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CHARACTERISTICS OF LONGLINE FLEETS REGISTERED IN tRFMOs AS OF JUNE 2026

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Abstract

This report presents a comprehensive assessment of the characteristics of longline fishing fleets registered in the five tuna Regional Fisheries Management Organizations (tRFMOs) — ICCAT, IOTC, IATTC, WCPFC, and CCSBT — using authorized vessel records available as of June 2026.

Following the harmonization of heterogeneous RFMO registries, missing vessel attributes were reconstructed using a combination of deterministic conversions, statistical regression models, and machine-learning imputation techniques to generate a consolidated dataset containing standardized information on vessel dimensions and fishing capacity. The analysis focused on key structural characteristics, including length overall (LOA), gross tonnage (GT), fish hold volume (FHV), and fish carrying capacity (FCC), with particular emphasis on the role of large-scale longline vessels (≥24 m LOA) in global tuna fisheries.

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Executive Summary

This report presents a comprehensive assessment of the characteristics of longline fishing fleets registered in the five tuna Regional Fisheries Management Organizations (tRFMOs)—ICCAT, IOTC, IATTC, WCPFC, and CCSBT—using authorized vessel records available as of June 2026. Following the harmonization of heterogeneous RFMO registries, missing vessel attributes were reconstructed using a combination of deterministic conversions, statistical regression models, and machine-learning imputation techniques to generate a consolidated dataset containing standardized information on vessel dimensions and fishing capacity. The analysis focused on key structural characteristics, including length overall (LOA), gross tonnage (GT), fish hold volume (FHV), and fish carrying capacity (FCC), with particular emphasis on the role of large-scale longline vessels (≥24 m LOA) in global tuna fisheries.

The consolidated database comprises 7,288 unique longline vessels after removing duplicate registrations across RFMOs from an initial set of 9,084 authorized records. The analysis demonstrates that simple vessel counts provide an incomplete representation of fleet capacity because many smaller vessels are absent from RFMO registries, while a relatively small number of large vessels account for the majority of fishing capacity. Fish Hold Volume (FHV), which represents the effective storage capacity available for catches, is shown to be a substantially more informative indicator of operational fleet capacity than vessel numbers alone. East Asian distant-water fleets dominate the global longline sector when measured by both vessel numbers and aggregate FHV.

Large-scale longline vessels (≥24 m LOA) represent only 31% of the global registered longline fleet (2,283 vessels) yet concentrate approximately 86% of the estimated global fish hold capacity. These vessels constitute the core of distant-water longline operations, in some cases operating across multiple ocean basins and appearing simultaneously in several RFMO registries. Their disproportionate contribution to overall fishing capacity highlights the importance of capacity-based indicators for evaluating fishing effort and assessing the global longline fleet. The analysis further distinguishes two operational categories within this segment, advanced medium-scale longliners (24–30 m) and large-scale longliners (>30 m), which differ substantially in gross tonnage, fish hold volume, and carrying capacity.

The study also identifies several structural limitations in the current RFMO vessel registration systems. Most notably, small- and medium-scale longline vessels remain substantially underrepresented because several tRFMOs exempt these vessel classes from mandatory registration. This omission creates significant gaps in estimates of fishing effort, operational fleet capacity, and regional fleet

composition. As a consequence, current RFMO registries provide only a partial representation of the fleets exploiting tuna and tuna-like resources and likely underestimate the contribution of smaller coastal and artisanal longline fisheries.

Another major limitation concerns vessel identification and traceability. Approximately 40% of registered longline vessels lack International Maritime Organization (IMO) numbers, particularly among smaller vessels, reducing the ability to identify duplicate registrations and accurately track vessels operating across multiple RFMO convention areas. Although the availability of IMO numbers exceeds 96% for vessels ≥24 m LOA, incomplete vessel identifiers continue to constrain robust global analyses of fleet structure, ownership continuity, and multi-regional activity. Furthermore, because RFMO registries list vessels authorized to fish rather than vessels actively operating within each convention area during a given year, authorized fleet records cannot be interpreted as direct measures of actual fishing effort.

Overall, the results demonstrate that standardized capacity indicators, particularly Fish Hold Volume, provide a more meaningful basis for evaluating the scale and distribution of the global tuna RFMO longline fleet than vessel counts alone. The study concludes that improving the completeness, standardization, and interoperability of RFMO vessel registries—including mandatory reporting of smaller vessels, universal adoption of IMO numbers, and the development of dynamic annual registries that record active rather than merely authorized vessels—would substantially strengthen transparency, vessel traceability, and the accuracy of global assessments of longline fishing capacity and fishing effort, thereby supporting more effective fisheries monitoring and management.

1 Introduction

Longline fishing fleets operate across all major oceans and are mostly specialized in catching large, high-quality fish for the premium fresh and frozen markets (FAO, 2014). Drifting pelagic longlines are deployed globally to target widely distributed tuna and tuna-like species, demonstrating high catch efficiency, particularly for tunas, billfishes, and sharks.

Longline fleets contributed approximately 9% (811,000 tonnes) of the 9.3 million tonnes of global tuna and tuna-like species catches reported to tRFMOs in 2024 (own elaboration; FAO, 2026). Yellowfin tuna, albacore, bigeye tuna, swordfish and sharks were, in descending order, the primary species reported in 2024 by longline fleets, collectively representing over 80% of the total catches recorded for this fishing gear.

Although longline fisheries account for a relatively minor share of total landing volumes of tuna and tuna-like species, their economic yield is disproportionately higher (Sun et al., 2019). This high asset-to-volume ratio is driven by premium market pricing for large-sized, mature individuals of highly valuable species. These fleets also account for significant catches of non-target species, which unfortunately are poorly documented due to low observer coverage that rarely exceeds 5%.

To analyze the characteristics of the longline fleets operating within the tRFMOs, this report examines the authorized vessel records put in place in these organizations. They are established through specific regulatory frameworks of each organization:

- ICCAT: The International Commission for the Conservation of Atlantic Tunas Record of Vessels 20m or greater, established by the *Recommendation 21-04 by ICCAT amending Recommendation 13-13 concerning the establishment of an ICCAT record of vessels 20 metres in length overall or greater authorized to operate in the Convention area*. Vessels 20 m or greater not entered on this Record are deemed not to be authorized to fish for tuna or tuna-like species in the ICCAT Convention area. Specific authorisations for Atlantic swordfish and albacore are required under Recs. 22-04; 24-10; 21-04 and 22-06.
- IOTC: Under *Resolution 19/04 Concerning the establishment of an IOTC record of vessels authorized to operate in the IOTC area*, Indian Ocean Tuna Commission shall establish and maintain an IOTC Record of fishing vessels that are: a) larger than 24 m in length overall, or b) in case of vessels less than 24 m, those operating in waters outside the economic exclusive zone

of the flag state, and that are authorized to fish for tuna and tuna-like species in the IOTC Area.

- IATTC: The 2000 *Resolution on a Regional Vessel Register* (amended in 2011, 2014 and 2018) established the list of vessels authorized by their governments to fish for species under the purview of the Inter-American Tropical Tuna Commission. The latest *Resolution on a Regional Vessel Register* (2018) establishes that CPCs shall notify of their vessels on the Register that were actively fishing in the previous year.

  The *2003 Resolution on large-scale longline vessels* (amended in 2011) established the list of longline vessels over 24 meters authorized to fish for tunas and tuna-like species in the eastern Pacific Ocean.

- WCPFC: The Western and Central Pacific Fisheries Commission Record of Fishing Vessels (RFV) includes all the details that each Member and Cooperating Non-Member has provided to the WCPFC Secretariat of its vessels that are authorized to fish beyond its national jurisdiction within the Convention Area (in accordance with *Article 24 of the WCPFC Convention*). *Resolution 22-05* establishes the standards, specifications and procedures for the WCPFC Record of Fishing Vessels.

- CCSBT: The Commission for the Conservation of Southern Bluefin Tuna (CCSBT) has established a list of fishing vessels (implemented by the *Record of Authorized Vessels Resolution*)

2 Methods

Vessel registries were downloaded from the tRFMOs websites in June 2026, and only longline vessels were selected for this analysis. The original files used for this report can be found in the following links:

- ICCAT: *Active Vessels List*
- IOTC: *IOTC Record of Active Vessels*
- IATTC: *Regional Vessel Register*
- WCPFC: *Record of Fishing Vessels*
- CCSBT: *Record of Authorised Vessels*

Vessel registries across the various tRFMOs are considerably heterogeneous. Following the data import, the objective of the data processing was to extract and complete the following set of variables (which were not always fully or partially available in the registries):

- *rfmo*: Regional Fisheries Management Organization
- *flag*: Flag of the vessel
- *name*: Name of the vessel
- *rfmo_code*: Code assigned in the RFMO
- *national_code*: National code of the vessel
- *imo*: Unique, seven-digit identifier assigned by the International Maritime Organization (IMO).
- *loa*: Length overall (m), the maximum length of a vessel from the two points on the hull measured perpendicular to the waterline.
- *grt*: Gross Register Tonnage, the total measured cubic content of the permanently enclosed spaces of a vessel, with some allowances or deductions for exempt spaces such as living quarters (1 gross register ton = 100 ft^3 = 2.83 m^3).
- *gt*: Gross Tonnage (dimensionless), the volume of all ship's enclosed spaces (from keel to funnel) measured to the outside of the hull framing.
- *fhv*: Fish Hold Volume (m^3), the total measured cubic content of the fish wells, in cubic meters.
- *fcc*: Fish Carrying Capacity (mt), the amount of fish, in tonnes, that a vessel can carry. This is related to the size of the fish wells. However, the actual tonnage carried may vary depending on the size of the fish and how they are stored. FCC is often measured as the maximum landings observed for a given vessel.
- *year_built*: Year of construction.

Definitions of most of the structural parameters above were obtained from Justel et al. (2025).

Table 2.1 displays the total number of records and counts by tRFMO, as well as the percentage of missing values (NAs) for each variable per tRFMO. This table reflects the information available in the authorized vessel registries in the different tRFMOs. Among the technical characteristics reported for the vessels, LOA and GT are the most consistently represented and will be utilized in this study to infer other capacity metrics, such as FHV and FCC, which present a high number of missing values. The subsequent section outlines the steps taken to address and populate some of the missing data gaps.

Table 2.1: Number of records (first row) and percentage of missing values (NAs) by RFMO and total.

Variable	CCSBT	IATTC	ICCAT	IOTC	WCPFC	TOTAL
TOTAL RECORDS	670	1,777	3,318	1,557	1,762	**9,084**
flag_code (%)	0	0	0	0	0	**0**
flag_name (%)	0	0	0	0	0	**0**
name (%)	0	0	0	0	0	**0**
rfmo_code (%)	0	0	0	0	0	**0**
national_code (%)	0	3	0	0	0	**1**
imo (%)	1	45	76	20	6	**41**
loa (%)	0	4	0	0	0	**1**
grt (%)	100	100	61	99	69	**80**
gt (%)	0	7	39	0	31	**22**
fhv (%)	100	26	100	100	3	**67**
fcc (%)	100	66	100	100	100	**93**
year_built (%)	100	14	12	100	0	**32**

2.1 Flags and economic status

Following Justel et al. (2025), flag states were categorized based on the International Monetary Fund's (IMF) April 2025 World Economic Outlook framework into two broad institutional groupings: 'Advanced Economies' (Developed) and 'Emerging and Developing Economies' (Other). The flag codes and corresponding development classifications utilized in this study are summarized in Table 2.2.

Table 2.2: Overview of flag states and their assigned economic status. The 'Economy' field designates whether a country is classified as a developed economy or not within this analysis.

Flag Name	Code	Economy	Flag Name	Code	Economy	Flag Name	Code	Economy
Albania	ALB	Other	Guinea	GIN	Other	PN Guinea	PNG	Other
Algeria	DZA	Other	India	IND	Other	Pakistan	PAK	Other
Angola	AGO	Other	Indonesia	IDN	Other	Panama	PAN	Other
Australia	AUS	Developed	Iran	IRN	Other	Peru	PER	Other
Bahamas	BHS	Developed	Ireland	IRL	Developed	Philippines	PHL	Other
Belize	BLZ	Other	Italy	ITA	Developed	Poland	POL	Developed
Brazil	BRA	Other	Japan	JPN	Developed	Portugal	PRT	Developed
Cabo Verde	CPV	Other	Kenya	KEN	Other	Russian Federation	RUS	Developed
Canada	CAN	Developed	Kiribati	KIR	Other	Senegal	SEN	Other
Chile	CHL	Developed	Korea, Rep.	KOR	Developed	Seychelles	SYC	Other
China, P.R.	CHN	Other	Latvia	LVA	Developed	Singapore	SGP	Developed

Flag Name	Code	Economy	Flag Name	Code	Economy	Flag Name	Code	Economy
Chinese T.	TWN	Developed	Liberia	LBR	Other	Solomon	SLB	Other
Colombia	COL	Other	Libya	LBY	Other	South Africa	ZAF	Other
Cook Islands	COK	Other	Lithuania	LTU	Developed	Spain	ESP	Developed
Costa Rica	CRI	Other	Madagascar	MDG	Other	Sri Lanka	LKA	Other
Croatia	HRV	Developed	Malaysia	MYS	Other	Suriname	SUR	Other
Curaçao	CUW	Other	Maldives	MDV	Other	Syria	SYR	Other
Cyprus	CYP	Developed	Malta	MLT	Developed	Syria	SYR	Other
Côte d'Ivoire	CIV	Other	Marshall	MHL	Other	Tanzania	TZA	Other
Ecuador	ECU	Other	Mauritius	MAU	Other	Thailand	THA	Other
Egypt	EGY	Other	Mexico	MEX	Other	Tonga	TON	Other
El Salvador	SLV	Other	Morocco	MAR	Other	Trinidad and Tobago	TTO	Other
FS Micronesia	FSM	Other	Mozambique	MOZ	Other	Tunisia	TUN	Other
Fiji	FJI	Other	Namibia	NAM	Other	Turkey	TUR	Other
France	FRA	Developed	Nauru	NAU	Other	Tuvalu	TUV	Other
France	FRA	Developed	Netherlands	NLD	Developed	USA	USA	Developed
Georgia	GEO	Other	New Caledonia	NCL	Other	United Kingdom	GBR	Developed
Ghana	GHA	Other	New Zealand	NZL	Developed	Uruguay	URY	Other
Greece	GRC	Developed	Nicaragua	NIC	Other	Vanuatu	VUT	Other
Grenada	GRD	Other	Norway	NOR	Developed	Venezuela	VEN	Other
Guatemala	GTM	Other	Oman	OMN	Other			

2.2 IMO numbers

An attempt was made to retrieve the missing IMO numbers for vessels lacking this information in the original registries. For this purpose, the Global Fishing Watch (GFW) vessel identity database was queried using the vessel's name and country flag. Prior to querying, the vessel name strings were standardized by converting them to uppercase and removing leading and trailing white spaces to maximize string-matching precision. The total number of successfully recovered IMO numbers amounted to only 127. And a total of 3,612 vessels (representing 39.8% of the fleet) remain with an unknown IMO number (Table 2.3).

Table 2.3: Summary of vessel records by RFMO and IMO data availability.

RFMO	Missing IMO	Available_IMO	Total Vessels	% Missing
ICCAT	2,508	810	3,318	75.6
IATTC	795	982	1,777	44.7
IOTC	201	1,356	1,557	12.9
WCPFC	101	1,661	1,762	5.7
CCSBT	7	663	670	1.0
Total	**3,612**	**5,472**	**9,084**	**39.8**

The IMO number is a key identifier for fishing vessels for transparency and traceability because it remains unchanged regardless of any modifications to the ship's name, ownership, or flag state. If we aim to analyze whether the same vessel appears simultaneously across different tRFMO registries, the IMO number is a critical variable for ensuring analytical robustness. In our case, as previously noted, 39.8% of the compiled records lack this identifier (41.2% in case of the tRFMOs registries). Given that the simultaneous appearance of a vessel in multiple RFMOs occurs primarily among large longliners (≥ 24 m LOA), the subsequent table displays the availability of IMO numbers for this specific fleet segment. Out of the 3,751 large longline vessels identified, 96.35% possess a valid IMO number (Table 2.4).

Table 2.4: Summary of large longline vessels (>= 24m LOA) by RFMO and IMO data availability.

RFMO	Missing IMO	Available IMO	Total Vessels	% Missing
IATTC	100	916	1,016	9.8
ICCAT	30	600	630	4.8
WCPFC	7	1,113	1,120	0.6
CCSBT	0	517	517	0.0
IOTC	0	468	468	0.0
Total	**137**	**3,614**	**3,751**	**3.7**

2.3 Gross Tonnage

Information on GT was available for 78.8% of the vessels, and on GRT for 20.5%. Since GRT is an obsolete metric, GT was selected as the preferred option for reporting vessel tonnage. To standardize the vessel capacity metrics to GT, missing GT values were estimated from GRT and LOA by applying a two-step volumetric transformation (Nomura, 1977):

- Volumetric Derivation: The vessel's closed volume (V) is derived from the reported GRT, where 1 GRT is defined as $2.83\ m^3$.
- Logarithmic Scaling: The final GT is calculated using the formula: $GT = V \times K_1$, where the multiplier K_1 is a logarithmic function of the total volume: $K_1 = 0.2 + 0.02\log_{10}(V)$.

The GT values for 1860 vessels with missing GT but available GRT and LOA data were estimated following this conversion procedure.

Missing GT values of vessels without GRT values but with LOA information were imputed using a predictive model based on the vessel's LOA using a linear regression fitted with log-transformed variables: log(GT) ~ log(LOA) - 1. The intercept was omitted to prevent negative estimates for smaller vessels (LOA < 10 m). The data set included only verified records where both parameters were present and greater than zero (n=7,096).

The model demonstrates robust predictive power, explaining 95.3% of the variance in GT based on LOA, with a residual standard error of 0.962 over 7094 degrees of freedom (Appendix A).

Predictions were generated for records with missing GT but available LOA data. Values were back-transformed to the original scale using the exponential function. The number of vessels with missing GT but available LOA data that were estimated following this linear regression were 62.

The number of vessels for which it was not possible to retrieve or estimate a GT value amounted to 66. The affected vessels belong to the following flags: Costa Rica (30), Mexico (31), USA (5) operating in the convention area of IATTC.

