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# SOUTHEAST ASIA

## Brief overview on status of information in six key Southeast Asian countries


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# SOUTHEAST ASIA:

## Brief overview on status of information in six key Southeast Asian countries


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## DISCLAIMER

This report is primarily based on data from global databases such as FAO FishStatJ, Sea Around Us, and FishSource, supplemented by desktop research conducted in November 2024 and updated in March 2026 (trade data). Unless otherwise specified, most of the information data used in the current report is obtained from the FAO FishstatJ database and FAO reports. The report focuses exclusively on the six Southeast Asian countries analyzed (Thailand, Cambodia, Viet Nam, Malaysia, Indonesia and Philippines) and primarily covers marine capture production. While the report provides up-to-date and reliable information into seafood production, trade, and fisheries' sustainability status, it is not intended as a comprehensive review of each country's situation.

# EXECUTIVE SUMMARY

Southeast Asia (SEA) has experienced rapid growth in seafood production and consumption in recent decades. This region has the largest number of people employed in fisheries and aquaculture worldwide, and most of the production growth is due to aquaculture. Despite this, fisheries continue to play a critical role in contributing to the regional and global seafood demand (FAO 2020). Southeast Asia is also home to some of the most important Large Marine Ecosystems (LMEs), and is considered a global center for marine biodiversity (e.g., Ramírez et al. 2017) and unique habitats, including some of the most productive ecosystems in the world (Teh et al., 2019).

The first phase of this research, conducted in late 2021, focused on the Gulf of Thailand (GoT) and the four main countries bordering this region: Thailand, Viet Nam, Malaysia, and Cambodia. The second phase expanded the scope to include Indonesia and the Philippines, two key players in marine production and international seafood trade.

This report integrates findings from both research phases, incorporating updated data and new sources. Its primary aim is to analyze fisheries-related data in these countries, with a focus on (1) the availability and detail of information, and (2) trends in marine production, trade, and stock health where such data is available. While some general statistics compare aquaculture-based with wild-caught seafood (including marine and inland production), the research primarily emphasizes wild marine capture.

The study revealed the following key insights:

## The relevance of Southeast Asia in the seafood world

- Southeast Asia (or southeastern Asia), which is the geographical region that encompasses the six countries under the scope of the current study, **is the second most important region in the world in terms of aquatic (inland and marine) production, accounting for 32 million tonnes (17% of global production) of both farmed and wild-captured aquatic organisms in 2022**. Seafood production in Southeast Asia is mostly dominated by the countries under the scope of this study, namely Indonesia (40% of total production), Viet Nam (27%), and the Philippines (8%) (Figure 1) (FAO 2024a).
- **Despite the considerable growth in aquaculture production** (following the trend of neighboring regions), **most seafood in the Southeast Asia region is still coming from wild capture production**. In 2022, a total of 18 million tonnes (55% of total) were reported to be captured by the Southeast Asian countries combined, compared to 14 MMT from aquaculture production.
- **Around two thirds (68%) of the estimated catches within the four LMEs that are relevant to this study come from the industrial sector**, with 15.2 million tonnes estimated to have been captured in 2019. Small-scale (or artisanal) fishing gears account for roughly 26% of the total catches in the LMEs of the region**. Recreational and subsistence fishing gears are the sectors with the smallest reported catches, but with the highest levels of underreporting** (79% of subsistence, and 100% for recreational). Unreported catches represent roughly 20% of the total estimated catches for both the industrial and artisanal sectors (Pauly et al., 2024).

- Most of the wild marine capture fisheries production in Southeast Asia is coming from the South China Sea LME (11.1 MMT in 2019). The second most important LME in the region, in terms of wild capture production, is the Bay of Bengal in the Eastern Indian Ocean, with 6.7 MMT reported to have been captured.

## Status and trends in production, trade, and fisheries sustainability

### Production:

- **Marine capture fisheries remain the dominant production source** (excluding seaweeds) in the six countries analyzed, except for **Viet Nam**, where **aquaculture contributes 59% of total production**. Indonesia leads marine capture production in the **Eastern Indian Ocean (FAO 57) and the Western and Central Pacific (FAO 71),** accounting for **34% of total catches from these two fishing areas**. Viet Nam (17%) and the Philippines (8%) are the second and third-largest producers in Asia.
- **Industrial fisheries dominate marine capture landings in the six countries**, contributing over **80% of total production in Viet Nam and Cambodia**. However, **artisanal fisheries** play a crucial role, employing thousands and supporting coastal and inland communities. In the **Philippines, artisanal fisheries contribute over one-third** of total marine capture landings, while in **Cambodia, almost half** of total seafood production comes from **inland artisanal fisheries**.
- **Key marine species groups** include **small pelagic fish, unidentified marine fish, tuna, and squid**, which are among the most frequently captured species in these six countries.
- **Reported capture production has stabilized or declined** in recent years across most countries, except in **Viet Nam**, where reported landings continue to grow. The **overall increase in seafood production** in these countries is primarily driven by **aquaculture expansion**.

### Trade

- **Major players in global seafood trade** – In 2022, **Viet Nam (3rd, $11 billion), Indonesia (10th, USD 5.9 billion),** and **Thailand (12th, $5.6 billion),** ranked among the **top 15 seafood exporters worldwide by value** and the **top 5 in Asia, alongside China** and **India**.
- **Domestic consumption dominates** – Except for **Thailand and Viet Nam**, which are **reported net exporters**, most seafood produced and imported in the region is **consumed domestically**. In **Cambodia and Indonesia**, over **90% of seafood (both produced and imported) is used for local consumption**.
- **Top exported seafood products** by value include **shrimp, tuna, miscellaneous marine fish (e.g., snappers, groupers), freshwater fish (e.g., pangasius, tilapia), squid, and blue swimming crab**—all high-demand commodities in global markets.
- **Key export markets are shifting** – While the **United States remains the primary market** for **shrimp, tuna, freshwater fish, and crab**, **Japan, South Korea, and China** are becoming **leading importers**, particularly for **squid and miscellaneous marine fish**. These Asian markets now **collectively surpass the U.S. in shrimp import value**.

- **Trade patterns vary by country** – The **United States is still the dominant importer** for **Indonesia and Viet Nam**, while for the **other four Southeast Asian nations studied**, **China, South Korea, and Japan** are **the largest buyers of their seafood exports**.
- **Small pelagic fish play a vital role in the region** as a source of seafood protein for local communities – while **lower in market value**, small pelagic fish are **crucial for domestic food supply** and **regional trade** across Southeast Asia.
- Key imported commodities – **Fishmeal and fish oil (FM/FO),** along with **fish and bivalve sauce** (mainly oyster sauce)**, are significant imports for these six countries.**
    - **FM/FO supports aquaculture growth in the region** – The high import volumes of FM/FO reflect the rising importance of aquaculture, particularly in the pangasius and shrimp farming industries.
    - The demand for **fish and bivalve sauce highlights** its **cultural and gastronomical importance** in all six countries **in the region.**

## Fisheries sustainability and management challenges in the six countries assessed

- While this report does not provide an in-depth assessment of the sustainability status of fisheries in the countries studied, available data suggest several **significant management challenges**.
- For fisheries with publicly available information, **global platforms such as FishSource, Seafood Watch,** and **Sea Around Us** indicate **widespread sustainability concerns**. Key issues include:
    - **Lack of stock assessments** – overall, **public** information in English on stock status and exploitation levels is limited or outdated, which results in the stock and exploitation status for most resources being unknown.
    - **Weak or ineffective management** – deficient regulations and management systems have been somewhat ineffective in controlling fishing pressure, restricting catches, or effectively enforcing spatial fishing limitations.
    - **High bycatch rates** – the use of low-selectivity and habitat-damaging gear, such as bottom trawls, contributes to high bycatch of vulnerable species, often with inadequate mitigation measures in place.
    - **Limited transparency and data availability** – in most cases, fisheries data collection, reporting, and management processes still lack transparency, making it difficult to assess or improve sustainability efforts.

To conclude, it is important to note that while this report provides up-to-date and reliable insights into seafood production, trade, and fisheries sustainability, it is not a comprehensive review of each country's situation. Some key sources (particularly those available only in national languages) may be missing, which could impact on the interpretation of certain findings, especially regarding fisheries sustainability and management challenges. Therefore, the information should be considered with caution.

## ACKNOWLEDGEMENTS

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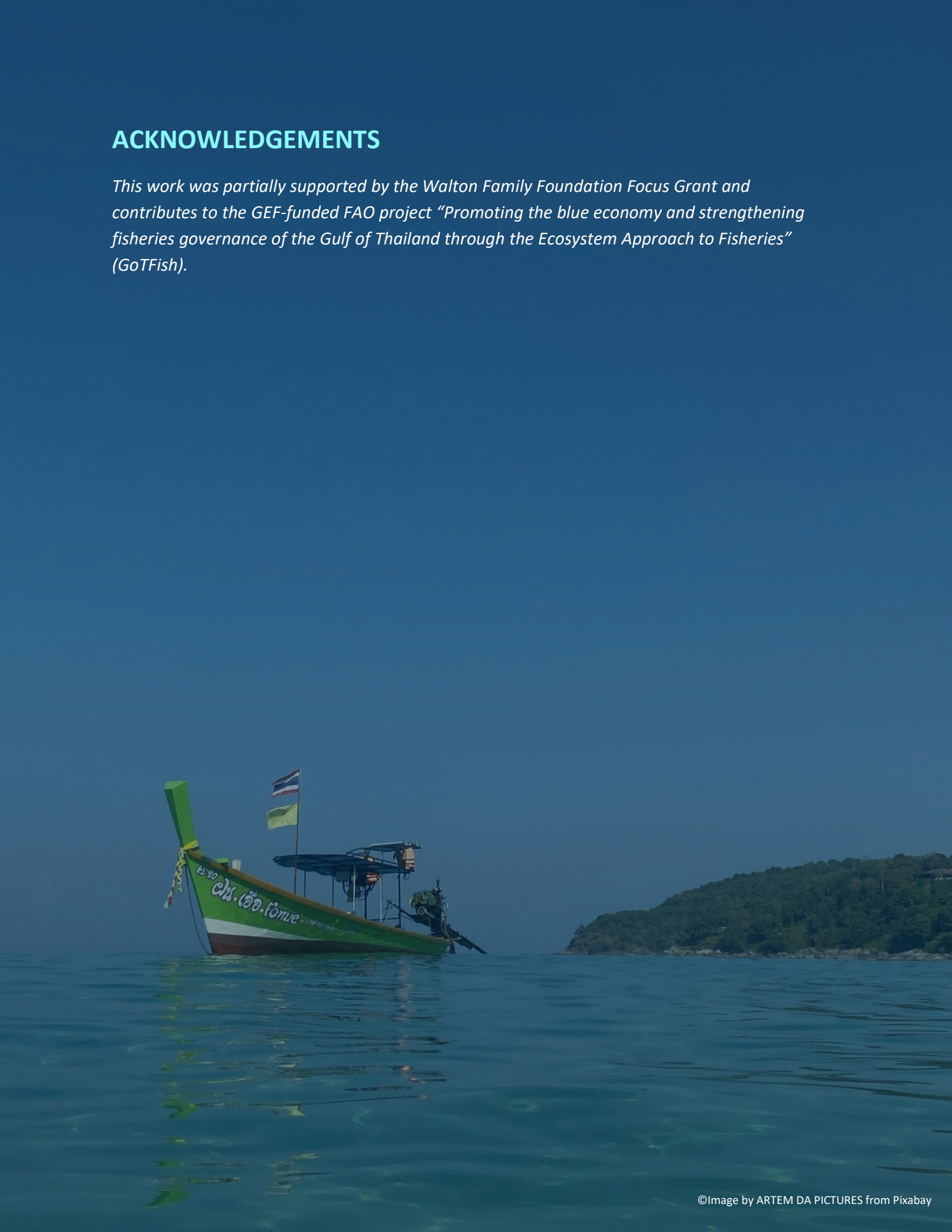

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# 1. SCOPE OF THE ANALYSIS AND SOURCES USED

The first phase of this research, conducted in late 2021, focused on the Gulf of Thailand (GoT) and the four main countries bordering this region: Thailand, Viet Nam, Malaysia, and Cambodia. A second phase was conducted for Indonesia and the Philippines between February 13th and 20th, 2023. The country information was updated in November 2024 for all countries, while the sections on stock status and fisheries exploitation status were reviewed in February 2026. The research only considered information and documentation available on the Internet and in international production (FAO FishstatJ, Sea Around Us) and trade (Panjiva, FAO FishstatJ, UN COMTRADE) databases. It also only considered documents and web pages that can be found via regular searches on Google or Google Scholar. English was the main language used in the search process, although some keywords included the respective countries' languages under the scope of this study.

The information collected covered four areas: (1) fisheries data availability, (2) fisheries production, (3) fisheries trade, and (4) stock and exploitation status and management performance. Descriptive statistics, tables and charts, and summaries of the key findings were developed based on the data collected. Although some charts and tables are included in the report, most of the summary statistics are provided in an Excel file as supplementary material. The multiple tables and charts are separated by topic (production, imports, exports, FishSource scores, SeafoodWatch (SFW) evaluations, etc.) and country as separate tabs (48 tabs in total).

The file can be downloaded and found at the following link: https://docs.google.com/spreadsheets/d/1-X5GSSTfI8sIBQXdCOjdr0tA_Rrj9oBT?rtpof=true&usp=drive_fs

Although the research looks at all seafood commodities, more attention is given to the main groups in terms of production, imports, or exports. Particular attention is also given to small pelagic fish and fish sauce, which are two commodities of interest to this research. The analysis is not meant to be a comprehensive review but rather an exploratory analysis. It is thus possible that some data and relevant documentation for these six countries were not considered.

Small pelagics in fIsh market in Indonesia. ©Shutterstock

# 2. MAIN FINDINGS

## 2.1. Southeast Asia

Southeast Asia, which is the geographical region encompassing the six countries under the scope of the current study, includes a total of 11 countries with a population of roughly 700 million people (2019), and covering a terrestrial area of about 4,500,000 km$^2$ (Source: Worldometers.info). In terms of oceanic coverage, this area spans from the Western and Central Pacific Ocean in the east to the Eastern Indian Ocean in the west and is bordered by four Large Marine Ecosystems (LMEs): Bay of Bengal, Gulf of Thailand, South China Sea, and Sulu-Celebes Sea, which are among some of the most productive LMEs in the world.

This is the second-most important region in the world in terms of aquatic production, accounting for 32 million tonnes (17% of global marine and inland production) of both farmed and wild-capture aquatic organisms.[1] Seafood production in Southeast Asia is mostly dominated by the countries under the scope of this study, namely Indonesia (40% of total production), Viet Nam (27%), and the Philippines (8%) (**Figure 1**) (**FAO 2024a**).

[1] Aquatic plants and other animals such as mammals, corals or sponges are not included.

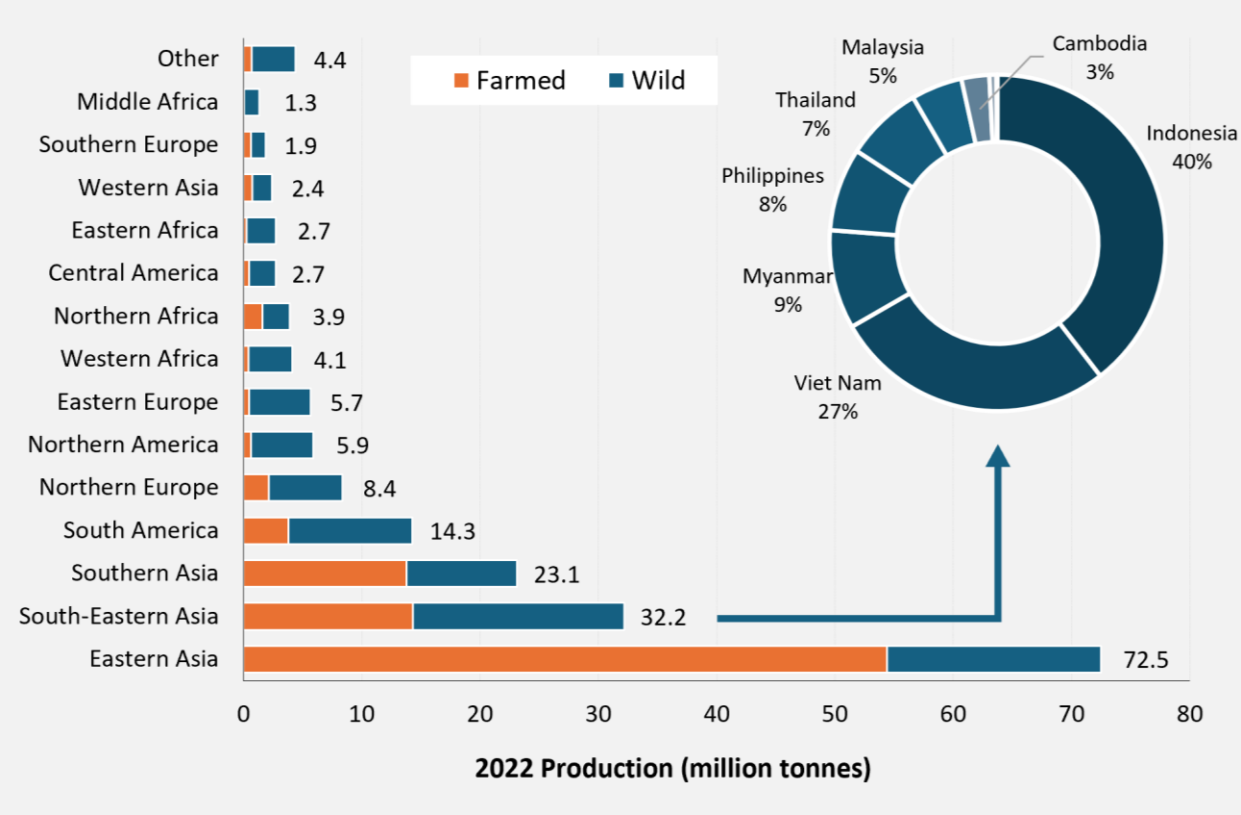



**Figure 1 |** Reported 2022 production, wild and farmed, for the top producing geographical regions (bar chart), and proportion of total production by country (doughnut chart), for the Southeast Asia region. **Source: FAO**

Despite the considerable growth in aquaculture production (following the trend of neighboring regions), most seafood in Southeast Asia is still coming from wild-capture production. In 2022, a total of roughly 18 million tonnes (55% of total, marine and inland) were reported to be captured by the Southeast Asia countries combined, compared to 14 MMT from aquaculture production (**Figure 1**).

In terms of the LMEs, a total of 22.14 million tonnes were estimated to have been captured in 2019 in the four LMEs that border the Southeast Asian countries. This represents only a slight (7%) increase compared to 2010 (Table 1). Approximately 5.2 million tonnes (or 23% of the total catches) of these catches are assumed to be unreported (**Froese & Pauly, 2024**).

**Table 1 |** Estimated annual catches (million tonnes) by Large Marine Ecosystem (LME) between 2010 and 2019, for the four LMEs bordering the Southeast Asian countries. Source: Sea Around Us database (Pauly et al., 2024)

| LME name | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|
| Bay of Bengal | 6.4 | 6.5 | 6.4 | 6.2 | 6.2 | 6.3 | 6.5 | 6.6 | 6.1 | 6.7 |
| Gulf of Thailand | 2.5 | 2.6 | 2.6 | 2.7 | 2.7 | 2.5 | 2.5 | 2.5 | 2.6 | 2.6 |
| South China Sea | 10.0 | 9.5 | 10.3 | 10.9 | 10.7 | 11.0 | 11.0 | 10.8 | 10.8 | 11.1 |
| Sulu-Celebes Sea | 1.9 | 1.8 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 |
| **Grand Total** | **20.7** | **20.5** | **21.2** | **21.7** | **21.4** | **21.7** | **21.9** | **21.6** | **21.2** | **22.1** |

Around two thirds (68%) of the catches for the four LMEs that are relevant to this study are coming from the industrial sector, with 15.2 million tonnes estimated to have been captured in 2019. Small-scale commercial (or artisanal) fishing gears account for roughly 26% of the total catches in the LMEs of the region. Recreational and subsistence fishing gears are the sectors with the smallest catches, but with the highest levels of unreported catc (79% of subsistence, and 100% for recreational). Unreported catches represent roughly 20% of the total estimated catches for both the industrial and artisanal sectors (**Figure 2**, **Pauly et al., 2024**).

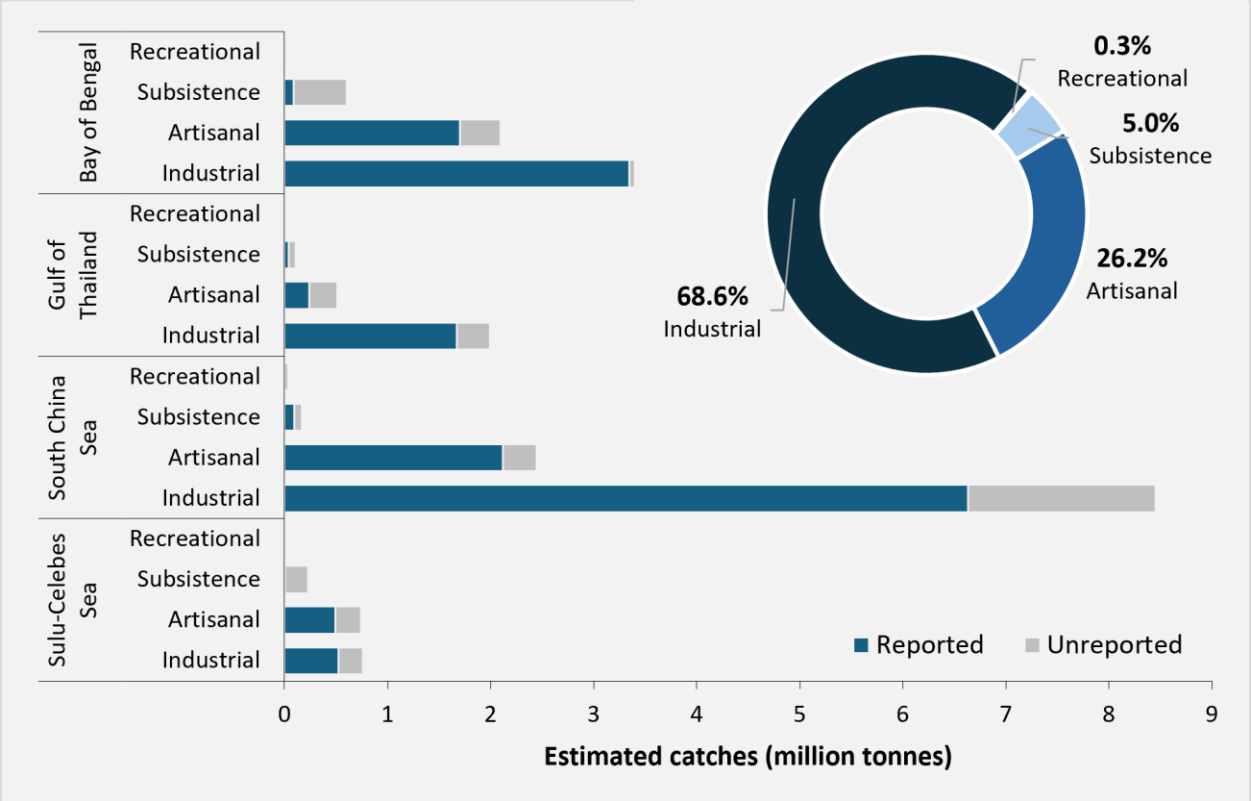



**Figure 2 |** Estimated 2019 catches (million tonnes) by Large Marine Ecosystem (LME) and fishing sector (bar chart), and proportion of total catches per fishing sector (doughnut chart), for the four LMEs bordering Southeast Asia.
Source: Sea Around Us database (Pauly et al., 2024)

Most of the wild production is coming from the South China Sea (11.1 million tonnes, MMT, in 2019). The second-most-important LME in the region, in terms of wild capture production, is the Bay of Bengal in the Eastern Indian Ocean, with 6.7 MMT estimated to have been captured. Except for the Bay of Bengal, the six countries under the scope of this study account for most of the catches in the other three LMEs: Gulf of Thailand, South China Sea, and Sulu-Celebes Sea (**Figure 3**).

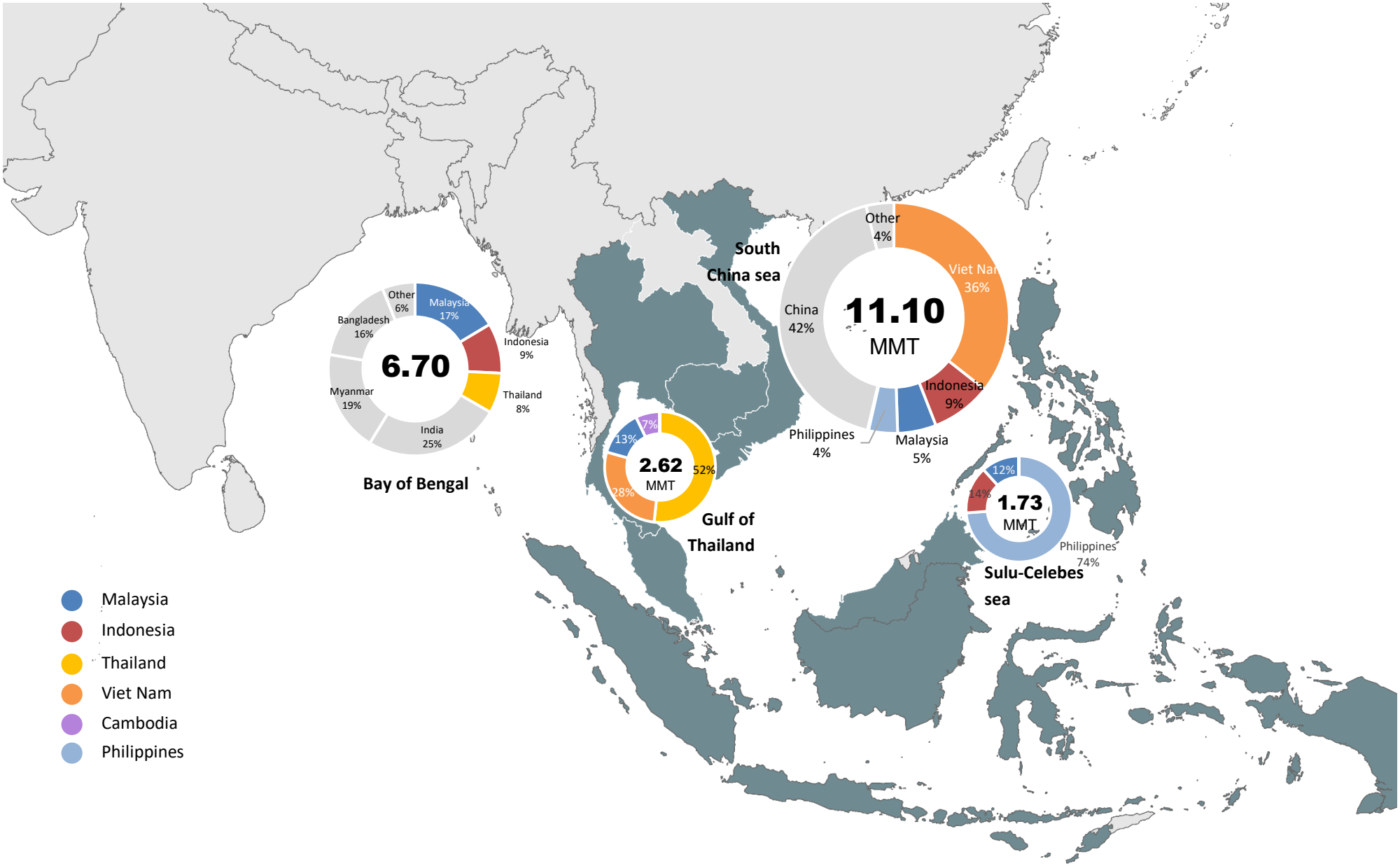



**Figure 3 |** Estimated 2019 wild capture by Large Marine Ecosystem (LME), for the LMEs relevant to the six countries under the scope of this study. Source SAU database.

# 2.2 | CAMBODIA

### 2.2.1. Data availability and transparency

As with the remaining countries in this study, accessing fisheries and aquaculture-related information in Cambodia remains challenging for non-native speakers, particularly through desktop research. Governance and statistics data were only easily accessible via FAO, which has limited and not very granular information. Despite these challenges, there is some recent information available related to the country fisheries statistics and legal framework on the FAO website. The newly named General Directorate of Fisheries (previously Fisheries Administration) also increased the information available on its website, with some information and documents already in English.

The first fisheries law for this country was developed in 1987. It included clauses on the exploitation and processing of resources from both inland and marine fisheries and aquaculture, the competent authorities to manage and monitor these activities, and penalties on law violations. It was replaced in 2006 by the Fisheries Law and then, more recently, by the 2025 Law on Fisheries (Royal Decree NS/RKM/0625 028; **MAFF 2025**), currently in place. These more recent laws already include further clauses on the sustainability of fishery management, fishery resource protection and conservation, fishing communities, transport and trade of fishery products, classification of protected and conservation areas, vessel monitoring and identification systems, licensing, etc. In recent years, there have been multiple additional initiatives and efforts to improve fisheries and address over issues such as overexploitation, habitat impacts (e.g. by banning destructive fishing), or livelihoods of people directly employed in fishing or aquaculture. Examples are the "Strategic Planning Framework for Fisheries: 2010–2019 - "FISHING FOR THE FUTURE" - Volume 1" (**MAFF 2011**), the "Cambodian Code of Conduct for Responsible Fisheries" (**FiA 2011**), and the "Strategic Planning Framework for Fisheries: Update for 2015-2024" (**FiA 2015**). Additional information and relevant sources are available in the FAO country profile (**FAO 2019b**).

For the sections below, all statistics and information on sustainability status, management, production, and trade were sourced from two main data sources: (1) international production and trade databases (e.g., FAO FishStatJ, Sea Around Us); and (2) national reports and statistics (when available).

### 2.2.2. Wild production: current status and recent trends

Cambodia is a relatively modest contributor to global seafood production. It ranked 23rd in overall production in 2022, with 0.86 million tonnes (including both wild capture and aquaculture) (**SI 1B-4**), and 67th for marine capture alone (**App Figure 1**) (**FAO 2024a**). Similar to the other Asian countries in this study, such as Indonesia, both capture and aquaculture production in Cambodia have been steadily increasing. In 2022, reported marine capture production reached 131,000 tonnes, a significant increase from 36,000 tonnes in 2000 and just 18,000 tonnes in 1980.

Aquaculture, particularly inland aquaculture, has seen accelerated growth over the past decade, with production reaching 314,000 tonnes in 2022. Despite this, much of the fish production in Cambodia still

originates from wild inland capture, which accounts for 47% of the country's total seafood output (**Figure 4**; **SI 2-2**).

Regarding marine capture production, which is the focus of this study, data quality and reporting is still very poor, with all catches still being reported to FAO in aggregated categories such as "Marine fishes nei" or "Cephalopods nei" (**Figure 5**). Marine fishes not identified (or "Marine fishes nei") represented almost four fifths (79%) of the total catches in 2022 (131,000 t), followed by unidentified marine decapods (7%) and unidentified marine molluscs (6%) (**SI 2-1; SI 2-3**). All marine catches are taken from the Western and Central Pacific Ocean (FAO 71) (**FAO 2024a**))

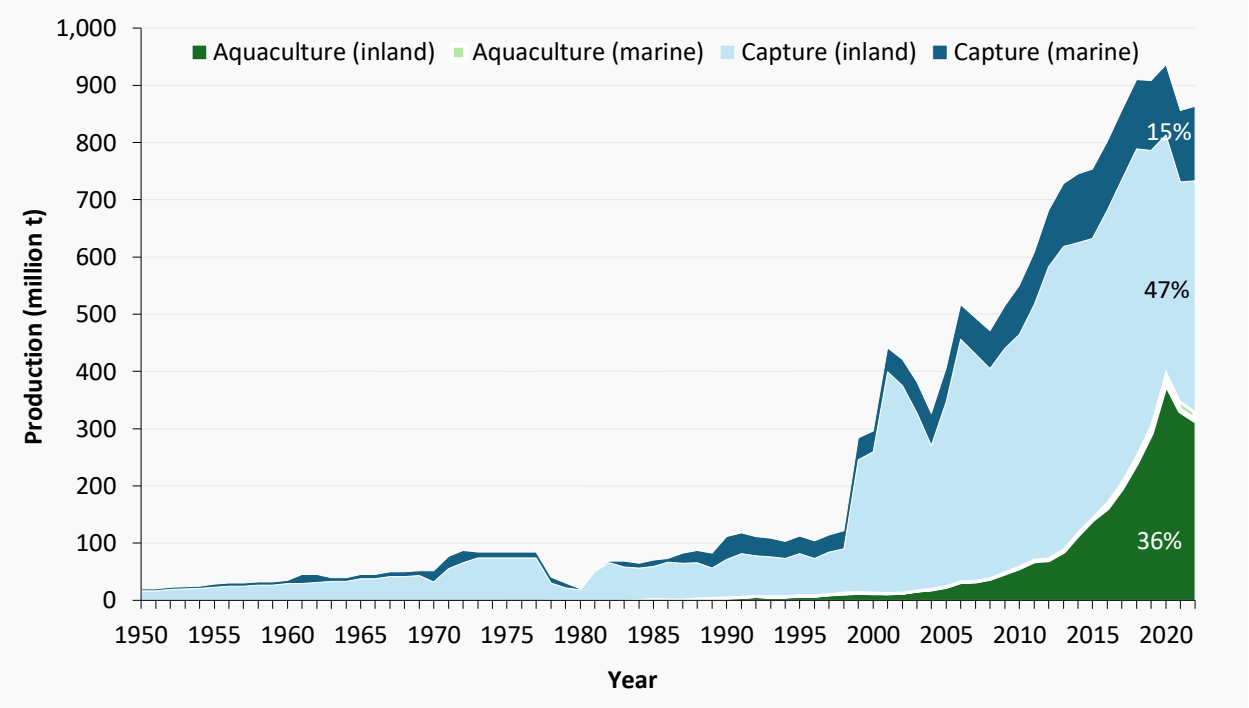



**Figure 4 |** Annual reported production (in million tonnes) by Cambodia in terms of main production source (aquaculture, inland capture, marine capture), between 1950 and 2022. **Note**: The percentage denotes the relative contribution of each production source to total production. **Source: FAO 2024a.**

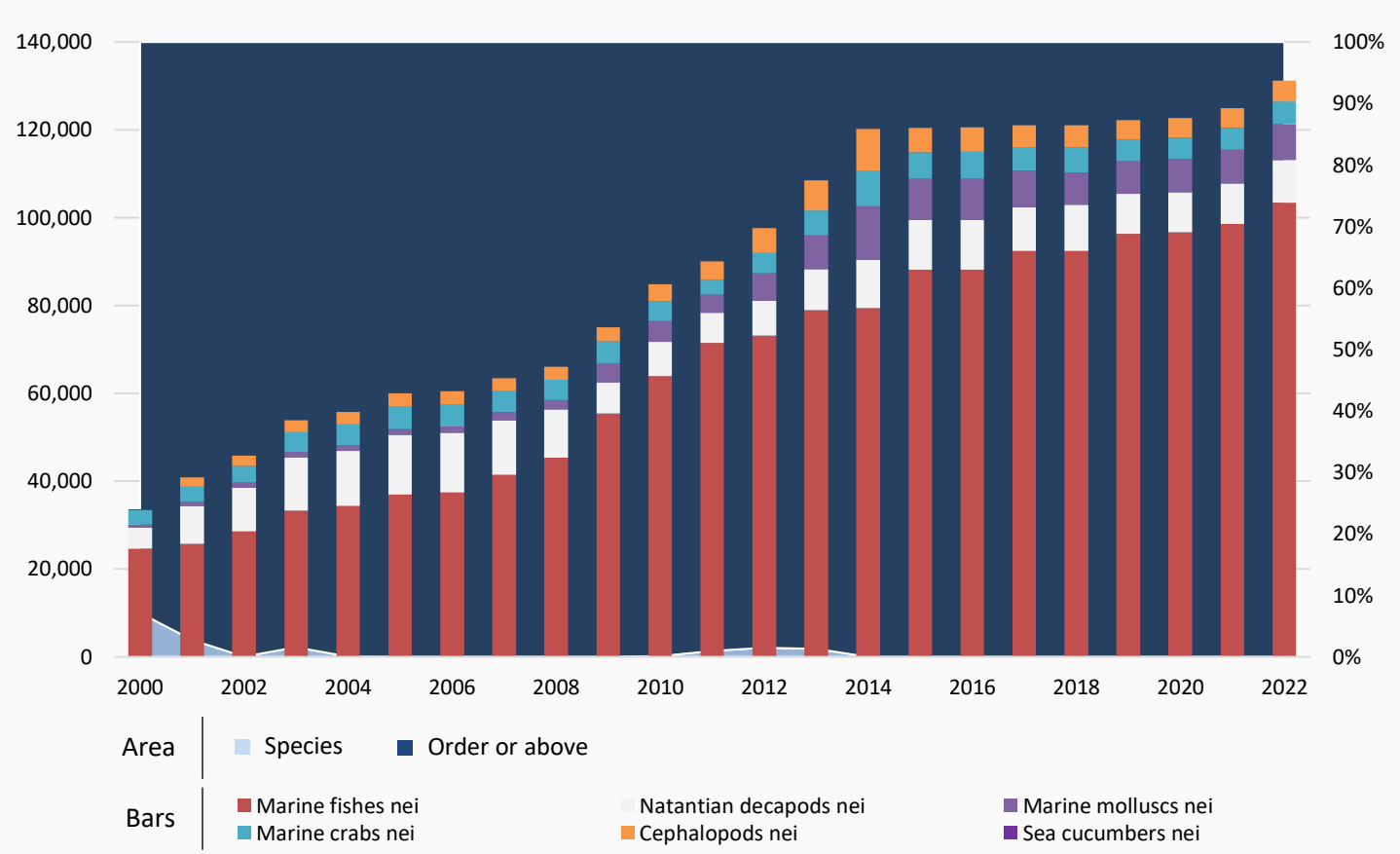



**Figure 5 |** Annual reported marine capture production (in tonnes) for Cambodia (in FAO area 71) by main species, and reporting level (% of total by classification), between 2000 and 2022. **Source: FAO 2024a.**

According to the Sea Around Us (SAU) global database, which includes estimated unreported catches, Cambodian marine catches totaled 182.5 thousand tonnes in 2019 (the latest year with available data). All of these catches were taken within the country's Exclusive Economic Zone (EEZ). Unreported catches accounted for approximately 25% of the total estimated catch (**Pauly et al., 2024**). The majority of these catches are attributed to the industrial sector, which represents 89% of the total. By gear type, industrial bottom trawls contributed the largest share (61% of total catches), followed by purse seines (28%). Artisanal fishing is estimated to account for about 11% of the total, though this figure is likely underestimated, as all artisanal catches are classified as unreported by **Pauly et al., 2024** (**Figure 6**; **SI 3-6**). A recent report by the United Nations Environment Programme (UNEP), however, notes that most of the trawl fleet are small scale,[2] with almost 90% of the vessels (n~6,699) with engines under 50 HP (**UNEP 2025**). Furthermore, the same study noted that only 3% of the counted vessels were registered, and that this situation hinders an adequate and sustainable management of fishing effort and fishing pressure. This discrepancy is likely due to the methodology by Sea Around Us, which treats gears that

[2] It is important to note, that, according to the Cambodian Fisheries Law, all trawl vessels are considered mid-scale for management purposes.

are dragged or towed by engine power as industrial regardless of vessel size or engine power (**Zeller and Pauly 2016**).

Key species groups in Cambodia's total catches include "Mackerels, tunas, bonitos" (22%, primarily caught with purse seines), "Slipmouths, ponyfishes" (17%), and "Marine fishes nei" (10%), the latter two mainly caught with bottom trawls (**Pauly et al., 2024**).

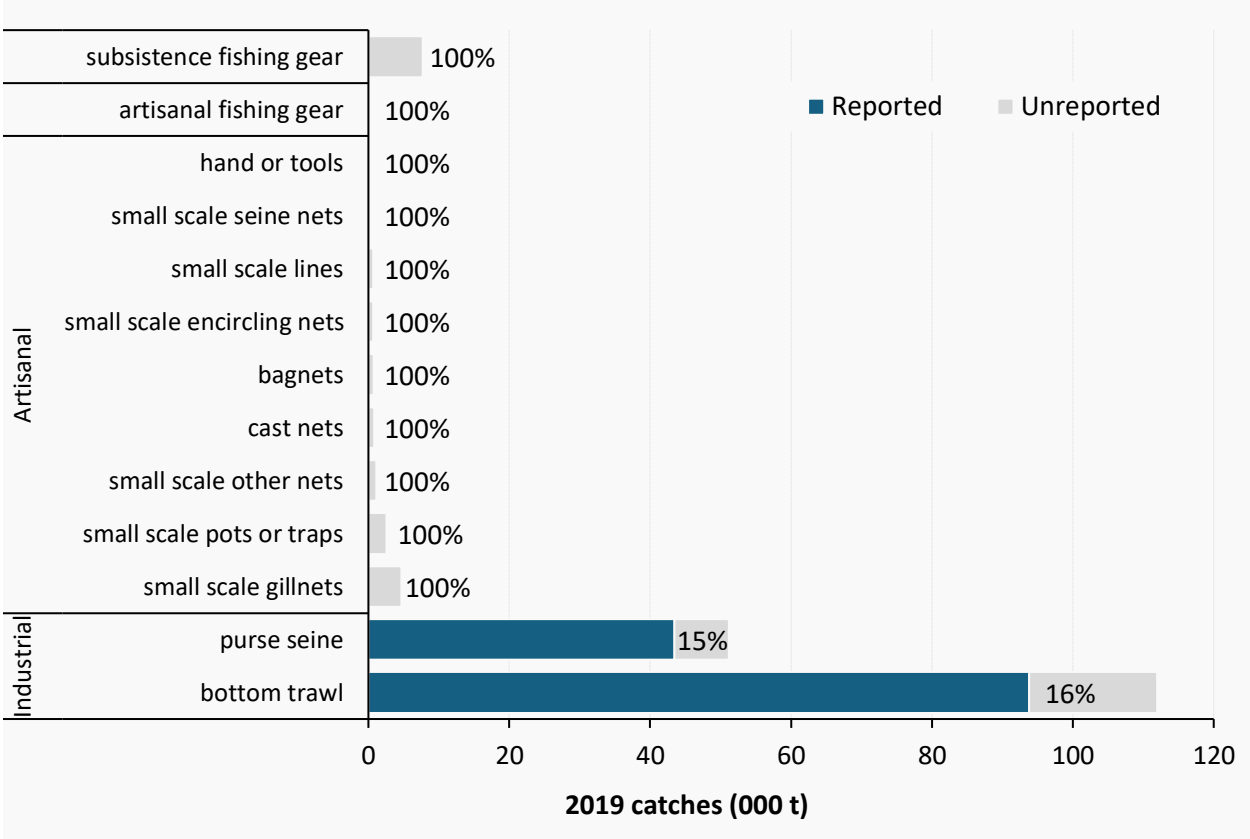



**Figure 6 |** Estimated total 2019 catches in thousand tonnes (reported and unreported) for Cambodia, by fishing sector and gear type. Note: for each fishing gear the estimated percentage of unreported catches is included. **Source: Pauly et al., 2024**.

### *2.2.3. Seafood consumption and domestic supply*

Seafood consumption in Cambodia is relatively important. With an average fish consumption estimated at 43.9 kg/capita/year in 2021, this country is well above the global average of 19.2 kg/capita/year, ranking 18$^{th}$ globally and 5$^{th}$ in the Asian countries. It is also the country with the highest dependence of fish and seafood as a source of protein, with seafood representing 70% of the total seafood intake per capita in 2021 (App Figure 3) (**Ritchie and Roser 2021**).

Similar to Indonesia and the Philippines, most of the country's production and imports seem to be for the domestic market. In 2019, reported seafood production (wild and farmed) totaled approximately 1

million tonnes, mostly of freshwater and diadromous fish (84% of total production) and only 38 thousand tonnes (~4% of production) of exports. Total seafood imports (61 thousand tonnes) were also relatively small compared to production and comprised mostly molluscks excluding cephalopods (**App Table 4**) (**FAO 2024b**). These numbers suggest that the country relies mostly on its own production to meet the needs of internal seafood demand.

### *2.2.4. International trade*

International trade databases (namely **FishstatJ**; **FAO 2024c; FAO 2024d**) were used for the trade analysis in terms of exports and imports. The main results are provided below. For Cambodia, it is important to note that, at the time of this research, Cambodia was classified as non-cooperating in the fight against IUU fishing in marine waters and has been issued a "red card" by the European Commission; hence it has been banned from exporting marine fishery products to the European Union (EU) since 2014.

#### 2.2.4.1. Exports

As seen in the previous section, seafood exports are relatively small compared to the country's total production. According to the FishstatJ database, exports in 2022 totaled 34 thousand tonnes (rank 79$^{th}$ globally) worth 70 million USD (rank 96$^{th}$ globally)) (**SI 4-1; SI 4-2**; **FAO 2024c**). The only specific commodity group where the country ranks among the top 10 global exporters is fish and bivalve sauce (7$^{th}$) (**SI 4-7**); however, the country's fish and bivalve sauce exports by value are very small compared to top exporting countries.

The country's most exported seafood commodities are non-specified marine fish (65% of 2020-22 annual exports by both weight and value) and freshwater fish (35% of 2020-22 annual exports by both weight and value). Shrimp is the sixth-most exported commodity group, but only accounts for less than 1% by both weight and value (**Figure 7; Figure 8**; **SI 5-1; SI 5-2**).

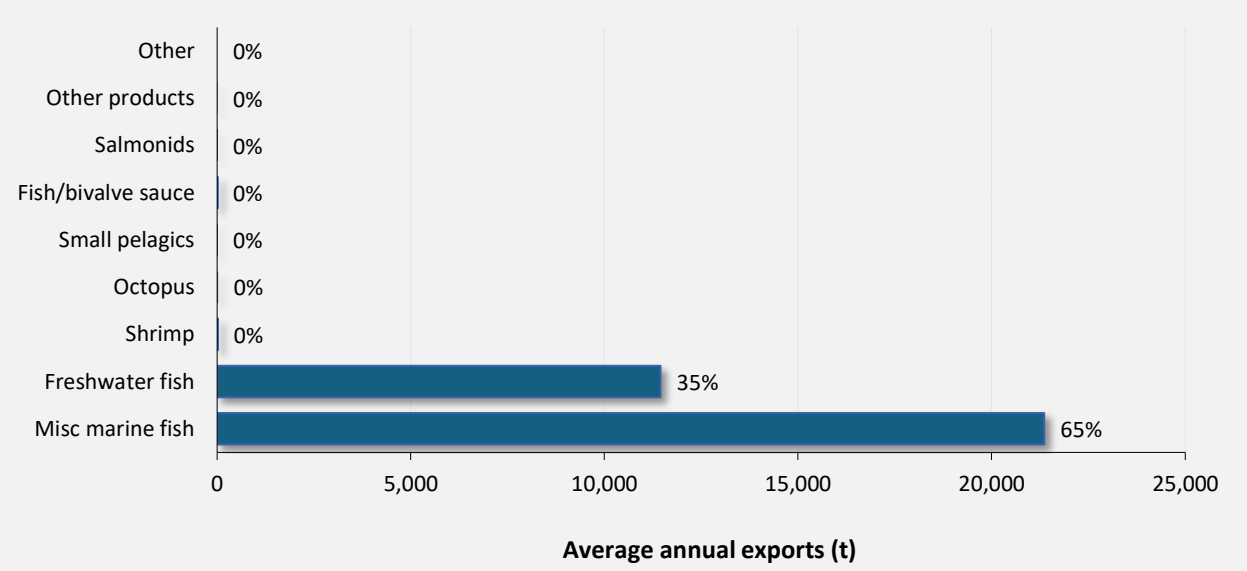



**Figure 7 |** 2020 - 2022 average annual seafood exports by Cambodia in terms of product weight and for the main commodity groups. **Source: FAO 2024c.**

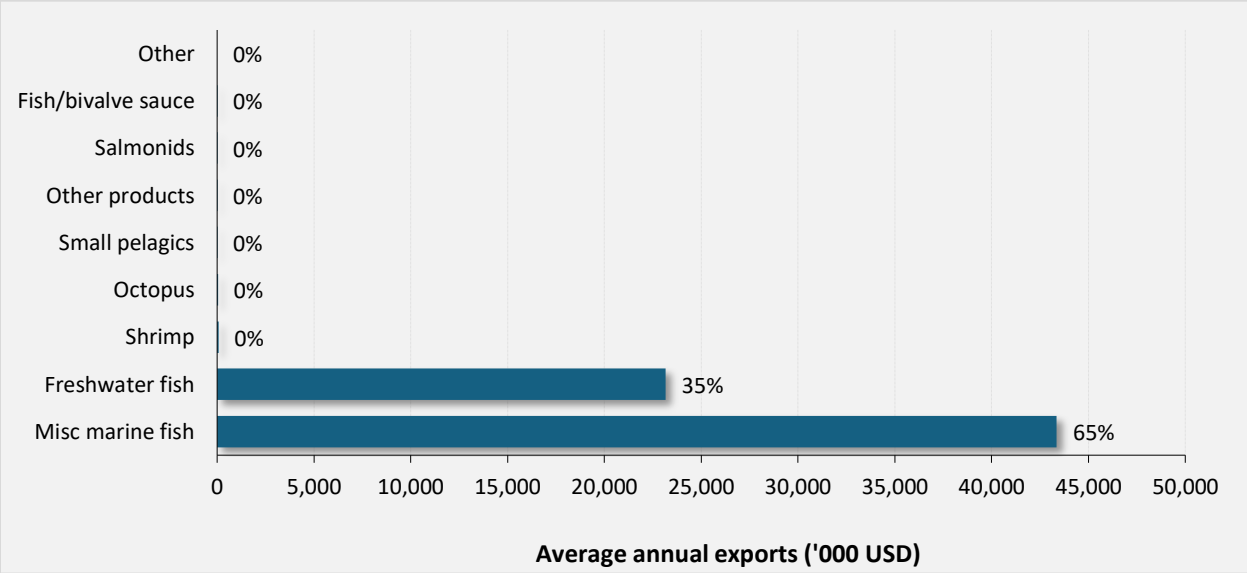



**Figure 8 |** 2020 - 2022 average annual seafood exports by Cambodia in terms of product weight and for the main commodity groups. **Source: FAO 2024c.**

Cambodia's reported export data provide limited details on specific commodities and trade partners. As a result, this analysis relied on mirror data—import records from other countries reporting seafood imports from Cambodia. According to these records, Thailand accounted for 99% of Cambodia's seafood export value in 2022, with the United States and Malaysia as minor importers, each representing just 0.3% (**SI 6-2; FAO 2024d**).

This dominance of Thailand as the primary importer is consistent across Cambodia's main seafood export categories: miscellaneous marine fish, shrimp, and freshwater fish. For miscellaneous marine fish, the United States (0.6%) and Malaysia (0.2%) follow as the second- and third-largest importers (**SI 6-3**). For shrimp, the only other minor relevant importer is New Zealand, accounting for 0.1% of Cambodia's export value (**SI 6-4**). In the freshwater fish category, Canada (0.3%) and Japan (0.2%) are the only other significant importers (**SI 6-5**).

#### 2.2.4.2. Imports

As mentioned earlier, Cambodia primarily relies on domestic seafood production for consumption, with limited trade in international markets. In 2022, imports accounted for just 5% of the country's total seafood supply (imports + production). Between 2020 and 2022, Cambodia's annual seafood imports averaged 60,000 tonnes (valued at $50 million), ranking 66$^{th}$ globally by quantity and 105$^{th}$ by value (**SI 9-1; SI 9-2**) (**FAO 2024c**). However, Cambodia is the world's second-largest importer of fish and bivalve sauce, representing 15% of global imports by value (**SI 9-7**).

The most imported seafood commodities (by product weight) include fish meals and oils (44% of annual imports; 28% by value), miscellaneous marine fish (33% by weight; 28% by value), fish and bivalve sauce (16% by weight; 23% by value), and small pelagics (4% by weight; 7% by value) (**Figure 9; Figure 10**). Like other Southeast Asian countries, Cambodia's high fishmeal and fish oil (FM/FO) imports highlight the growing importance of aquaculture, as FM/FO plays a key role in pangasius, shrimp, and other fish-farming industries (**FAO 2024a**). This aligns with the fact that aquaculture (mainly inland) now accounts for over one-third of the country's total aquatic animal production (FAO 2024a). Additionally, the significance of fish and bivalve sauce imports reflects its cultural and economic importance in the country.

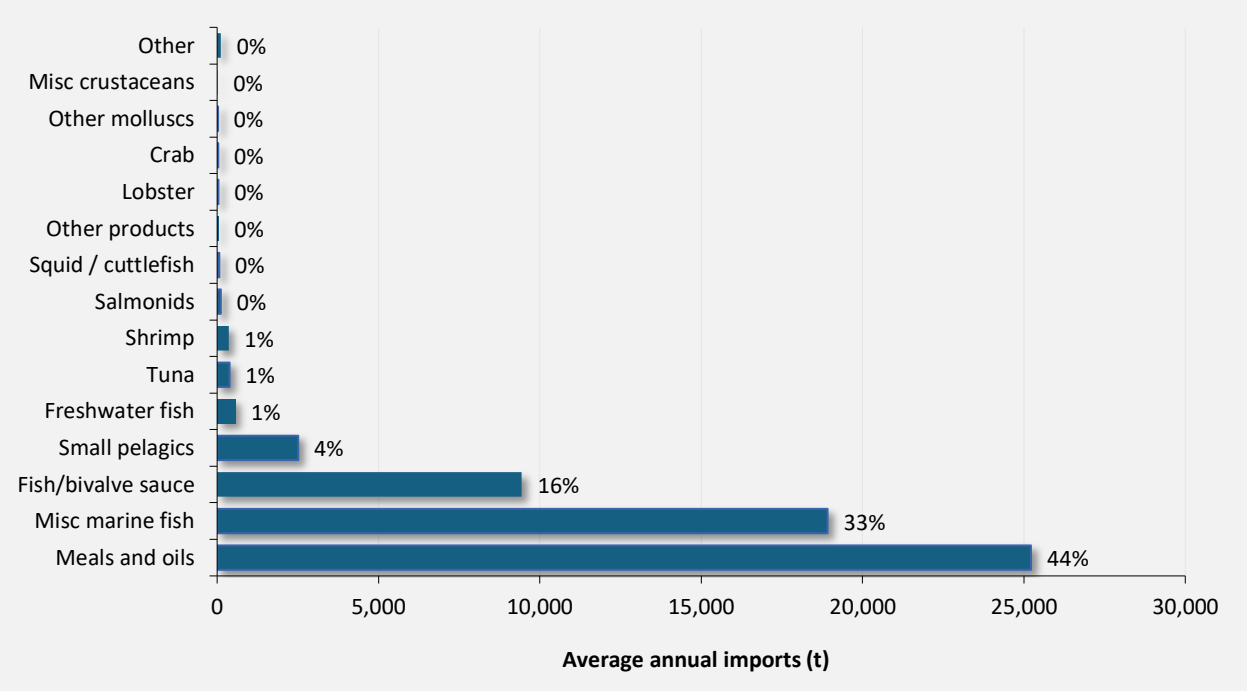



**Figure 9 |** 2020 - 2022 average annual seafood imports by Cambodia in terms of weight and for the main commodity groups. **Source: FAO 2024c.**

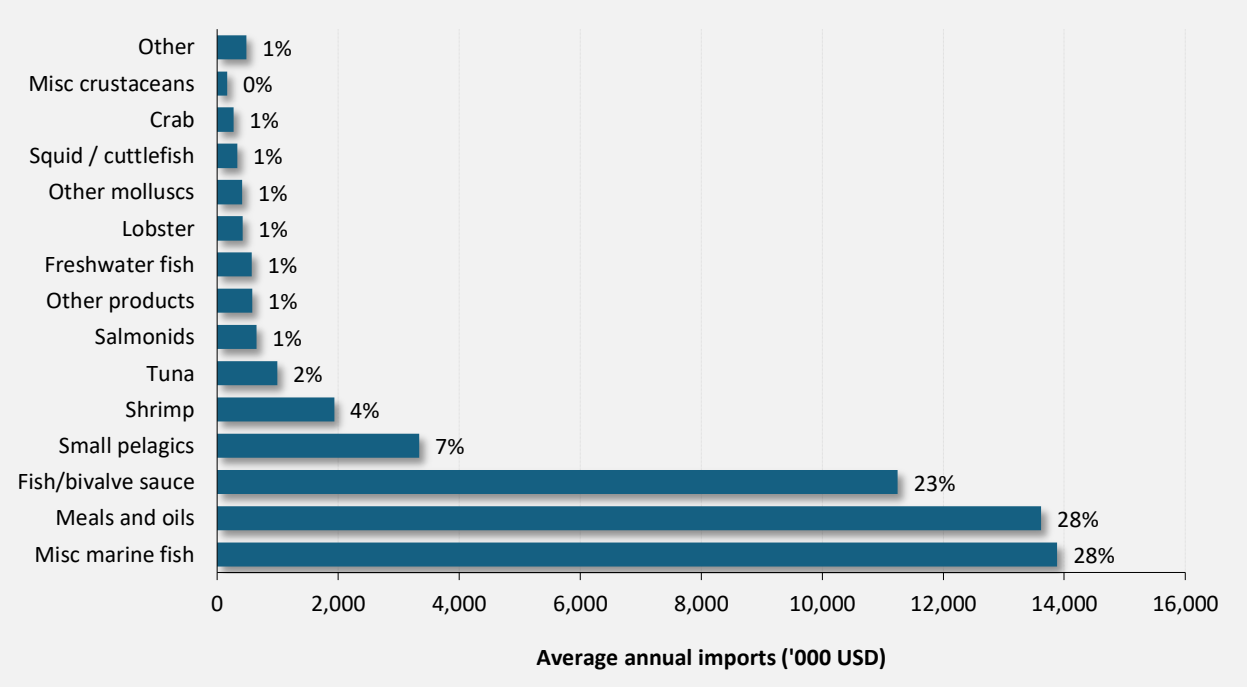



**Figure 10 |** 2020 - 2022 average annual seafood imports by Cambodia in terms of value (x1000 USD) and for the main commodity groups. **Source: FAO 2024c.**

An analysis of the most important trade partners indicates that the most significant exporters of seafood to Cambodia by value are Viet Nam (32%, mostly live miscellaneous marine fish, and fish meals and oils), Other NEI (19%, mostly oyster sauce), the United Kingdom (14%, FM/FO), and Thailand (10%, mostly miscellaneous marine fish preparations) (**SI 8-1; SI 8-2**). It is important to note data limitations in Cambodia's import records, as nearly 20% of reported imports (by value) lack specified trade partners. However, mirror trade data suggests that most imports listed as "Other NEI" likely originate from Thailand (**FAO 2024d**).

The trade flow analysis focused on four key seafood commodity groups: fish meals & oils (FM/FO), miscellaneous marine fish, fish & bivalve sauce, and small pelagics.

- FM/FO Imports: The United Kingdom (40%), Viet Nam (16%), France (13%), Italy (8%), and Germany (5%) were Cambodia's top suppliers in 2022, accounting for over 80% of total FM/FO import value (**SI 8-3**).
- Miscellaneous marine fish: Viet Nam dominated Cambodia's imports, supplying nearly 80% of total import value, primarily live fish to meet domestic demand. Other key suppliers were Thailand (10%) and China (7%) (**SI 8-4**).
- Fish & bivalve sauce: 91% of reported imports—mostly oyster sauce—lacked specific exporter details ("Other NEI") (**SI 8-5**). However, mirror trade data suggests that most originate from Thailand (**FAO 2024d**).
- Small pelagics: The main suppliers were Thailand (49%), Viet Nam (20%), Japan (14%), and Malaysia (5%) in 2022 (**SI 8-6**).

### *2.2.5. Information on stock and fisheries exploitation status*

At the time of this research, reliable information on Cambodia's fisheries remains extremely limited, especially through desktop research. A key challenge is the lack of published data on fisheries. As a result, this section mostly references global databases and tools such as SFP FishSource, Monterey Bay Aquarium Seafood Watch, Sea Around Us, and FAO Fisheries and Resources Monitoring System (FIRMS). A key summary of relevant information from other SEAFDEC and UNEP reports is provided.

In the FishSource database, no Cambodian fisheries are currently flagged, and Seafood Watch does not currently provide recommendations for wild fisheries in Cambodia. This may reflect Cambodia's modest presence in global seafood trade, lower marine capture volumes, and the fact that Cambodian seafood remains subject to an EU import ban under the IUU "red card," which indicates that the country has not yet adequately addressed the EU's concerns over IUU fishing in this country.

