the availability of geo-referenced catch data from artisanal fisheries continues to exhibit substantial interannual variability. While some fleets consistently report spatial grid data, reporting remains incomplete or inconsistent for others. In 2025, the coverage of geo-referenced catch data relative to reported retained catches of skipjack tuna declined to approximately 55%, as increases in retained catches were not accompanied by corresponding improvements in spatial reporting. This represents a decrease of approximately 38% compared with 2024 (**Fig. 24b**).

The gaps in geo-referenced catch data are associated with fleets that collectively accounted for approximately 45% of coastal fisheries catches in 2025. The principal data gaps include:

- Indonesia: Geo-referenced catch data were not available for all coastal fisheries, and the coverage of reported catches declined relative to previous years.
- Somalia: Efforts were made in 2025 to develop geo-referenced catch datasets; however, the spatially referenced catches were not fully consistent with the reported retained catches.
- India: Although the quantity and quality of geo-referenced information improved, the datasets continue to lack complete stratification by month and area for both catch and effort, limiting their utility for fine-scale spatial analyses.

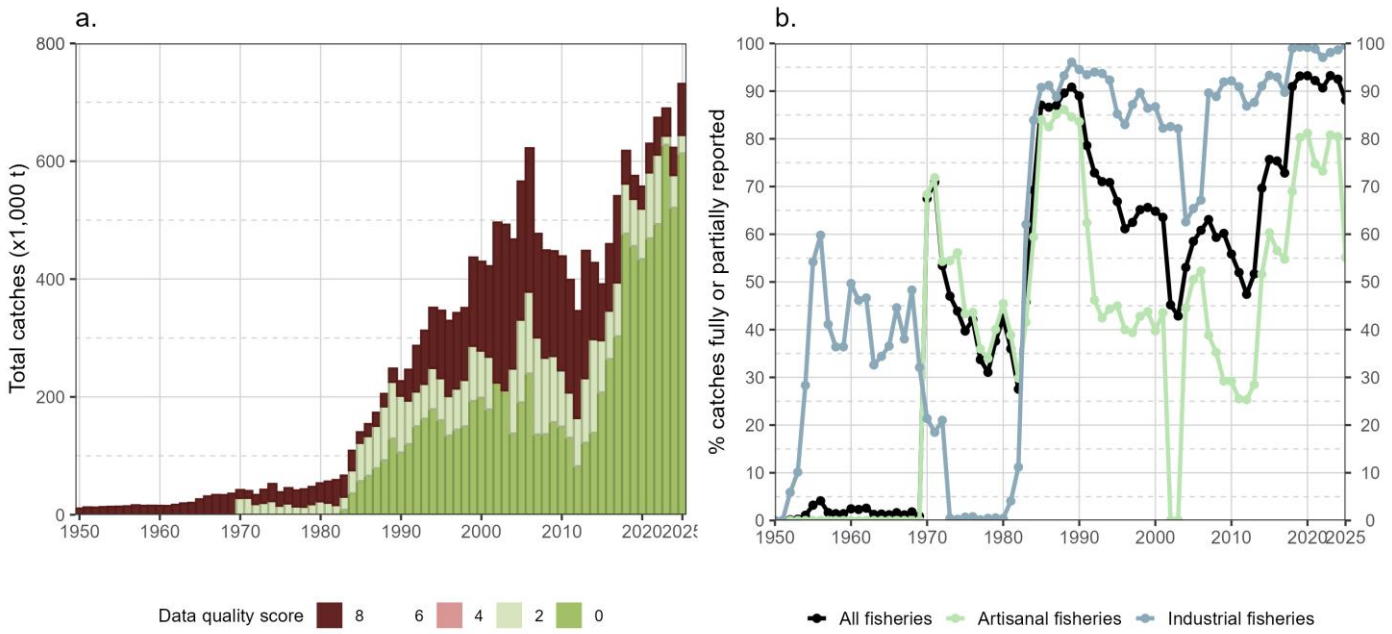

Figure 24: Annual retained catches (t) of skipjack tuna estimated by quality score (barplot) and percentage of geo-referenced catches reported to the IOTC Secretariat in agreement with the requirements of Res. 15/02 (lines with dots) for all fisheries (a) and by type of fishery (b), in the period 1950-2025

Size composition of the catch

Size-frequency data for skipjack tuna are the most widely available among the three tropical tuna species, with the majority of samples originating from purse seine fisheries. Recognizing the importance of biological information for stock assessment and fisheries research, the Secretariat is developing a voluntary biological sampling programme targeting primarily coastal CPCs. The programme is expected to include the collection of morphometric measurements and genetic samples. In recent years, several studies presented at IOTC meetings have demonstrated the value of such biological information, particularly morphometric data, for improving the understanding of skipjack tuna population

structure and fisheries characteristics (Prawira A.R.P. Tampubolon et al. 2014, Irwan Jatmiko et al. 2025, Pheaphabrattana & Noranarttragoon 2025). These biological datasets constitute an important resource that could be systematically compiled and maintained within a Secretariat-managed biological data repository. Such an initiative would improve data accessibility, support collaborative research, and strengthen the scientific basis for stock assessments and other population-based analyses of tropical tuna species.

Samples availability

By fishery group

Although coastal fisheries dominated skipjack tuna catches during the early decades of the fishery, data collection efforts initially focused primarily on catch statistics, with limited biological sampling undertaken. Historical sampling programmes, including those conducted under the Indo-Pacific Tuna Programme (IPTP), collected size-frequency data from several small-scale fisheries in the Indian Ocean from the 1980s onwards, notably in Sri Lanka, Iran, Indonesia, the Maldives, Pakistan, and Malaysia (**Fig. 25**). Appendix illustrates the size frequency available by fishery and fleet.

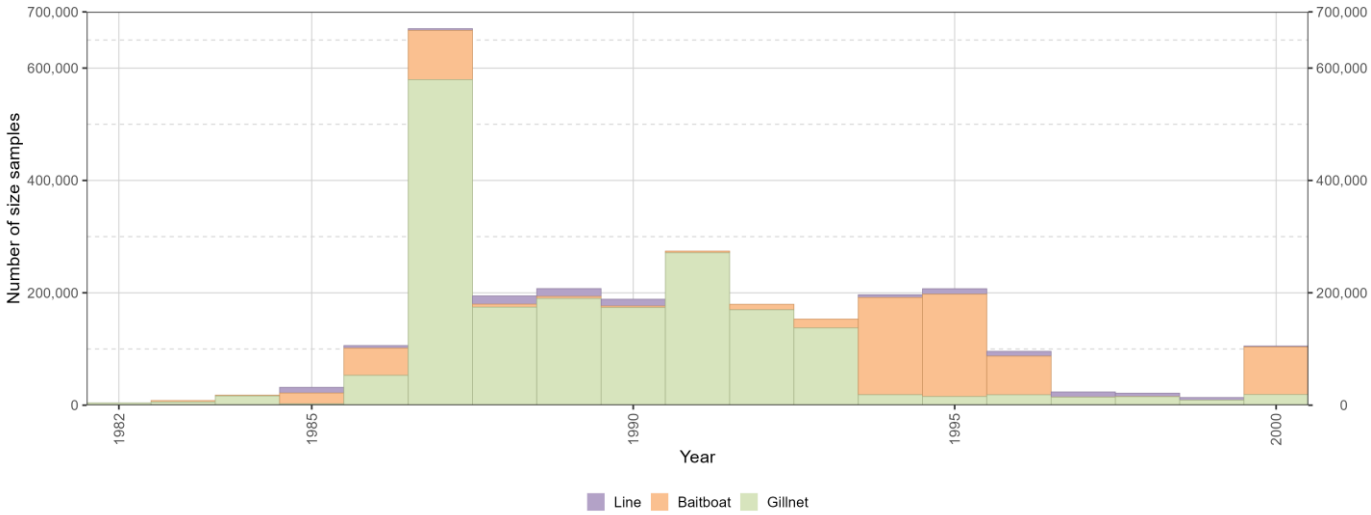

Figure 25: Availability of skipjack tuna size-frequency data as absolute number of samples per year small-scale fisheries, 1975-2000. Data source: standardized size-frequency dataset (Res. 15/02)

The development of industrial purse seine fisheries during the 1980s led to a substantial increase in the collection of size-frequency samples. Since the mid-1980s, large quantities of sampling data have been collected and reported as raised samples, whereby measured lengths are expanded to represent catch-at-size by fleet, fishery, and year. Consequently, estimated sample sizes increased substantially over time, reaching peaks of more than 80 million fish represented in a single year (**Fig. 26**).

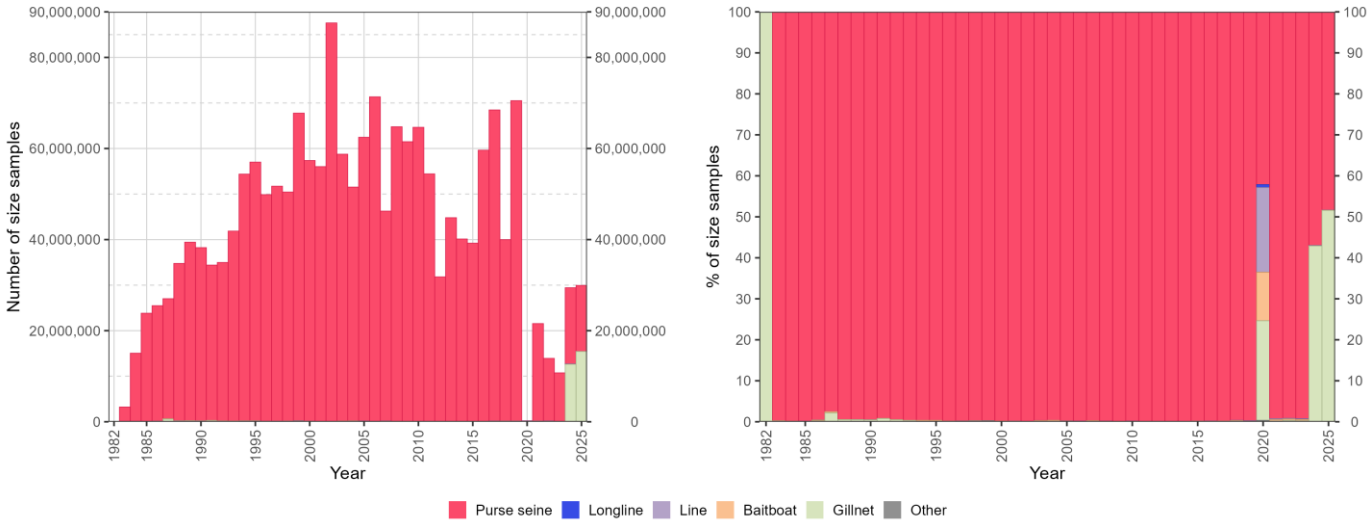

Figure 26: Availability of skipjack tuna size-frequency data as absolute number of samples (left) and relative number of samples (right) per year and fishery group. Data source: standardized size-frequency dataset (Res. 15/02)

Due to the COVID-19 pandemic, size-frequency data from purse seine fisheries were largely unavailable in 2020, except for limited sampling by EU-France, Mauritius, and Seychelles.

The availability of size-frequency samples by fishery group clearly reflects the spatial distribution and operating areas of the principal fisheries. Purse seine fisheries contribute the largest volume of samples, with substantial sampling coverage concentrated in the western Indian Ocean. In contrast, longline fisheries provide a more moderate but widespread level of sampling across most areas of the Indian Ocean. Size-frequency samples from line fisheries originate primarily from waters surrounding Indonesia and Sri Lanka, while gillnet sampling is dominated by the fisheries of Iran and Sri Lanka, which remain the principal contributors of skipjack tuna size data from the gillnet sector (**Fig. 27**).

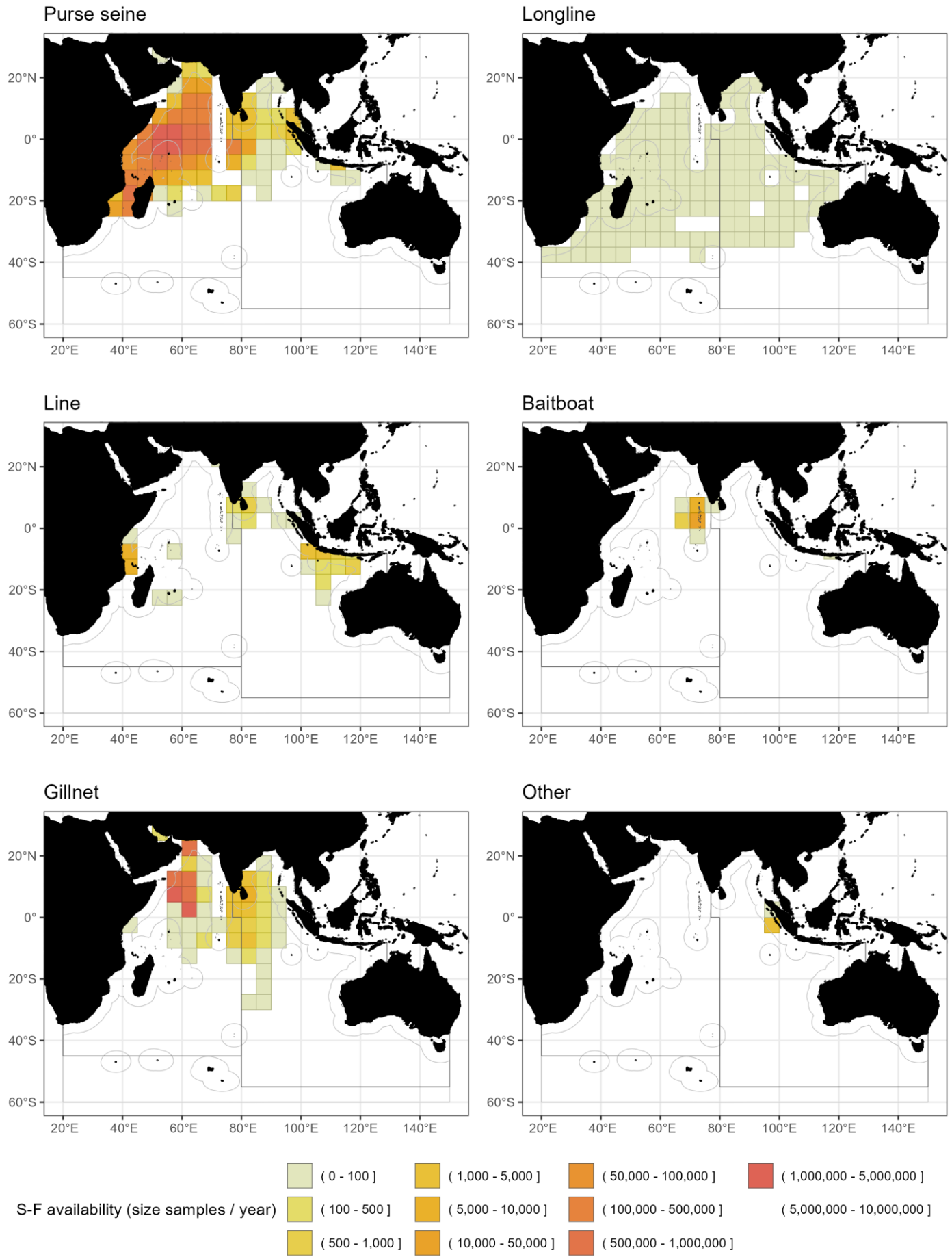

Figure 27: Spatial distribution (average number of samples per grid per year) of available skipjack tuna size-frequency data for each fishery group in the period 2021-2025. Data source: standardized size-frequency dataset (Res. 15/02)

By fishery

Purse seine fisheries

Purse seine fisheries operating on floating-object-associated schools (FOBs) are the principal source of skipjack tuna size-frequency samples, reflecting the dominant contribution of these fisheries to total skipjack catches relative to other purse seine fishing modes. Although catches of skipjack tuna from coastal purse seine fisheries have increased in recent years, size-frequency sampling has not always been conducted consistently across these fisheries (**Fig. 28**).