2.4 Fish Hold Volume

The Fish Hold Volume (FHV) is the total volume of all spaces on board a vessel destined exclusively for the containment and preservation of fish, measured in cubic metres (m^3). This volume represents the net capacity available for the catch after accounting for permanent insulation, cooling machinery, and structural internal partitions (FAO, 1988). Unlike administrative metrics such as GT or GRT, FHV provides a functional measure of active fishing capacity.

Missing FHV values were imputed using a multi-variable regression model of the form: $\log(\text{FHV}) = \beta_0 + \beta_1 \cdot \log(\text{LOA}) + \beta_2 \cdot \log(\text{GT})$.

To ensure model integrity, the data used for the model was strictly restricted to records containing positive, non-zero values for LOA, GT and FHV, exclusively utilizing verified original data entries (2,495 observations). The multi-variable model explained 82.1% of the variance in fish hold volume (Appendix A).

Predictions were generated for records with available GT and LOA data. Values were back-transformed to the original scale using the exponential function. The FHV values for 5,995 vessels with available GT and LOA data were estimated using this linear regression.

2.5 Fish Carrying Capacity

The Fish Carrying Capacity (FCC) is the amount of fish, in tonnes, that a vessel can carry. While GT measures the total enclosed structural volume of the entire vessel and FHV quantifies the specific geometric space available for storage, FCC defines the maximum operational payload weight the vessel can transport. GT serves as an administrative envelope and FHV represents a rigid cubic constraint (m^3), whereas FCC is dynamic and typically measured in metric tons (mt).

Missing FCC values were imputed using a multi-variable regression model of the form: $\log(\text{FCC}) = \beta_0 + \beta_1 \cdot \log(\text{LOA}) + \beta_2 \cdot \log(\text{GT})$.

As before, to ensure model integrity, the data used for the model was strictly restricted to records containing positive, non-zero values for LOA, GT and FCC, exclusively utilizing verified original data entries (606 observations). The multi-variable model explained 86% of the variance in FCC.

Predictions were generated for records with available GT and LOA data. Values were back-transformed to the original scale using the exponential function. The FCC was estimated for 8,412 vessels following this linear regression.

2.6 Consolidated tRFMO Longline Fleet Dataset

To address some final missing data (<1%) in key vessel dimensions (LOA, GT, FHV, and FCC), we applied a stratified machine learning method using the missForest library to impute missing values in the dataset. Imputations were computed strictly within the subgroups RFMO and FLAG to ensure predictions were derived only from operationally and geographically comparable fleets. A total of 66 records required missing value imputation.

After processing the data and estimating the missing values of different key variables in the current RFMO registries, the consolidated dataset consisted of 9,084 longline vessel records with information of most variables of Table 2.1. Three variables maintained a certain percentage of missing values: national code (0.5%), IMO number (39.8%) and year of built (31.6%).

3 Results and discussion

3.1 Global list of authorized longline vessels

The consolidation of RFMO registries restricted exclusively to longline vessels and adjusted for likely duplicates—yielded a total of 7,288 unique vessels (Table 3.1). A total of 9,084 vessels were registered; however, 1,796 were found to be duplicates. The criterion used to identify unique vessels in the consolidated database was the IMO number or, in its absence, the national vessel code.

The distribution of the main analyzed variables (LOA, GT, FHV, and FCC) is shown in Figure 3.1. It can be observed that the distributions of GT, FHV, and FCC are highly right-skewed, exhibiting two minor modes located around medium and high values of these variables, respectively. Regarding LOA, three distinct groups are basically observed: one with lengths overall under 20 m, another with lengths roughly between 20 and 30 m, and a final group exceeding 30 m. These three categories align with the IATTC-proposed classifications of 'medium- and small-scale longline' (<20 m), 'advanced medium-scale longline' (20–30 m) and 'large-scale longline' (>30 m) (Fuller et al., 2026).

Table 3.1 presents the fleet breakdown by flag state. The leading countries in terms of number of vessels are Sri Lanka (909), Italy (766), Chinese T. (623) and China, P.R. (611). And, in terms of FHV (m^3), the leading countries are China, P.R. (229,432), Chinese T. (149,668), Japan (91,324), and Korea, Rep. (54,707). It should be noted that a significant portion of the small-scale longline fleet is likely not represented in the registries. In ICCAT, due to very specific regulatory requirements, particularly in the Mediterranean, the registry contains substantial information on small-scale vessels. However, this seems not to be the case for other RFMOs. Furthermore, information remains limited for countries such as Indonesia, the Philippines, and Vietnam, among others. Consequently, given the uneven representation of small-scale longliners in RFMO registries, the total number of vessels does not appear to be the optimal indicator for measuring the overall scale of the longline fleet. Since the vessels omitted from these registries are small-scale, FHV emerges as a more accurate metric, at least until small-scale longliners are consistently registered/included in tRFMOs vessel records. Thus, in terms of FHV, East Asian fleets, which predominantly operate large-scale vessels, lead the rankings.

The exemption of small- and medium-scale vessels from RFMO vessel records introduces critical gaps that impede the precise estimation of accurate fishing effort estimates within their areas of competence. Integrating these vessels into such registries would enhance transparency, traceability, and the precision of catch and effort data reporting. This is especially important since the artisanal

longline fleet, as well as those using other gears, produces significant catches of species, some of them vulnerable, under the purview of tuna RFMOs.

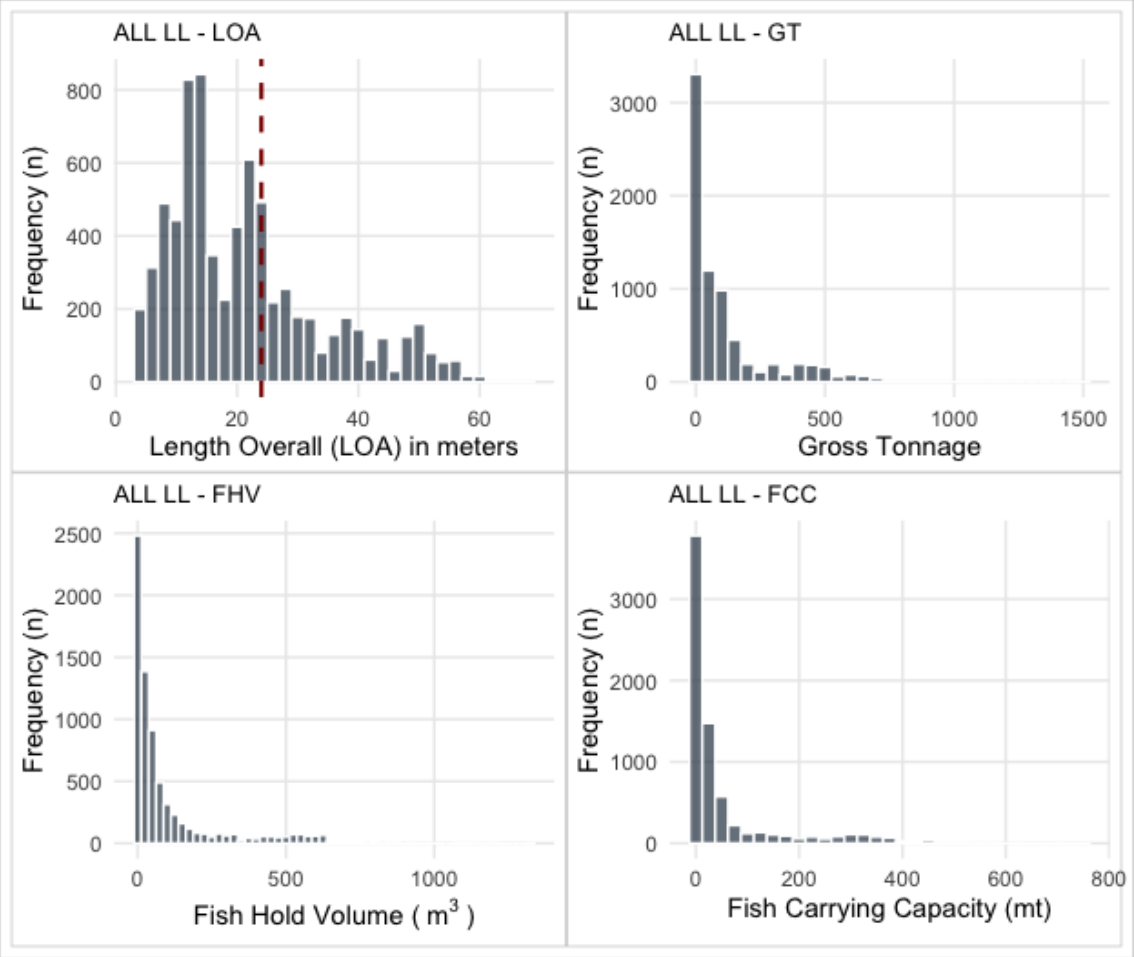

Figure 3.1: Number of longline vessels registered in the tRFMOs by LOA, GT, FHV and FCC. The vertical red line marks the 24 m LOA value.

Table 3.1: Summary of longline vessels (all sizes) by flag state, displaying total number of vessels and combined estimated FHV (m^3).

Flag	N	FHV (m^3)	Flag	N	FHV (m^3)	Flag	N	FHV (m^3)
Algeria	436	1,485	**France**	204	7,025	**Norway**	1	139
Angola	1	195	**Grenada**	1	64	**Oman**	4	2,019
Australia	46	3,078	**Guatemala**	22	163	**PN Guinea**	2	629
Belize	13	1,071	**Indonesia**	402	37,511	**Panama**	57	2,690
Brazil	43	2,509	**Italy**	766	9,676	**Peru**	2	557
Cabo Verde	1	46	**Japan**	366	91,324	**Portugal**	43	5,706
Canada	3	286	**Kiribati**	5	773	**Seychelles**	67	8,409
Chile	8	271	**Korea, Rep.**	100	54,707	**South Africa**	40	3,507
China, P.R.	611	229,432	**Madagascar**	5	87	**Spain**	222	35,481
Chinese T.	623	149,668	**Malaysia**	15	1,505	**Sri Lanka**	909	13,049
Côte d'Ivoire	6	751	**Malta**	583	2,487	**Suriname**	17	874
Costa Rica	150	2,182	**Mauritius**	16	4,328	**Tanzania**	1	71
Croatia	3	15	**Mexico**	209	10,266	**Tonga**	3	95
Cyprus	33	975	**Morocco**	491	16,036	**Trinidad and T.**	11	652
Ecuador	122	14,232	**Namibia**	5	1,437	**Turkey**	107	491
Egypt	32	524	**New Caledonia**	14	399	**USA**	252	13,940
FS Micronesia	11	775	**New Zealand**	3	922	**Vanuatu**	38	16,779
Fiji	50	3,913	**Nicaragua**	7	667	**Venezuela**	106	9,371
						Total	**7,288**	**765,244**

Based on the distribution of the longline fleet by flag shown in Table 3.1, and accounting for the associated economic status outlined in Table 2.2, it can be inferred that developed countries account for 3,256 vessels with a total FHV of 375,699 m^3, representing 44.7% of all longline vessels and 49.1% of the total FHV (Table 3.2).

Table 3.2: Number of longline vessels and their estimated combined FHV (m^3) by economic classification groups.

Metric (All Sizes)	Developed	Other	Total	% Developed
Vessels	3,256	4,032	**7,288**	**44.7%**
FHV (m^3)	375,699	389,545	**765,243**	**49.1%**

3.2 The large-scale longline fleet (≥ 24 m)

In addition to providing global data for the entire longline fleet, this study focuses specifically on vessels with a LOA of 24 m or greater. While these vessels account for only 31.3% of the fleet by number (2,283 out of a total of 7288 vessels), they represent 86% of the total FHV (654.6 out of 765.2 x1,000 m^3) (Table 3.3). This 24 m threshold represents the baseline requirement for vessel inclusion in most RFMO authorized vessel registries (except ICCAT). Furthermore, due to their operational capacity, these large-scale vessels are capable of distant-water fishing, allowing them to potentially operate across multiple RFMO convention areas.

The distribution of the main analyzed variables (LOA, GT, FHV, and FCC) of vessels ≥ 24 m is shown in Figure 3.2. Similarly to the classification proposed by Fuller et al. (2026), we can distinguish two main groups, the 'advanced medium-scale longliners' (20–30 m) and the 'large-scale longliners' (>30 m). The first group, with LOA between 24 m and 30 m, presents the following average values: LOA = 26.6 m, GT = 118, FHV = 98.6 m^3 and FCC = 41.4 mt. And the second group, with LOA > 30 m, average values of LOA = 42.2 m, GT = 370, FHV = 383.5 m^3 and FCC = 222.1 mt.

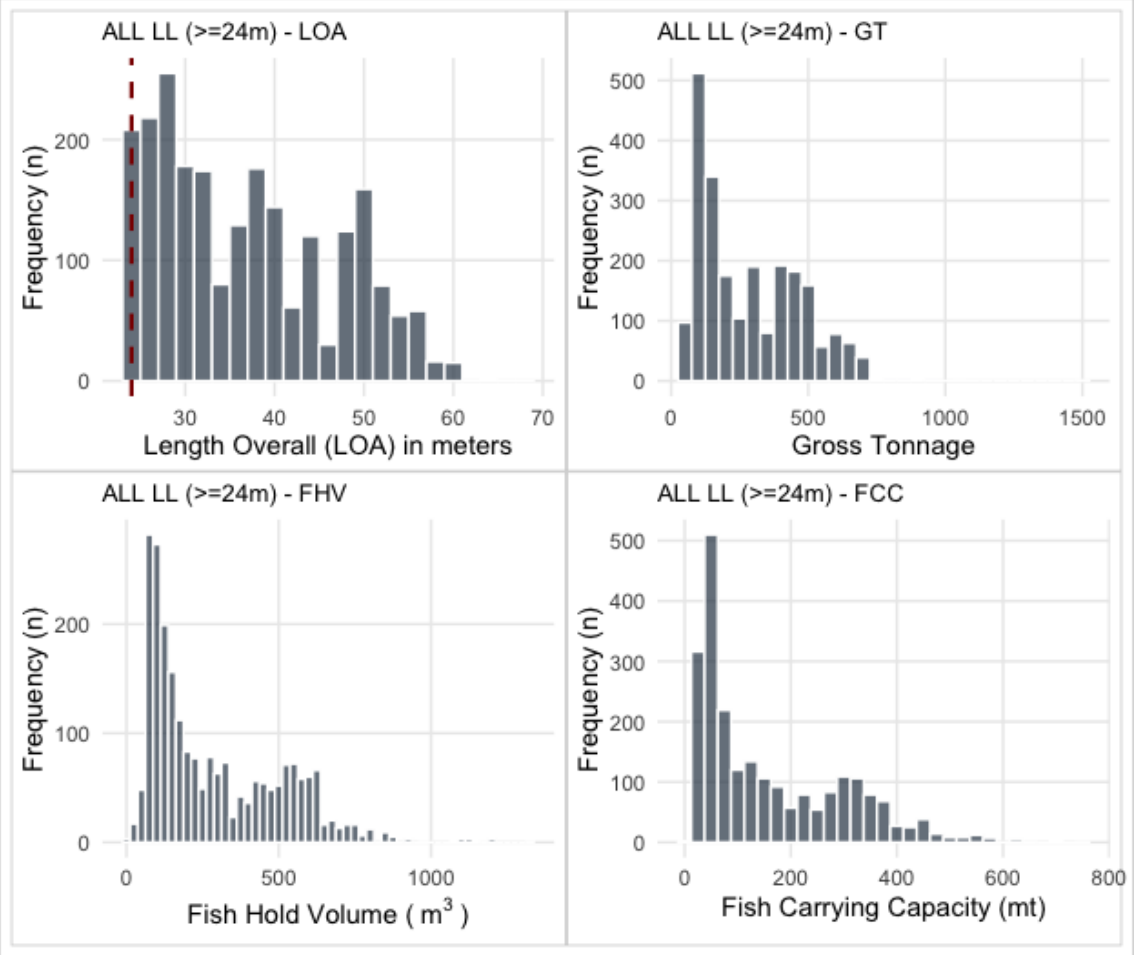

Figure 3.2: Large longline vessels (≥24m) registered in the tRFMOs by LOA, GT, FHV and FCC.

Table 3.3 presents the fleet breakdown by flag state. The leading countries in terms of number of vessels are China, P.R. (601), Chinese T. (480), Indonesia (272) and Japan (166). And, in terms of FHV (m^3), the leading countries are China, P.R. (228,628), Chinese T. (141,751), Japan (83,164), and Korea, Rep. (54,707).

Table 3.3: Summary of large longline vessels (≥24 m) by flag state, displaying total number of vessels and combined estimated FHV (m^3).

Flag	N	FHV (m^3)	Flag	N	FHV (m^3)	Flag	N	FHV (m^3)
Angola	1	195	Indonesia	272	31,625	PN Guinea	2	629
Australia	9	1,245	Italy	5	430	Panama	6	1,270
Belize	9	830	Japan	166	83,164	Peru	1	495
Brazil	14	1,046	Kiribati	5	773	Portugal	34	5,297
Canada	2	239	Korea, Rep.	100	54,707	Seychelles	23	7,614
Chile	1	58	Malaysia	15	1,505	South Africa	17	2,104
China, P.R.	601	228,628	Malta	3	219	Spain	164	33,397
Chinese T.	480	141,751	Mauritius	16	4,328	Sri Lanka	4	407
Côte d'Ivoire	1	448	Mexico	35	3,158	Tanzania	1	71
Costa Rica	2	151	Morocco	42	3,274	Tonga	1	45
Cyprus	4	352	Namibia	5	1,437	Trinidad and T.	4	332
Ecuador	21	6,794	New Caledonia	1	65	USA	45	4,293
FS Micronesia	8	680	New Zealand	2	858	Vanuatu	31	16,029
Fiji	38	3,468	Nicaragua	4	567	Venezuela	71	7,370
France	11	1,014	Norway	1	139			
Grenada	1	64	Oman	4	2,019			
						Total	**2,283**	**654,584**

Developed countries account for 1,027 vessels with a total FHV of 327,163 m^3, representing 45% of all large longline vessels (>24 m) and 50% of the total FHV (Table 3.4).