According to Sea Around Us, 89% of catches in Cambodia's Exclusive Economic Zone (EEZ) come from fully exploited stocks, while 10% originate from overexploited or collapsed stocks (**Figure 11**) (**Pauly et al., 2024**). The number of overexploited or collapsed stocks in these waters has been rising, and over two-thirds of the stocks are now considered to be in a collapsed (i.e., severely depleted) condition (**Figure 12**).

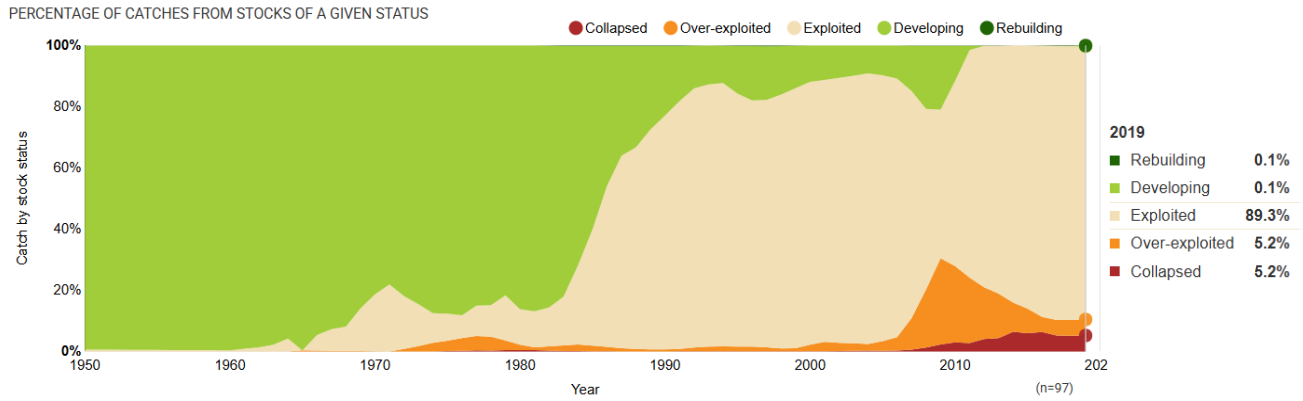



**Figure 11 |** Estimated status of stocks found in Cambodia's EEZ by catch biomass (3-year running average values), between 1950 and 2019. **Source: Pauly et al., 2024**.

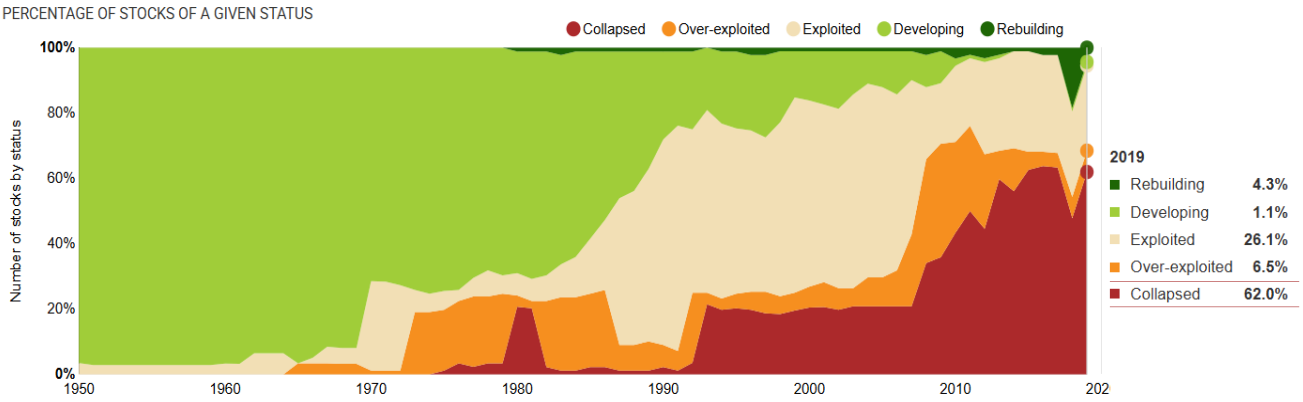



**Figure 12 |** Estimated status of stocks found in Cambodia's EEZ by number of stocks in each category (3-year running average values), between 1950 and 2019. **Source: Pauly et al., 2024**.

In terms of national and regional evaluations of the status of fisheries in Cambodia, there is no evidence of regular, systematic stock assessments. However, some information is available from discrete studies conducted by Cambodian institutions and the Southeast Asian Fisheries Development Center (SEAFDEC).

For inland fisheries, which dominate catches in the country, around 500 species have been recorded. However, most capture production comes from 10 key groups such as snakeheads, carps and minnows, barbs, and catfish. There is no detailed information on exploitation levels or stock status for freshwater resources. Nevertheless, according to a recent report on inland fisheries in Southeast Asia, a data collection program has been in place since 1994. This program collects catch and effort data to generate species-specific estimates of total annual catch, abundance, and biomass. Precautionary management measures, including closed seasons, spatial restrictions, and fishing gear controls, have also been implemented to support resource sustainability (Muthmainnah et al., 2019).

For marine resources, despite a significant increase in catches over the last three decades (FAO, 2024), regular stock assessments for species occurring in Cambodian waters are limited to a few species'

groups. Until recently, publicly available assessments mainly covered large pelagic species, such as tunas and tuna-like species, and have been conducted by SEAFDEC. The most recent SEASOFIA was published in 2022 (SEAFDEC, 2022). While these assessments also generally include other important species, such as scads, mackerels, and anchovies, no Cambodia-specific information was available for these stocks in the latest SEASOFIA report. The same applies for a SEAFDEC workshop on the Mixed Stock Fisheries in the GoT, where no recent assessments were found to have been conducted in the GoT for Cambodia (**SEAFDEC 2025b2022-2024.**). In any case, and similar to the Sea Around Us database (**Pauly et al., 2024**), a recent report from the Strategic Action Programme for the South China Sea also notes that catch per unit effort (CPUE) and stock indicators show that the respective resources are in a severe depleted condition (**UNEP 2025**).

Regarding potential fisheries impacts on endangered, threatened, and protected (ETP) species, several sea turtle, marine mammal, and shark species are known to occur in Cambodian waters, including Irrawaddy dolphin, dugong, blacktip reef shark, grey bamboo shark, and whale shark. Available evidence indicates the presence of some incidental catches in fisheries using gears such as trawls, purse seines and gillnets (**Beasley and Davidson 2007; Jaaman et al., 2009: Sereywath undated; SEAFDEC 2022**). However, there is no robust information to determine whether these impacts are affecting the population status of these species.

# 2.3 | INDONESIA

©Fisherman landing a large billfish in Indonesia. ©Duncan Leadbitter

### 2.3.1. Data availability and transparency

The availability of information and national statistics on stocks and fisheries for non-Indonesian users seems to have improved in recent years. Fisheries regulations, as well as information on the stock and exploitation status of fisheries, are available on the Ministry of Maritime Affairs and Fisheries website (https://kkp.go.id/). Even though the website is available both in Bahasa Indonesian and English, there are some limitations with accessing some of the tabs and information in English.

The official publications are generally only in Bahasa. However, additional data and information on fisheries production and trade can be found on the Statistics Indonesia website (https://www.bps.go.id/), which is also available in English. Capture statistics and existing assessments are still generally obtained or conducted at the species group level and for the most important species groups (e.g., tuna, shrimp).

For the sections below, all statistics and information on sustainability status, management, production, and trade were sourced from two main data sources: (1) international production and trade databases (e.g., FAO FishStatJ, Sea Around Us); and (2) national reports and statistics (when available). Additional information was also included from various FAO and SEAFDEC reports.

### 2.3.2. Wild production: current status and recent trends

Indonesia is the second top producing country globally in terms of wild marine capture (just after China) (**App Figure 1**). Capture marine production has been increasing, and in 2022 Indonesia's marine capture totaled 6.8 million tonnes, compared to 5 million t in 2010, 3.8 million t in 2000, and 1.4 million t in 1980. However, the pace of growth is slower than for aquaculture, which has been showing an average growth rate of 9% per year since 1980. Still, the average annual growth rate of aquaculture of the last ten years (6%) is much lower than for the previous 10 years (2003-2012) (13%) (**Figure 13; Supplementary Information 10-2**).

For the Eastern Indian and the Western and Central Pacific oceans, Indonesia is the largest producing country, accounting for 34% of the total 2022 catches in these two areas combined (**App Table 1; FAO 2024a**). Per FAO data, 98% of the production is destined to direct human consumption, with just a small fraction going to fishmeal and fish oil (**FAO 2024b**).

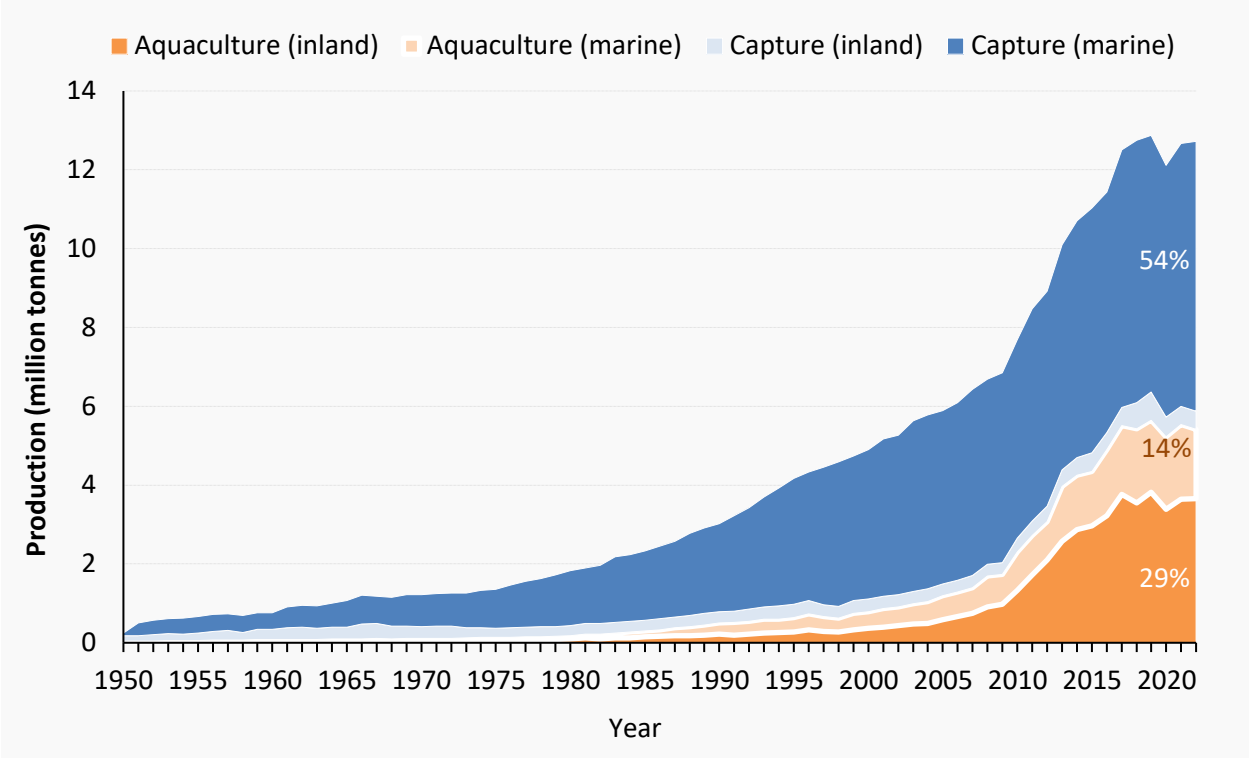



**Figure 13 |** Annual reported production (in million tonnes) by Indonesia in terms of main production source (Aquaculture, inland capture, marine capture), between 1950 and 2022. Note: The percentage denotes the relative contribution of each production source to total production. **Source: FAO 2024a.**

The reported catches are dominated by marine fishes not identified and small pelagic fish (Scads, mackerels, Sardinellas), followed by tuna and tuna-like species, snapper, and squid (**App Table 2**). The granularity of the reported catches to FAO is better than for other countries in the region. However, production reported in aggregated groups (e.g., Marine fishes nei) still represent 26% of the total reported catches (**Figure 14; SI 10-1 and SI 10-2**; **FAO 2024a)**.

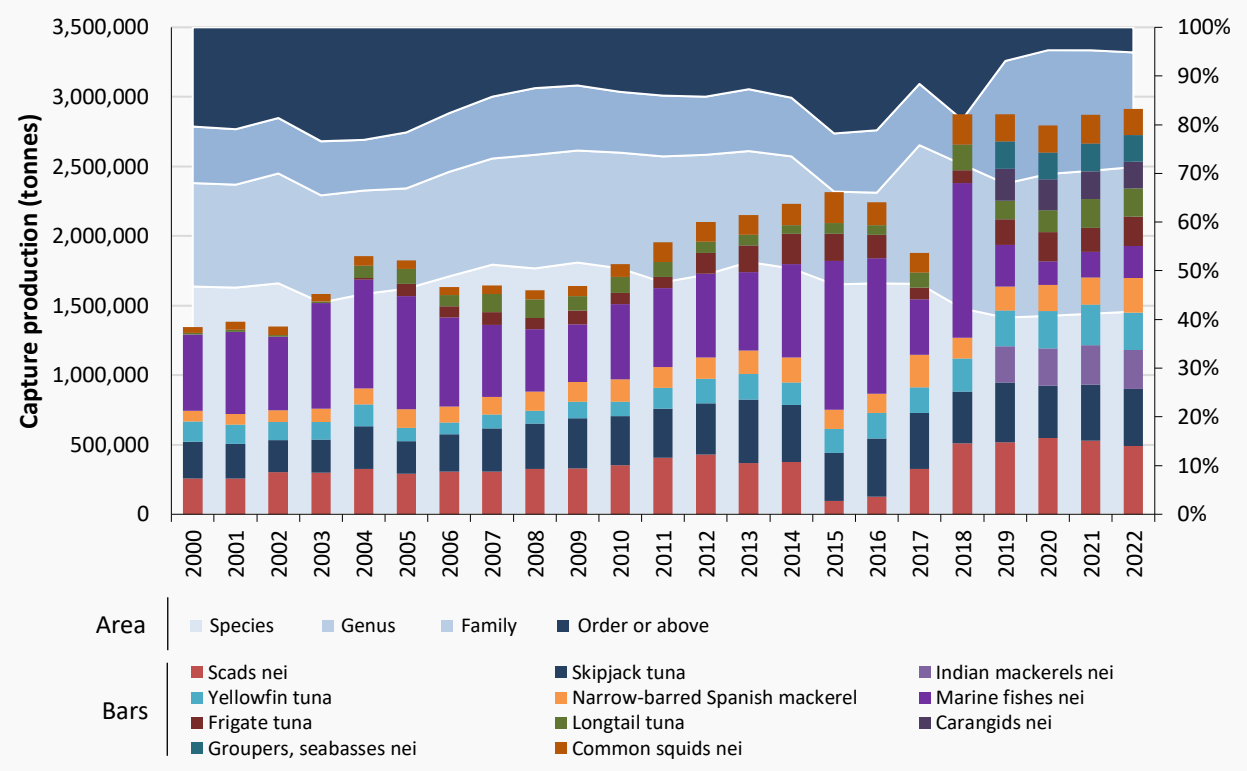



**Figure 14 |** Annual reported marine capture production (in tonnes) for Indonesia by main species and reporting level between 2000 and 2022. **Source: FAO 2024a**

The Sea Around Us (SAU) global database also includes estimated catches for this country. According to SAU data, Indonesian catches totaled 7.46 million tonnes in 2019 (the latest year for which data is available). This includes catches from all FAO areas, and both in the EEZ and the High Seas. The estimate by SAU is higher than that reported to FAO for the same year (6.5 million tonnes), likely because it already considers unreported catches (**Pauly et al., 2024**). According to the SAU, overall unreported catches in Indonesia represented roughly 7% of the total estimated catch (**Pauly et al., 2024**). Catches are estimated to come mostly from the industrial sector (65% of total catch). Regarding specific fishing gears, 58% is estimated to come from unknown gears (all from the industrial sector). The second most important gear type is "artisanal fishing gear" (31% of total catch) (Figure 15; **App Table 3**).

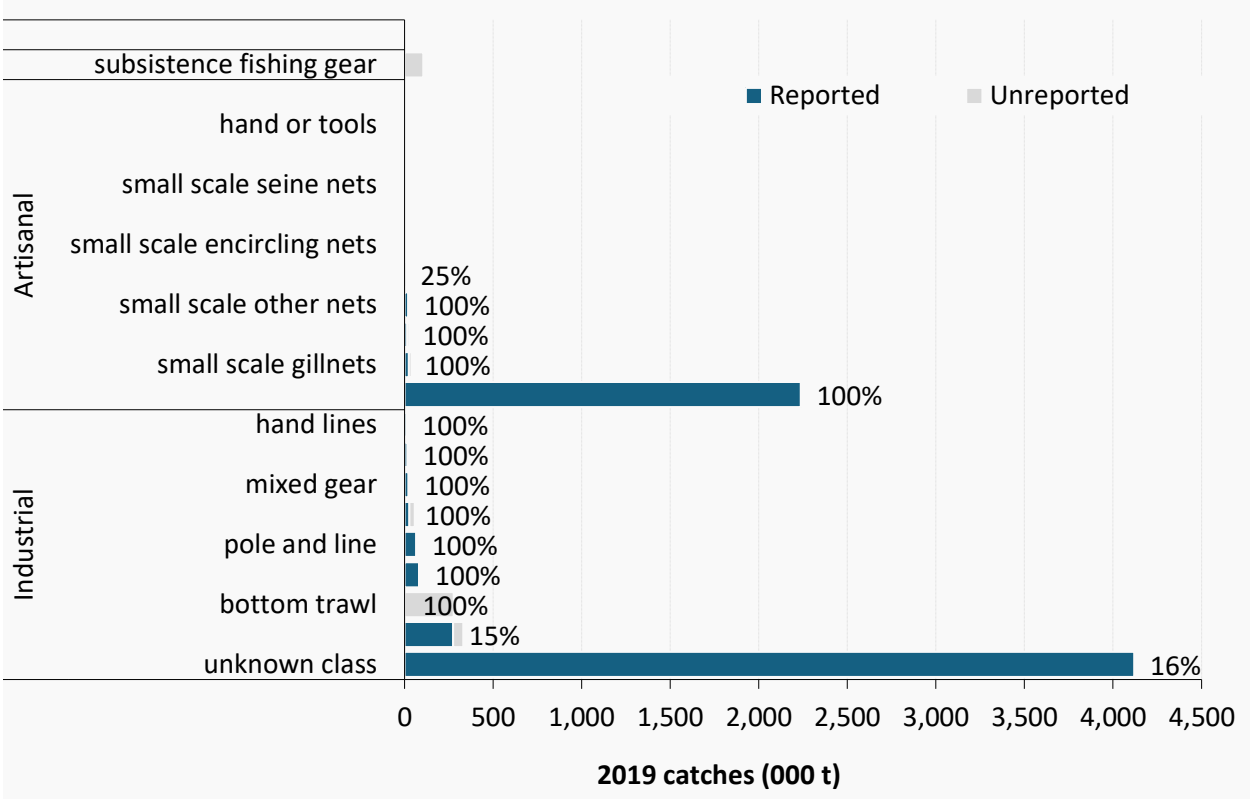
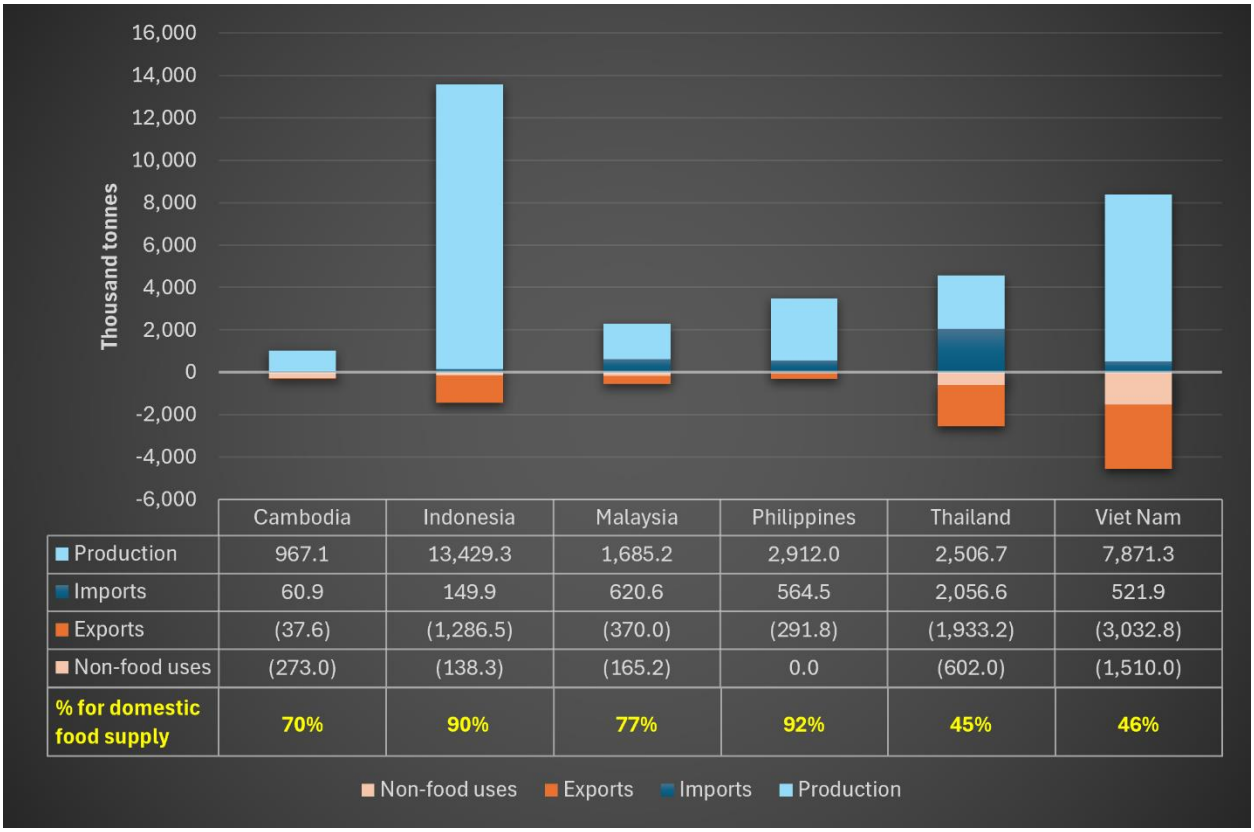



**Figure 15 |** Estimated total 2019 catches in thousand tonnes, including reported and unreported catches, in Indonesia, by fishing sector and gear type. Note: the estimated percentage of unreported catches is shown for each gear type. **Source: Pauly et al., 2024.**

### *2.3.3. Seafood consumption and domestic supply*

As a country where most of the population lives in the coastal areas, Indonesia is one of the top countries in terms of consumption and dependence on seafood for food security. According to recent statistics, the country's average fish consumption was estimated at 44.40 kg/capita/year in 2021, ranking fifth in the Asian countries, and 15$^{th}$ globally (App Figure 2) (**Ritchie and Roser 2021**). It is also one of the countries with the highest dependence on fish and seafood as a source of protein. In 2021, it ranked sixth globally, with 49% of the total animal protein coming from seafood (App Figure 3) (**Ritchie and Roser 2021**).

In terms of trade balances, most of the country's production seems to stay in the domestic market. In 2019, processed seafood production (wild and farmed) totaled 13.4 million tonnes, and exports only totaled 1.3 million tonnes (~10% of production). Most of the domestic supply relies on the country's seafood production, with imports only representing 150 thousand tonnes (**Figure 16**; App Table 4) (**FAO 2023**). Except for commodities important to the international markets, such as crustaceans, snapper-grouper, tuna, or octopus, most of the imports and production are estimated to stay in the domestic market. This is particularly true for freshwater, marine pelagic, or demersal fish, and suggests the critical importance of these groups for the seafood availability and consumption for the country.




| | Cambodia | Indonesia | Malaysia | Philippines | Thailand | Viet Nam |
|---|---|---|---|---|---|---|
| Production | 967.1 | 13,429.3 | 1,685.2 | 2,912.0 | 2,506.7 | 7,871.3 |
| Imports | 60.9 | 149.9 | 620.6 | 564.5 | 2,056.6 | 521.9 |
| Exports | (37.6) | (1,286.5) | (370.0) | (291.8) | (1,933.2) | (3,032.8) |
| Non-food uses | (273.0) | (138.3) | (165.2) | 0.0 | (602.0) | (1,510.0) |
| **% for domestic food supply** | **70%** | **90%** | **77%** | **92%** | **45%** | **46%** |

**Figure 16 |** Processed production, imports, exports, non-food uses (in thousand tonnes; product weight), and the estimated percentage of imports and production retained for domestic food supply in the Southeast Asian countries included in this study (2019 data). **Source: FAO 2023**

### *2.3.4. International trade*

Public trade information is available via global databases such as UN COMTRADE and FishstatJ. The quality of the trade information for Indonesia seems reasonable and comparable to other countries in the region. Trade data is also available via national statistics, but generally only in Indonesian and in an aggregated format (i.e., it is not available in a format that can be used for detailed analysis). International trade databases were thus used for the trade analysis in terms of exports and imports. The main results are provided below.

#### 2.3.4.1. Exports

As with production, Indonesia is also one of the top exporter countries of seafood in the world. In 2022, it was the 14th top exporter country by product weight (with seafood exports of roughly 1 million tonnes) and the 10th by value (6 billion USD) (SI 4-1; SI 4-2). For commodity groups such as crab (4th top exporter by value), tuna (5th), and shrimp (4th), this country is among the top ten exporters globally (SI 4-3; SI 4-5; **FAO 2024c**). For small pelagics specifically, Indonesia's exports are relatively small compared to other countries (121 million USD in 2022; 27th top exporter). This supports previous findings (e.g.,

**Roberts et al 2023**) that small pelagics are mostly destined for the domestic market and represent an important source of food, especially for the coastal communities.

The country's most exported seafood commodities are shrimp (24% of 2020-22 annual exports by weight; 41% by value), tuna (19% by weight; 15% by value), other non-specified marine fish (which includes highly valuable species such as emperors, seabreams, and mahi: 19% by weight; 10% by value), and squid/cuttlefish (13% by weight; 10% by value). Small pelagics are the fifth most exported commodity group by weight (6%; 2% by value) (**Figure 17**; **Figure 18**; **App Table 5; App Table 6**).

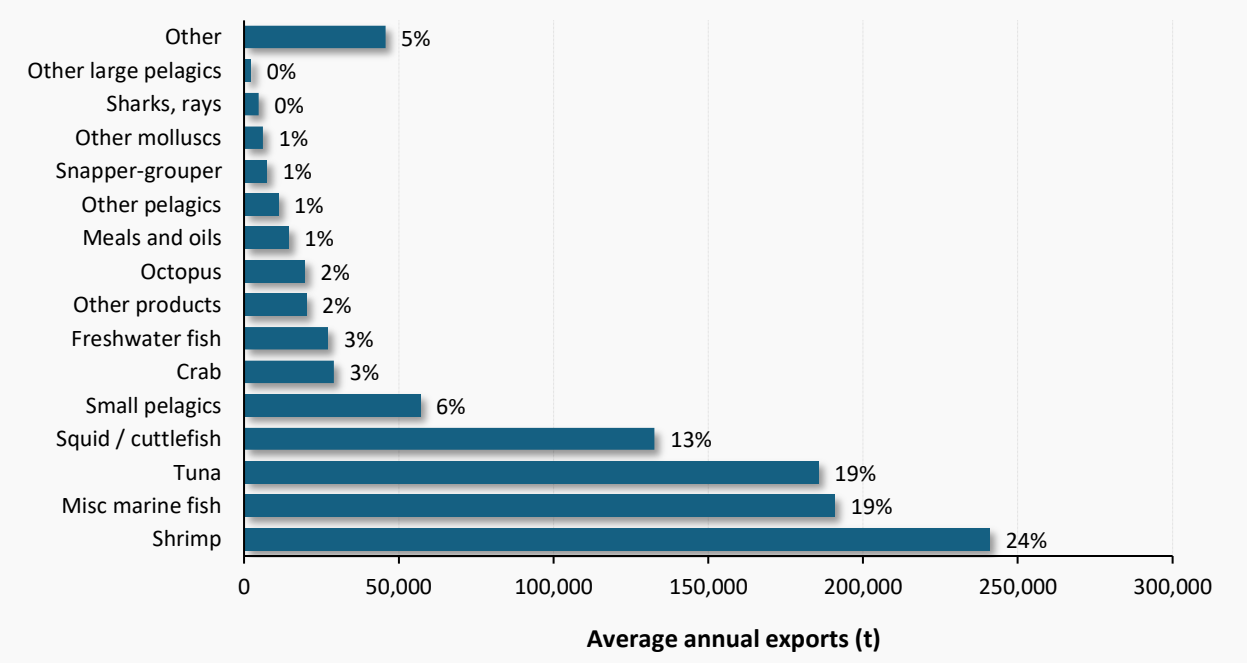



**Figure 17 |** 2020 - 2022 average annual seafood exports by Indonesia in terms of product weight, and for the main commodity groups. **Source: FAO 2024c.**

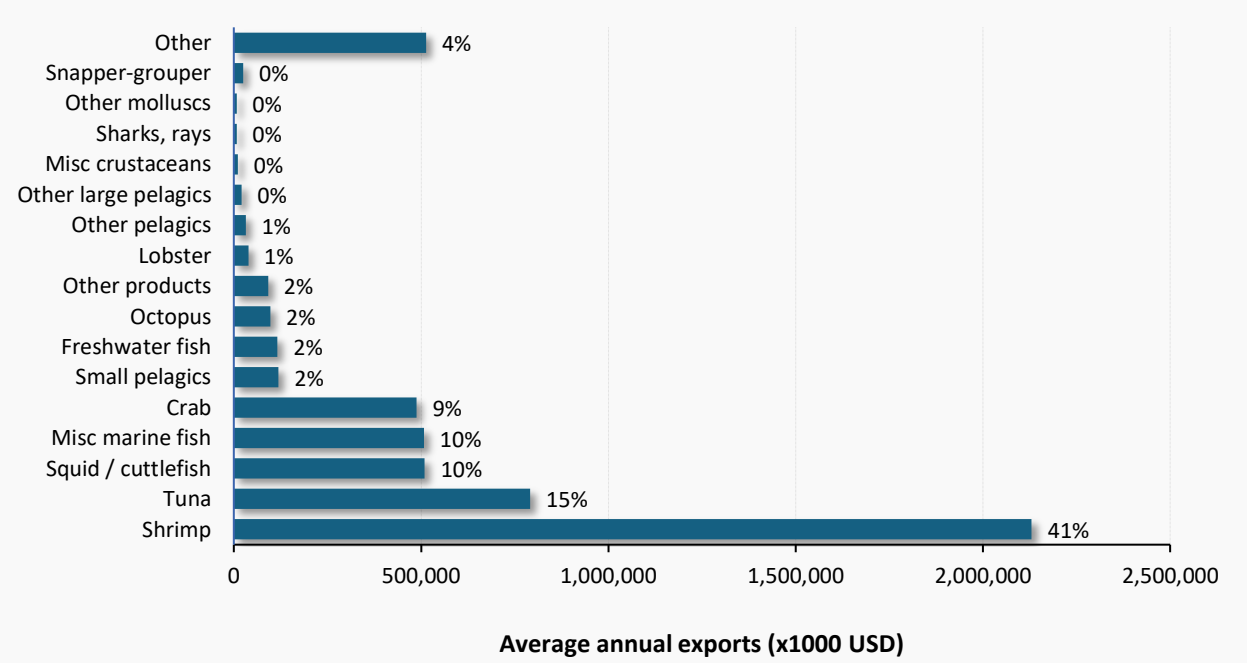



**Figure 18 |** 2020 - 2022 average annual seafood exports by Indonesia in terms of value (x1000 USD), and for the main commodity groups. **Source: FAO 2024c.**

Bilateral trade data indicates that the most important trade partners (importers) of Indonesia in terms of overall seafood exports by value are the United States (42% of Indonesia's total exports by value), Japan (13%), China (13%), Viet Nam (5%), and Malaysia (3%). The top EU importer is Italy, with the overall EU market only contributing to 6% of Indonesia's seafood exports by value (App Table 7; **FAO 2024d**).

In terms of trade flows per main commodity group, the following groups were investigated: shrimp, tuna, crab, small pelagics, and fish sauce. These groups were chosen because they are either relevant in terms of contribution to Indonesia's total exports or important for the scope of this analysis.

For shrimp, the most important trade partners (importers) are the United States (66% of Indonesia's shrimp exports by value), Japan (18%), China (5%), and Canada (1.4%). Combined, these four countries represented 91% of Indonesia's total shrimp exports by value (SI 13-2). For tuna, the top importers are the United States (29% of total 2022 exports by value), Japan (15%), Thailand (12%), Saudi Arabia (10%), and Viet Nam (8%) (SI 13-3). For crab, the United States is also the most important importer, accounting for around two thirds (66%) of Indonesia's total exports by value. Other important countries are China (11%), Japan (8%), and Malaysia (5%) (SI 13-4) (**FAO 2024d**).

In terms of small pelagics, most are exported to other countries in Asia. But as noted before, total annual exports are relatively small compared to other commodities such as shrimp or tuna. The top importers of small pelagics are Taiwan (15%), China (13%), Japan (6%), Singapore (6%), South Korea (5%), and Malaysia (4%) (SI 13-5). As with other countries and seafood commodities, there is some discrepancy on what Indonesia reports *vs* what importers report in terms of trade value for this group. In terms of importer (mirror) data, the top five importers by value are: China (18%), United States (11%), Taiwan (10%), Malaysia (8%), and South Korea (6%) (**FAO 2024d**).

Fish sauce is residual in terms of exports from Indonesia, with no reported exports in 2022 (**FAO 2024d**).

### 2.3.4.2. Imports

Indonesia is a net seafood exporter, meaning that it exports more seafood than it imports. Between 2020 and 2022, seafood imports averaged 280,000 tonnes per year (495 million USD/year) (**SI 14-1, SI 14-2**). I.e., in terms of value, average annual imports only represented about 9% of the exports (5.5 billion USD/year between 2020 and 2022). Compared to other countries, it ranks 42nd globally and 15th in Asia in terms of seafood imports by value (**SI 9-1, SI 9-2**) (**FAO 2024c**).

The country's most imported seafood commodities by product weight are fishmeal and fish oil (FM/FO) (43% of 2020-22 annual imports; 17% by value), small pelagics (27% by weight; 17% by value), and tuna (11% by weight; 10% by value) (**Figure 19**; **Figure 20**; **App Table 8**; **App Table 9**). The relevance of small pelagics in the country's imports underscores their importance as a vital food source for the Indonesian population, particularly in coastal communities. Similarly, the substantial imports of FM/FO are likely tied to the growth of aquaculture and their critical role in the shrimp farming industry.

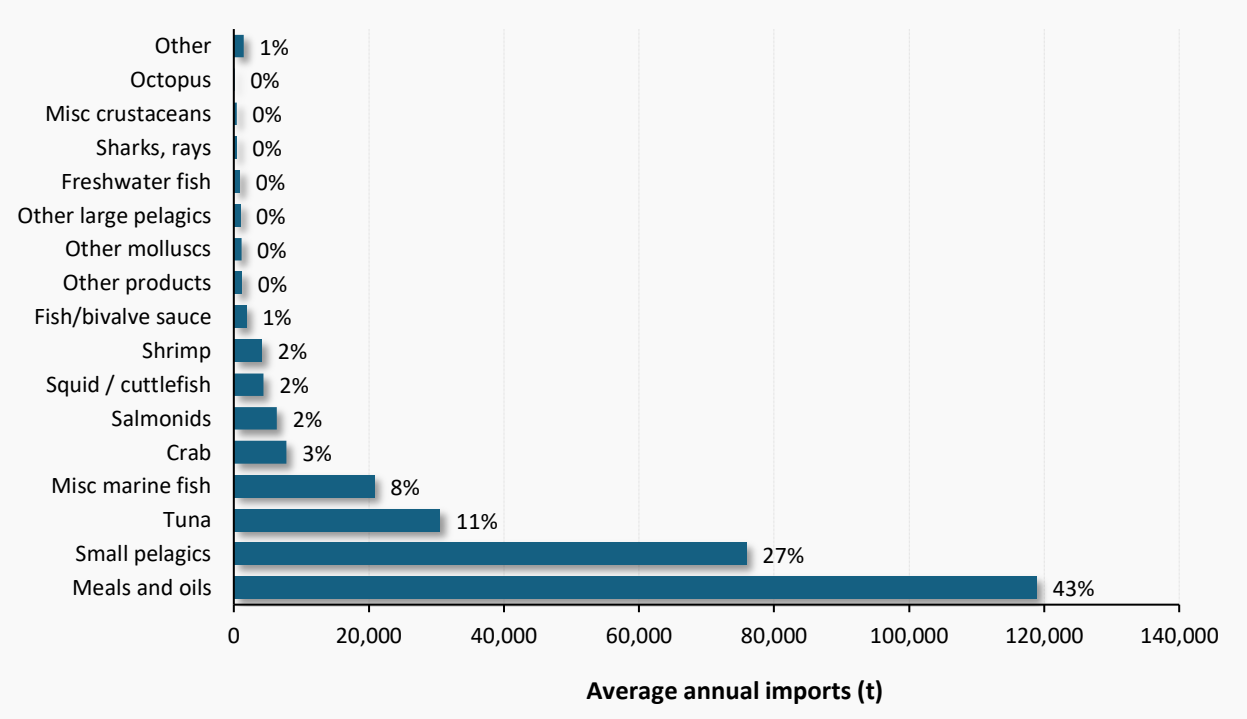



**Figure 19 |** 2020 - 2022 average annual seafood imports by Indonesia in terms of weight and for the main commodity groups. **Source: FAO 2024c.**

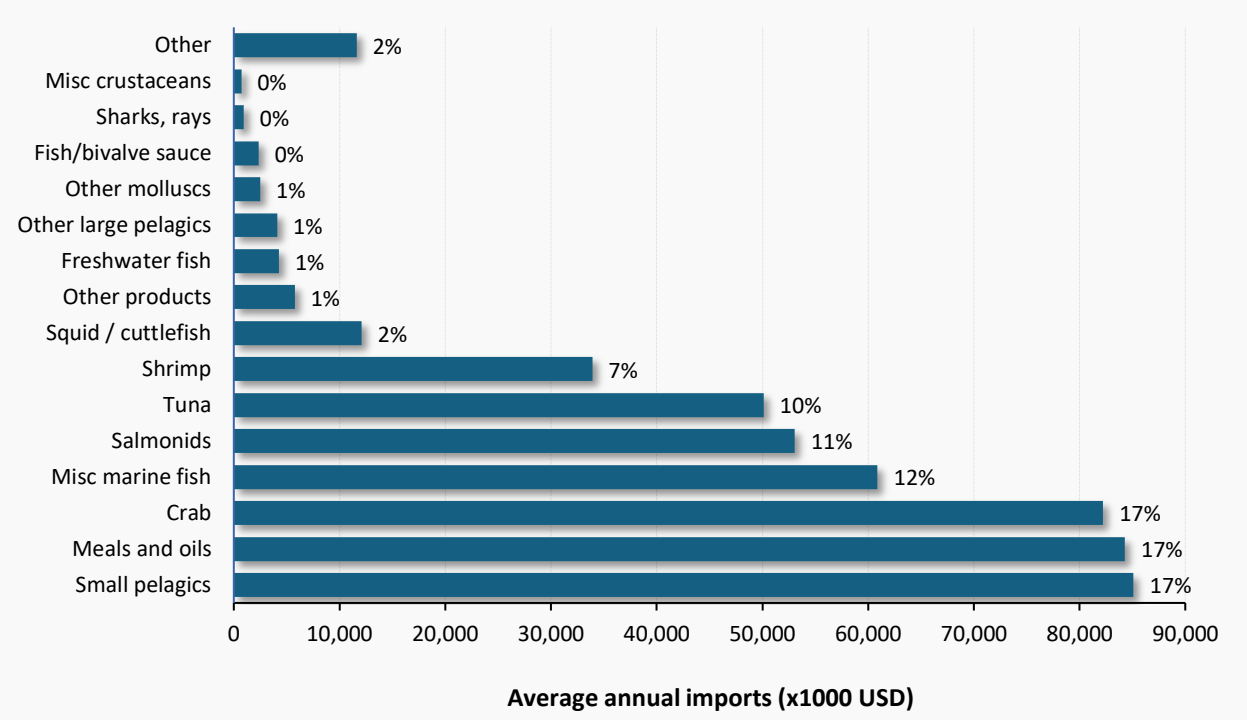



**Figure 20 |** 2020 - 2022 average annual seafood imports by Indonesia in terms of value (x1000 USD) and for the main commodity groups. **Source: FAO 2024c.**

According to bilateral trade data, the most significant exporters of seafood to Indonesia by value are China (17% of total imported seafood in 2022 by value; pelagic fish, squid, and crab), Russia (10%, mostly whitefish and crab), South Korea (9%, mostly tuna and miscellaneous marine fish), and Canada (7%, mostly crab and flatfish) (see **SI 15-2**). The fact that Indonesia imports certain commodities that are also significant in terms of their exports (such as tuna and crab) suggests that similar to countries like China and Thailand, Indonesia serves as a processing hub for seafood before being re-exported.

The analysis of trade flows per main commodity group considered the following groups: fish meals and oils[3] (FM/FO), small pelagics, tuna, miscellaneous marine fish and crab.

For aquatic animal meals and oils, South Korea (19% of Indonesia's FM/FO imports by value), the Netherlands (15%), Chile (14%), Denmark (8%), the United Kingdom (8%), Poland (6%), and Viet Nam (5%), are the most significant trade partners (exporters to Indonesia). Together, these seven countries accounted for almost three quarters (74%) of Indonesia's total FM/FO imports by value in 2022 (**SI 15-3**) (**FAO 2024c**).

In terms of small pelagics, China (61%), Japan (9%), Pakistan (7%), and United Kingdom (5%) are the countries from which Indonesia reported importing more than 80% of its total value of small pelagics. The most important commodities in this group are chub mackerels, mackerels, and sardines (**SI 15-4**).

For tuna, the top exporters to Indonesia are South Korea (44% of total 2022 tuna imports by value), Seychelles (23%), Japan (13%), and Indonesia itself (6%) (**SI 15-5**). Regarding other marine fish, Russia dominates as the top exporter to Indonesia, with more than half (51%) of the imports by value. Other relevant countries are the United States (7%), Norway (6%), and Malaysia (6%). Whereas for the first

[3] Includes shrimp meal

three countries the exported seafood to Indonesia is mostly coldwater whitefish, from Malaysia it is most likely unidentified coastal fish such as snappers, emperors, or others (SI 15-6). In terms of crab, the most relevant exporters to Indonesia are Canada (36% of Indonesia's 2022 crab imports by value; most likely coldwater crab), Tunisia (12%, most likely swimming crab as this country is growing in importance as a producer of this species group), United States (11% of Indonesia's 2020 crab imports by value; it is unclear whether they are coldwater or swimming crab), Russia (10%, most likely coldwater crab), and China (7%, most likely swimming crab) (SI 15-7) (**FAO 2024c**).

As noted above, given Indonesia's growing importance as a seafood processing country, it is likely that most of the imported tuna and crab, which is mostly imported frozen, is then processed and re-exported.

### *2.3.5. Information on stock and fisheries exploitation status*

Information on the status of Indonesia's marine resources is available through various sources but remains limited in terms of the information that is made publicly available on a timely manner.

According to FishSource, stock assessments in Indonesia at the national level are conducted by government fisheries scientists at the Research Center for Fisheries (Pusriskan). These assessments are reviewed by the National Commission for Fish Stock Assessment (Komnas Kajiskan), an independent body that advises the Minister of Marine Affairs and Fisheries (KKP-RI) (KKP-RI 2016 in **SFP 2024**). However, many assessments are not species-specific, instead aggregating multiple species (e.g., snappers or small pelagics), and the frequency of these assessments is unclear. A 2022 decree by the Indonesian Ministry of Fisheries (KKP-RI) outlined estimates of fish resource potential, total allowable catch, and exploitation rates by species group and management area, but provided no further details on assessment outcomes.

FishSource is relatively data-rich for Indonesia, with 349 Gear Flag Profiles (GFPs) as of November 2024. However, only 59% (207) have scores (Table 2). Among the scored profiles, over 80% (175 GFPs) either lack sufficient data or have at least one FishSource score below 6, pointing to information gaps or significant issues in stock health or management. Only some tuna and large pelagic fisheries score at or above 6 in all stock health and management quality categories. The full list of FishSource profiles and scores is available in SI-46 (supporting Excel file).

**Table 2 |** Number of Gear Flag Profiles (GFPs) in FishSource by seafood sector for Indonesia (as of November 2024), and the percentage of GFPs that are either not scored or have critical issues (i.e., at least one Stock Health or Management Quality score below 6).

| Flag country and sector | All scores >=6 | With scores below 6 of DD | Not scored | Total number of Gear Flag Profiles | % of fisheries not scored or with critical issues |
|---|---|---|---|---|---|
| **Indonesia** | **32** | **175** | **142** | **349** | **91%** |
| Large pelagics | 2 | 6 | 0 | 8 | 75% |
| Large Shrimp | 0 | 7 | 4 | 11 | 100% |
| Marine Ingredients - Asia reduction | 0 | 10 | 54 | 64 | 100% |
| Non-T75 | 0 | 14 | 35 | 49 | 100% |
| Octopus | 0 | 4 | 14 | 18 | 100% |
| Snapper & Grouper | 0 | 105 | 31 | 136 | 100% |
| Squid | 0 | 0 | 3 | 3 | 100% |
| Swimming Crab | 0 | 6 | 1 | 7 | 100% |
| Tuna | 30 | 23 | 0 | 53 | 43% |

**Seafood Watch** currently provides 18 recommendations for Indonesian fisheries, covering the following species or species groups:

- **Blue Swimming Crab (BSC):** All six evaluated fisheries are rated **"Avoid"** due to (1) the poor condition of BSC stocks, (2) bycatch of vulnerable species like rays and horseshoe crabs, and (3) ineffective management.
- **Squid:** Two recommendations each for **swordtip squid** and **mitre squid**, all rated **"Avoid."** Key concerns include likely overexploitation, poor stock conditions, and ineffective management in controlling fishing effort and fleet capacity.
- **Mahi:** Two recommendations, both **"Avoid."** While mahi stocks appear relatively healthy, bycatch of vulnerable species (sharks, sea turtles, and seabirds) remains a critical issue, with inadequate measures in place to reduce bycatch.
- **Octopus:** One recommendation, **"Avoid,"** due to a lack of stock condition data, potential overfishing, and insufficient management actions.
- **Longtail Tuna:** Six recommendations—two rated **"Good Alternative,"** four **"Avoid."** The "Avoid"-rated fisheries face issues with overfishing, poor enforcement of regulations, and inadequate bycatch management.
- **Yellowfin Tuna** (handlines and pole-lines, hand-operated): **MSC Certified**.
- **Skipjack Tuna** (handlines and pole-lines, hand-operated): **MSC Certified**.

A summary of the current Seafood Watch recommendations for each evaluated species is available in **SI-16** (Supplementary information).

It is important to note that some evaluations in both **Seafood Watch** and **FishSource** may be outdated and not accurately reflect the current state of the respective fisheries.

The Sea Around Us (SAU) platform (**Pauly et al., 2024**) also includes rough estimates on status of the stocks found in its waters and assessed per SAU methodology. For this country, estimates are available for each of the three marine areas: Eastern waters, Central waters, and Indian Ocean waters. The estimates for each area, based on the most recent available data, are provided below (See also **App Figure 4**).

For the **Eastern waters (n = 134 assessed stocks)**, most (63%) of catches still come from developing fisheries (i.e., underfished stocks) while almost 19% originate from overexploited or collapsed stocks (**Figure 21**). Mirroring other EEZs in the region, the number of overexploited or collapsed stocks in these waters has been rising, and almost two-thirds (58%) of the stocks that have been assessed by the SAU methodology are now considered to be in poor condition (i.e., either overexploited or collapsed) (**Figure 22**).

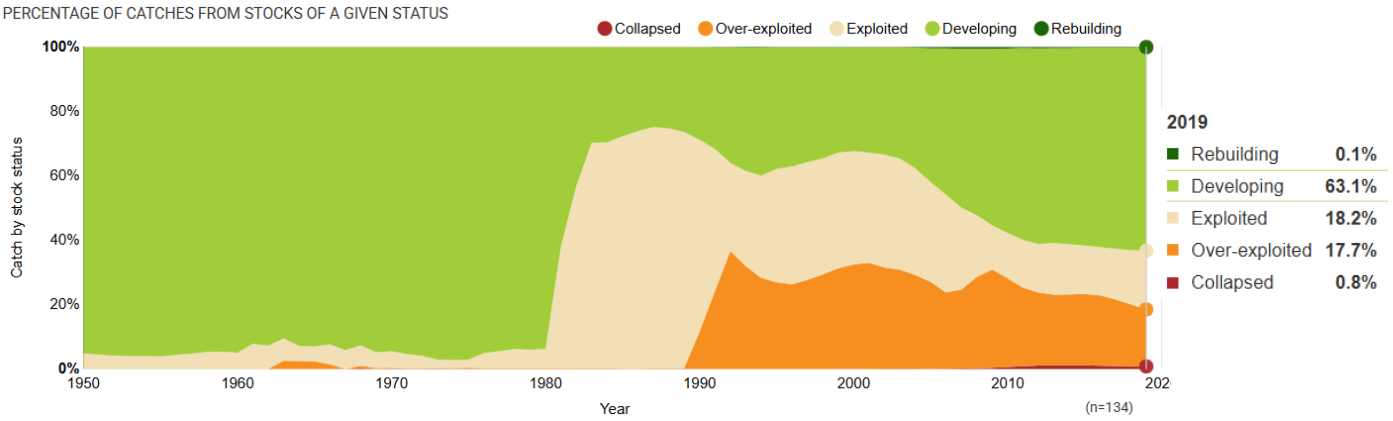



**Figure 21 |** Estimated status of stocks found in Indonesia's EEZ (Eastern waters) by catch biomass (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024)

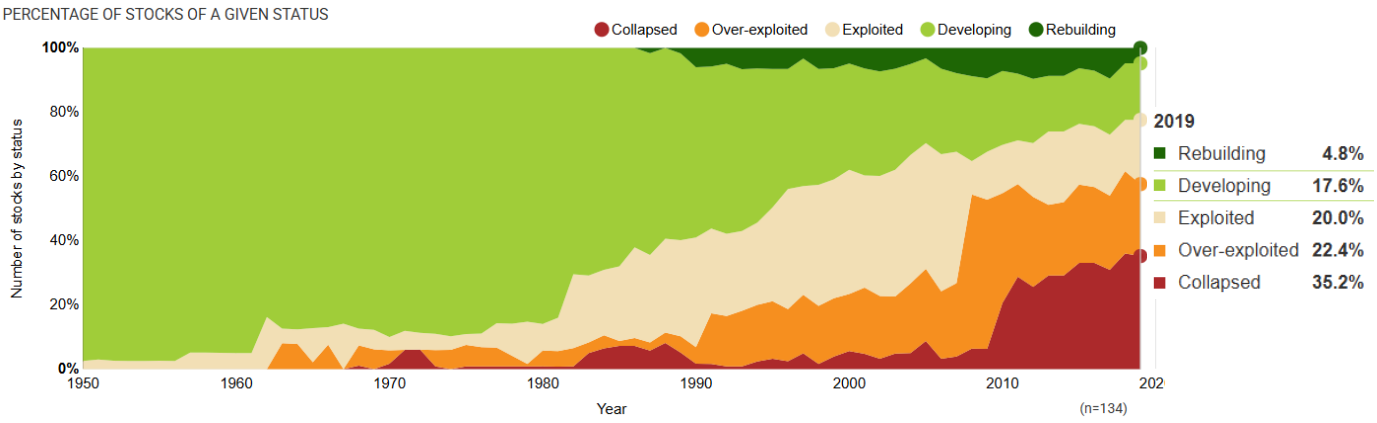



**Figure 22 |** Estimated status of stocks found in Indonesia's EEZ (Eastern waters) by number of stocks in each category (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024).

In terms of the **Central waters (n = 112)**, most catches (61%) also still come from developing fisheries while almost 19% originate from overexploited or collapsed stocks (**Figure 23**). In terms of number of stocks, the number of stocks in these waters that are either overexploited or collapsed increased steadily from the mid-2000s to 2011 and has stabilized since – currently about 50% of the stocks that have been assessed are considered to be in poor condition (i.e., either overexploited or collapsed) (**Figure 24**).

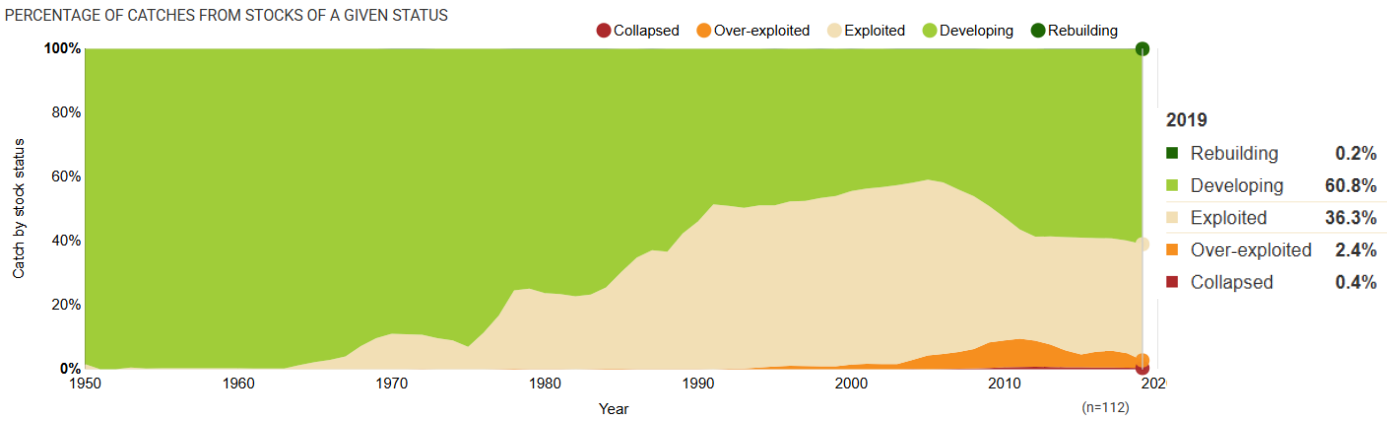



**Figure 23 |** Estimated status of stocks found in Indonesia's EEZ (Central waters) by catch biomass (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024)

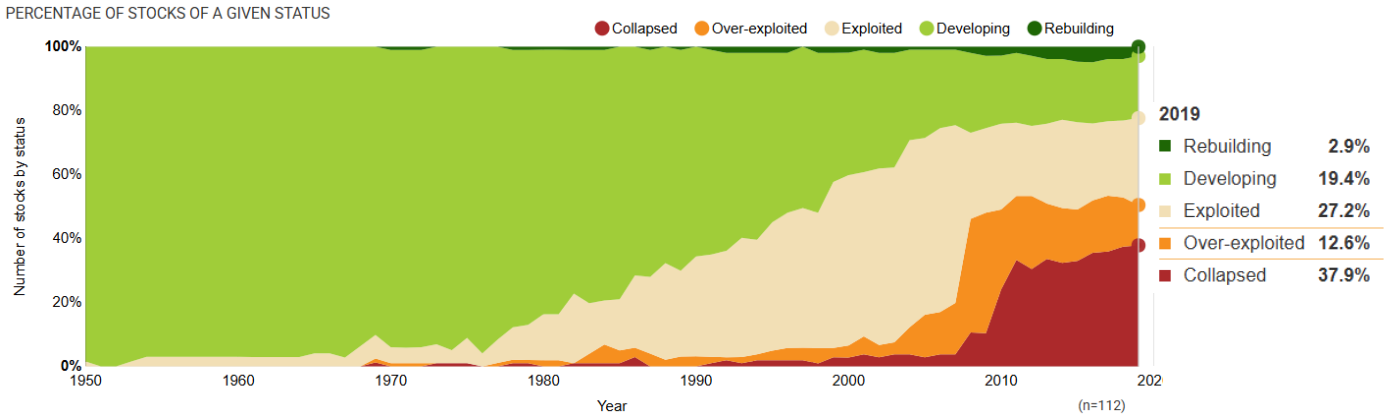



**Figure 24 |** Estimated status of stocks found in Indonesia's EEZ (Central waters) by number of stocks in each category (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024).

Finally, for the **Indian ocean waters (n = 112)**, 78% of catches in these waters come from fully exploited stocks, while only 3% originate from overexploited or collapsed stocks (**Figure 25**). Like in the Central waters, the number of overexploited or collapsed stocks collapsed increased steadily from the mid-2000s to the early-2010s but dropped afterwards and has been relatively stable since. Currently, around

45% of the stocks that have been assessed are in poor condition (i.e., either overexploited or collapsed) (**Figure 26**).

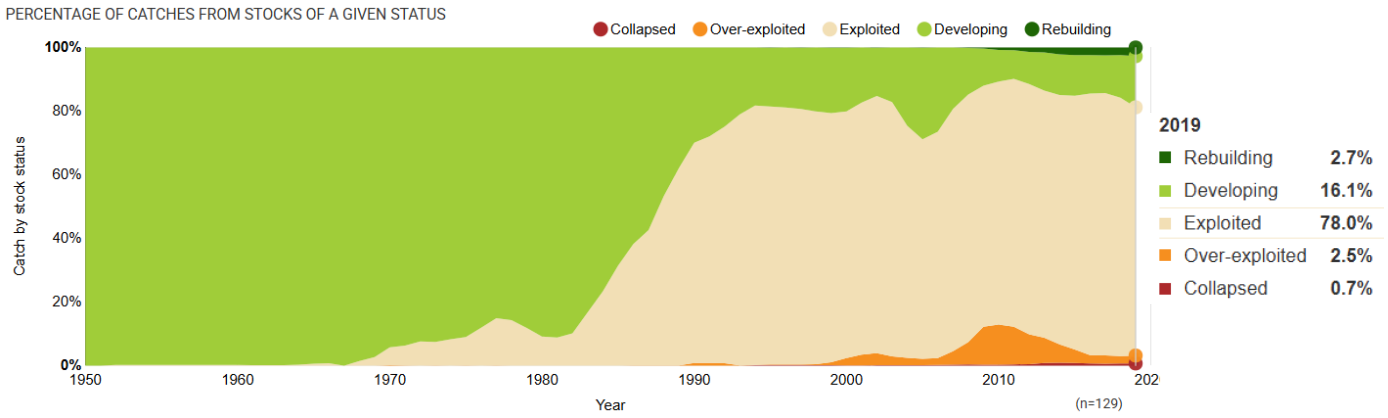



**Figure 25 |** Estimated status of stocks found in Indonesia's EEZ (Indian ocean waters) by catch biomass (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024)

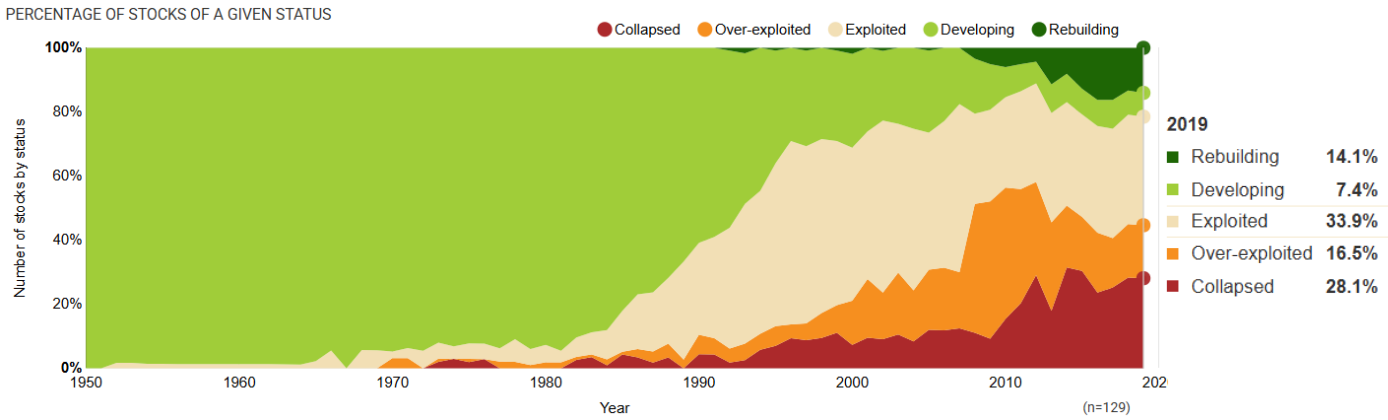



**Figure 26 |** Estimated status of stocks found in Indonesia's EEZ (Indian ocean waters) by number of stocks in each category (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024).