The spatial distribution of samples by purse seine fishing mode highlights the substantial sampling effort associated with FOB fisheries in the western Indian Ocean. In contrast, samples from free-school fisheries are comparatively limited. The category "other purse seine fisheries" includes industrial purse seine fleets for which fishing mode was not specified, as well as coastal purse seine fisheries (**Fig. 29**)

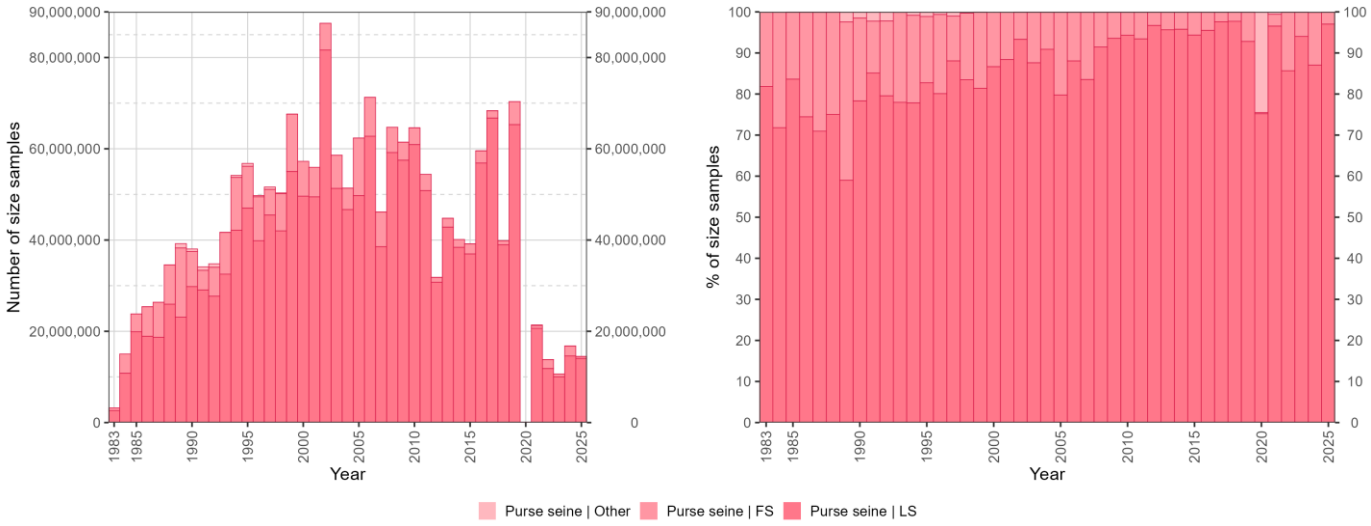

Figure 28: Availability of skipjack tuna size-frequency data as absolute number of samples (left) and relative number of samples (right) per year and purse seine fishery type. Data source: standardized size-frequency dataset (Res. 15/02)

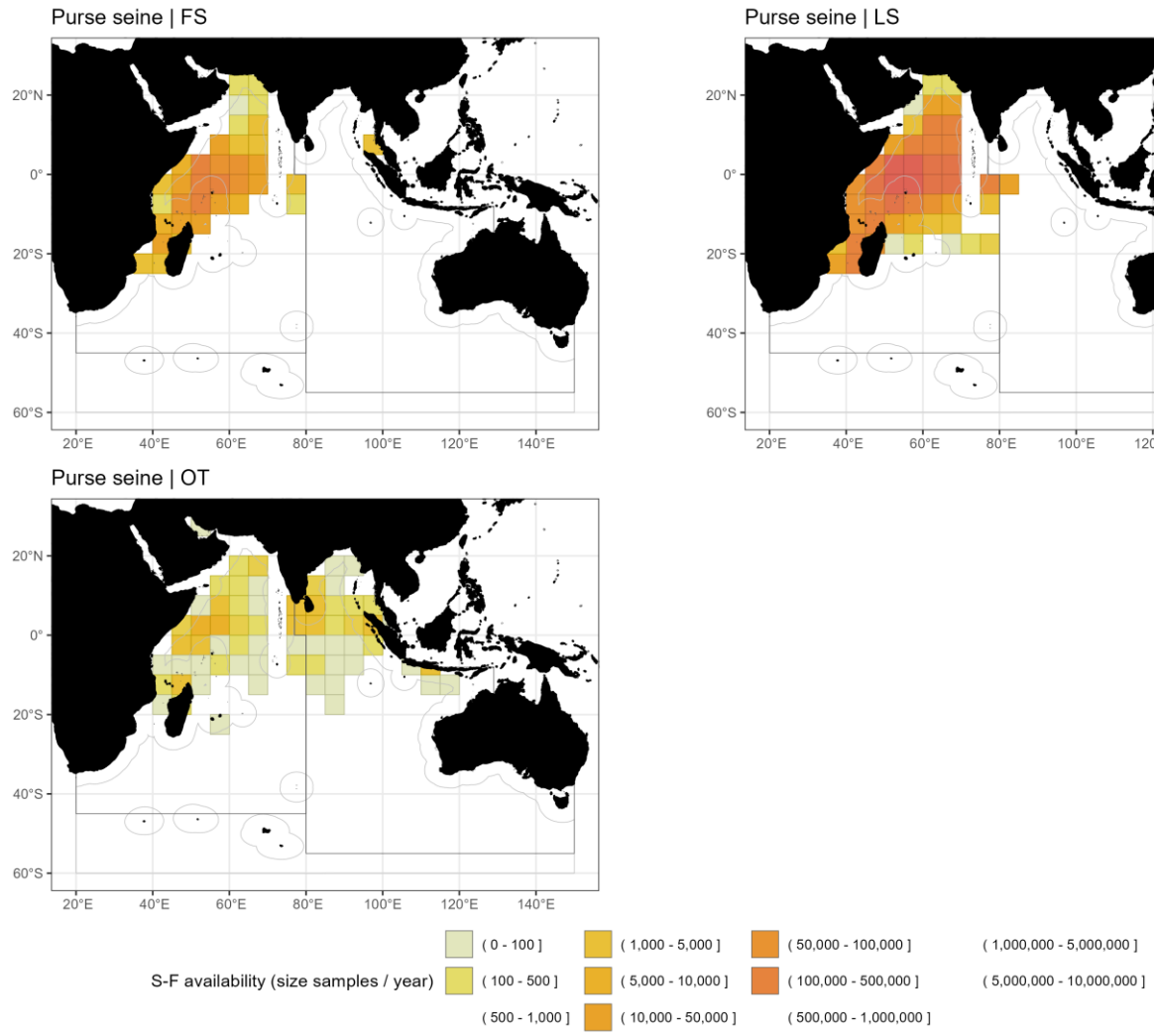

Figure 29: Spatial distribution (average number of samples per grid per year) of available skipjack tuna size-frequency data by purse seine fishery types in the period 2021-2025. Data source: standardized size-frequency dataset (Res. 15/02)

Sampling coverage of large industrial purse seine fleets

Assessing the coverage of size-frequency sampling by fleet is essential for evaluating the extent of substitution or raising procedures applied during the estimation process and for determining whether the samples are representative of the underlying catches. Coverage is commonly assessed against the recommended benchmark of one fish measured per metric tonne of catch.

Sampling coverage varies considerably among fleets. Historically, several large industrial purse seine fleets, notably Spain (EU), France (EU), and Seychelles, raised sampled length-frequency data to represent total catches. This practice is still applied by some fleets, although changes in estimation procedures have occurred over time. Consequently, differences between historical and recent sample sizes may reflect methodological changes in the estimation and raising of size-frequency data rather than changes in sampling effort alone.

Since 2020, not all purse seine fleets have continued to raise size-frequency samples to total catches. As a result, apparent differences in sampling coverage among fleets should be interpreted with caution. For example, the reported coverage levels for Spain (EU) and Seychelles are lower than those observed for France (EU) and Italy (EU), partly reflecting differences in the treatment and reporting of size-frequency data among fleets (**Fig. 30**)

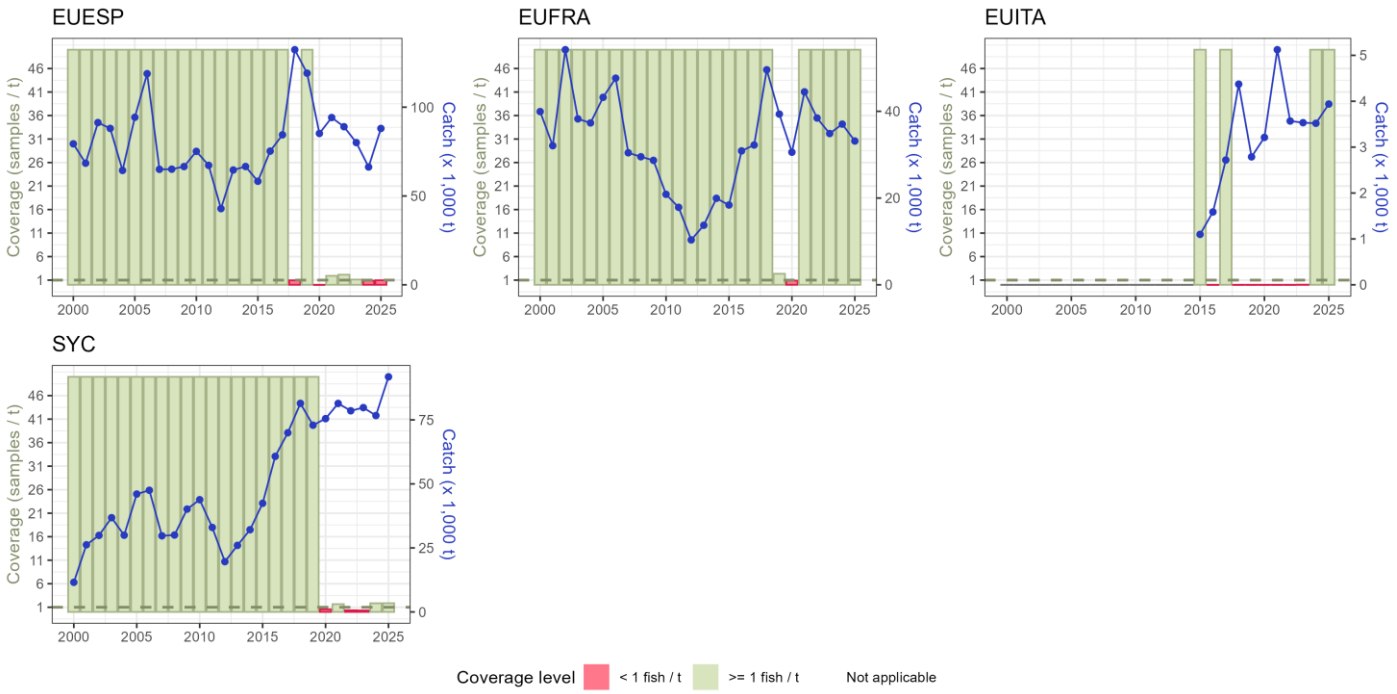

Figure 30: Size-frequency samples coverage (number of fish measured by t of retained catches) of skipjack tuna caught by the major industrial purse-seine fleets, by fleet and year (2000-2025). Data source: standardized size-frequency dataset (Res. 15/02)

Size-frequency samples from other purse seine fisheries are comparatively limited relative to the principal fleets discussed above, and in some cases no sampling data are available. With the exception of the purse seine fleets of Mauritius and the Republic of Korea, many of these fleets have only recently entered the fishery and have been operating for less than five years. Consequently, the availability of size-frequency data remains limited, resulting in low sampling coverage relative to catch levels (**Fig. 31**).

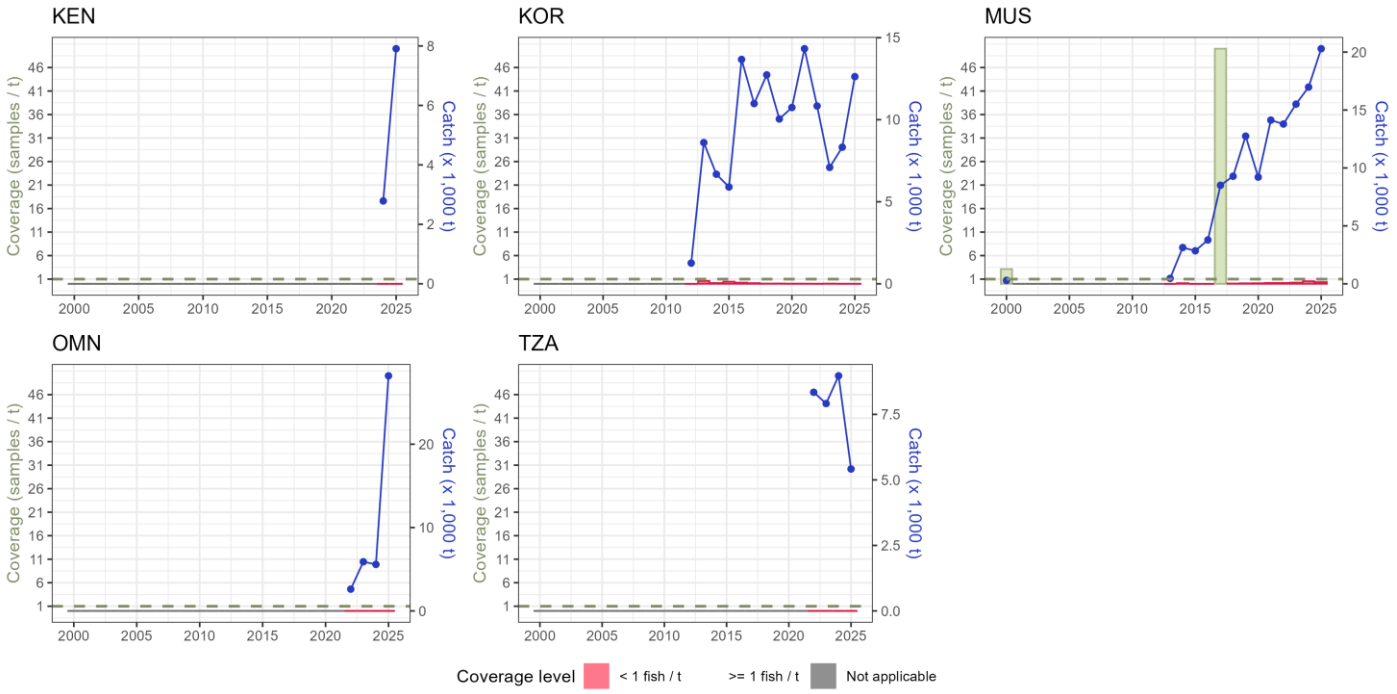

Figure 31: Size-frequency samples coverage (number of fish measured by t of retained catches) of skipjack tuna caught by the major industrial purse-seine fleets, by fleet and year (2000-2025). Data source: standardized size-frequency dataset (Res. 15/02)

Sampling coverage of other small-scale purse seine fleets

Size-frequency data from small-scale purse seine fisheries remain limited, with several fleets either reporting few samples or not reporting size-frequency data at all. In 2025, sampling coverage for skipjack tuna improved in the

Malaysian and Thai purse seine fisheries, whereas coverage from Indonesian purse seine fisheries declined relative to previous years (**Fig. 32**)

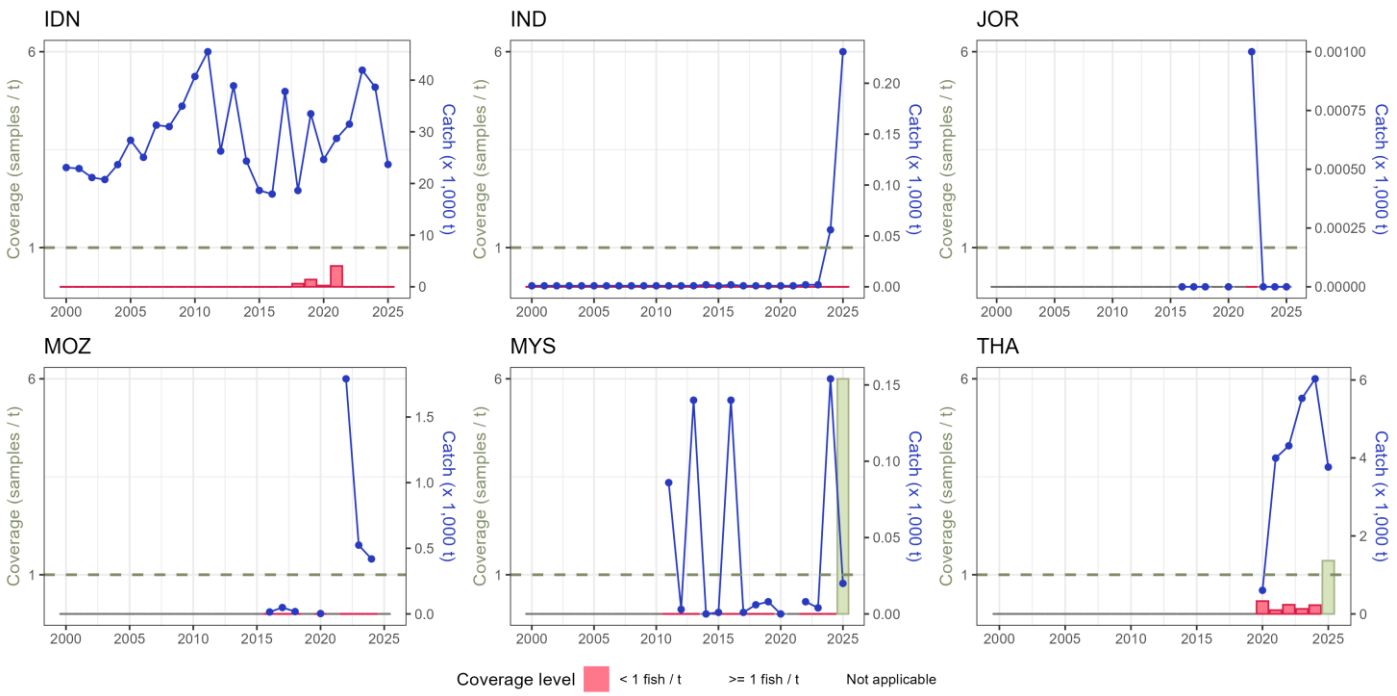

Figure 32: Size-frequency samples coverage (number of fish measured by t of retained catches) of skipjack tuna caught by the major industrial purse-seine fleets, by fleet and year (2000-2025). Data source: standardized size-frequency dataset (Res. 15/02)

Longline fisheries

The availability of size-frequency data from longline fisheries remains limited compared with other fishery groups, with the highest annual sampling effort reaching approximately 5,500 fish in 2017 (**Fig. 33**). Deep-freezing and fresh-tuna longline fleets provide sampling coverage across a broad geographic range of the Indian Ocean, reflecting their widespread fishing operations. Conversely, size-frequency samples from other longline fisheries, primarily those targeting swordfish, are concentrated in coastal waters and areas adjacent to national jurisdictions (**Fig. 34**).