Table 3.4: Number of large longline vessels (>24 m) and their estimated combined FHV (m^3) by economic classification groups.

Metric (>24 m)	Developed	Other	Total	% Developed
Vessels	1,027	1,256	**2,283**	**45.0%**
FHV (m^3)	327,163	327,422	**654,585**	**50.0%**

3.3 Large scale longline vessels by tRFMO

The 2,283 large-scale longliners over 24 m are registered in at least one tRFMO. There are 1,191 registered in only one tRFMO, 861 in two, 137 in three, 72 in four and even 26 in five tRFMOs.

To analyze the co-occurrence of longline vessels across different RFMOs, it is essential to determine which vessel identifier variable provides the highest discriminatory power. As explained in the methodology section, the IMO number remains unchanged regardless of any modifications to the ship's name, ownership, or flag state. Therefore, we used the IMO number for this co-occurrence analysis. However, 39.8% of the records lack an IMO number; thus, for records without an IMO, we used the national registration code as the vessel identifier variable.

Based on these criteria, the following RFMO co-occurrence matrix was obtained for large longliners exceeding 24 m LOA (Table 3.5).

Table 3.5: RFMO Co-occurrence Matrix (Shared longline vessels - >=24m)

RFMO	CCSBT	IATTC	ICCAT	IOTC	WCPFC
CCSBT	**509**	159	188	263	91
IATTC		**1015**	227	82	714
ICCAT			**630**	64	134
IOTC				**468**	42
WCPFC					**1120**

The tRFMO co-occurrence matrix illustrates the operational distribution and regional cross-listing of large-scale longline vessels (≥ 24 meters). The diagonal entries represent the total number of vessels registered within each respective tRFMO, with WCPFC containing the highest number of authorized vessels (1,120), closely followed by IATTC (1,015), while CCSBT exhibits the smallest baseline fleet (509). The off-diagonal values quantify the exact multi-tRFMO overlap. The Pacific Ocean shows the highest cross-presence, with IATTC and WCPFC sharing a substantial number of 714 vessels. Conversely, the lowest co-occurrence is found between IOTC and WCPFC with only 42 shared vessels.

Below are the main countries with longline fleets, in descending order of both number (Table 3.6) and FHV (Table 3.7), across the different tRFMOs and globally. In terms of vessel count, China, P.R. (601) and Chinese T. (480) exhibit clear dominance, followed at a greater distance by Indonesia (272), Japan (166), and

Spain (164). Similarly, in terms of FHV (1000 m^3), China, P.R. (229) and Chinese T. (142) were the main flags, followed by Japan (83), Korea, Rep. (55), and Spain (33).

The East Asian distant-water longline fleet (≥ 24 m), comprising China, P.R., Chinese T., Japan and Korea, Rep., accounts for 59% in terms of vessel count and 78% in terms of FHV.

Evaluating fleet size and capacity metrics requires accounting for vessel co-occurrence across RFMO records and the fact that registration does not guarantee active regional operations. This highlights the need for dynamic annual registries that record vessels actively fishing within each convention area.

Table 3.6: Top 5 flags by number of large longliners (LOA ≥ 24m) across RFMOs and globally.

Ranking	CCSBT	IATTC	ICCAT	IOTC	WCPFC	Total
Number of vessels with LOA ≥ 24 meters						
1	IDN (207)	CHN (429)	ESP (151)	IDN (257)	CHN (418)	CHN (601)
2	ESP (92)	JPN (151)	JPN (141)	CHN (74)	TWN (346)	TWN (480)
3	JPN (81)	TWN (126)	TWN (73)	JPN (37)	JPN (100)	IDN (272)
4	TWN (77)	KOR (100)	VEN (71)	SYC (24)	KOR (98)	JPN (166)
5	ZAF (24)	ESP (62)	CHN (49)	ESP (17)	FJI (38)	ESP (164)

Table 3.7: Top 5 flags by Fish Hold volume (1000 m^3) of large longliners (LOA ≥ 24m) across RFMOs and globally.

Ranking	CCSBT	IATTC	ICCAT	IOTC	WCPFC	Total
Fish Hold Volume (1000 m3) of vessels with LOA ≥ 24m)						
1	JPN (48)	CHN (184)	JPN (67)	IDN (30)	CHN (135)	CHN (229)
2	TWN (29)	JPN (73)	TWN (36)	CHN (28)	TWN (89)	TWN (142)
3	IDN (25)	TWN (58)	ESP (28)	JPN (22)	KOR (55)	JPN (83)
4	ESP (23)	KOR (55)	CHN (26)	SYC (8)	JPN (47)	KOR (55)
5	KOR (5)	ESP (19)	VEN (7)	MAU (4)	VUT (17)	ESP (33)

As a final summary, Table 3.8 integrates the key characteristics of the longline vessel attributes evaluated in this study. The information is aggregated both globally and by individual RFMO, distinguishing between the overall registered fleet and the primary component of vessels over 24 m.

Table 3.8: Summary of statistics for the global longline fleet by RFMO and combined, for all vessels and large longliners (≥ 24m).

Metric	CCSBT	IATTC	ICCAT	IOTC	WCPFC	Total
All Vessels						
Number of vessels	670	1.777	3.318	1.557	1.762	7.288
Number of flags	9	19	30	15	17	54
Total GT	150.505	449.073	229.874	141.672	366.860	800.037
Total FHV (m^3)	145.783	450.667	221.950	123.276	388.725	765.243
Total FCC (mt)	81.579	251.757	118.910	65.540	213.832	406.098
Prop. Developed vessels (%)	48.1%	39.7%	59.9%	4.6%	68.0%	44.7%
Prop. Developed FHV (%)	76.8%	49.3%	71.9%	23.7%	58.5%	49.1%
Vessels with LOA ≥ 24m						
Number of vessels	517	1.016	630	469	1.120	2.283
Number of flags	9	16	23	14	17	46
Total GT	139.916	397.125	183.323	114.459	331.754	649.761
Total FHV (m^3)	138.409	420.279	184.197	103.757	359.568	654.585
Total FCC (mt)	78.593	239.512	105.888	59.069	203.780	366.886
Prop. Developed vessels (%)	55.3%	48.6%	67.5%	14.1%	54.8%	45.0%
Prop. Developed FHV (%)	79.5%	50.3%	77.4%	27.8%	56.0%	50.0%

4 Conclusions

- **The consolidated global longline fleet registered across tRFMOs totals 7,288 unique vessels**, with a prominent representation of East Asian nations in terms of both vessel numbers and fish hold volume (FHV).

- **Large-scale vessels (≥ 24 m in length overall) account for 31% of the fleet by number (2,283 vessels), yet concentrate 86% of the total fish hold capacity**, making this segment the most critical component for distant-water fishing and multi-regional registration.

- **Small and medium-scale fleets remain heavily underrepresented in tRFMO registries**, because these management bodies do not mandate the inclusion of smaller vessel classes.

- The reporting exemption of small and medium-scale fleets within tRFMO registries **constrains the precise estimation of global fishing effort and operational fleet capacity**.

- **Vessel co-occurrence across multiple tRFMO registries, combined with the absence of IMO numbers in approximately 40% of smaller vessels**, hampers traceability and impedes robust analyses of authorized fleets.

- **Capacity metrics, particularly Fish Hold Volume (FHV), prove to be more representative than crude vessel numbers** when evaluating the operational scale of the longline fleet.

- **The integration of standardized, complete and dynamic registries and the inclusion of smaller-scale fleets** is essential to enhance transparency, ensure traceability, and improve accuracy in global fishing effort assessments.

- Because **tRFMO registries monitor authorized vessels rather than active vessels** operating within convention areas, they do not accurately reflect actual fishing effort.

5 Recommendations

- **Mandate the inclusion of small- and medium-scale vessels in RFMO records**: Eliminating current exemptions for these fleet segments will contribute to solving some important data gaps, improving the accuracy of regional fishing effort estimates while strengthening data transparency, traceability, and catch reporting.

- **Expand RFMO records to include all vessels operating within national jurisdictions:** Requiring the registration of all fishing vessels, regardless of whether they operate inside or outside national jurisdictions, is essential to obtain precise data on total fishing effort exerted on species under tRFMOs' responsibility.

- **Establish dynamic, annualized registries for active vessels**: To mitigate the issues of multi-registry vessel co-occurrence and that registration does not imply active fishing, implementing dynamic annual tracking is essential to know precisely the vessels operating within each convention area.

- **Standardize and complete RFMO vessel records**: Address current information gaps by ensuring all registered vessels include full technical characteristics and valid IMO numbers to guarantee robust global transparency and traceability.

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Appendices

Appendix A: Relationship between vessel attributes

GT vs LOA

Results of the linear regression model between GT (tonnes)) and LOA (m) fitted with log-transformed variables: $\log(GT) \sim \log(LOA) - 1$. Using a sample of 7,096 observations, the log-linear model accounted for 95.33% of the variance in GT (Adjusted $R^2 = 0.9533, p < 0.001$).

Table A-1: Estimation of GT: Linear Regression Results.

Estimate	Std. Error	t value	Pr(>|t|)
1.3878	0.0036	380.4678	0.0000

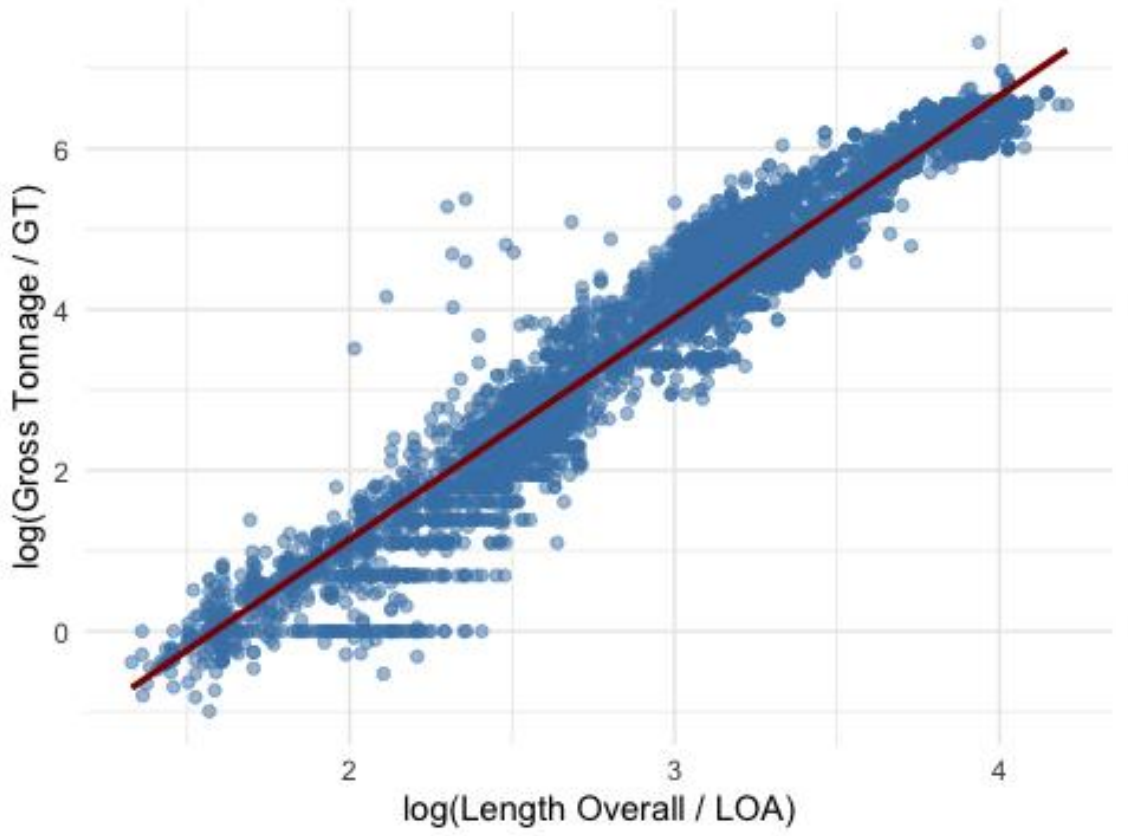

Figure A-1: Model fit showing the relationship between Length Overall (LOA) and Gross Tonnage (GT).

FHV vs LOA & GT

Results of a log-log multiple linear regression model to analyze the relationship between the dependent variable FHV and the predictors LOA and GT. The model exhibits a strong goodness-of-fit, explaining approximately 82.08% of the total variance in the dependent variable (N = 2,495, Adjusted $R^2 = 0.821$, $p < 0.001$).

Table A-2: Estimation of FHV: Linear Regression Results

Variable	Estimate	Std. Error	t value	P-value
(Intercept)	-4.1166	0.1205	-34.1530	0.0000
log(loa)	2.2872	0.0747	30.6282	0.0000
log(gt)	0.2365	0.0314	7.5338	0.0000

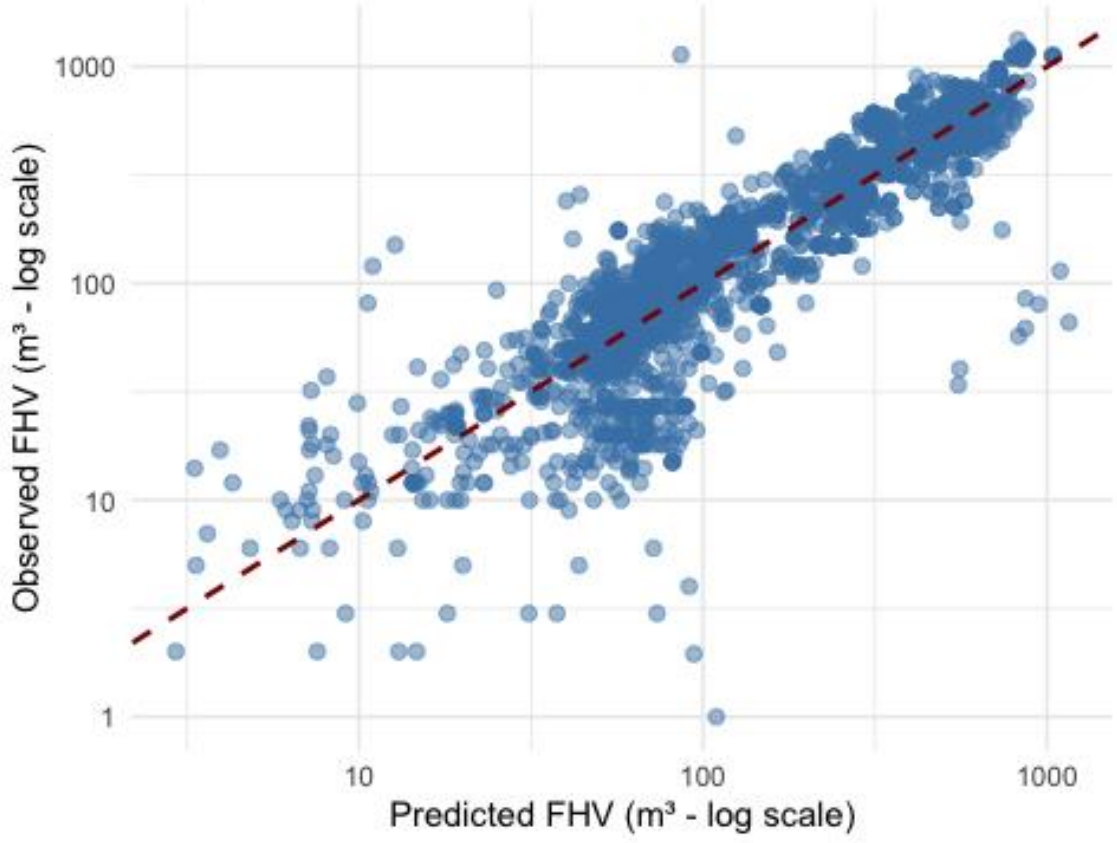

Figure A-2: Observed vs predicted Fish Hold Volume (FCC). The dashed red line represents a perfect model fit (1:1 ratio).

FCC vs LOA & GT

Results of a log-log multiple linear regression model to analyze the relationship between the dependent variable FCC and the predictors LOA and GT. The model exhibits a strong goodness-of-fit, explaining approximately 85.91% of the total variance in the dependent variable (N = 606, Adjusted $R^2 = 0.859, p < 0.001$).

Table A-3: Estimation of FCC: Linear Regression Results

Variable	Estimate	Std. Error	t value	P-value
(Intercept)	-5.6593	0.2364	-23.9351	0.0000
log(loa)	2.0791	0.1847	11.2583	0.0000
log(gt)	0.5381	0.0878	6.1295	0.0000

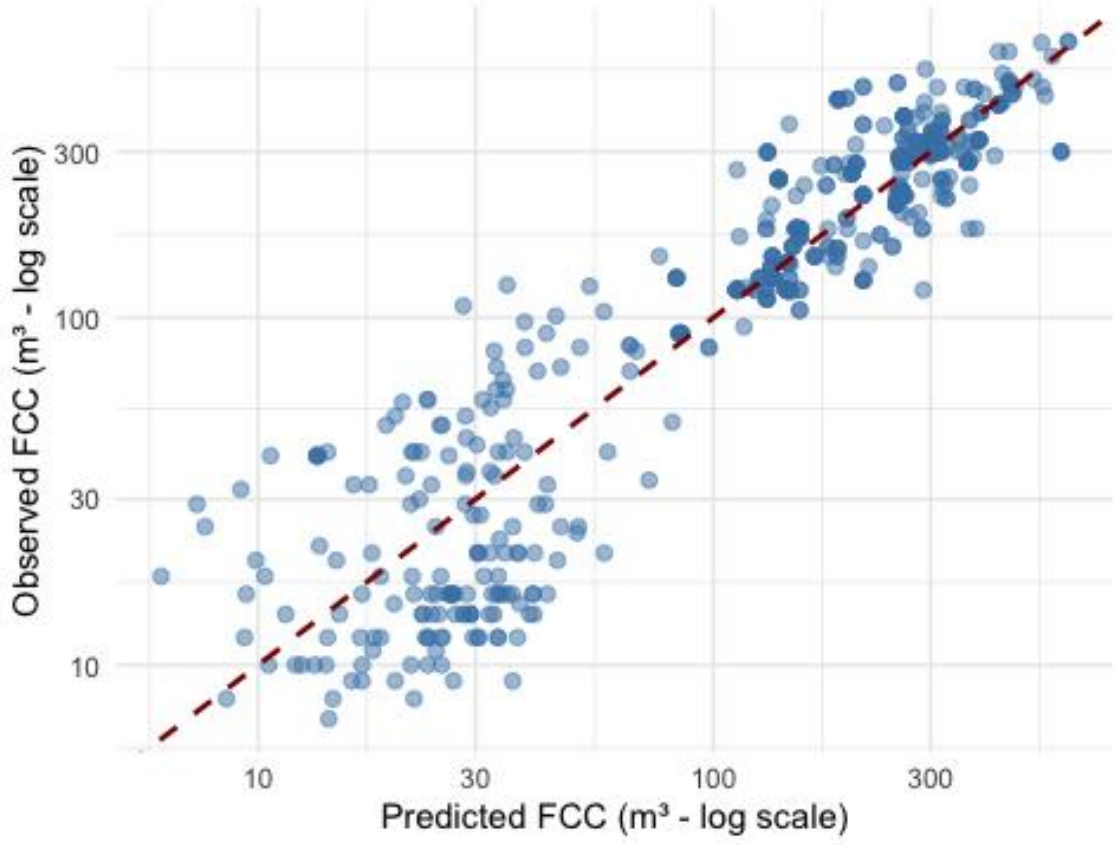

Figure A-3: Observed vs predicted Fish Carrying Capacity (FCC). The dashed red line represents a perfect model fit (1:1 ratio).