The SEASOFIA report generally also includes a section on marine fishery status, issues, and concerns. The latest edition (SEAFDEC 2022) provides estimates based on the most recent data, though, as already noted, coverage is restricted to certain key resources like small pelagics and tunas. Additionally, exploitation status data is incomplete, outdated in some cases, and unavailable for many areas and species. For the species groups other than tuna for which evaluations are available, the exploitation rates for scads were considered excessive in four fisheries,[4] and for mackerels in two fisheries (**SEAFDEC 2022**).

[4] Here, the term "fishery" is used for the combination of the fishing ground and species evaluated. Specific details in the evaluations can be consulted in the SEASOFIA 2022 report.

# 2.4 | MALAYSIA

### 2.4.1. Data availability and transparency

As with other countries in this study, accessing fisheries and aquaculture-related information in Malaysia remains challenging for non-Malay speakers, particularly through desktop research. However, the Department of Fisheries Malaysia (**DOF 2025**)—the primary authority overseeing fisheries management—provides extensive on-line resources on licensing, regulations, and sectoral policies. DOF is structured into various divisions, each overseeing a specific aspect of fisheries and aquaculture development, management, or research. Key divisions include the Capture Fishery Resources Division, Fisheries Conservation & Protection Division, Fisheries Research Institute, Fisheries extension Division, or Aquaculture Division. According to an FAO country fisheries management review (**Flewwelling and Hosch 2006**), the Ministry of Science, Technology, and Innovation (MOSTI) plays a role in providing scientific support for fisheries management. However, publicly available information on fisheries statistics, monitoring, or stock assessments remains limited.

The Fisheries Act of 1985 serves as the foundation for Malaysia's fisheries management framework, with additional regulations enacted under this law. A key conservation policy is the Establishment of Marine Parks Malaysia Order 1994, aimed at protecting marine biodiversity. Additional information and relevant sources are available in the FAO country profile (**FAO 2019a**).

For the sections below, all statistics and information on sustainability status, management, production, and trade were sourced from two main data sources: (1) international production and trade databases (e.g., FAO FishStatJ, Sea Around Us); and (2) national reports and statistics (when available).

### 2.4.2. Wild production: current status and recent trends

Malaysia ranked 18$^{th}$ in the world in terms of overall seafood production (wild and farmed) in 2022 (**SI 1B-2**), with a total production of 1.5 million tonnes. Most of the country's production comes from wild marine capture (83% of total production in 2022, ranking 15$^{th}$ globally) (**App Figure 1**).

Annual marine catches increased steadily from 140 thousand tonnes in 1980 to a record high of 1.6 million tonnes in 2016 but have slightly declined since. In 2022, the country's marine capture production totaled 1.3 million tonnes, reflecting a 17% decrease compared to 2016. Aquaculture plays a smaller role in total production compared to other Asian countries, but it has grown considerably over the past few decades, increasing from around five thousand tonnes in 1950 to 260 thousand tonnes in 2022. However, production has stabilized over the past decade, fluctuating between 200 and 300 thousand tonnes (**Figure 27**; **SI 17-2**).

Virtually all (99.9%) marine production from Malaysia is from the Eastern Indian (FAO 57; 53%) and the Western Central Pacific (FAO 71; 47%) oceans. Similar to other countries in Southeast Asia, the reported catches are dominated by Marine fishes not identified and small pelagics (scads, mackerels, sardinellas), followed by shrimp and squid species. The granularity of the reported catches to FAO has improved compared to the early 2002s, but only 23% of the catches are reported at the species level. Production

reported in aggregated groups (e.g., Marine fishes nei, mackerels nei) still represents more than 60% of the total reported catches (**Figure 28**; **SI 17-1**; **SI 17-3**).

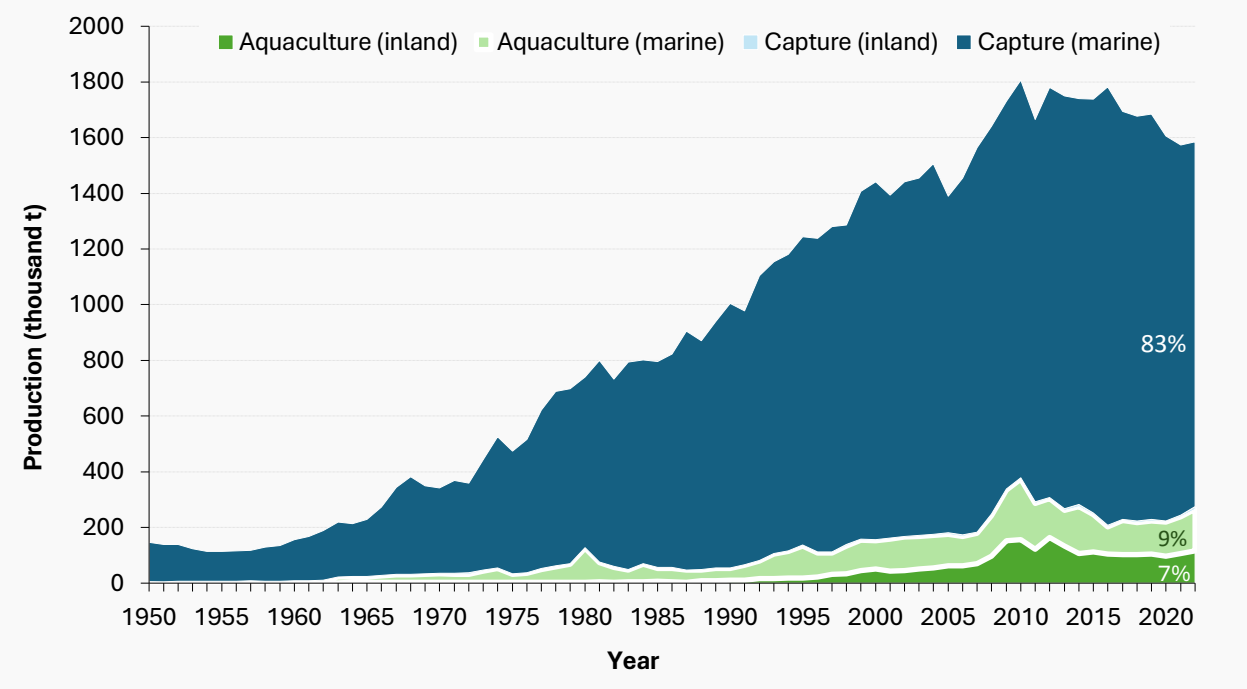



**Figure 27 |** Annual reported production (in million tonnes) by Malaysia in terms of main production source (Aquaculture, inland capture, marine capture), between 1950 and 2022. **Note**: The percentage denotes the relative contribution of each production source to total production. **Source: FAO 2024a**

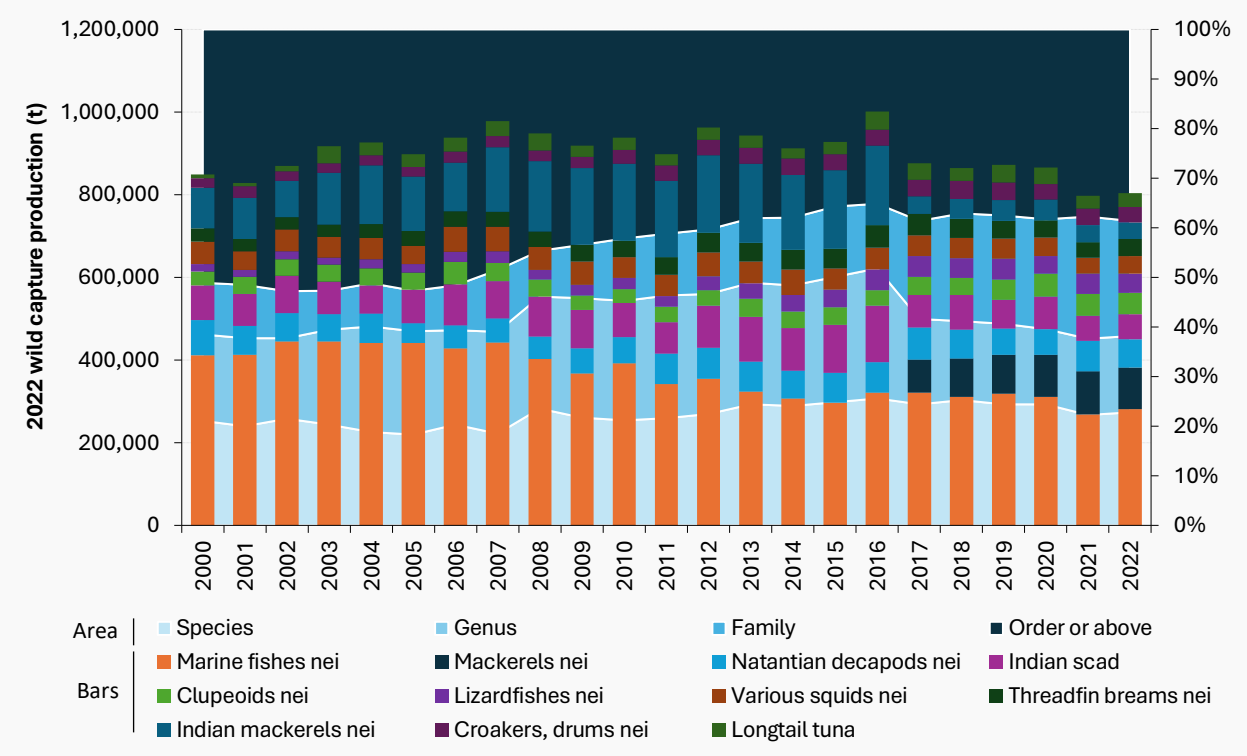



**Figure 28 |** Annual reported marine capture production (in tonnes) for Malaysia (in FAO areas 57 and 71) by main species, and reporting level (% of total by classification), between 2000 and 2022. **Source: FAO 2024a.**

According to the Sea Around Us (SAU) global database, which provides estimates of both reported landings and unreported catches, Malaysia's total catches reached 2.3 million tonnes in 2019 (the most recent year available). These catches mainly originate from Malaysia's Economic Exclusive Zone (EEZ) waters (97% of total catches), with only one percent of the catches coming from the High Seas (**Pauly et al., 2024**). As with other countries, SAU's estimate exceeds the figure reported to FAO for the same year, because it also considers unreported catches (**Pauly et al., 2024**). Unreported catches in Malaysia were estimated to represent nearly one-half (42%) of the total (**SI 18-4**), indicating significant underreporting. 92% of the production was estimated to be for direct human consumption, with 5% for reduction (e.g., fishmeal and fish oil) (**SI 18-3**).

As in other countries in this study, most catches in Malaysia are estimated to originate from the industrial sector, accounting for 72% of the total. Specifically, industrial trawls (bottom and midwater) and purse seines contribute 71.5% of the total catch, while small-scale (or artisanal) gillnets and pots/traps account for approximately 11%. Underreporting is relatively consistent across fishing gears and sectors, averaging around 40%. The exception is recreational fishing, where catches are not reported (**Figure 29**; **SI 18-6**) (**Pauly et al., 2024**).

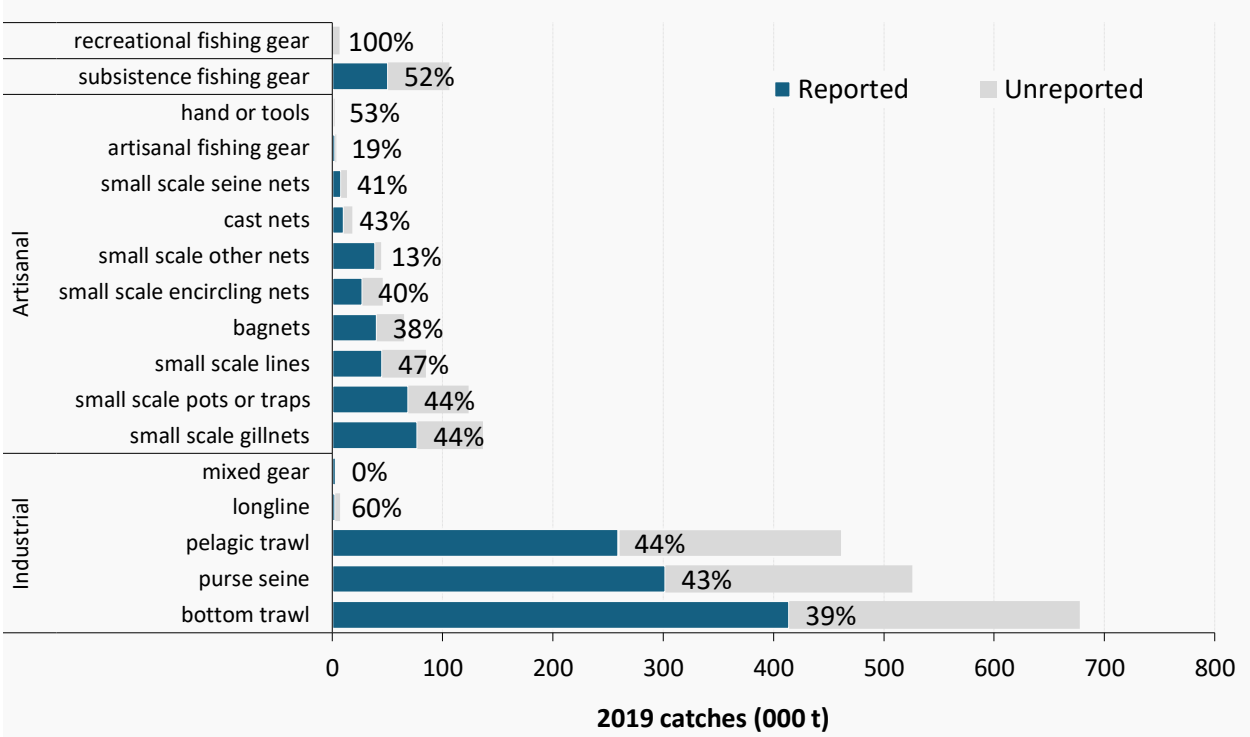



**Figure 29 |** Estimated total 2019 catches in thousand tonnes (reported and unreported) for Malaysia, by fishing sector and gear type. Note: for each fishing gear the estimated percentage of unreported catches is included. **Source: Pauly et al., 2024.**

### 2.4.3. Seafood consumption and domestic supply

Malaysia is the country in this study with the highest seafood consumption per capita, ranking 9th globally (App Figure 2). According to recent statistics, the country's average fish consumption was estimated at 52.7 kg/capita/year in 2021, ranking fifth in Asia and first in South-Eastern Asia (SI 1A-5). However, the dependence on fish and seafood as a source of protein is also not as important in Malaysia as it is in other countries in the current study, as only 30% of the total animal protein consumed in Malaysia was from fish and seafood. Hence, Malaysia ranked only 27th globally in terms of relative dependence of seafood (App Figure 3) (**Ritchie and Roser 2021**).

Like Indonesia and the Philippines, most of Malaysia's seafood production appears to be destined to the domestic market. In 2019, the country's reported seafood production (wild and farmed) totaled 1.7 million tonnes, with exports accounting for less than 400 thousand tonnes (approximately 20% of production). Meanwhile, total seafood imports (0.6 million tonnes) were roughly double the volume of reported exports (App Table 4) (**FAO 2024b**). This indicates that Malaysia is a net seafood importer, relying on imports to meet domestic demand. Exceptions to this trend include crustaceans (likely shrimp and swimming crab) and cephalopods (primarily squid and cuttlefish), where export volumes were similar to or exceeded imports, reflecting their potential significance in international markets.

### 2.4.4. International trade

International trade databases (namely FishstatJ; **FAO 2024c; FAO 2024d**) were used for the trade analysis in terms of exports and imports. The main results are provided below.

#### 2.4.4.1. Exports

Like the Philippines, Malaysia is a relatively small exporter country in terms of seafood, with exports in 2022 totaling 290 thousand tonnes (rank 34th globally) worth 930 million USD (rank 36th globally) (SI 4-1; SI 4-2; **FAO 2024c**). However, for specific commodity groups such as shrimp (18th top exporter by value) and fish and bivalve sauce (4th by value), this country is among the top 20 exporters globally (SI 4-5; SI 4-7). Still, for both commodity groups, the exports are relatively small compared to top exporting countries.

The country's most exported seafood commodities are non-specified marine fish (which includes highly valuable species as snappers, grouper and mahi: 36% of 2020-22 annual exports by weight; 29% by value), shrimp (12% by weight; 27% by value), fish meals and oils (12% by weight; 5% by value), and squid/cuttlefish (11% by weight; 12% by value). Small pelagics are the sixth most exported commodity group (7% by weight; 3% by value) (Figure 30; Figure 31; SI 19-3; SI 19-4).

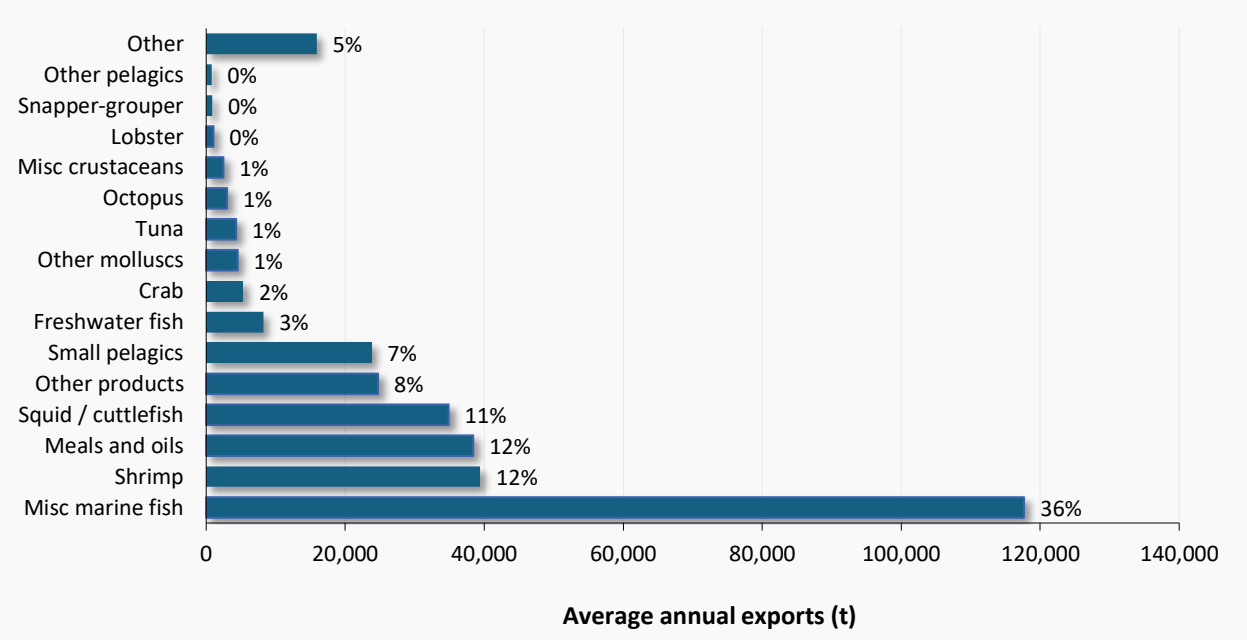



**Figure 30 |** 2020 - 2022 average annual seafood exports by Malaysia in terms of product weight, and for the main commodity groups. **Source: FAO 2024c.**

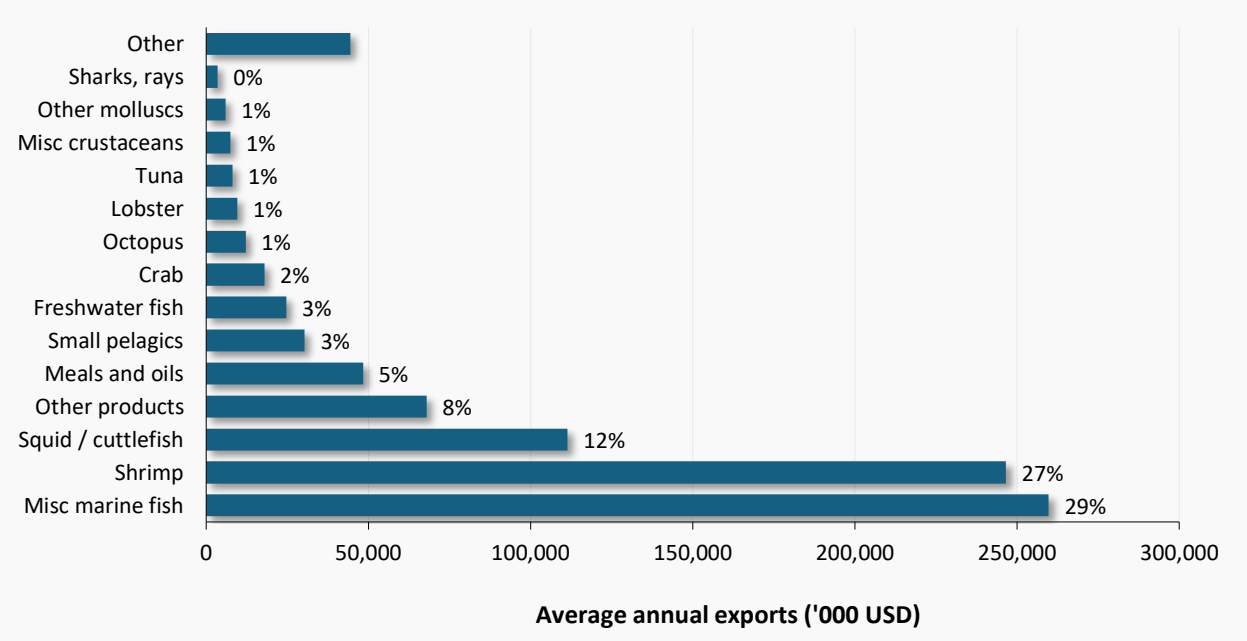



**Figure 31 |** 2020 - 2022 average annual seafood exports by Malaysia in terms of value (x1000 USD), and for the main commodity groups. **Source: FAO 2024c.**

Bilateral trade data reveals that Asia is the primary destination for Malaysia's seafood exports by value. China alone accounted for 26% of Malaysia's total export value in 2022. Other significant Asian importers included Singapore (19%), Taiwan (6%), Turkey (6%), and Hong Kong (6%). Australia represented virtually all exports to the Oceanic region (6%). The United States contributed just 3% to

Malaysia's seafood export value, while France was the only relevant EU importer (2%). Overall, the EU represented a modest 2.4% of Malaysia's seafood export value. (**Figure 32**; **SI 20-1**; **FAO 2024d**).

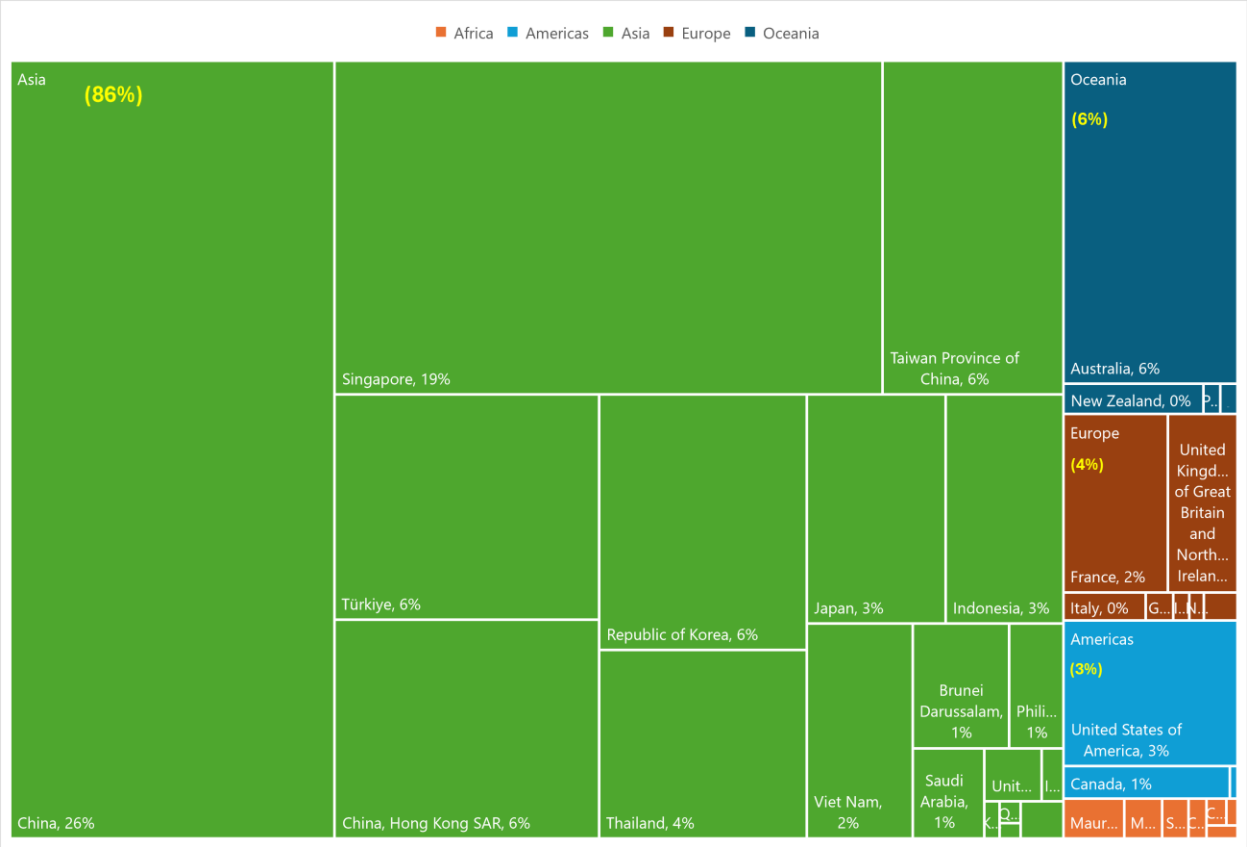



**Figure 32 |** Percentage of Malaysia's 2022 total seafood exports in thousand USD per partner country and region. **Source: FAO 2024d.**

In terms of trade flows per main commodity group, the following groups were investigated: miscellaneous marine fish, shrimp, fish meals and oils, squid/cuttlefish, small pelagics, and fish/bivalve sauce. These groups were chosen because they are either relevant in terms of contribution to Malaysia's total exports or important for the scope of this analysis.

In 2022, the main importers of miscellaneous marine fish from Malaysia were Singapore (22% of total export value), China (20%), Hong Kong (11%), Australia (8%), and Thailand (7%). Combined, these five countries accounted for more than two-thirds (68%) of Malaysia's total shrimp export value (**SI 20-2**) (**FAO 2024d**).

For shrimp, five countries contributed to 82% of Malaysia's 2022 shrimp exports by value: China (22%; $59 million USD), Taiwan (18%), Singapore (17%), South Korea (15%), and Turkey (10%) (**SI 20-3**). The majority of these exports consisted of warmwater frozen shrimp, likely from both wild capture and aquaculture production (**FAO 2024a, FAO 2024d**).

Regarding fish meals and oils, China is by far the main end market of Malaysia's exports. With an import value of 38 million USD, this country alone represented 60% of Malaysia's total export value for this

commodity. Most of the imports were fish meals. Other relevant importers were Singapore (22%; mostly fish oils), and Viet Nam (10%; mostly fish meals) (**SI 20-4**).

Malaysia's main importers of squid and cuttlefish in 2022 were China (41% of total export value), Turkey (20%), Singapore (7%), Australia (5%), and the United Kingdom (5%). Although exports of squid and cuttlefish are reported as a combined category, production data indicate that squid constitutes most of these exports (**SI 20-5**) (**FAO 2024a, FAO 2024d**).

As with other commodities, the majority of small pelagics exported from Malaysia are destined for other countries in Asia. In 2022, the top importers were Thailand (27% of Malaysia's total export value), Singapore (24%), Indonesia (20%), Hong Kong (7%), and Brunei (7%) (**SI 20-6**). Frozen mackerels, pilchards, and anchovies accounted for the largest share of these exports (**FAO 2024d**).

Regarding fish and bivalve sauce, even though Malaysia is the world's third largest exporter by value, it only accounts for 0.3% of the market share by value. The main importers of this commodity are Singapore (61% of total export value from Malaysia), Australia (13%), and New Zealand (9%) (**SI 20-7**).

#### 2.4.4.2. Imports

Like Indonesia and the Philippines, Malaysia is a net importer, with total seafood imports in 2022 being roughly double the volume of reported exports in terms of value (**FAO 2024c**). Similar to Viet Nam and Thailand, it ranks among the top 20 seafood-importing countries, placing 17th globally (2% of seafood imports by weight[5]) and sixth in Asia in 2022, with approximately 650 thousand tonnes of imported seafood valued at 1.6 billion USD (**SI 9-1; SI 9-2**) (**FAO 2024c**). For commodities such as fish and bivalve sauce (ranking 4$^{th}$ in imports by value) and shrimp (18$^{th}$), Malaysia is among the top 20 importing countries globally (**SI 9-5; SI 9-7**).

The most imported seafood commodities are miscellaneous marine fish (33% of annual imports by product weight between 2020 and 2022; 29% by value), small pelagics (19% by weight; 13% by value), squid and cuttlefish (10% by weight; 12% by value), fish meals and oils (9% by weight; 5% by value), and shrimp (6% by weight; 10% by value) (**Figure 33**; **Figure 34**; **SI 21-1; SI 21-2**). As observed in many other countries included in this study, the relevance of small pelagics in Malaysia's imports highlights their critical role as a food source, particularly for coastal communities. Additionally, similar to Indonesia, the significant imports of fish meals and oils—specifically fishmeal and fish oil (FM/FO)—reflect the increasing importance of aquaculture in the country and the vital role of FM/FO in supporting pangasius and shrimp farming industries (**FAO 2024a**).

[5] Alligators, plants, marine mammals, etc. excluded

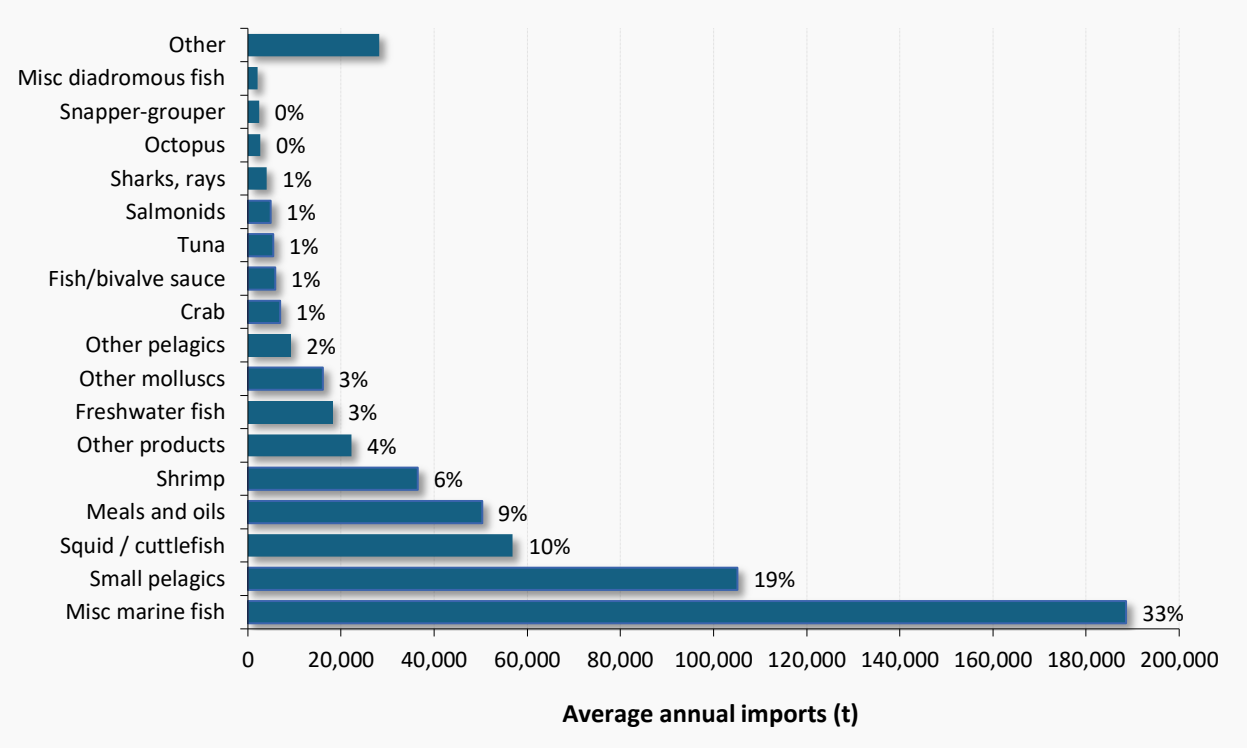



**Figure 33 |** 2020 - 2022 average annual seafood imports by Malaysia in terms of weight and for the main commodity groups. Source: FAO 2024c.

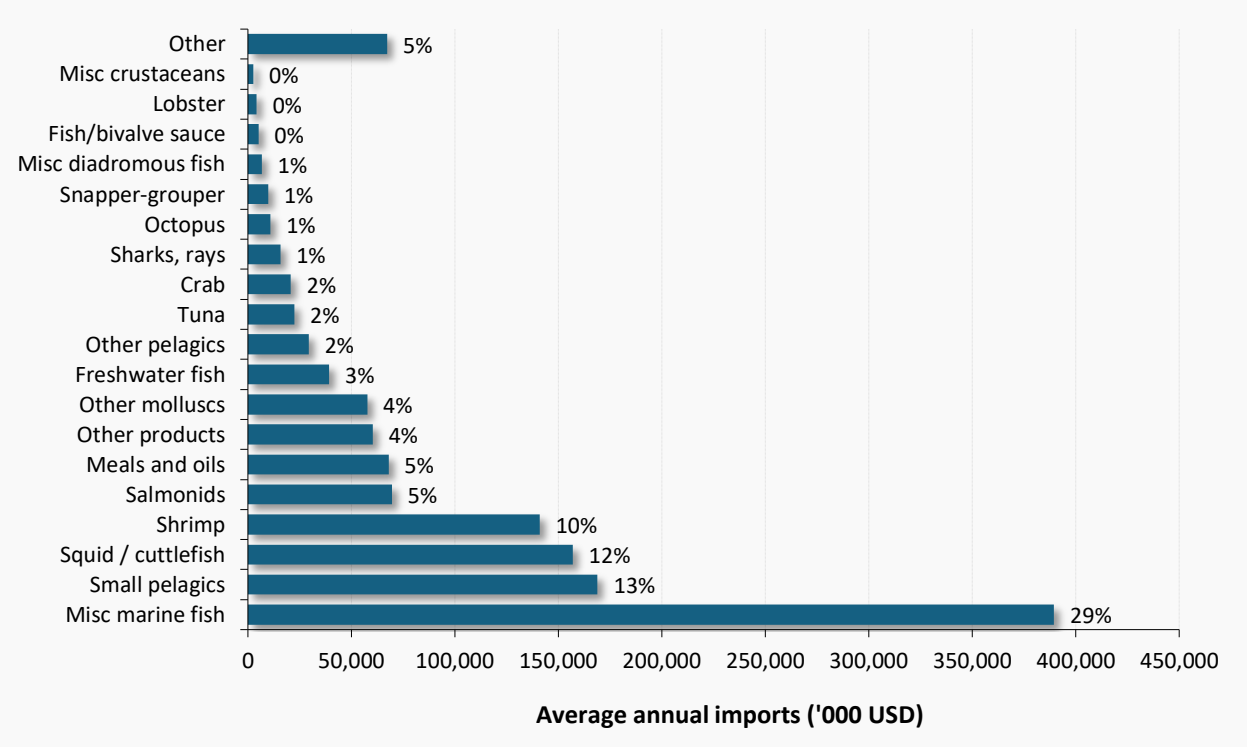



**Figure 34 |** 2020 - 2022 average annual seafood imports by Malaysia in terms of value (x1000 USD) and for the main commodity groups. **Source: FAO 2024c.**

Bilateral trade data shows that the most significant exporters of seafood to Malaysia by value are China (22%, mostly squid/cuttlefish and miscellaneous marine fish), Viet Nam (13%, mostly miscellaneous marine fish and crustacean meal), Indonesia (11%, mostly miscellaneous marine fish and shrimp), Thailand (11%, mostly miscellaneous marine fish and shrimp), and India (8%, mostly shrimp and squid/cuttlefish) (**SI 22-1; SI 22-2**). The analysis of trade flows per main commodity group considered the following groups: miscellaneous marine fish, small pelagics, squid/cuttlefish, fish meals and oils, shrimp, and fish/bivalve sauce.

The majority (88% of the total import value) of Malaysia's miscellaneous marine fish imports in 2022 originated from other Asian countries. Key exporters included Indonesia (22%), Thailand (18%), China (13%), Viet Nam (10%), and Oman (9%). These imports mainly consist of fresh, chilled, and frozen fish (**SI 22-3**).

China (34%), Viet Nam (15%), India (10%), Thailand (10%), Japan (6%), and Mexico (5%), are the top export countries of small pelagics into Malaysia, accounting for almost 80% of this country's total import value in 2022 (**SI 22-4**). The most important commodities in this group are chub mackerels, mackerels, and sardines, and are usually imported frozen (**FAO 2024d**).

China (35% of Malaysia's 2022 import value) and India (17%) are also the top exporters of squid and cuttlefish into Malaysia. Combined, these two countries account for more than half of Malaysia's total squid and cuttlefish imports by value in 2022. Other relevant trade partners are Oman (12%), Viet Nam (7%), and Iran (7%) (**SI 22-5**).

Viet Nam is the leading exporter of fish meals and oils (FM/FO) to Malaysia (mainly crustacean meal and fish oil), contributing to roughly 60% of the country's total FM/FO imports by value in 2022. Other significant exporters include Thailand (9%; both fish meal and fish oil) and Japan (7%; mostly fish oil) (**SI 22-6**) (**FAO 2024d**).

For shrimp, India (24% of Malaysia's FM/FO imports by value), China (18%), Ecuador (13%), Thailand (12%), and Indonesia (10%) are the most significant trade partners (exporters to Malaysia). Together, these five countries accounted for almost four fifths (78%) of Malaysia's total shrimp imports by value in 2022 (**SI 22-7**).

As previously mentioned, Malaysia is the second-largest global importer of fish and bivalve sauce (**SI 9-7**) (**FAO 2024c**). Nearly all these imports come from two countries: Thailand, which accounted for $4 million (67% of Malaysia's 2022 import value), and China, contributing $1.4 million (25%) (**SI 22-8**) (**FAO 2024d)**.

### *2.4.5. Information on stock and fisheries exploitation status*

Like other countries in this report, the current section aims only to provide a quick snapshot on the overall sustainability status and management performance of the main fisheries in this country. It is not intended to provide an exhaustive analysis on the condition of the multiple fisheries in Malaysia. This section mostly includes information available in two platforms/tools: SFP FishSource and Monterey Bay Aquarium Seafoodwatch recommendations. However, it also references the latest information on exploitation status for the key stocks covered by the SEASOFIA assessment (SEAFDEC 2022).

For Malaysia, FishSource still provides moderate coverage of its fisheries, with only 14 gear flag profiles (GFPs) created as of November 2024 (**Table 3**). Nonetheless, each of these profiles have completed scores. Like most countries covered in this study, most (11 GFPs) of the fisheries assessed have at least one FishSource score below 6 or are classified as data deficient, denoting either critical issues related to stock condition or management, and a data deficiency situation, which per se is also a potential sustainability risk. The remaining three profiles relate to tuna or large pelagic longline/hook and line fisheries which are performing relatively well and do not seem to have any significant impacts on either the target species or the ecosystem. A full list of FishSource profiles and their respective scores can be found in **SI-46** (**Supplementary Information**).

**Table 3 |** Number of Gear Flag Profiles (GFPs) in FishSource by seafood sector for Malaysia (as of November 2024), and the percentage of GFPs that are either not scored or have critical issues (i.e., at least one Stock Health or Management Quality score below 6).

| Flag country and sector | All scores >=6 | With scores below 6 of DD | Not scored | Total number of Gear Flag Profiles | % of fisheries not scored or with critical issues |
|---|---|---|---|---|---|
| **Malaysia** | **3** | **11** | **0** | **14** | **79%** |
| Large pelagics | 1 | 0 | 0 | 1 | 0% |
| Non-T75 | 1 | 3 | 0 | 4 | 75% |
| Tuna | 1 | 8 | 0 | 9 | 89% |

**Seafood Watch** currently provides **two recommendations** for **wild fisheries in Malaysia**, both related to **longtail tuna**. These cover **purse seine fisheries** in the two **FAO major fishing areas** bordering Malaysia: Western and Central Pacific Ocean (WCPO; FAO 71), rated **"Good Alternative,"** and Eastern Indian Ocean (EIO; FAO 57), rated **"Avoid."**

According to the assessment report (MBAq 2015), the **EIO purse seine fishery** received an **"Avoid"** rating mainly due to:

- **Excessive fishing pressure**, raising sustainability concerns
- **Ineffective management and poor enforcement**, failing to control fishing effort and catches.

The report and evaluations on these fisheries are over 10 years old, so they may not capture their present status or impacts.

For Malaysia, the Sea Around Us platform (**Pauly et al., 2024**) includes rough estimates on status of the stocks divided in four marine areas: Sabah, Sarawak, Peninsula East, and Peninsula West.

For the **Sabah waters (n = 120 assessed stocks)**, more than three-quarters (76%) of the total catches in these waters come from fully exploited stocks, while 20% already originate from over-exploited or collapsed stocks (**Figure 35**). However, and similar to other areas in the region, the number of overexploited or collapsed stocks increased steadily from the mid-2000s to the early-2010s but has been relatively stable since. Currently, more than half (51%) of the stocks that have been assessed are in poor condition (i.e., either overexploited or collapsed) (**Figure 36**).

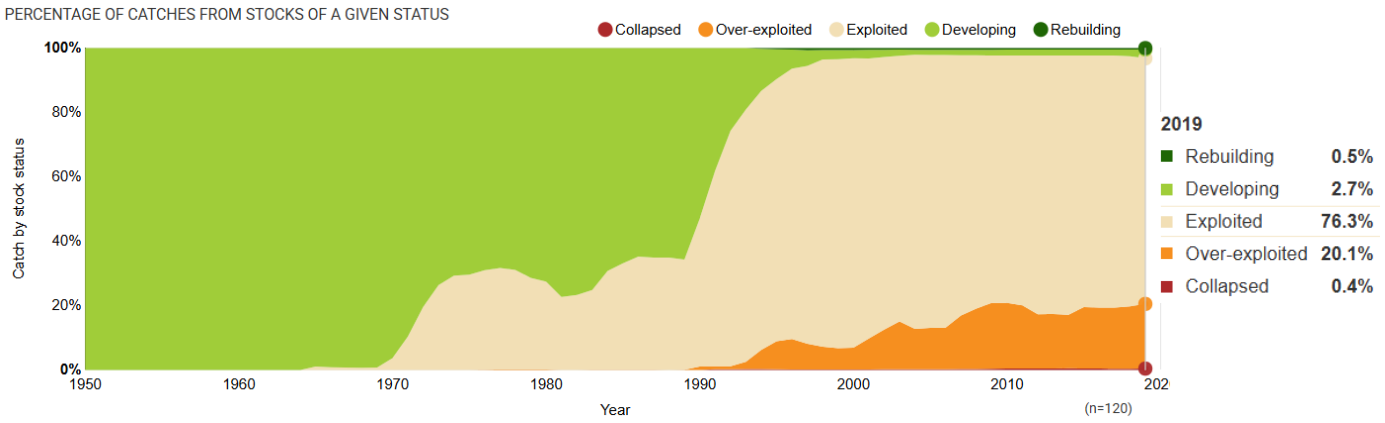



**Figure 35 |** Estimated status of stocks found in Malaysia's EEZ (Sabah waters) by catch biomass (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024)

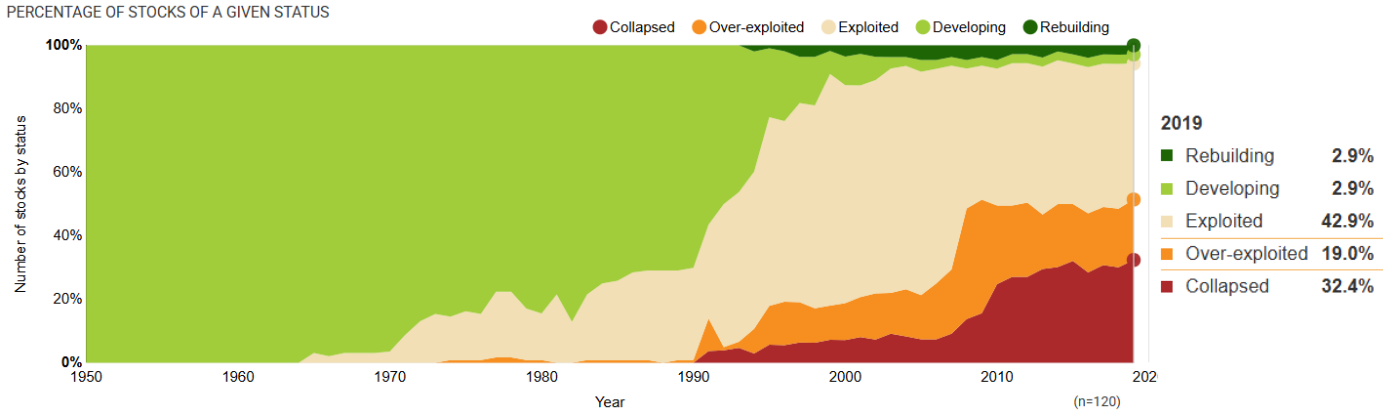



**Figure 36 |** Estimated status of stocks found in Malaysia's EEZ (Sabah waters) by number of stocks in each category (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024).

**In terms of the Sarawak waters (n = 132)**, most catches (53%) come from fully exploited fisheries, while only 3% originate from underfished stocks. Meanwhile, 43% of catches come from overexploited or collapsed fisheries (**Figure 37**). The number of overexploited or collapsed stocks has been rising since the late 2000s, and currently, nearly two-thirds (55.6%) of assessed stocks are classified as being in poor condition. (**Figure 38**).

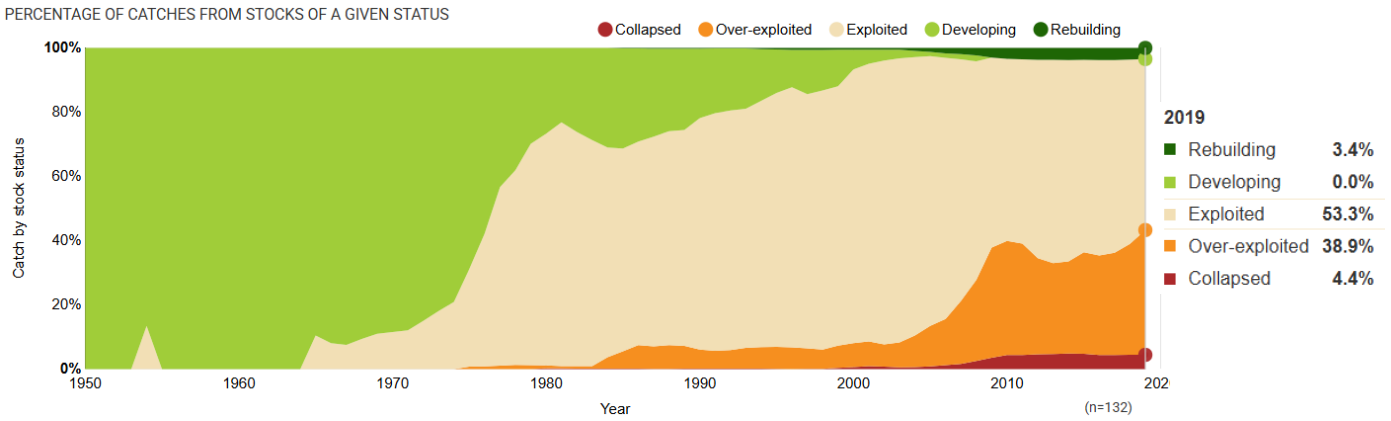



**Figure 37 |** Estimated status of stocks found in Malaysia's EEZ (Sarawak waters) by catch biomass (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024)

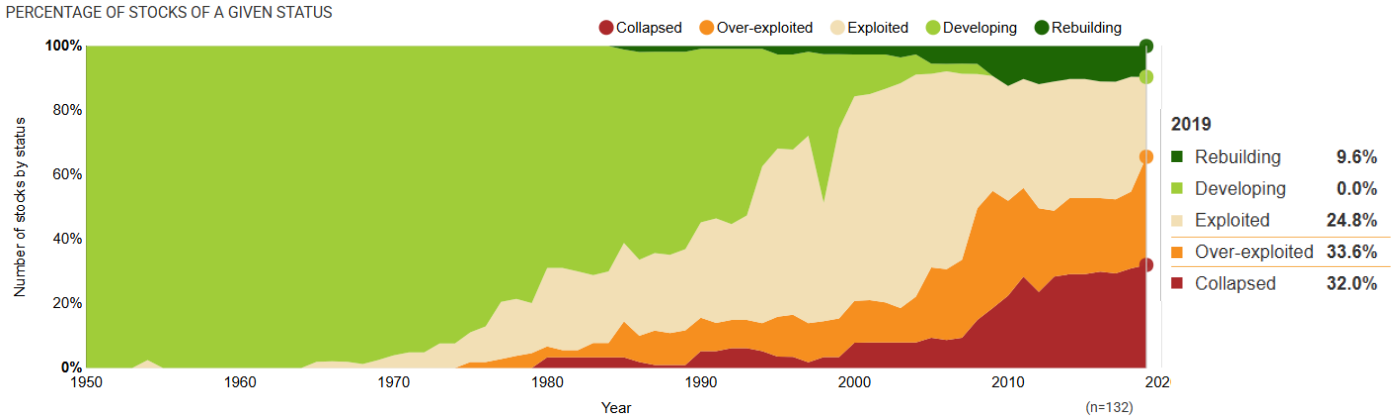



**Figure 38 |** Estimated status of stocks found in Malaysia's EEZ (Sarawak waters) by number of stocks in each category (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024).

In **Malaysia's Peninsula East waters (n = 155)**, 60% of marine capture production comes from fully exploited stocks, while nearly a quarter (23%) originates from overexploited or collapsed stocks, and 18% comes from stocks in an apparently good condition (i.e., rebuilding or developing) (**Figure 39**). The increase in overexploited or collapsed stocks has been slower here than in other parts of Malaysia. Currently, about 47% of assessed stocks are in poor condition (either overexploited or collapsed), while 12% remain underfished (**Figure 40**).

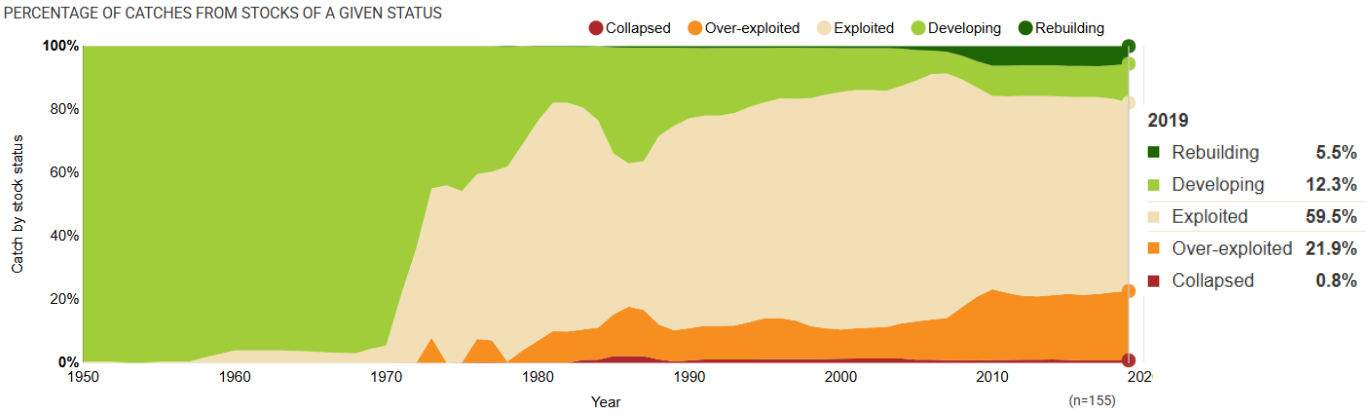



**Figure 39 |** Estimated status of stocks found in Malaysia's EEZ (Peninsula East waters) by catch biomass (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024)

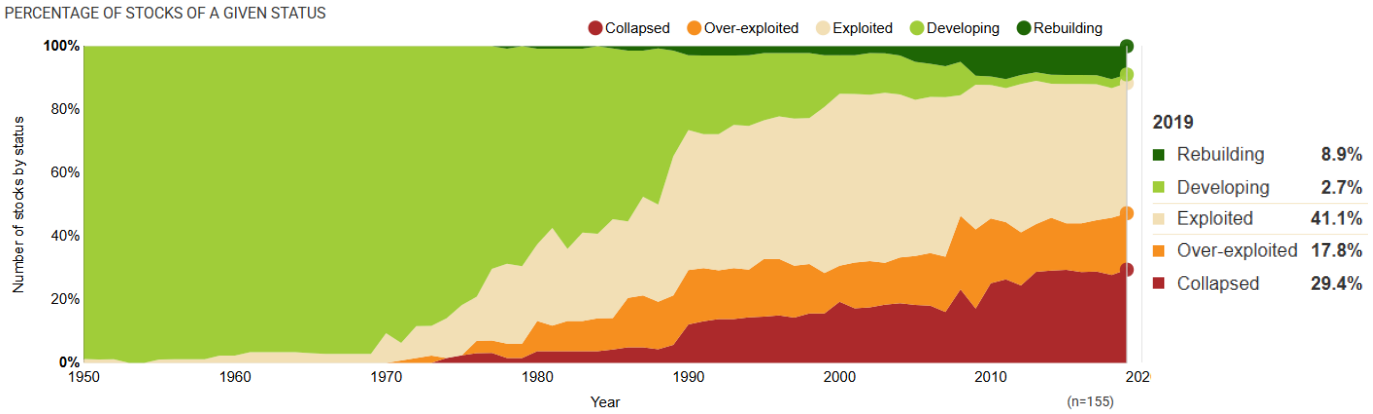



**Figure 40 |** Estimated status of stocks found in Malaysia's EEZ (Peninsula East waters) by number of stocks in each category (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024).

Finally, in **Malaysia's Peninsula West waters (n = 153)**, 52% of catches come from fully exploited stocks, while 12% originate from overexploited or collapsed stocks. Notably, this region has the highest proportion of stocks (37%) that appear to be rebuilding or developing (**Figure 41**). Similar to Peninsula East waters, the number of overexploited or collapsed stocks has been increasing gradually but slowly since 1990. Currently, more than one-third (39%) of assessed stocks are in poor condition (either overexploited or collapsed) (**Figure 42**).

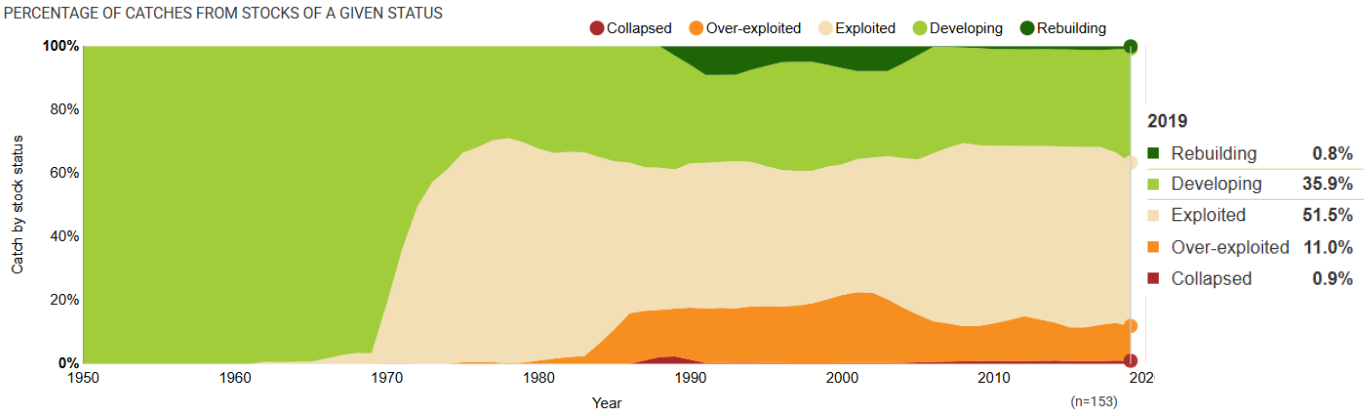



**Figure 41 |** Estimated status of stocks found in Malaysia's EEZ (Peninsula West waters) by catch biomass (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024)

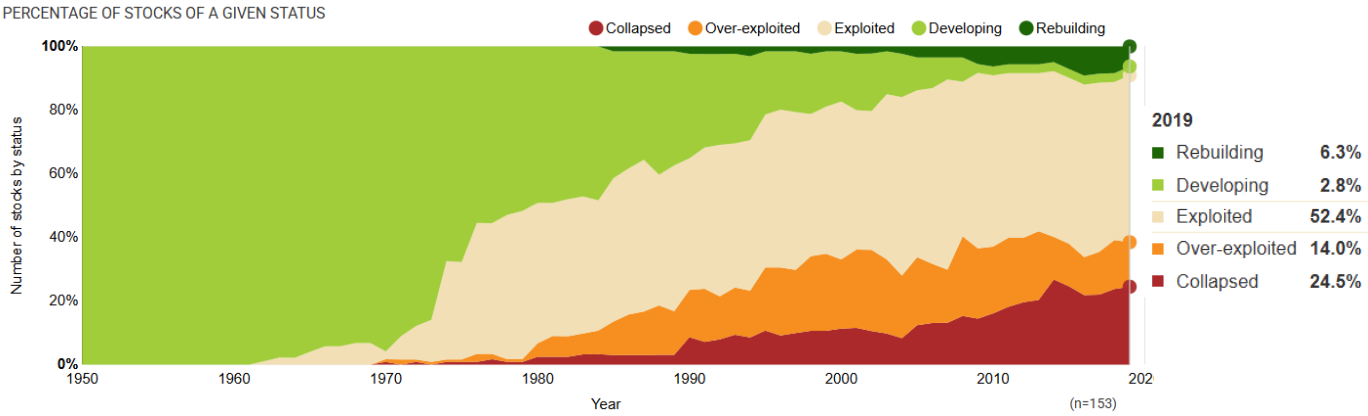



**Figure 42 |** Estimated status of stocks found in Malaysia's EEZ (Peninsula West waters) by number of stocks in each category (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024).

Like the other countries included in this overview, the latest edition of the SEASOFIA report 2022 (**SEAFDEC 2022**) provides estimates of exploitation status for key resources, such as large pelagics. For small pelagics, out of the 18 cases evaluated (by species and fishing ground), exploitation rates for scads in seven fisheries were estimated to be above sustainable levels. A similar pattern was observed for mackerel. Although anchovies and sardines were also covered in the report, no specific assessments of their exploitation status were provided for this country. More recently (in 2024), a workshop was held on Mixed Stock Fisheries in the Gulf of Thailand (GoT), in which the main fisheries resources of all countries bordering this area were evaluated. For the GoT coast of Malaysia, the multispecies assessments showed all species groups to be within safe exploitation levels and anchovies to be recovering. The single species assessments also revealed the exploitation status of all key species to be safe, except for threadfin breams, which are overfished (**SEAFDEC 2025**).

# 2.5 | PHILIPPINES

### 2.5.1. Data availability and transparency

Like Indonesia, information on fisheries production and trade in the Philippines can be found in national statistics and global databases such as FAO FishstatJ (**FAO 2024a, 2024b, 2024c**), UN COMTRADE, and Sea Around Us (**Pauly et al., 2024**).

In terms of national fisheries statistics for the Philippines, there is relatively good availability and granularity of information related to fisheries and aquaculture, such as trade and production. The Bureau of Fisheries and Aquatic Resources (BFAR) and the Philippine Statistics Authority (PSA) provide statistics on the production and status of the most relevant fisheries on their websites. Compared to other countries in the region, most of this information is already available in English. This includes the various tabs on the respective websites, as well as fisheries statistics reports like the Philippine Fisheries profile (**BFAR 2023**). Additionally, detailed fisheries statistics are downloadable in table format via the OpenSTAT tool on the PSA website.

### 2.5.2. Wild production: current status and recent trends

The Philippines ranked 12th in the world for wild marine capture in 2022, with a catch of 1.6 million tonnes. While annual marine catches steadily increased until the mid-2000s, they have since decreased. In 2022, the country's marine capture production totaled 1.6 million tonnes, down from 2.4 million tonnes in 2008. Conversely, aquaculture production (particularly from marine or brackish waters) has shown a relatively steady upward trend, with an average annual growth rate of 4% since 1980 (**Figure 43**; **SI 24-2**), although production has slowed since 2010.