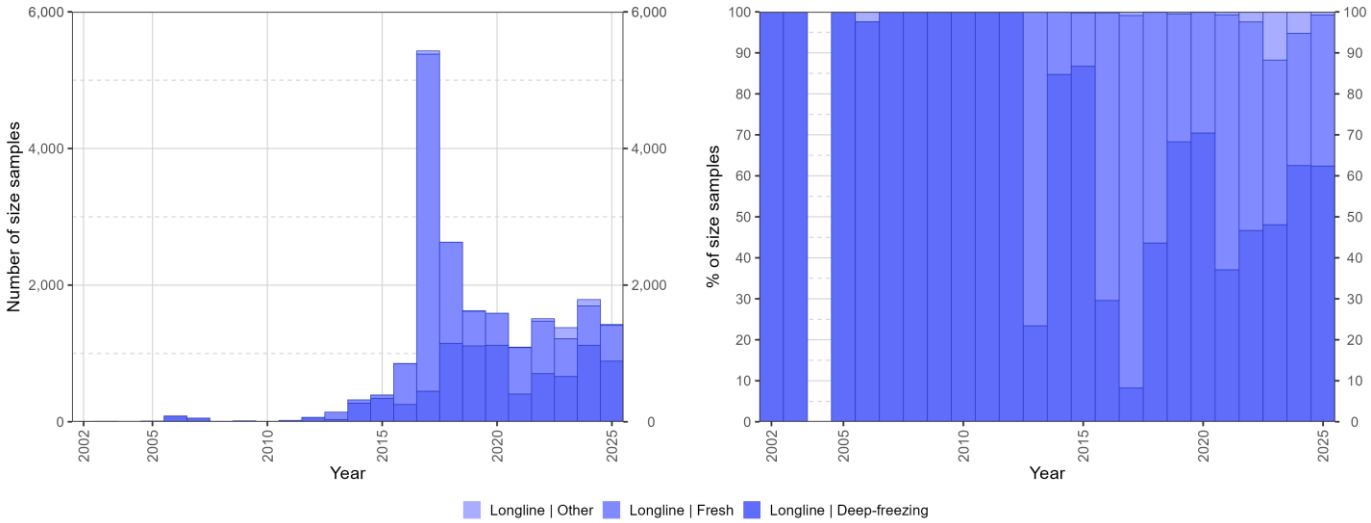

Figure 33: Availability of skipjack tuna size-frequency data as absolute number of samples (left) and relative number of samples (right) per year and longline fishery type. Data source: standardized size-frequency dataset (Res. 15/02)

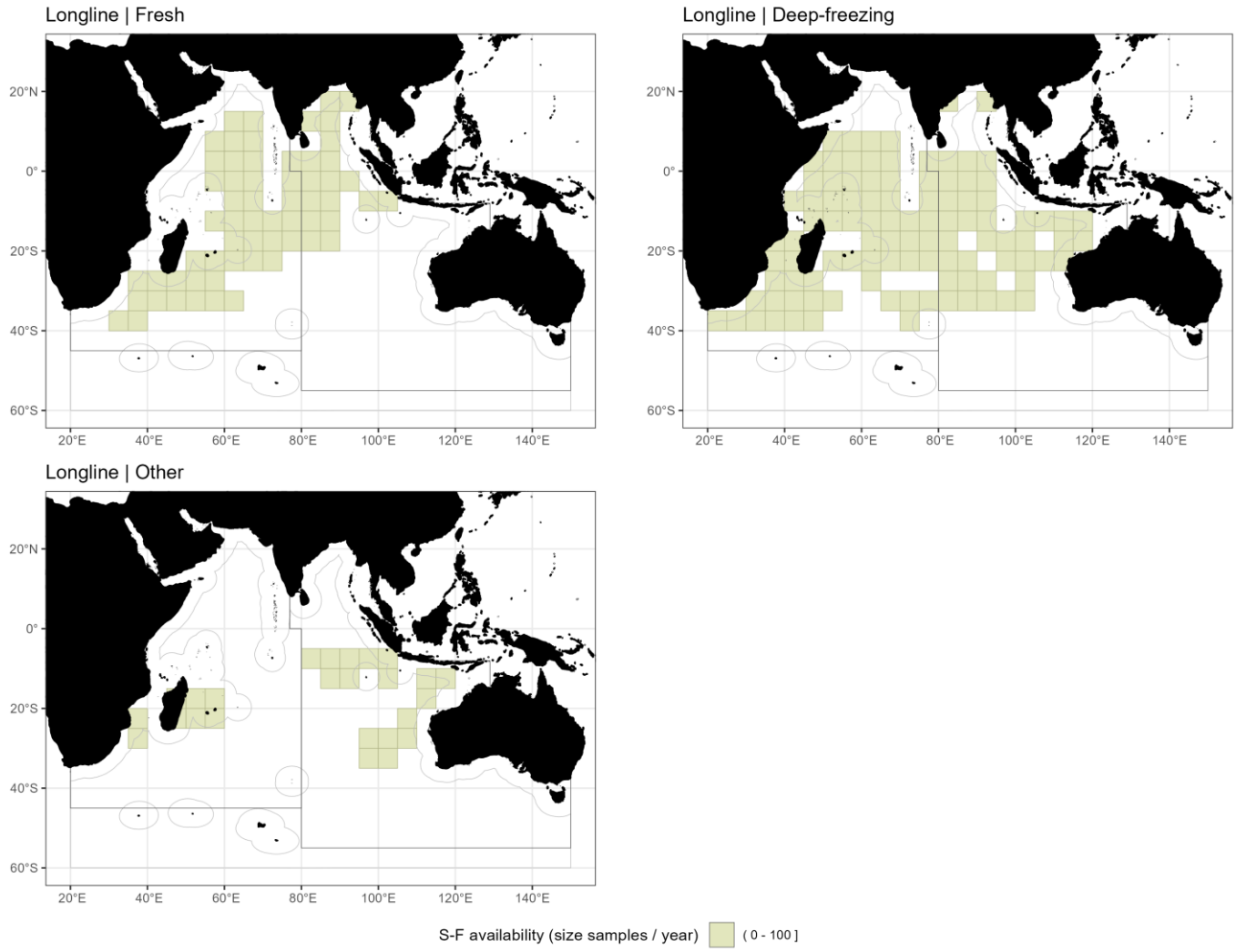

Figure 34: Spatial distribution (average number of samples per grid per year) of available skipjack tuna size-frequency data by longline fishery types in the period 2021-2025. Data source: standardized size-frequency dataset (Res. 15/02)

Line fisheries

Several coastal fleets operating line fisheries collect size-frequency data for skipjack tuna. However, the relatively small size of skipjack tuna and the potential for misidentification with other small tuna species present challenges for sampling programmes in some coastal fisheries. The availability of size-frequency data varies considerably among fleets and between years. Among the principal line fisheries, Sri Lanka and Mauritius have provided the most consistent sampling coverage.

The elevated sample sizes observed in 2020 and 2021 were largely driven by substantial contributions from Indonesian line fisheries during those years. In 2025, only four fleets reported size-frequency samples from line fisheries, yielding a total of approximately 3,000 observations (**Fig. 35**). The spatial distribution of samples closely reflects the coastal nature of these fisheries, with sampling concentrated in waters adjacent to national jurisdictions (**Fig. 36**). Fleet-level coverage indicates that several line fisheries achieved the recommended benchmark of one fish measured per metric tonne of catch in some years. In recent years, however, sampling coverage has generally remained below this benchmark, reflecting the limited availability of size-frequency data from many coastal line fisheries (**Fig. 37, Fig. 38, Fig. 39**).

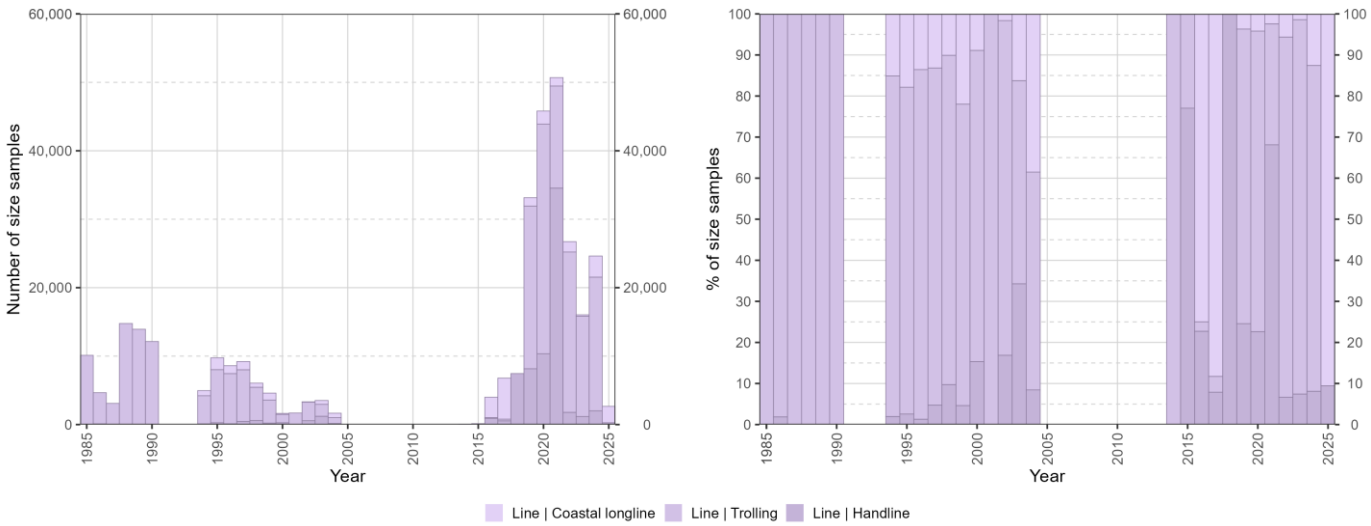

Figure 35: Availability of skipjack tuna size-frequency data as absolute number of samples (left) and relative number of samples (right) per year and line fishery type. Data source: standardized size-frequency dataset (Res. 15/02)

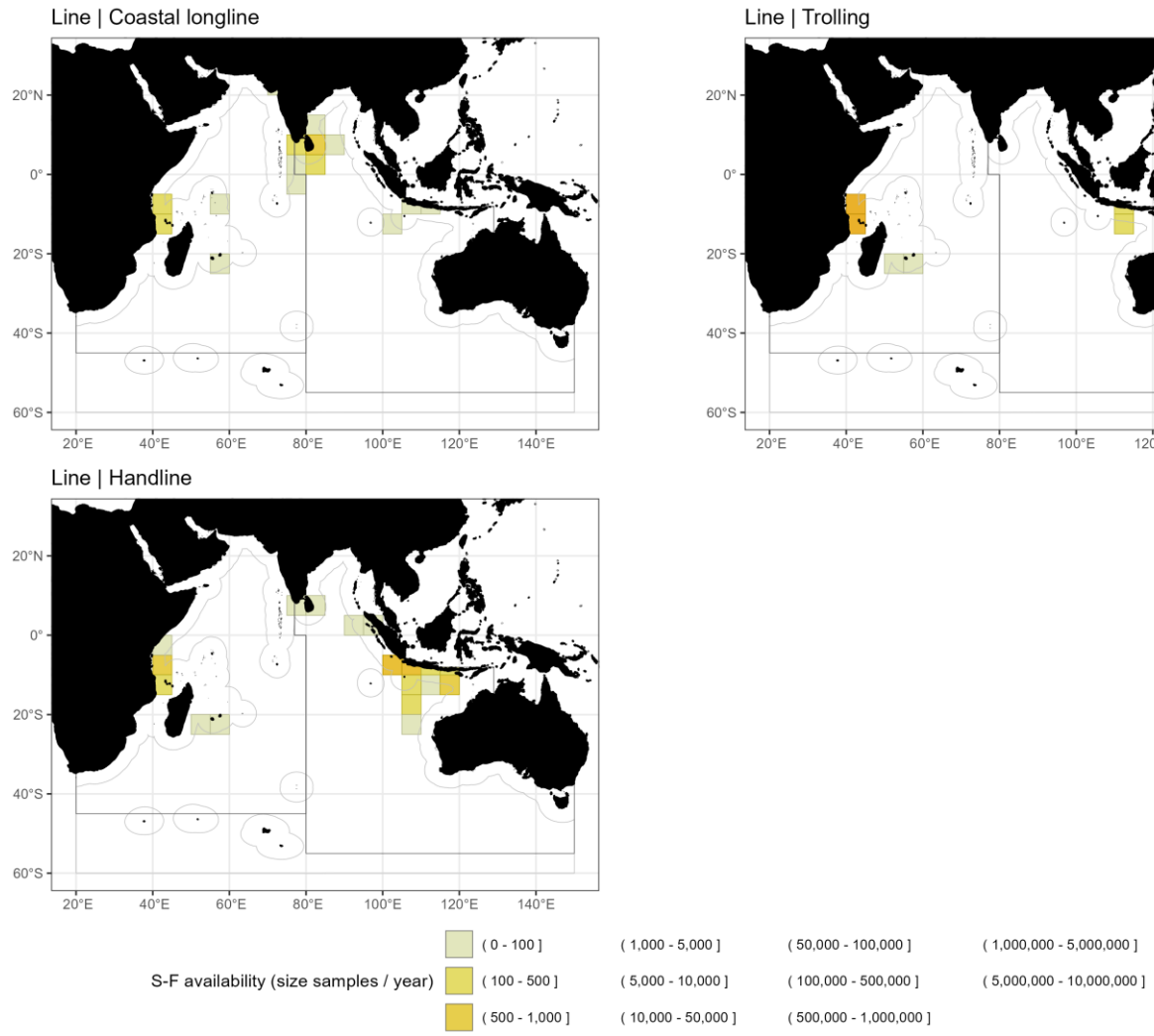

Figure 36: Spatial distribution (average number of samples per grid per year) of available skipjack tuna size-frequency data by line fishery types in the period 2021-2025. Data source: standardized size-frequency dataset (Res. 15/02)

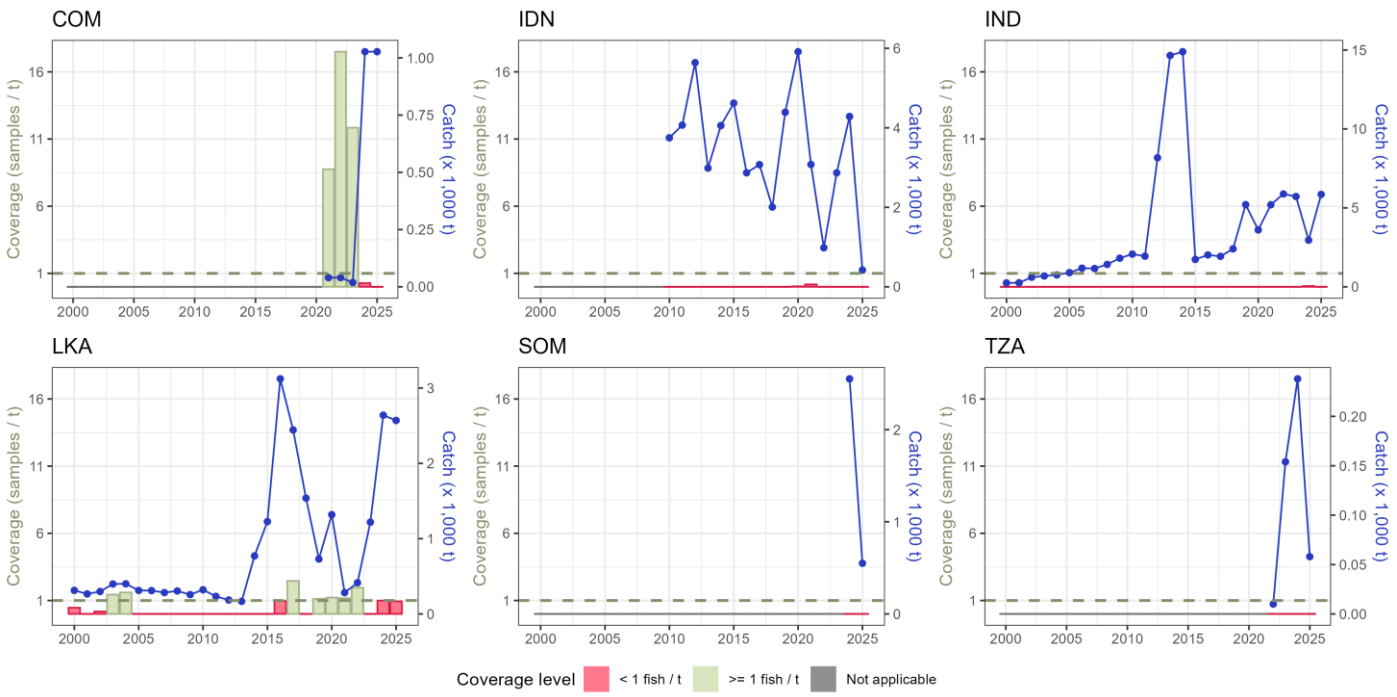

Figure 37: Size-frequency samples coverage (number of fish measured by t of retained catches) of skipjack tuna caught by the major coastal longline fleets, by fleet and year (2000-2025). Data source: standardized size-frequency dataset (Res. 15/02)