Appendix B: Characteristics of longline fleets in each tRFMOs

Appendix B presents a standardized suite of tables and figures compiled for the longline fleets registered within each of the five tuna RFMOs. These figures and tables are structured as follows:

- Summary of longline fleets (all sizes) by flag state, displaying total number of vessels and combined estimated FHV (m^3): ICCAT (Table B-1), IOTC (Table B-4), IATTC (Table B-7), WCPFC (Table B-10), CCSBT (Table B-13)
- Summary of longline fleets (>= 24m) by flag state, displaying total number of vessels and combined estimated FHV (m^3): ICCAT (Table B-2), IOTC (Table B-5), IATTC (Table B-8), WCPFC (Table B-11), CCSBT (Table B-14)
- Summary of longline vessel numbers and aggregate estimated FHV (m^3) by country economic classification group, segmented by fleet scale with totals and Developed economy percentage contribution: ICCAT (Table B-3), IOTC (Table B-6), IATTC (Table B-9), WCPFC (Table B-12), CCSBT (Table B-15)
- Number of longline vessels by flag state and size category and number of large longline vessels (>24m) by flag state registered in the tRFMOs: ICCAT (Figure B-1), IOTC (Figure B-5), IATTC (Figure B-9), WCPFC (Figure B-13), CCSBT (Figure B-17)
- Fish Hold Volume (FHV) by flag state and size category and FHV of large longline vessels (>24m) by flag state registered in the tRFMOs: ICCAT (Figure B-2), IOTC (Figure B-6), IATTC (Figure B-10), WCPFC (Figure B-14), CCSBT (Figure B-18)
- Longline vessels registered in the tRFMOs by LOA, GT, FHV and FCC: ICCAT (Figure B-3), IOTC (Figure B-7), IATTC (Figure B-11), WCPFC (Figure B-15), CCSBT (Figure B-19)
- Large longline vessels (>=24m) registered in the tRFMOs by LOA, GT, FHV and FCC: ICCAT (Figure B-4), IOTC (Figure B-8), IATTC (Figure B-12), WCPFC (Figure B-16), CCSBT (Figure B-20)

- ICCAT

Table B-1: Summary of the ICCAT registered longline fleet (all sizes) by flag state, displaying total number of vessels and combined estimated FHV (m^3).

Flag	N	FHV (m^3)	Flag	N	FHV (m^3)	Flag	N	FHV (m^3)
Algeria	436	1,485	**Côte d'Ivoire**	6	751	**Namibia**	6	1,520
Angola	1	195	**Egypt**	32	524	**Norway**	1	139
Belize	13	1,071	**France**	99	1,235	**Portugal**	39	4,634
Brazil	43	2,509	**Grenada**	1	64	**South Africa**	11	1,214
Cabo Verde	1	46	**Italy**	766	9,676	**Spain**	209	29,957
Canada	3	286	**Japan**	141	66,910	**Suriname**	17	874
China, P.R.	49	25,625	**Korea, Rep.**	9	5,022	**Trinidad & T.**	11	652
Chinese T.	73	36,283	**Malta**	583	2,487	**Turkey**	107	491
Croatia	3	15	**Mexico**	1	49	**USA**	27	1,854
Cyprus	33	975	**Morocco**	491	16,036	**Venezuela**	106	9,371
						Total	**3,318**	**221,950**

Table B-2: Summary of the ICCAT registered longline fleet (>= 24m) by flag state, displaying total number of vessels and combined estimated FHV (m^3).

Flag	N	FHV (m^3)	Flag	N	FHV (m^3)	Flag	N	FHV (m^3)
Angola	1	195	**France**	1	96	**Norway**	1	139
Belize	9	830	**Grenada**	1	64	**Portugal**	31	4,304
Brazil	14	1,046	**Italy**	5	430	**South Africa**	8	1,042
Canada	2	239	**Japan**	141	66,910	**Spain**	151	27,873
China, P.R.	49	25,625	**Korea, Rep.**	9	5,022	**Trinidad & T.**	4	332
Chinese T.	73	36,283	**Malta**	3	219	**USA**	4	668
Cyprus	4	352	**Morocco**	42	3,274	**Venezuela**	71	7,370
Côte d'Ivoire	1	448	**Namibia**	5	1,437			
						Total	**630**	**184,198**

Table B-3: Summary of ICCAT longline vessel distribution and aggregate estimated FHV (m^3) by country economic classification group, segmented by fleet scale with totals and Developed economy percentage contribution.

	All Vessels		Vessels >= 24m LOA	
Economy Group	**Vessels**	**FHV (m^3)**	**Vessels**	**FHV (m^3)**
Developed	1,986	159,472	425	142,534
Other	1,332	62,478	205	41,664
Total	**3,318**	**221,950**	**630**	**184,197**
% Developed	**59.9%**	**71.9%**	**67.5%**	**77.4%**

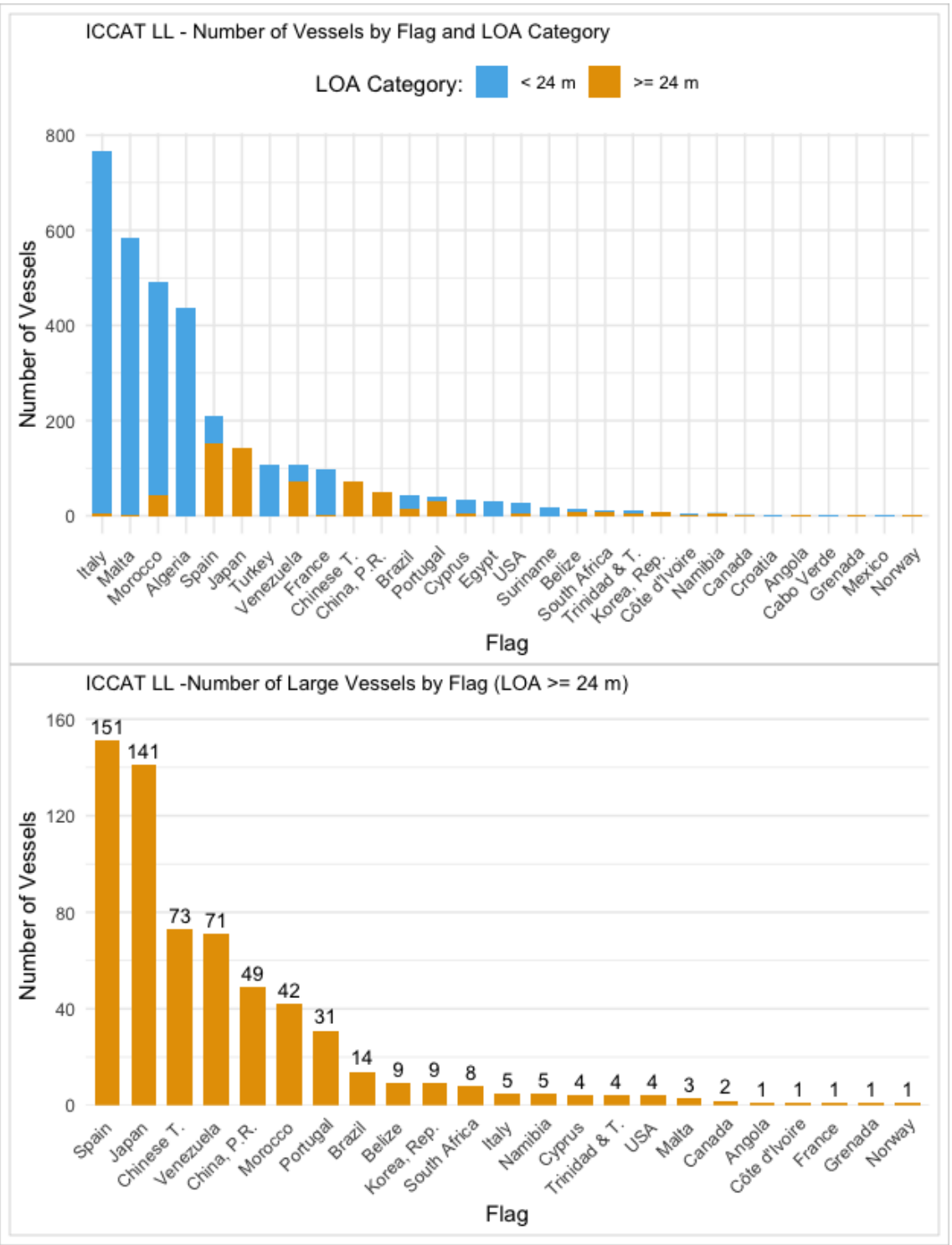

Figure B-1: Number of vessels by flag state and size category and number of large longline vessels (>24m) by flag state registered in ICCAT.

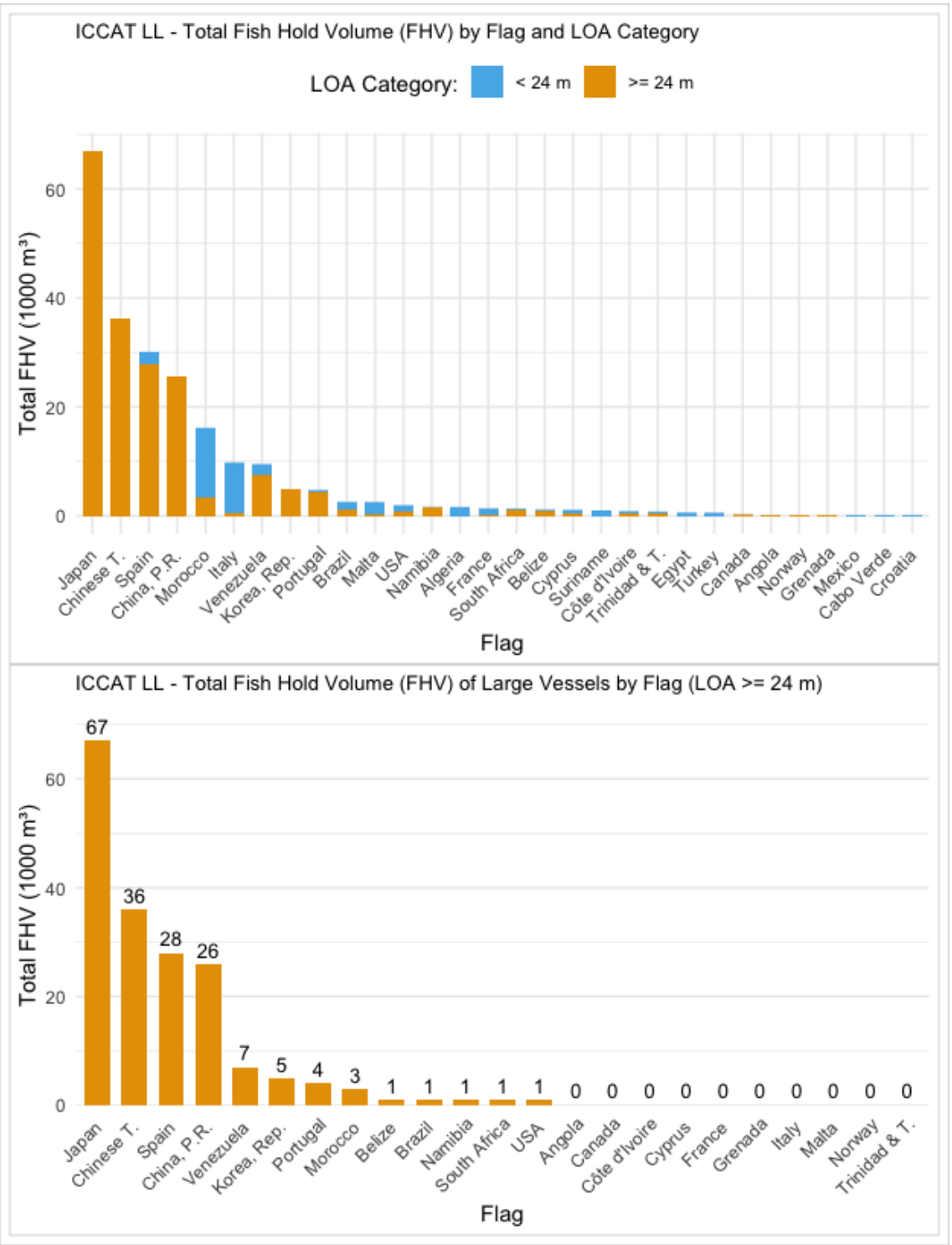

Figure B-2: Fish Hold Volume (FHV) by flag state and size category and FHV of large longline vessels (>24m) by flag state registered in ICCAT.