All marine capture is from the Western and Central Pacific Ocean (FAO region 71), with the Philippines ranking as the third-largest producing country, accounting for 12% of the total catches in this FAO region in 2022 (**SI 1B-1**) (**FAO 2024a**). According to FAO data, all processed production is intended for direct human consumption (**SI 1B-5**) (**FAO 2024b**).

Reported catches consist primarily of small pelagics such as scads, mackerels, and sardinellas (51% of total reported catches in 2022), followed by miscellaneous coastal fish (e.g., ponyfish and threadfin breams; 19%), tuna (skipjack and yellowfin) and tuna-like species (e.g., frigate tunas) (16%), cephalopods (mostly squid; 4%), and crab (mostly swimming crab; 2%). The full list of reported species can be found in **App Table 10** (**FAO 2024a**). The granularity of reported catches to FAO has been improving, with 45% of total marine catches reported at the species level in 2022 (compared to 29% in 2020) (**Figure 44**; **FAO 2024a**).

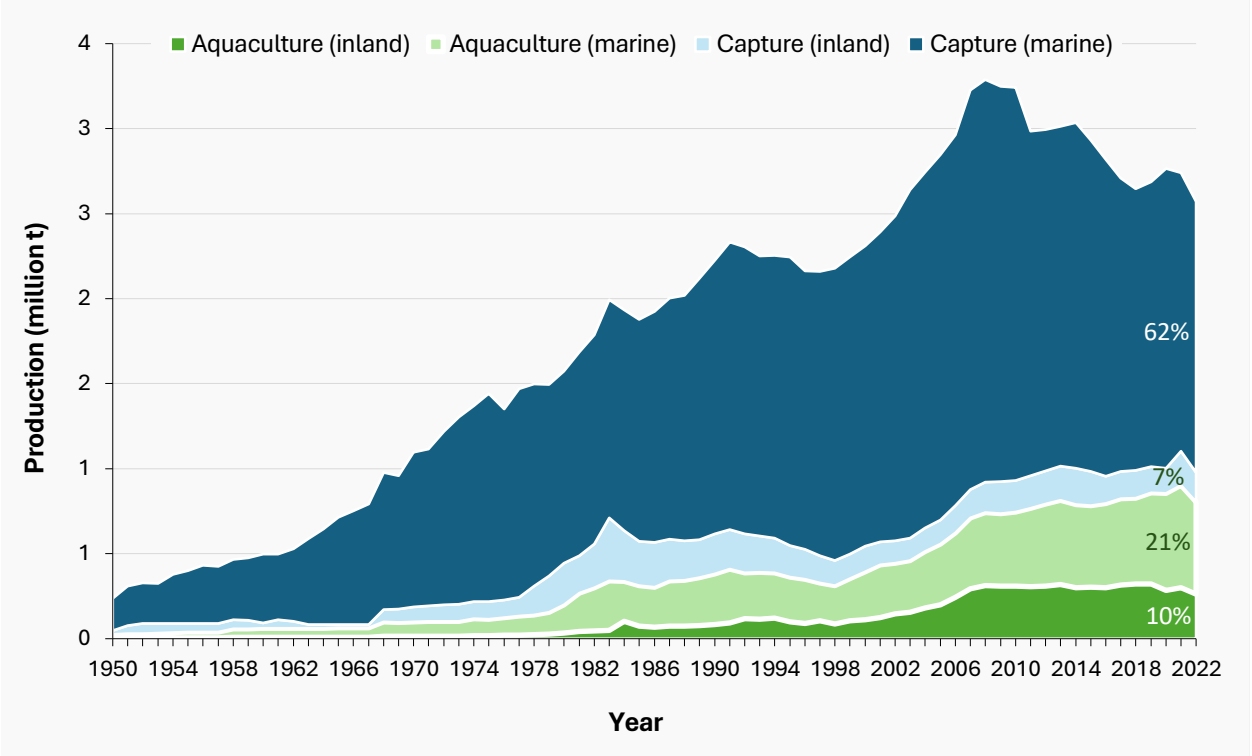



**Figure 43 |** Annual reported production (in million tonnes) by the Philippines in terms of main production source (aquaculture, inland capture, marine capture), between 1950 and 2022. **Note**: The percentage denotes the relative contribution of each production type to total production. **Source: FAO 2024a**

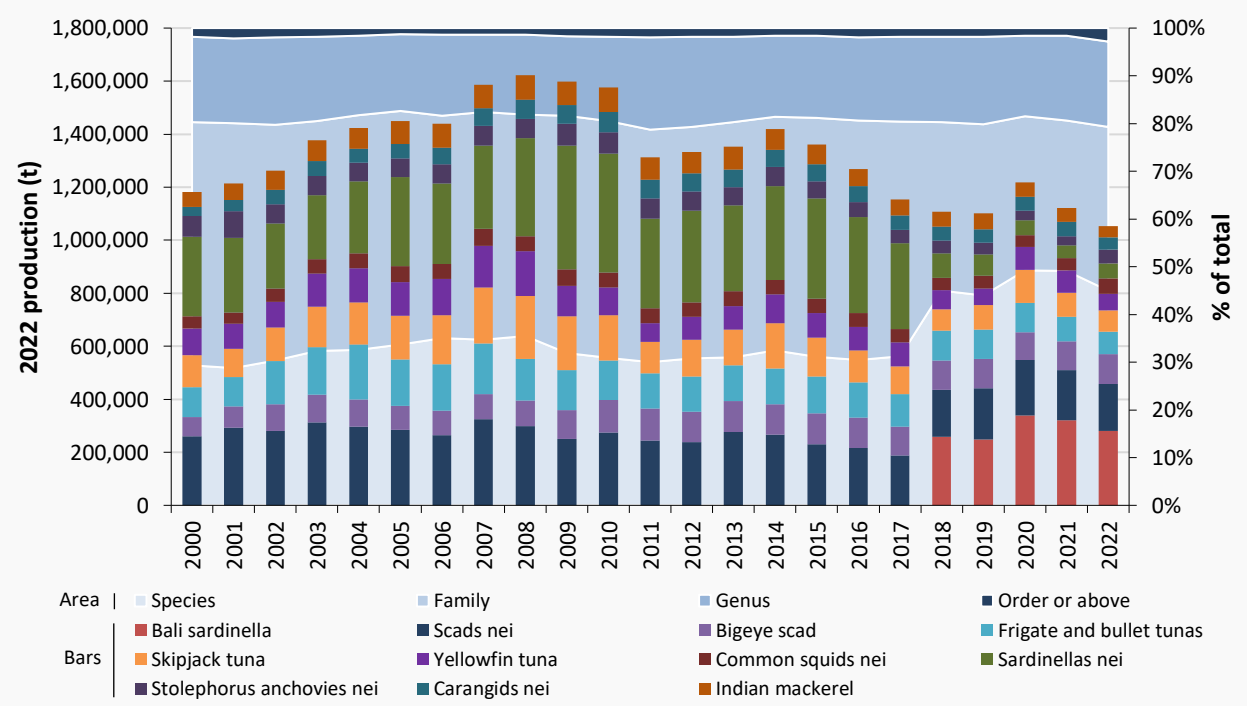



**Figure 44 |** Annual reported marine capture production (in tonnes) for the Philippines by main species and reporting level (% of total by classification), between 2000 and 2022. **Source: FAO 2024a.**

The Sea Around Us (SAU) global database also includes estimated catches for this country. The most recent year of estimated catches is 2019. According to SAU estimations, catches from the Philippines totaled 2.3 million tonnes, all from the EEZ (SI-25). The estimate by SAU is higher than the reported to FAO for the same year because it already considers unreported catches. According to the SAU, estimated unreported catches in the Philippines are relatively high, accounting for 46% of the total estimated catch. Both the industrial (51% of total catch; mostly from purse seine and bottom trawl) and artisanal (38%; from gillnets, lines, pots/traps, and other small-scale fishing gears) sectors are important to the total catches. The remaining 11% are estimated to come from subsistence fishing (**Figure 45**) (**Pauly et al., 2024)**. More detailed information on catches per fishing sector, gear type and specific species can be found in App Table 11 and SI-25.

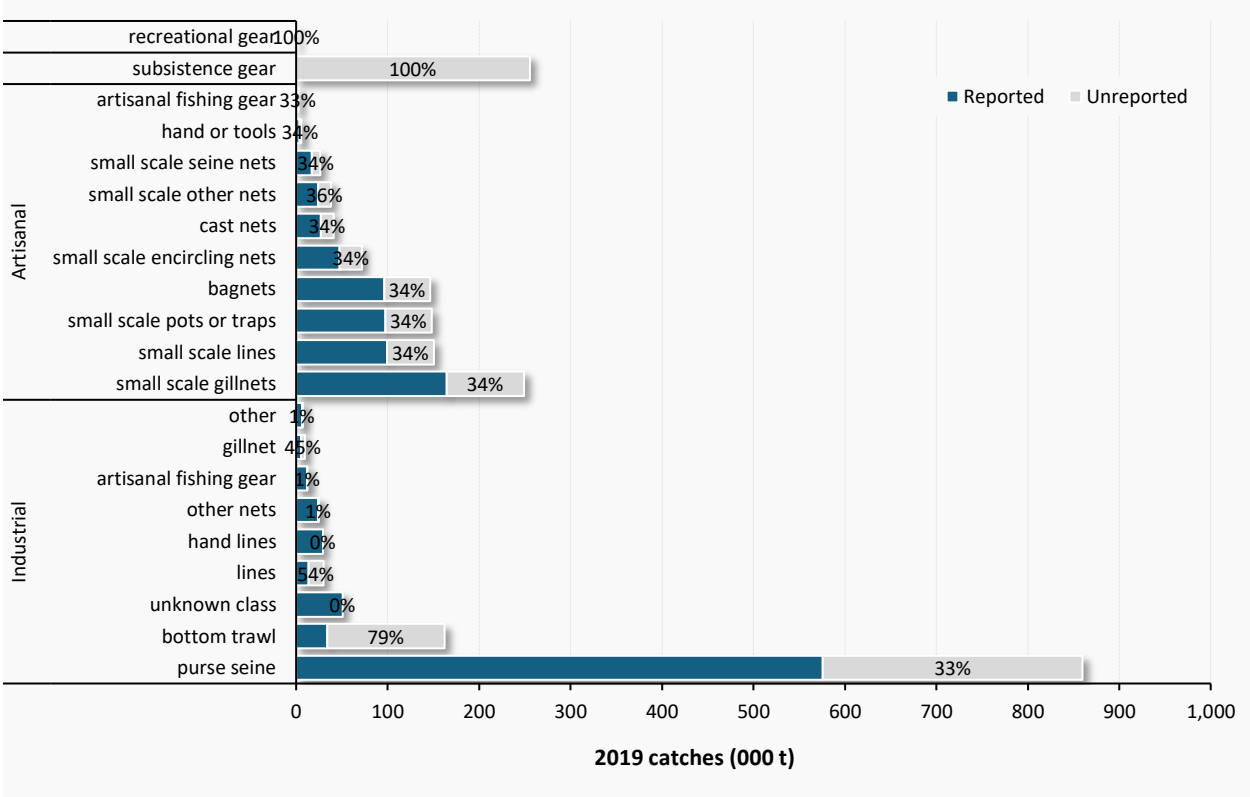



**Figure 45 |** Estimated total 2019 catches in thousand tonnes (reported and unreported) for the Philippines, by fishing sector and gear type. Note: for each fishing gear the estimated percentage of unreported catches is included. **Source: Pauly et al., 2024.**

### *2.5.3. Seafood consumption and domestic supply*

Seafood consumption in the Philippines is not as high as in Indonesia. According to recent statistics, the country's average fish consumption was estimated at 28.0 kg/capita/year in 2021, ranking 16$^{th}$ in the Asian countries, and 43$^{rd}$ globally. Based on recent statistics, dependence on fish and seafood as a source of protein is also not as important in the Philippines as it is in other countries. In 2021, the Philippines ranked 22$^{nd}$ globally in terms of relative dependence of seafood, with 33% of the total animal protein coming from this group (App Figure 3) (**Ritchie and Roser 2021**).

In terms of trade balances, similar to Indonesia, most of the country's production seems to be for the domestic market. In 2019, reported processed seafood production (wild and farmed) totaled 2.9 million tonnes, and only 0.6 million tonnes (~20% of production) of exports. Total seafood imports (0.3 million tonnes) were relatively small compared to both exports and production (App Table 4) (**FAO 2024b**). This suggests that the country relies mostly on its own production to meet the needs of internal seafood demand (e.g., for species groups as small pelagics). Cephalopods were the only commodity group where exports exceeded imports. This is likely due to swimming crab, which is a very important seafood commodity for international markets, namely the United States (**FAO 2024d**).

### *2.5.4. International Trade*

Similar to Indonesia, seafood trade data for the Philippines was primarily sourced from FAO FishStatJ (**FAO 2024c**, **FAO 2024d**). Although trade information is also available in some national statistical reports (e.g., **BFAR 2023**), the international databases provided more extensive and detailed data. A summary of recent seafood trade statistics from these international sources is presented below, including figures for both exports and imports by the Philippines.

#### 2.5.4.1. Exports

Compared to Indonesia, the Philippines are a relatively small exporter country in terms of seafood, with exports in 2022 totaling 220 thousand tonnes (rank 41st) and 900 million USD (rank 39th) (SI 4-1; SI 4-2; **FAO 2024c**). However, and similar to Indonesia, for specific commodity groups such as fish and bivalve sauce (2$^{nd}$ top exporter by value), tuna (11$^{th}$), and crab (13$^{th}$), this country is among the top 15 exporters globally (SI 4-3; SI 4-4; SI 4-7). For small pelagics specifically, exports from the Philippines are small compared to other countries (25 million USD in 2022; 49th top exporter by value) (SI 4-6; **FAO 2024c**). Similar to Indonesia, this supports previous findings that small pelagics are mostly destined to the Filipino domestic market, and represent an important source of food, especially for the coastal communities (e.g., **Muallil et al 2016; Suloma et al 2016**).

The country's most exported seafood commodities are tuna (48% of 2020-22 annual exports by weight; 49% by value), miscellaneous marine fish (21% by weight; 17% by value; this likely includes snapper, mahi and other valuable species), and crab (5% by weight; 11% by value; likely most is swimming crab). Small pelagics are the fourth most exported commodity group by weight (4%), but in terms of value, octopus exports are more relevant. Despite being the second top exporter globally regarding fish and bivalve sauce, this commodity group has little relevance in terms of the overall seafood exports from the Philippines (Figure 46; **Figure 47**; App Table 12; App Table 13).

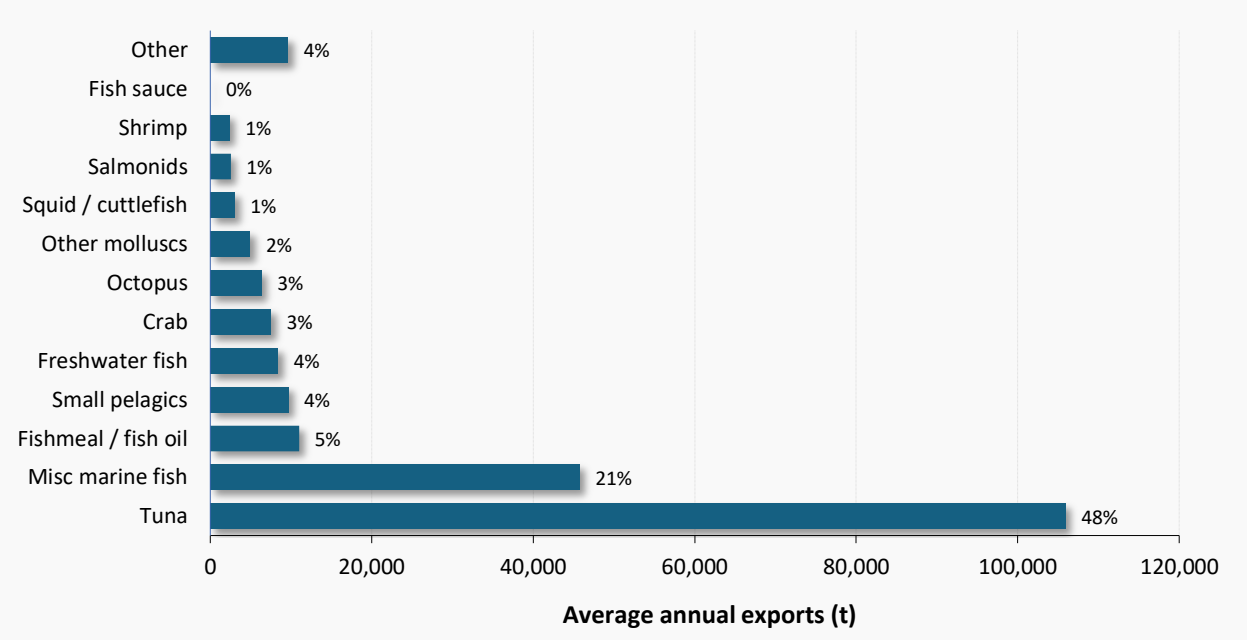



**Figure 46 |** 2020 - 2022 average annual seafood exports by the Philippines in terms of weight and for the main commodity groups. **Source: FAO 2024c.**

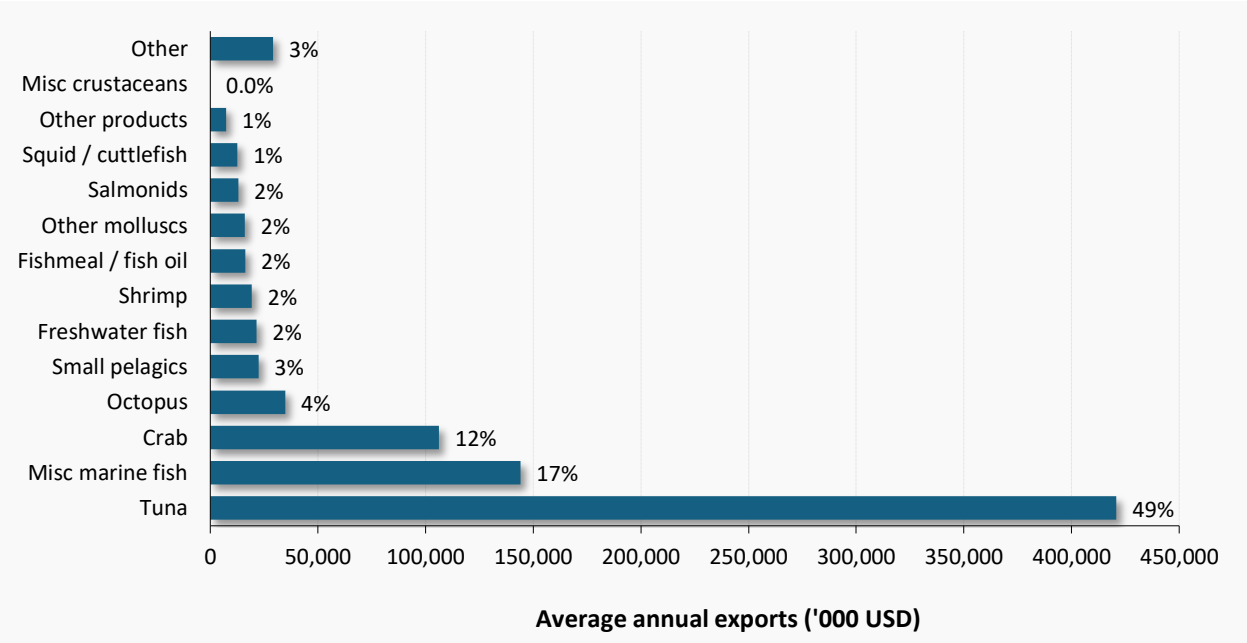



**Figure 47 |** 2020 - 2022 average annual seafood exports by the Philippines in terms of value (x1000 USD) and for the main commodity groups. **Source: FAO 2024c.**

According to bilateral trade data, the United States (21%), Japan (17%), China (12%), Germany (8%), and Italy (6%), are the top importers of seafood from the Philippines by value. The European Union is the most significant importer, accounting for approximately 31% of the Philippines' seafood exports by value (**Figure 48**; **SI 27-1**) (**FAO 2024d**).

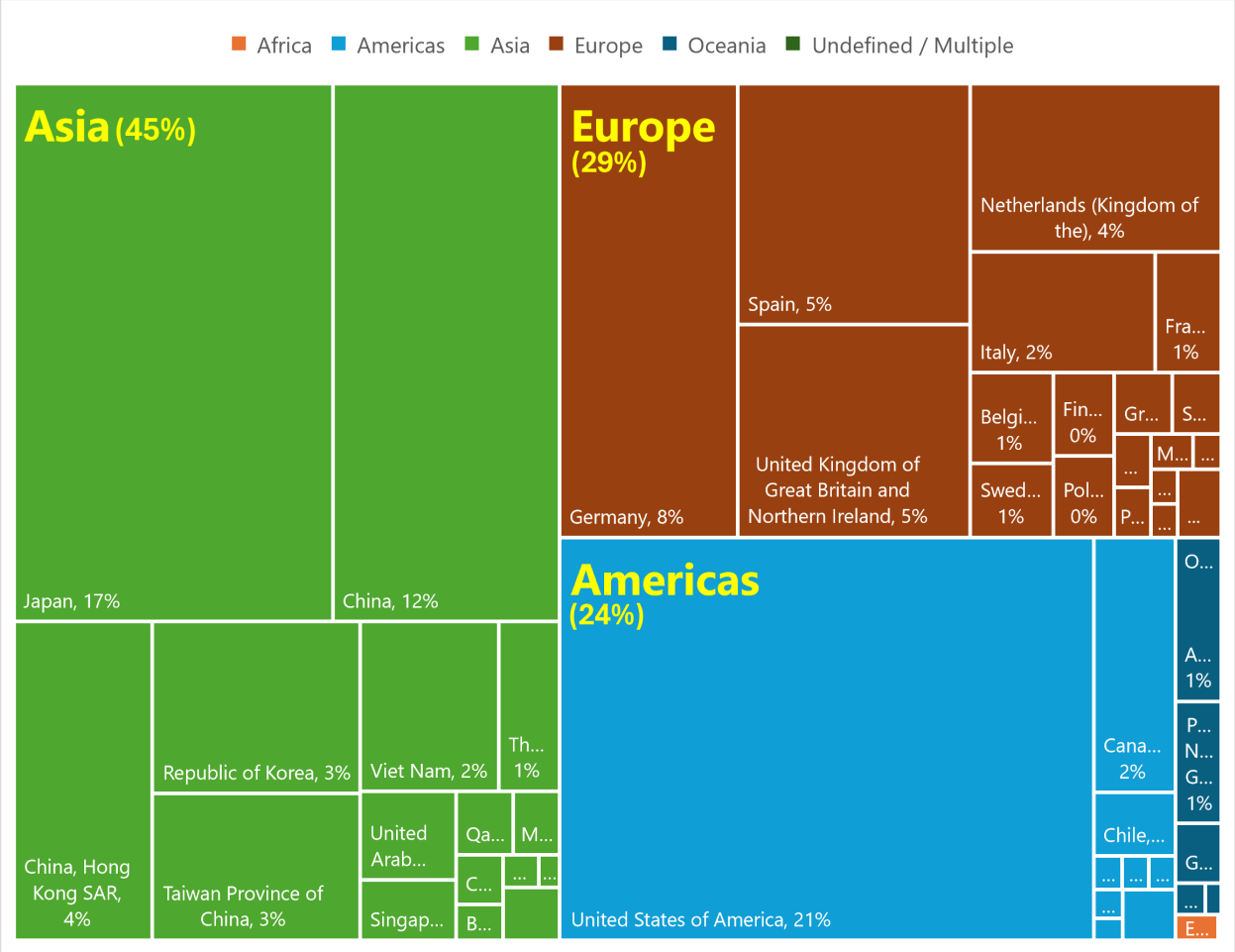



**Figure 48 |** Percentage of Philippines' 2022 total seafood exports in thousand USD per partner country and region.
**Source: FAO 2024d**

The specific trade flow per main commodity group was examined, including tuna, crab, small pelagics, fish meals and oils, octopus and fish/bivalve sauce. These groups were selected because they are either relevant in terms of contribution to the Philippines' total exports or essential to the scope of this analysis.

For tuna, the top importers are Japan (20%), Germany (17%), the United States (12%), Spain (11%), the United Kingdom (10%), and Netherlands (9%). The European Union is the largest end market for tuna, accounting for almost half (48%) of the Philippines' exports of this commodity (SI 27-2) (**FAO 2024d**).

The United States is by far the largest importer of crab (primarily swimming crab) from the Philippines, accounting for 69% of total exports. The remainder is mostly exported to other Asian countries, including Hong Kong (14%), Taiwan (7%), China (7%), and Singapore (2%). Together, these five markets represented 98% of the Philippines' total crab export value in 2022 (SI 27-3).

Regarding small pelagics, as mentioned earlier, most of this commodity, which is a vital food source for the population, is estimated to stay in the domestic market. For the portion that is exported, Japan is the largest importer, accounting for 34% of the total exports by value, followed by the United States (22%), the United Arab Emirates (8%), Canada (7%), and Hong Kong (4%) (SI 27-4).

For octopus, while the United States is the largest importer, accounting for 30% of the Philippines' total export value, the majority is destined for other Asian markets, including South Korea (25%), Japan (12%), Viet Nam (8%), and China (6%). The European Union, primarily France, Italy, and Spain, represents the third-largest end market, accounting for 7% of the total export value (**SI 27-5**) (**FAO 2024d**).

According to 2022 data, the main importers of fish meals and oils (FM/FO) are Chile (29% of Philippines' export value), Japan (28%), Thailand (11%), Bangladesh (10%), and Australia (7%) (**SI 27-6**). For Asia (excluding Japan), exports are primarily destined for the shrimp farming industry, while for Chile and Japan, the primary end use is likely the growing salmon and yellowtail (*Seriola quinqueradiata*) fish farming industries.

The most significant end markets for the fish and bivalve sauce exported by the Philippines in 2022 were the United States (43% of total exports by value), Canada (15%), Qatar (11%), Kuwait (5%), and the United Arab Emirates (5%) (**SI 27-7**). Bilateral trade information is also available for freshwater fish and squid/cuttlefish in **SI-27-9**.

#### 2.5.4.2. Imports

Like Indonesia, the Philippines is a net seafood exporter, meaning that it exports more seafood than it imports. Between 2020 and 2022, seafood imports by weight averaged 466,000 tonnes (630 million USD) per year (**Figure 49; Figure 50; SI 28-1; SI 28-2**). In terms of product weight, average annual seafood exports (219,000 tonnes/year between 2020 and 2022) represented about 47% of imports. Despite this, the average annual exports (864 million USD) by value were almost 1.5 times higher than the imports (**FAO 2024c**).

The most imported seafood commodities in the Philippines by product weight are tuna (39% of annual imports from 2020–2022; 39% by value), small pelagics (22% by weight; 18% by value), and miscellaneous marine fish (16% by weight; 17% by value) (see **Figure 49** and **Figure 50**). Like Indonesia, the prominence of small pelagics in imports highlights their role as a vital food source for the population, particularly in coastal communities. Additionally, the significant volume of tuna imports suggests the Philippines' potential importance as a key processing and re-exporting hub for tuna.

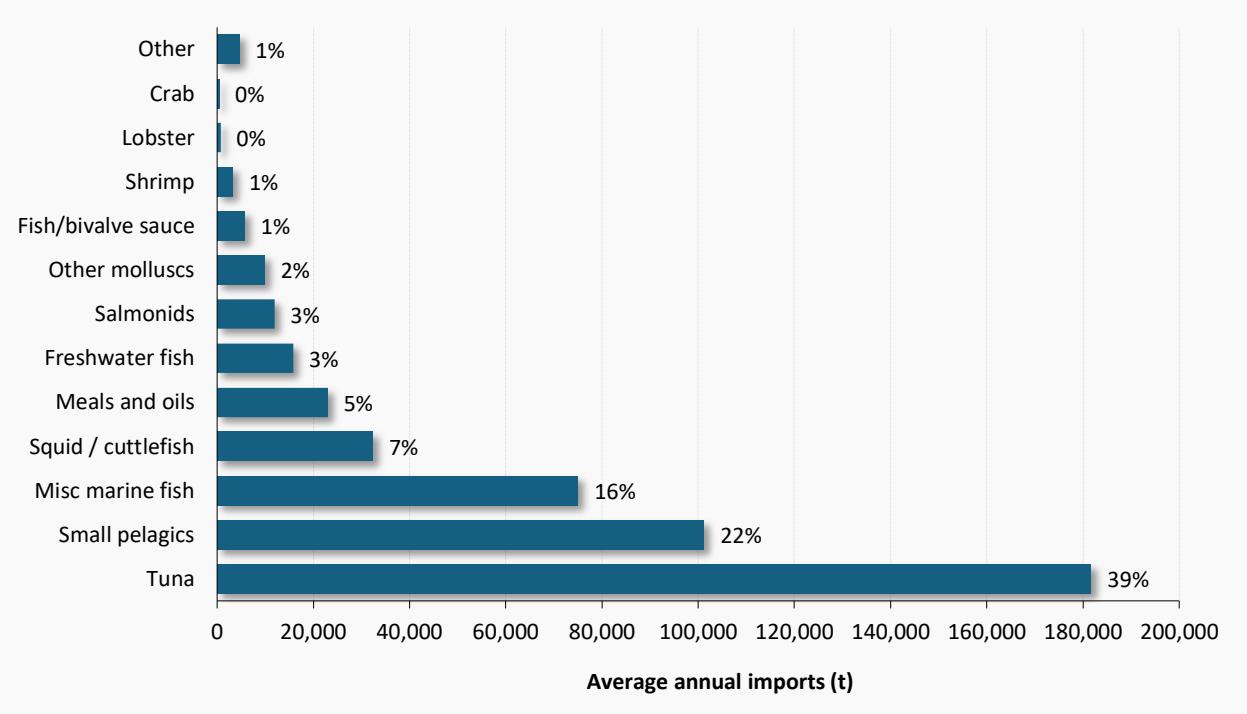



**Figure 49 |** Reported 2020-2022 average annual imports (t) by the Philippines by seafood group. **Source: FAO 2024c.**

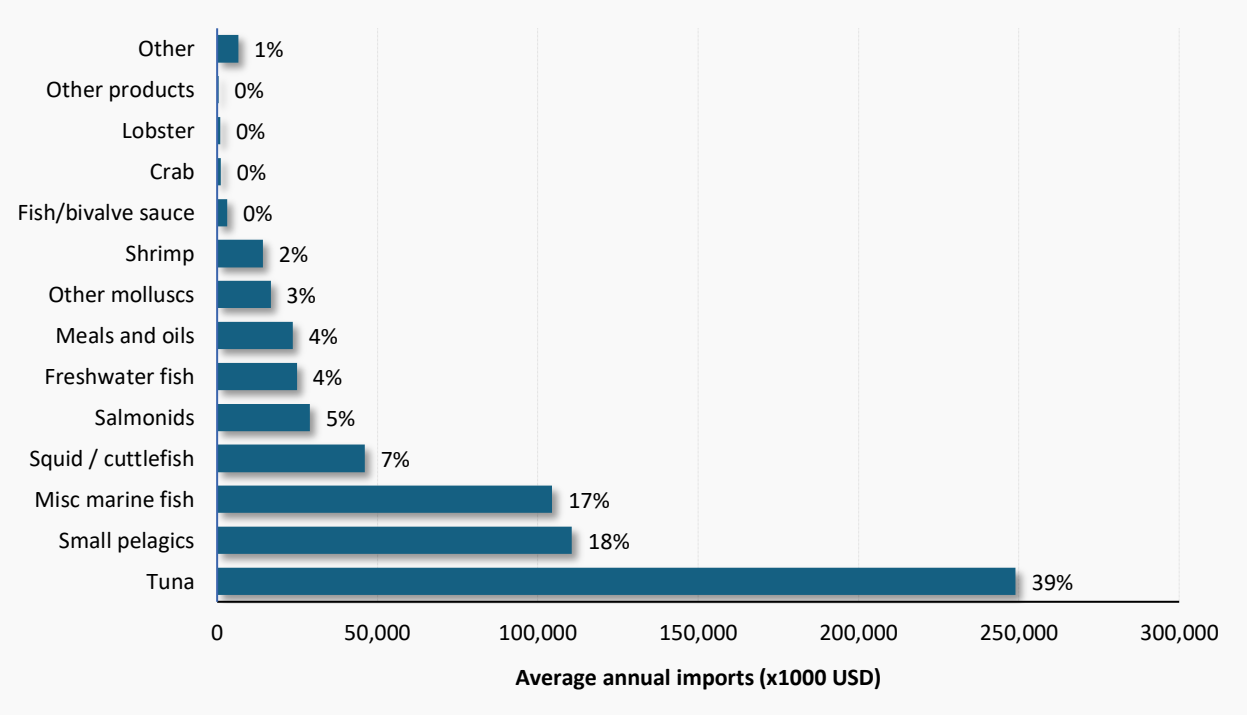



**Figure 50 |** Reported 2020-2022 average annual imports (x000 USD) by the Philippines by seafood group. **Source: FAO 2024c.**

Bilateral trade data indicates that the most important exporters of seafood to the Philippines by value are China (36%; mostly small pelagics, miscellaneous marine fish and cephalopods), Viet Nam (15%; mostly small pelagics and freshwater fish (likely pangasius), and Papua New Guinea (14%, mostly tuna) (**SI 29-1; SI 29-2**).

In terms of trade flow per main commodity group, the following groups were investigated: tuna, small pelagics, miscellaneous marine fish, squid/cuttlefish, and fish sauce.

Papua New Guinea is the largest exporter of tuna to the Philippines, contributing 39% of the country's total tuna import value. Other significant exporters include Taiwan (8%), Micronesia (8%), Nauru (8%), and Kiribati (6%). Together, these five countries accounted for over two-thirds of the Philippines' total tuna imports in 2022 (39%) (**SI 29-3**) (**FAO 2024d**). As previously noted, and similar to Indonesia, it is likely that most imported tuna (primarily frozen) is processed locally and subsequently re-exported.

For small pelagics, 95% of the Philippines' reported import value comes from four countries: China (64%), Viet Nam (23%), Japan (7%), and Russia (2%). The main imported commodities are mackerel, anchovies, and sardines (**SI 29-4**).

Top exporters to the Philippines of unidentified miscellaneous marine fish are China (64% of imports by value in 2022), Viet Nam (10%), the United Kingdom (5%), and Thailand (4%) (**SI 29-5**). In terms of fish and bivalve sauce, almost all the imports (92% by value) are from Thailand. The only other relevant country is China, accounting for 5% of fish and bivalve sauce exports by value to the Philippines (**SI 29-6**) (**FAO 2024d**).

### *2.5.5. Information on stock and fisheries exploitation status*

Information on the status of the Philippines' marine resources is available at various levels. As already noted, the SEASOFIA report typically includes a section on the state of marine fisheries, outlining exploitation status, key issues, and concerns. In the latest assessment (**SEAFDEC 2022**), and among the small pelagic fisheries evaluated, exploitation rates were considered excessive for scads in one fishery, for mackerels in eight fisheries, and for sardines in two fisheries. These estimates, however, are not available for all areas and species, and in some cases are already quite outdated (i.e., 10 years or more).

In terms of national assessments, some stock assessment reports are available on the Philippines' National Stock Assessment Program webpage (**NFRDI 2023**), but these are generally also outdated and cover only a few species groups (e.g., small pelagics) and regions.

Given the growing importance of the Philippines' wild seafood production (e.g., tuna) in international markets, FishSource has already covered multiple fisheries from the country. As of November 2024, 131 Gear Flag Profiles (GFPs) have been developed on the platform, primarily covering small pelagics, tunas, snappers, and groupers (**Table 4**). Nearly 70% (90 GFPs) have at least one FishSource score below 6 or are classified as data deficient, indicating a lack of information or significant issues related to stock condition or management. Only 19 profiles—covering tuna and swordfish fisheries—score at or above 6 across all stock health, exploitation, and management quality criteria, suggesting these fisheries are

relatively well-managed. Meanwhile, 22 profiles remain unscored, meaning these fisheries have not yet been assessed under FishSource methodology. The full list of FishSource profiles and the respective scores can be found in **SI-46** (Supplementary Information).

**Table 4 |** Number of Gear Flag Profiles (GFPs) in FishSource by seafood sector for the Philippines (as of November 2024), and the percentage of GFPs that are either not scored or have critical issues (i.e., at least one Stock Health or Management Quality score below 6).

| Flag country and sector | All scores >=6 | With scores below 6 of DD | Not scored | Total number of Gear Flag Profiles | % of fisheries not scored or with critical issues |
|---|---|---|---|---|---|
| **Philippines** | **19** | **90** | **22** | **131** | **85%** |
| Large pelagics | 1 | 0 | 0 | 1 | 0% |
| Marine Ingredients - Asia reduction | 0 | 48 | 0 | 48 | 100% |
| Non-T75 | 0 | 16 | 1 | 17 | 100% |
| Octopus | 0 | 3 | 0 | 3 | 100% |
| Snapper & Grouper | 0 | 10 | 0 | 10 | 100% |
| Squid | 0 | 6 | 0 | 6 | 100% |
| Swimming Crab | 0 | 4 | 21 | 25 | 100% |
| Tuna | 18 | 3 | 0 | 21 | 14% |

In terms of Seafood Watch recommendations, only two seafood groups in the Philippines are currently covered: blue swimming crab and octopus.

- For **blue swimming crab (BSC)**, all the four fisheries evaluated are rated "**Avoid,**" with the most critical issues flagged being: (1) the poor condition of the respective BSC stocks, (2) bycatch of some vulnerable species such as sharks, rays, sea turtles, and dolphins, and (3) ineffective management to address these issues.
- For **octopus**, all the four fisheries evaluated are also rated "**Avoid.**" Raised issues are (1) lack of information and uncertainty related to the condition of the respective stocks; (2) potential impacts on vulnerable species groups (e.g., corals); and (3) relatively weak management systems.

As for Indonesia, it is important to note that the Seafood Watch reports supporting these recommendations—published in 2018 for BSC and 2021 for octopus—may not reflect the most recent status of these fisheries. A summary of the current Seafood Watch recommendations for each evaluated species in the Philippines is available in **SI-30**.

Another source that includes some estimates around stock status is the Sea Around Us platform (**Pauly et al., 2024**). According to this source, 74% of catches in Cambodia's Exclusive Economic Zone (EEZ) come from fully exploited stocks, while almost 25% originate from overexploited or collapsed stocks (**Figure 51**). The number of overexploited or collapsed stocks in these waters has been rising, and more than half (51%) of the stocks that have been assessed by the SAU methodology are now considered to be in poor condition (**Figure 52**).

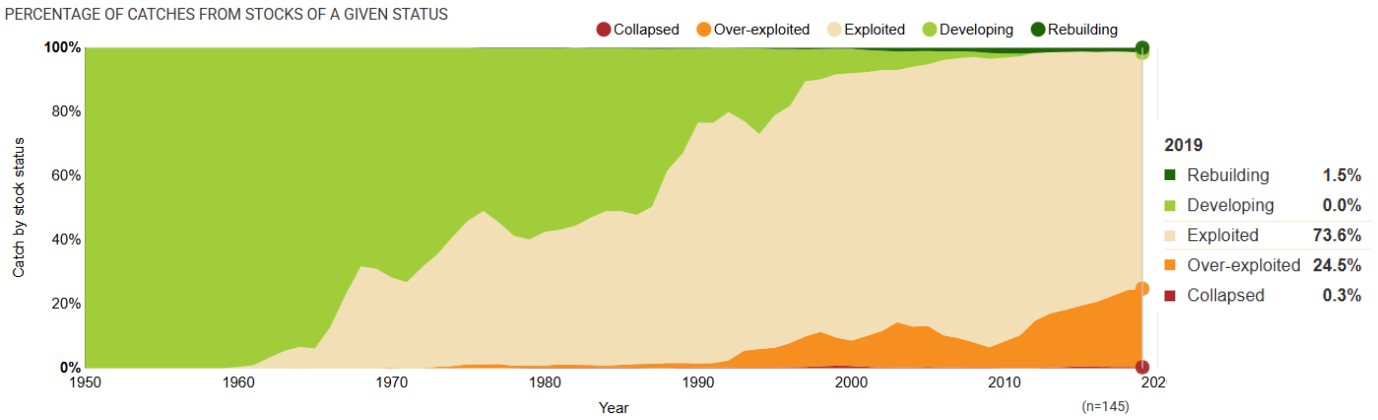



**Figure 51 |** Estimated status of stocks found in the Philippines's EEZ by catch biomass (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024)

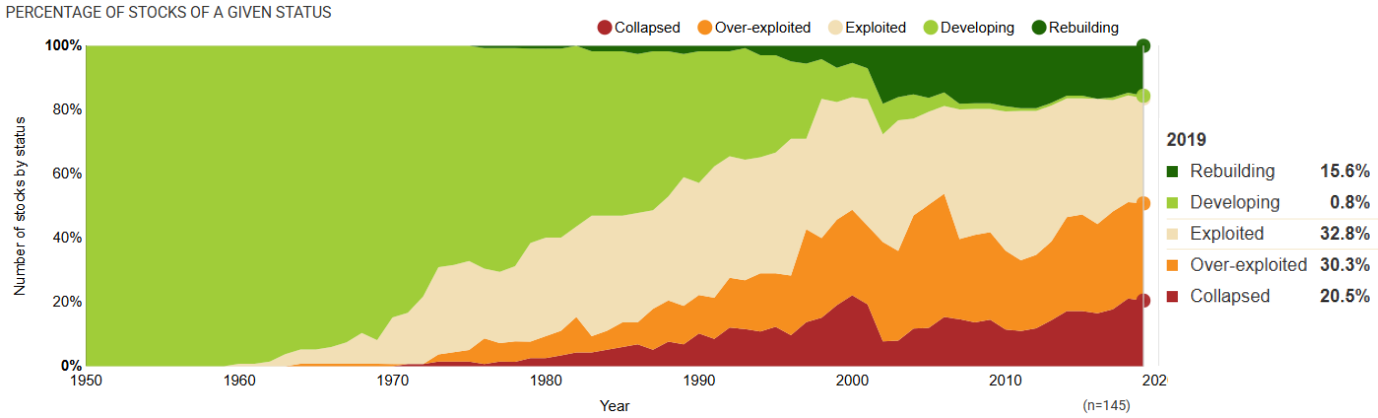
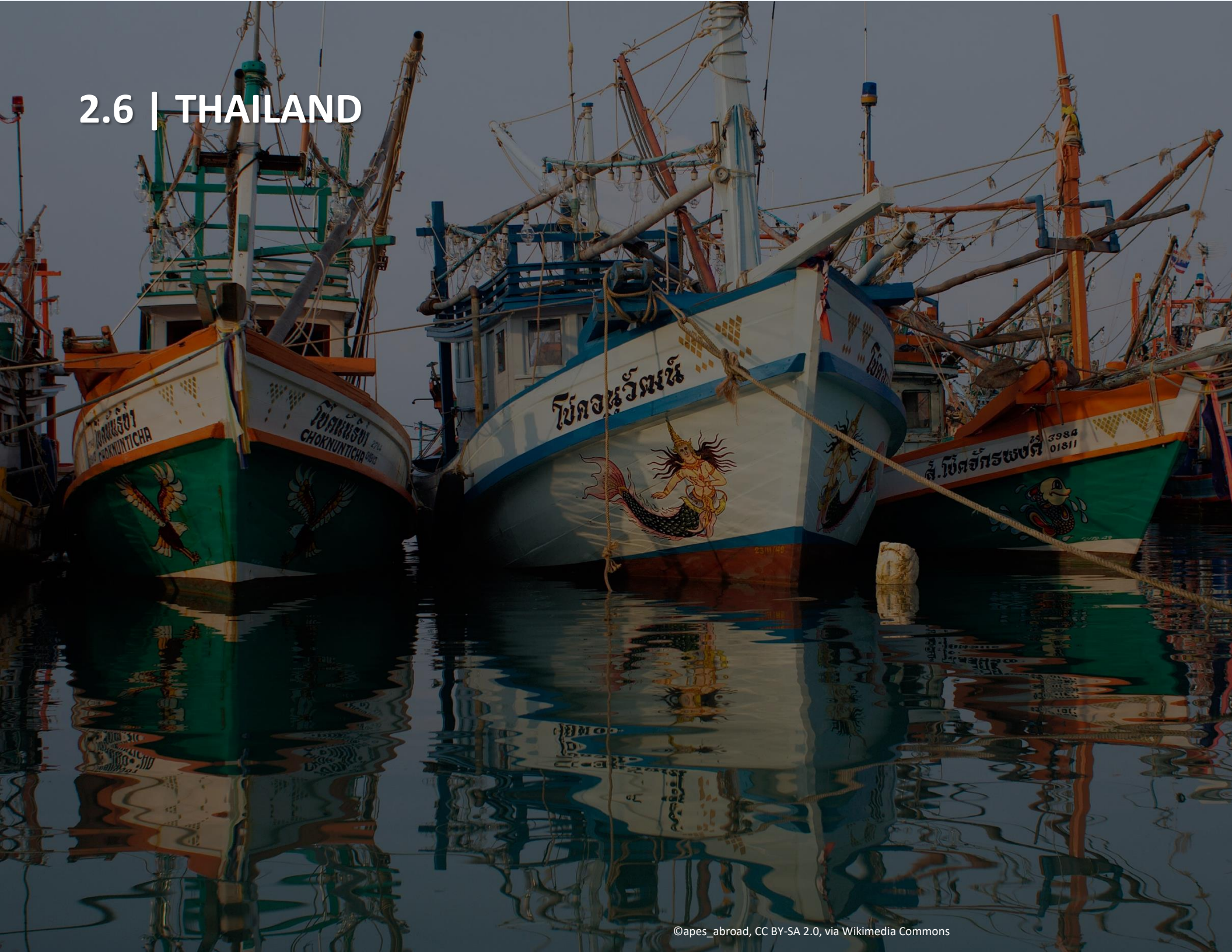



**Figure 52 |** Estimated status of stocks found in the Philippines's EEZ by number of stocks in each category (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024).

# 2.6 | THAILAND



### 2.6.1. Data availability and transparency

Transparency and data availability on stock status, management, and production for non-Thai users remains challenging through desktop research. Fisheries management data and statistics were only accessible via FAO, as the Thailand Department of Fisheries website could not be accessed. In any case, despite these challenges, the fisheries management in this country seems to have improved considerably. For example, the most recent Marine Fisheries Management Plan of Thailand (2020-2022) anticipates a number of measures to promote recovery of the fisheries resources, combat IUU fishing, improve livelihoods of artisanal fishers and fishing communities, mitigate impacts on habitats and environment (**DoF, undated**).

For the sections below, all statistics and information on sustainability status, management, production, and trade were sourced from two main data sources: (1) international production and trade databases (e.g., FAO FishStatJ, Sea Around Us); and (2) national reports and statistics (when available).

### 2.6.2. Wild production: current status and recent trends

Thailand is the 17th top producing country globally for wild marine capture (with reported catches of 1.4 million tonnes in 2022), and the sixth in the Eastern Indian Ocean and Western and Central Pacific Ocean (FAO areas 57 and 71, respectively), with annual catches in 2022 of roughly 1.3 million tonnes (**App Figure 1**). Most of these catches come from the Gulf of Thailand (FAO 71; **SI 1B-1**). Overall production, including fisheries and aquaculture from both inland and marine waters, showed a steady increase from 231 thousand tonnes in 1960 to 3.9 million tonnes in 2013. Most of this growth was due to marine capture production, but also due to an expansion in aquaculture since the early 1990s (**Figure 53**).

Production, both wild and farmed, then dropped until 2015 (likely due to the depleted condition of many wild fish stocks, as well as disease outbreaks in aquaculture), and has been relatively stable since, at around three million tonnes per year. Despite the recent growth in aquaculture, with an average annual increase in production of 5% since 1990, wild marine capture still accounts for most (54%) of the country's total seafood production (**Figure 53**) (**FAO 2024a**).

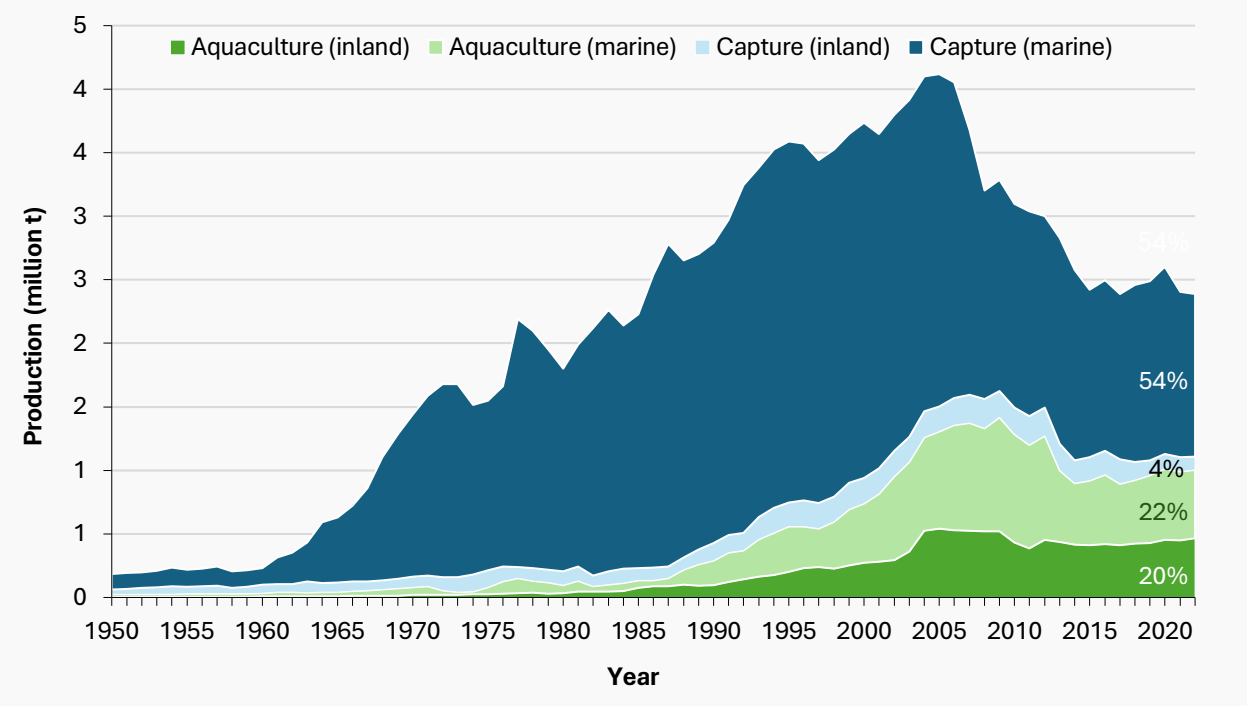



**Figure 53 |** Annual reported production (in million tonnes) by Thailand in terms of main production source (Aquaculture, inland capture, marine capture), between 1950 and 2022. Note: The percentage denotes the relative contribution of each production type to total production. **Source: FAO 2024a**

Marine fishes not identified and small pelagics, namely anchovies, sardinellas, mackerels, and scads, account for more than half of the country's total catches. Squids and blue swimming crab (BSC) are also important species groups, comprising 6% and 3% of total reported catches, respectively. The granularity of the reported catches data is relatively low and doesn't seem to have improved over time. In 2022, roughly only one fifth (18%) of the catches were reported at the species level. Similar to other countries in the scope of this study, most of the catches reported at the species level refer to small pelagics, tunas and BSC (**Figure 54**). The poor detail in the reported catches is likely related to the fact that multispecies trawl ("trash") fisheries are known to represent one the most important fishing segments in the region, and more than 300 species are estimated to contribute to these fisheries (**FAO 2014).** According to the latest national fisheries statistics report, trash fisheries totaled 365.6 thousand tonnes in 2023 (*c.* 104.8 million USD), around one-third of all the marine fish landed **(DoF Thailand 2024).**

The Sea Around Us (SAU) global database also includes estimated catches for this country. The most recent year of estimated catches is 2019. Compared to FAO data, there is a three-year gap in terms of the most recent data available. According to the latest SAU estimates, Thailand's catches totaled 2.1 million mt.[6] Of the total estimated catches, almost all (99%) were from Thailand's Economic Exclusive Zone (EEZ), with only 1% from the high seas (mostly tuna and large pelagics) (**SI 32-1**). More than 27% was estimated to be unreported, i.e., are not accounted in the existing FAO databases (**Pauly et al., 2024**). The level of underreporting is much higher in the artisanal and subsistence sectors than for the industrial fisheries, which dominate the country's catches (75% of total catches) (**Figure 55**). The most important industrial fishing gears are bottom trawl (37% of total catches) and purse seine (22%).

[6] This includes catches from all FAO areas, and both in the EEZ and the High Seas.

Combined, these two fishing gears account for roughly 60% of Thailand's catches. The artisanal sector only contributes to 19% of catches, with the most important gear being small-scale gillnets and cast nets (**SI 32-3; SI 32-7**) (**Pauly et al., 2024**).

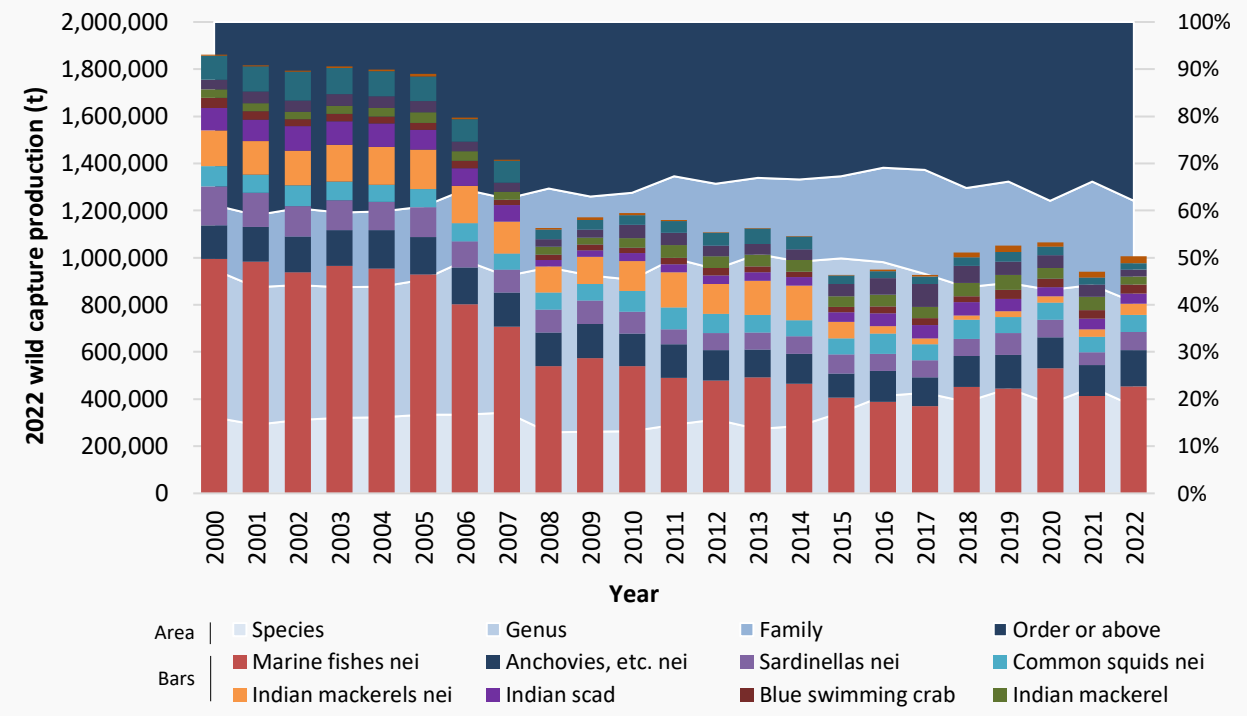



**Figure 54 |** Annual reported marine capture production (in tonnes) for Thailand (in FAO areas 57 and 71) by main species, and reporting level (% of total by classification), between 2000 and 2022. **Source: FAO 2024a.**

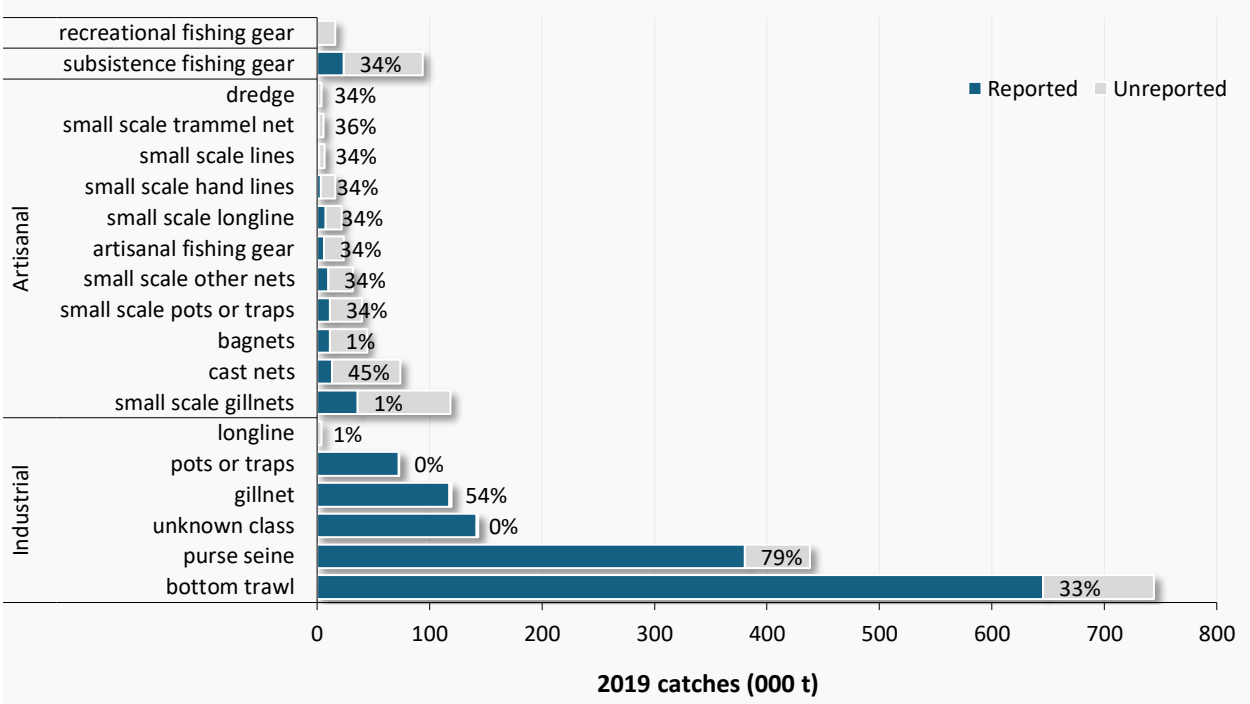



**Figure 55 |** Estimated total 2019 catches in thousand tonnes (reported and unreported) for Thailand, by fishing sector and gear type. Note: for each fishing gear the estimated percentage of unreported catches is included. **Source: Pauly et al., 2024.**

Regarding the end use of catches, and consistent with FAO data, approximately 85% are estimated to be for direct human consumption, while around 9% are used for fish meals and oils (FM/FO) (**SI 32-4**). Available data suggest that a portion of most captured species is directed toward FM/FO. However, slipmouths, ponyfishes, threadfins, and whiptail breams collectively account for nearly two-thirds of the catches utilized for this purpose. (**SI 32-6**).

### *2.6.3. Seafood consumption and domestic supply*

Thailand ranks 42$^{nd}$ in terms of seafood consumption globally (**App Figure 2**). This is a much smaller consumption of seafood per capita than in other countries in this study such as Indonesia and Malaysia. According to recent statistics, the country's average fish consumption was estimated at 28.7 kg/capita/year in 2021, ranking 15$^{th}$ in the Asean countries (**SI 1A-5**). Based on recent statistics, dependence on fish and seafood as a source of protein is also not as important in Thailand as it is in other countries. In 2021, Thailand ranked 18$^{th}$ globally in terms of relative dependence of seafood, with 36% of the total animal protein coming from this group (**App Figure 3**) (**Ritchie and Roser 2021**).

Thailand's imports of seafood products (by quantity) are almost equal to exports, and slightly below production. This trend is even more evident for pelagic species (likely tuna) and crustaceans (shrimp), and demersal fish (likely snappers, groupers, and other species groups with relevance to the international markets) (**Figure 16; App Table 4**). However, the available data does not provide a clear picture of the domestic market's importance for specific species.

Unlike countries such as Indonesia and the Philippines, only about half (45%) of the seafood (wild and farmed) that is either produced in Thailand or imported by the country is estimated to stay for domestic market. In 2019, reported processed seafood production (wild and farmed) totaled 2.5 million tonnes, with an additional 2.0 million tonnes being imported, and about 1.9 million tonnes of seafood being exported (**Figure 16; App Table 4**) (**FAO 2024b**). This corroborates the fact that the country is an important seafood exporter, particularly of seafood groups such as tuna and shrimp (**FAO 2024d**).