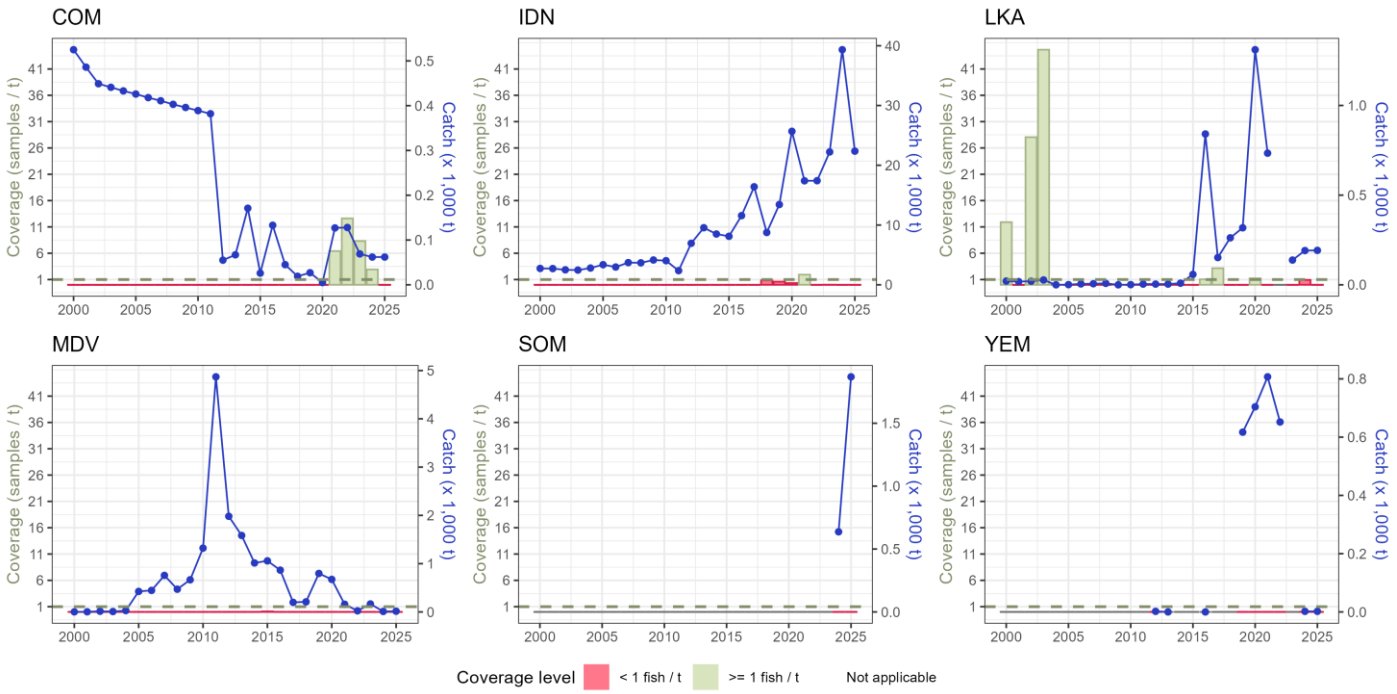

Figure 38: Size-frequency samples coverage (number of fish measured by t of retained catches) of skipjack tuna caught by the major handline fleets, by fleet and year (2000-2025). Data source: standardized size-frequency dataset (Res. 15/02)

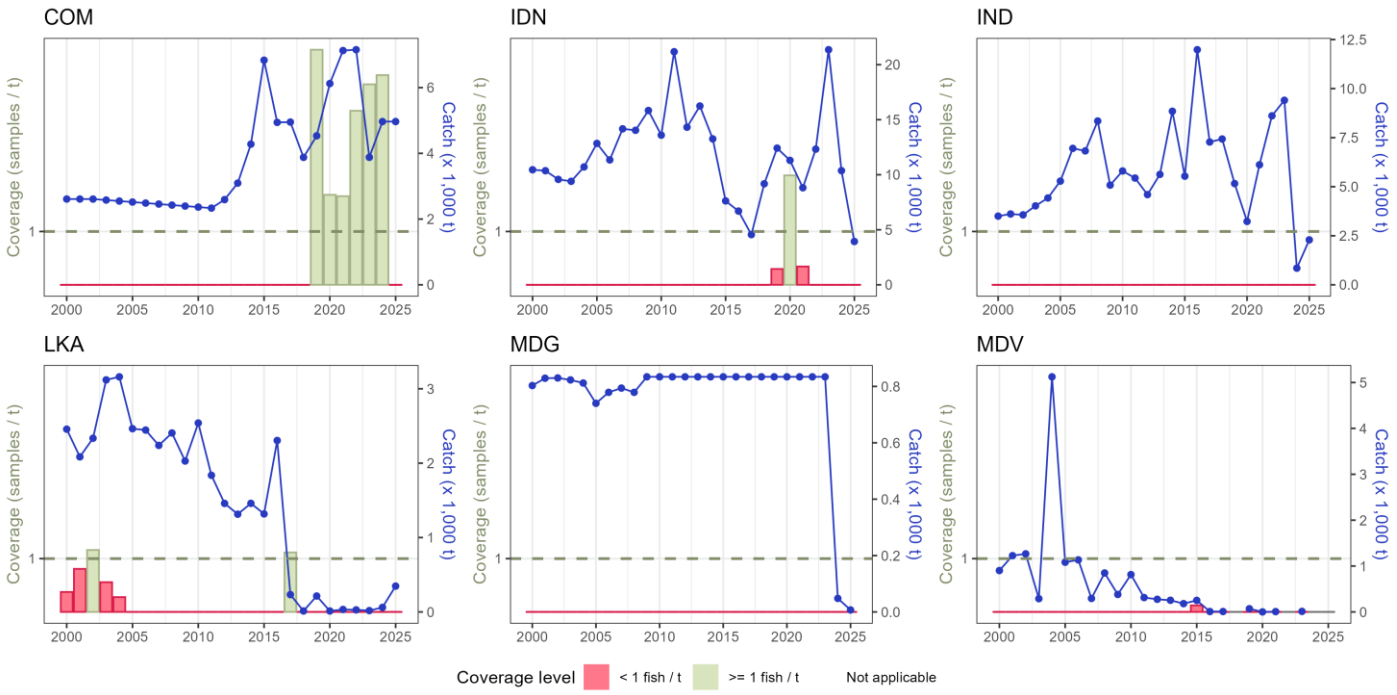

Figure 39: Size-frequency samples coverage (number of fish measured by t of retained catches) of skipjack tuna caught by the major trolling fleets, by fleet and year (2000-2025). Data source: standardized size-frequency dataset (Res. 15/02)

Other fisheries

Gillnet and pole-and-line fisheries contribute substantial size-frequency data for skipjack tuna. Sampling from gillnet fisheries increased markedly from 2024 onwards, reaching levels substantially higher than those observed in previous years (**Fig. 40**).

The spatial distribution of samples highlights the dominant contribution of the Maldivian pole-and-line fishery to skipjack tuna sampling, with additional samples collected by the Sri Lankan pole-and-line fleet. In contrast, gillnet samples are more widely distributed throughout the Indian Ocean, reflecting the broader spatial extent of these

fisheries. The largest contributions originate from the Iranian and Sri Lankan gillnet fleets, both of which conduct fishing operations in offshore waters in addition to areas within national jurisdiction (**Fig. 41**).

In terms of sampling coverage, the Maldivian pole-and-line fishery (**Fig. 42**), together with the Iranian and Sri Lankan gillnet fisheries (**Fig. 43**), consistently achieves coverage levels close to or exceeding the recommended benchmark of one fish measured per metric tonne of catch when size-frequency data are available. These fisheries therefore represent some of the best-sampled skipjack tuna fisheries in the Indian Ocean.

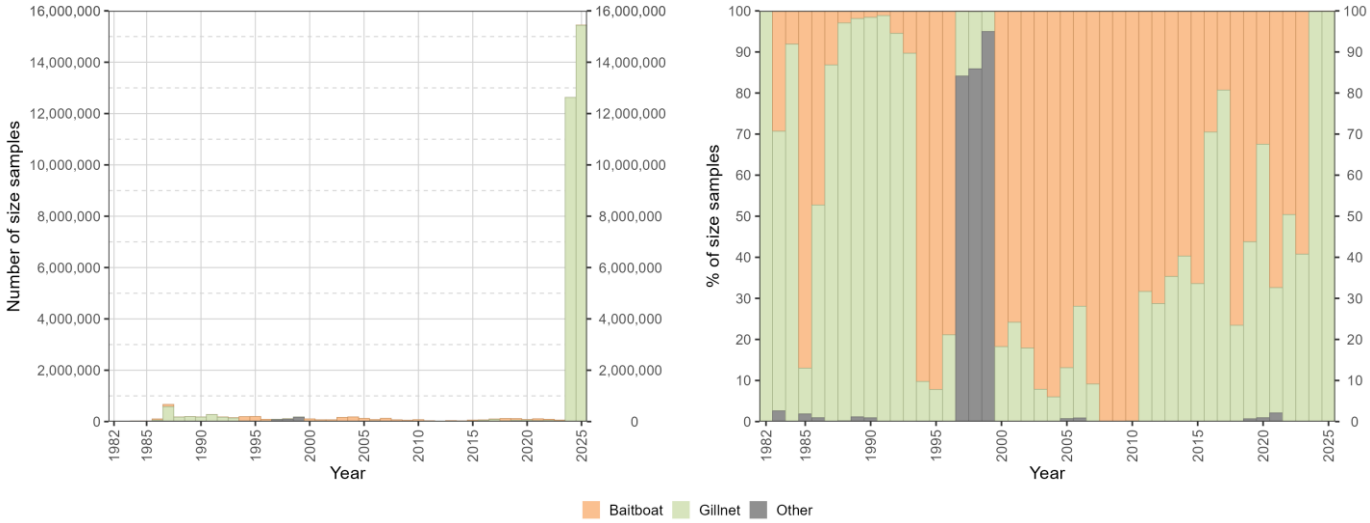

Figure 40: Availability of skipjack tuna size-frequency data as absolute number of samples (left) and relative number of samples (right) per year and all other fishery types. Data source: standardized size-frequency dataset (Res. 15/02)

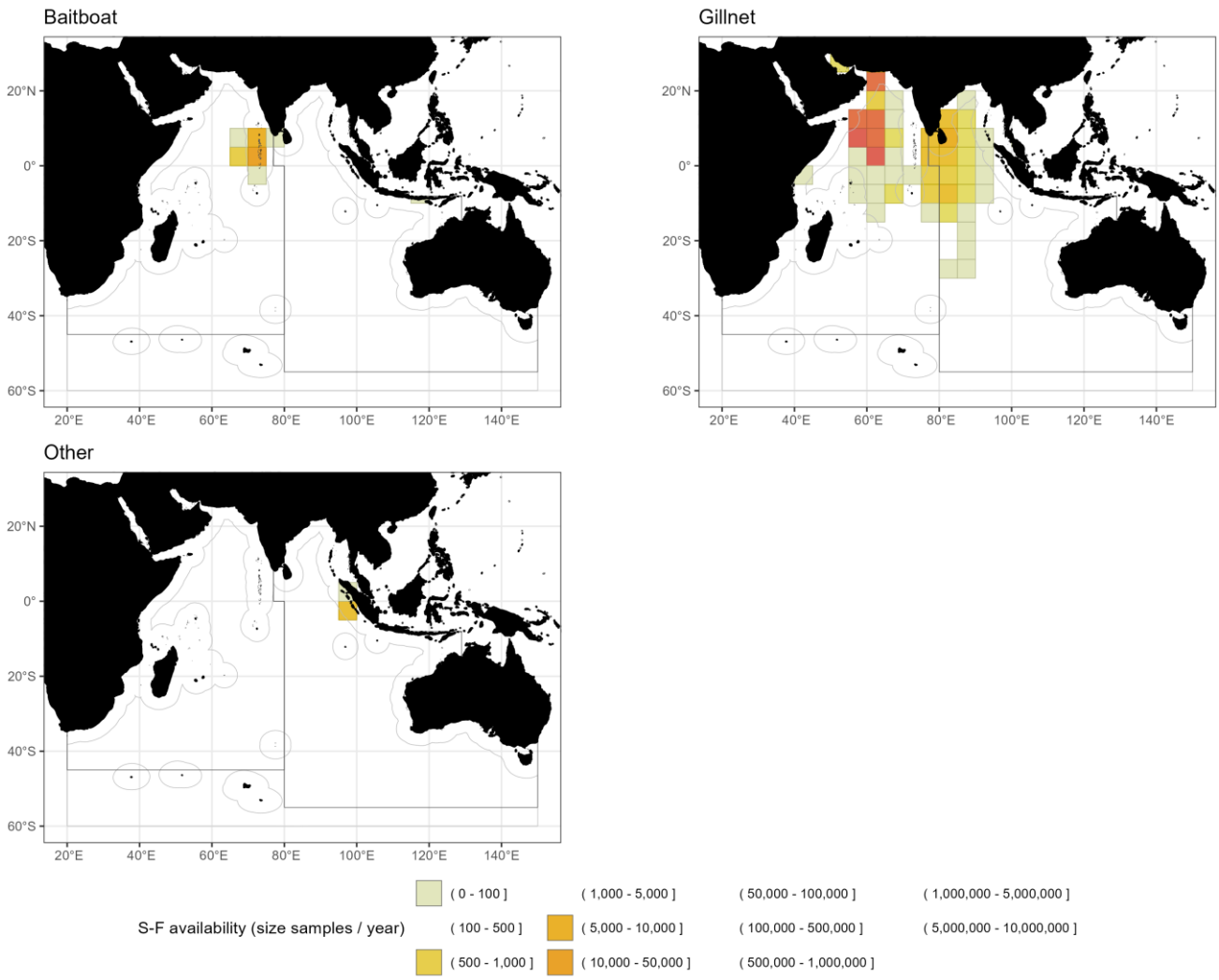

Figure 41: Spatial distribution (average number of samples per grid per year) of available skipjack tuna size-frequency data by all other fishery types in the period 2021-2025. Data source: standardized size-frequency dataset (Res. 15/02)

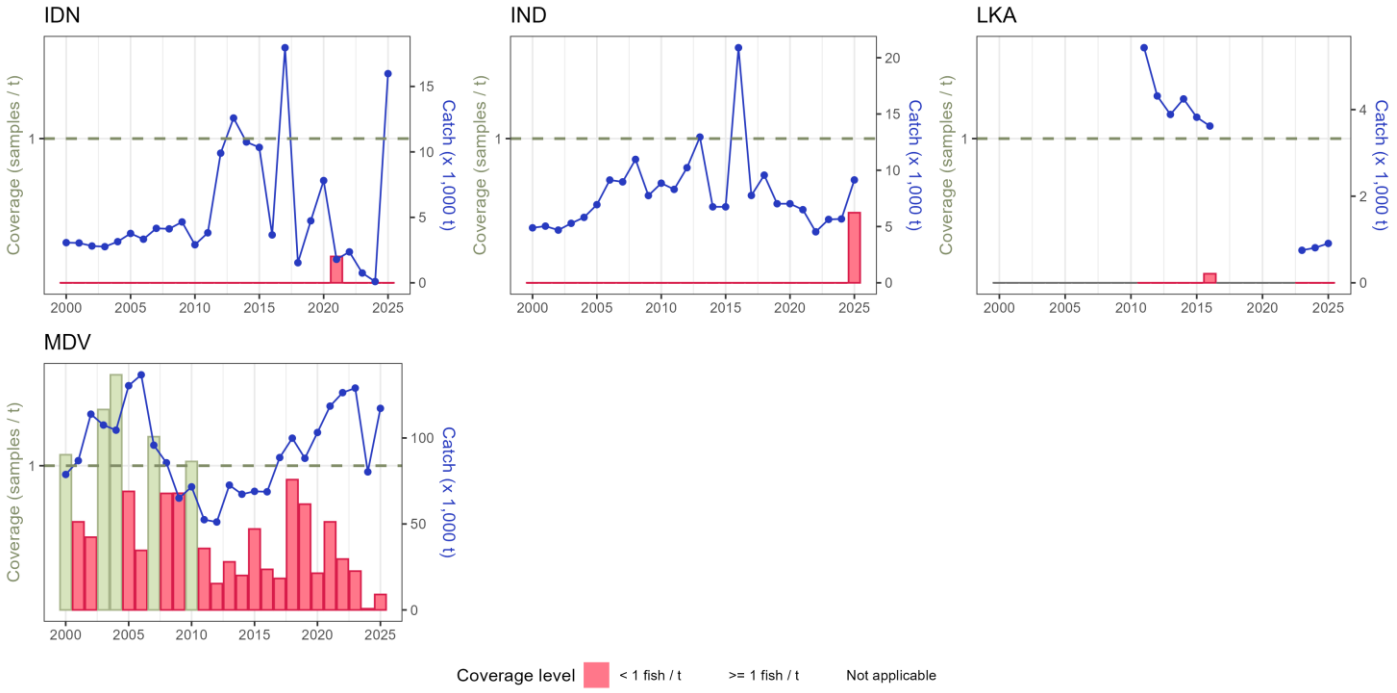

Figure 42: Size-frequency samples coverage (number of fish measured by t of retained catches) of skipjack tuna caught by the major baitboat fleets, by fleet and year (2000-2025). Data source: standardized size-frequency dataset (Res. 15/02)