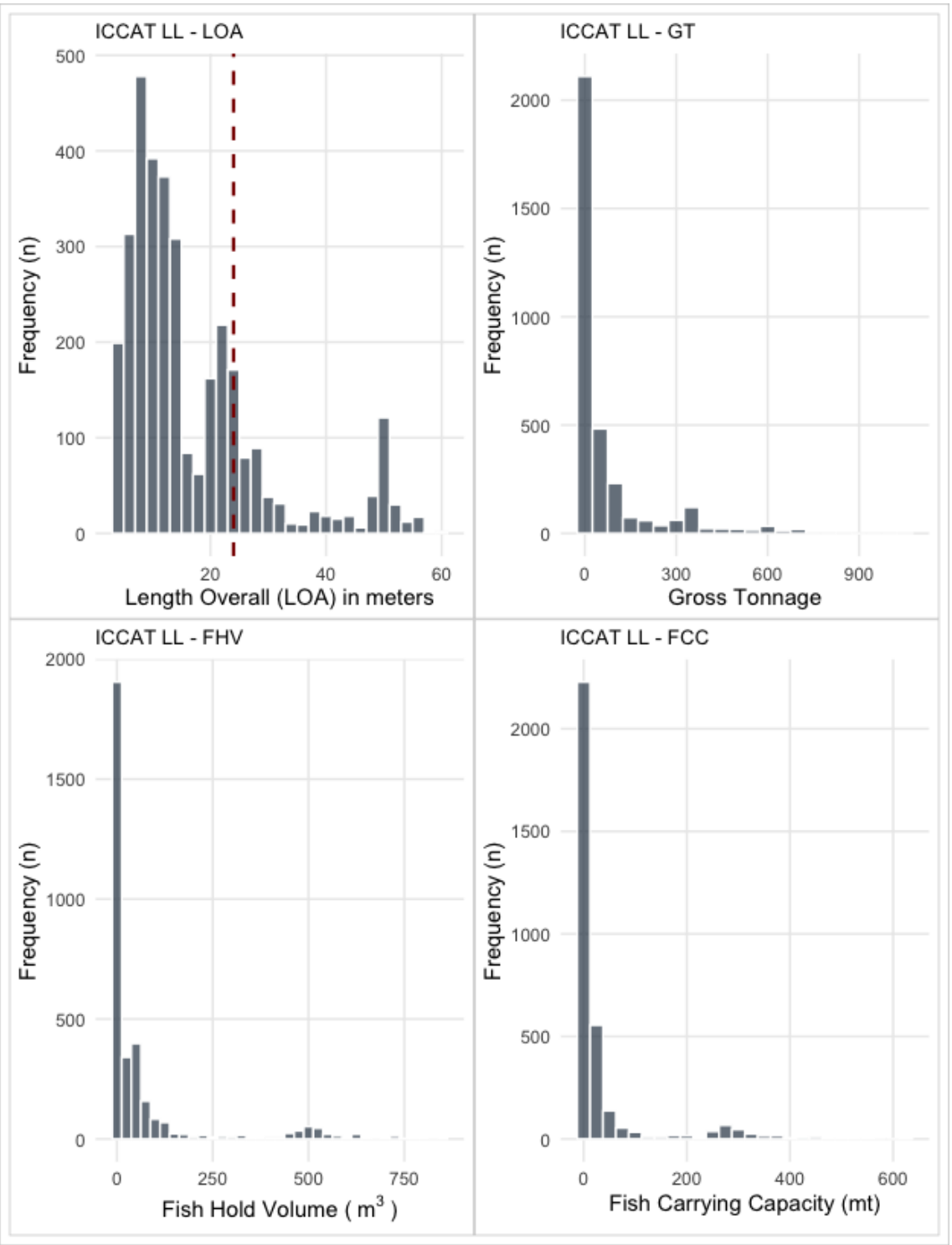

Figure B-3: Longline vessels registered in ICCAT by LOA, GT, FHV and FCC

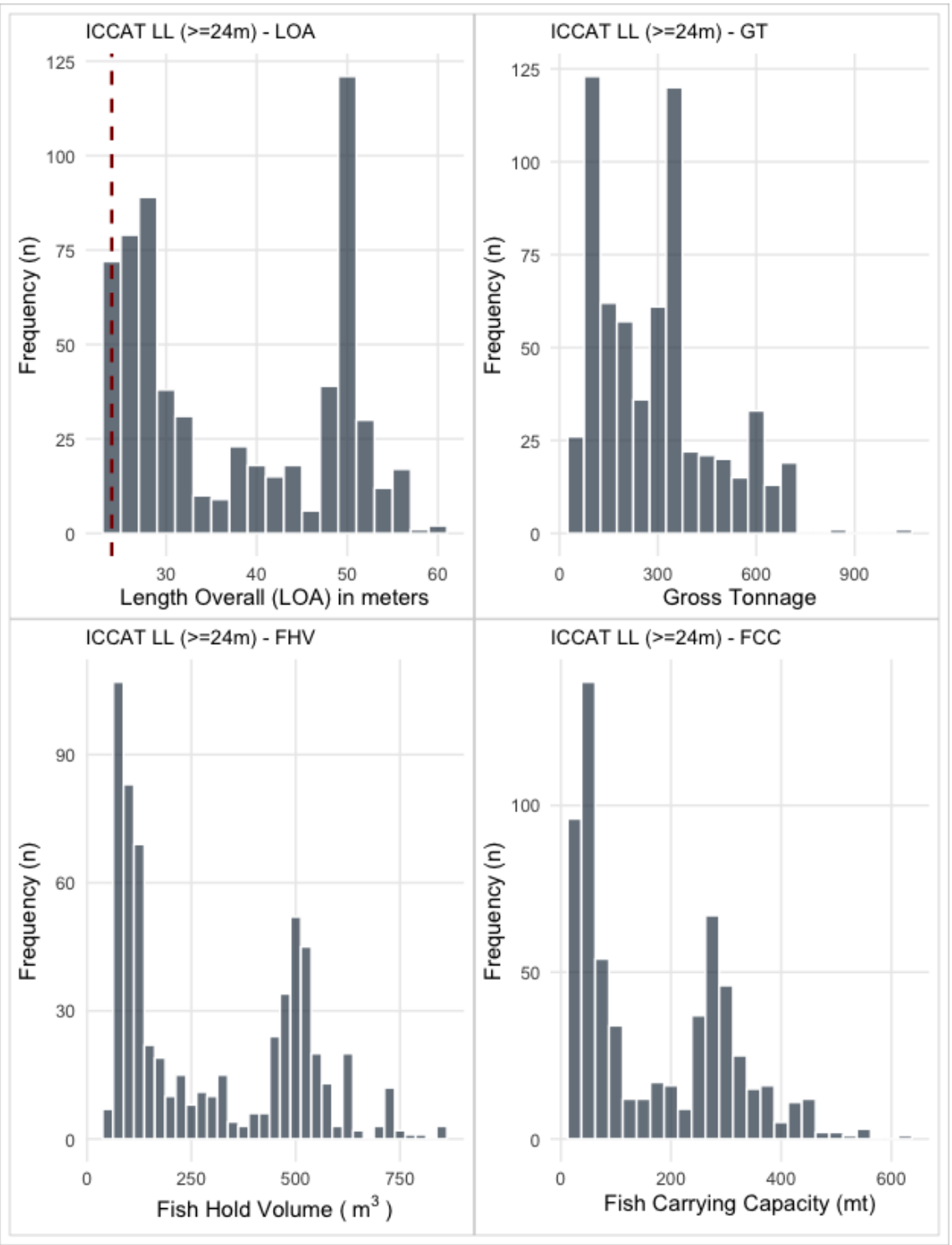

Figure B-4: Large longline vessels (>=24m) registered in ICCAT by LOA, GT, FHV and FCC

- IOTC

Table B-4: Summary of the IOTC registered longline fleet (all sizes) by flag state, displaying total number of vessels and combined estimated FHV (m^3).

Flag	N	FHV (m^3)	Flag	N	FHV (m^3)	Flag	N	FHV (m^3)
Australia	11	1,104	**Madagascar**	5	87	**Seychelles**	68	8,713
China, P.R.	74	27,927	**Malaysia**	15	1,505	**South Africa**	18	1,616
Indonesia	372	34,707	**Mauritius**	16	4,328	**Spain**	17	3,366
Japan	37	21,771	**Oman**	4	2,019	**Sri Lanka**	912	13,100
Korea, Rep.	4	2,277	**Portugal**	3	686	**Tanzania**	1	71
						Total	**1,557**	**123,277**

Table B-5: Summary of the IOTC registered longline fleet (>= 24m) by flag state, displaying total number of vessels and combined estimated FHV (m^3).

Flag	N	FHV (m^3)	Flag	N	FHV (m^3)	Flag	N	FHV (m^3)
Australia	5	742	**Malaysia**	15	1,505	**South Africa**	8	1,046
China, P.R.	74	27,927	**Mauritius**	16	4,328	**Spain**	17	3,366
Indonesia	257	29,694	**Oman**	4	2,019	**Sri Lanka**	4	407
Japan	37	21,771	**Portugal**	3	686	**Tanzania**	1	71
Korea, Rep.	4	2,277	**Seychelles**	24	7,919			
						Total	**469**	**103,758**

Table B-6: Summary of IOTC longline vessel distribution and aggregate estimated FHV (m^3) by country economic classification group, segmented by fleet scale with totals and Developed economy percentage contribution.

	All Vessels		Vessels >= 24m LOA	
Economy Group	**Vessels**	**FHV (m^3)**	**Vessels**	**FHV (m^3)**
Developed	72	29,203	66	28,841
Other	1,485	94,073	403	74,915
Total	**1,557**	**123,276**	**469**	**103,757**
% Developed	**4.6%**	**23.7%**	**14.1%**	**27.8%**

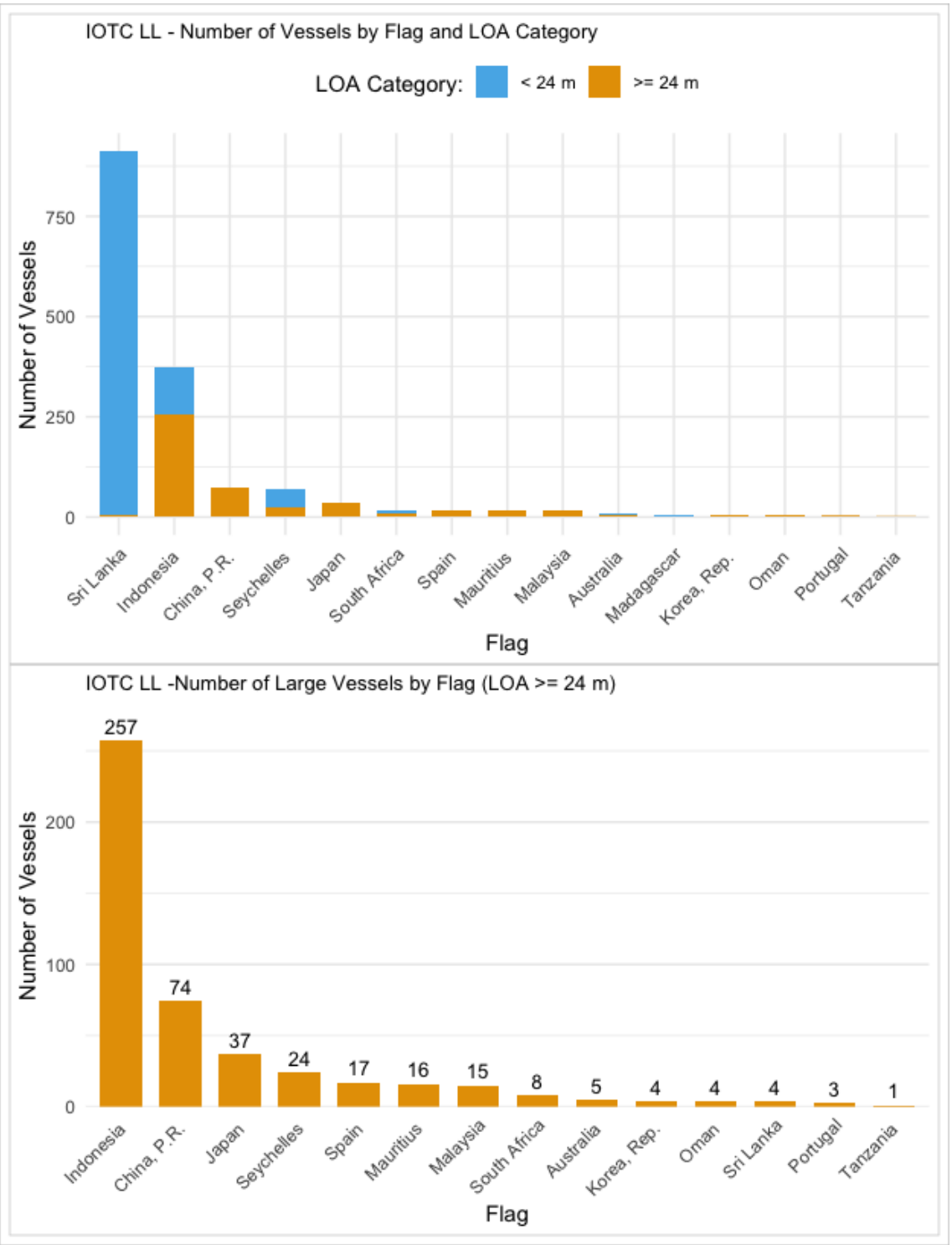

Figure B-5: Number of vessels by flag state and size category and number of large longline vessels (>24m) by flag state registered in IOTC.

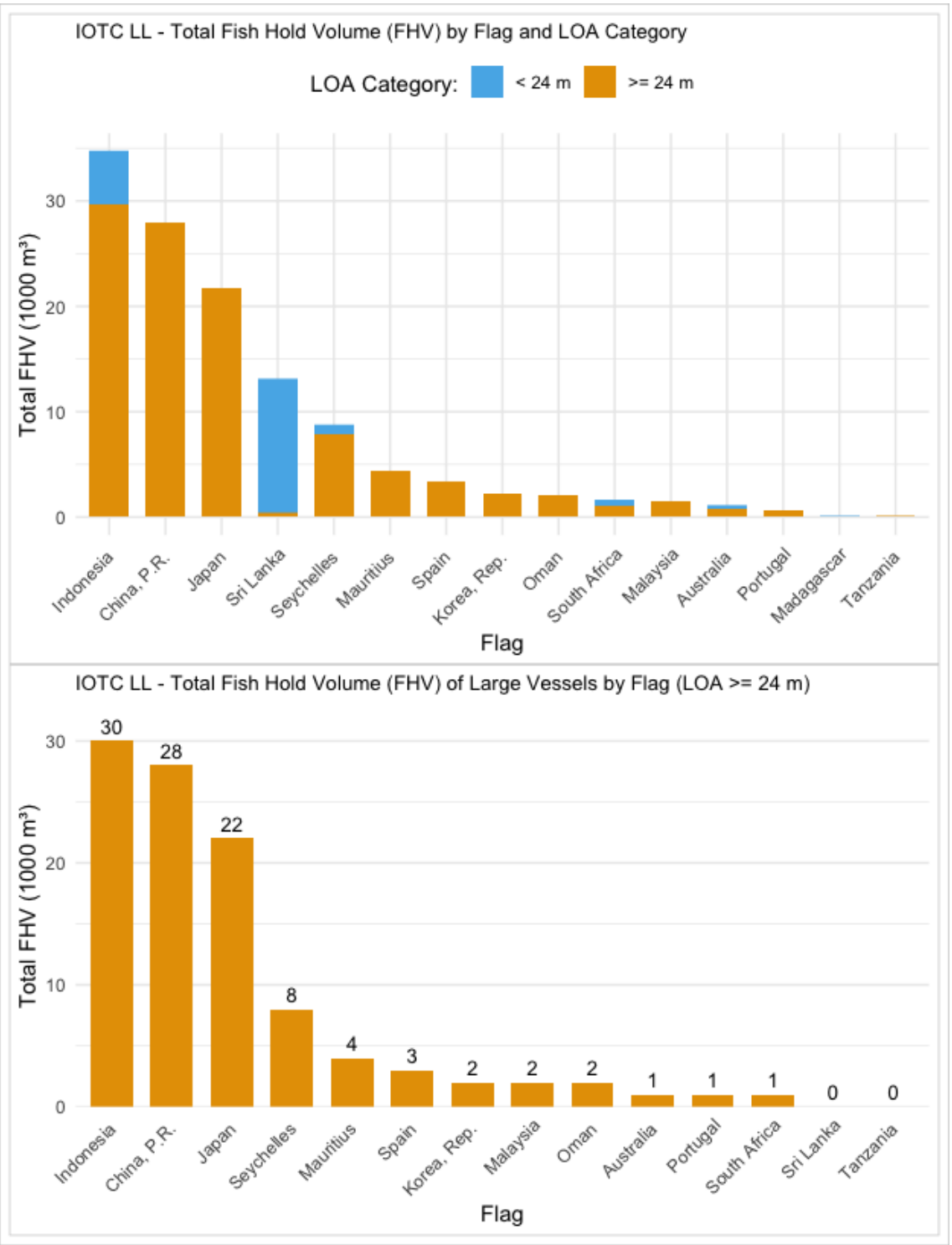

Figure B-6: Fish Hold Volume (FHV) by flag state and size category and FHV of large longline vessels (>24m) by flag state registered in IOTC.

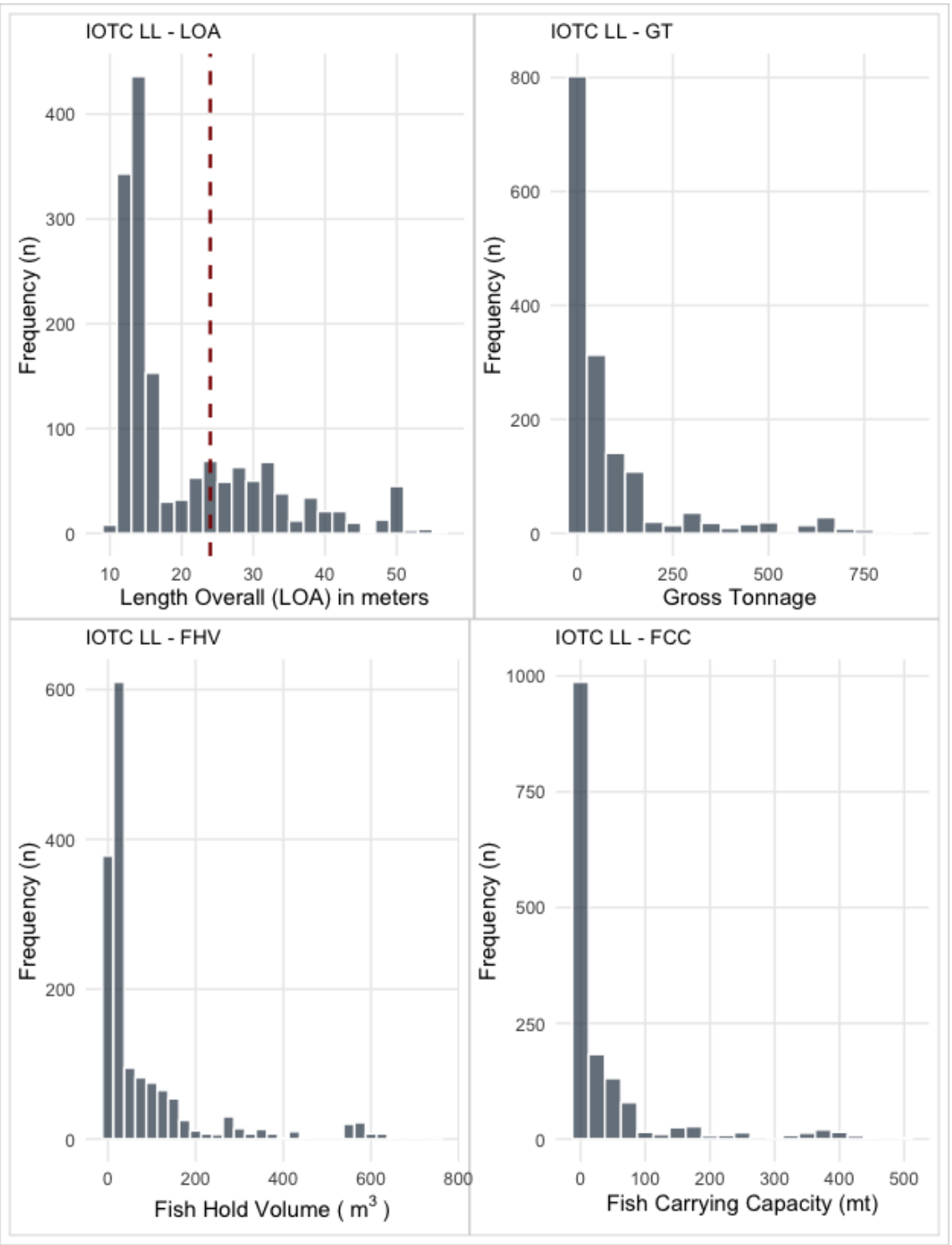

Figure B-7: Longline vessels registered in IOTC by LOA, GT, FHV and FCC

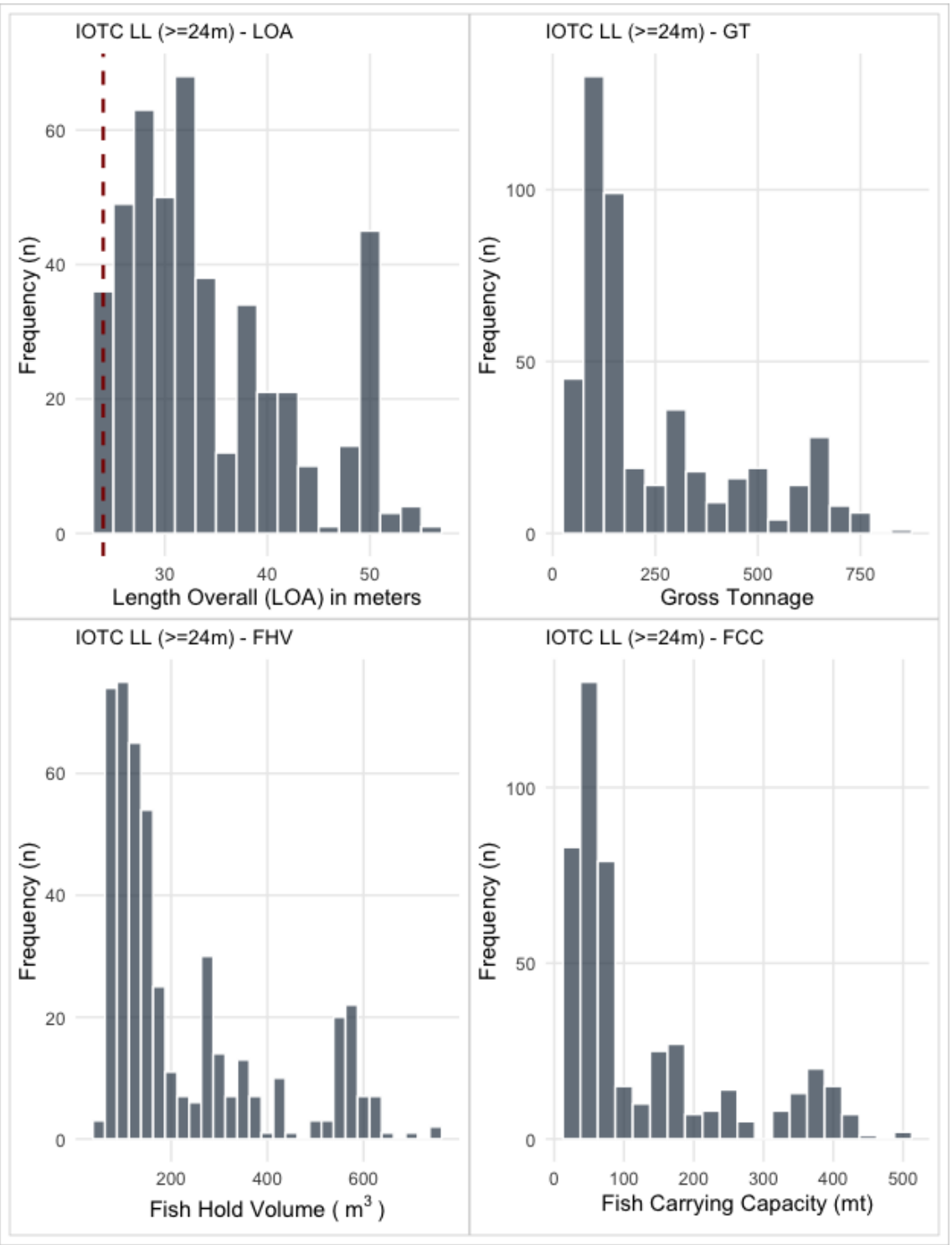

Figure B-8: Large longline vessels (>=24m) registered in IOTC by LOA, GT, FHV and FCC

- IATTC

Table B-7: Summary of the IATTC registered longline fleet (all sizes) by flag state, displaying total number of vessels and combined estimated FHV (m^3).