### *2.6.4. International trade*

Public trade information is available via global databases such as UN COMTRADE and FishstatJ. In terms of official national statistics, the quality of the trade information for Thailand could not be determined due to the challenge with access to official websites from this country. As a result, international trade databases (namely FishstatJ; **FAO 2024c; FAO 2024d**) were used for the trade analysis in terms of exports and imports. The main results are provided below.

#### 2.6.4.1. Exports

In terms of overall seafood exports, Thailand ranks as the 10$^{th}$ most important country in terms of quantity and 12$^{th}$ in terms of export value. In 2022, a total of 1.36 million tonnes of seafood (worth 5.8 billion USD) were reported to have been exported by this country. For commodity groups such as tuna (1$^{st}$ top exporter by value), shrimp (6th), and fish and bivalve sauce (1$^{st}$), this country is among the top ten exporters globally (**SI 4-4; SI 4-5; SI 4-7**).

The country's most exported seafood commodities by quantity are tuna (39% of 2020-22 annual exports), shrimp (11%), fish meals and oils (10%), miscellaneous marine fish (likely snappers, grouper and other commercially valuable fish) (8%), and fish and bivalve sauce (7%). In terms of value, the most relevant groups are tuna (40% of 2020-22 annual exports), shrimp (26%), miscellaneous marine fish (6%), squid/cuttlefish (5%), and small pelagics (5%) (**Figure 56**; **Figure 57**; **App Table 14**; **App Table 15**).

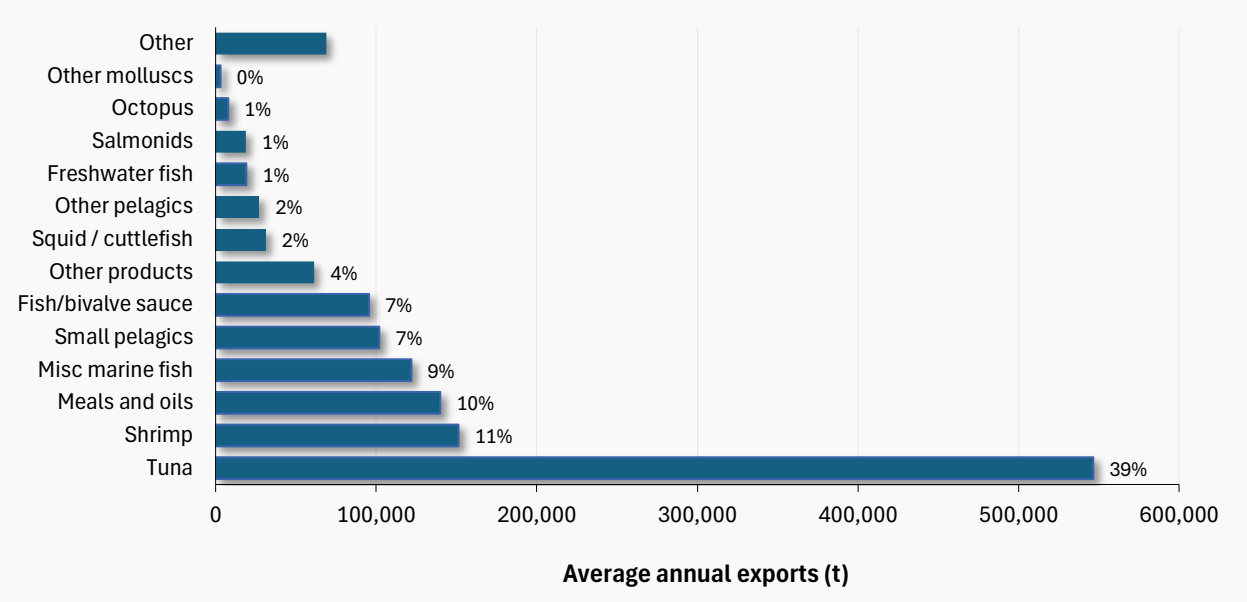



**Figure 56 |** 2020 - 2022 average annual seafood exports by Thailand in terms of product weight and for the main commodity groups. **Source: FAO 2024c.**

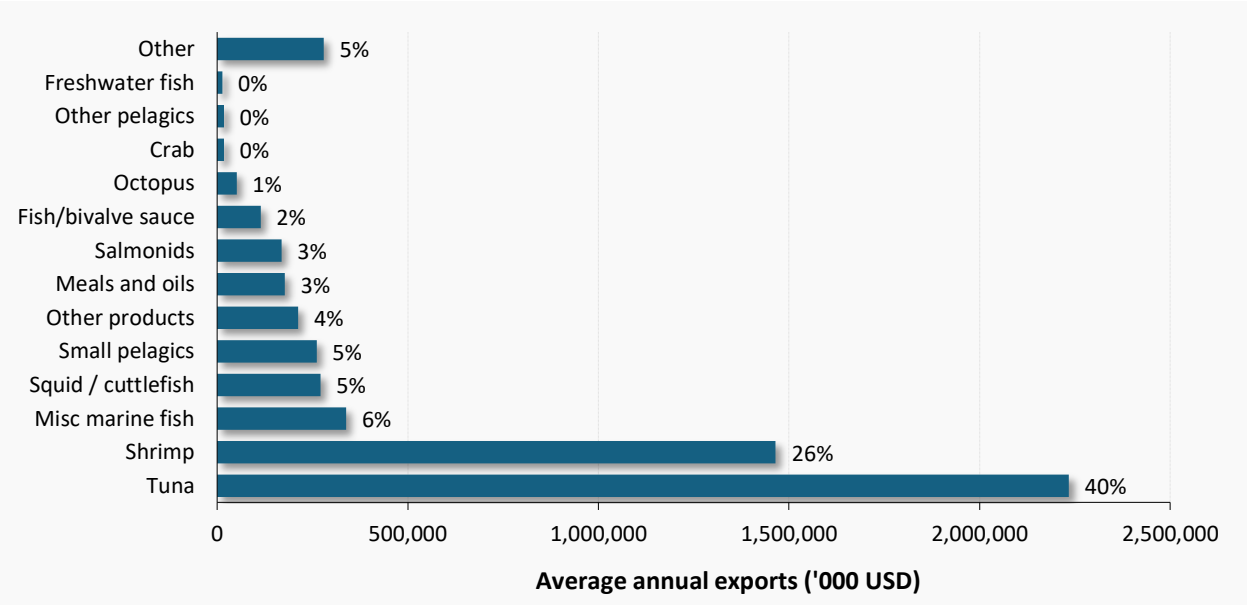



**Figure 57 |** 2020 - 2022 average annual seafood exports by Thailand in terms of value (x1000 USD) and for the main commodity groups. **Source: FAO 2024c.**

Bilateral trade data shows that Thailand's key seafood export markets by value are the United States (22% of total seafood exports in 2022), Japan (18%), China (9%), Australia (6%), Canada (4%), and South Korea (3%). Tuna and shrimp dominate exports to most of these countries, except for China and South Korea, where fish meals and oils (China) and octopus (South Korea) are also significant. The European Union currently plays a minor role as a trade partner for Thailand, accounting for only 4% of the country's seafood exports by value (**Figure 58**; **FAO 2024d**).

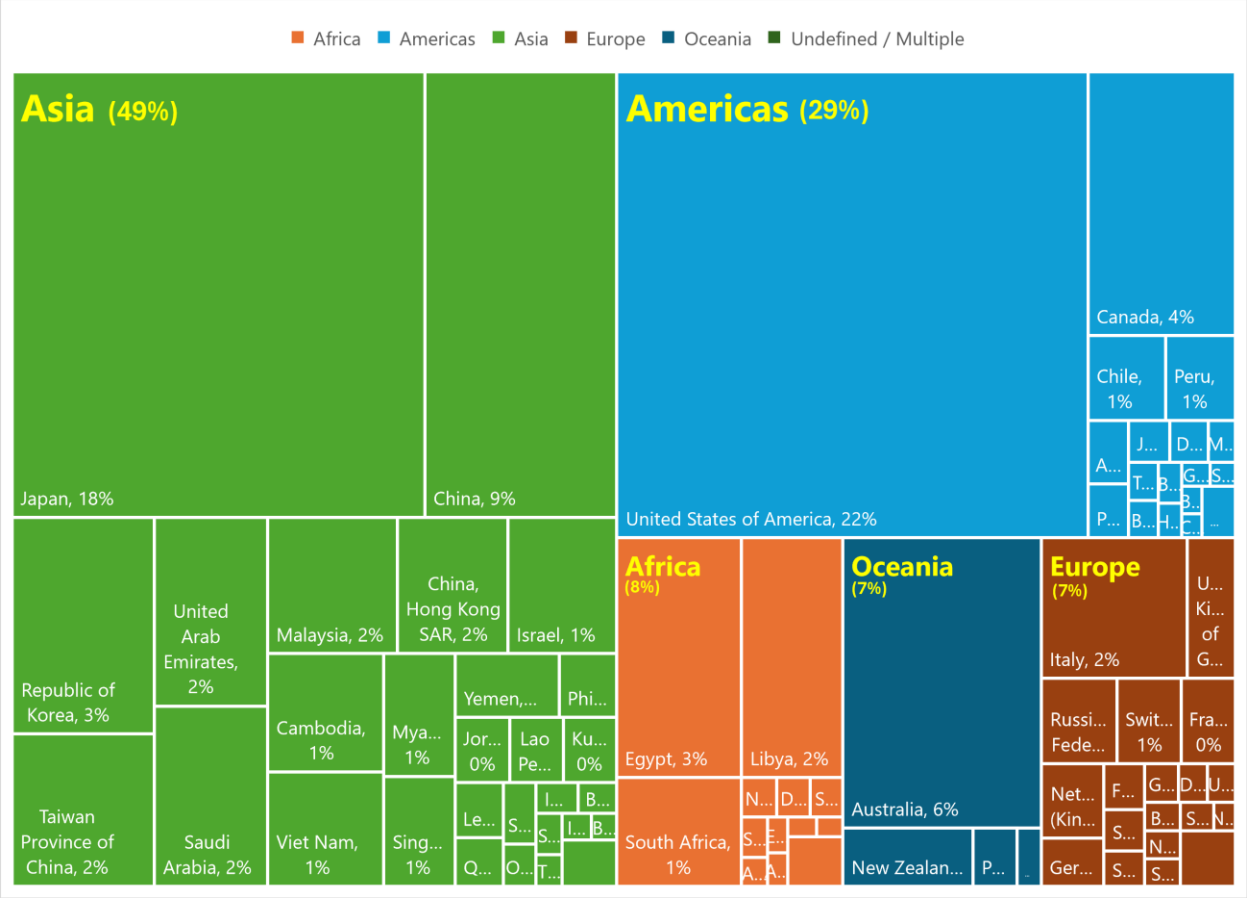



**Figure 58 |** Percentage of Thailand's 2022 total seafood exports in thousand USD per partner country and region. **Source: FAO 2024d.**

In terms of trade flows per main commodity group, the following groups were investigated: tuna, shrimp, fish meals and oils, miscellaneous marine fish, small pelagics, squid / cuttlefish, and fish sauce. These groups were chosen because they are either relevant in terms of contribution to Thailand's total exports or important for the scope of this analysis.

For tuna, the top importers are the United States (25% of total 2022 exports by value), Japan (10%), Australia (8%), and Egypt (7%). Most of these exports refer to prepared or preserved tuna (e.g., canned) (**SI 34-2**) (**FAO 2024d**).

The United States and Japan are also the most important trade partners of Thailand for shrimp, representing 28% and 27% this country's shrimp exports by value, respectively. Other relevant importers are China (18%), South Korea (6%), and Taiwan (5%). Combined, these five countries represented almost 85% of Thailand's total shrimp exports by value in 2022 (**SI 34-3**).

In terms of miscellaneous marine fish, Japan was by far the most important trade partner. This country alone represented more than one third (36%) of Thailand's export value in 2022. Other relevant

importers were the United States (12%), China (7%), and Australia (6%). Exports for this group were mostly prepared indiscriminate fish[7] (**SI 34-4**).

Like Indonesia, most of Thailand's exported small pelagics are destined to other countries in Asia (51% of total exports in 2022 by value). But as noted before, total annual exports from this group are relatively small compared to other commodities such as shrimp or tuna. The top importers of small pelagics are Japan (24%), South Africa (17%), United States (12%), Cambodia (5%), and Malaysia (5%) (**SI 34-5; FAO 2024d**).

Thailand's main importers of squid and cuttlefish in 2022 were Italy (31% of total export value), Japan (22%), the United States (15%), Canada (7%), Australia (5%), and China (4%). While China mainly imported cuttlefish, the majority of exports in this category to other countries consisted of squid products (**SI 34-6**).

As noted earlier, Thailand is the world's leading exporter of fish and bivalve sauce, accounting for nearly two-thirds (59%) of global export value in 2022 (**FAO 2024d**). The top importers of this product were the United States (15% of total export value), Myanmar (10%), Cambodia (10%), Laos (8%), and the Netherlands (6%) (**SI 34-7**).

#### 2.6.4.2. Imports

Overall seafood imports by Thailand in 2022 totaled 2.1 million tonnes, making it the fourth top importer country globally and the third in Asia, only surpassed China and Japan (**SI 9-1**). However, in terms of value Thailand ranked 13$^{th}$, with seafood imports in 2022 worth 4.4 billion USD (**SI 9-2**) (**FAO 2024b**).

Thailand's most imported seafood commodities by weight include tuna (37% of annual imports from 2010–2022; 34% by value), small pelagics (19% by weight; 13% by value), miscellaneous marine fish (13% by weight; 8% by value), and squid/cuttlefish (10% by weight; 13% by value) (**Figure 59**; **Figure 60**) (**FAO 2024c**). As with other Asian countries in this study, the significance of small pelagics in imports underlines their importance as a key food source for the Thai population. The relative importance of fish meals and oils (FM/FO) in trade is linked to aquaculture growth and the essential role of FM/FO in shrimp farming. However, Thailand's relatively low imports of FM/FO compared to other commodities is related to its position as a major processor (ranking 6$^{th}$ globally; **FAO 2024b**) and likely self-sufficient in meeting domestic aquaculture supply needs.

[7] The most important commodities were "Fish meat, whether or not minced, frozen, nei", "Fish minced nei, prepared or preserved", and "Fish not minced, prep. or pres., not in airtight containers".

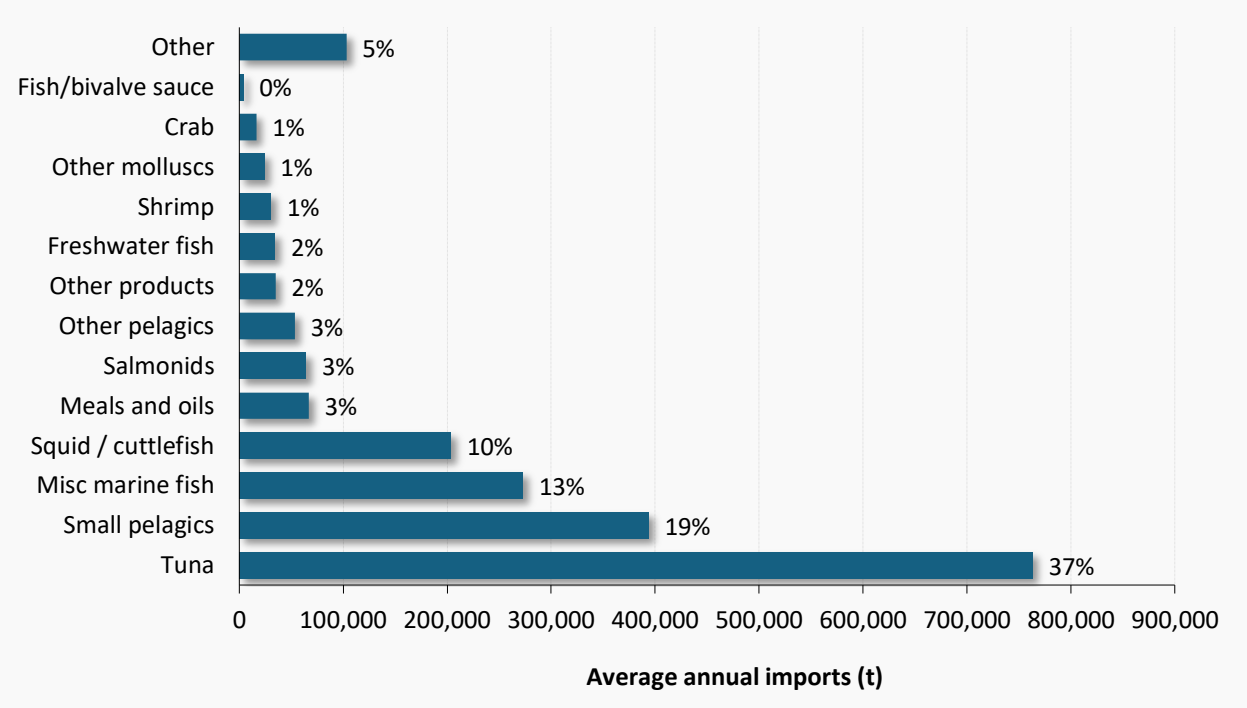



**Figure 59 |** 2020 - 2022 average annual seafood imports by Thailand in terms of weight and for the main commodity groups. **Source: FAO 2024c.**

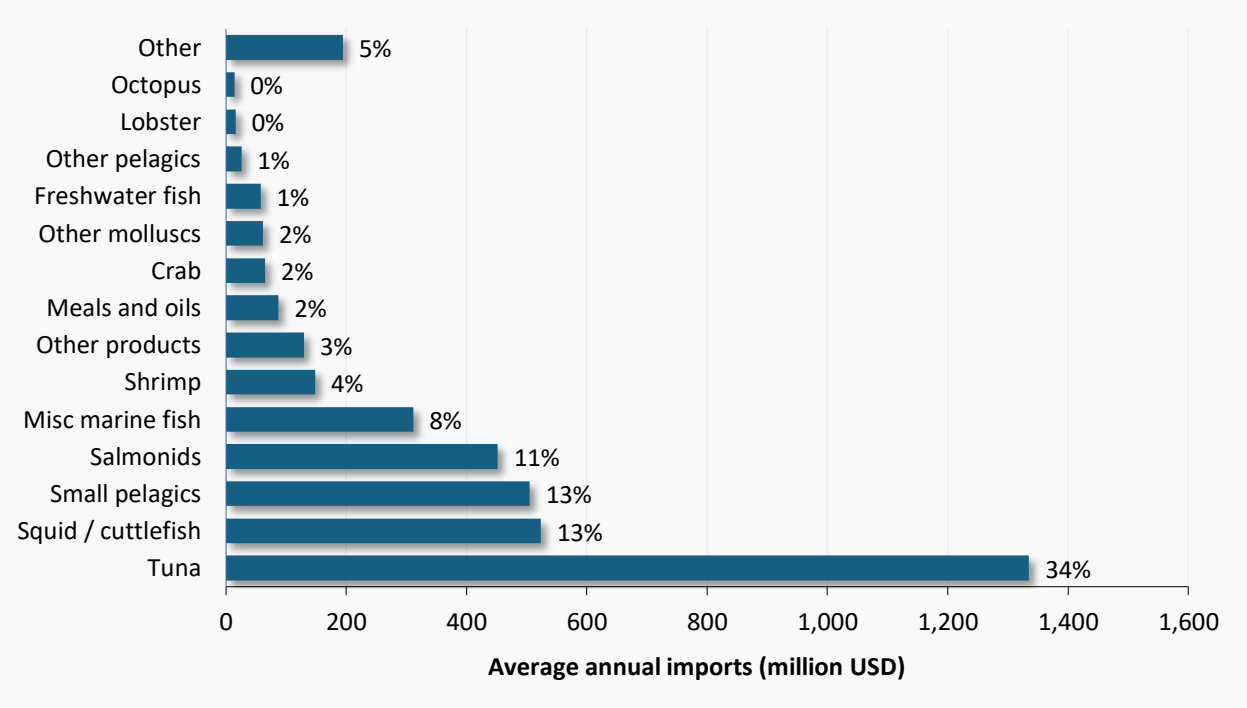



**Figure 60 |** 2020 - 2022 average annual seafood imports by Thailand in terms of value (million USD) and for the main commodity groups. **Source: FAO 2024c.**

In terms of bilateral trade, the most significant exporters of seafood to Thailand by value are China (10%, mostly tuna, squid, and small pelagics), Norway (8%, mostly salmon), India (9%, mostly small

pelagics and squid), Seychelles (6%, mostly tuna), Viet Nam (8%, mostly miscellaneous marine fish and freshwater fish), and Taiwan (6%, mostly tuna) (see **SI 36-2**). As in countries such as China and Indonesia, the fact that Thailand imports certain commodities that are also significant in terms of their exports (such as tuna and squid) suggests that it serves as a processing hub for seafood before being re-exported.

The analysis of trade flows per main commodity group considered the following groups: tuna, small pelagics, miscellaneous marine fish, squid/cuttlefish, and fish meals and oils.

For tuna, the top exporters to Thailand are Papua New Guinea (39% of total 2022 imports by value), Taiwan (8%), Micronesia (8%), and Nauru (8%) (**SI 36-3**).

Asian countries dominate Thailand's small pelagics market, accounting for 95% of exports by value. China is the leading exporter, representing 64% of Thailand's total imports in 2022 by value, followed by Viet Nam (23%) and Japan (7%). Outside Asia, Russia is the only relevant exporter, contributing 2% of Thailand's small pelagics imports by value (**SI 36-4**).

China is the most important exporter of miscellaneous marine fish into Thailand, accounting for 64% of Thailand's total 2022 imports by value. Other relevant countries are Viet Nam (10%), and the United Kingdom (5%) (**SI 36-5**).

Regarding cuttlefish and squid, more than 85% of Thailand's imports by value in 2022 referred to squid (**FAO 2024d**). The top exporter countries of this commodity group were China (23% of total 2022 imports by value), India (19%), Argentina (15%), Viet Nam (12%), and Peru (10%) (**SI 36-5**). Similar to tuna, it is likely that most of the imported squid and cuttlefish are processed and then re-exported.

Finally, more than 75% of Thailand's reported import value for fish meals and oils originates from five countries: Myanmar (34%), Viet Nam (22%), Chile (9%), Norway (7%), and the United States (4%) (**SI 36-7**).

### *2.6.5. Information on stock and fisheries exploitation status*

Some information on the status of Thailand's marine resources is available from various sources, including global assessment initiatives and platforms such as national assessment reports, FAO SEAFDEC reports, FishSource, and Seafood Watch recommendations, as well as national scientific and management entities. However, as mentioned earlier, transparency and data accessibility for non-Thai users remain limited, particularly through desktop research. One of the main barriers is language, as most official fisheries-related platforms are available only in Thai.

FishSource provides relatively good coverage of Thai fisheries, with 120 gear flag profiles (GFPs) created as of November 2024. However, only 20% (24 profiles) have scores (**Table 5**). Of the 24 scored profiles, the majority (17) have at least one FishSource score below 6 or are classified as data deficient, indicating either a lack of information or significant issues in stock health and management. These concerns are primarily linked to tuna and tuna-like species (e.g., Kawakawa *Euthynnus affinis*) and blue swimming crab fisheries, where poor management and/or overfishing are the main challenges.

Only a handful of purse seine and longline tuna fisheries are performing relatively well, with all FishSource scores at or above 6. A full list of the fisheries covered in FishSource and their respective scores can be found in **SI-46**.

**Table 5 |** Number of Gear Flag Profiles (GFPs) in FishSource by seafood sector for Thailand (as of November 2024), and the percentage of GFPs that are either not scored or have critical issues (i.e., at least one Stock Health or Management Quality score below 6).

| Flag country and sector | All scores >=6 | With scores below 6 of DD | Not scored | Total number of Gear Flag Profiles | % of fisheries not scored or with critical issues |
|---|---|---|---|---|---|
| **Thailand** | **7** | **17** | **96** | **120** | **94%** |
| Large Shrimp | 0 | 0 | 2 | 2 | 100% |
| Marine Ingredients - Asia reduction | 0 | 0 | 58 | 58 | 100% |
| Non-T75 | 0 | 6 | 17 | 23 | 100% |
| Octopus | 0 | 0 | 4 | 4 | 100% |
| Snapper & Grouper | 0 | 0 | 4 | 4 | 100% |
| Squid | 0 | 0 | 11 | 11 | 100% |
| Swimming Crab | 0 | 4 | 0 | 4 | 100% |
| Tuna | 7 | 7 | 0 | 14 | 50% |

In terms of Seafood Watch, there are currently 15 recommendations available for marine fisheries in Thailand. These cover the following species or species groups:

- **Blue Swimming Crab (BSC):** All four evaluated fisheries are rated **"Avoid"** due to (1) the poor condition of the respective BSC stocks; (2) bycatch of vulnerable species like rays, sharks, sea turtles, dugongs, etc.; and (3) ineffective management to restrict catches and reduce bycatch.
- **Squid:** Nine recommendations, three for each of the important squid species—Indian squid, mitre squid, and swordtip squid—and covering the three most important fishing gears: cast nets, jigs, and bottom trawls. Jig fisheries were rated **"Good Alternative,"** while cast nets and bottom trawls fisheries were all rated **"Avoid,"** mostly due to lack of information on stock or exploitation status, bycatch levels of finfish and some vulnerable species as well as ineffective management.
- **Longtail Tuna:** Two recommendations—one rated **"Good Alternative,"** for the purse seine fisheries in the Western and Central Pacific, and one rated **"Avoid,"** for the purse seine fisheries in the Indian ocean. The "Avoid"-rated fisheries face issues with potential overfishing and inadequate management to address this issue.

A summary of the current Seafood Watch recommendations for each evaluated species is available in **SI-24**.

It is important to note that, similar to the other countries in this study, some evaluations in both **Seafood Watch** and **FishSource** may be outdated and not accurately reflect the current state of the respective fisheries.

The Sea Around Us platform (**Pauly et al., 2024**) includes rough estimates on status of the stocks found in Thai waters and assessed through SAU methodology. For this country, the estimates are available for each of the two marine regions: Andaman Sea and Gulf of Thailand.

For the **Thailand Andaman Sea (n = 69 assessed stocks)**, about half (49%) of the total catches in these waters come from fully exploited stocks, while more than two thirds (38%) already originate from over-exploited or collapsed stocks (**Figure 61**). Similar to other areas in the region, the number of over-exploited or collapsed stocks increased steadily from the mid-1990s to 2014 but have slightly decreased since. Currently, more than half (53%) of the stocks that have been assessed are in poor condition (i.e., either overexploited or collapsed) (**Figure 62**).

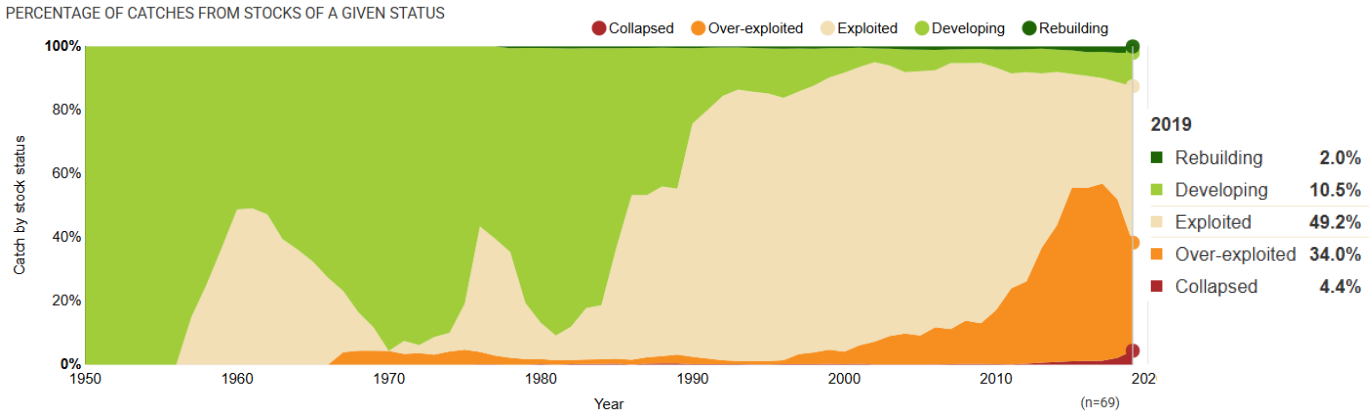



**Figure 61 |** Estimated status of stocks found in Thailand Andaman Sea EEZ by catch biomass (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024)

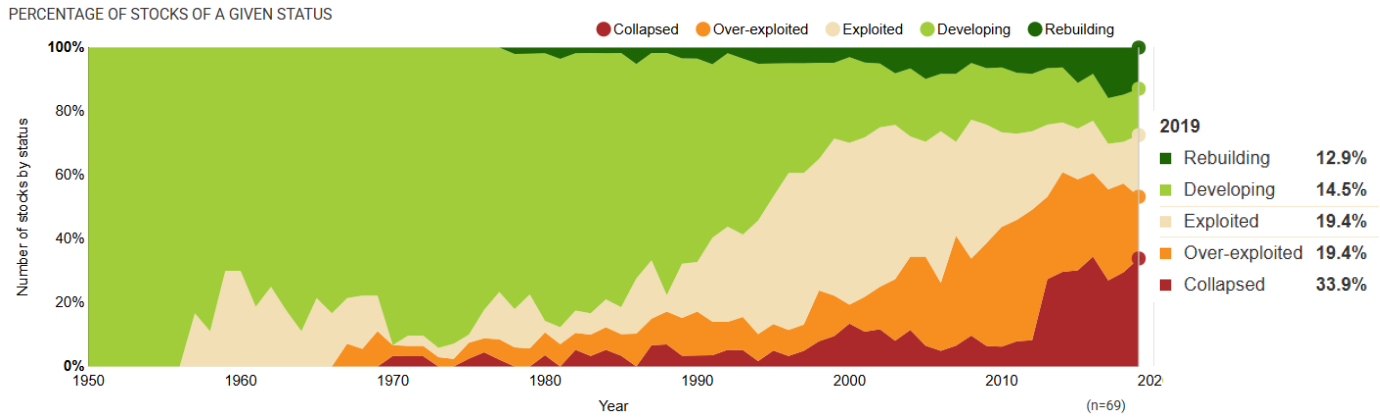



**Figure 62 |** Estimated status of stocks found in the Thailand Andaman Sea EEZ by number of stocks in each category (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024).

In terms of the **Thailand Gulf of Thailand** waters **(n = 61)**, most catches (48%) come from fully exploited fisheries, while only 12% originate from underfished stocks. Meanwhile, 40% of catches come from overexploited or collapsed fisheries (**Figure 63**). The number of overexploited or collapsed stocks steadily increased until 2011 but has been decreasing since. However, more than 40% of the stocks assessed are still classified as being in poor condition (**Figure 64**).

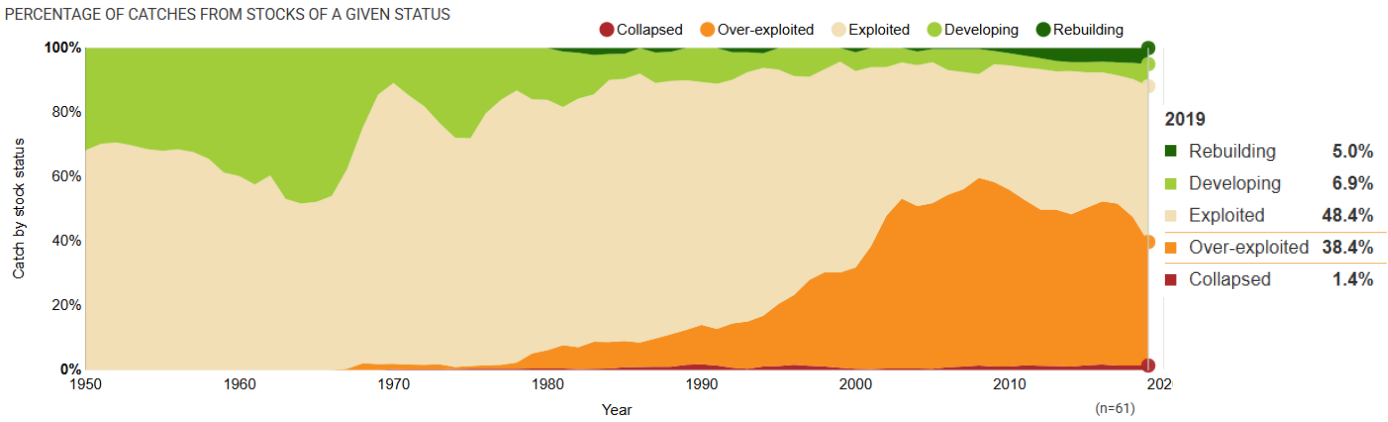



**Figure 63 |** Estimated status of stocks found in Thailand Gulf of Thailand EEZ by catch biomass (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024)

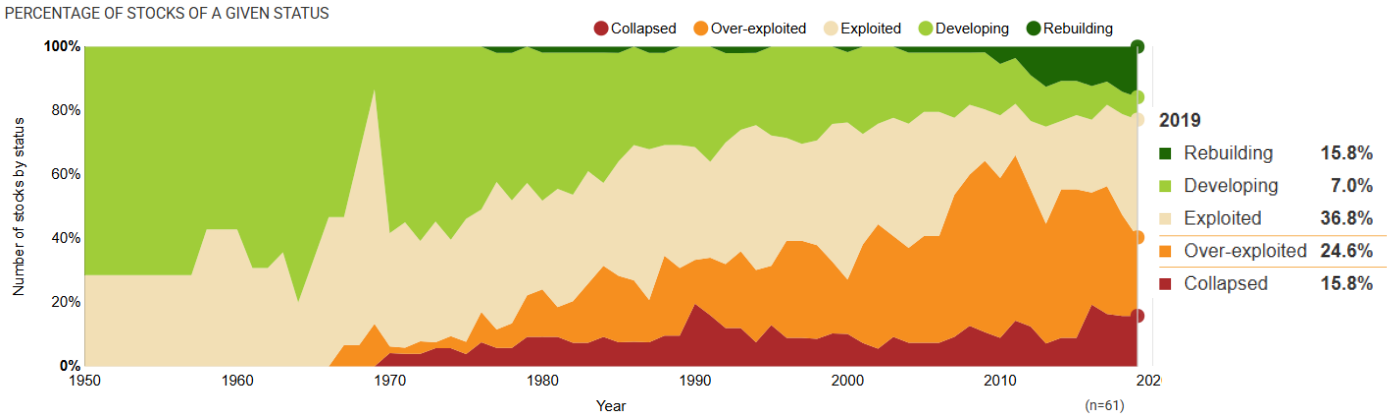



**Figure 64 |** Estimated status of stocks found in the Thailand Gulf of Thailand EEZ by number of stocks in each category (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024).

With regards to national assessments, some the key marine fisheries resources are regularly assessed by the Thai Department of Fisheries (DoF). The latest report available by DoF on fisheries statistics and the status of resources dates from 2024 and includes exploitation status up to 2023. For the marine fisheries, Thailand uses an overall Maximum Sustainable Yield (MSY) by species group because its marine fisheries are mixed and complex, making this a more practical approach for management than assessing each species separately (**DoF Thailand 2022**; **MarinTrust 2022**). In recent years, exploitation rates for marine species have been deemed sustainable by the Thai national fisheries authorities. According to the fisheries management plan, overall catches have been in line with the estimated combined MSY and Total Allowable Catch (TAC). For 2023 specifically, the combined Thai TAC for the Gulf of Thailand was 1.15 million tonnes, while catches were 1.02 million tonnes (i.e., 11% below the set TAC). For the Andaman Sea, the reported 329 thousand tonnes were also below the agreed Thai TAC of 364.3 thousand tonnes (**DoF Thailand 2022**). However, for particular species groups, namely pelagics fishes other than anchovies, catches have been above both the TAC and the estimated MSY. For this group, the reported catches of 398.7 thousand tonnes for 2023 were 15% above the combined TAC of 348.05 thousand tonnes. Catches from both anchovies and demersal fish were well below the respective combined TACs (**DoF Thailand 2024**).

In the latest edition of the SEASOFIA Report 2022 (SEAFDEC, 2022), the available assessments of small pelagic species noted the following. For scads, in both the Gulf of Thailand and Andaman Sea fisheries, exploitation rates for Japanese scad (*Decapterus maruadsi*) were well above the 0.5 threshold, above which fishing levels are considered unsustainable. A similar pattern was observed for Goldstripe sardinella (*Sardinella gibbosa*), for which the exploitation rate was estimated at 0.78. For Indian mackerel (*Rastrelliger kanagurta*), the estimated exploitation rate was also above the threshold, indicating a high level of fishing pressure (SEAFDEC, 2022). Although anchovies and sardines were also covered in the report, no specific assessments of their exploitation status were provided for this country. It is important to note, however, that in most cases the estimates are relatively outdated.

A recent SEAFDEC workshop on Mixed Stock Fisheries in the Gulf of Thailand (**SEAFDEC 2025b**) reported that multispecies assessments of three key resource groups within a fisheries management area (FMA) covering the Thai EEZ—demersal fish, anchovies, and other pelagic fish—indicated that all groups were in good condition (i.e., underfished). However, single-species assessments revealed a more variable picture. While Jinga shrimp and Brushtooth lizardfish were classified as either overfished or subject to overfishing, all other key stocks assessed were considered to be sustainably harvested and in good condition.

# 2.7 | VIET NAM

### 2.7.1. Data availability and transparency

As with Thailand, transparency and data availability on stock status, management and fisheries and aquaculture statistics for non-Vietnamese speakers remains challenging through desktop research. Governance and statistics data were only easily accessible via FAO, has limited and not very granular information. Despite these challenges, the fisheries management in this country seems to have improved. In recent years, there have been multiple initiatives and efforts to improve fisheries and address over issues such as overexploitation, habitat impacts, or livelihoods of people directly employed in fishing or aquaculture. For example, in 2021 the Strategy for Development of Vietnam's Fisheries by 2030 with vision towards 2045 was approved (**MARD 2021**), four years after the revised Law of fisheries was published (**MARD 2017**). In 2022, the Scheme for "Preventing illegal, unreported, and unregulated fishing until 2025" was published (**MARD 2022**).

For the sections below, all statistics and information on sustainability status, management, production, and trade were sourced from two main data sources: (1) international production and trade databases (e.g., FAO FishStatJ, Sea Around Us); an d(2) national reports and statistics (when available).

### 2.7.2. Wild production: current status and recent trends

Viet Nam is the seventh top producing country globally in terms of wild marine capture (App Figure 1), and the fourth in terms of overall production (5.2 million tonnes in 2022, including both wild capture and farmed production) (SI 1B-4) (**FAO 2024a**). As with other Asian countries (e.g., Indonesia), capture production has been increasing; in 2022 Viet Nam's marine capture totaled 3.4 million tonnes, compared to 2.01 million t in 2010, 1.4 million t in 2000, and 0.4 million t in 1980. For aquaculture, the annual growth pace is much higher, at an average of 12% per in the last 25 years. Currently, aquaculture from both inland and marine waters accounts for almost two thirds (59%) of the country's total seafood production (**Figure 65**; SI 38-2).

All marine capture originates from the Western and Central Pacific Ocean (FAO region 71), with Viet Nam ranking as the second-largest producing country, contributing 25% of total catches in this region in 2022 (SI 1B-1) (**FAO 2024a**). The available data does not specify how much of this production originates from the Gulf of Thailand, which constitutes only a small part of Viet Nam's coastline.

According to FAO data, approximately 84% of processed production is used for direct human consumption, including a portion for fish sauce, while 16% is used for fish meals and oils (FM/FO). Viet Nam is a key global producer of FM/FO, ranking third worldwide and first in Asia. In 2019, the country produced 0.53 million tonnes of processed FM/FO, with the majority (66%) consisting of fish meal (SI 1B-5) (**FAO 2024b**).

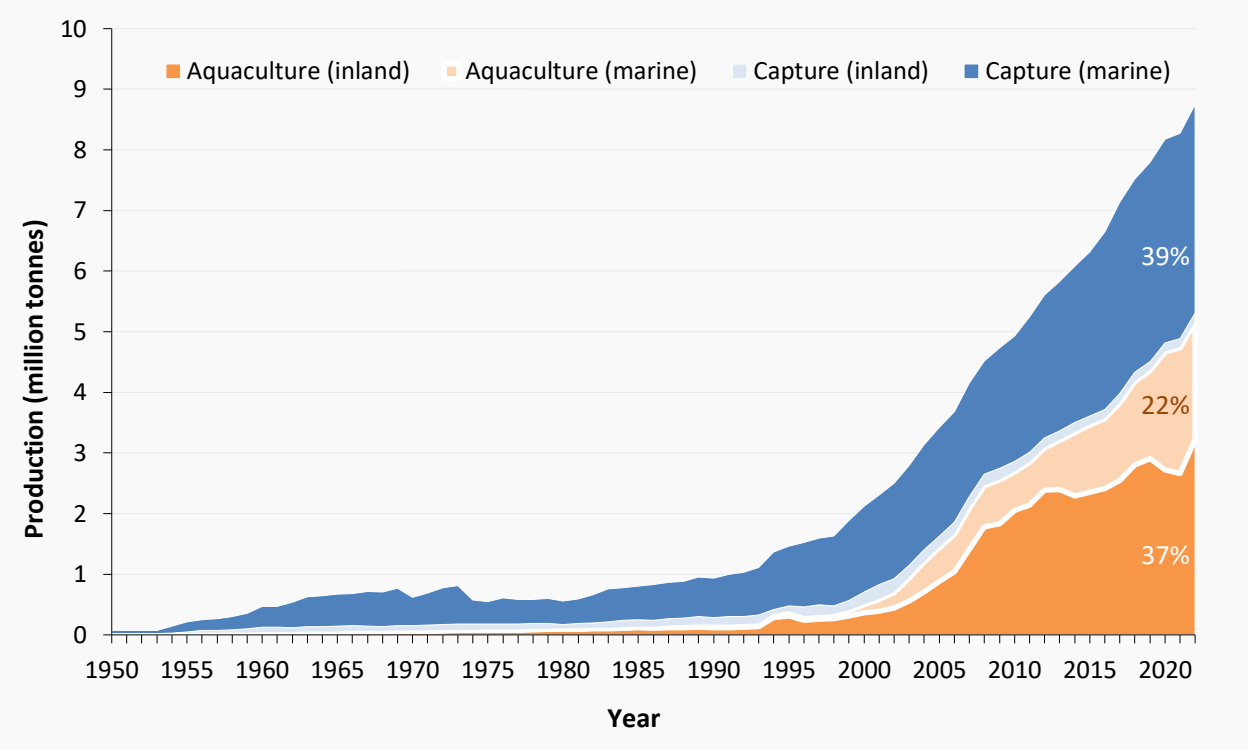



**Figure 65 |** Annual reported production (in million tonnes) by Viet Nam in terms of main production source (Aquaculture, inland capture, marine capture), between 1950 and 2022. **Note**: The percentage denotes the relative contribution of each production source to total production. **Source: FAO 2024a**

More than two-thirds (69% in 2022) of the reported catches consist of unspecified marine fish ("marine fishes nei"). Other important species groups are unspecified tunas or tuna-like species (11%), unspecified cephalopods (10%), and unspecified shrimps and prawns (4%). The full list of reported species can be found in App Table 16 (**FAO 2024a**). The granularity of reported catches to FAO remains poor, with only 3% of total marine catches reported at the species level in 2022 (**Figure 66**; **FAO 2024a**).

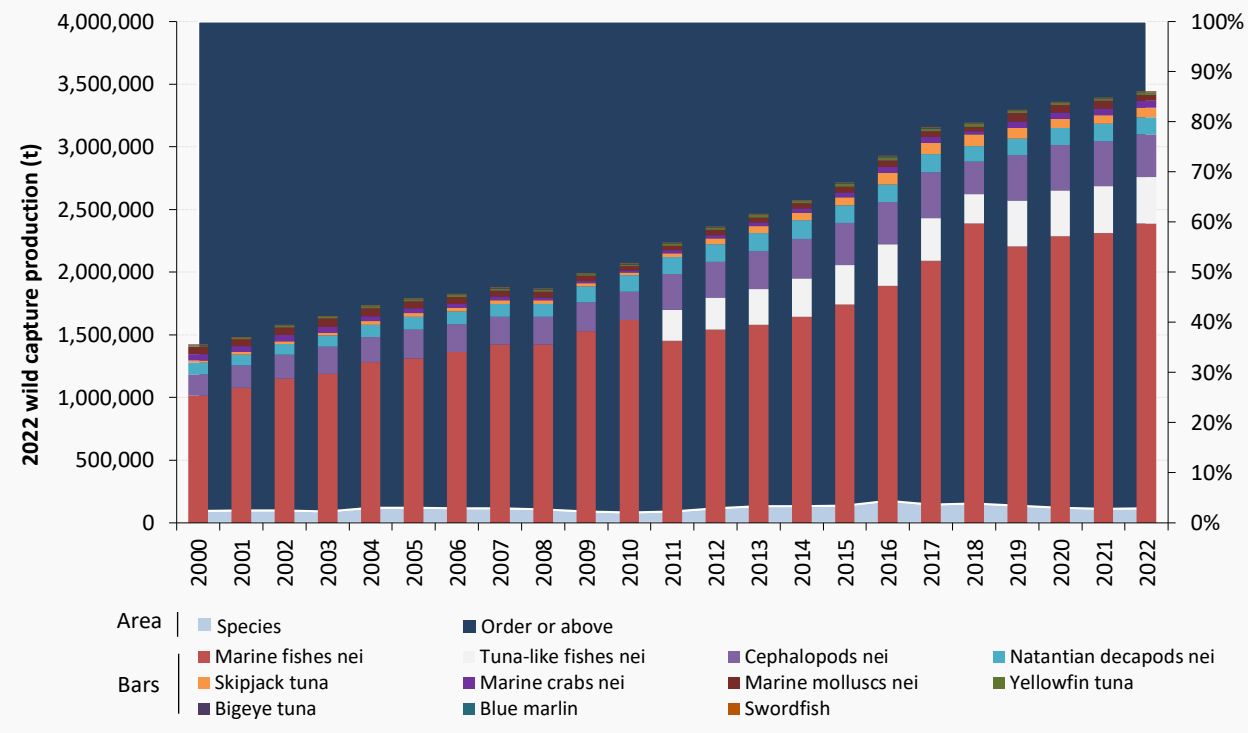



**Figure 66 |** Annual reported marine capture production (in tonnes) for Viet Nam (in FAO areas 57 and 71) by main species and reporting level (% of total by classification), between 2000 and 2022. **Source: FAO 2024a.**

The Sea Around Us (SAU) global database provides estimates of both reported landings and unreported catches for Viet Nam. According to SAU data, Viet Nam's total catches reached 4.7 million tonnes in 2019 (the most recent year available). These catches primarily originate from the Western Central Pacific Ocean (FAO region 71), including both the EEZ and the High Seas. As with other countries, SAU's estimate exceeds the figure reported to FAO for the same year (3.4 million tonnes) because it accounts for unreported catches (**Pauly et al., 2024**). Unreported catches in Viet Nam were estimated to represent nearly one-third (32%) of the total (**SI 39-5**), indicating significant underreporting. Catches are predominantly from the industrial sector (80%), with 18% attributed to the artisanal sector and 1–2% to subsistence fisheries (**Figure 67**; **SI 39-7**). While there are no estimates for recreational fishing, it is likely negligible. In terms of fishing gear, industrial bottom trawls account for most of the catches (65%), followed by purse seines (7%) and unknown gear types (6%). Small-scale nets and pots/traps contribute 10% to the total (**SI 39-2**).

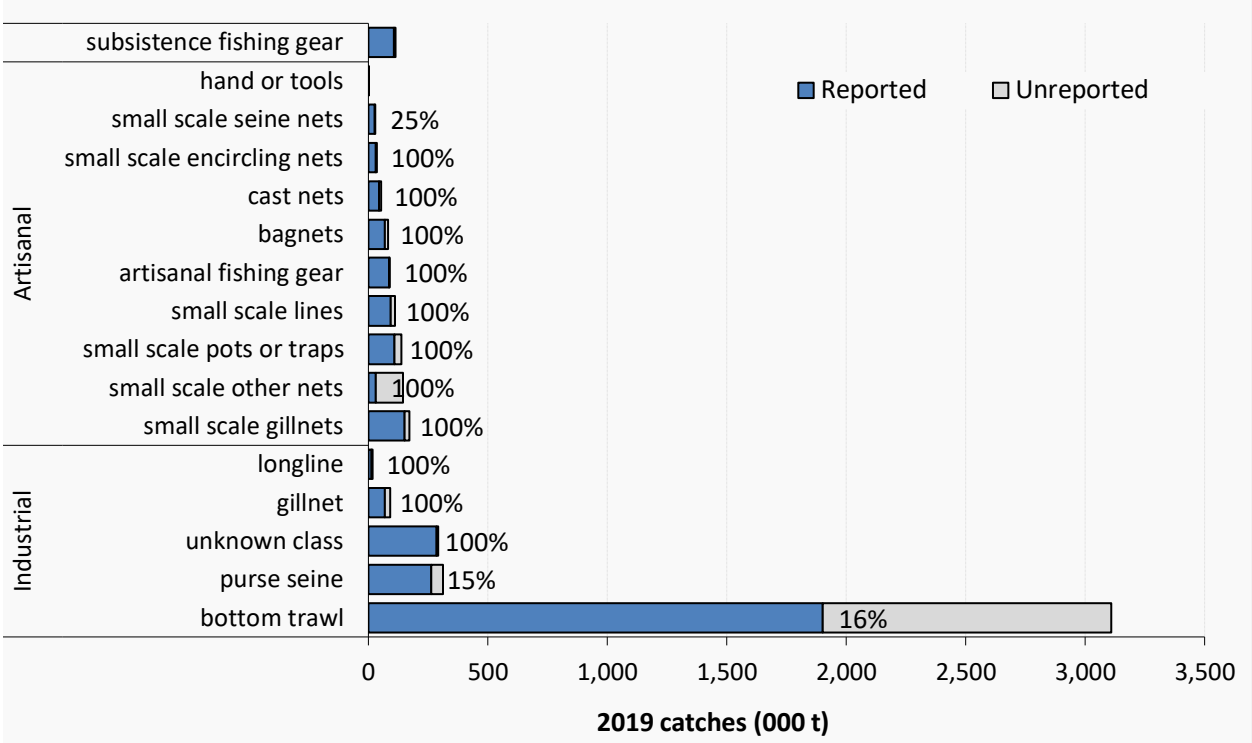



**Figure 67 |** Estimated total 2019 catches in thousand tonnes (reported and unreported) for Viet Nam, by fishing sector and gear type. Note: for each fishing gear the estimated percentage of unreported catches is included. **Source: Pauly et al., 2024**.

### 2.7.3. Seafood consumption and domestic supply

Viet Nam ranks 23rd globally, and 11th in Asia, in terms of seafood consumption. According to recent statistics, the country's average fish consumption was estimated at 39.50 kg/capita/year in 2021. This seafood consumption is lower than in other countries in Asia, and those under the scope of the current study. In fact, it is one of the countries in Southeast Asia with the lowest dependence on fish and seafood as a source of protein. In 2021, it ranked 30th globally, with only 29% of the total animal protein coming from seafood (App Figure 3) (**Ritchie and Roser 2021**).

Similar to Thailand, which is also a net seafood exporter, less than half (46%) of the seafood—both wild-caught and farmed—produced or imported by Viet Nam is estimated to remain for domestic consumption. In 2019, reported seafood production, including wild and farmed sources, reached approximately 7.8 million tonnes, with an additional 0.5 million tonnes imported. During the same year, about three million tonnes were exported (**Figure 16; App Table 4**) (**FAO 2023**). These figures highlight Viet Nam's growing prominence as a seafood exporter, particularly for farmed commodities such as pangasius and shrimp.

### 2.7.4. International trade

Public trade information is accessible through global databases such as UN COMTRADE and FishstatJ. However, as with other countries in this study, the quality of Viet Nam's official national trade statistics could not be assessed due to difficulties in accessing the country's official websites. Consequently, international trade databases, namely FishstatJ (**FAO 2024c, and FAO 2024d**), were used for analyzing exports and imports. The main findings are summarized below.

### 2.7.4.1. Exports

Viet Nam is currently among the world's leading seafood exporters. In 2022, it ranked as the fourth-largest exporter by product weight, with approximately 2.4 million tonnes of seafood exports, and the third-largest by export value, generating $11 billion USD. Only China and Norway exceeded these figures (SI 4-1; SI 4-2). Viet Nam is a top global exporter for specific commodity groups, ranking first for freshwater fish by value, third for shrimp, and sixth for tuna globally (SI 4-4; SI 4-5; SI 4-8; **FAO 2024c**). For small pelagic species, Viet Nam's exports are relatively modest compared to other leading countries, totaling $240 million USD in 2022, making it the 17th-largest exporter. However, this value remains higher than most countries analyzed in this study. According to the latest food balance data, the majority of Viet Nam's imported and domestically produced pelagic fish is allocated to either domestic consumption or non-food uses, such as fishmeal and oil production (App Table 4) (**FAO 2023**).

The country's most exported seafood commodities are freshwater fish (mainly pangasius; 33% of 2020-22 annual exports by weight; 18% by value), shrimp (20% by weight; 40% by value), other non-specified marine fish (which includes highly valuable species such as emperors, seabreams and mahi: 17% by weight; 14% by value), and fish meals and oils (11% by weight; 3% by value). Small pelagics are the seventh most exported commodity group by weight (3%; 2% by value) (Figure 68; Figure 69; App Table 17; App Table 18). As with most countries in Asia, seafood exports by both quantity and value have been increasing steadily since the mid-1990s and in 2022 reached their peak, at 2.4 million tonnes (SI 40-0) and 11 billion USD and (**Figure 70**; SI 40-6).

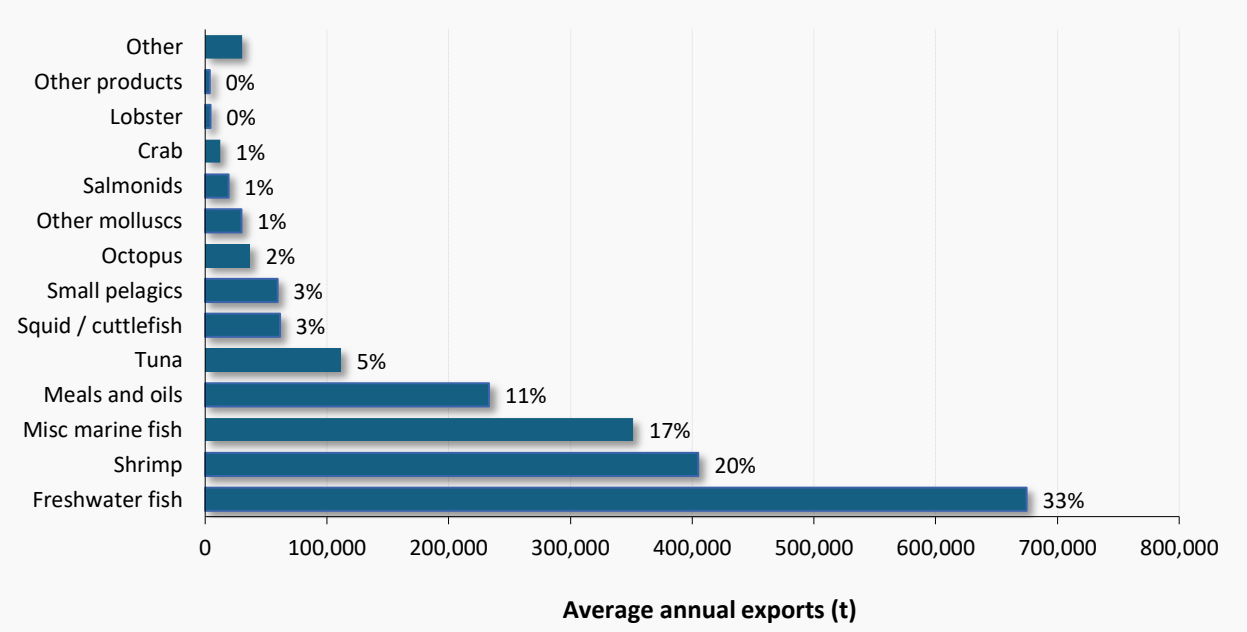



**Figure 68 |** 2020 - 2022 average annual seafood exports by Viet Nam in terms of product weight and for the main commodity groups. **Source: FAO 2024c.**

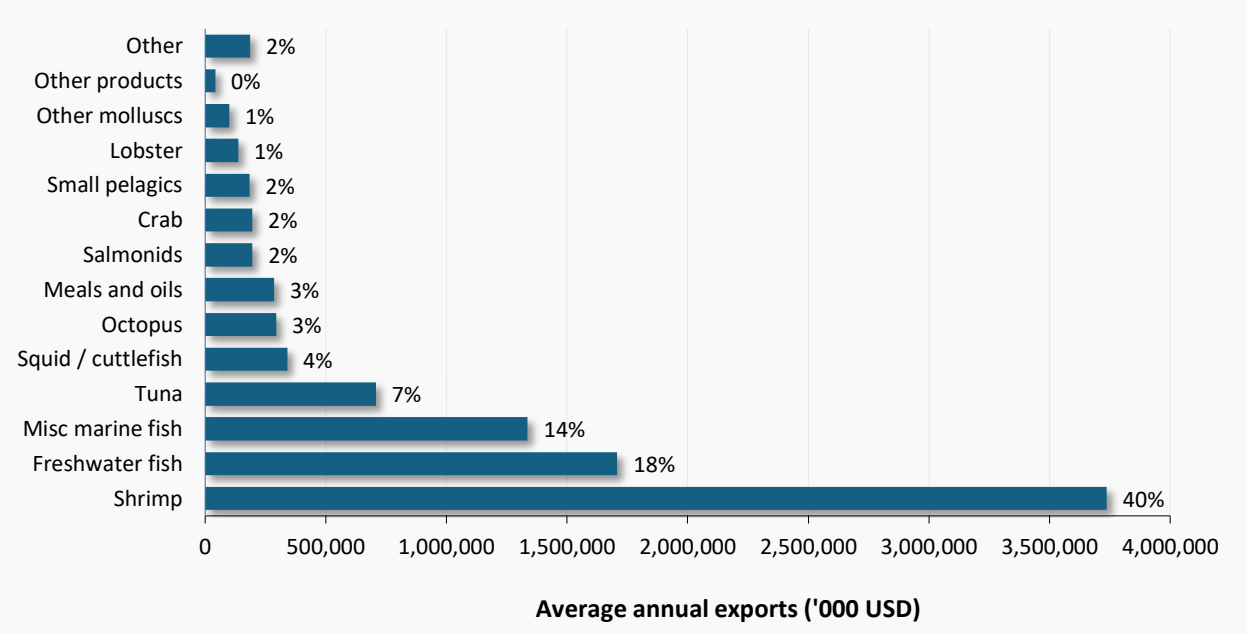



**Figure 69 |** 2020 - 2022 average annual seafood exports by Viet Nam in terms of value (x1000 USD) and for the main commodity groups. **Source: FAO 2024c.**

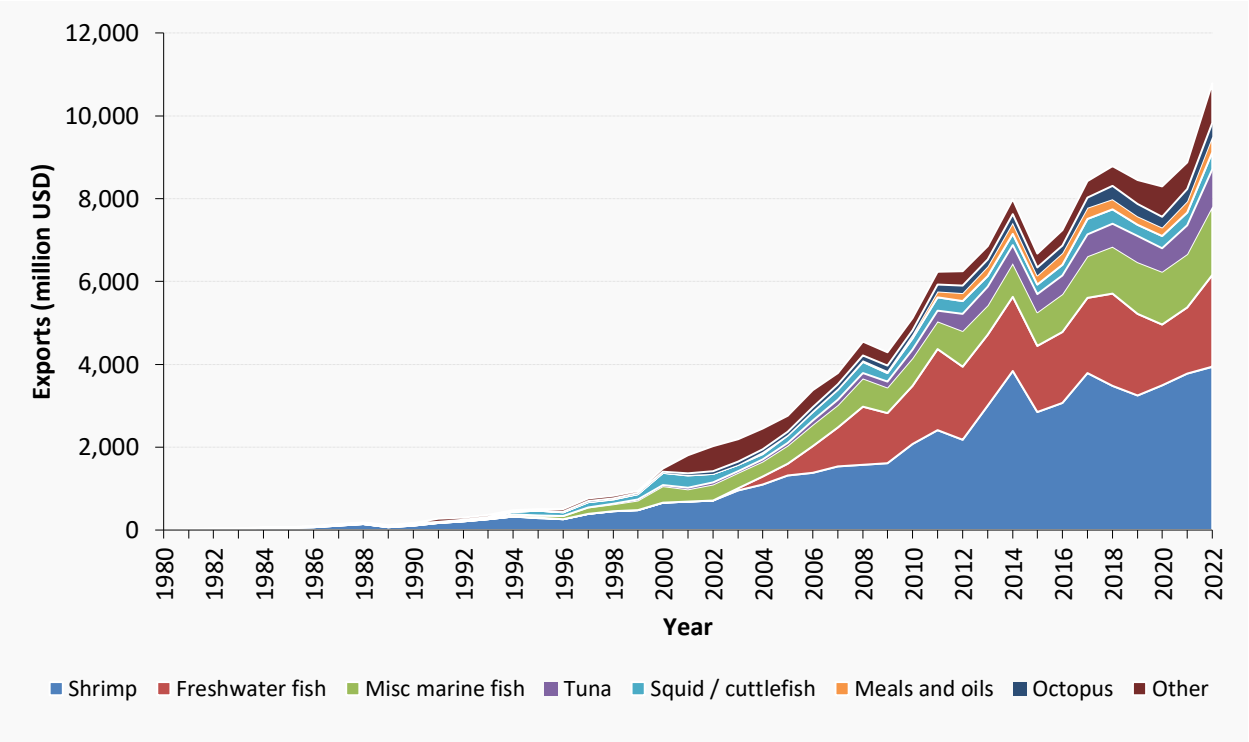



**Figure 70 |** Trends in annual seafood exports from Viet Nam by major commodity group (in million USD), 1980–2022. **Source: FAO 2024c.**

Bilateral trade data indicates that the most important trade partners (importers) of Viet Nam in terms of overall seafood exports by value are the United States (19% of Viet Nam's total exports by value), China (16%), Japan (16%), South Korea (9%), and Canada (3%). Collectively, Asia is the main end market for Viet Nam seafood exports, accounting for more than

half of the country's seafood exports by value. The top European Union importer is the United Kingdom (3%), with Europe combined only contributing to about 17% of Viet Nam's seafood exports (**Figure 71**) (**FAO 2024c**).