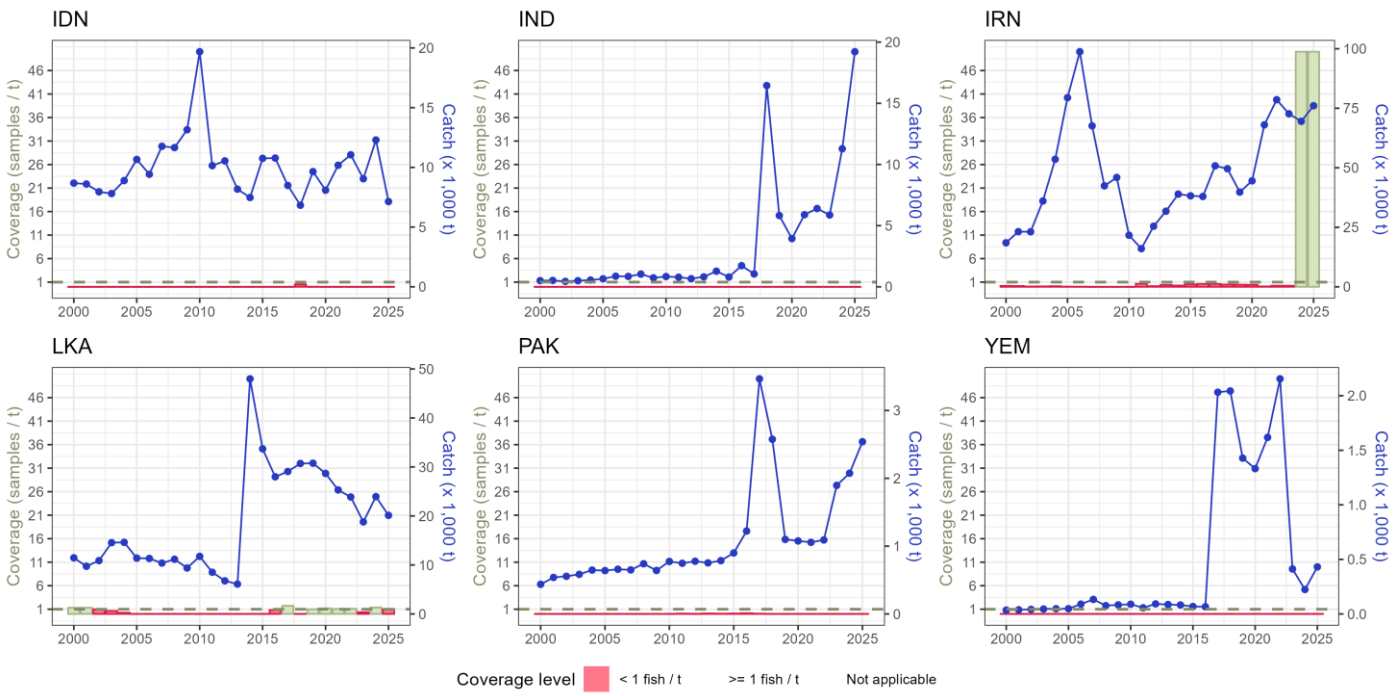

Figure 43: Size-frequency samples coverage (number of fish measured by t of retained catches) of skipjack tuna caught by the major gillnet fleets, by fleet and year (2000-2025). Data source: standardized size-frequency dataset (Res. 15/02)

Temporal patterns and trends in size distributions

Size-frequency distributions varied among years, fisheries, and fleets, reflecting differences in fishing strategies, selectivity, and areas of operation. Available samples indicate that skipjack tuna generally ranged between approximately 20 and 90 cm fork length. Smaller individuals were more frequently observed in coastal fisheries, whereas larger size classes were typically associated with offshore and industrial fisheries (appendixII).

Uncertainties in size-frequency data

Overall in 2025 the availability of size frequency data decline, with the level of reporting of skipjack samples from small-scale fisheries being disappointed. although the availability decline, relative to the retained catch, the quality of the size frequency data reported had improved, as most fleets are using the standard format for reporting. The availability in 2025 was low at 29% for the artisanal fisheries, compared to the higher level 80% in 2020. Overall, 9%, from 80% in 2020. Overall the availability of size frequency in 2025, relative to retained catch was 68% in 2025 (**Fig. 44**).

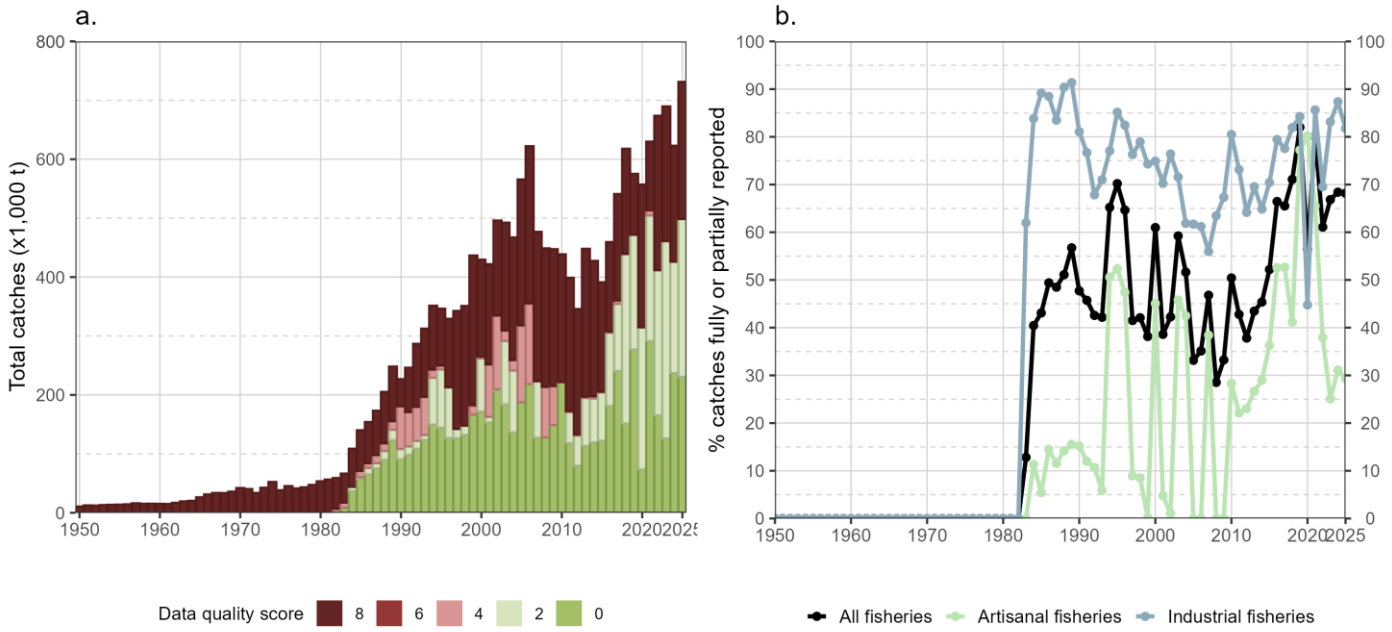

Figure 44: Annual retained catches (t) of skipjack tuna estimated by quality score (barplot) and percentage of geo-referenced size-frequency data reported to the IOTC Secretariat in agreement with the requirements of Res. 15/02 (lines with dots) for all fisheries (a) and by type of fishery (b), in the period 1950–2025

Appendix I: Changes in best nominal catches from previous Working Party

Table 4: Changes in best scientific estimates of average annual retained catches of skipjack tuna by year, fleet, fishery group and main Indian Ocean area, limited to absolute values (>10t). Data source: (https://www.iotc.org/WPTT/28DP/Data/02-RC)

Year	Fleet	Fishery group	Area	Current (t)	Previous (t)	Difference (t)
2022	BGD	Gillnet	Eastern Indian Ocean	70	4,357	-4,288
		Other	Eastern Indian Ocean	476	279	196
	EUITA	Purse seine	Western Indian Ocean	3,569	3,205	364
	IDN	Baitboat	Eastern Indian Ocean	2,362	3,384	-1,022
		Gillnet	Eastern Indian Ocean	11,055	13,932	-2,878
		Line	Eastern Indian Ocean	30,725	25,426	5,299
		Longline	Eastern Indian Ocean	284	1,528	-1,244
		Other	Eastern Indian Ocean	3,366	7,356	-3,990
		Purse seine	Eastern Indian Ocean	98,966	91,706	7,260
	IND	Baitboat	Western Indian Ocean	4,532	5,600	-1,067
		Gillnet	Eastern Indian Ocean	6,113	4,902	1,211
		Gillnet	Western Indian Ocean	286	175	111
		Line	Eastern Indian Ocean	5,509	4,004	1,505
		Line	Western Indian Ocean	9,246	6,044	3,201
		Other	Eastern Indian Ocean	1,813	1,454	359
		Other	Western Indian Ocean	31	19	12
		Purse seine	Eastern Indian Ocean	108	86	21
	OMN	Purse seine	Western Indian Ocean	2,613	0	2,613
	PAK	Gillnet	Western Indian Ocean	1,091	1,053	38
	TMP	Gillnet	Eastern Indian Ocean	137	0	137
	TZA	Gillnet	Western Indian Ocean	119	371	-252
		Line	Western Indian Ocean	159	0	159
		Purse seine	Western Indian Ocean	8,407	8,343	64
	YEM	Gillnet	Western Indian Ocean	2,155	1,296	859
		Line	Western Indian Ocean	652	731	-79
2021	BGD	Gillnet	Eastern Indian Ocean	60	4,277	-4,216
		Other	Eastern Indian Ocean	1,056	928	129
	EUITA	Purse seine	Western Indian Ocean	5,123	5,416	-293

Year	Fleet	Fishery group	Area	Current (t)	Previous (t)	Difference (t)
	IDN	Baitboat	Eastern Indian Ocean	1,795	3,283	-1,488
		Gillnet	Eastern Indian Ocean	10,179	13,516	-3,337
		Line	Eastern Indian Ocean	29,299	23,245	6,054
		Longline	Eastern Indian Ocean	45	1,019	-974
		Other	Eastern Indian Ocean	2,719	7,136	-4,417
		Purse seine	Eastern Indian Ocean	68,514	83,966	-15,451
	TMP	Gillnet	Eastern Indian Ocean	129	3	126
	YEM	Gillnet	Western Indian Ocean	1,618	1,352	266
		Line	Western Indian Ocean	807	675	133
2020	BGD	Gillnet	Eastern Indian Ocean	1	24	-23
	EUITA	Purse seine	Western Indian Ocean	3,212	2,433	779
	IDN	Baitboat	Eastern Indian Ocean	7,811	4,114	3,697
		Gillnet	Eastern Indian Ocean	8,091	16,938	-8,847
		Line	Eastern Indian Ocean	42,900	29,130	13,770
		Longline	Eastern Indian Ocean	80	1,843	-1,763
		Other	Eastern Indian Ocean	4,744	8,943	-4,199
		Purse seine	Eastern Indian Ocean	61,959	55,152	6,807
	LKA	Gillnet	Eastern Indian Ocean	27,555	27,476	79
	TMP	Gillnet	Eastern Indian Ocean	818	3	815
2019	EUITA	Purse seine	Western Indian Ocean	2,788	2,357	431
	IDN	Baitboat	Eastern Indian Ocean	4,736	2,813	1,923
		Gillnet	Eastern Indian Ocean	9,648	11,583	-1,935
		Line	Eastern Indian Ocean	30,239	19,920	10,319
		Longline	Eastern Indian Ocean	128	1,457	-1,329
		Other	Eastern Indian Ocean	2,638	6,115	-3,477
		Purse seine	Eastern Indian Ocean	66,361	87,099	-20,738
	LKA	Gillnet	Eastern Indian Ocean	29,029	28,991	38
	TMP	Gillnet	Eastern Indian Ocean	314	3	312
	YEM	Gillnet	Western Indian Ocean	1,428	1,416	11
2018	EUESP	Purse seine	Western Indian Ocean	132,354	130,572	1,782

Year	Fleet	Fishery group	Area	Current (t)	Previous (t)	Difference (t)
	EUITA	Purse seine	Western Indian Ocean	4,372	4,510	-138
	IDN	Baitboat	Eastern Indian Ocean	1,535	2,413	-878
		Gillnet	Eastern Indian Ocean	6,830	9,936	-3,105
		Line	Eastern Indian Ocean	19,936	17,088	2,849
		Longline	Eastern Indian Ocean	225	1,314	-1,089
		Other	Eastern Indian Ocean	2,221	5,246	-3,024
		Purse seine	Eastern Indian Ocean	58,491	42,929	15,562
	TMP	Gillnet	Eastern Indian Ocean	146	3	143
	YEM	Gillnet	Western Indian Ocean	2,044	2,031	13
2017	EUITA	Purse seine	Eastern Indian Ocean	36	0	36
		Purse seine	Western Indian Ocean	2,683	3,181	-498
	IDN	Baitboat	Eastern Indian Ocean	17,959	3,800	14,159
		Gillnet	Eastern Indian Ocean	8,487	15,644	-7,156
		Line	Eastern Indian Ocean	24,036	26,904	-2,868
		Longline	Eastern Indian Ocean	198	454	-256
		Other	Eastern Indian Ocean	4,994	8,259	-3,266
		Purse seine	Eastern Indian Ocean	61,090	45,229	15,860
2016	EUITA	Purse seine	Western Indian Ocean	1,587	1,719	-133
	IDN	Baitboat	Eastern Indian Ocean	3,659	3,047	613
		Gillnet	Eastern Indian Ocean	10,779	12,543	-1,765
		Line	Eastern Indian Ocean	21,140	21,572	-432
		Longline	Eastern Indian Ocean	19	279	-261
		Other	Eastern Indian Ocean	2,572	6,622	-4,050
		Purse seine	Eastern Indian Ocean	31,827	36,265	-4,438
2015	EUITA	Purse seine	Western Indian Ocean	1,099	1,315	-216
	IDN	Baitboat	Eastern Indian Ocean	10,344	3,206	7,138
		Gillnet	Eastern Indian Ocean	10,755	13,200	-2,445
		Line	Eastern Indian Ocean	20,359	22,701	-2,342
		Longline	Eastern Indian Ocean	618	350	268
		Other	Eastern Indian Ocean	5,114	6,969	-1,855

Year	Fleet	Fishery group	Area	Current (t)	Previous (t)	Difference (t)
		Purse seine	Eastern Indian Ocean	28,418	38,163	-9,745