Flag	N	FHV (m^3)	Flag	N	FHV (m^3)	Flag	N	FHV (m^3)
Chile	8	271	**Guatemala**	22	163	**Portugal**	12	2,869
China, P.R.	429	183,558	**Japan**	151	72,775	**Spain**	62	19,372
Chinese T.	126	57,523	**Korea, Rep.**	100	54,760	**USA**	154	9,902
Costa Rica	150	2,182	**Mexico**	210	10,307	**Vanuatu**	28	13,523
Ecuador	122	14,232	**Nicaragua**	50	1,001	**Venezuela**	1	58
El Salvador	1	35	**Panama**	57	2,690			
France	92	4,891	**Peru**	2	557			
						Total	**1,777**	**450,669**

Table B-8: Summary of the IATTC registered longline fleet (>= 24m) by flag state, displaying total number of vessels and combined estimated FHV (m^3).

Flag	N	FHV (m^3)	Flag	N	FHV (m^3)	Flag	N	FHV (m^3)
Chile	1	58	**Japan**	151	72,775	**Portugal**	12	2,869
China, P.R.	429	183,558	**Korea, Rep.**	100	54,760	**Spain**	62	19,372
Chinese T.	126	57,523	**Mexico**	35	3,158	**USA**	35	3,269
Costa Rica	2	151	**Nicaragua**	4	567	**Vanuatu**	24	13,045
Ecuador	21	6,794	**Panama**	6	1,270			
France	7	616	**Peru**	1	495			
						Total	**1,016**	**420,280**

Table B-9: Summary of IATTC longline vessel distribution and aggregate estimated FHV (m^3) by country economic classification group, segmented by fleet scale with totals and Developed economy percentage contribution.

	All Vessels		Vessels >= 24m LOA	
Economy Group	**Vessels**	**FHV (m^3)**	**Vessels**	**FHV (m^3)**
Developed	705	222,362	494	211,241
Other	1,072	228,305	522	209,038
Total	**1,777**	**450,667**	**1,016**	**420,279**
% Developed	**39.7%**	**49.3%**	**48.6%**	**50.3%**

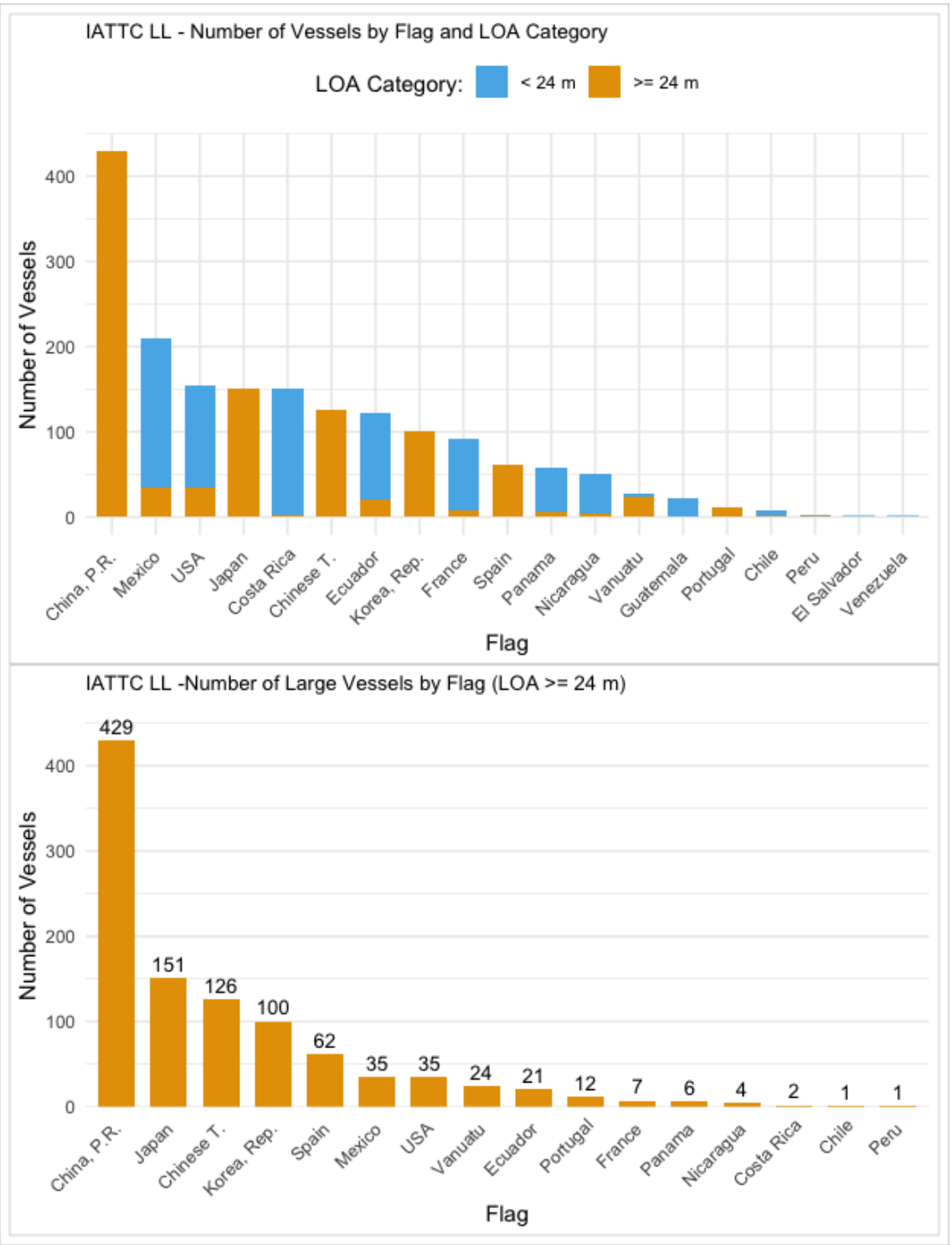

Figure B-9: Number of vessels by flag state and size category and number of large longline vessels (>24m) by flag state registered in IATTC.

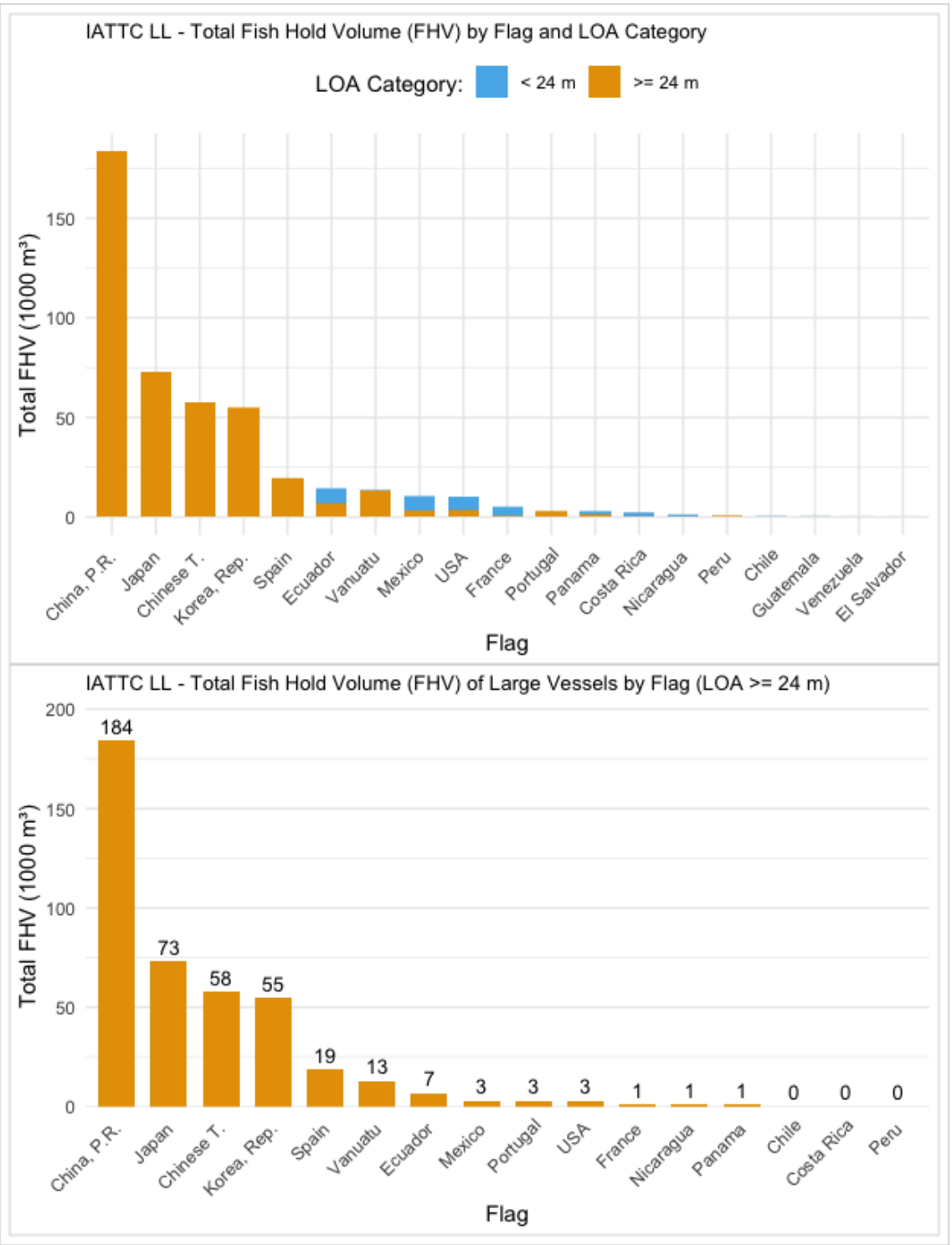

Figure B-10: Fish Hold Volume (FHV) by flag state and size category and FHV of large longline vessels (>24m) by flag state registered in IATTC.

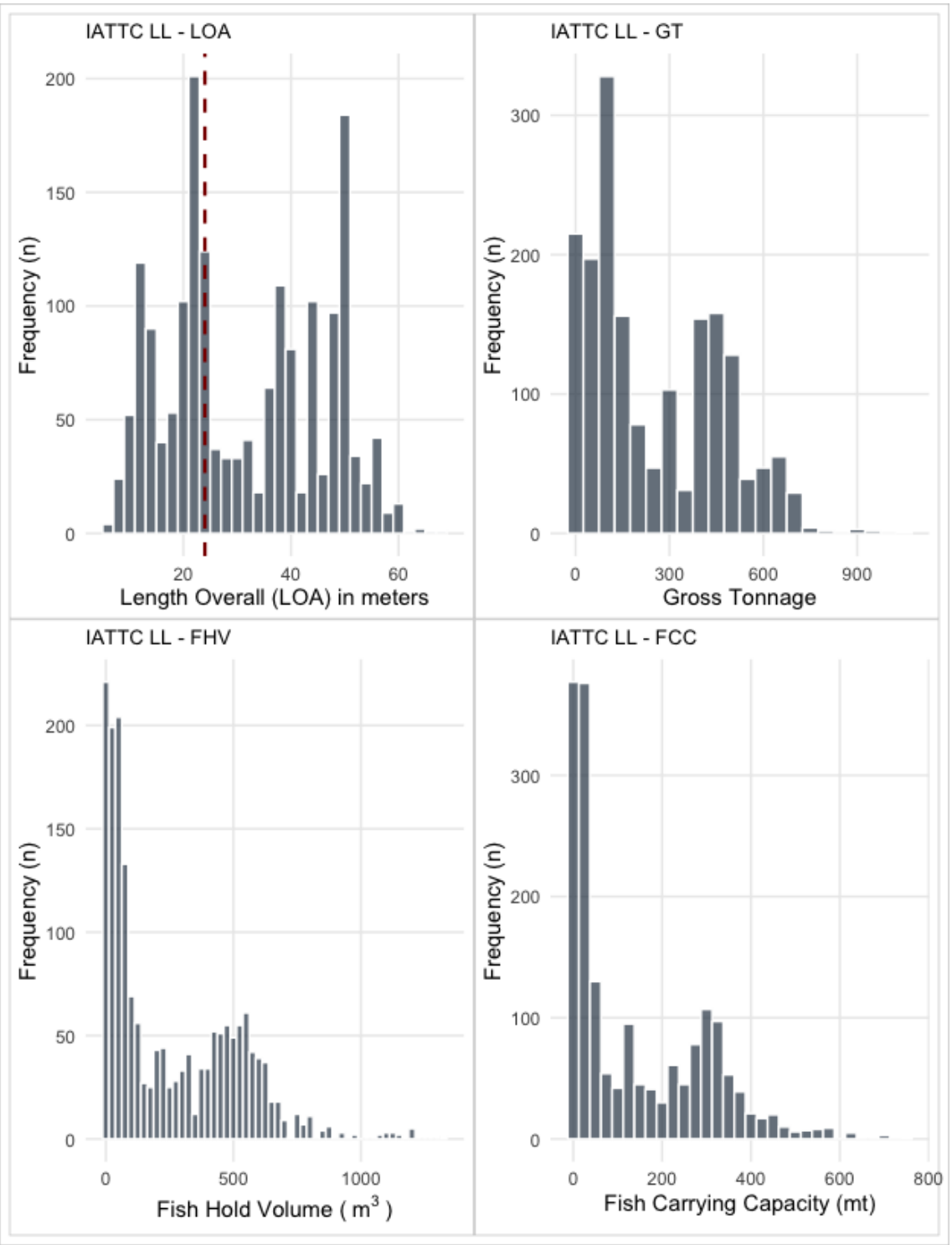

Figure B-11: Longline vessels registered in IATTC by LOA, GT, FHV and FCC

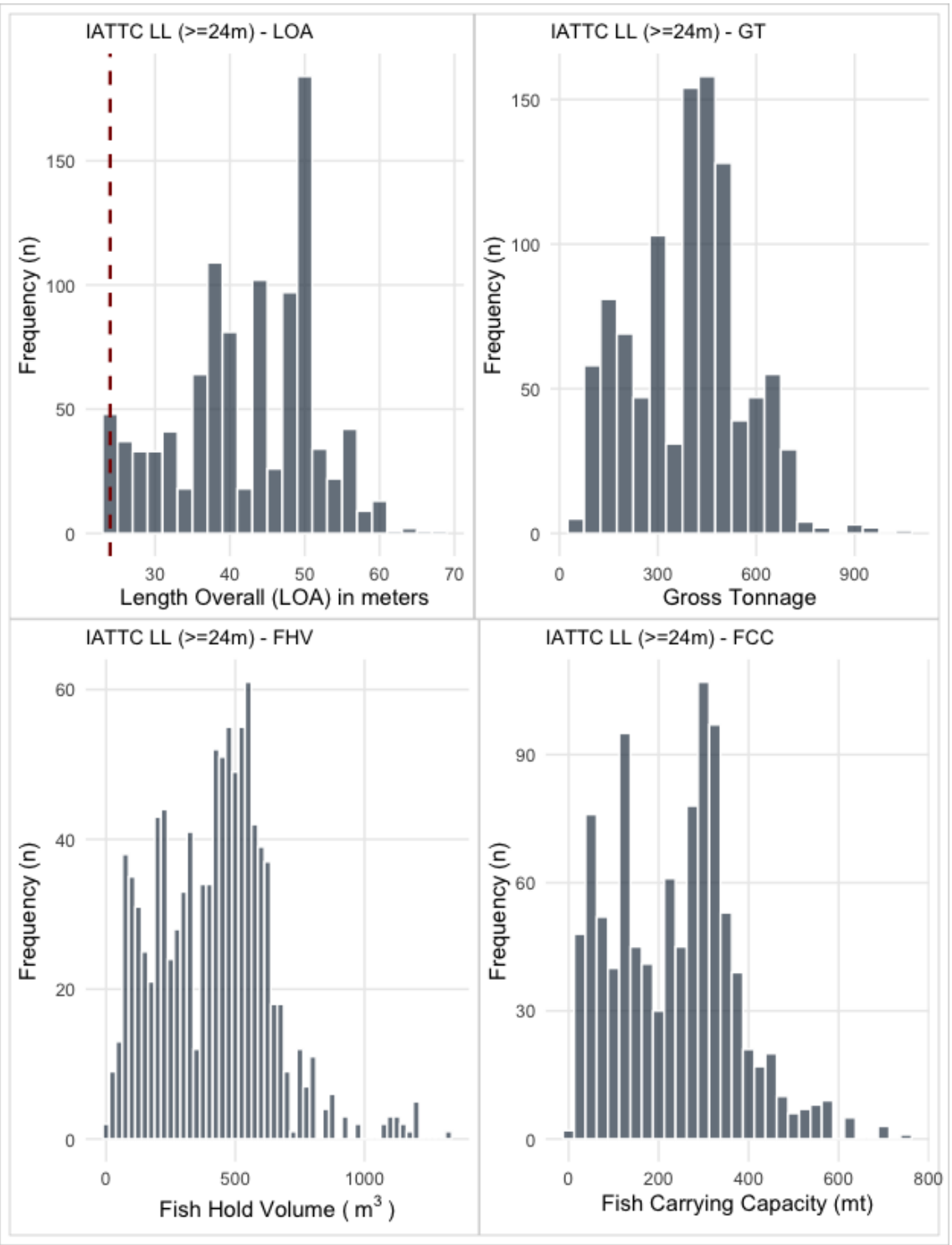

Figure B-12: Large longline vessels (>=24m) registered in IATTC by LOA, GT, FHV and FCC

- WCPFC

Table B-10: Summary of the WCPFC registered longline fleet (all sizes) by flag state, displaying total number of vessels and combined estimated FHV (m^3).