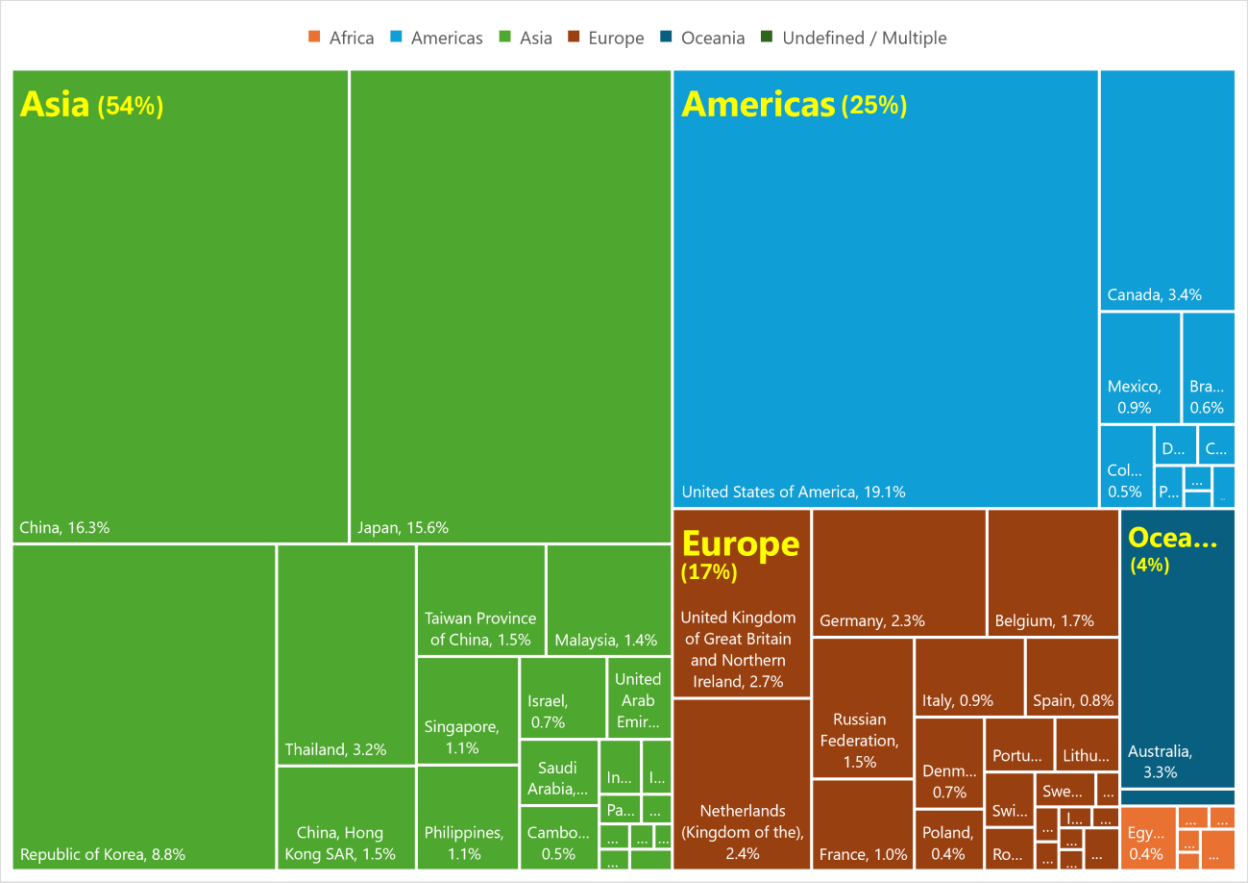



**Figure 71 |** Percentage of Viet Nam's 2022 total seafood exports in thousand USD per partner country and region. **Source: FAO 2024d.**

In terms of trade flows per main commodity group, the following groups were investigated: shrimp, freshwater fish, miscellaneous marine fish, tuna, fish meals and oils, squid/cuttlefish, and small pelagics. These groups were chosen because they are either relevant in terms of contribution to Indonesia's total exports or important for the scope of this analysis.

In 2022, the main importers of shrimp from Viet Nam were the United States (19% of total export value), Japan (17%), South Korea (12%), China (8%), and Australia (7%). Collectively, these five countries accounted for nearly two-thirds (62%) of Viet Nam's total shrimp export value (**SI 41-2**).

China (26% of total export value) and the United States (25%) were the dominant importers of freshwater fish from Viet Nam in 2022 (mainly pangasius), with a combined import value of $1.1 billion for this commodity. Other relevant importers, though to a lesser extent, included Mexico (3%), Brazil (3%), and the Netherlands (3%) (**SI 41-3**).

For tuna, the United States is also the most important importer, accounting for almost half (50%) of Viet Nam's total exports by value. The second and third most important countries are Canada (5%), Israel (4%) and Japan (4%), respectively (**SI 41-4**).

For other miscellaneous marine fish, the top importers from Viet Nam are Japan (24% of total export value), China (17%), the United States (12%), South Korea (11%), and Thailand (7%) (**SI 41-5**). While imports from most top importer

countries appear to have steadily increased, imports from South Korea seem to have stabilized at approximately $180 million per year (**FAO 2024d**).

According to 2022 data, Asia serves as the main end market for fish meals and oils exported from Viet Nam, accounting for over 90% of the country's export value. China is the leading importer, with imports in 2022 valued at $250 million (68%). Outside of Asia, the only relevant importer is the United States, which accounts for 7% of Viet Nam's export value for this commodity (**SI 41-6**).

For squid and cuttlefish, as noted above, these two species groups are generally reported in the same category, and as such the values for squid and cuttlefish specifically cannot be fully depicted. The main importers in 2022 by value were Japan (19% of total export value from Viet Nam), South Korea (16%), China (16%), Thailand (16%), and Italy (6%). Like other commodities exported by Viet Nam, Asia is by far the main destination market for this commodity (**SI 41-7**) (**FAO 2024d**).

As with other commodities of significance in international trade, the Asian market accounts for the majority of small pelagics exported by Viet Nam. In 2022, Asia—led by Japan (25%), the Philippines (19%), Thailand (15%), and China (8%) as key importers—represented over 80% of the country's export value (**SI 41-8**). However, as seen in other countries examined in this study, the total annual exports of small pelagics are considerably lower compared to other commodities such as shrimp or freshwater fish.

#### 2.7.4.2. Imports

Similar to Indonesia, Viet Nam is both a net seafood exporter and a leading seafood producer. This indicates that the country primarily relies on domestic production to meet its internal supply needs, while exporting more seafood than it imports. Despite this, Viet Nam ranks among the top 20 seafood-importing countries, placing 14th globally (2% of seafood imports[8]) and fifth in Asia in 2022, with approximately 730 thousand tonnes of imported seafood valued at 2.7 billion USD (**SI 9-1**) (**FAO 2024c**).

For commodities such as shrimp (ranking 3rd in imports by value), crab (5th), and tuna (6th), Viet Nam is among the top ten importing countries globally. Considering the significance of these three seafood groups in international markets and Viet Nam's role as a major seafood processing hub (e.g., **WTO-FTA 2024**), it is highly likely that a substantial portion of the imported tuna, shrimp, and crab is subsequently re-exported.

The most imported seafood commodities by product weight are fish meals and oils (FM/FO) (25% of annual imports between 2020 and 2022; 10% by value), tuna (19% by weight; 15% by value), small pelagics (19% by weight; 9% by value), and miscellaneous marine fish (11% by weight; 12% by value) (**Figure 72**; **Figure 73**). As observed in many other countries included in this study, the relevance of small pelagics in Viet Nam's imports highlights their critical role as a food source, particularly for coastal communities. Additionally, similar to Indonesia, the significant imports of fish meals and oils—specifically fishmeal and fish oil (FM/FO)—reflect the increasing importance of aquaculture in the country and the vital role of FM/FO in supporting pangasius and shrimp farming industries (**FAO 2024a**).

[8] Alligators, plants, marine mammals, etc. excluded

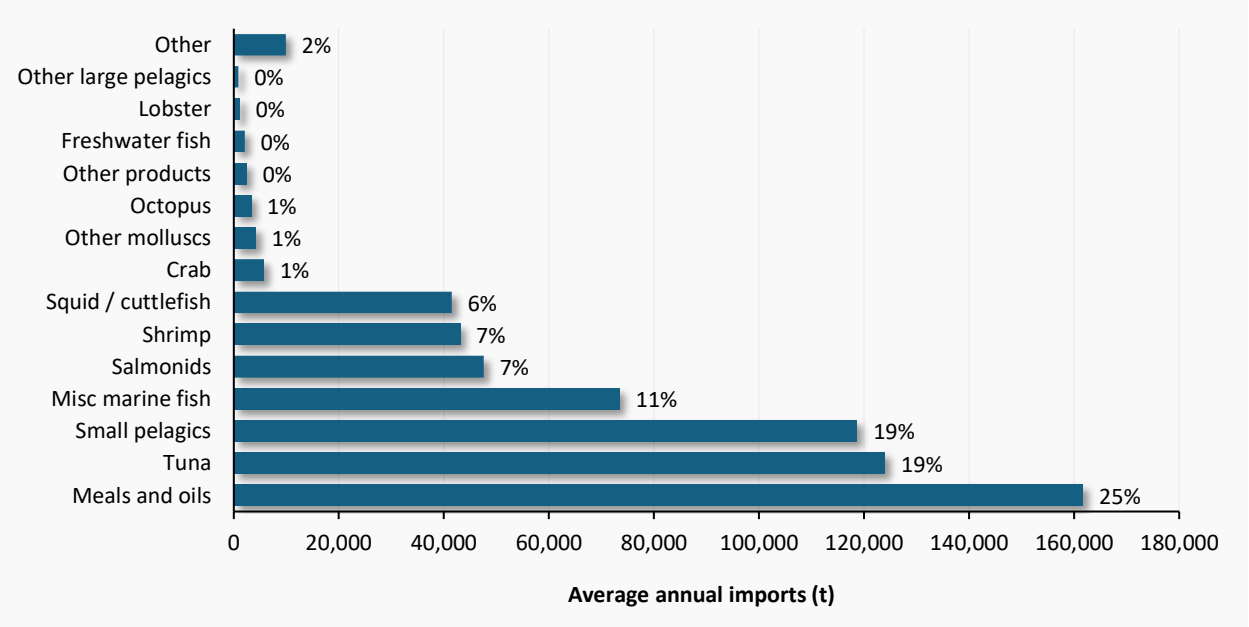



**Figure 72 |** 2020 - 2022 average annual seafood imports by Viet Nam in terms of weight and for the main commodity groups. **Source: FAO 2024c.**

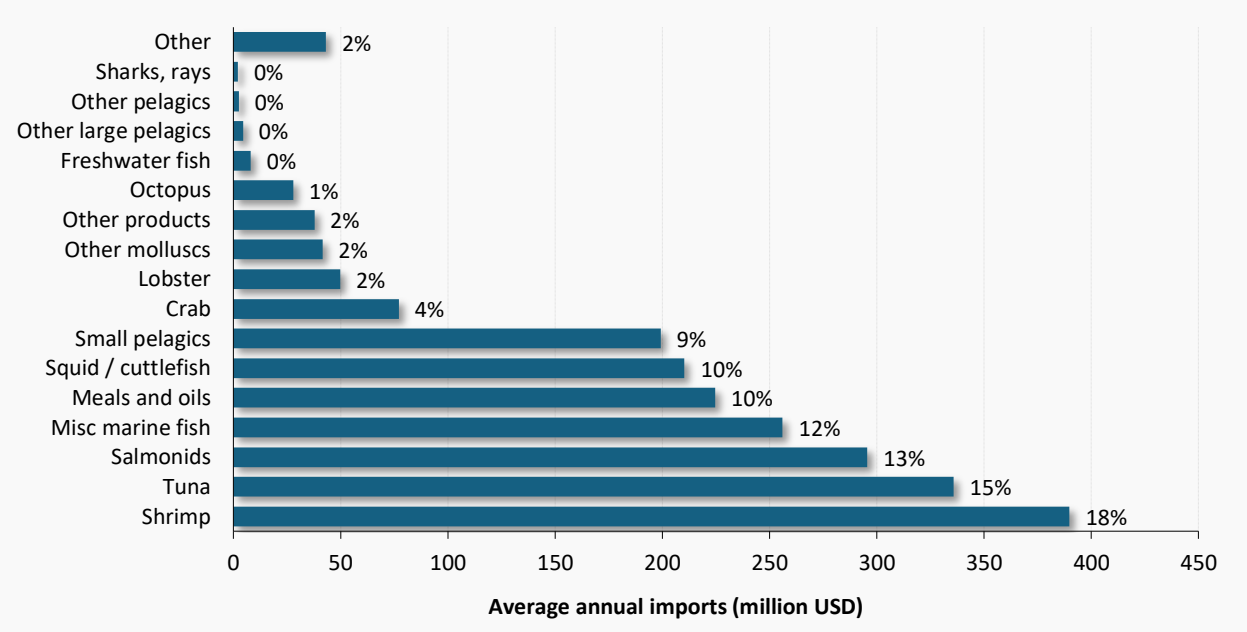



**Figure 73 |** 2020 - 2022 average annual seafood imports by Viet Nam in terms of value (x1000 USD) and for the main commodity groups. **Source: FAO 2024c.**

According to bilateral trade data, the most significant exporters of seafood to Viet Nam by value are India (17%, mostly shrimp and fish meals and oils), Indonesia (11%, mostly squid/cuttlefish and tuna), Norway (10%, mostly salmon and small pelagics), China (8%, mostly miscellaneous marine fish and tuna), and Taiwan (7%, tuna) (**SI 43-1; SI 43-2**). Combined, these five countries represent more than half (52%) of Viet Nam's total seafood imports by value (**FAO 2024b**).

The analysis of trade flows per main commodity group considered the following groups: fish meals and oils (FM/FO), tuna, small pelagics, miscellaneous marine fish, shrimp, and salmon.

For FM/FO, India (31% of Viet Nam's FM/FO imports by value), Peru (13%), South Korea (13%), Chile (12%), Thailand (5%), and China (5%) are the most significant trade partners (exporters to Viet Nam). Together, these six countries accounted for almost four fifths (79%) of Viet Nam's total FM/FO imports by value in 2022 (**SI 43-3**).

In terms of tuna, Taiwan (35%), Indonesia (19%), South Korea (13%), and China (11%) are the countries from which Viet Nam reported importing almost 80% of its total value of tuna (**SI 43-4**). Tuna is usually imported frozen, and the most important species are yellowfin tuna (64% of total import value), albacore (12%), and skipjack tuna (9%) (**FAO 2024d**).

In 2022, Norway (34% of total import value) and Japan (32%) were the leading exporters of small pelagics to Viet Nam, accounting for a combined export value of $140 million, which represented 66% of Viet Nam's total import value for this commodity. Other notable exporters, though contributing less significantly, included South Korea (10%), China (9%), and the United States (5%) (**SI 43-5**). Similar to tuna, the majority of small pelagics imported by Viet Nam is frozen (**FAO 2024b**).

Russia and China are the most important exporters of miscellaneous marine fish into Viet Nam, accounting for 35% of the country's 2022 imports by value. Other relevant countries are Japan (12%), and Norway (11%) (**SI 43-6**). Most of these exports are frozen whitefish, which is processed and then likely re-exported.

India is the leading exporter of shrimp to Viet Nam, contributing 60% of the country's total shrimp imports by value in 2022. Other significant exporters include Ecuador (26%) and Argentina (4%) (**SI 43-7**) (FAO 2024d). While Ecuador primarily exports farmed shrimp and Argentina exports wild-caught shrimp (namely Argentine red shrimp), Viet Nam's shrimp imports from India likely consist of both farmed (predominantly) and wild production (**FAO 2024a**). As noted above, a significant portion of this shrimp is likely processed and subsequently re-exported. Most traded shrimp are frozen.

Approximately 70% of Viet Nam's reported import value for salmon in 2022 refers to frozen salmon sourced from four main countries: Norway (Atlantic salmon; 40% of the total import value), Chile (Pacific salmon; 22%), Turkey (Pacific salmon; 10%), and Russia (Pacific salmon; 4%) (**SI 43-8**) (**FAO 2024d**). Except for Russia, Japan (6% of Viet Nam's imports), and the United States (5%), nearly all imported salmon originates from farmed production (**FAO 2024a**).

### *2.7.5. Information on stock and fisheries exploitation status*

As for Thailand, information on the status of some of the Vietnamese marine resources is available from various sources, including global assessment initiatives and platforms such as FAO SEAFDEC reports, FishSource, and Seafood Watch recommendations, as well as national scientific and management entities. However, as mentioned earlier, transparency and data accessibility for non-Vietnamese users remain limited, particularly through desktop research. One of the main barriers is language, as most official fisheries-related platforms are available only in Vietnamese.

The coverage of Vietnamese fisheries in FishSource is less extensive compared to other Southeast Asian countries like Indonesia or Thailand. As of November 2024, a total of 65 gear flag profiles (GFPs) were created for fisheries flagged to Viet Nam, covering various seafood groups, including Marine Ingredients (23 profiles), tuna (16), and large pelagics (7) (**Table 6**).

Of these, 32 profiles have been assessed and assigned scores. Unlike other countries in this study, a relatively small portion—only nine profiles—have at least one FishSource score below 6 or are classified as data deficient, indicating either a lack of information or significant issues in stock health and management. These issues are mainly linked to tuna and tuna-like species (e.g., *Kawakawa Euthynnus affinis*) and blue swimming crab fisheries, where poor management and/or overfishing remain key challenges. The remaining 23 profiles, mostly from tuna fisheries, score 6 or above across

all stock health and management quality criteria, suggesting they are relatively well-managed. A full list of FishSource profiles and their respective scores can be found in **SI-46**

**Table 6 |** Number of fisheries (Gear Flag Profiles, GFPs) in FishSource by seafood sector for Viet Nam (as of November 2024), and the percentage of GFPs that are either not scored or have critical issues (i.e., at least one Stock Health or Management Quality score below 6).

| Flag country and sector | All scores >=6 | With scores below 6 of DD | Not scored | Total number of Gear Flag Profiles | % of fisheries not scored or with critical issues |
|---|---|---|---|---|---|
| **Viet Nam** | **23** | **9** | **33** | **65** | **65%** |
| Large pelagics | 4 | 3 | 0 | 7 | 43% |
| Large Shrimp | 0 | 0 | 2 | 2 | 100% |
| Marine Ingredients - Asia reduction | 0 | 2 | 21 | 23 | 100% |
| Non-T75 | 3 | 2 | 3 | 8 | 63% |
| Snapper & Grouper | 0 | 0 | 2 | 2 | 100% |
| Squid | 0 | 0 | 2 | 2 | 100% |
| Swimming Crab | 0 | 2 | 3 | 5 | 100% |
| Tuna | 16 | 0 | 0 | 16 | 0% |

Seafood Watch currently provides only **three recommendations** for wild fisheries in Viet Nam, all related to blue swimming crab. These cover three fishing methods: pots, traps, and gillnets/entangling nets.

All three methods are rated **"Avoid"** due to:

- **Ineffective management and poor enforcement**, failing to control the fishery effectively
- **Lack of a bycatch management strategy** to mitigate impacts on non-target species
- **High uncertainty regarding stock condition and fishing pressure**, raising concerns about sustainability.

Note that some evaluations in both **Seafood Watch** and **FishSource** may be outdated and do not accurately reflect the current state of the respective fisheries.

Available estimates around stock status on the Sea Around Us platform (**Pauly et al., 2024**) suggest that most (58%) catches in Viet Nam's Exclusive Economic Zone (EEZ) still come from developing (i.e., underfished), fisheries while almost 40% originate from fully exploited or collapsed stocks. Only 2% of the catches are estimated to come from either overexploited or collapsed stocks (**Figure 74**). The number of overexploited or collapsed stocks in these waters has been rising, and more than half (51%) of the stocks that have been assessed by the SAU methodology are now considered to be in poor condition (**Figure 75**).

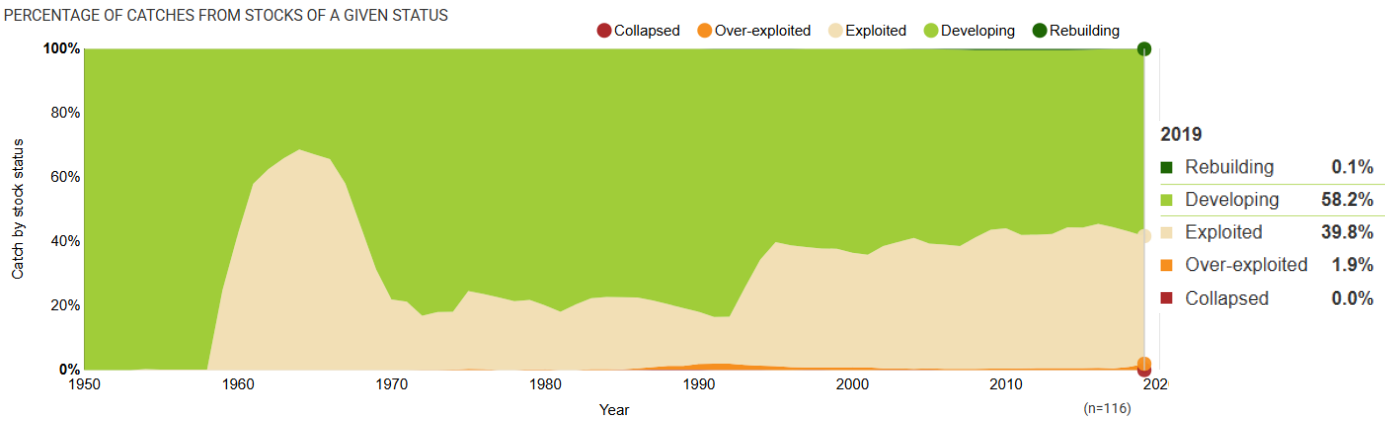



**Figure 74 |** Estimated status of stocks found in Viet Nam's EEZ by catch biomass (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024)

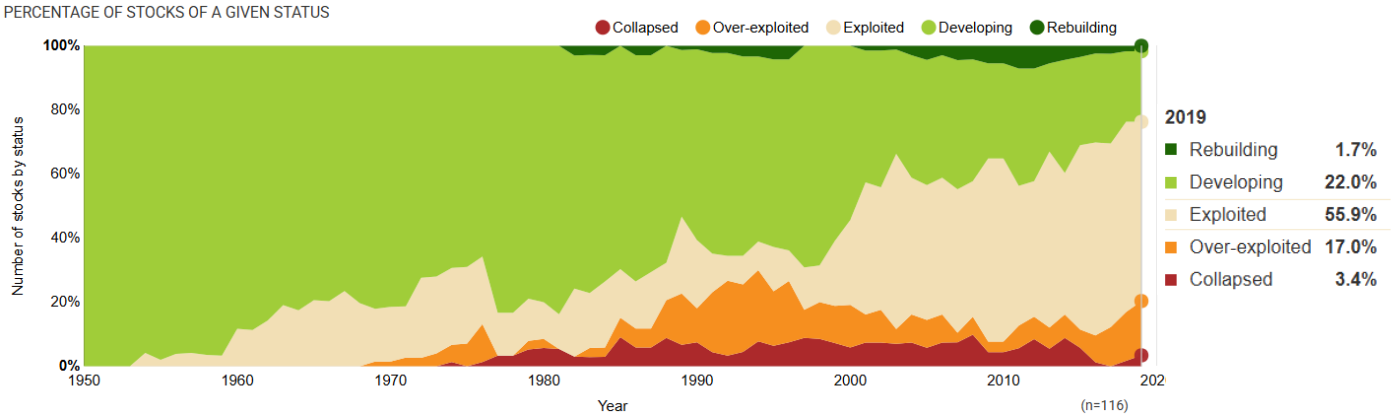



**Figure 75 |** Estimated status of stocks found in Viet Nam's EEZ by number of stocks in each category (3-year running average values), between 1950 and 2019. **Source: Sea Around Us** (Pauly et al., 2024).

No estimates of exploitation rates for Viet Nam's small pelagic fisheries were reported in the latest SEASFOFIA assessment. However, a recent SEAFDEC workshop on Mixed Stock Fisheries in the Gulf of Thailand (**SEAFDEC, 2025b**) provided exploitation rate estimates for key species groups within the Vietnamese EEZ. Results from the multispecies assessment indicated that trawl fisheries are overfished and experiencing overfishing. Likewise, single-species assessments showed that, with the exception of four species (*Slender lizardfish*, *Yellowstripe scad*, *Chacunda gizzard shad*, and *Brushtooth lizardfish*), all other key species assessed were either subject to overfishing or at risk of overfishing.

At the national level, despite the 2022 government decision (523/QD-TTg) approving a five-year program for the periodic survey and assessment of fisheries resources and aquatic habitats nationwide, no additional information on stock status was identified beyond catch statistics reported by the Vietnamese National Statistics Office.

# 3. FINAL REMARKS

As noted in a previous report, Southeast Asia (SEA) has experienced rapid growth in seafood production and consumption in recent years. This region has the largest number of people employed in fisheries and aquaculture worldwide, and most of the production growth is due to aquaculture. Despite this, fisheries continue to play a critical role in contributing to the regional and global seafood demand (FAO 2020). Southeast Asia is also home to some of the most important Large Marine Ecosystems (LMEs), and is considered a global center of marine biodiversity (e.g., Ramírez et al 2017) and unique habitats, with some of the most productive ecosystems in the world.


The first phase of this research, conducted in late 2021, focused on the Gulf of Thailand (GoT) and the four main countries bordering this region: Thailand, Viet Nam, Malaysia, and Cambodia. The second phase expanded the scope to include Indonesia and the Philippines, two key players in marine production and international seafood trade.

This report integrates findings from both research phases, incorporating updated data and new sources. Its primary aim is to analyze fisheries-related data in these countries, with a focus on (1) the availability and detail of information and (2) trends in marine production, trade, and stock health, where such data is available. While some general statistics compare aquaculture with wild-caught seafood (including marine and inland production), the research primarily emphasizes wild marine capture.

The research revealed the following key insights:

## 3.1. The relevance of Southeast Asia in the seafood world

- Southeast Asia, which is the geographical region that encompasses the six countries under the scope of the current study, is the second-most important region in the world in terms of aquatic (inland and marine) production, accounting for 32 million tonnes (17% of global production) of both farmed and wild-capture aquatic organisms. Seafood production in Southeast Asia is mostly dominated by the countries under the scope of this study, namely Indonesia (40% of total production), Viet Nam (27%), and the Philippines (8%) (**Figure 1**) (FAO 2024a).
- Despite the considerable growth in aquaculture production (following the trend of neighboring regions), more than half of the marine seafood in the Southeast Asia region is still coming from wild-capture production. In 2022, a total of 18 million tonnes (55% of total) were reported to be captured by the Southeast Asian countries combined, compared to 14 MMT from aquaculture production.
- Around two-thirds (68%) of the reported catches within the four LMEs that are relevant to this study are coming from the industrial sector, with 15.2 million tonnes estimated to have been captured in 2019. Small-scale (or artisanal) fishing gears account for roughly 26% of the total catches in the LMEs of the region. Recreational and subsistence fishing gears are the sectors with the smallest reported catches, but with the highest levels of underreporting (79% of subsistence, and 100% for recreational). Unreported catches represent roughly 20% of the total estimated catches for both the industrial and artisanal sectors.

- Most of the wild-capture production in the region is coming from the South China Sea (11.1 million tonnes, MMT, in 2019). The second most important LME in terms of wild capture production is the Bay of Bengal in the Eastern Indian Ocean, with 6.7 MMT reported to have been captured.

## 3.2. Status and trends in production, trade and fisheries sustainability

### *3.2.1. Production*

- Marine capture fisheries remain the dominant production source (excluding seaweeds) in the six countries analyzed, except for Viet Nam, where aquaculture contributes 59% of total production. Indonesia leads marine capture production in the Eastern Indian Ocean (FAO 57) and the Western and Central Pacific (FAO 71), accounting for 34% of total catches from these fishing areas. Viet Nam (17%) and the Philippines (8%) are the second- and third-largest producers in the region.
- Industrial fisheries dominate estimated marine catches in the six countries, contributing over 80% of total production in Viet Nam and Cambodia. However, artisanal fisheries play a crucial role, employing thousands and supporting coastal and inland communities. In the Philippines, artisanal fisheries contribute over one-third of estimated total marine catches, while in Cambodia, almost half of total seafood production comes from inland artisanal fisheries.
- Key marine species groups include small pelagics, unidentified marine fish, tuna, and squid, which are among the most frequently captured species in the region.
- Reported capture production has stabilized or declined in recent years across most countries, except in Viet Nam, where reported landings continue to grow. The overall increase in seafood production in these countries is primarily driven by aquaculture expansion.

### *3.2.2. Trade*

- Major players in global seafood trade – In 2022, Viet Nam (3rd, $11.0 billion), Indonesia (10th, $6.0 billion), and Thailand (12th, $5.8 billion), ranked among the top 15 seafood exporters worldwide by value and the top 5 in Asia, alongside China and India.
- Domestic consumption dominates – Except for Thailand and Viet Nam, which are reported net exporters, most seafood produced and imported in the region is consumed domestically. In Cambodia and Indonesia, over 90% of seafood (both produced and imported) is used for local consumption.
- Top exported seafood products by value include shrimp, tuna, miscellaneous marine fish (e.g., snappers, groupers), freshwater fish (e.g., pangasius, tilapia), squid, and blue swimming crab—all high-demand commodities in global markets.
- Key export markets are shifting – While the United States remains the primary market for shrimp, tuna, freshwater fish, and crab, Japan, South Korea, and China are becoming leading importers, particularly for squid and miscellaneous marine fish. These Asian markets now collectively surpass the U.S. in shrimp import value.
- Trade patterns vary by country – The United States is still the dominant importer for Indonesia and Viet Nam, while for the other four Southeast Asian nations, China, South Korea, and Japan are the largest buyers of their seafood exports.
- Small pelagics play a vital role in the region as a source of seafood protein for local communities – while lower in market value, small pelagic fish are crucial for domestic food supply and regional trade across Southeast Asia.

- Key imported commodities – Fishmeal and fish oil (FM/FO), along with fish and bivalve sauce (mainly oyster sauce), are significant imports for these six countries.
    - FM/FO supports aquaculture growth in the region – The high import volumes of FM/FO reflect the rising importance of aquaculture, particularly in pangasius and shrimp farming industries.
    - The demand for fish and bivalve sauce highlights its cultural and gastronomical importance in several countries in Southeast Asia.

## 3.3. Fisheries sustainability and management challenges in southeast Asia

- While this report does not provide an in-depth assessment of the sustainability status of fisheries in the countries studied, available data suggest several significant management challenges.
- For fisheries with publicly available information in English, global platforms such as FishSource, Seafood Watch, and Sea Around Us indicate widespread sustainability concerns. Key issues include:
    - **Lack of stock assessments** – overall, information on stock status and exploitation levels is limited or outdated, which results in the stock and exploitation status for most resources being unknown.
    - **Weak or ineffective management** – deficient regulations and management systems have been somewhat inefficient in controlling fishing pressure, restricting catches, or effectively enforcing spatial fishing limitations.
    - **High bycatch rates** – the extensive use of low-selectivity and habitat-damaging gear, such as bottom trawls, may contribute to high bycatch of vulnerable species, often with inadequate mitigation measures in place.
    - **Limited transparency and data availability** – in most cases, fisheries data collection, reporting, and management processes still lack transparency, making it difficult to assess or improve sustainability efforts.

To conclude, it is important to note that, while this report provides up-to-date and reliable insights into seafood production, trade, and fisheries sustainability, it is not a comprehensive review of each country's situation. Some key sources (particularly those available only in national languages) may be missing, which could impact the interpretation of certain findings, especially regarding fisheries sustainability and management challenges. Therefore, the information should be considered with caution.

# 4. REFERENCES AND SOURCES

## 4.1. Overall


Asia Pacific Economic Cooperation (APEC). 2013. Potential contribution of small pelagic fish to food security within the Asia-Pacific region. Ocean And Fisheries Working Group. Final Report. APEC Project FWG 01/2010A. 34 pp. https://www.apec.org/docs/default-source/Publications/2013/3/Potential-Contribution-of-Small-Pelagic-Fish-to-Food-Security-within-the-Asia-Pacific-Region/2013_fwg_pelagic-fish-food-security.pdf

FAO. 2014. APFIC/FAO Regional Expert Workshop on "Regional guidelines for the management of tropical trawl fisheries in Asia". Phuket, Thailand, 30 September–4 October 2013. FAO Regional Office for Asia and the Pacific, Bangkok, Thailand. RAP Publication 2014/01, 91 pp. https://www.fao.org/3/i3575e/i3575e.pdf

FAO 2023. Fishery and Aquaculture Statistics: Food balances. In: FAO Fisheries and Aquaculture Department [online]. Rome. February 2023. https://www.fao.org/faostat/en/#data/FBS

FAO. 2024a. Fishery and Aquaculture Statistics. Global capture production 1950-2022 (FishStatJ). In: FAO Fisheries and Aquaculture Division [online]. Rome. Updated 2024. www.fao.org/fishery/statistics/software/fishstatj/en

FAO. 2024b. Fishery and Aquaculture Statistics. Global Fish Processed Products Production 1976-2022 (FishStatJ). In: FAO Fisheries and Aquaculture Division [online]. Rome. Updated 2024. www.fao.org/fishery/statistics/software/fishstatj/en

FAO. 2024c. Fishery and Aquaculture Statistics. Global Fish Trade - All partners aggregated 1976-2022 (FishStatJ). In: FAO Fisheries and Aquaculture Division [online]. Rome. Updated 2024. www.fao.org/fishery/statistics/software/fishstatj/en

FAO. 2024d. Fishery and Aquaculture Statistics. Global fish trade - By partner country. 2019 - 2022 (FishStatJ). In: FAO Fisheries and Aquaculture Division [online]. Rome. Updated 2024. www.fao.org/fishery/statistics/software/fishstatj/en

Jaaman, S. A., Lah-Anyi, Y. U., & Pierce, G. J. 2009. The magnitude and sustainability of marine mammal by-catch in fisheries in East Malaysia. Journal of the Marine Biological Association of the United Kingdom, 89(5), 907–920.

Monterey Bay Aquarium (MBAq) 2015. Seafood Watch recommendations: Malaysia. World Wide Web electronic publication. November 2024. Accessed online at: https://www.seafoodwatch.org/recommendations/search?query=%3Acountry%3BMalaysia%3Amethods%3BWild

Monterey Bay Aquarium (MBAq) 2024a. Seafood Watch recommendations: Indonesia. World Wide Web electronic publication. November 2024. Accessed online at: https://www.seafoodwatch.org/recommendations/search?query=%3Acountry%3BIndonesia%3Amethods%3BWild

Monterey Bay Aquarium (MBAq) 2024b. Seafood Watch recommendations: Philippines. World Wide Web electronic publication. November 2024. Accessed online at: https://www.seafoodwatch.org/recommendations/search?query=%3Acountry%3BPhilippines%3Amethods%3BWild

Monterey Bay Aquarium (MBAq) 2024c. Seafood Watch recommendations: Thailand. World Wide Web electronic publication. November 2024. Accessed online at: https://www.seafoodwatch.org/recommendations/search?query=%3Acountry%3BThailand%3Amethods%3BWild

Monterey Bay Aquarium (MBAq) 2024d. Seafood Watch recommendations: Viet Nam. World Wide Web electronic publication. November 2024. Accessed online at: https://www.seafoodwatch.org/recommendations/search?query=%3Acountry%3BVietnam%3Amethods%3BWild

Monterey Bay Aquarium (MBAq) 2024e. Seafood Watch recommendations: Malaysia. World Wide Web electronic publication. November 2024. Accessed online at: https://www.seafoodwatch.org/recommendations/search?query=%3Acountry%3BMalaysia%3Amethods%3BWild

Monterey Bay Aquarium (MBAq) 2024f. Longtail tuna: Indonesia, Iran, Malaysia, Thailand. Drift gillnets, Unassociated purse seine (non-FAD), Trolling lines, Hand-operated pole and lines. Seafood Watch recommendations: Assessment report. August 2015. 56 pp. Available online at: https://www.seafoodwatch.org/globalassets/sfw-data-blocks/reports/t/mba_seafoodwatch_longtail_tuna_report.pdf

Pauly, D., Zeller, D., Palomares, M.L.D. (Editors) 2024. Sea Around Us Concepts, Design and Data. Accessed November 2024. http://www.seaaroundus.org/

Ramírez, F., Afán, I., Davis, L. S., & Chiaradia, A. 2017. Climate impacts on global hot spots of marine biodiversity. Science Advances, 3(2), e1601198. doi: 10.1126/sciadv.1601198

Southeast Asian Fisheries Development Center (SEAFDEC) 2022. The Southeast Asian State of Fisheries and Aquaculture 2022. Southeast Asian Fisheries Development Center. 260 pp. http://repository.seafdec.org/handle/20.500.12066/6752

Southeast Asian Fisheries Development Center (SEAFDEC) 2025a. Fishery Statistical Bulletin of Southeast Asia 2022. Fishery Statistical Bulletin 16. 201 pp. https://repository.seafdec.org/handle/20.500.12066/7565

Southeast Asian Fisheries Development Center (SEAFDEC) 2025b. Report of Sub-Regional Training Workshop on Mixed Stock Fisheries in the Gulf of Thailand, Bangkok, Thailand, 26–30 August 2024. Southeast Asian Fisheries Development Center, Bangkok, Thailand; 111 pp. https://repository.seafdec.org/handle/20.500.12066/7620

S&P Global 2024. Panjiva Research platform, Macro trade data tool. S&P Global Market intelligence. New York. Accessed November 2024. https://panjiva.com/macro

Teh, L.S.L., Cashion, T., Alava Saltos, J.J., Cheung, W.W.L., Sumaila, U.R. 2019. Status, Trends, and the Future of Fisheries in the East and South China Seas. Fisheries Centre Research Reports 27(1). Institute for the Oceans and Fisheries. University of British Columbia, Canada. 101 pp. https://open.library.ubc.ca/media/download/pdf/52383/1.0379884/5#page=8

Zeller, D. and D. Pauly. 2016. Marine fisheries catch reconstruction: definitions, sources, methodology and challenges, In: Pauly D and Zeller D (eds.) Global Atlas of Marine Fisheries: Ecosystem Impacts and Analysis. Island Press, Washington, D.C. 45 pp.

## 4.1. Cambodia

Beasley, I. L., & Davidson, P. J. A. 2007. Conservation status of marine mammals in Cambodian waters, including seven new cetacean records of occurrence. Aquatic Mammals, 33(3), 368–379.

FAO 2019b. Fisheries Country Profile: Cambodia (2019). FAO Fishery and Aquaculture Country Profiles. Accessed online in February 2025. Available at: https://www.fao.org/fishery/en/facp/khm

FiA 2011. The Cambodian Code of Conduct for Responsible Fisheries. Fisheries Administration (FiA) of the Ministry of Agriculture, Forestry and Fisheries (MAFF), Phnom Penh. [English unofficial translation]. 70 pp. https://faolex.fao.org/docs/pdf/cam219547.pdf

FiA 2015. The Strategic Planning Framework for Fisheries: Update for 2015-2024. "Fishing for the Future". Volume 4. Fisheries Administration (FiA) of the Ministry of Agriculture, Forestry and Fisheries (MAFF), Phnom Penh. [English unofficial translation]. 62 pp. https://faolex.fao.org/docs/pdf/cam200394.pdf

MAFF 2011. Strategic Planning Framework for Fisheries: 2010–2019 - "FISHING FOR THE FUTURE" - Volume 1. Ministry of Agriculture, Forestry and Fisheries (MAFF). July 2011. [English unofficial translation]. 59 pp. https://faolex.fao.org/docs/pdf/cam143042.pdf

MAFF 2025. Law on Fisheries. Royal Decree NS/RKM/0625 028. Ministry of Agriculture, Forestry and Fisheries (MAFF). Kingdom of Cambodia. June 2025. 48 pp. https://policypulse.org/wp-content/uploads/2025/09/law-on-fisheries.pdf [original document; In Cambodian]

Muthmainnah, D., Makmur, S., Rais, A. H., Sawestri, S., Supriyadi, F., & Fatah, K. (2019). The features of inland fisheries in Southeast Asia. PT Penerbit IPB Press. Bogor, Indonesia. 140 pp. https://repository.seafdec.org/handle/20.500.12066/7144

Sereywath, P. (n.d.). Study on data and information collection on shark fisheries in Cambodia. Department of Fisheries, Ministry of Agriculture, Forestry and Fisheries Cambodia; South East Asia Fisheries Development Center (SEAFDEC). 43-58 p. https://repository.seafdec.org/bitstream/handle/20.500.12066/5467/SereywathP2006.pdf?sequence=1

UNEP 2025. Implementing the Strategic Action Programme for the South China Sea and Gulf of Thailand (SCS SAP Project). Country: Cambodia. Fourth Draft. United Nations Environmental Program (UNEP). Global Environment Facility (GEF). December 2025. https://www.scssap.org/library/publications/854-khm-ch5-fish-v20251221-1/file

## 4.1. Indonesia

FIKP2B. 2t022. Kondisi stok ikan pelagis kecil di perairan laut Sulawesi, provinsi Sulawesi utara (WPPNRI 716) (Stock condition of small pelagic fish in Sulawesi sea, North Sulawesi province (FMA 716)). Scientific and Consultative Forum on Sustainable Fisheries Management (FIKP2B) North Sulawesi Province. 69 pp. Available at: https://zenodo.org/record/6952532#.Y-9kw-zP2rN

ICBS. 2022. Buletin Statistik Perdagangan Luar Negeri Ekspor Menurut HS (Bulletin of Export Foreign Trade Statistics According to HS), October 2022. Indonesian Central Bureau of Statistics (ICBS). ISSN : 2745-3987. 303 pp. (In Indonesian). Available at: https://www.bps.go.id/publication/2022/12/27/4695c845684afc046cab44b6/buletin-statistik-perdagangan-luar-negeri-ekspor-menurut-hs--oktober-2022.html

KKP-RI. 2022. Keputusan Menteri Kelautan Dan Perikanan Republik Indonesia Nomor 19 Tahun 2022 Tentang Estimasi Potensi Sumber Daya Ikan, Jumlah Tangkapan Ikan Yang Diperbolehkan, Dan Tingkat Pemanfaatan Sumber Daya Ikan Di Wilayah Pengelolaan Perikanan Negara Republik Indonesia [Decree Of The Minister Of Marine And Fisheries Of The Republic Of Indonesia No. 19/2022 on Estimation of Fish Resources Potential, Total Allowable Catch, And Level Of Use Of Fish Resources In The Fisheries Management Area Of The Republic Of Indonesia]. 7 pp. https://jdih.kkp.go.id/peraturan/df947-2022kepmen-kp19.pdf

Ritchie, H. and Roser, M.. 2021. Global Rise of Education. Published online at OurWorldInData.org. Available at: https://ourworldindata.org/fish-and-overfishing#how-much-fish-do-people-eat

Roberts, N., Mengge, B., Oaks, B. et al. 2023. Fish consumption pathways and food security in an Indonesian fishing community. Food Sec. 15, 1–19. https://doi.org/10.1007/s12571-022-01323-7

Scientific and Consultative Forum on Sustainable Fisheries Management (FIKP2B) PURWANTO, P., FRANKLIN, E. C., MARDIANI, S. R., & WHITE, A. (2022). Stock Assessment and Overexploitation Risk of Small Pelagic Fish in Fisheries

Management Area 715 of Indonesia. Asian Fisheries Science, 35, 76-89. Available at: https://zenodo.org/record/6952532#.Y-ZnxXbP2bg

Southeast Asian Fisheries Development Center (SEAFDEC) 2024. Fisheries Country Profile: Indonesia (2022). Fisheries country profiles. SEAFDEC webpage. Accessed online in November 2024. Available at: http://www.seafdec.org/fisheries-country-profile-indonesia/

Sustainable Fisheries Partnership (SFP). 2024. Snappers nei Makassar Strait - Flores Sea. FishSource profile. In: FishSource [online]. Updated 28 February 2024. Accessed [10 March 2025]. https://www.fishsource.org/stock_page/1588

Suastika Jaya, IBM. 2018. International Fish Trade Profile: Indonesia. Southeast Asian Fisheries Development Center (SEAFDEC). 16 pp. Available at: http://www.seafdec.org/wp-content/uploads/2018/12/Fish-Trade-Profile-Indonesia.pdf

## 4.1. Malaysia

DoF 2025. Department of Fisheries Malaysia (DoF) webpage. Accessed online in February 2025. Available at: https://www.dof.gov.my/en/

FAO 2019a. Fisheries Country Profile: Malaysia (2019). FAO Fishery and Aquaculture Country Profiles. Accessed online in February 2025. Available at: https://www.fao.org/fishery/en/facp/MYS?lang=en

Flewwelling, P. and Hosch, G. 2006. Country review: Malaysia. In: *Review of the state of world marine capture fisheries management: Indian Ocean* (De Young, C. ed.). FAO Fisheries Technical Paper. No. 488. Rome, FAO. 2006. 458p. https://www.fao.org/4/a0477e/a0477e0c.htm#fn186

## 4.2. Philippines

Bureau of Fisheries and Aquatic Resources (BFAR). 2023. Philippine fisheries profile 2022. Fisheries Planning and Economics Division. Department of Agriculture. October 2023. Quezon City. ISSN: 2704 - 3355. 161 pp. https://www.bfar.da.gov.ph/wp-content/uploads/2024/02/2022-Philippine-Fisheries-Profile.pdf

Muallil RN, Aliño PM, Martinez RJ. (2016). Assessing fishery status and community livelihoods in a small-scale commercial fishery in the Visayas region, Philippines. Ocean & Coastal Management, 123, 10-18.

National Fisheries Research and Development Institute (NFRDI). 2023. National Stock Assessment Program (NSAP). National Fisheries Research and Development Institute. Accessed February 2023. https://nsap.nfrdi.da.gov.ph/home

Philippine Statistics Authority (PSA). 2022a. Fisheries Statistics of the Philippines: 2019-2021. Volume 30. Philippine Statistics Authority. Quezon city. ISSN 2012 - 0397. 321 pp. https://psa.gov.ph/sites/default/files/Fisheries%20Statistics%20of%20the%20Philippines%2C%202019-2021.pdf

Philippine Statistics Authority (PSA). 2022b. OpenStat database. Trade: International Merchandise and Domestic Philippine Exports by Commodity Groups. Accessed online on 10 Feb 2023. Available at: https://openstat.psa.gov.ph/PXWeb/pxweb/en/DB/DB__2L__IMT__PCG/0012L4DGXA2.px/?rxid=bdf9d8da-96f1-4100-ae09-18cb3eaeb313

Philippine Statistics Authority (PSA). 2022c. Fisheries situation report for major species. January-March 2022. Philippine Statistics Authority. Quezon city ISSN-2012-0400. 30 pp. https://psa.gov.ph/sites/default/files/Fisheries%20Situation%20Report%20for%20Major%20Species%2C%20January%20to%20March%202022.pdf

Philippine Statistics Authority (PSA). 2024. Fisheries Situation Report: January to December 2023. Philippine Statistics Authority. Reference No. 2024-SSO-010. Quezon city. 5 pp. https://psa.gov.ph/system/files/fsd/Special%20Release%20Fisheries%20Situation%20Report%2C%20January%20to%20December%202023.pdf

Singian, R. 2022. 2022. Seafood Products Market Brief. Country: Philippines. United States Department of Agriculture (USDA). Foreign Agricultural Service. Report Number: RP2022-0023. 3 pp. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Seafood%20Products%20Market%20Brief_Manila_Philippines_RP2022-0023.pdf

Soliven, B. B. 2019. International Fish Trade Profile: Philippines. Southeast Asian Fisheries Development Center (SEAFDEC). 7 pp. Available at: http://www.seafdec.org/wp-content/uploads/2019/01/Fish-Trade-Profile-Philippines.pdf

Southeast Asian Fisheries Development Center (SEAFDEC). 2024. Fisheries Country Profile: Philippines (2022). Fisheries country profiles. SEAFDEC webpage. Accessed online in November 2024. Available at: https://www.seafdec.org/fisheries-country-profile-philippines/

Suloma JI, Mamauag SS, Asaad AT. (2016). Contribution of small pelagic fish to the food and nutrition security of selected coastal communities in the Tawi-Tawi province, Philippines. Marine Policy, 63, 36-43.

## 4.3. Thailand

Department of Fisheries, Thailand. 2022. Marine Fisheries Management Plan of Thailand - 2020-2022. Department of Fisheries (DoF). Ministry of Agriculture and Cooperatives. Thailand. 97 pp. https://faolex.fao.org/docs/pdf/tha212512.pdf

Department of Fisheries (DoF), Thailand. 2024. สถิติการประมงแห่งประเทศไทย พ.ศ. 2566 (*Fisheries statistics of Thailand 2023*). Department of Fisheries, Ministry of Agriculture and Cooperatives. Report No. 11/2024. 93 pp. https://www4.fisheries.go.th/local/file_document/20240819161939_1_file.pdf

MarinTrust 2022 Multispecies Fisheries Assessment Report. Gulf of Thailand Mixed Trawl. MarinTrust. London, United Kingdom. February 2022. 71 pp. https://www.marin-trust.com/sites/marintrust/files/2022-12/Multi-species%20assessment%20Report_2022%20to%20MT-compressed.pdf

Southeast Asian Fisheries Development Center (SEAFDEC). 2024. Fisheries Country Profile: Thailand (2022). Fisheries country profiles. SEAFDEC webpage. Accessed online in November 2024. Available at: https://www.seafdec.org/fisheries-country-profile-thailand/

## 4.4. Viet Nam

MARD 2017. Law on Fisheries. Minister of Agriculture and Rural Development (MARD). 18/2017/QH14. November 2017. 69 pp. [In Vietnamese] https://faolex.fao.org/docs/pdf/vie171855.pdf

MARD 2021. Strategy for Development of Viet Nam's Fisheries by 2030 with vision towards 2045. Minister of Agriculture and Rural Development (MARD). Nº. 339/QD-TTg. March 2021. 40 pp. https://faolex.fao.org/docs/pdf/vie212247.pdf

MARD 2022. Scheme for "Preventing illegal, unreported, and unregulated fishing until 2025". Minister of Agriculture and Rural Development (MARD). Nº. 1077/QD-TTg. September 2022. 18 pp. https://faolex.fao.org/docs/pdf/vie212240.pdf

Southeast Asian Fisheries Development Center (SEAFDEC). 2024. Fisheries Country Profile: Viet Nam (2022). Fisheries country profiles. SEAFDEC webpage. Accessed online in November 2024. Available at: https://www.seafdec.org/fisheries-country-profile-viet-nam/

WTO-FTA 2024. Opportunities for accelerating Viet Nam's seafood exports. Center for WTO and International Trade (WTO-FTA). Viet Nam Chamber of Commerce and Industry. Online article. 1 January 2024. Available online: https://wtocenter.vn/tin-tuc/25989-opportunities-for-accelerating-vietnams-seafood-exports

# APPENDICES

## Appendix 1 | Tables

**App Table 1 |** Reported wild capture (thousand tonnes) by country, for the Eastern Indian (FAO 57) and Western Central Pacific (FAO 71) oceans.

| Country | Eastern Indian Ocean (57) | Western Central Pacific (71) | Total | % of total | Rank |
|---|---|---|---|---|---|
| Indonesia | 1,589.2 | 5,254.2 | 6,843.4 | 34.4% | 1 |
| Viet Nam | | 3,442.8 | 3,442.8 | 17.3% | 2 |
| Philippines | 0.0 | 1,594.6 | 1,594.6 | 8.0% | 3 |
| India | 1,392.1 | 0.0 | 1,392.1 | 7.0% | 4 |
| Malaysia | 698.6 | 609.8 | 1,308.4 | 6.6% | 5 |
| Thailand | 327.8 | 951.9 | 1,279.8 | 6.4% | 6 |
| Myanmar | 1,010.0 | 0.0 | 1,010.0 | 5.1% | 7 |
| Bangladesh | 706.0 | 0.0 | 706.0 | 3.5% | 8 |
| Sri Lanka | 265.6 | 0.0 | 265.6 | 1.3% | 9 |
| Taiwan | 7.0 | 230.1 | 237.2 | 1.2% | 10 |
| South Korea | 0.6 | 234.0 | 234.5 | 1.2% | 11 |
| Papua New Guinea | 0.0 | 224.0 | 224.0 | 1.1% | 12 |
| Kiribati | 0.0 | 203.3 | 203.3 | 1.0% | 13 |
| Micronesia | 0.0 | 178.1 | 178.1 | 0.9% | 14 |
| Japan | 8.6 | 154.9 | 163.4 | 0.8% | 15 |
| Cambodia | 0.0 | 131.2 | 131.2 | 0.7% | 16 |
| Australia | 105.3 | 25.4 | 130.8 | 0.7% | 17 |
| Nauru | 0.0 | 106.8 | 106.8 | 0.5% | 18 |
| Marshall Islands | 0.0 | 91.6 | 91.6 | 0.5% | 19 |
| Vanuatu | 0.0 | 77.3 | 77.3 | 0.4% | 20 |
| China | 5.6 | 69.4 | 75.0 | 0.4% | 21 |
| Other | 7.8 | 191.7 | 199.5 | 1.0% | |
| **Total** | **6,124.4** | **13,771.1** | **19,895.5** | **100%** | |

**Note**: The countries under the scope of the current study are shaded light green.

**App Table 2 |** 2022 marine catches (t) in Indonesia by species and reporting level (species, genus, order or above).

| ASFIS common name | ASFIS scientific name | ISSCAAP group name | Reporting level | 2022 catches ('000) | % of total |
|---|---|---|---|---|---|
| Scads nei | *Decapterus* spp | Miscellaneous pelagic fishes | Genus | 492.4 | 7.2% |
| Skipjack tuna | *Katsuwonus pelamis* | Tunas, bonitos, billfishes | Species | 406.8 | 5.9% |
| Indian mackerels nei | *Rastrelliger* spp | Miscellaneous pelagic fishes | Genus | 280.8 | 4.1% |
| Yellowfin tuna | *Thunnus albacares* | Tunas, bonitos, billfishes | Species | 269.8 | 3.9% |
| Narrow-barred Spanish mackerel | *Scomberomorus commerson* | Tunas, bonitos, billfishes | Species | 248.0 | 3.6% |
| Marine fishes nei | Actinopterygii | Marine fishes not identified | Order or above | 230.8 | 3.4% |
| Frigate tuna | *Auxis thazard* | Tunas, bonitos, billfishes | Species | 210.7 | 3.1% |
| Longtail tuna | *Thunnus tonggol* | Tunas, bonitos, billfishes | Species | 201.6 | 2.9% |
| Carangids nei | Carangidae | Miscellaneous pelagic fishes | Family | 193.2 | 2.8% |
| Groupers, seabasses nei | Serranidae | Miscellaneous coastal fishes | Family | 191.6 | 2.8% |
| Common squids nei | *Loligo* spp | Squids, cuttlefishes, octopuses | Genus | 188.7 | 2.8% |
| Snappers nei | *Lutjanus* spp | Miscellaneous coastal fishes | Genus | 175.4 | 2.6% |
| Goldstripe sardinella | *Sardinella gibbosa* | Herrings, sardines, anchovies | Species | 174.2 | 2.5% |
| Kawakawa | *Euthynnus affinis* | Tunas, bonitos, billfishes | Species | 156.3 | 2.3% |
| Goatfishes | *Upeneus* spp | Miscellaneous coastal fishes | Genus | 152.4 | 2.2% |
| Yellowstripe scad | *Selaroides leptolepis* | Miscellaneous pelagic fishes | Species | 138.7 | 2.0% |
| Snappers, jobfishes nei | Lutjanidae | Miscellaneous coastal fishes | Family | 131.8 | 1.9% |
| Anchovies, etc. nei | Engraulidae | Herrings, sardines, anchovies | Family | 123.2 | 1.8% |
| Sea catfishes nei | Ariidae | Miscellaneous coastal fishes | Family | 110.0 | 1.6% |
| Ponyfishes(=Slipmouths) nei | Leiognathidae | Miscellaneous coastal fishes | Family | 105.3 | 1.5% |
| Blue swimming crab | *Portunus pelagicus* | Crabs, sea-spiders | Species | 97.1 | 1.4% |
| Metapenaeus shrimps nei | *Metapenaeus* spp | Shrimps, prawns | Genus | 95.5 | 1.4% |
| Spinefeet(=Rabbitfishes) nei | *Siganus* spp | Miscellaneous coastal fishes | Genus | 88.5 | 1.3% |
| Mullets nei | Mugilidae | Miscellaneous coastal fishes | Family | 82.8 | 1.2% |
| Stolephorus anchovies nei | *Stolephorus* spp | Herrings, sardines, anchovies | Genus | 82.4 | 1.2% |
| Blood cockle | *Tegillarca granosa* | Clams, cockles, arkshells | Species | 75.9 | 1.1% |
| Indian mackerel | *Rastrelliger kanagurta* | Miscellaneous pelagic fishes | Species | 64.0 | 0.9% |
| Threadfin breams nei | *Nemipterus* spp | Miscellaneous coastal fishes | Genus | 63.3 | 0.9% |
| Bigeye tuna | *Thunnus obesus* | Tunas, bonitos, billfishes | Species | 61.2 | 0.9% |

| ASFIS common name | ASFIS scientific name | ISSCAAP group name | Reporting level | 2022 catches ('000) | % of total |
|---|---|---|---|---|---|
| Black pomfret | *Parastromateus niger* | Miscellaneous pelagic fishes | Species | 57.2 | 0.8% |
| Penaeid shrimps nei | Penaeidae | Shrimps, prawns | Family | 55.0 | 0.8% |
| Bigeye scad | *Selar crumenophthalmus* | Miscellaneous pelagic fishes | Species | 54.0 | 0.8% |
| Grey large-eye bream | *Gymnocranius griseus* | Miscellaneous coastal fishes | Species | 53.8 | 0.8% |
| Hairtails, scabbardfishes nei | Trichiuridae | Miscellaneous demersal fishes | Family | 53.1 | 0.8% |
| Other | | | | 1,678.0 | 24.5% |
| **Total** | | | | **6,843.4** | **100%** |

**App Table 3 |** Estimated reported and unreported 2019 catches (thousand tonnes) for Indonesia, by fishing sector and gear type. Source: Sea Around Us.

| Fishing sector | Gear type | Reported | Unreported | Total | % Unreported |
|---|---|---|---|---|---|
| **Industrial** | unknown class | 4,118.7 | 0.0 | 4,118.7 | 0% |
| | purse seine | 274.5 | 56.7 | 331.1 | 17% |
| | bottom trawl | 0.0 | 277.0 | 277.0 | 100% |
| | other | 82.5 | 0.7 | 83.2 | 1% |
| | pole and line | 64.9 | 0.6 | 65.6 | 1% |
| | longline | 26.6 | 31.0 | 57.7 | 54% |
| | mixed gear | 22.1 | 0.0 | 22.1 | 0% |
| | artisanal fishing gear | 14.9 | 0.0 | 14.9 | 0% |
| | hand lines | 11.8 | 0.0 | 11.8 | 0% |
| **Artisanal** | artisanal fishing gear | 2,236.1 | 1.6 | 2,237.7 | 0% |
| | small scale gillnets | 25.1 | 15.7 | 40.8 | 38% |
| | small scale lines | 13.9 | 13.9 | 27.8 | 50% |
| | small scale other nets | 20.9 | 2.1 | 23.0 | 9% |
| | small scale pots or traps | 0.5 | 12.4 | 12.9 | 96% |
| | small scale encircling nets | 0.0 | 5.5 | 5.5 | 100% |
| | bagnets | 0.0 | 5.3 | 5.3 | 100% |
| | small scale seine nets | 0.0 | 2.8 | 2.8 | 100% |
| | cast nets | 0.0 | 1.7 | 1.7 | 100% |
| | hand or tools | 0.0 | 0.7 | 0.7 | 100% |
| | small scale longline | 0.0 | 0.0 | 0.0 | 100% |
| | subsistence fishing gear | 0.0 | 105.7 | 105.7 | 100% |
| | recreational fishing gear | 0.0 | 10.4 | 10.4 | 100% |
| **Total** | | **6,912.5** | **543.7** | **7,456.2** | **7%** |

**App Table 4 |** 2019 Processed production, exports, imports, total food supply in thousand tonnes (product weight), and estimated % of imports and production estimated to stay in the domestic market, for the SE Asia countries in this study. Source: FAOSTAT (FAO 2023)

| Country (Name) | FAOSTAT group (Name) | Food imports | Production | Food exports | Non-food uses | Stock variations | Total food supply | Grand Total | % staying in the domestic market |
|---|---|---|---|---|---|---|---|---|---|
| Cambodia | Freshwater & diadromous fish | 2,176 | 814,615 | 33,849 | 270,010 | 0 | 512,933 | 1,633,583 | 63% |
| | Marine fish nei | 6,055 | 104,963 | 3,476 | 3,000 | 10,545 | 115,086 | 243,127 | 95% |
| | Molluscs excl. cephalopods | 45,126 | 21,330 | 4 | 0 | 0 | 66,453 | 132,913 | 100% |
| | Crustaceans | 530 | 19,570 | 65 | 0 | 0 | 20,035 | 40,199 | 100% |
| | Pelagic fish | 6,839 | 0 | 0 | 0 | 0 | 6,839 | 13,679 | 100% |
| | Cephalopods | 16 | 5,600 | 12 | 0 | 0 | 5,604 | 11,232 | 100% |
| | Demersal fish | 1 | 840 | 234 | 0 | 0 | 607 | 1,682 | 72% |
| | Aquatic animals nei | 156 | 180 | 0 | 0 | 0 | 336 | 673 | 100% |
| **Cambodia Total** | | **60,901** | **967,098** | **37,641** | **273,010** | **10,545** | **727,892** | **2,077,087** | **70%** |
| Indonesia | Freshwater & diadromous fish | 9,290 | 5,468,885 | 82,996 | 117 | 0 | 5,395,062 | 10,956,350 | 98% |
| | Pelagic fish | 103,243 | 3,330,365 | 317,028 | 88,150 | 0 | 3,028,429 | 6,867,215 | 88% |
| | Demersal fish | 3,057 | 1,636,485 | 53,224 | 0 | 0 | 1,586,318 | 3,279,084 | 97% |
| | Crustaceans | 12,027 | 1,502,730 | 380,668 | 50,063 | 0 | 1,084,026 | 3,029,514 | 72% |
| | Marine fish nei | 14,352 | 963,890 | 231,020 | 17 | 0 | 747,205 | 1,956,484 | 76% |
| | Cephalopods | 3,230 | 251,890 | 149,372 | 0 | 0 | 105,749 | 510,241 | 41% |
| | Aquatic animals nei | 34 | 142,690 | 31,694 | 0 | 0 | 111,030 | 285,449 | 78% |
| | Molluscs excl. cephalopods | 4,668 | 132,390 | 40,483 | 0 | 0 | 96,575 | 274,117 | 70% |
| **Indonesia Total** | | **149,901** | **13,429,325** | **1,286,486** | **138,347** | **0** | **12,154,394** | **27,158,453** | **90%** |
| Malaysia | Pelagic fish | 261,701 | 560,024 | 78,520 | 140,000 | 0 | 603,204 | 1,643,449 | 73% |
| | Marine fish nei | 81,736 | 314,410 | 72,943 | 25,000 | 0 | 298,203 | 792,293 | 75% |
| | Demersal fish | 37,563 | 355,688 | 8,423 | 0 | 0 | 384,828 | 786,502 | 98% |
| | Freshwater & diadromous fish | 66,888 | 165,331 | 26,314 | 0 | 0 | 205,904 | 464,437 | 89% |
| | Crustaceans | 54,490 | 176,751 | 104,021 | 209 | 0 | 127,011 | 462,482 | 55% |
| | Cephalopods | 44,415 | 70,603 | 39,134 | 0 | 0 | 75,884 | 230,035 | 66% |
| | Molluscs excl. cephalopods | 47,602 | 20,855 | 10,254 | 0 | 0 | 58,202 | 136,912 | 85% |
| | Aquatic animals nei | 26,168 | 21,525 | 30,359 | 0 | 0 | 17,335 | 95,386 | 36% |
| **Malaysia Total** | | **620,562** | **1,685,186** | **369,969** | **165,209** | **0** | **1,770,570** | **4,611,497** | **77%** |

| Country (Name) | FAOSTAT group (Name) | Food imports | Production | Food exports | Non-food uses | Stock variations | Total food supply | Grand Total | % staying in the domestic market |
|---|---|---|---|---|---|---|---|---|---|
| Philippines | Pelagic fish | 309,918 | 1,436,855 | 221,449 | 0 | 0 | 1,525,325 | 3,493,547 | 87% |
| | Freshwater & diadromous fish | 22,324 | 807,890 | 14,278 | 0 | 0 | 815,936 | 1,660,427 | 98% |
| | Demersal fish | 82,595 | 326,721 | 668 | 0 | 0 | 408,648 | 818,632 | 100% |
| | Crustaceans | 10,410 | 166,159 | 29,018 | 0 | 0 | 147,551 | 353,138 | 84% |
| | Marine fish nei | 100,534 | 13,416 | 5,458 | 0 | 0 | 108,492 | 227,901 | 95% |
| | Molluscs excl. cephalopods | 2,733 | 107,788 | 8,081 | 0 | 0 | 102,440 | 221,042 | 93% |
| | Cephalopods | 35,616 | 52,178 | 12,082 | 0 | 0 | 75,712 | 175,589 | 86% |
| | Aquatic animals nei | 368 | 951 | 728 | 0 | 0 | 591 | 2,637 | 45% |
| **Philippines Total** | | **564,499** | **2,911,958** | **291,761** | **0** | **0** | **3,184,696** | **6,952,913** | **92%** |
| Thailand | Pelagic fish | 1,440,112 | 558,566 | 1,188,808 | 0 | 0 | 809,870 | 3,997,356 | 41% |
| | Freshwater & diadromous fish | 176,988 | 559,886 | 101,710 | 35 | 0 | 635,129 | 1,473,747 | 86% |
| | Crustaceans | 80,738 | 533,155 | 308,134 | 130,000 | 0 | 175,759 | 1,227,787 | 29% |
| | Marine fish nei | 0 | 451,012 | 0 | 447,925 | 0 | 3,087 | 902,024 | 1% |
| | Cephalopods | 200,757 | 98,374 | 53,706 | 0 | 0 | 245,425 | 598,261 | 82% |
| | Molluscs excl. cephalopods | 95,961 | 149,161 | 130,231 | 24,000 | 0 | 90,891 | 490,243 | 37% |
| | Demersal fish | 59,237 | 145,849 | 115,978 | 0 | 0 | 89,108 | 410,173 | 43% |
| | Aquatic animals nei | 2,802 | 10,728 | 34,664 | 0 | 24,000 | 2,866 | 75,061 | 8% |
| **Thailand Total** | | **2,056,594** | **2,506,731** | **1,933,230** | **601,959** | **24,000** | **2,052,136** | **9,174,651** | **45%** |
| Viet Nam | Freshwater & diadromous fish | 65,985 | 3,250,820 | 1,581,776 | 0 | 0 | 1,735,030 | 6,633,611 | 52% |
| | Marine fish nei | 65,892 | 2,379,222 | 554,041 | 1,170,000 | 0 | 721,073 | 4,890,228 | 29% |
| | Crustaceans | 54,690 | 1,059,638 | 522,603 | 80,000 | 0 | 511,725 | 2,228,655 | 46% |
| | Pelagic fish | 246,633 | 451,029 | 163,193 | 260,000 | 0 | 274,469 | 1,395,324 | 39% |
| | Cephalopods | 32,773 | 371,693 | 91,716 | 0 | 0 | 312,751 | 808,933 | 77% |
| | Molluscs excl. cephalopods | 22,847 | 345,984 | 118,080 | 0 | 0 | 250,750 | 737,662 | 68% |
| | Demersal fish | 32,978 | 0 | 92 | 0 | 0 | 32,886 | 65,956 | 100% |
| | Aquatic animals nei | 146 | 12,900 | 1,265 | 0 | 0 | 11,781 | 26,092 | 90% |
| **Viet Nam Total** | | **521,945** | **7,871,286** | **3,032,765** | **1,510,000** | **0** | **3,850,466** | **16,786,461** | **46%** |
| **Grand Total** | | **3,974,402** | **29,371,584** | **6,951,851** | **2,688,525** | **34,545** | **23,740,155** | **66,761,063** | **71%** |

**Note**: "% staying in the domestic market" refers to the ratio of total food supply and the total amount of seafood produced or imported by each country.