Appendix II: Size distribution by fishery and fleet

Industrial purse seine fisheries

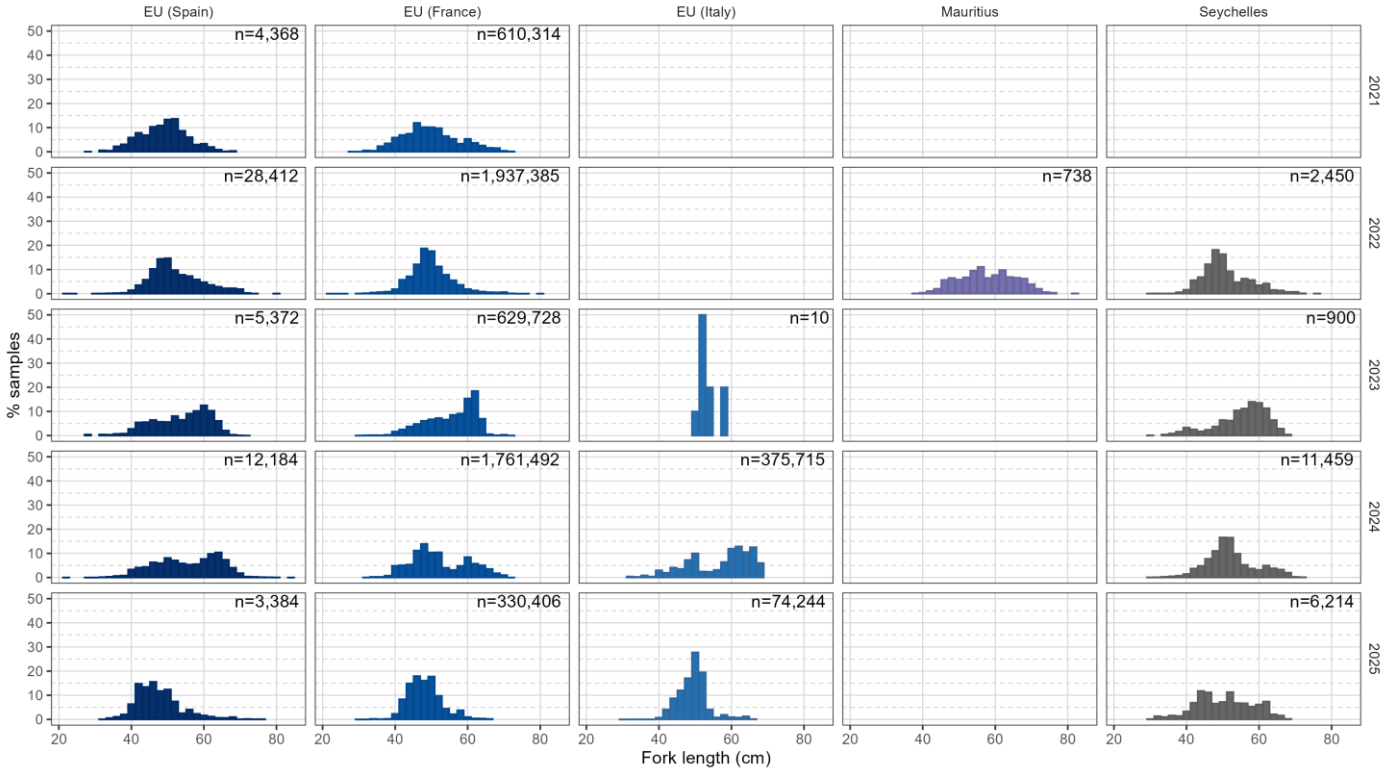

Figure 45: Relative size distribution of skipjack tuna (fork length in cm) recorded for free-swimming schools, by year (2021–2025) and main purse seine fleet. Data source: standardized size-frequency dataset (Res. 15/02)

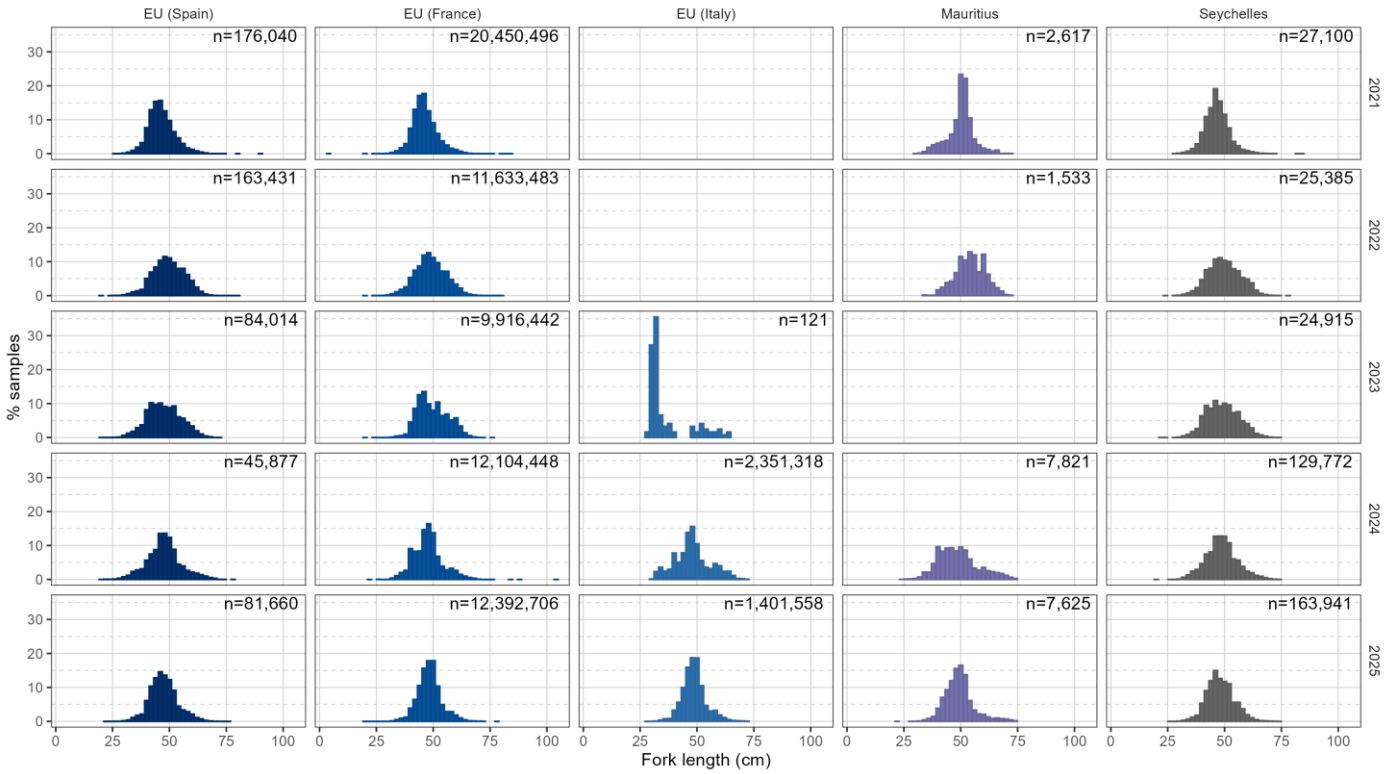

Figure 46: Relative size distribution of skipjack tuna (fork length in cm) recorded for FOB-associated schools, by year (2021–2025) and major purse seine fleet. Data source: standardized size-frequency dataset (Res. 15/02)

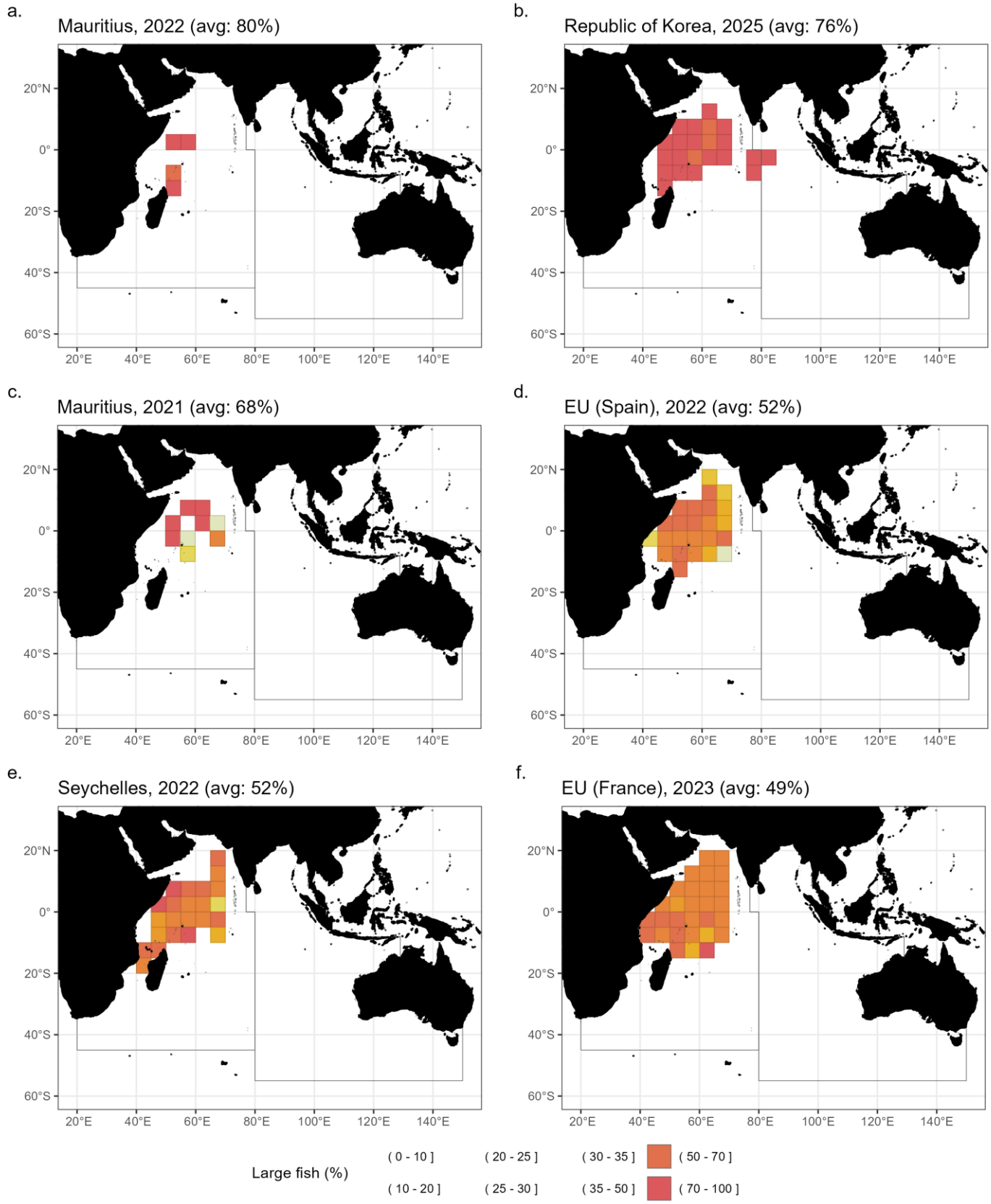

Figure 47: Spatial distribution of sampled skipjack tuna with fork length above 50 cm recorded by the major purse seine fleets fishing on FOB-associated schools, as reported for the period 2021-2025. Data source: standardized size-frequency dataset (Res. 15/02)

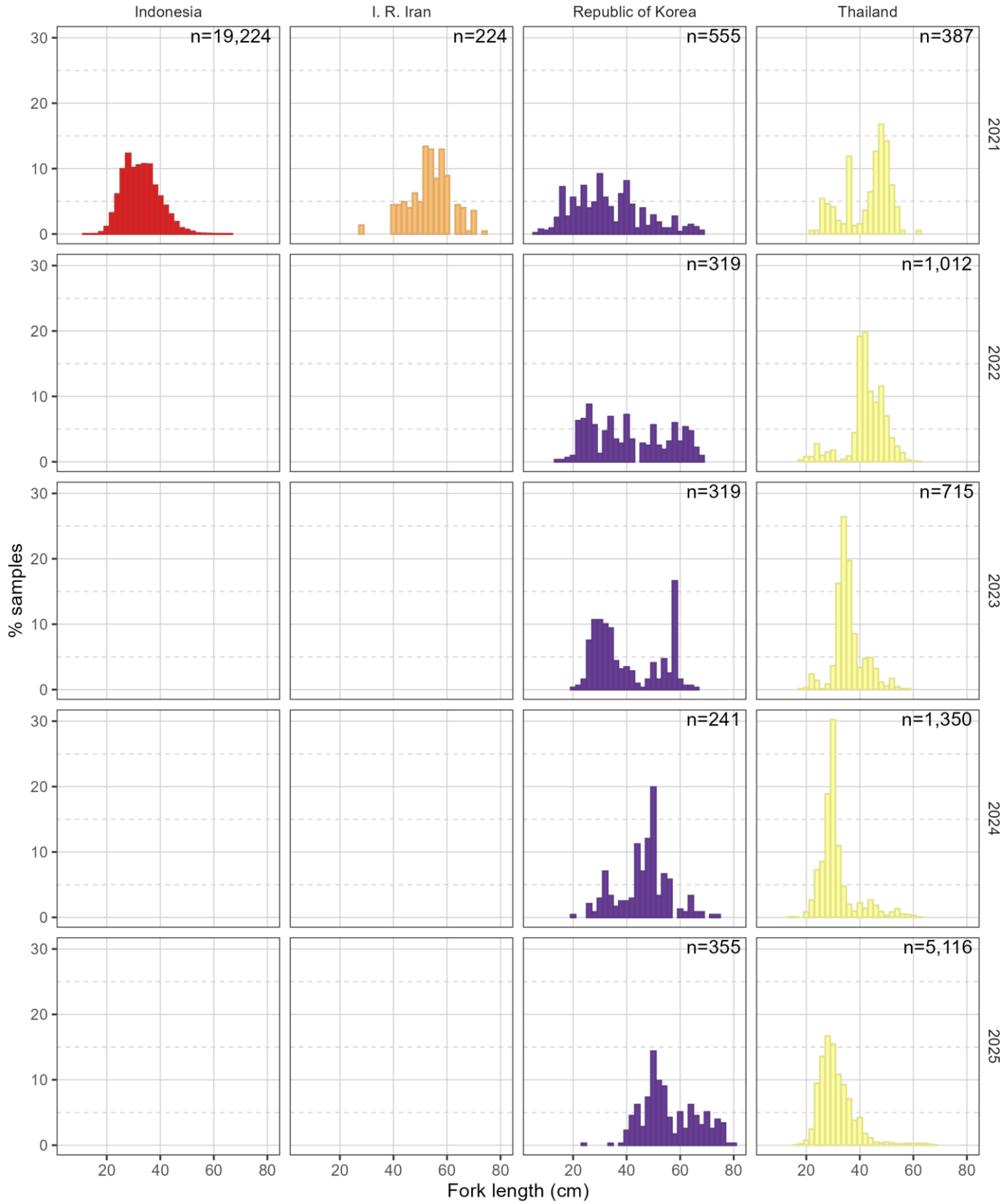

Figure 48: Relative size distribution of skipjack tuna (fork length in cm) recorded for unclassified schools, by year (2021–2025) and other purse seine fleet. Data source: standardized size-frequency dataset (Res. 15/02)

Temporal patterns and trends in size distributions

Industrial purse seine fisheries

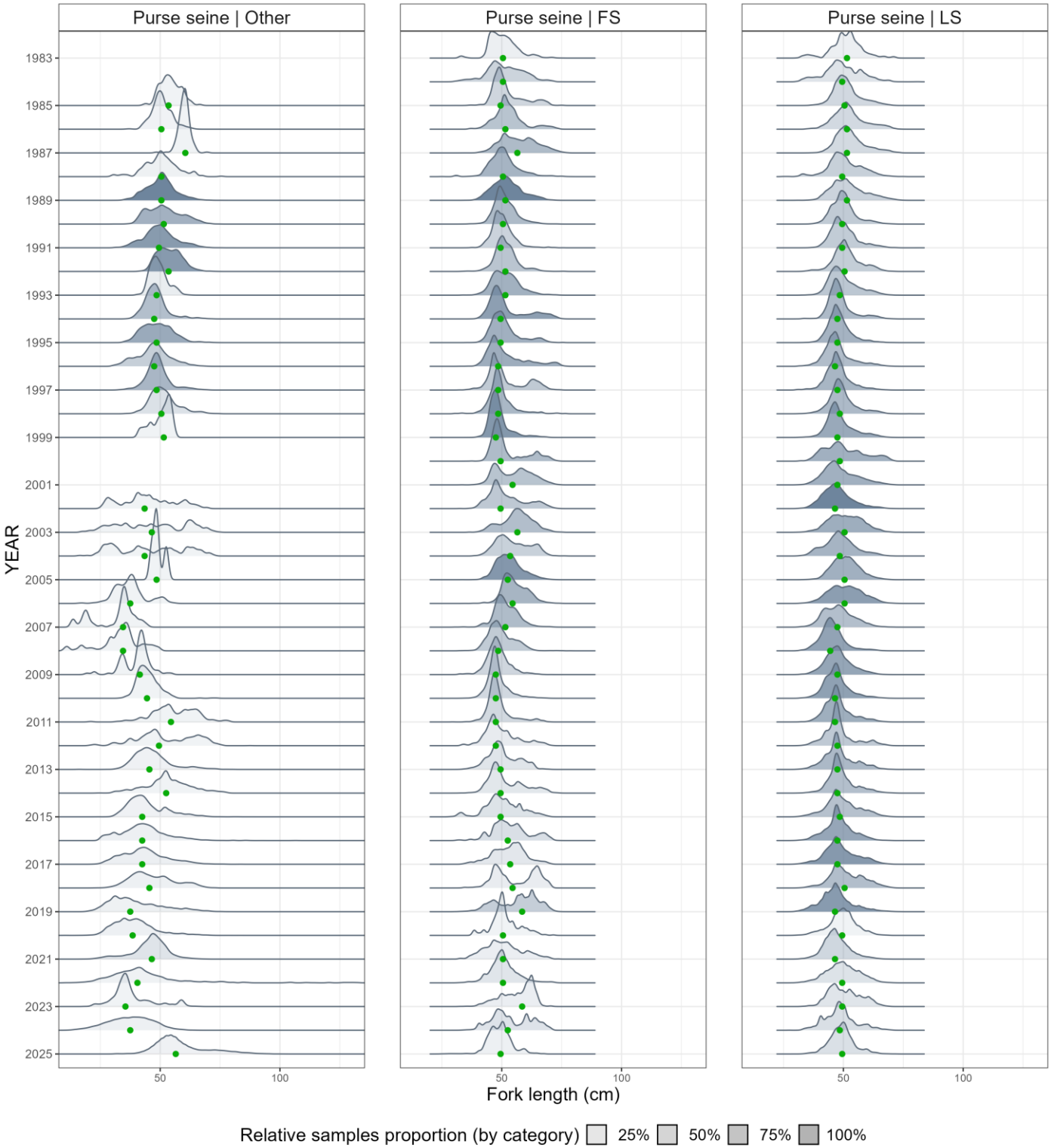

Figure 49: Relative size distribution (fork length in 2 cm size bins) of skipjack tuna caught by all purse seine fleets for the period 1983-2025. Other = no information provided on the school association; FS = free-swimming schools; LS = schools associated with floating objects. Fill intensity is proportional to the number of samples recorded for the year, while the green dot corresponds to the median value. Data source: standardized size-frequency dataset (Res. 15/02)