Flag	N	FHV (m^3)	Flag	N	FHV (m^3)	Flag	N	FHV (m^3)
Australia	40	2,091	**Indonesia**	14	1,156	**Portugal**	10	2,434
China, P.R.	429	135,995	**Japan**	300	54,838	**Spain**	13	4,651
Chinese T.	489	96,591	**Kiribati**	5	773	**Tonga**	3	95
FS Micronesia	11	775	**Korea, Rep.**	98	54,789	**USA**	155	7,068
Fiji	50	3,913	**N. Caledonia**	14	399	**Vanuatu**	36	17,615
France	93	4,911	**PN Guinea**	2	629			
						Total	**1,762**	**388,723**

Table B-11: Summary of the WCPFC registered longline fleet (>= 24m) by flag state, displaying total number of vessels and combined estimated FHV (m^3).

Flag	N	FHV (m^3)	Flag	N	FHV (m^3)	Flag	N	FHV (m^3)
Australia	6	824	**Indonesia**	4	487	**Portugal**	10	2,434
China, P.R.	418	135,071	**Japan**	100	46,678	**Spain**	13	4,651
Chinese T.	346	88,674	**Kiribati**	5	773	**Tonga**	1	45
FS Micronesia	8	680	**Korea, Rep.**	98	54,789	**USA**	34	2,818
Fiji	38	3,468	**New Caledonia**	1	65	**Vanuatu**	29	16,865
France	7	616	**PN Guinea**	2	629			
						Total	**1,120**	**359,567**

Table B-12: Summary of WCPFC longline vessel distribution and aggregate estimated FHV (m^3) by country economic classification group, segmented by fleet scale with totals and Developed economy percentage contribution.

	All Vessels		Vessels >= 24m LOA	
Economy Group	**Vessels**	**FHV (m^3)**	**Vessels**	**FHV (m^3)**
Developed	1,198	227,374	614	201,485
Other	564	161,351	506	158,083
Total	**1,762**	**388,725**	**1,120**	**359,568**
% Developed	**68%**	**58.5%**	**54.8%**	**56%**

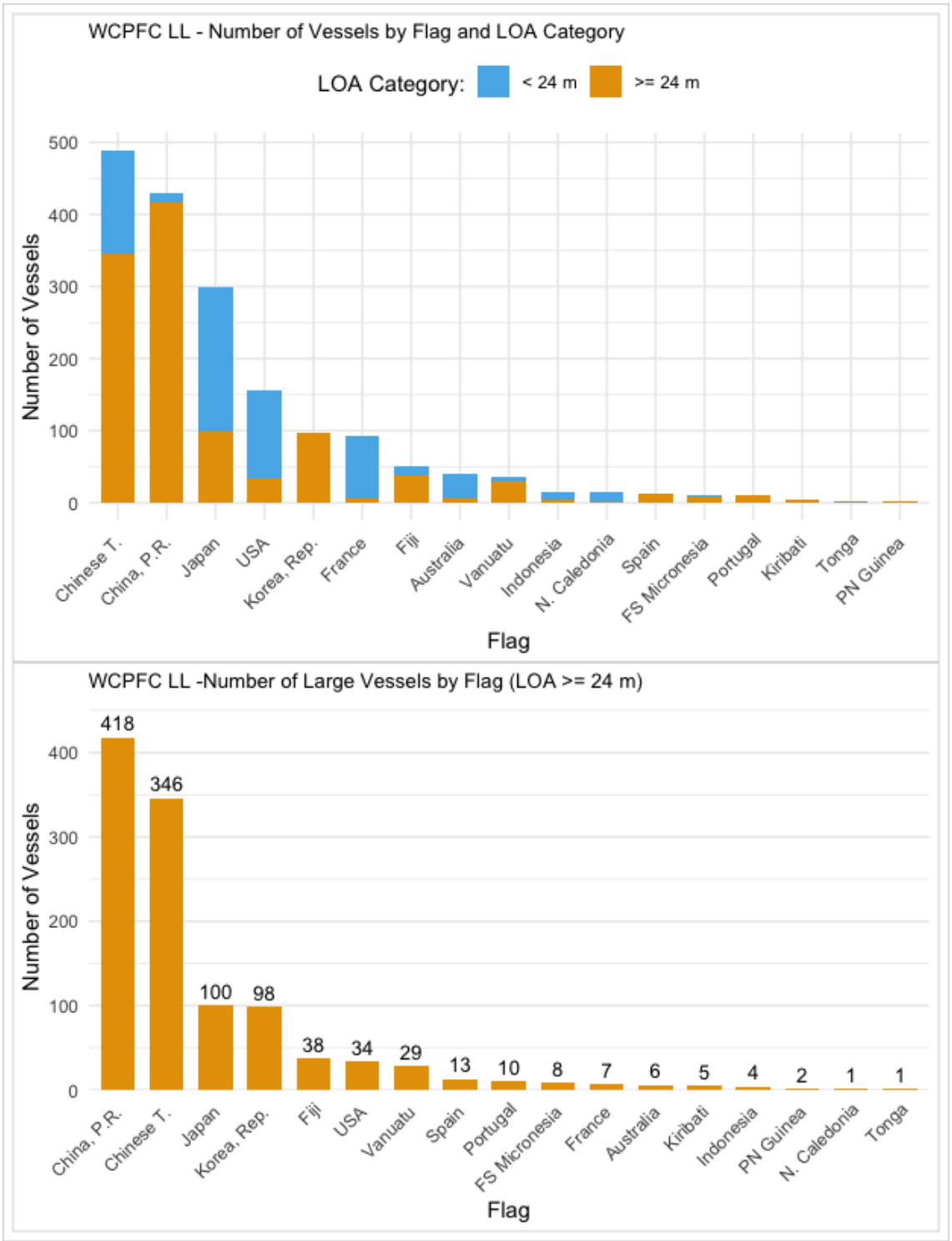

Figure B-13: Number of vessels by flag state and size category and number of large longline vessels (>24m) by flag state registered in WCPFC.

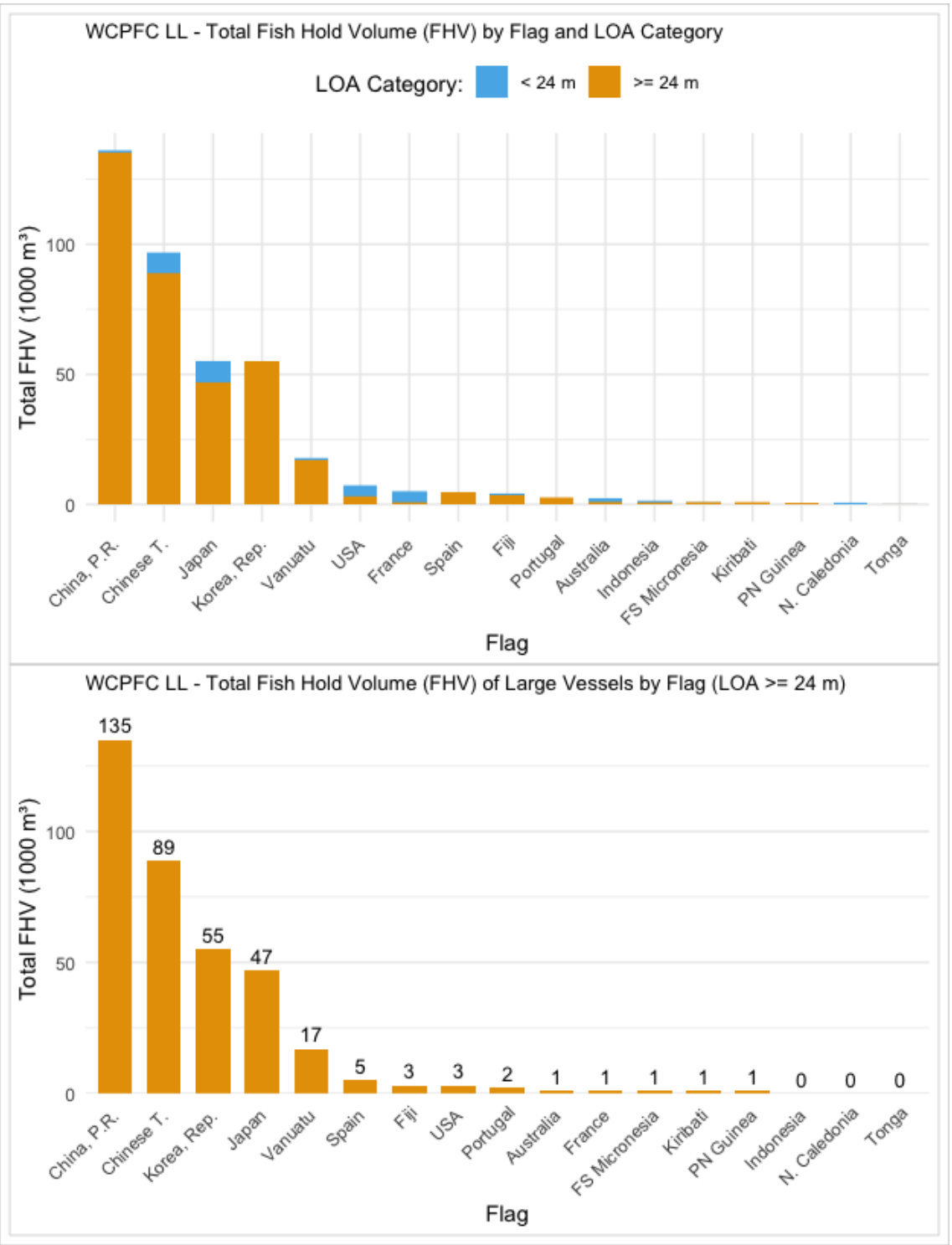

Figure B-14: Fish Hold Volume (FHV) by flag state and size category and FHV of large longline vessels (>24m) by flag state registered in WCPFC.

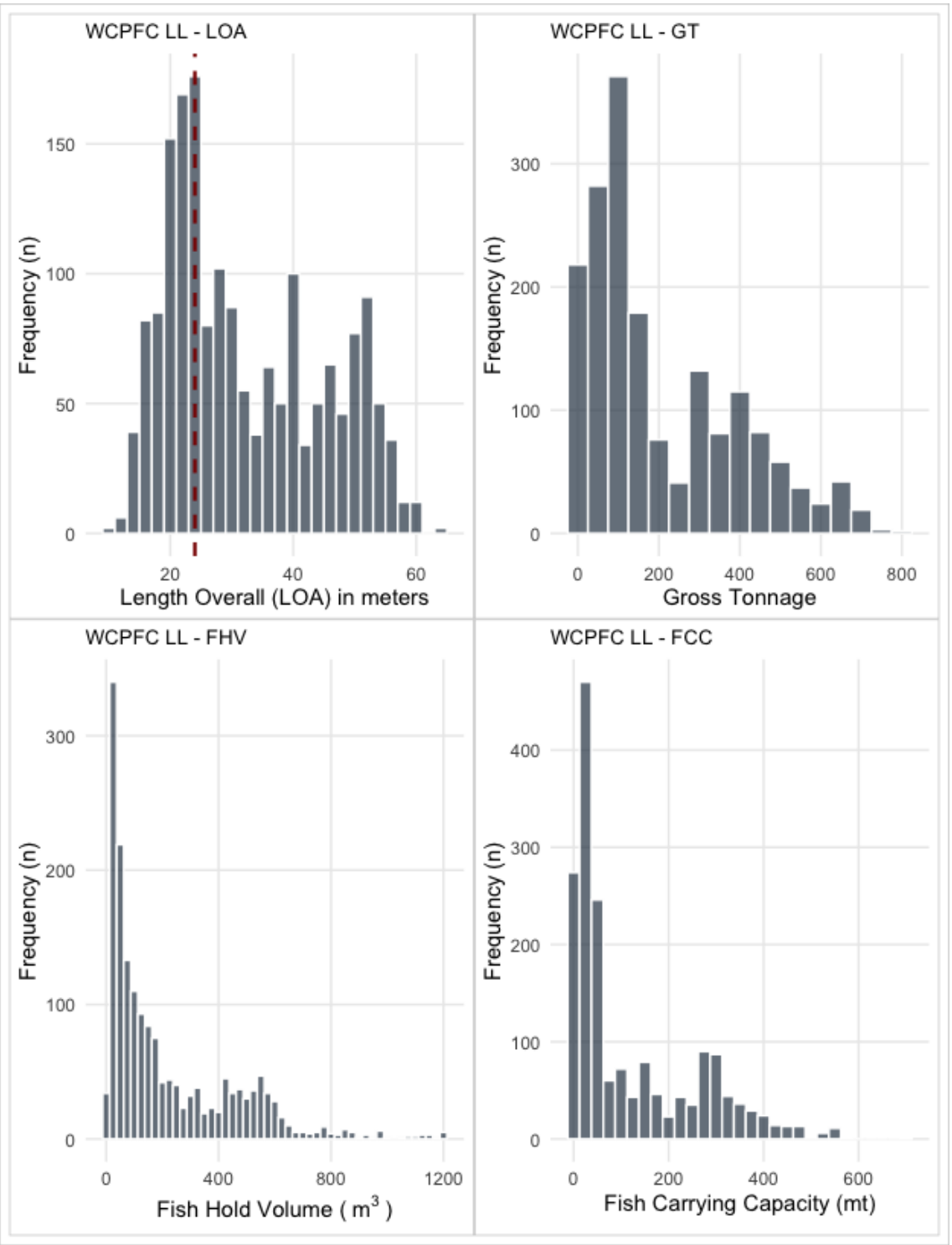

Figure B-15: Longline vessels registered in WCPFC by LOA, GT, FHV and FCC

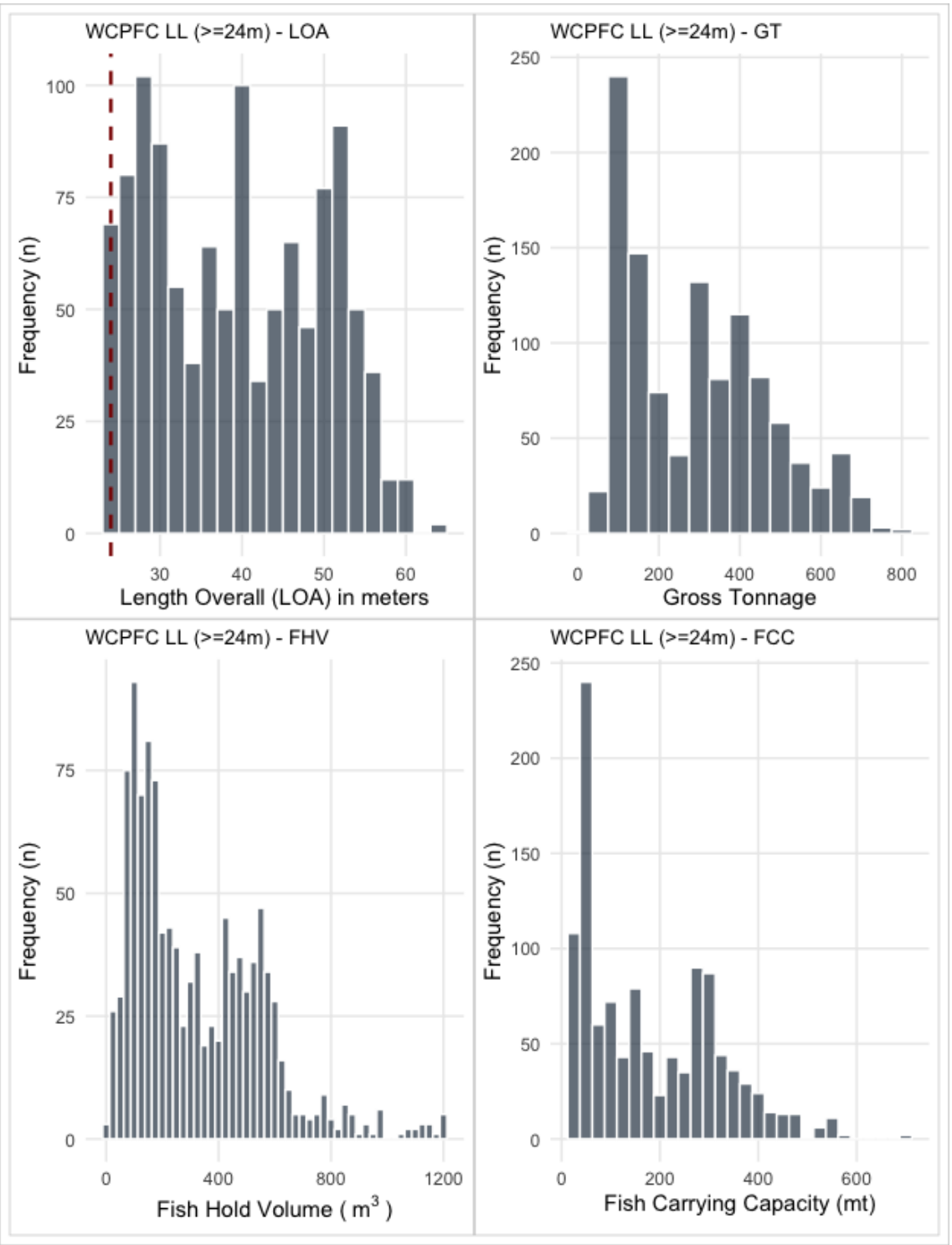

Figure B-16: Large longline vessels (>=24m) registered in WCPFC by LOA, GT, FHV and FCC

- CCSBT

Table B-13: Summary of the CCSBT registered longline fleet (all sizes) by flag state, displaying total number of vessels and combined estimated FHV (m^3).