**App Table 5 |** Indonesia's total reported seafood exports in tonnes by commodity, between 2020 and 2022 (and annual 2020-22 average).

| Seafood Commodity [2] | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (t) | % of total | Commodity group |
|---|---|---|---|---|---|---|---|
| Shrimps and prawns (Penaeus spp.), frozen | Shrimps, prawns | 148,848 | 150,806 | 141,696 | 147,116 | 14.8% | Shrimp |
| Cuttlefish and squid, frozen, nei | Squids, cuttlefishes, octopuses | 120,034 | 143,927 | 133,615 | 132,525 | 13.3% | Squid / cuttlefish |
| Marine fish, frozen, nei | Marine fishes not identified | 73,907 | 55,221 | 49,176 | 59,435 | 6.0% | Misc marine fish |
| Tunas prepared or preserved, not minced, in airtight containers | Tunas, bonitos, billfishes | 56,340 | 51,908 | 54,292 | 54,180 | 5.5% | Tuna |
| Shrimps and prawns, prep. or pres., not in airtight containers | Shrimps, prawns | 48,687 | 52,984 | 51,550 | 51,073 | 5.1% | Shrimp |
| Tunas (of the genus Thunnus), skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), fillets, frozen | Tunas, bonitos, billfishes | 33,424 | 47,965 | 56,293 | 45,894 | 4.6% | Tuna |
| Skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), frozen | Tunas, bonitos, billfishes | 48,357 | 26,934 | 31,623 | 35,638 | 3.6% | Tuna |
| Hairtails, frozen | Miscellaneous demersal fishes | 46,603 | 41,574 | 17,509 | 35,229 | 3.5% | Misc marine fish |
| Marine fish, fresh or chilled, nei | Marine fishes not identified | 34,422 | 32,743 | 31,129 | 32,765 | 3.3% | Misc marine fish |
| Fish meat, whether or not minced, frozen, nei | Marine fishes not identified | 33,431 | 24,025 | 19,085 | 25,514 | 2.6% | Misc marine fish |
| Fish fillets, frozen, nei | Marine fishes not identified | 20,748 | 27,107 | 28,074 | 25,310 | 2.5% | Misc marine fish |
| Anchovies, Indian mackerels, seerfishes, jacks, crevalles, silver pomfrets, Pacif. saury, scads, capelin, Kawakawa, bonitos, marlins, sailfishes, spearfish, frozen | Miscellaneous pelagic fishes | 21,362 | 17,458 | 26,467 | 21,762 | 2.2% | Small pelagics |
| Yellowfin tuna, frozen, nei | Tunas, bonitos, billfishes | 18,556 | 23,898 | 21,246 | 21,233 | 2.1% | Tuna |
| Octopus, frozen | Squids, cuttlefishes, octopuses | 17,752 | 21,180 | 19,804 | 19,579 | 2.0% | Octopus |
| Pilchards (Sardinops spp.), prep. or pres., not minced, nei | Herrings, sardines, anchovies | 14,956 | 20,111 | 18,227 | 17,765 | 1.8% | Small pelagics |
| Shrimps and prawns, other than coldwater, even smoked, frozen | Shrimps, prawns | 15,329 | 16,319 | 18,985 | 16,878 | 1.7% | Shrimp |
| Mackerels nei, frozen | Miscellaneous pelagic fishes | 34,640 | 10,612 | 1,573 | 15,609 | 1.6% | Small pelagics |
| Shrimps, breaded, raw and cooked, prep. or pres. | Shrimps, prawns | 12,656 | 12,338 | 12,366 | 12,453 | 1.3% | Shrimp |
| Crabs, peeled or not, live, fresh or chilled, nei | Crabs, sea-spiders | 9,141 | 13,599 | 12,624 | 11,788 | 1.2% | Crab |
| Freshwater fish nei, frozen | Miscellaneous freshwater fishes | 17,410 | 10,728 | 6,948 | 11,695 | 1.2% | Freshwater fish |
| Tilapia fillets, frozen | Tilapias and other cichlids | 11,441 | 10,112 | 11,127 | 10,893 | 1.1% | Freshwater fish |
| Skipjack prepared or preserved, not minced, nei | Tunas, bonitos, billfishes | 20,262 | 9,781 | 0 | 10,014 | 1.0% | Tuna |
| Crab meat nei, prepared or preserved | Crabs, sea-spiders | 7,050 | 6,506 | 13,548 | 9,034 | 0.9% | Crab |
| Eels, frozen | River eels | 9,676 | 7,974 | 6,540 | 8,063 | 0.8% | Other products |

| Seafood Commodity [2] | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (t) | % of total | Commodity group |
|---|---|---|---|---|---|---|---|
| Indian mackerels, seerfishes, jacks, crevalles, silver pomfrets, Pacif. saury, scads, capelin, Kawakawa, bonitos, marlins, sailfishes, spearfish, fresh or chilled | Miscellaneous pelagic fishes | 7,352 | 6,648 | 6,460 | 6,820 | 0.7% | Other pelagics |
| Shrimps and prawns, prep. or pres., in airtight containers | Shrimps, prawns | 4,475 | 8,644 | 6,816 | 6,645 | 0.7% | Shrimp |
| Crab meat, in airtight containers, prep.or pres. | Crabs, sea-spiders | 8,918 | 10,587 | 0 | 6,502 | 0.7% | Crab |
| Albacore (=Longfin tuna), frozen, nei | Tunas, bonitos, billfishes | 4,040 | 5,795 | 7,486 | 5,774 | 0.6% | Tuna |
| Shrimp meal | Shrimps, prawns | 7,383 | 1,167 | 8,286 | 5,612 | 0.6% | Meals and oils |
| Fishmeals, nei | Marine fishes not identified | 6,437 | 3,834 | 6,113 | 5,461 | 0.5% | Meals and oils |
| Jellyfish, dried, salted or in brine, smoked | Miscellaneous aquatic invertebrates | 4,711 | 5,409 | 5,123 | 5,081 | 0.5% | Other products |
| Dogfish and other sharks nei (excl. Squalus acanthias, Scyliorhinus spp., Lamna nasus, Prionace glauca), frozen | Sharks, rays, chimaeras | 6,786 | 4,032 | 3,215 | 4,678 | 0.5% | Sharks, rays |
| Tunas, skipjack tuna and bonito (Sarda spp.), prepared or preserved | Tunas, bonitos, billfishes | 0 | 0 | 13,815 | 4,605 | 0.5% | Tuna |
| Shrimps and prawns, peeled, fresh or chilled | Shrimps, prawns | 3,151 | 4,482 | 6,070 | 4,568 | 0.5% | Shrimp |
| Bonito (Sarda spp.), not minced, prepared or preserved, nei | Tunas, bonitos, billfishes | 5,457 | 3,510 | 3,937 | 4,301 | 0.4% | Tuna |
| Pomfrets, ocean breams, frozen | Miscellaneous pelagic fishes | 5,566 | 3,803 | 3,336 | 4,235 | 0.4% | Other pelagics |
| Grouper, fresh or chilled | Miscellaneous coastal fishes | 3,543 | 3,829 | 3,857 | 3,743 | 0.4% | Snapper-grouper |
| Clams, cockles, arkshells, live, fresh or chilled | Clams, cockles, arkshells | 3,867 | 1,932 | 5,175 | 3,658 | 0.4% | Other molluscs |
| Snappers, frozen | Miscellaneous coastal fishes | 2,963 | 2,989 | 4,848 | 3,600 | 0.4% | Snapper-grouper |
| Shrimp paste | Shrimps, prawns | 3,524 | 3,763 | 2,424 | 3,237 | 0.3% | Other products |
| Catfish, frozen | Miscellaneous freshwater fishes | 4,617 | 2,484 | 2,181 | 3,094 | 0.3% | Freshwater fish |
| Fish nei, smoked | Marine fishes not identified | 3,772 | 2,377 | 2,896 | 3,015 | 0.3% | Misc marine fish |
| Fish, frozen, nei | Marine fishes not identified | 0 | 0 | 8,113 | 2,704 | 0.3% | Misc marine fish |
| Clams, cockles, arkshells, etc., prep. or pres., nei | Clams, cockles, arkshells | 2,657 | 2,517 | 2,063 | 2,412 | 0.2% | Other molluscs |
| Swordfish, frozen | Tunas, bonitos, billfishes | 2,046 | 2,842 | 1,828 | 2,239 | 0.2% | Other large pelagics |
| Hairtails, fresh or chilled | Miscellaneous demersal fishes | 2,259 | 2,315 | 1,965 | 2,180 | 0.2% | Misc marine fish |
| Tunas nei, frozen | Tunas, bonitos, billfishes | 3,780 | 1,035 | 1,666 | 2,160 | 0.2% | Tuna |
| Livers, roes, milt, dried, salted or in brine, nei | Marine fishes not identified | 2,355 | 1,967 | 1,888 | 2,070 | 0.2% | Other products |
| Shrimps and prawns, dried, salted or in brine, smoked nei | Shrimps, prawns | 2,942 | 2,393 | 850 | 2,061 | 0.2% | Shrimp |
| Sardines, sardinellas, brisling or sprats, frozen | Herrings, sardines, anchovies | 3,541 | 1,515 | 320 | 1,792 | 0.2% | Small pelagics |
| Crabs nei, frozen | Crabs, sea-spiders | 1,210 | 1,156 | 2,874 | 1,747 | 0.2% | Crab |

| Seafood Commodity [2] | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (t) | % of total | Commodity group |
|---|---|---|---|---|---|---|---|
| Yellowfin tuna, fresh or chilled | Tunas, bonitos, billfishes | 2,424 | 1,746 | 1,024 | 1,731 | 0.2% | Tuna |
| Fish body oils, nei | Marine fishes not identified | 2,164 | 1,592 | 1,291 | 1,683 | 0.2% | Meals and oils |
| Eels and elvers live | River eels | 1,263 | 2,071 | 1,688 | 1,674 | 0.2% | Other products |
| Flours, meals and pellets of fish, fit for human consumption | Marine fishes not identified | 1,878 | 2,530 | 490 | 1,633 | 0.2% | Meals and oils |
| Lizardfish, frozen | Miscellaneous coastal fishes | 2,179 | 1,337 | 1,239 | 1,585 | 0.2% | Misc marine fish |
| Fish fillets, fresh or chilled, nei | Marine fishes not identified | 2,018 | 1,503 | 1,149 | 1,557 | 0.2% | Misc marine fish |
| Miscellaneous freshwater fish, dried, whether or not salted, not smoked, nei | Miscellaneous freshwater fishes | 1,585 | 1,365 | 1,571 | 1,507 | 0.2% | Freshwater fish |
| Cod nei, fillets, frozen | Cods, hakes, haddocks | 0 | 0 | 4,452 | 1,484 | 0.1% | Misc marine fish |
| Other | NA | 49,973 | 43,128 | 43,871 | 45,658 | 4.6% | Other |
| **Total** | | **1,045,866** | **982,106** | **953,880** | **993,950** | **100%** | |

Notes: (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

**App Table 6 |** Indonesia's total reported seafood exports in thousand USD by commodity, between 2020 and 2022 (and annual 2020-22 average).

| Seafood Commodity [2] | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (t) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Shrimps and prawns (Penaeus spp.), frozen | Shrimps, prawns | 1,295,075 | 1,403,319 | 1,290,251 | 1,329,548 | 25.6% | Shrimp |
| Cuttlefish and squid, frozen, nei | Squids, cuttlefishes, octopuses | 425,261 | 492,635 | 586,506 | 501,467 | 9.6% | Squid / cuttlefish |
| Shrimps and prawns, prep. or pres., not in airtight containers | Shrimps, prawns | 460,712 | 487,659 | 496,273 | 481,548 | 9.3% | Shrimp |
| Tunas (of the genus Thunnus), skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), fillets, frozen | Tunas, bonitos, billfishes | 238,750 | 323,078 | 443,146 | 334,992 | 6.4% | Tuna |
| Tunas prepared or preserved, not minced, in airtight containers | Tunas, bonitos, billfishes | 247,486 | 227,098 | 256,624 | 243,736 | 4.7% | Tuna |
| Crab meat nei, prepared or preserved | Crabs, sea-spiders | 130,719 | 180,127 | 369,782 | 226,876 | 4.4% | Crab |
| Crab meat, in airtight containers, prep.or pres. | Crabs, sea-spiders | 163,896 | 333,956 | 0 | 165,951 | 3.2% | Crab |
| Fish fillets, frozen, nei | Marine fishes not identified | 121,580 | 157,727 | 208,750 | 162,686 | 3.1% | Misc marine fish |
| Shrimps and prawns, other than coldwater, even smoked, frozen | Shrimps, prawns | 121,368 | 126,990 | 161,412 | 136,590 | 2.6% | Shrimp |
| Shrimps, breaded, raw and cooked, prep. or pres. | Shrimps, prawns | 91,251 | 104,942 | 106,723 | 100,972 | 1.9% | Shrimp |
| Marine fish, frozen, nei | Marine fishes not identified | 112,621 | 86,939 | 96,557 | 98,706 | 1.9% | Misc marine fish |
| Octopus, frozen | Squids, cuttlefishes, octopuses | 68,580 | 103,688 | 119,083 | 97,117 | 1.9% | Octopus |
| Tilapia fillets, frozen | Tilapias and other cichlids | 76,036 | 64,664 | 77,798 | 72,833 | 1.4% | Freshwater fish |
| Fish meat, whether or not minced, frozen, nei | Marine fishes not identified | 86,816 | 68,266 | 62,343 | 72,475 | 1.4% | Misc marine fish |
| Crabs, peeled or not, live, fresh or chilled, nei | Crabs, sea-spiders | 44,563 | 76,250 | 76,177 | 65,663 | 1.3% | Crab |
| Yellowfin tuna, frozen, nei | Tunas, bonitos, billfishes | 45,538 | 63,689 | 83,000 | 64,076 | 1.2% | Tuna |
| Hairtails, frozen | Miscellaneous demersal fishes | 81,943 | 72,110 | 36,351 | 63,468 | 1.2% | Misc marine fish |
| Livers, roes, milt, dried, salted or in brine, nei | Marine fishes not identified | 40,547 | 55,929 | 54,417 | 50,298 | 1.0% | Other products |
| Marine fish, fresh or chilled, nei | Marine fishes not identified | 50,649 | 50,372 | 48,309 | 49,777 | 1.0% | Misc marine fish |
| Skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), frozen | Tunas, bonitos, billfishes | 62,059 | 37,270 | 49,381 | 49,570 | 1.0% | Tuna |
| Pilchards (Sardinops spp.), prep. or pres., not minced, nei | Herrings, sardines, anchovies | 34,266 | 49,880 | 50,920 | 45,022 | 0.9% | Small pelagics |
| Anchovies, Indian mackerels, seerfishes, jacks, crevalles, silver pomfrets, Pacif. saury, scads, capelin, Kawakawa, bonitos, marlins, sailfishes, spearfish, frozen | Miscellaneous pelagic fishes | 40,071 | 35,817 | 54,079 | 43,322 | 0.8% | Small pelagics |
| Shrimps and prawns, prep. or pres., in airtight containers | Shrimps, prawns | 29,773 | 54,626 | 45,052 | 43,150 | 0.8% | Shrimp |
| Rock lobster & other sea crawfish (Palinurus,Panulirus,Jasus), live, fresh or chilled, nei | Lobsters, spiny-rock lobsters | 71,437 | 24,285 | 20,352 | 38,691 | 0.7% | Lobster |

| Seafood Commodity [2] | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (t) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Skipjack prepared or preserved, not minced, nei | Tunas, bonitos, billfishes | 75,489 | 35,961 | 0 | 37,150 | 0.7% | Tuna |
| Mackerels nei, frozen | Miscellaneous pelagic fishes | 65,050 | 24,203 | 3,753 | 31,002 | 0.6% | Small pelagics |
| Ornamental freshwater fish | Miscellaneous freshwater fishes | 24,680 | 27,855 | 29,549 | 27,361 | 0.5% | Freshwater fish |
| Shrimps and prawns, live | Shrimps, prawns | 16,944 | 27,859 | 28,836 | 24,546 | 0.5% | Shrimp |
| Indian mackerels, seerfishes, jacks, crevalles, silver pomfrets, Pacif. saury, scads, capelin, Kawakawa, bonitos, marlins, sailfishes, spearfish, fresh or chilled | Miscellaneous pelagic fishes | 24,356 | 22,097 | 20,211 | 22,221 | 0.4% | Other pelagics |
| Fish nei, smoked | Marine fishes not identified | 23,973 | 16,064 | 21,946 | 20,661 | 0.4% | Misc marine fish |
| Tunas, skipjack tuna and bonito (Sarda spp.), prepared or preserved | Tunas, bonitos, billfishes | 0 | 0 | 58,410 | 19,470 | 0.4% | Tuna |
| Crabs nei, frozen | Crabs, sea-spiders | 10,675 | 12,358 | 33,283 | 18,772 | 0.4% | Crab |
| Fish fillets, fresh or chilled, nei | Marine fishes not identified | 22,742 | 17,629 | 14,059 | 18,143 | 0.3% | Misc marine fish |
| Albacore (=Longfin tuna), frozen, nei | Tunas, bonitos, billfishes | 12,535 | 16,332 | 23,823 | 17,563 | 0.3% | Tuna |
| Freshwater fish nei, frozen | Miscellaneous freshwater fishes | 22,406 | 15,574 | 12,053 | 16,678 | 0.3% | Freshwater fish |
| Bonito (Sarda spp.), not minced, prepared or preserved, nei | Tunas, bonitos, billfishes | 16,866 | 13,293 | 17,808 | 15,989 | 0.3% | Tuna |
| Grouper, fresh or chilled | Miscellaneous coastal fishes | 15,188 | 15,030 | 14,669 | 14,962 | 0.3% | Snapper-grouper |
| Shrimps and prawns, peeled, fresh or chilled | Shrimps, prawns | 8,948 | 13,244 | 18,217 | 13,470 | 0.3% | Shrimp |
| Livers, roes, milt, frozen | Marine fishes not identified | 7,355 | 15,761 | 14,272 | 12,463 | 0.2% | Other products |
| Eels, frozen | River eels | 13,239 | 9,508 | 11,804 | 11,517 | 0.2% | Other products |
| Cod nei, fillets, frozen | Cods, hakes, haddocks | 0 | 0 | 34,356 | 11,452 | 0.2% | Misc marine fish |
| Swordfish, frozen | Tunas, bonitos, billfishes | 8,406 | 14,650 | 10,548 | 11,201 | 0.2% | Other large pelagics |
| Crustaceans nei, prepared or preserved | Miscellaneous marine crustaceans | 297 | 11,031 | 22,068 | 11,132 | 0.2% | Misc crustaceans |
| Crabs, dried, salted or in brine, smoked, nei | Crabs, sea-spiders | 17,668 | 10,554 | 4,985 | 11,069 | 0.2% | Crab |
| Snappers, frozen | Miscellaneous coastal fishes | 7,597 | 8,962 | 15,062 | 10,540 | 0.2% | Snapper-grouper |
| Swordfish fillets, frozen | Tunas, bonitos, billfishes | 11,165 | 8,856 | 9,307 | 9,776 | 0.2% | Other large pelagics |
| Saltwater fish nei, live | Marine fishes not identified | 12,471 | 16,752 | 6 | 9,743 | 0.2% | Misc marine fish |
| Pomfrets, ocean breams, frozen | Miscellaneous pelagic fishes | 12,278 | 8,022 | 8,707 | 9,669 | 0.2% | Other pelagics |

| Seafood Commodity [2] | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (t) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Sea-cucumber, dried, salted or in brine, smoked | Sea-urchins and other echinoderms | 12,174 | 6,940 | 8,866 | 9,327 | 0.2% | Other products |
| Yellowfin tuna, fresh or chilled | Tunas, bonitos, billfishes | 11,306 | 7,015 | 6,302 | 8,208 | 0.2% | Tuna |
| Jellyfish, dried, salted or in brine, smoked | Miscellaneous aquatic invertebrates | 6,383 | 8,377 | 8,631 | 7,797 | 0.1% | Other products |
| Cuttlefish and squid, prepared or preserved | Squids, cuttlefishes, octopuses | 7,844 | 8,167 | 6,864 | 7,625 | 0.1% | Squid / cuttlefish |
| Shark fins, dried, unsalted | Sharks, rays, chimaeras | 9,773 | 12,999 | 0 | 7,591 | 0.1% | Sharks, rays |
| Clams, cockles, arkshells, etc., prep. or pres., nei | Clams, cockles, arkshells | 8,004 | 7,770 | 6,532 | 7,436 | 0.1% | Other molluscs |
| Other | | 416,737 | 433,214 | 690,020 | 513,324 | 4.0% | Other |
| **Grand Total** | | **5,043,546** | **5,527,393** | **5,948,239** | **5,506,393** | | |

**Notes:** (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

**App Table 7 |** Reported 2022 total seafood exports in thousand USD by Indonesia, per partner country. Source: FAO 2024d.

| Country | 2022 exports (000 USD) | % of 2022 total | EU market |
|---|---|---|---|
| United States of America | 2,297,543 | 41.7% | |
| Japan | 696,972 | 12.7% | |
| China | 691,596 | 12.6% | |
| Viet Nam | 276,788 | 5.0% | |
| Malaysia | 156,858 | 2.8% | |
| Thailand | 148,828 | 2.7% | |
| Taiwan | 144,110 | 2.6% | |
| Italy | 117,340 | 2.1% | Y |
| Singapore | 102,134 | 1.9% | |
| Saudi Arabia | 95,557 | 1.7% | |
| Australia | 92,975 | 1.7% | |
| Canada | 90,671 | 1.6% | |
| South Korea | 88,296 | 1.6% | |
| Hong Kong | 66,430 | 1.2% | |
| United Kingdom | 49,153 | 0.9% | |
| Netherlands | 43,884 | 0.8% | Y |
| Spain | 32,415 | 0.6% | Y |
| France | 32,051 | 0.6% | Y |
| Belgium | 24,559 | 0.4% | Y |
| Mexico | 20,989 | 0.4% | |
| Philippines | 17,782 | 0.3% | |
| Germany | 17,080 | 0.3% | Y |
| Greece | 14,594 | 0.3% | Y |
| Russia | 12,653 | 0.2% | |
| Jordan | 10,202 | 0.2% | |
| Ecuador | 9,244 | 0.2% | |
| Portugal | 7,719 | 0.1% | Y |
| Costa Rica | 7,666 | 0.1% | |
| Mauritius | 7,542 | 0.1% | |
| United Arab Emirates | 7,519 | 0.1% | |
| Dominican Republic | 6,596 | 0.1% | |
| Poland | 6,526 | 0.1% | Y |
| Senegal | 5,464 | 0.1% | |
| Egypt | 4,758 | 0.1% | |
| Algeria | 4,417 | 0.1% | |
| Togo | 3,806 | 0.1% | |
| Kuwait | 3,793 | 0.1% | |
| Democratic Republic of the Congo | 3,627 | 0.1% | |
| Samoa | 3,621 | 0.1% | |
| Other | 83,857 | 1.5% | |
| **Total** | **5,507,613** | | |

**App Table 8 | Indonesia's total reported seafood imports in tonnes by commodity, between 2020 and 2022 (and annual 2020-22 average).**

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Average 2020-2022 imports (t) | % of total | Commodity group |
|---|---|---|---|---|---|---|---|
| Fishmeals, nei | Marine fishes not identified | 108,479 | 83,546 | 105,968 | 99,331 | 35.8% | Meals and oils |
| Chub mackerel, frozen | Miscellaneous pelagic fishes | 17,957 | 35,343 | 70,841 | 41,380 | 14.9% | Small pelagics |
| Skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), frozen | Tunas, bonitos, billfishes | 25,783 | 20,042 | 22,112 | 22,646 | 8.2% | Tuna |
| Sardines, sardinellas, brisling or sprats, frozen | Herrings, sardines, anchovies | 21,500 | 7,218 | 18,351 | 15,690 | 5.7% | Small pelagics |
| Mackerels nei, frozen | Miscellaneous pelagic fishes | 7,494 | 13,500 | 18,125 | 13,039 | 4.7% | Small pelagics |
| Cods nei, frozen | Cods, hakes, haddocks | 3,110 | 5,588 | 12,141 | 6,947 | 2.5% | Misc marine fish |
| Crabs nei, frozen | Crabs, sea-spiders | 5,124 | 7,658 | 9,967 | 7,583 | 2.7% | Crab |
| Fish body oils, nei | Marine fishes not identified | 9,096 | 8,713 | 6,942 | 8,250 | 3.0% | Meals and oils |
| Shrimp meal | Shrimps, prawns | 13,569 | 12,983 | 6,059 | 10,870 | 3.9% | Meals and oils |
| Cuttlefish and squid, frozen, nei | Squids, cuttlefishes, octopuses | 1,978 | 5,549 | 5,696 | 4,408 | 1.6% | Squid / cuttlefish |
| Mackerel prepared or preserved, not minced, nei | Miscellaneous pelagic fishes | 2,029 | 3,354 | 5,073 | 3,485 | 1.3% | Small pelagics |
| Fish meat, whether or not minced, frozen, nei | Marine fishes not identified | 1,352 | 2,969 | 4,299 | 2,873 | 1.0% | Misc marine fish |
| Alaska pollock, frozen | Cods, hakes, haddocks | 52 | 420 | 4,173 | 1,549 | 0.6% | Misc marine fish |
| Yellowfin tuna, frozen, nei | Tunas, bonitos, billfishes | 9,936 | 3,503 | 3,405 | 5,615 | 2.0% | Tuna |
| Jack and horse mackerel, frozen | Miscellaneous pelagic fishes | 107 | 285 | 3,246 | 1,213 | 0.4% | Small pelagics |
| Atlantic and Danube salmons, fresh or chilled | Salmons, trouts, smelts | 901 | 2,953 | 3,209 | 2,354 | 0.8% | Salmonids |
| Haddock, frozen | Cods, hakes, haddocks | 0 | 569 | 2,959 | 1,176 | 0.4% | Misc marine fish |
| Fish minced nei, in airtight containers prepared or preserved | Marine fishes not identified | 2,159 | 2,685 | 2,497 | 2,447 | 0.9% | Misc marine fish |
| Shrimps and prawns, other than coldwater, even smoked, frozen | Shrimps, prawns | 1,798 | 3,245 | 2,297 | 2,447 | 0.9% | Shrimp |
| Marine fish, frozen, nei | Marine fishes not identified | 1,976 | 3,129 | 2,275 | 2,460 | 0.9% | Misc marine fish |
| Fish, sauce | Marine fishes not identified | 1,486 | 1,999 | 2,122 | 1,869 | 0.7% | Fish/bivalve sauce |
| Flatfish nei, fillets, frozen | Flounders, halibuts, soles | 25 | 1,198 | 1,669 | 964 | 0.3% | Misc marine fish |
| Balls, cakes, sausages, etc.prepared from minced fish | Marine fishes not identified | 749 | 1,007 | 1,526 | 1,094 | 0.4% | Other products |
| Bigeye tuna, frozen, nei | Tunas, bonitos, billfishes | 1,607 | 701 | 1,492 | 1,267 | 0.5% | Tuna |
| Pacific salmons, frozen, nei | Salmons, trouts, smelts | 989 | 904 | 1,445 | 1,113 | 0.4% | Salmonids |
| Anchovies, Indian mackerels, seerfishes, jacks, crevalles, silver pomfrets, Pacif. saury, scads, capelin, Kawakawa, bonitos, marlins, sailfishes, spearfish, frozen | Miscellaneous pelagic fishes | 334 | 255 | 1,383 | 657 | 0.2% | Small pelagics |
| Atlantic salmon and Danube salmon, frozen | Salmons, trouts, smelts | 679 | 605 | 1,174 | 819 | 0.3% | Salmonids |
| Freshwater fish nei, frozen | Miscellaneous freshwater fishes | 252 | 899 | 950 | 700 | 0.3% | Freshwater fish |
| Trouts and chars, fresh or chilled | Salmons, trouts, smelts | 2,290 | 784 | 938 | 1,337 | 0.5% | Salmonids |

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Average 2020-2022 imports (t) | % of total | Commodity group |
|---|---|---|---|---|---|---|---|
| Fish minced nei, not in airtight containers prepared or preserved | Marine fishes not identified | 766 | 768 | 848 | 794 | 0.3% | Misc marine fish |
| Flatfish nei, frozen | Flounders, halibuts, soles | 421 | 333 | 761 | 505 | 0.2% | Misc marine fish |
| Cold-water shrimps and prawns (Pandalus spp., Crangon crangon), frozen, even smoked, whether in shell or not | Shrimps, prawns | 627 | 935 | 648 | 737 | 0.3% | Shrimp |
| Shrimps and prawns (Penaeus spp.), frozen | Shrimps, prawns | 576 | 1,262 | 610 | 816 | 0.3% | Shrimp |
| Tunas (of the genus Thunnus), skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), fillets, frozen | Tunas, bonitos, billfishes | 413 | 874 | 600 | 629 | 0.2% | Tuna |
| Crustaceans nei, even smoked, frozen | Miscellaneous marine crustaceans | 330 | 286 | 595 | 404 | 0.1% | Misc crustaceans |
| Salmon fillets, frozen | Salmons, trouts, smelts | 267 | 365 | 591 | 408 | 0.1% | Salmonids |
| Trouts and chars, frozen | Salmons, trouts, smelts | 287 | 208 | 570 | 355 | 0.1% | Salmonids |
| Fish nei, prepared or preserved, not minced | Marine fishes not identified | 234 | 405 | 534 | 391 | 0.1% | Misc marine fish |
| Dogfish and other sharks nei (excl. Squalus acanthias, Scyliorhinus spp., Lamna nasus, Prionace glauca), frozen | Sharks, rays, chimaeras | 121 | 329 | 528 | 326 | 0.1% | Sharks, rays |
| Albacore (=Longfin tuna), frozen, nei | Tunas, bonitos, billfishes | 14 | 22 | 513 | 183 | 0.1% | Tuna |
| Clams, cockles, arkshells, frozen | Clams, cockles, arkshells | 1,085 | 878 | 451 | 805 | 0.3% | Other molluscs |
| Fish liver oils, nei | Marine fishes not identified | 406 | 412 | 448 | 422 | 0.2% | Meals and oils |
| Scallops and other molluscs of the family Pectinidae, frozen | Scallops, pectens | 106 | 418 | 404 | 309 | 0.1% | Other molluscs |
| Swordfish, frozen | Tunas, bonitos, billfishes | 1,143 | 1,367 | 397 | 969 | 0.3% | Other large pelagics |
| Pilchards (Sardinops spp.), prep. or pres., not minced, nei | Herrings, sardines, anchovies | 187 | 461 | 313 | 320 | 0.1% | Small pelagics |
| Hairtails, frozen | Miscellaneous demersal fishes | 222 | 900 | 211 | 445 | 0.2% | Misc marine fish |
| Ornamental freshwater fish | Miscellaneous freshwater fishes | 185 | 249 | 197 | 210 | 0.1% | Freshwater fish |
| Fish fillets, frozen, nei | Marine fishes not identified | 106 | 434 | 169 | 236 | 0.1% | Misc marine fish |
| Fish fillets, fresh or chilled, nei | Marine fishes not identified | 0 | 0 | 158 | 53 | 0.0% | Misc marine fish |
| Crab meat nei, prepared or preserved | Crabs, sea-spiders | 198 | 320 | 133 | 217 | 0.1% | Crab |
| Octopus, frozen | Squids, cuttlefishes, octopuses | 56 | 84 | 133 | 91 | 0.0% | Octopus |
| Sea-cucumber, prepared or preserved | Sea-urchins and other echinoderms | 0 | 41 | 133 | 58 | 0.0% | Other products |
| Shrimps and prawns, prep. or pres., not in airtight containers | Shrimps, prawns | 87 | 39 | 130 | 85 | 0.0% | Shrimp |
| Tunas prepared or preserved, not minced, in airtight containers | Tunas, bonitos, billfishes | 154 | 127 | 129 | 137 | 0.0% | Tuna |
| Sea-cucumber, dried, salted or in brine, smoked | Sea-urchins and other echinoderms | 2 | 15 | 116 | 44 | 0.0% | Other products |
| Tunas nei, frozen | Tunas, bonitos, billfishes | 50 | 53 | 101 | 68 | 0.0% | Tuna |
| Anchovies nei, dried, whether or not salted, but not smoked | Herrings, sardines, anchovies | 115 | 128 | 95 | 113 | 0.0% | Small pelagics |

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Average 2020-2022 imports (t) | % of total | Commodity group |
|---|---|---|---|---|---|---|---|
| Shark fins, frozen | Sharks, rays, chimaeras | 122 | 98 | 92 | 104 | 0.0% | Sharks, rays |
| Shrimps, prawns live, for breeding and other purposes | Shrimps, prawns | 102 | 76 | 89 | 89 | 0.0% | Shrimp |
| Other | NA | 1,409 | 1,801 | 1,203 | 1,471 | 0.5% | Other |
| **Total** | | **252,601** | **245,292** | **334,232** | **277,375** | **100%** | |

**Notes:** (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

**App Table 9 | Indonesia's total reported seafood imports in thousand USD by commodity, between 2020 and 2022 (and annual 2020-22 average).**

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Average 2020-2022 imports (t) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Crabs nei, frozen | Crabs, sea-spiders | 51,182 | 66,914 | 109,935 | 76,011 | 15.4% | Crab |
| Fishmeals, nei | Marine fishes not identified | 48,041 | 44,924 | 52,917 | 48,627 | 9.8% | Meals and oils |
| Chub mackerel, frozen | Miscellaneous pelagic fishes | 17,993 | 35,972 | 74,557 | 42,841 | 8.7% | Small pelagics |
| Skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), frozen | Tunas, bonitos, billfishes | 34,895 | 28,109 | 38,053 | 33,686 | 6.8% | Tuna |
| Cods nei, frozen | Cods, hakes, haddocks | 10,559 | 20,003 | 60,544 | 30,369 | 6.1% | Misc marine fish |
| Atlantic and Danube salmons, fresh or chilled | Salmons, trouts, smelts | 7,304 | 27,441 | 39,083 | 24,609 | 5.0% | Salmonids |
| Mackerels nei, frozen | Miscellaneous pelagic fishes | 13,155 | 22,195 | 27,909 | 21,086 | 4.3% | Small pelagics |
| Shrimp meal | Shrimps, prawns | 33,682 | 17,053 | 8,516 | 19,750 | 4.0% | Meals and oils |
| Shrimps and prawns, other than coldwater, even smoked, frozen | Shrimps, prawns | 12,729 | 24,336 | 19,429 | 18,831 | 3.8% | Shrimp |
| Fish body oils, nei | Marine fishes not identified | 15,408 | 14,866 | 15,127 | 15,134 | 3.1% | Meals and oils |
| Cuttlefish and squid, frozen, nei | Squids, cuttlefishes, octopuses | 5,773 | 15,216 | 15,341 | 12,110 | 2.5% | Squid / cuttlefish |
| Trouts and chars, fresh or chilled | Salmons, trouts, smelts | 17,895 | 8,149 | 9,791 | 11,945 | 2.4% | Salmonids |
| Yellowfin tuna, frozen, nei | Tunas, bonitos, billfishes | 17,126 | 6,723 | 7,832 | 10,560 | 2.1% | Tuna |
| Sardines, sardinellas, brisling or sprats, frozen | Herrings, sardines, anchovies | 13,012 | 4,116 | 12,951 | 10,026 | 2.0% | Small pelagics |
| Mackerel prepared or preserved, not minced, nei | Miscellaneous pelagic fishes | 4,535 | 7,756 | 10,629 | 7,640 | 1.5% | Small pelagics |
| Fish minced nei, in airtight containers prepared or preserved | Marine fishes not identified | 6,228 | 7,712 | 8,081 | 7,340 | 1.5% | Misc marine fish |
| Shrimps and prawns (Penaeus spp.), frozen | Shrimps, prawns | 4,714 | 8,404 | 5,818 | 6,312 | 1.3% | Shrimp |
| Atlantic salmon and Danube salmon, frozen | Salmons, trouts, smelts | 3,464 | 3,994 | 9,647 | 5,702 | 1.2% | Salmonids |
| Pacific salmons, frozen, nei | Salmons, trouts, smelts | 3,293 | 3,886 | 9,252 | 5,477 | 1.1% | Salmonids |
| Shrimps, prawns live, for breeding and other purposes | Shrimps, prawns | 4,729 | 5,211 | 6,132 | 5,357 | 1.1% | Shrimp |
| Crab meat nei, prepared or preserved | Crabs, sea-spiders | 3,276 | 8,157 | 4,629 | 5,354 | 1.1% | Crab |
| Fish meat, whether or not minced, frozen, nei | Marine fishes not identified | 2,024 | 4,129 | 6,982 | 4,378 | 0.9% | Misc marine fish |
| Haddock, frozen | Cods, hakes, haddocks | 0 | 1,740 | 10,926 | 4,222 | 0.9% | Misc marine fish |
| Swordfish, frozen | Tunas, bonitos, billfishes | 6,095 | 4,510 | 1,698 | 4,101 | 0.8% | Other large pelagics |
| Marine fish, frozen, nei | Marine fishes not identified | 2,413 | 5,251 | 3,565 | 3,743 | 0.8% | Misc marine fish |
| Balls, cakes, sausages, etc.prepared from minced fish | Marine fishes not identified | 2,684 | 3,586 | 4,758 | 3,676 | 0.7% | Other products |
| Fish minced nei, not in airtight containers prepared or preserved | Marine fishes not identified | 2,741 | 3,680 | 4,499 | 3,640 | 0.7% | Misc marine fish |
| Ornamental freshwater fish | Miscellaneous freshwater fishes | 2,844 | 3,941 | 2,373 | 3,053 | 0.6% | Freshwater fish |
| Tunas (of the genus Thunnus), skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), fillets, frozen | Tunas, bonitos, billfishes | 1,515 | 3,186 | 4,036 | 2,912 | 0.6% | Tuna |
| Salmon fillets, frozen | Salmons, trouts, smelts | 1,416 | 2,158 | 4,595 | 2,723 | 0.6% | Salmonids |

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Average 2020-2022 imports (t) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Trouts and chars, frozen | Salmons, trouts, smelts | 1,512 | 1,372 | 4,927 | 2,603 | 0.5% | Salmonids |
| Cold-water shrimps and prawns (Pandalus spp., Crangon crangon), frozen, even smoked, whether in shell or not | Shrimps, prawns | 2,427 | 3,112 | 2,171 | 2,570 | 0.5% | Shrimp |
| Fish, sauce | Marine fishes not identified | 1,899 | 2,491 | 2,691 | 2,360 | 0.5% | Fish/bivalve sauce |
| Alaska pollock, frozen | Cods, hakes, haddocks | 109 | 595 | 6,238 | 2,314 | 0.5% | Misc marine fish |
| Bigeye tuna, frozen, nei | Tunas, bonitos, billfishes | 2,285 | 1,134 | 3,023 | 2,147 | 0.4% | Tuna |
| Clams, cockles, arkshells, frozen | Clams, cockles, arkshells | 2,648 | 1,939 | 1,035 | 1,874 | 0.4% | Other molluscs |
| Flatfish nei, fillets, frozen | Flounders, halibuts, soles | 47 | 1,775 | 2,808 | 1,543 | 0.3% | Misc marine fish |
| Jack and horse mackerel, frozen | Miscellaneous pelagic fishes | 154 | 367 | 3,856 | 1,459 | 0.3% | Small pelagics |
| Livers, roes, milt, frozen | Marine fishes not identified | 1,528 | 2,118 | 200 | 1,282 | 0.3% | Other products |
| Freshwater fish nei, frozen | Miscellaneous freshwater fishes | 489 | 1,762 | 1,450 | 1,234 | 0.2% | Freshwater fish |
| Anchovies, Indian mackerels, seerfishes, jacks, crevalles, silver pomfrets, Pacif. saury, scads, capelin, Kawakawa, bonitos, marlins, sailfishes, spearfish, frozen | Miscellaneous pelagic fishes | 831 | 519 | 1,935 | 1,095 | 0.2% | Small pelagics |
| Shark fins, frozen | Sharks, rays, chimaeras | 987 | 875 | 1,001 | 954 | 0.2% | Sharks, rays |
| Pilchards (Sardinops spp.), prep. or pres., not minced, nei | Herrings, sardines, anchovies | 763 | 1,338 | 756 | 953 | 0.2% | Small pelagics |
| Flatfish nei, frozen | Flounders, halibuts, soles | 704 | 546 | 1,464 | 905 | 0.2% | Misc marine fish |
| Fish fillets, frozen, nei | Marine fishes not identified | 586 | 1,024 | 978 | 863 | 0.2% | Misc marine fish |
| Crab meat, in airtight containers, prep.or pres. | Crabs, sea-spiders | 873 | 1,702 | 0 | 858 | 0.2% | Crab |
| Shrimps and prawns, prep. or pres., not in airtight containers | Shrimps, prawns | 1,056 | 173 | 1,328 | 852 | 0.2% | Shrimp |
| River eels, prepared or preserved, not minced, nei | River eels | 410 | 822 | 1,210 | 814 | 0.2% | Other products |
| Tunas prepared or preserved, not minced, in airtight containers | Tunas, bonitos, billfishes | 882 | 693 | 846 | 807 | 0.2% | Tuna |
| Hairtails, frozen | Miscellaneous demersal fishes | 446 | 1,534 | 441 | 807 | 0.2% | Misc marine fish |
| Fish nei, prepared or preserved, not minced | Marine fishes not identified | 434 | 801 | 1,066 | 767 | 0.2% | Misc marine fish |
| Fish liver oils, nei | Marine fishes not identified | 715 | 758 | 818 | 763 | 0.2% | Meals and oils |
| Crustaceans nei, even smoked, frozen | Miscellaneous marine crustaceans | 644 | 539 | 991 | 724 | 0.1% | Misc crustaceans |
| Scallops and other molluscs of the family Pectinidae, frozen | Scallops, pectens | 278 | 576 | 1,017 | 624 | 0.1% | Other molluscs |
| Other | | 8,315 | 8,981 | 17,584 | 11,627 | 2.4% | Other |
| **Grand Total** | | **381,748** | **450,863** | **649,438** | **494,016** | | |

**Notes:** (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

**App Table 10 | 2022 marine catches (t) in the Philippines by species, reporting level (species, genus, order or above), and species group.**

| ASFIS common name | ASFIS scientific name | ISSCAAP group name | Reporting level | 2022 catches (t) | % of total | Group |
|---|---|---|---|---|---|---|
| Bali sardinella | Sardinella lemuru | Herrings, sardines, anchovies | Species | 280,509 | 18% | Small pelagics |
| Scads nei | Decapterus spp | Miscellaneous pelagic fishes | Genus | 176,598 | 11% | Small pelagics |
| Bigeye scad | Selar crumenophthalmus | Miscellaneous pelagic fishes | Species | 112,744 | 7% | Small pelagics |
| Frigate and bullet tunas | Auxis thazard, A. rochei | Tunas, bonitos, billfishes | Genus | 84,013 | 5% | Tuna |
| Skipjack tuna | Katsuwonus pelamis | Tunas, bonitos, billfishes | Species | 82,331 | 5% | Tuna |
| Yellowfin tuna | Thunnus albacares | Tunas, bonitos, billfishes | Species | 62,398 | 4% | Tuna |
| Common squids nei | Loligo spp | Squids, cuttlefishes, octopuses | Genus | 57,303 | 4% | Cephalopods |
| Sardinellas nei | Sardinella spp | Herrings, sardines, anchovies | Genus | 55,611 | 3% | Small pelagics |
| Stolephorus anchovies nei | Stolephorus spp | Herrings, sardines, anchovies | Genus | 52,994 | 3% | Small pelagics |
| Carangids nei | Carangidae | Miscellaneous pelagic fishes | Family | 45,852 | 3% | Small pelagics |
| Indian mackerel | Rastrelliger kanagurta | Miscellaneous pelagic fishes | Species | 41,747 | 3% | Other large pelagics |
| Threadfin breams nei | Nemipterus spp | Miscellaneous coastal fishes | Genus | 33,973 | 2% | Misc coastal fish |
| Ponyfishes(=Slipmouths) nei | Leiognathidae | Miscellaneous coastal fishes | Family | 33,920 | 2% | Misc coastal fish |
| Kawakawa | Euthynnus affinis | Tunas, bonitos, billfishes | Species | 30,669 | 2% | Tuna |
| Blue swimming crab | Portunus pelagicus | Crabs, sea-spiders | Species | 24,177 | 2% | Crab |
| Short mackerel | Rastrelliger brachysoma | Miscellaneous pelagic fishes | Species | 19,552 | 1% | Small pelagics |
| Spinefeet(=Rabbitfishes) nei | Siganus spp | Miscellaneous coastal fishes | Genus | 18,704 | 1% | Misc coastal fish |
| Goatfishes, red mullets nei | Mullidae | Miscellaneous coastal fishes | Family | 18,221 | 1% | Misc coastal fish |
| Penaeus shrimps nei | Penaeus spp | Shrimps, prawns | Genus | 17,947 | 1% | Shrimp |
| Fusiliers nei | Caesionidae | Miscellaneous coastal fishes | Family | 17,816 | 1% | Misc coastal fish |
| Groupers, seabasses nei | Serranidae | Miscellaneous coastal fishes | Family | 17,628 | 1% | Misc coastal fish |
| Marine fishes nei | Actinopterygii | Marine fishes not identified | Order or above | 16,743 | 1% | Other |
| Percoids nei | Percoidei | Miscellaneous coastal fishes | Order or above | 16,389 | 1% | Misc coastal fish |
| Sergestid shrimps nei | Sergestidae | Shrimps, prawns | Family | 15,377 | 1% | Shrimp |
| Torpedo scad | Megalaspis cordyla | Miscellaneous pelagic fishes | Species | 15,175 | 1% | Small pelagics |
| Flyingfishes nei | Exocoetidae | Miscellaneous pelagic fishes | Family | 15,163 | 1% | Small pelagics |
| Narrow-barred Spanish mackerel | Scomberomorus commerson | Tunas, bonitos, billfishes | Species | 14,325 | 1% | Other large pelagics |
| Needlefishes nei | Tylosurus spp | Miscellaneous pelagic fishes | Genus | 13,649 | 1% | Small pelagics |
| Sillago-whitings | Sillaginidae | Miscellaneous coastal fishes | Family | 13,471 | 1% | Misc coastal fish |
| Snappers, jobfishes nei | Lutjanidae | Miscellaneous coastal fishes | Family | 13,006 | 1% | Misc coastal fish |
| Hairtails, scabbardfishes nei | Trichiuridae | Miscellaneous demersal fishes | Family | 12,720 | 1% | Other |
| Wrasses, hogfishes, etc. nei | Labridae | Miscellaneous coastal fishes | Family | 12,117 | 1% | Misc coastal fish |
| Gobies nei | Gobiidae | Miscellaneous coastal fishes | Family | 12,105 | 1% | Misc coastal fish |
| Mullets nei | Mugilidae | Miscellaneous coastal fishes | Family | 11,375 | 1% | Misc coastal fish |
| Porgies, seabreams nei | Sparidae | Miscellaneous coastal fishes | Family | 11,144 | 1% | Misc coastal fish |
| Metapenaeus shrimps nei | Metapenaeus spp | Shrimps, prawns | Genus | 10,238 | 1% | Shrimp |
| Moonfish | Mene maculata | Miscellaneous coastal fishes | Species | 9,784 | 1% | Misc coastal fish |
| Barracudas nei | Sphyraena spp | Miscellaneous pelagic fishes | Genus | 8,612 | 1% | Small pelagics |
| Sea catfishes nei | Ariidae | Miscellaneous coastal fishes | Family | 6,454 | 0% | Misc coastal fish |
| Octopuses, etc. nei | Octopodidae | Squids, cuttlefishes, octopuses | Family | 5,801 | 0% | Cephalopods |
| Rainbow sardine | Dussumieria acuta | Herrings, sardines, anchovies | Species | 5,736 | 0% | Small pelagics |
| Mojarras(=Silver-biddies) nei | Gerres spp | Miscellaneous coastal fishes | Genus | 5,533 | 0% | Misc coastal fish |

| ASFIS common name | ASFIS scientific name | ISSCAAP group name | Reporting level | 2022 catches (t) | % of total | Group |
|---|---|---|---|---|---|---|
| Queenfishes | Scomberoides spp | Miscellaneous pelagic fishes | Genus | 5,161 | 0% | Small pelagics |
| Surgeonfishes nei | Acanthuridae | Miscellaneous coastal fishes | Family | 4,330 | 0% | Misc coastal fish |
| Lizardfishes nei | Synodontidae | Miscellaneous coastal fishes | Family | 4,327 | 0% | Misc coastal fish |
| Rainbow runner | Elagatis bipinnulata | Miscellaneous pelagic fishes | Species | 4,088 | 0% | Small pelagics |
| Threadfins, tasselfishes nei | Polynemidae | Miscellaneous coastal fishes | Family | 3,699 | 0% | Misc coastal fish |
| Sharks, rays, skates, etc. nei | Elasmobranchii | Sharks, rays, chimaeras | Order or above | 3,621 | 0% | Other |
| Batfishes | Platax spp | Miscellaneous coastal fishes | Genus | 3,170 | 0% | Misc coastal fish |
| Rays, stingrays, mantas nei | Rajiformes | Sharks, rays, chimaeras | Order or above | 3,152 | 0% | Other |
| Conger eels, etc. nei | Congridae | Miscellaneous demersal fishes | Family | 2,728 | 0% | Other |
| Bigeye tuna | Thunnus obesus | Tunas, bonitos, billfishes | Species | 2,586 | 0% | Tuna |
| Halfbeaks nei | Hemiramphidae | Miscellaneous pelagic fishes | Family | 2,516 | 0% | Small pelagics |
| Scats | Scatophagus spp | Miscellaneous coastal fishes | Genus | 2,436 | 0% | Misc coastal fish |
| Glassfishes | Ambassidae | Miscellaneous coastal fishes | Family | 1,843 | 0% | Misc coastal fish |
| Cuttlefish, bobtail squids nei | Sepiidae, Sepiolidae | Squids, cuttlefishes, octopuses | Order or above | 1,829 | 0% | Cephalopods |
| Sea cucumbers nei | Holothuroidea | Sea-urchins and other echinoderms | Order or above | 1,639 | 0% | Other |
| Indo-Pacific swamp crab | Scylla serrata | Crabs, sea-spiders | Species | 1,483 | 0% | Crab |
| Chacunda gizzard shad | Anodontostoma chacunda | Shads | Species | 1,309 | 0% | Other |
| Pacific chub mackerel | Scomber japonicus | Miscellaneous pelagic fishes | Species | 1,294 | 0% | Small pelagics |
| Cobia | Rachycentron canadum | Miscellaneous pelagic fishes | Species | 1,198 | 0% | Other large pelagics |
| Squillids nei | Squillidae | Miscellaneous marine crustaceans | Family | 1,138 | 0% | Other |
| Butterfishes, pomfrets nei | Stromateidae | Miscellaneous pelagic fishes | Family | 1,134 | 0% | Small pelagics |
| Indo-Pacific tarpon | Megalops cyprinoides | Miscellaneous coastal fishes | Species | 1,054 | 0% | Misc coastal fish |
| Indian pellona | Pellona ditchela | Shads | Species | 1,041 | 0% | Other |
| Giant tiger prawn | Penaeus monodon | Shrimps, prawns | Species | 974 | 0% | Shrimp |
| Blue marlin | Makaira nigricans | Tunas, bonitos, billfishes | Species | 935 | 0% | Other large pelagics |
| Silversides(=Sand smelts) nei | Atherinidae | Miscellaneous pelagic fishes | Family | 765 | 0% | Small pelagics |
| Barramundi(=Giant seaperch) | Lates calcarifer | Miscellaneous diadromous fishes | Species | 703 | 0% | Other |
| Clupeoids nei | Clupeoidei | Herrings, sardines, anchovies | Order or above | 665 | 0% | Small pelagics |
| Flatfishes nei | Pleuronectiformes | Flounders, halibuts, soles | Order or above | 655 | 0% | Other |
| Endeavour shrimp | Metapenaeus endeavouri | Shrimps, prawns | Species | 463 | 0% | Shrimp |
| Wolf-herrings nei | Chirocentrus spp | Herrings, sardines, anchovies | Genus | 444 | 0% | Small pelagics |
| Milkfish | Chanos chanos | Miscellaneous diadromous fishes | Species | 372 | 0% | Other |
| Black marlin | Istiompax indica | Tunas, bonitos, billfishes | Species | 310 | 0% | Other large pelagics |
| Clams, etc. nei | Bivalvia | Clams, cockles, arkshells | Order or above | 301 | 0% | Other |
| Other | | | | 1,662 | 0% | Other |
| **Grand Total** | | | | **1,594,645** | | |