Coastal fisheries

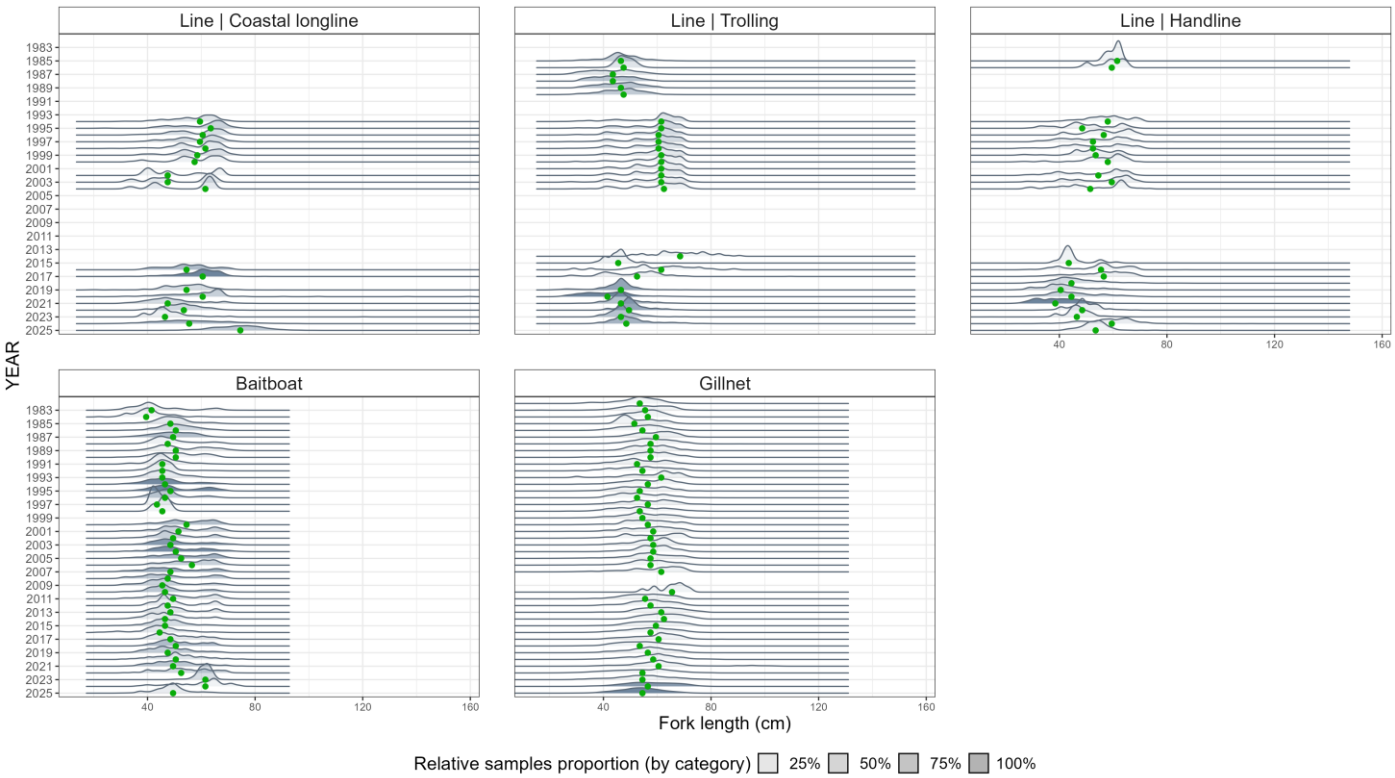

Figure 50: Relative size distribution (fork length in 2 cm size bins) of skipjack tuna caught by all coastal fisheries for the period 1982-2025. Fill intensity is proportional to the number of samples recorded for the year, while the green dot corresponds to the median value. Data source: standardized size-frequency dataset (Res. 15/02)

Baitboat fisheries

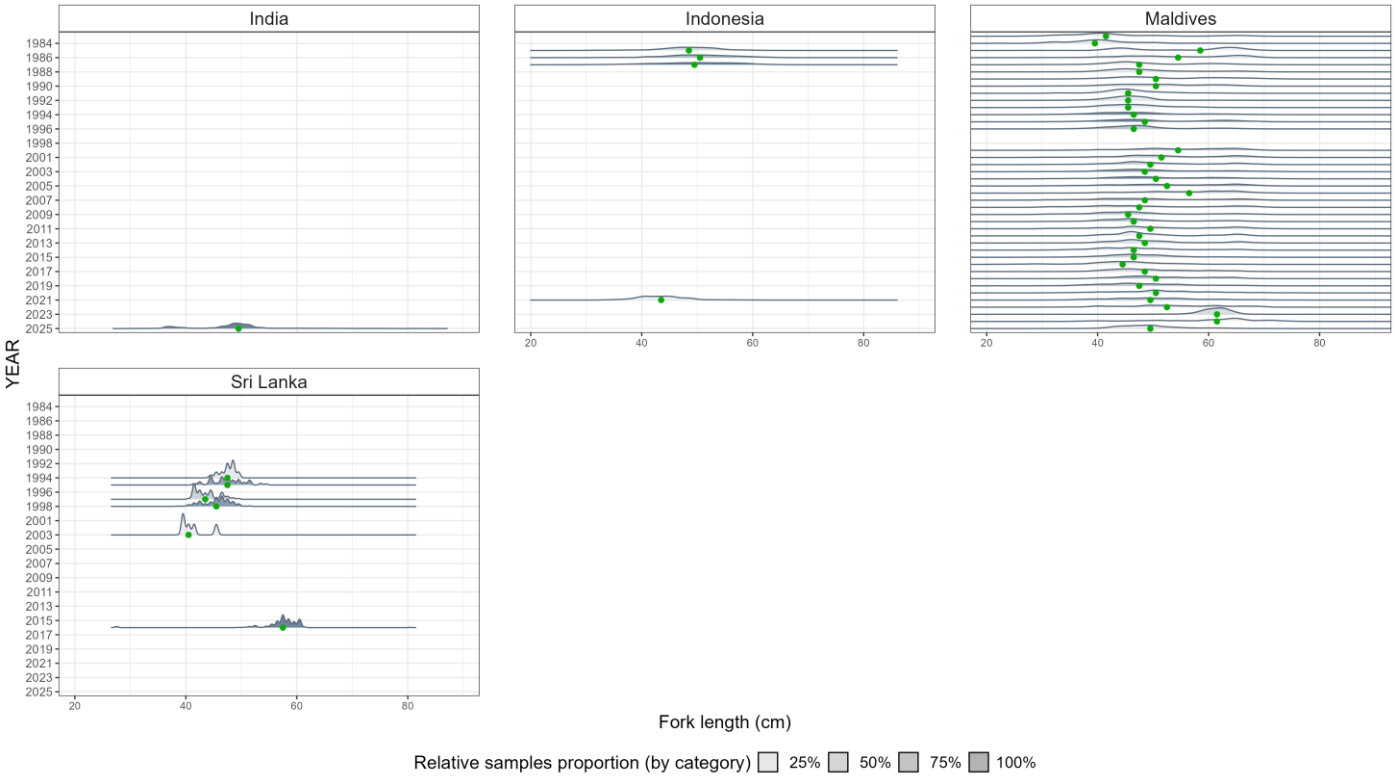

Figure 51: Relative size distribution (fork length in 2 cm size bins) of skipjack tuna caught by baitboat fleets for the period 1982-2025. Fill intensity is proportional to the number of samples recorded for the year, while the green dot corresponds to the median value. Data source: standardized size-frequency dataset (Res. 15/02)

Gillnet fisheries

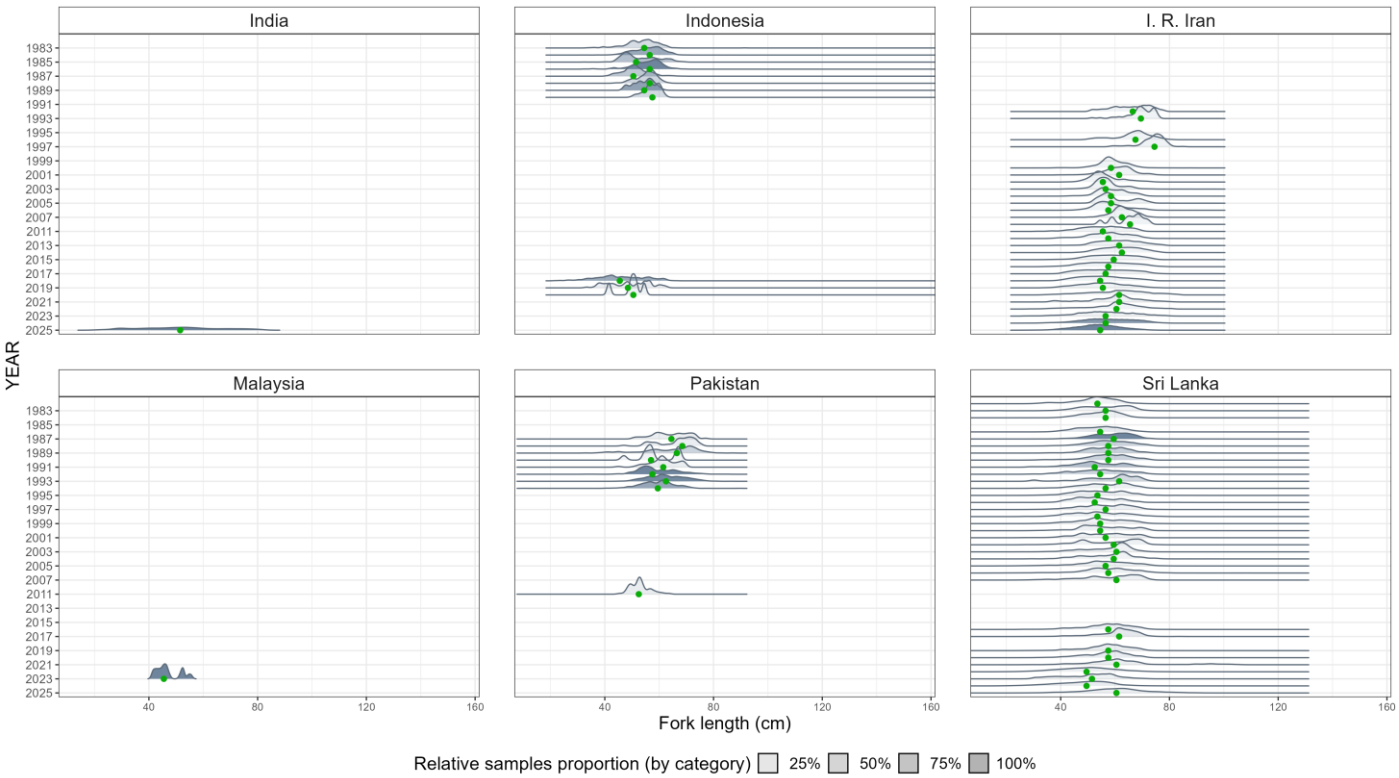

Figure 52: Relative size distribution (fork length in 2 cm size bins) of skipjack tuna caught by gillnet fleets for the period 1982-2025. Fill intensity is proportional to the number of samples recorded for the year, while the green dot corresponds to the median value. Data source: standardized size-frequency dataset (Res. 15/02)

Appendix III

Temporal trends in estimated average weights

Trends in average weights of skipjack tuna can be derived from the raised time-area catches in weight and numbers. While they can be estimated for the entire time series and for each fishery, due to the lack of original samples for several strata (especially in the early periods of the fisheries) they are considered accurate only for those periods for which actual samples are available and cover strata that correspond to at least 50 t of retained catches per year.

Trends in average weight for all other fisheries (baitboat, gillnet and all other gears) are more challenging to assess due to their inherently artisanal nature, which in turn implies a lower number of available samples and with a lower quality compared to those provided by the industrial fleets (which are recorded through logbooks or collected by scientific observers, in several cases).

Nevertheless, marked increases in average weights are detected in 2022 for industrial purse seiners (all fishing modes), while the average weight estimated for coastal purse seiners and ring nets (**54 - 'Purse seine | OT'**) remains the lowest among all gears. Outliers exist in estimated average weights from gillnet fisheries for 2021 (**Fig. 54 - 'Gillnet'**), due to the high proportion of large fish (> 60 cm FL) reported by I.R. Iran and Sri Lanka, with the latter also reporting significant number of fish of 85 cm FL and above which need further investigation.

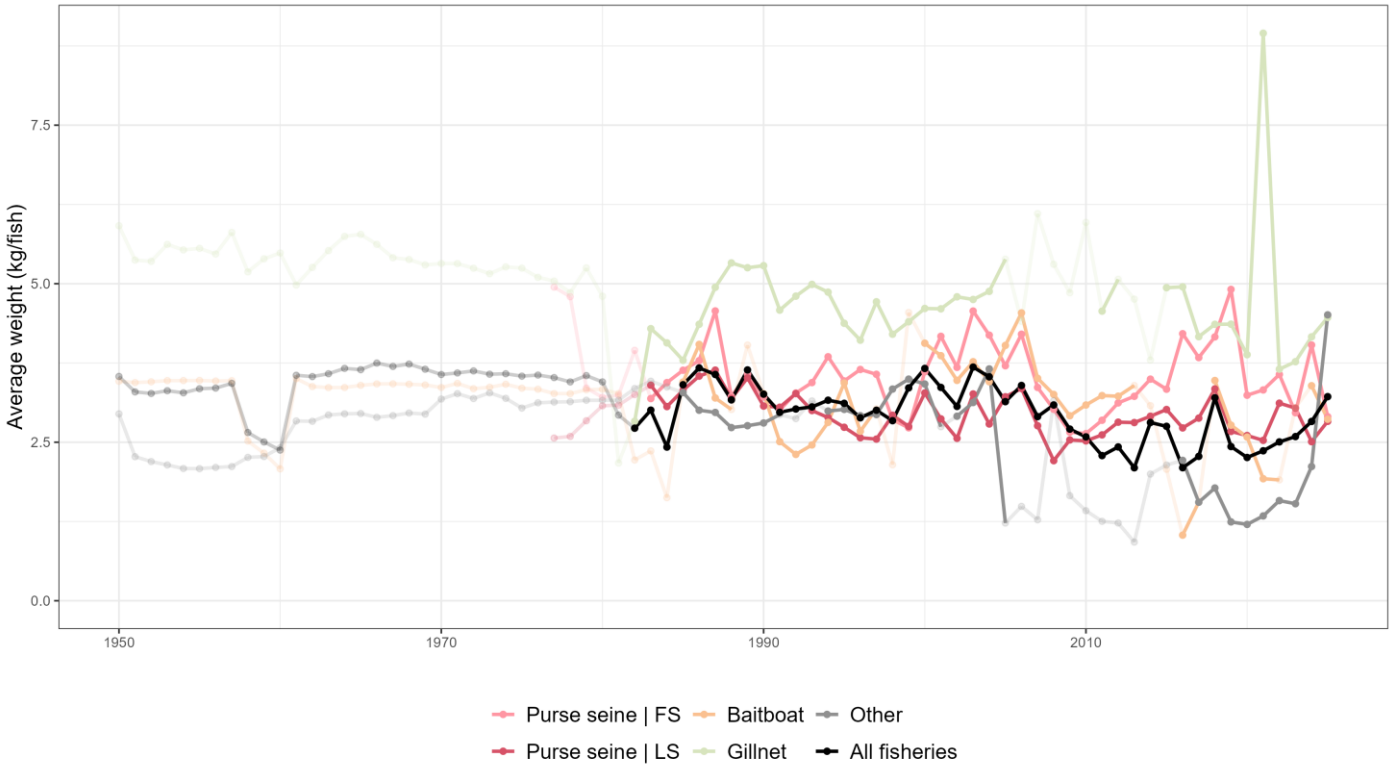

Figure 53: Combined estimated skipjack tuna average weight (kg/fish) in the catch by fishery and year. Semi-transparent points correspond to years for which the original size samples cover strata with reported catches (by year and fishery) **lower** than 50 t. LS = schools associated with floating objects; FS = free-swimming schools; OT = school type unknown. Data source: raised time-area catches