Flag	N	FHV (m^3)	Flag	N	FHV (m^3)	Flag	N	FHV (m^3)
Australia	38	2,316	**Japan**	81	48,143	**Portugal**	21	4,024
Chinese T.	77	29,131	**Korea, Rep.**	9	4,768	**South Africa**	49	4,575
Indonesia	299	29,189	**New Zealand**	4	969	**Spain**	92	22,668
						Total	**670**	**145,783**

Table B-14: Summary of the CCSBT registered longline fleet (>= 24m) by flag state, displaying total number of vessels and combined estimated FHV (m^3).

Flag	N	FHV (m^3)	Flag	N	FHV (m^3)	Flag	N	FHV (m^3)
Australia	5	578	**Japan**	81	48,143	**Portugal**	20	3,944
Chinese T.	77	29,131	**Korea, Rep.**	9	4,768	**South Africa**	24	3,084
Indonesia	207	25,235	**New Zealand**	2	858	**Spain**	92	22,668
						Total	**517**	**138,409**

Table B-15: Summary of CCSBT longline vessel distribution and aggregate estimated FHV (m^3) by country economic classification group, segmented by fleet scale with totals and Developed economy percentage contribution.

	All Vessels		Vessels >= 24m LOA	
Economy Group	**Vessels**	**FHV (m^3)**	**Vessels**	**FHV (m^3)**
Developed	322	112,019	286	110,090
Other	348	33,763	231	28,319
Total	**670**	**145,783**	**517**	**138,409**
% Developed	**48.1%**	**76.8%**	**55.3%**	**79.5%**

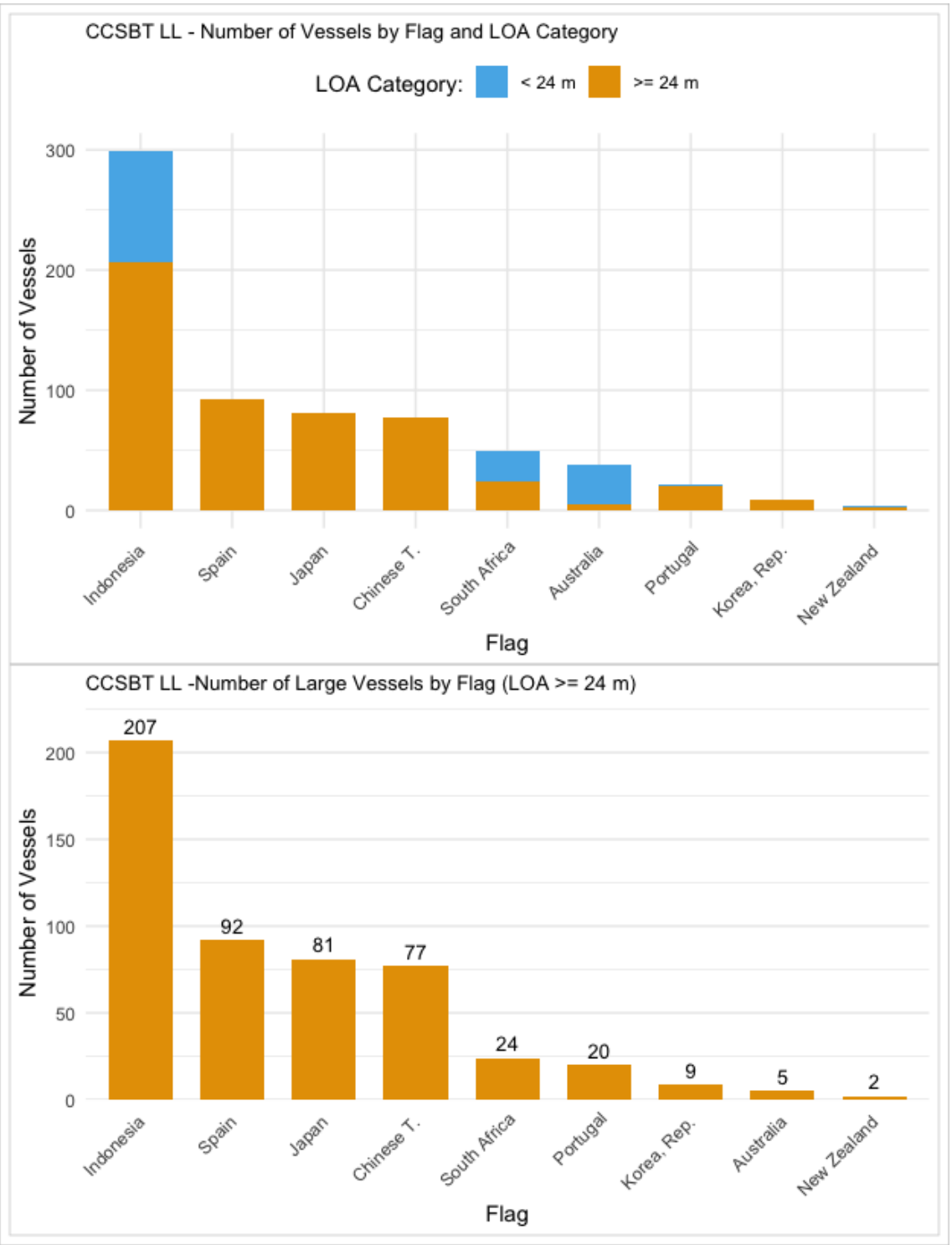

Figure B-17: Number of vessels by flag state and size category and number of large longline vessels (>24m) by flag state registered in CCSBT.

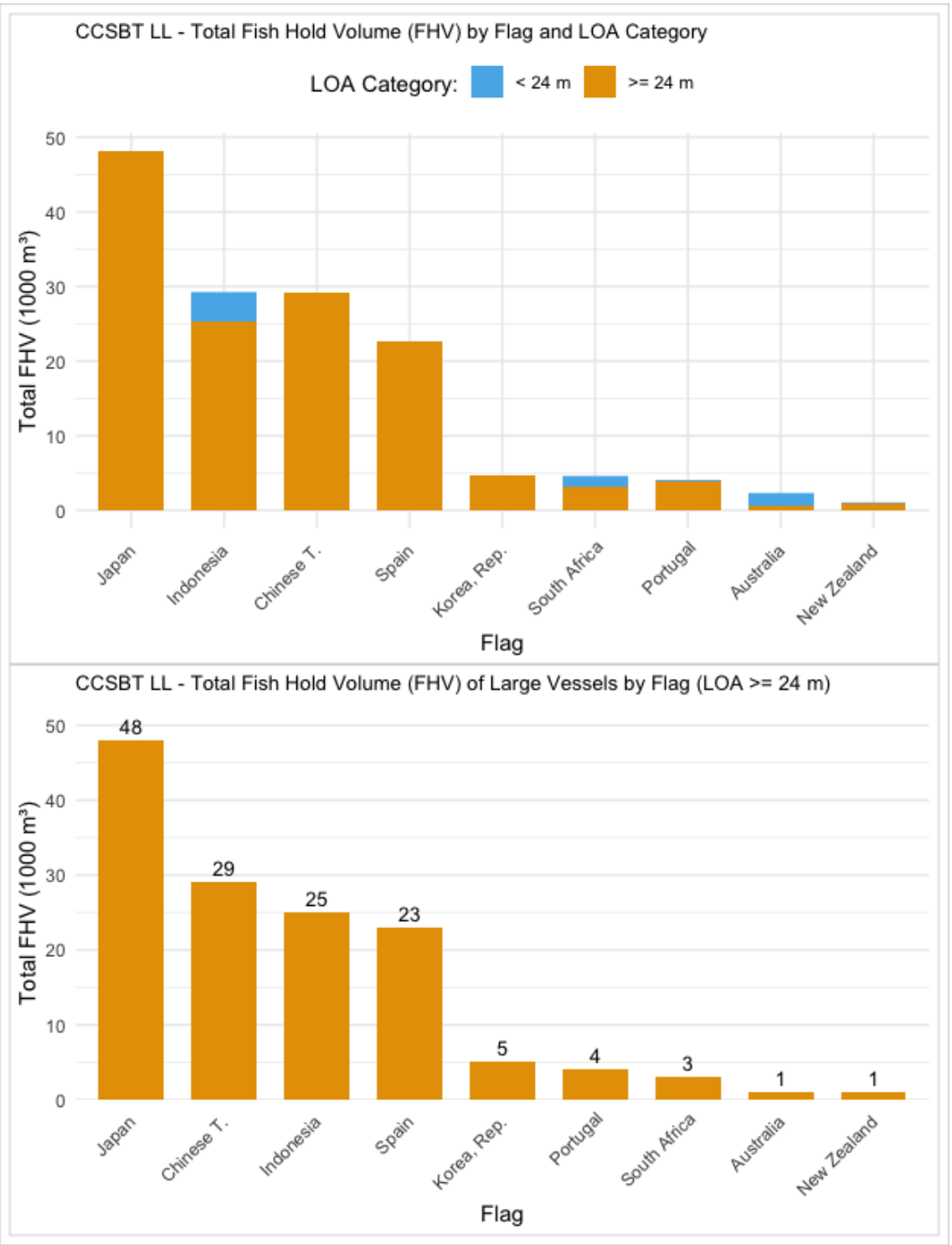

Figure B-18: Fish Hold Volume (FHV) by flag state and size category and FHV of large longline vessels (>24m) by flag state registered in CCSBT.

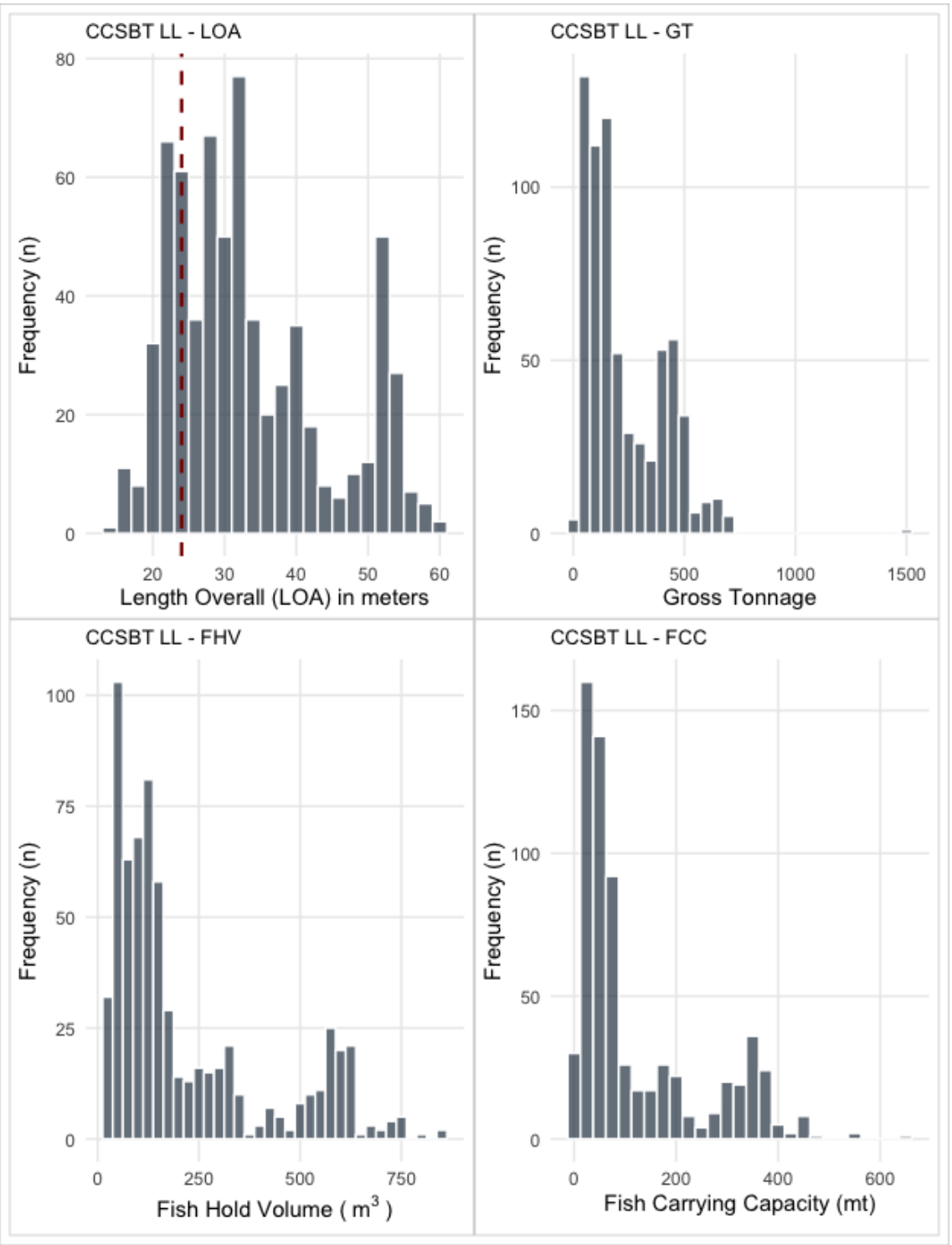

Figure B-19: Longline vessels registered in CCSBT by LOA, GT, FHV and FCC

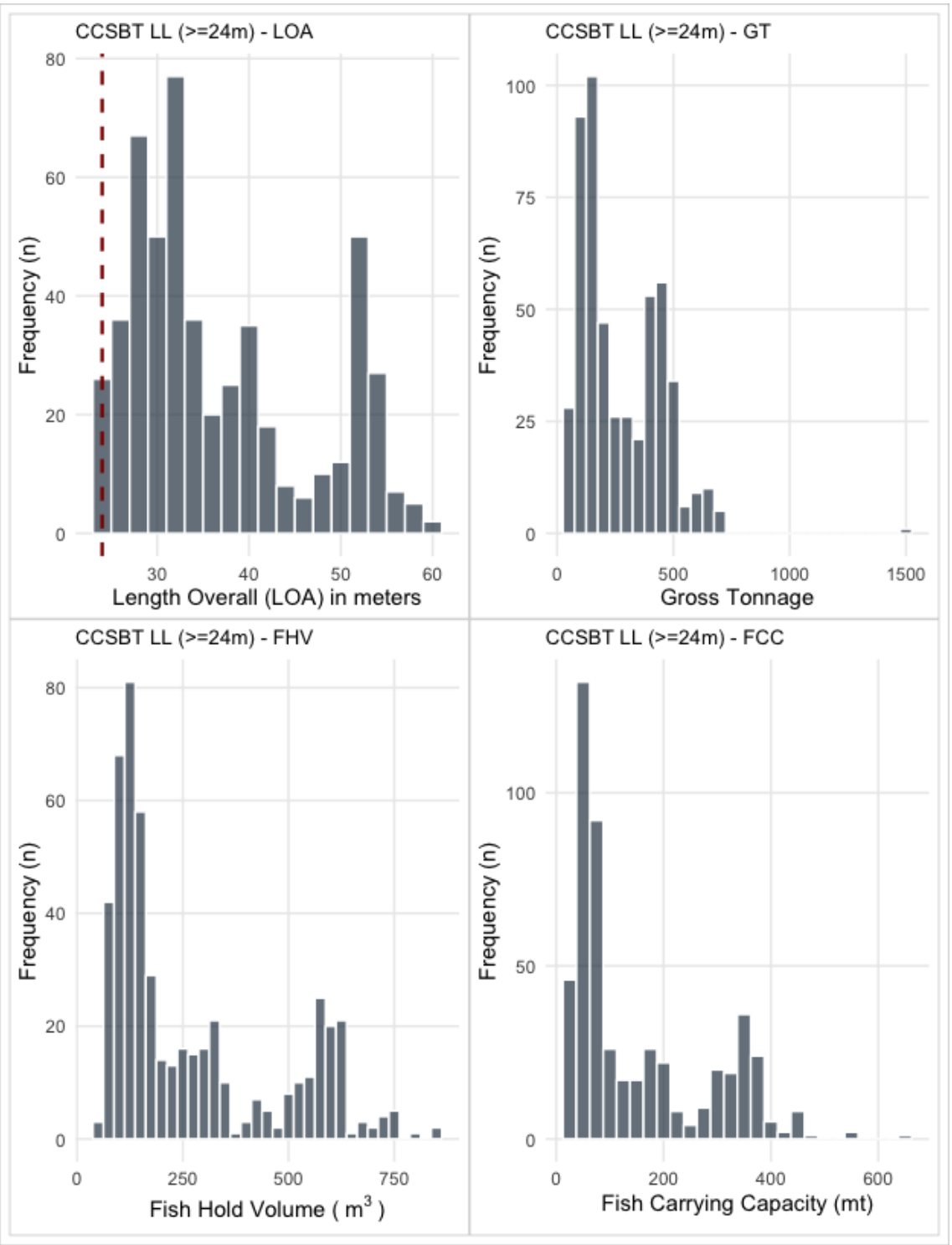

Figure B-20: Large longline vessels (>=24m) registered in CCSBT by LOA, GT, FHV and FCC

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