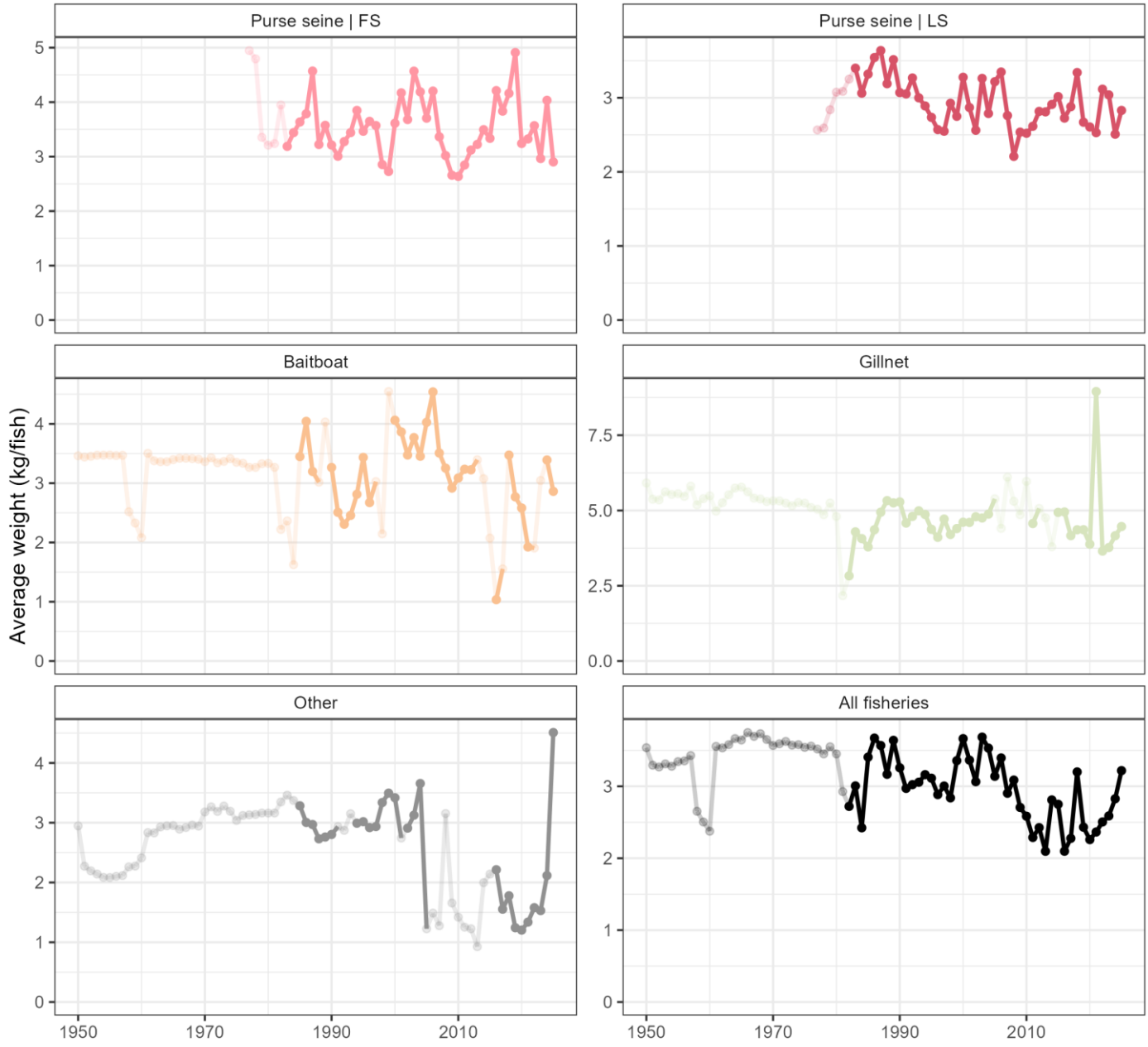

Figure 54: Estimated skipjack tuna average weight (kg/fish) in the catch by fishery and year. Semi-transparent points correspond to years for which the original size samples cover strata with reported catches (by year and fishery) **lower** than 50 t. LS = schools associated with floating objects; FS = free-swimming schools; OT = coastal purse seines and ringnets. Data source: raised time-area catches

Overall, the trend in average weights that results from combining together data for all fisheries shows a clear and steady decrease in the size of fish caught since the beginning of the 1990s, which can be explained by the generalized increased efforts exerted by several coastal fleets combined with the rapid increase in catches from schools associated to floating objects in the purse seine fishery (**Fig. 53**).

Appendix IV

Spatial distribution of average weights

Estimated average weights by decade (1950-2019)

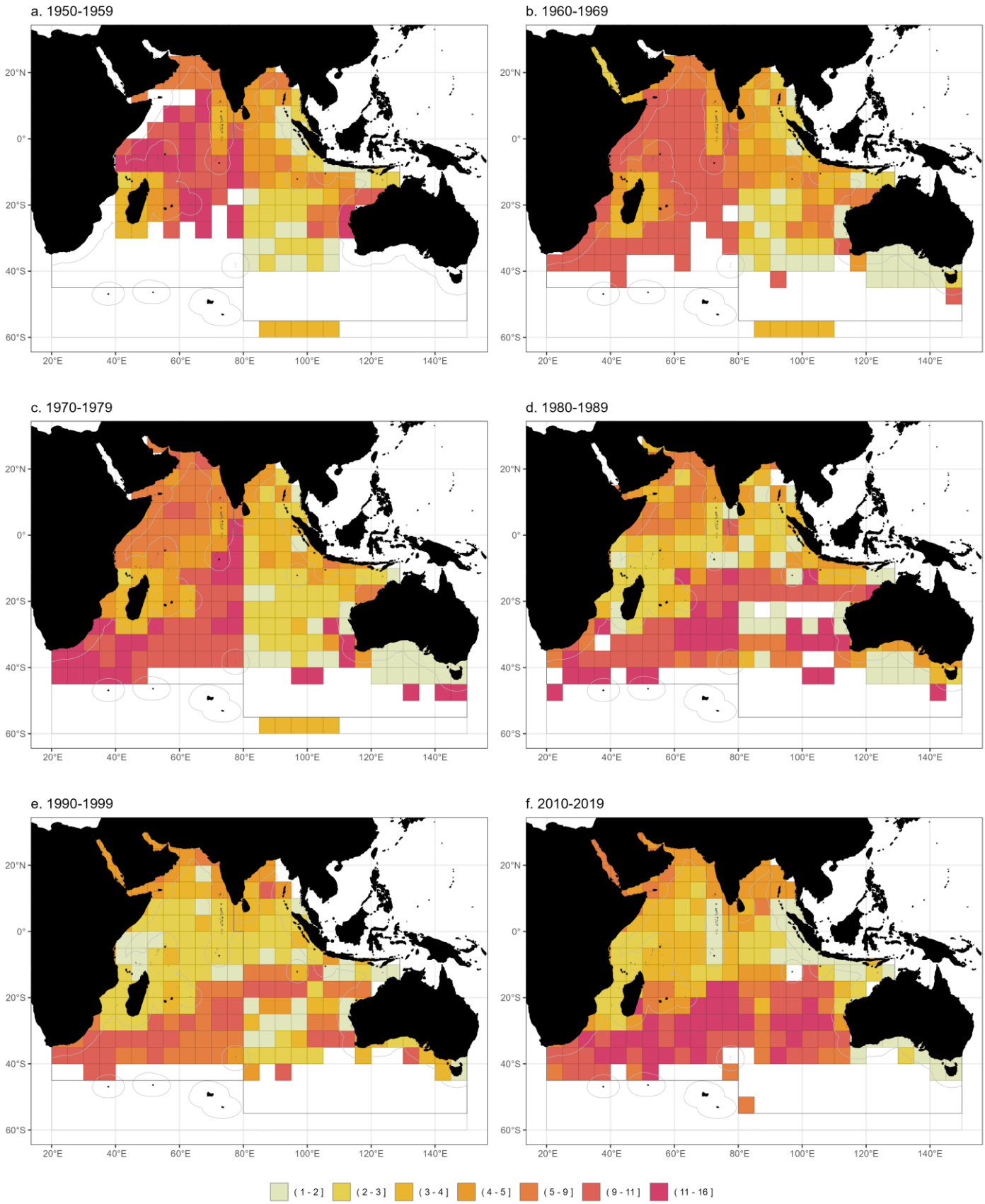

Figure 55: Estimated skipjack tuna average weight (kg/fish) in the catch by decade and 5x5 grid, for all fisheries combined for the period 1950-2019. Data source: raised time-area catches

Estimated average weights by year (2021-2025) and last decade (2010-2019)

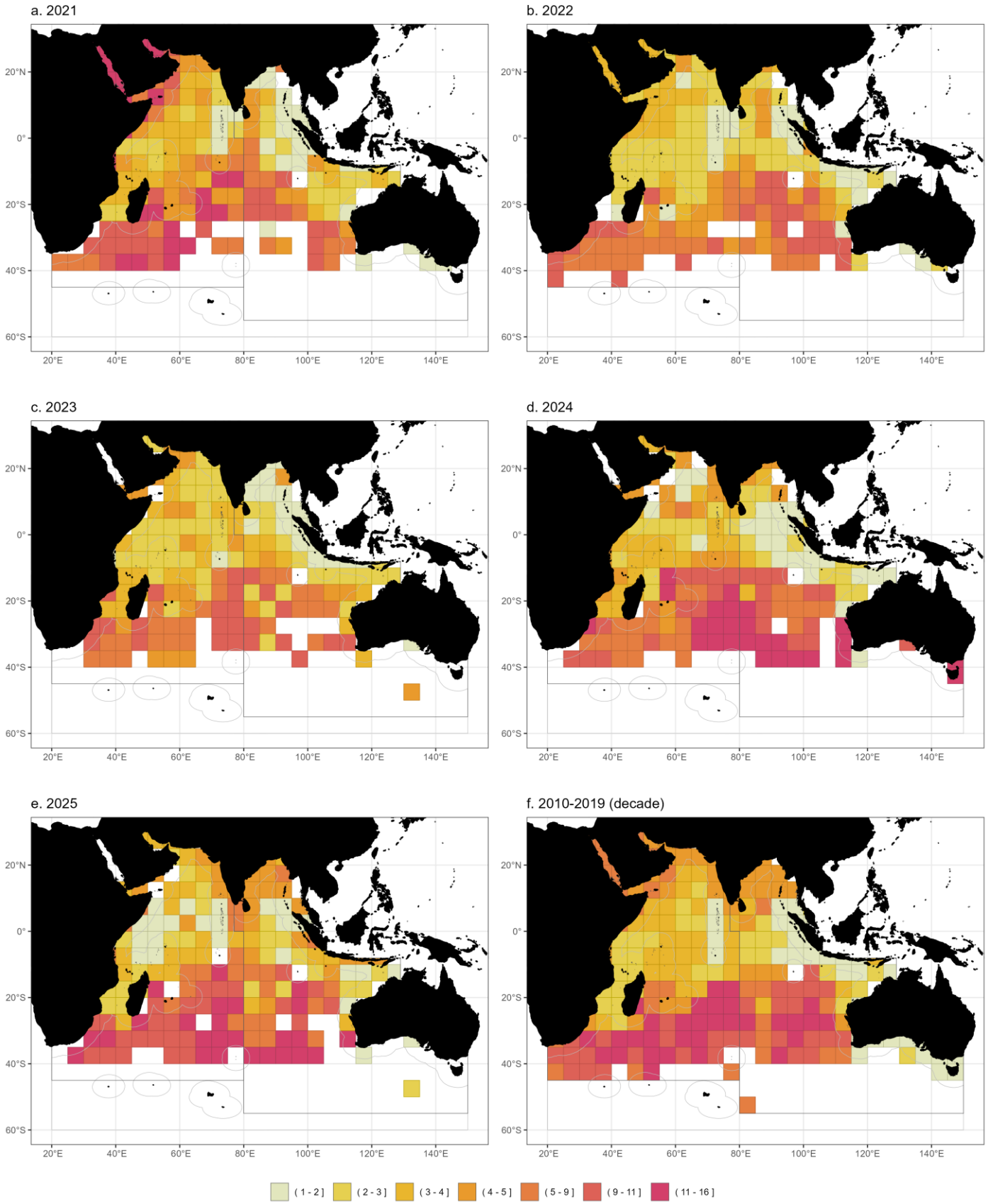

Figure 56: Estimated skipjack tuna average weight (kg/fish) in the catch by year and 5x5 grid, for all fisheries combined for the period 2021-2025 and for the decade 2010-2019. Data source: raised time-area catches

Estimated average weights by fishery group in recent years (2021-2025)

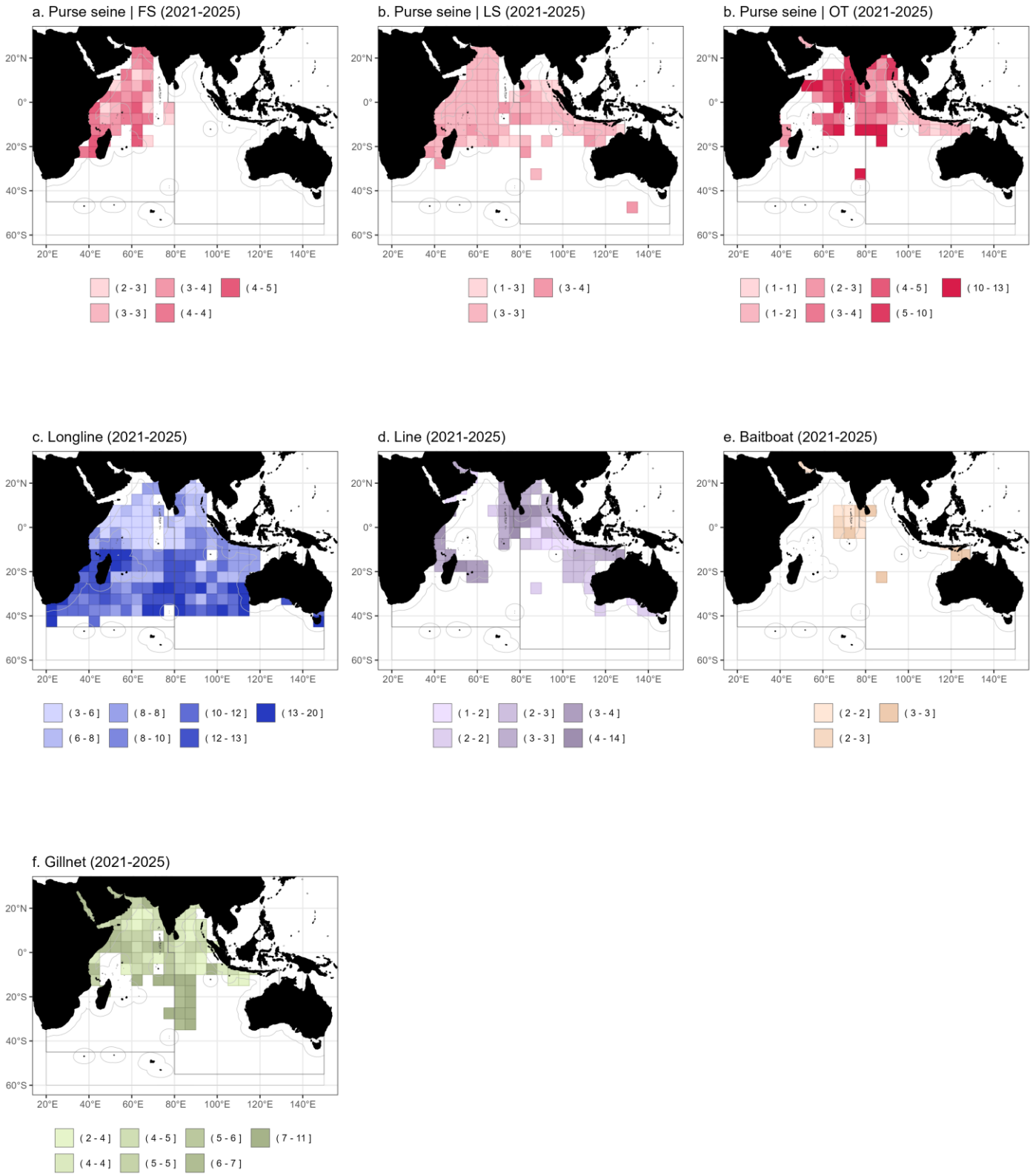

Figure 57: Estimated skipjack tuna average weight (kg/fish) in the catch by 5x5 grid and fishery group for the period 2021-2025. LS = schools associated with floating objects; FS = free-swimming schools. Data source: raised time-area catches

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