**Notes:** (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

**App Table 11 | Estimated reported and unreported 2019 catches (thousand tonnes) for the Philippines, by fishing sector and gear type. Source: Sea Around Us.**

| Fishing sector | Gear type | Reported | Unreported | Grand Total | % Unreported |
|---|---|---|---|---|---|
| **Industrial** | purse seine | 575.7 | 284.2 | 860.0 | 33% |
| | bottom trawl | 34.2 | 128.0 | 162.1 | 79% |
| | unknown class | 50.8 | 0.0 | 50.8 | 0% |
| | lines | 13.8 | 15.9 | 29.7 | 54% |
| | hand lines | 29.3 | 0.0 | 29.3 | 0% |
| | other nets | 24.1 | 0.2 | 24.4 | 1% |
| | artisanal fishing gear | 12.1 | 0.2 | 12.3 | 1% |
| | gillnet | 5.3 | 4.4 | 9.6 | 45% |
| | other | 6.5 | 0.1 | 6.5 | 1% |
| **Artisanal** | small scale gillnets | 164.4 | 84.7 | 249.1 | 34% |
| | small scale lines | 99.4 | 51.2 | 150.6 | 34% |
| | small scale pots or traps | 97.8 | 50.4 | 148.2 | 34% |
| | bagnets | 96.6 | 49.8 | 146.4 | 34% |
| | small scale encircling nets | 47.6 | 24.5 | 72.1 | 34% |
| | cast nets | 27.1 | 14.0 | 41.1 | 34% |
| | small scale other nets | 24.3 | 13.7 | 38.0 | 36% |
| | small scale seine nets | 17.3 | 8.9 | 26.3 | 34% |
| | hand or tools | 3.6 | 1.8 | 5.4 | 34% |
| | artisanal fishing gear | 1.7 | 0.8 | 2.5 | 33% |
| | subsistence gear | 0.0 | 255.7 | 255.7 | 100% |
| | recreational gear | 0.0 | 0.1 | 0.1 | 100% |
| **Grand Total** | | **1,331.7** | **988.6** | **2,320.3** | |

**App Table 12 | Philippines total reported seafood exports in tonnes (t) by commodity, between 2020 and 2022 (and annual 2020-22 average).**

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (t) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Tunas prepared or preserved, not minced, in airtight containers | Tunas, bonitos, billfishes | 88,211 | 79,070 | 58,644 | 75,308 | 34% | Tuna |
| Fish live, nei | Marine fishes not identified | 0 | 27,200 | 38,979 | 22,060 | 10% | Misc marine fish |
| Yellowfin tuna, frozen, nei | Tunas, bonitos, billfishes | 40,442 | 6,893 | 9,784 | 19,039 | 9% | Tuna |
| Fishmeals, nei | Marine fishes not identified | 8,907 | 9,668 | 6,304 | 8,293 | 4% | Fishmeal / fish oil |
| Tunas, skipjack tuna and bonito (Sarda spp.), prepared or preserved | Tunas, bonitos, billfishes | 425 | 3,924 | 19,862 | 8,070 | 4% | Tuna |
| Sardines, sardinellas, brisling or sprats, prep. or pres., not minced, nei | Herrings, sardines, anchovies | 9,253 | 7,762 | 6,279 | 7,765 | 4% | Small pelagics |
| Ornamental saltwater fish | Marine fishes not identified | 3,789 | 7,079 | 7,904 | 6,257 | 3% | Misc marine fish |
| Octopus, frozen | Squids, cuttlefishes, octopuses | 3,593 | 5,731 | 7,003 | 5,442 | 2% | Octopus |
| Carps live | Carps, barbels and other cyprinids | 0 | 14,126 | 1,973 | 5,366 | 2% | Freshwater fish |
| Marine fish, frozen, nei | Marine fishes not identified | 1,720 | 7,145 | 6,809 | 5,225 | 2% | Misc marine fish |
| Fish meat, whether or not minced, frozen, nei | Marine fishes not identified | 5,614 | 3,420 | 5,172 | 4,735 | 2% | Misc marine fish |
| Crabs, peeled or not, live, fresh or chilled, nei | Crabs, sea-spiders | 7 | 5,257 | 5,980 | 3,748 | 2% | Crab |
| Freshwater fish nei, live | Miscellaneous freshwater fishes | 9,094 | 0 | 0 | 3,031 | 1% | Freshwater fish |
| Cuttlefish and squid, frozen, nei | Squids, cuttlefishes, octopuses | 0 | 4,473 | 4,598 | 3,024 | 1% | Squid / cuttlefish |
| Crab meat, in airtight containers, prep.or pres. | Crabs, sea-spiders | 2,070 | 4,033 | 2,075 | 2,726 | 1% | Crab |
| Marine fish nei, smoked | Marine fishes not identified | 3,414 | 1,752 | 2,925 | 2,697 | 1% | Misc marine fish |
| Salmonoids, frozen | Salmons, trouts, smelts | 5,810 | 1,787 | 0 | 2,532 | 1% | Salmonids |
| Clams, cockles, arkshells, live, fresh or chilled | Clams, cockles, arkshells | 2,476 | 2,484 | 2,546 | 2,502 | 1% | Other molluscs |
| Shrimps and prawns, other than coldwater, even smoked, frozen | Shrimps, prawns | 1,395 | 3,070 | 2,703 | 2,389 | 1% | Shrimp |
| Yellowfin tuna, fresh or chilled | Tunas, bonitos, billfishes | 1,646 | 2,579 | 2,474 | 2,233 | 1% | Tuna |
| Marine fish, fresh or chilled, nei | Marine fishes not identified | 2,524 | 2,423 | 1,412 | 2,120 | 1% | Misc marine fish |
| Mackerel prepared or preserved, not minced, nei | Miscellaneous pelagic fishes | 1,259 | 1,855 | 2,617 | 1,910 | 1% | Small pelagics |
| Fish, sauce | Marine fishes not identified | 1,596 | 2,057 | 1,784 | 1,812 | 1% | Fish/bivalve sauce |
| Fish body oils, nei | Marine fishes not identified | 1,570 | 2,027 | 1,824 | 1,807 | 1% | Fishmeal / fish oil |
| Saltwater fish nei, live | Marine fishes not identified | 5,252 | 0 | 0 | 1,751 | 1% | Misc marine fish |
| Cephalopods nei, frozen | Squids, cuttlefishes, octopuses | 3,878 | 0 | 0 | 1,293 | 1% | Other molluscs |
| Tunas (of the genus Thunnus), skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), fillets, frozen | Tunas, bonitos, billfishes | 658 | 565 | 2,506 | 1,243 | 1% | Tuna |

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (t) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Scallops and other molluscs of the family Pectinidae, frozen | Scallops, pectens | 921 | 1,406 | 1,121 | 1,149 | 1% | Other molluscs |
| Crabs, live | Crabs, sea-spiders | 3,142 | 0 | 0 | 1,047 | 0% | Crab |
| Octopus, prepared or preserved | Squids, cuttlefishes, octopuses | 765 | 1,004 | 1,007 | 925 | 0% | Octopus |
| Fish liver oils, nei | Marine fishes not identified | 2,085 | 574 | 1 | 886 | 0% | Fishmeal / fish oil |
| Fish, fresh or chilled, nei | Marine fishes not identified | 4 | 795 | 1,855 | 884 | 0% | Misc marine fish |
| Other | NA | 8,681 | 10,079 | 10,085 | 9,615 | 4% | Other |
| **Grand Total** | | **220,202** | **220,238** | **216,224** | **218,888** | **100%** | |

**Notes:** (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

**App Table 13 | Philippines total reported seafood exports in thousand USD by commodity, between 2020 and 2022 (and annual 2020-22 average).**

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (000 USD) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Tunas prepared or preserved, not minced, in airtight containers | Tunas, bonitos, billfishes | 342,791 | 326,612 | 250,901 | 306,768 | 35.5% | Tuna |
| Crab meat, in airtight containers, prep.or pres. | Crabs, sea-spiders | 44,369 | 138,295 | 61,737 | 81,467 | 9.4% | Crab |
| Yellowfin tuna, frozen, nei | Tunas, bonitos, billfishes | 116,401 | 20,247 | 27,636 | 54,761 | 6.3% | Tuna |
| Fish live, nei | Marine fishes not identified | 0 | 60,709 | 77,454 | 46,054 | 5.3% | Misc marine fish |
| Tunas, skipjack tuna and bonito (Sarda spp.), prepared or preserved | Tunas, bonitos, billfishes | 1,941 | 18,448 | 89,036 | 36,475 | 4.2% | Tuna |
| Fish meat, whether or not minced, frozen, nei | Marine fishes not identified | 30,319 | 31,306 | 43,260 | 34,961 | 4.0% | Misc marine fish |
| Octopus, frozen | Squids, cuttlefishes, octopuses | 13,835 | 26,697 | 40,534 | 27,022 | 3.1% | Octopus |
| Marine fish, frozen, nei | Marine fishes not identified | 3,986 | 26,661 | 27,037 | 19,228 | 2.2% | Misc marine fish |
| Crabs, peeled or not, live, fresh or chilled, nei | Crabs, sea-spiders | 10 | 24,427 | 26,087 | 16,841 | 1.9% | Crab |
| Shrimps and prawns, other than coldwater, even smoked, frozen | Shrimps, prawns | 8,351 | 22,460 | 18,801 | 16,537 | 1.9% | Shrimp |
| Sardines, sardinellas, brisling or sprats, prep. or pres., not minced, nei | Herrings, sardines, anchovies | 18,811 | 16,571 | 13,859 | 16,414 | 1.9% | Small pelagics |
| Carps live | Carps, barbels and other cyprinids | 0 | 34,829 | 5,121 | 13,316 | 1.5% | Freshwater fish |
| Salmonoids, frozen | Salmons, trouts, smelts | 29,053 | 9,868 | 0 | 12,973 | 1.5% | Salmonids |
| Cuttlefish and squid, frozen, nei | Squids, cuttlefishes, octopuses | 0 | 19,383 | 18,594 | 12,659 | 1.5% | Squid / cuttlefish |
| Tunas (of the genus Thunnus), skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), fillets, frozen | Tunas, bonitos, billfishes | 8,126 | 8,381 | 20,308 | 12,272 | 1.4% | Tuna |
| Yellowfin tuna, fresh or chilled | Tunas, bonitos, billfishes | 7,543 | 11,670 | 12,146 | 10,453 | 1.2% | Tuna |
| Marine fish nei, smoked | Marine fishes not identified | 11,235 | 5,971 | 11,011 | 9,406 | 1.1% | Misc marine fish |
| Fishmeals, nei | Marine fishes not identified | 8,916 | 9,912 | 9,028 | 9,285 | 1.1% | Fishmeal / fish oil |
| Freshwater fish nei, live | Miscellaneous freshwater fishes | 24,516 | 0 | 0 | 8,172 | 0.9% | Freshwater fish |
| Octopus, prepared or preserved | Squids, cuttlefishes, octopuses | 6,098 | 8,176 | 8,997 | 7,757 | 0.9% | Octopus |
| Sea-cucumber, dried, salted or in brine, smoked | Sea-urchins and other echinoderms | 5,669 | 7,298 | 9,382 | 7,450 | 0.9% | Other products |
| Marine fish, fresh or chilled, nei | Marine fishes not identified | 9,759 | 8,341 | 3,153 | 7,084 | 0.8% | Misc marine fish |
| Mackerel prepared or preserved, not minced, nei | Miscellaneous pelagic fishes | 4,037 | 5,831 | 8,163 | 6,010 | 0.7% | Small pelagics |
| Cephalopods nei, frozen | Squids, cuttlefishes, octopuses | 17,221 | 0 | 0 | 5,740 | 0.7% | Other molluscs |
| Scallops and other molluscs of the family Pectinidae, frozen | Scallops, pectens | 4,032 | 6,695 | 6,077 | 5,601 | 0.6% | Other molluscs |
| Fish nei, prepared or preserved, not minced | Marine fishes not identified | 2,775 | 4,013 | 8,813 | 5,200 | 0.6% | Misc marine fish |

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (000 USD) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Ornamental saltwater fish | Marine fishes not identified | 3,971 | 5,813 | 5,164 | 4,983 | 0.6% | Misc marine fish |
| Clams, cockles, arkshells, live, fresh or chilled | Clams, cockles, arkshells | 4,971 | 4,900 | 4,519 | 4,797 | 0.6% | Other molluscs |
| Crabs, live | Crabs, sea-spiders | 13,677 | 0 | 0 | 4,559 | 0.5% | Crab |
| Fish body oils, nei | Marine fishes not identified | 2,139 | 5,634 | 5,616 | 4,463 | 0.5% | Fishmeal / fish oil |
| Abalone (Haliotis spp.), frozen | Abalones, winkles, conchs | 5,340 | 2,660 | 4,241 | 4,080 | 0.5% | Misc marine fish |
| Saltwater fish nei, live | Marine fishes not identified | 11,342 | 0 | 0 | 3,781 | 0.4% | Misc marine fish |
| Fish, fresh or chilled, nei | Marine fishes not identified | 32 | 2,312 | 8,083 | 3,476 | 0.4% | Misc marine fish |
| Crab meat nei, prepared or preserved | Crabs, sea-spiders | 5,610 | 1,260 | 3,150 | 3,340 | 0.4% | Crab |
| Crustaceans, live, fresh, chilled or boiled in water, nei | Miscellaneous marine crustaceans | 0 | 4,697 | 4,376 | 3,024 | 0.4% | Misc marine fish |
| Fish meat, whether or not minced nei, fresh or chilled | Marine fishes not identified | 2,141 | 4,106 | 2,065 | 2,771 | 0.3% | Misc marine fish |
| Shrimps and prawns (Penaeus spp.), frozen | Shrimps, prawns | 8,282 | 0 | 0 | 2,761 | 0.3% | Shrimp |
| Fish liver oils, nei | Marine fishes not identified | 5,029 | 2,432 | 28 | 2,497 | 0.3% | Fishmeal / fish oil |
| Other | | 23,611 | 32,557 | 31,594 | 29,254 | 3.4% | Other |
| **Grand Total** | | **805,936** | **919,173** | **865,968** | **863,692** | **100%** | |

**Notes:** (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

**App Table 14 | Thailand total reported seafood exports in tonnes (t) by commodity, between 2020 and 2022 (and annual 2020-22 average).**

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (t) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Skipjack prepared or preserved, not minced, nei | Tunas, bonitos, billfishes | 455,929 | 362,995 | 398,647 | 405,857 | 29.1% | Tuna |
| Fishmeals, nei | Marine fishes not identified | 148,482 | 121,319 | 129,464 | 133,088 | 9.5% | Meals and oils |
| Tunas prepared or preserved, not minced, in airtight containers | Tunas, bonitos, billfishes | 102,939 | 82,235 | 85,594 | 90,256 | 6.5% | Tuna |
| Fish, sauce | Marine fishes not identified | 62,242 | 75,359 | 68,968 | 68,856 | 4.9% | Fish/bivalve sauce |
| Pilchards (Sardinops spp.), prep. or pres., not minced, nei | Herrings, sardines, anchovies | 49,426 | 45,327 | 45,216 | 46,657 | 3.3% | Small pelagics |
| Preparations of surimi | Cods, hakes, haddocks | 44,243 | 45,978 | 43,448 | 44,556 | 3.2% | Other products |
| Shrimps and prawns (Penaeus spp.), frozen | Shrimps, prawns | 49,812 | 54,132 | 7,029 | 36,991 | 2.7% | Shrimp |
| Indian mackerels, seerfishes, jacks, crevalles, silver pomfrets, Pacif. saury, scads, capelin, Kawakawa, bonitos, marlins, sailfishes, spearfish, fresh or chilled | Miscellaneous pelagic fishes | 24,080 | 30,312 | 27,261 | 27,218 | 2.0% | Other pelagics |
| Oyster sauce | Oysters | 23,869 | 28,058 | 28,200 | 26,709 | 1.9% | Fish/bivalve sauce |
| Fish minced nei, prepared or preserved | Marine fishes not identified | 25,799 | 23,512 | 22,657 | 23,989 | 1.7% | Misc marine fish |
| Shrimps and prawns, prep. or pres., in airtight containers | Shrimps, prawns | 22,286 | 22,986 | 22,558 | 22,610 | 1.6% | Shrimp |
| Shrimps, breaded, raw and cooked, prep. or pres. | Shrimps, prawns | 19,075 | 22,058 | 23,648 | 21,593 | 1.5% | Shrimp |
| Shrimps and prawns, other than coldwater, even smoked, frozen | Shrimps, prawns | 4,236 | 4,747 | 55,017 | 21,333 | 1.5% | Shrimp |
| Mackerel prepared or preserved, not minced, nei | Miscellaneous pelagic fishes | 22,453 | 19,198 | 21,210 | 20,954 | 1.5% | Small pelagics |
| Shrimps and prawns, prep. or pres., not in airtight containers | Shrimps, prawns | 22,565 | 20,556 | 17,079 | 20,067 | 1.4% | Shrimp |
| Marine fish, frozen, nei | Marine fishes not identified | 35,168 | 23,369 | 0 | 19,512 | 1.4% | Misc marine fish |
| Herring,anchovy,sardine,sardinella,brisling/sprat,mackerel,Indian mackerel,seerfish,jack&horse mackerel,jack,crevalle,cobia,silver pomfret,Pacif.saury,scad,capelin,etc,dried,salted or not,not smoked | Miscellaneous pelagic fishes | 23,134 | 17,857 | 16,192 | 19,061 | 1.4% | Small pelagics |
| Shrimps and prawns (Penaeus spp.), live, fresh or chilled | Shrimps, prawns | 23,440 | 17,526 | 14,235 | 18,400 | 1.3% | Shrimp |
| Squid nei, frozen | Squids, cuttlefishes, octopuses | 17,630 | 15,968 | 18,308 | 17,302 | 1.2% | Squid / cuttlefish |
| Tunas prepared or preserved, not minced, not in airtight containers | Tunas, bonitos, billfishes | 23,821 | 25,775 | 0 | 16,532 | 1.2% | Tuna |
| Fish meat, whether or not minced, frozen, nei | Marine fishes not identified | 12,398 | 11,825 | 24,999 | 16,407 | 1.2% | Misc marine fish |
| Fish not minced, prep. or pres., in airtight containers | Marine fishes not identified | 17,817 | 18,311 | 11,672 | 15,933 | 1.1% | Misc marine fish |
| Yellowfin tuna, frozen, nei | Tunas, bonitos, billfishes | 12,637 | 12,795 | 22,255 | 15,896 | 1.1% | Tuna |

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (t) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Sardines, sardinellas, brisling or sprats, prep. or pres., not minced, nei | Herrings, sardines, anchovies | 17,783 | 17,231 | 10,812 | 15,275 | 1.1% | Small pelagics |
| Salmon nei, not minced, prep.or pres, in airtight containers | Salmons, trouts, smelts | 14,794 | 15,203 | 14,969 | 14,989 | 1.1% | Salmonids |
| Marine fish, fresh or chilled, nei | Marine fishes not identified | 14,102 | 14,832 | 10,805 | 13,246 | 0.9% | Misc marine fish |
| Fish minced (=surimi), frozen | Marine fishes not identified | 18,153 | 17,767 | 0 | 11,973 | 0.9% | Other products |
| Tunas, skipjack tuna and bonito (Sarda spp.), prepared or preserved | Tunas, bonitos, billfishes | 0 | 0 | 29,848 | 9,949 | 0.7% | Tuna |
| Fish minced nei, in airtight containers prepared or preserved | Marine fishes not identified | 9,548 | 10,374 | 9,632 | 9,851 | 0.7% | Misc marine fish |
| Carps, frozen | Carps, barbels and other cyprinids | 7,203 | 11,093 | 7,622 | 8,639 | 0.6% | Freshwater fish |
| Gadiformes, fresh or chilled, nei | Cods, hakes, haddocks | 7,699 | 9,325 | 7,993 | 8,339 | 0.6% | Misc marine fish |
| Octopus, frozen | Squids, cuttlefishes, octopuses | 8,308 | 7,061 | 8,222 | 7,864 | 0.6% | Octopus |
| Cuttlefish, frozen | Squids, cuttlefishes, octopuses | 9,047 | 6,796 | 6,438 | 7,427 | 0.5% | Squid / cuttlefish |
| Fish body oils, nei | Marine fishes not identified | 5,833 | 6,924 | 7,668 | 6,808 | 0.5% | Meals and oils |
| Fish not minced, prep. or pres., not in airtight containers | Marine fishes not identified | 5,354 | 5,529 | 8,655 | 6,513 | 0.5% | Misc marine fish |
| Cuttlefish and squid, prepared or preserved | Squids, cuttlefishes, octopuses | 6,375 | 6,710 | 6,411 | 6,499 | 0.5% | Squid / cuttlefish |
| Shrimps and prawns, dried, salted or in brine, smoked nei | Shrimps, prawns | 6,418 | 9,695 | 2,680 | 6,265 | 0.4% | Shrimp |
| Jellyfish, dried, salted or in brine, smoked | Miscellaneous aquatic invertebrates | 4,381 | 5,697 | 4,704 | 4,927 | 0.4% | Other products |
| Marine fish fillets, frozen, nei | Marine fishes not identified | 6,099 | 6,384 | 0 | 4,161 | 0.3% | Misc marine fish |
| Tunas, fresh or chilled, nei | Tunas, bonitos, billfishes | 2,377 | 4,465 | 5,299 | 4,047 | 0.3% | Tuna |
| Tunas (of the genus Thunnus), skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), fillets, frozen | Tunas, bonitos, billfishes | 2,697 | 4,042 | 5,328 | 4,022 | 0.3% | Tuna |
| Shrimps and prawns, live, fresh or chilled, nei | Shrimps, prawns | 3,870 | 4,827 | 3,334 | 4,010 | 0.3% | Shrimp |
| Fish, frozen, nei | Marine fishes not identified | 0 | 0 | 11,961 | 3,987 | 0.3% | Misc marine fish |
| Tilapias, fresh or chilled | Tilapias and other cichlids | 3,397 | 4,398 | 3,819 | 3,871 | 0.3% | Freshwater fish |
| Salmon fillets, frozen | Salmons, trouts, smelts | 3,434 | 4,010 | 3,674 | 3,706 | 0.3% | Salmonids |
| Carps, fresh or chilled | Carps, barbels and other cyprinids | 4,365 | 3,203 | 2,573 | 3,380 | 0.2% | Freshwater fish |
| Tilapias, frozen | Tilapias and other cichlids | 2,417 | 3,700 | 3,612 | 3,243 | 0.2% | Freshwater fish |
| Clams, cockles, arkshells, etc., prep. or pres., nei | Clams, cockles, arkshells | 2,547 | 3,198 | 3,536 | 3,094 | 0.2% | Other molluscs |
| Other | NA | 64,915 | 64,850 | 77,155 | 68,974 | 4.9% | Other |
| **Grand Total** | | **1,474,601** | **1,349,510** | **1,360,407** | **1,394,839** | **100.0%** | |

**Notes:** (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

**App Table 15 | Thailand total reported seafood exports in thousand USD by commodity, between 2020 and 2022 (and annual 2020-22 average).**

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 2020-22 exports (000 USD) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Skipjack prepared or preserved, not minced, nei | Tunas, bonitos, billfishes | 1,648,893 | 1,327,490 | 1,634,985 | 1,537,123 | 27.3% | Tuna |
| Tunas prepared or preserved, not minced, in airtight containers | Tunas, bonitos, billfishes | 582,013 | 428,860 | 467,965 | 492,946 | 8.8% | Tuna |
| Shrimps and prawns (Penaeus spp.), frozen | Shrimps, prawns | 511,702 | 561,361 | 71,281 | 381,448 | 6.8% | Shrimp |
| Shrimps and prawns, prep. or pres., in airtight containers | Shrimps, prawns | 277,425 | 302,431 | 321,465 | 300,440 | 5.3% | Shrimp |
| Shrimps and prawns, prep. or pres., not in airtight containers | Shrimps, prawns | 254,572 | 228,829 | 193,622 | 225,674 | 4.0% | Shrimp |
| Shrimps and prawns, other than coldwater, even smoked, frozen | Shrimps, prawns | 40,368 | 47,801 | 576,778 | 221,649 | 3.9% | Shrimp |
| Shrimps, breaded, raw and cooked, prep. or pres. | Shrimps, prawns | 166,128 | 186,589 | 200,990 | 184,569 | 3.3% | Shrimp |
| Preparations of surimi | Cods, hakes, haddocks | 160,961 | 165,848 | 166,694 | 164,501 | 2.9% | Other products |
| Squid nei, frozen | Squids, cuttlefishes, octopuses | 137,635 | 154,955 | 179,041 | 157,211 | 2.8% | Squid / cuttlefish |
| Fishmeals, nei | Marine fishes not identified | 162,009 | 139,194 | 165,394 | 155,532 | 2.8% | Meals and oils |
| Pilchards (Sardinops spp.), prep. or pres., not minced, nei | Herrings, sardines, anchovies | 118,667 | 107,015 | 118,464 | 114,715 | 2.0% | Small pelagics |
| Salmon nei, not minced, prep.or pres, in airtight containers | Salmons, trouts, smelts | 104,729 | 108,444 | 107,496 | 106,890 | 1.9% | Salmonids |
| Tunas prepared or preserved, not minced, not in airtight containers | Tunas, bonitos, billfishes | 125,221 | 129,907 | 0 | 85,043 | 1.5% | Tuna |
| Shrimps and prawns (Penaeus spp.), live, fresh or chilled | Shrimps, prawns | 89,881 | 92,615 | 72,196 | 84,897 | 1.5% | Shrimp |
| Fish minced nei, prepared or preserved | Marine fishes not identified | 83,699 | 79,780 | 77,034 | 80,171 | 1.4% | Misc marine fish |
| Fish, sauce | Marine fishes not identified | 68,507 | 81,036 | 72,374 | 73,973 | 1.3% | Fish/bivalve sauce |
| Mackerel prepared or preserved, not minced, nei | Miscellaneous pelagic fishes | 73,066 | 67,875 | 79,808 | 73,583 | 1.3% | Small pelagics |
| Fish meat, whether or not minced, frozen, nei | Marine fishes not identified | 50,967 | 51,176 | 97,377 | 66,507 | 1.2% | Misc marine fish |
| Shrimps and prawns, dried, salted or in brine, smoked nei | Shrimps, prawns | 65,833 | 97,816 | 35,532 | 66,394 | 1.2% | Shrimp |
| Cuttlefish and squid, prepared or preserved | Squids, cuttlefishes, octopuses | 55,445 | 60,345 | 58,747 | 58,179 | 1.0% | Squid / cuttlefish |
| Tunas, skipjack tuna and bonito (Sarda spp.), prepared or preserved | Tunas, bonitos, billfishes | 0 | 0 | 165,060 | 55,020 | 1.0% | Tuna |
| Octopus, frozen | Squids, cuttlefishes, octopuses | 47,363 | 50,385 | 56,038 | 51,262 | 0.9% | Octopus |
| Fish not minced, prep. or pres., in airtight containers | Marine fishes not identified | 56,129 | 55,349 | 38,659 | 50,046 | 0.9% | Misc marine fish |
| Salmon fillets, frozen | Salmons, trouts, smelts | 42,841 | 46,096 | 52,376 | 47,104 | 0.8% | Salmonids |
| Fish not minced, prep. or pres., not in airtight containers | Marine fishes not identified | 35,345 | 36,934 | 52,810 | 41,696 | 0.7% | Misc marine fish |
| Oyster sauce | Oysters | 36,610 | 43,239 | 41,149 | 40,333 | 0.7% | Fish/bivalve sauce |
| Herring,anchovy,sardine,sardinella,brisling/sprat,mackerel, Indian mackerel,seerfish,jack&horse mackerel,jack,crevalle,cobia,silver | Miscellaneous pelagic fishes | 49,151 | 37,366 | 27,761 | 38,093 | 0.7% | Small pelagics |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pomfret,Pacif.saury,scad,capelin,etc,dried,salted or not,not smoked | | | | | | | |
| Cuttlefish, frozen | Squids, cuttlefishes, octopuses | 36,417 | 35,941 | 38,541 | 36,967 | 0.7% | Squid / cuttlefish |
| Fish minced nei, in airtight containers prepared or preserved | Marine fishes not identified | 33,686 | 37,104 | 37,444 | 36,078 | 0.6% | Misc marine fish |
| Yellowfin tuna, frozen, nei | Tunas, bonitos, billfishes | 27,241 | 27,226 | 52,952 | 35,806 | 0.6% | Tuna |
| Sardines, sardinellas, brisling or sprats, prep. or pres., not minced, nei | Herrings, sardines, anchovies | 40,495 | 37,668 | 25,878 | 34,680 | 0.6% | Small pelagics |
| Fish minced (=surimi), frozen | Marine fishes not identified | 48,899 | 53,705 | 0 | 34,201 | 0.6% | Other products |
| Marine fish, frozen, nei | Marine fishes not identified | 60,520 | 35,037 | 0 | 31,852 | 0.6% | Misc marine fish |
| Tunas (of the genus Thunnus), skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), fillets, frozen | Tunas, bonitos, billfishes | 17,045 | 26,976 | 39,201 | 27,741 | 0.5% | Tuna |
| Fish body oils, nei | Marine fishes not identified | 20,195 | 22,636 | 24,058 | 22,296 | 0.4% | Meals and oils |
| Cuttlefish and squid, frozen, nei | Squids, cuttlefishes, octopuses | 21,251 | 15,875 | 20,358 | 19,161 | 0.3% | Squid / cuttlefish |
| Marine fish fillets, frozen, nei | Marine fishes not identified | 27,979 | 28,429 | 0 | 18,803 | 0.3% | Misc marine fish |
| Crabs nei, frozen | Crabs, sea-spiders | 20,349 | 19,166 | 14,834 | 18,116 | 0.3% | Crab |
| Indian mackerels, seerfishes, jacks, crevalles, silver pomfrets, Pacif. saury, scads, capelin, Kawakawa, bonitos, marlins, sailfishes, spearfish, fresh or chilled | Miscellaneous pelagic fishes | 16,183 | 20,479 | 16,557 | 17,740 | 0.3% | Other pelagics |
| Salmon nei prep. or pres., not minced, not in airtight containers | Salmons, trouts, smelts | 13,803 | 15,366 | 16,954 | 15,374 | 0.3% | Salmonids |
| Jellyfish, dried, salted or in brine, smoked | Miscellaneous aquatic invertebrates | 12,756 | 17,302 | 12,792 | 14,283 | 0.3% | Other products |
| Carps, frozen | Carps, barbels and other cyprinids | 12,076 | 17,042 | 10,982 | 13,367 | 0.2% | Freshwater fish |
| Marine fish, fresh or chilled, nei | Marine fishes not identified | 14,360 | 15,129 | 10,355 | 13,281 | 0.2% | Misc marine fish |
| Other | | 249,085 | 275,844 | 314,492 | 279,807 | 5.0% | Other |
| **Grand Total** | | **5,717,502** | **5,389,661** | **5,766,494** | **5,624,552** | **100%** | |

**Notes:** (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

**App Table 16 | 2022 marine catches (t) in Viet Nam by species, reporting level (species, genus, order or above), and species group.**

| ASFIS common name | ASFIS scientific name | ISSCAAP group name | Reporting level | Indian Ocean, Eastern (57) | Pacific, Western Central (71) | Grand Total | % of total | Group |
|---|---|---|---|---|---|---|---|---|
| Marine fishes nei | Actinopterygii | Marine fishes not identified | Order or above | 0.0 | 2,388,321.1 | 2,388,321.1 | 69.4% | Misc marine fish |
| Tuna-like fishes nei | Scombroidei | Tunas, bonitos, billfishes | Order or above | 0.0 | 370,709.9 | 370,709.9 | 10.8% | Tuna |
| Cephalopods nei | Cephalopoda | Squids, cuttlefishes, octopuses | Order or above | 0.0 | 340,410.3 | 340,410.3 | 9.9% | Cephalopods |
| Natantian decapods nei | Natantia | Shrimps, prawns | Order or above | 0.0 | 137,213.4 | 137,213.4 | 4.0% | Shrimps, Prawns |
| Skipjack tuna | *Katsuwonus pelamis* | Tunas, bonitos, billfishes | Species | 0.0 | 75,344.0 | 75,344.0 | 2.2% | Tuna |
| Marine crabs nei | Brachyura | Crabs, sea-spiders | Order or above | 0.0 | 56,964.4 | 56,964.4 | 1.7% | Crab |
| Marine molluscs nei | Mollusca | Miscellaneous marine molluscs | Order or above | 0.0 | 47,407.4 | 47,407.4 | 1.4% | Other molluscs |
| Yellowfin tuna | *Thunnus albacares* | Tunas, bonitos, billfishes | Species | 0.0 | 19,941.0 | 19,941.0 | 0.6% | Tuna |
| Bigeye tuna | *Thunnus obesus* | Tunas, bonitos, billfishes | Species | 0.0 | 2,208.0 | 2,208.0 | 0.1% | Tuna |
| Blue marlin | *Makaira nigricans* | Tunas, bonitos, billfishes | Species | 0.0 | 1,567.0 | 1,567.0 | 0.0% | Other large pelagics |
| Swordfish | *Xiphias gladius* | Tunas, bonitos, billfishes | Species | 0.0 | 1,472.0 | 1,472.0 | 0.0% | Other large pelagics |
| Black marlin | *Istiompax indica* | Tunas, bonitos, billfishes | Species | 0.0 | 915.0 | 915.0 | 0.0% | Other large pelagics |
| Lobsters nei | Reptantia | Lobsters, spiny-rock lobsters | Order or above | 0.0 | 202.9 | 202.9 | 0.0% | Lobster |
| Albacore | *Thunnus alalunga* | Tunas, bonitos, billfishes | Species | 0.0 | 122.0 | 122.0 | 0.0% | Tuna |
| Striped marlin | *Kajikia audax* | Tunas, bonitos, billfishes | Species | 0.0 | 0.0 | 0.0 | 0.0% | Other large pelagics |
| **Grand Total** | | | | **0.0** | **3,442,798.5** | **3,442,798.5** | | |

**Notes:** (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

**App Table 17 | Viet Nam total reported seafood exports in tonnes (t) by commodity, between 2020 and 2022 (and annual 2020-22 average).**

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Average 2020-2022 exports (t) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Catfish fillets, frozen | Miscellaneous freshwater fishes | 537,804.8 | 506,408.3 | 691,730.8 | 578,648.0 | 28.5% | Freshwater fish |
| Shrimps and prawns, other than coldwater, even smoked, frozen | Shrimps, prawns | 239,118.2 | 266,335.9 | 253,628.1 | 253,027.4 | 12.4% | Shrimp |
| Fishmeals, nei | Marine fishes not identified | 153,906.6 | 198,457.5 | 217,360.3 | 189,908.1 | 9.3% | Meals and oils |
| Fish meat, whether or not minced, frozen, nei | Marine fishes not identified | 160,261.6 | 193,812.6 | 200,243.1 | 184,772.4 | 9.1% | Misc marine fish |
| Shrimps and prawns, prep. or pres., in airtight containers | Shrimps, prawns | 102,289.2 | 98,108.8 | 122,303.0 | 107,567.0 | 5.3% | Shrimp |
| Catfish, frozen | Miscellaneous freshwater fishes | 55,769.3 | 87,430.9 | 106,699.6 | 83,299.9 | 4.1% | Freshwater fish |
| Tunas, skipjack tuna and bonito (Sarda spp.), prepared or preserved | Tunas, bonitos, billfishes | 54,830.4 | 55,714.3 | 64,163.3 | 58,236.0 | 2.9% | Tuna |
| Fish body oils, nei | Marine fishes not identified | 28,255.5 | 34,546.2 | 66,595.8 | 43,132.5 | 2.1% | Meals and oils |
| Tunas (of the genus Thunnus), skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), fillets, frozen | Tunas, bonitos, billfishes | 21,487.9 | 39,860.1 | 64,271.3 | 41,873.1 | 2.1% | Tuna |
| Shrimps and prawns, prep. or pres., not in airtight containers | Shrimps, prawns | 35,562.6 | 38,102.4 | 44,876.0 | 39,513.7 | 1.9% | Shrimp |
| Cuttlefish and squid, frozen, nei | Squids, cuttlefishes, octopuses | 30,987.2 | 33,459.7 | 43,686.3 | 36,044.4 | 1.8% | Squid / cuttlefish |
| Fish fillets, frozen, nei | Marine fishes not identified | 25,173.5 | 32,449.7 | 46,428.8 | 34,684.0 | 1.7% | Misc marine fish |
| Octopus, frozen | Squids, cuttlefishes, octopuses | 26,880.1 | 29,222.6 | 45,290.7 | 33,797.8 | 1.7% | Octopus |
| Fish dried, whether or not salted, nei | Marine fishes not identified | 25,789.5 | 19,508.7 | 45,600.7 | 30,299.6 | 1.5% | Misc marine fish |
| Fish, frozen, nei | Marine fishes not identified | 26,336.4 | 24,362.5 | 38,242.2 | 29,647.0 | 1.5% | Misc marine fish |
| Clams, cockles, arkshells, etc., prep. or pres., nei | Clams, cockles, arkshells | 14,269.6 | 27,227.7 | 40,658.2 | 27,385.2 | 1.3% | Other molluscs |
| Marine fish nei, prepared or preserved, not minced | Marine fishes not identified | 27,856.6 | 25,098.7 | 29,181.2 | 27,378.8 | 1.3% | Misc marine fish |
| Fish minced nei, prepared or preserved | Marine fishes not identified | 21,059.2 | 20,605.3 | 23,527.8 | 21,730.8 | 1.1% | Misc marine fish |
| Cuttlefish and squid, other than live, fresh or chilled | Squids, cuttlefishes, octopuses | 23,242.1 | 19,236.7 | 22,037.2 | 21,505.3 | 1.1% | Squid / cuttlefish |
| Anchovies, Indian mackerels, seerfishes, jacks, crevalles, silver pomfrets, Pacif. saury, scads, capelin, Kawakawa, bonitos, marlins, sailfishes, spearfish, frozen | Miscellaneous pelagic fishes | 11,593.8 | 18,120.7 | 27,792.4 | 19,169.0 | 0.9% | Small pelagics |
| Mackerel prepared or preserved, not minced, nei | Miscellaneous pelagic fishes | 11,626.4 | 14,607.3 | 18,934.1 | 15,055.9 | 0.7% | Small pelagics |
| Fish heads, tails, maws, tongues, nei frozen | Marine fishes not identified | 9,028.5 | 7,280.9 | 16,872.4 | 11,060.6 | 0.5% | Misc marine fish |
| Jack and horse mackerel, frozen | Miscellaneous pelagic fishes | 6,495.9 | 11,853.9 | 9,888.1 | 9,412.6 | 0.5% | Small pelagics |
| Tilapias, frozen | Tilapias and other cichlids | 7,707.0 | 8,630.7 | 8,057.7 | 8,131.8 | 0.4% | Freshwater fish |
| Sardines, sardinellas, brisling or sprats, prep. or pres., not minced, nei | Herrings, sardines, anchovies | 5,715.6 | 7,036.7 | 8,821.6 | 7,191.3 | 0.4% | Small pelagics |
| Salmon fillets, frozen | Salmons, trouts, smelts | 6,228.2 | 5,470.2 | 9,703.0 | 7,133.8 | 0.4% | Salmonids |

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Average 2020-2022 exports (t) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Salmon nei, not minced, prepared or preserved | Salmons, trouts, smelts | 6,406.0 | 5,759.7 | 7,347.4 | 6,504.4 | 0.3% | Salmonids |
| Yellowfin tuna, frozen, nei | Tunas, bonitos, billfishes | 8,730.6 | 7,053.0 | 2,482.7 | 6,088.8 | 0.3% | Tuna |
| Trout fillets, frozen | Salmons, trouts, smelts | 5,662.5 | 5,211.1 | 5,888.73 | 5,587.4 | 0.3% | Salmonids |
| Shrimps and prawns, dried, salted or in brine, smoked nei | Shrimps, prawns | 2,055.8 | 2,132.5 | 10,326.1 | 4,838.1 | 0.2% | Shrimp |
| Nile perch (Lates niloticus) and snakeheads (Channa spp.), frozen | Miscellaneous freshwater fishes | 4,163.7 | 3,791.6 | 5,830.96 | 4,595.4 | 0.2% | Freshwater fish |
| Crab meat nei, prepared or preserved | Crabs, sea-spiders | 3,809.7 | 3,830.5 | 5,125.24 | 4,255.16 | 0.2% | Crab |
| Fish heads, tail, maws etc., smoked, dried, salted, or in brine | Marine fishes not identified | 1,792.9 | 3,891.2 | 6,898.59 | 4,194.21 | 0.2% | Misc marine fish |
| Cod nei, fillets, frozen | Cods, hakes, haddocks | 5,303.4 | 2,398.9 | 4,854.47 | 4,185.6 | 0.2% | Misc marine fish |
| Crabs, peeled or not, live, fresh or chilled, nei | Crabs, sea-spiders | 4,526.3 | 3,675.9 | 3,825.18 | 4,009.1 | 0.2% | Crab |
| Cuttlefish and squid, prepared or preserved | Squids, cuttlefishes, octopuses | 3,209.8 | 3,556.2 | 5,039.72 | 3,935.2 | 0.2% | Squid / cuttlefish |
| Crabs nei, frozen | Crabs, sea-spiders | 4,351.6 | 3,013.7 | 4,384.44 | 3,916.6 | 0.2% | Crab |
| Livers, roes, milt, dried, salted or in brine, nei | Marine fishes not identified | 3157.4 | 3,197.7 | 4,967.9 | 3,774.3 | 0.2% | Other products |
| Anchovies, salted or in brine | Herrings, sardines, anchovies | 2750.91 | 5048.95 | 2,578.8 | 3,459.5 | 0.2% | Small pelagics |
| Tunas nei, frozen | Tunas, bonitos, billfishes | 2198.27 | 5,666.2 | 2,145.9 | 3,336.8 | 0.2% | Tuna |
| Alaska pollock fillets, frozen | Cods, hakes, haddocks | 2493.41 | 2,965.4 | 4,438.0 | 3,298.9 | 0.2% | Misc marine fish |
| Herring,anchovy,sardine,sardinella,brisling/sprat,mackerel,Indian mackerel,seerfish,jack&horse mackerel,jack,crevalle,cobia,silver pomfret,Pacif.saury,scad,capelin,etc,dried,salted or not,not smoked | Miscellaneous pelagic fishes | 2088.53 | 2159.59 | 4564.67 | 2,937.6 | 0.1% | Small pelagics |
| Octopus, prepared or preserved | Squids, cuttlefishes, octopuses | 2285.5 | 2,604.9 | 3,808.9 | 2,899.8 | 0.1% | Octopus |
| Molluscs nei, prepared or preserved | Miscellaneous marine molluscs | 1,473.8 | 2,498.2 | 3,181.0 | 2,384.3 | 0.1% | Other molluscs |
| Rock lobster & other sea crawfish (Palinurus,Panulirus,Jasus), live, fresh or chilled, nei | Lobsters, spiny-rock lobsters | 2,664.3 | 545.3 | 3,917.9 | 2,375.8 | 0.1% | Lobster |
| Mackerels nei, frozen | Miscellaneous pelagic fishes | 2,381.4 | 1,916.9 | 2,557.1 | 2,285.1 | 0.1% | Small pelagics |
| American/European lobsters (Homarus spp.), live, fresh or chilled, nei | Lobsters, spiny-rock lobsters | 2372.2 | 400.66 | 3,279.7 | 2,017.5 | 0.1% | Lobster |
| Skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), frozen | Tunas, bonitos, billfishes | 2316.9 | 1,734.1 | 1,524.7 | 1858.57 | 0.1% | Tuna |
| Other | NA | 28,856.9 | 25,607.5 | 37,166.9 | 30,543.7 | 1.5% | Other |
| **Grand Total** | | **1,774,327.3** | **1,921,608.4** | **2,402,728.3** | **2,032,888.0** | **100.0%** | |

**Notes:** (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

**App Table 18 | Viet Nam total reported seafood exports in thousand USD by commodity, between 2020 and 2022 (and annual 2020-22 average).**

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Average 2020-2022 exports (000 USD) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Shrimps and prawns, other than coldwater, even smoked, frozen | Shrimps, prawns | 1,942,352.7 | 2,261,307.6 | 2,256,028.1 | 2,153,229.5 | 22.8% | Shrimp |
| Catfish fillets, frozen | Miscellaneous freshwater fishes | 1,242,896.7 | 1,344,783.6 | 1,926,779.3 | 1,504,819.8 | 15.9% | Freshwater fish |
| Shrimps and prawns, prep. or pres., in airtight containers | Shrimps, prawns | 1,130,910.3 | 1,076,860.9 | 1,204,325.7 | 1,137,365.6 | 12.0% | Shrimp |
| Fish meat, whether or not minced, frozen, nei | Marine fishes not identified | 436,820.6 | 494,413.8 | 535,373.2 | 488,869.2 | 5.2% | Misc marine fish |
| Shrimps and prawns, prep. or pres., not in airtight containers | Shrimps, prawns | 382,654.9 | 403,353.1 | 437,588.5 | 407,865.5 | 4.3% | Shrimp |
| Tunas (of the genus Thunnus), skipjack tuna (stripe-bellied bonito) (Katsuwonus pelamis), fillets, frozen | Tunas, bonitos, billfishes | 238,030.8 | 378,491.7 | 576,149.7 | 397,557.4 | 4.2% | Tuna |
| Tunas, skipjack tuna and bonito (Sarda spp.), prepared or preserved | Tunas, bonitos, billfishes | 300,395.0 | 280,345.9 | 309,505.1 | 296,748.7 | 3.1% | Tuna |
| Octopus, frozen | Squids, cuttlefishes, octopuses | 217,947.0 | 252,658.4 | 279,869.7 | 250,158.3 | 2.6% | Octopus |
| Fish fillets, frozen, nei | Marine fishes not identified | 199,243.5 | 226,913.5 | 313,723.7 | 246,626.9 | 2.6% | Misc marine fish |
| Fishmeals, nei | Marine fishes not identified | 166,258.4 | 234,991.2 | 286,025.4 | 229,091.7 | 2.4% | Meals and oils |
| Catfish, frozen | Miscellaneous freshwater fishes | 130,962.2 | 179,504.6 | 206,848.2 | 172,438.4 | 1.8% | Freshwater fish |
| Cuttlefish and squid, frozen, nei | Squids, cuttlefishes, octopuses | 149,351.1 | 152,148.4 | 210,742.3 | 170,747.3 | 1.8% | Squid / cuttlefish |
| Fish dried, whether or not salted, nei | Marine fishes not identified | 161,465.9 | 126,855.2 | 192,053.0 | 160,124.7 | 1.7% | Misc marine fish |
| Cuttlefish and squid, other than live, fresh or chilled | Squids, cuttlefishes, octopuses | 125,441.2 | 131,913.9 | 170,457.8 | 142,604.3 | 1.5% | Squid / cuttlefish |
| Marine fish nei, prepared or preserved, not minced | Marine fishes not identified | 145,831.2 | 124,604.2 | 144,910.5 | 138,448.6 | 1.5% | Misc marine fish |
| Rock lobster & other sea crawfish (Palinurus,Panulirus,Jasus), live, fresh or chilled, nei | Lobsters, spiny-rock lobsters | 104,630.7 | 22,959.3 | 164,957.1 | 97,515.7 | 1.0% | Lobster |
| Fish minced nei, prepared or preserved | Marine fishes not identified | 99,261.2 | 93,144.6 | 97,283.4 | 96,563.1 | 1.0% | Misc marine fish |
| Clams, cockles, arkshells, etc., prep. or pres., nei | Clams, cockles, arkshells | 66,856.2 | 100,372.0 | 92,414.0 | 86,547.4 | 0.9% | Other molluscs |
| Crab meat nei, prepared or preserved | Crabs, sea-spiders | 59,116.4 | 90,094.1 | 105,194.4 | 84,801.6 | 0.9% | Crab |
| Fish, frozen, nei | Marine fishes not identified | 74,330.5 | 64,479.5 | 98,820.7 | 79,210.2 | 0.8% | Misc marine fish |
| Salmon nei, not minced, prepared or preserved | Salmons, trouts, smelts | 69,724.3 | 68,114.5 | 86,635.7 | 74,824.8 | 0.8% | Salmonids |
| Mackerel prepared or preserved, not minced, nei | Miscellaneous pelagic fishes | 70,225.2 | 65,733.0 | 75,837.3 | 70,598.5 | 0.7% | Small pelagics |
| Salmon fillets, frozen | Salmons, trouts, smelts | 70,426.9 | 56,844.5 | 78,011.5 | 68,427.6 | 0.7% | Salmonids |
| Crabs, peeled or not, live, fresh or chilled, nei | Crabs, sea-spiders | 60,795.7 | 53,655.4 | 55,901.5 | 56,784.2 | 0.6% | Crab |
| Fish body oils, nei | Marine fishes not identified | 40,225.0 | 42,640.9 | 87,482.0 | 56,782.6 | 0.6% | Meals and oils |
| Crabs nei, frozen | Crabs, sea-spiders | 60,337.2 | 44,088.3 | 55,643.4 | 53,356.3 | 0.6% | Crab |

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Average 2020-2022 exports (000 USD) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Trout fillets, frozen | Salmons, trouts, smelts | 53,570.0 | 45,203.6 | 58,576.6 | 52,450.1 | 0.6% | Salmonids |
| Fish heads, tail, maws etc., smoked, dried, salted, or in brine | Marine fishes not identified | 32,685.0 | 41,874.4 | 70,682.9 | 48,414.1 | 0.5% | Misc marine fish |
| Octopus, prepared or preserved | Squids, cuttlefishes, octopuses | 37,866.6 | 40,831.3 | 54,760.6 | 44,486.1 | 0.5% | Octopus |
| Anchovies, Indian mackerels, seerfishes, jacks, crevalles, silver pomfrets, Pacif. saury, scads, capelin, Kawakawa, bonitos, marlins, sailfishes, spearfish, frozen | Miscellaneous pelagic fishes | 25,559.3 | 40,795.0 | 61,844.7 | 42,733.0 | 0.5% | Small pelagics |
| Livers, roes, milt, dried, salted or in brine, nei | Marine fishes not identified | 38,535.8 | 34,644.3 | 53,708.2 | 42,296.1 | 0.4% | Other products |
| American/European lobsters (Homarus spp.), live, fresh or chilled, nei | Lobsters, spiny-rock lobsters | 41,573.9 | 8,304.7 | 67,982.3 | 39,287.0 | 0.4% | Lobster |
| Cod nei, fillets, frozen | Cods, hakes, haddocks | 40,236.7 | 17,453.7 | 35,128.1 | 30,939.5 | 0.3% | Misc marine fish |
| Cuttlefish and squid, prepared or preserved | Squids, cuttlefishes, octopuses | 21,038.1 | 23,799.5 | 36,870.9 | 27,236.2 | 0.3% | Squid / cuttlefish |
| Sardines, sardinellas, brisling or sprats, prep. or pres., not minced, nei | Herrings, sardines, anchovies | 25,933.5 | 24,835.9 | 30,279.7 | 27,016.4 | 0.3% | Small pelagics |
| Shrimps and prawns, dried, salted or in brine, smoked nei | Shrimps, prawns | 20,598.1 | 20,393.9 | 17,105.4 | 19,365.8 | 0.2% | Shrimp |
| Herring,anchovy,sardine,sardinella,brisling/sprat,mackerel,Indian mackerel,seerfish,jack&horse mackerel,jack,crevalle,cobia,silver pomfret,Pacif.saury,scad,capelin,etc,dried,salted or not,not smoked | Miscellaneous pelagic fishes | 13,660.2 | 14,513.8 | 29,847.6 | 19,340.5 | 0.2% | Small pelagics |
| Shrimps and prawns, live, fresh or chilled, nei | Shrimps, prawns | 19,402.2 | 16,387.4 | 20,226.7 | 18,672.1 | 0.2% | Shrimp |
| Fish live, nei | Marine fishes not identified | 11,372.2 | 15,338.1 | 28,722.6 | 18,477.6 | 0.2% | Misc marine fish |
| Fish heads, tails, maws, tongues, nei frozen | Marine fishes not identified | 11,823.5 | 11,008.0 | 28,126.5 | 16,986.0 | 0.2% | Misc marine fish |
| Tilapias, frozen | Tilapias and other cichlids | 12,596.3 | 17,685.5 | 16,649.9 | 15,643.9 | 0.2% | Freshwater fish |
| Nile perch (Lates niloticus) and snakeheads (Channa spp.), frozen | Miscellaneous freshwater fishes | 12,731.9 | 14,218.7 | 19,226.8 | 15,392.5 | 0.2% | Freshwater fish |
| Yellowfin tuna, frozen, nei | Tunas, bonitos, billfishes | 17,455.1 | 17,658.1 | 6,134.2 | 13,749.2 | 0.1% | Tuna |
| Molluscs nei, prepared or preserved | Miscellaneous marine molluscs | 11,690.8 | 12208.4 | 13,793.2 | 12564.16 | 0.1% | Other molluscs |
| Jack and horse mackerel, frozen | Miscellaneous pelagic fishes | 8,654.8 | 16,135.4 | 12,361.9 | 12,384.0 | 0.1% | Small pelagics |
| Anchovies, salted or in brine | Herrings, sardines, anchovies | 10,010.9 | 18,631.4 | 8,285.7 | 12,309.3 | 0.1% | Small pelagics |
| Alaska pollock fillets, frozen | Cods, hakes, haddocks | 9,765.5 | 10,081.2 | 14,793.3 | 11,546.7 | 0.1% | Misc marine fish |
| Other | | 187,113.9 | 166,020.8 | 207,036.5 | 186,723.7 | 2.0% | Other |
| **Grand Total** | | **8,410,364.7** | **8,999,294.7** | **10,940,705.7** | **9,450,121.7** | **100%** | |

**Notes:** (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

**App Table 19 | Malaysia total reported seafood exports in thousand USD by commodity, between 2020 and 2022 (and annual 2020-22 average).**

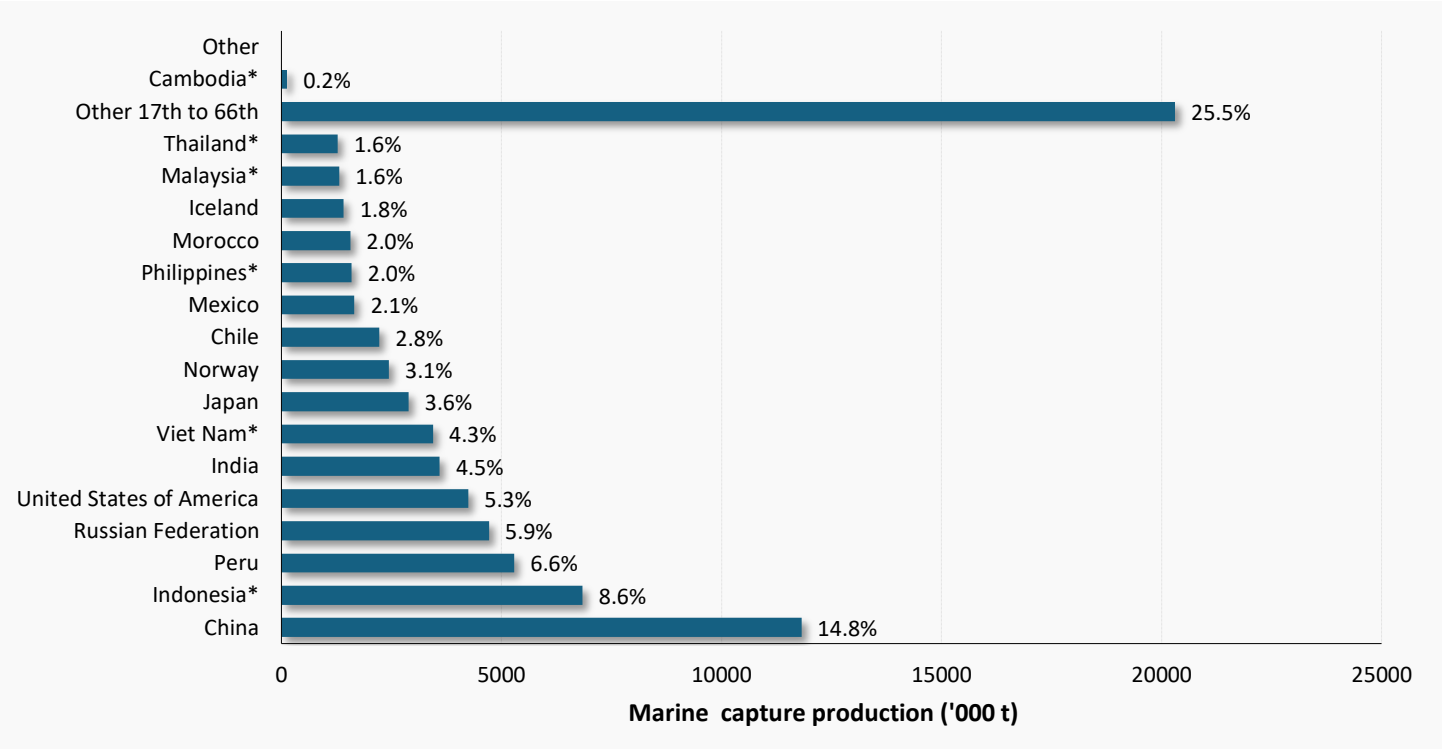
| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 20-22 exports (000 USD) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Shrimps and prawns, other than coldwater, even smoked, frozen | Shrimps, prawns | 159,776 | 178,792 | 175,437 | 171,335 | 19.1% | Shrimp |
| Cuttlefish and squid, frozen, nei | Squids, cuttlefishes, octopuses | 64,920 | 84,674 | 107,739 | 85,778 | 9.6% | Squid / cuttlefish |
| Fish minced nei, not in airtight containers prepared or preserved | Marine fishes not identified | 67,215 | 77,768 | 66,303 | 70,429 | 7.8% | Misc marine fish |
| Marine fish, frozen, nei | Marine fishes not identified | 74,120 | 55,166 | 68,988 | 66,091 | 7.4% | Misc marine fish |
| Shrimps and prawns (Penaeus spp.), frozen | Shrimps, prawns | 26,029 | 54,552 | 58,026 | 46,202 | 5.1% | Shrimp |
| Fish nei, prepared or preserved, not minced | Marine fishes not identified | 31,563 | 34,353 | 45,802 | 37,239 | 4.1% | Misc marine fish |
| Fishmeals, nei | Marine fishes not identified | 49,849 | 25,059 | 33,589 | 36,166 | 4.0% | Meals and oils |
| Balls, cakes, sausages, etc.prepared from minced fish | Marine fishes not identified | 16,674 | 19,148 | 21,775 | 19,199 | 2.1% | Other products |
| Cuttlefish and squid, prepared or preserved | Squids, cuttlefishes, octopuses | 16,774 | 19,658 | 20,376 | 18,936 | 2.1% | Squid / cuttlefish |
| Jellyfish, dried, salted or in brine, smoked | Miscellaneous aquatic invertebrates | 15,405 | 28,504 | 11,400 | 18,436 | 2.1% | Other products |
| Fish meat, whether or not minced, frozen, nei | Marine fishes not identified | 21,968 | 15,368 | 15,662 | 17,666 | 2.0% | Misc marine fish |
| Marine fish, fresh or chilled, nei | Marine fishes not identified | 21,097 | 16,968 | 13,550 | 17,205 | 1.9% | Misc marine fish |
| Shrimps and prawns, live | Shrimps, prawns | 14,427 | 19,626 | 12,571 | 15,541 | 1.7% | Shrimp |
| Crabs, peeled or not, live, fresh or chilled, nei | Crabs, sea-spiders | 10,487 | 15,230 | 13,238 | 12,985 | 1.4% | Crab |
| Pilchards (Sardinops spp.), prep. or pres., not minced, nei | Herrings, sardines, anchovies | 14,827 | 11,886 | 11,968 | 12,894 | 1.4% | Small pelagics |
| Octopus, frozen | Squids, cuttlefishes, octopuses | 11,250 | 10,995 | 14,193 | 12,146 | 1.4% | Octopus |
| Ornamental freshwater fish | Miscellaneous freshwater fishes | 13,431 | 12,184 | 10,787 | 12,134 | 1.4% | Freshwater fish |
| Sea-cucumber, dried, salted or in brine, smoked | Sea-urchins and other echinoderms | 18,781 | 10,995 | 5,156 | 11,644 | 1.3% | Other products |
| Fish, frozen, nei | Marine fishes not identified | 8,244 | 13,450 | 10,387 | 10,694 | 1.2% | Misc marine fish |
| Seabass, fresh or chilled | Miscellaneous coastal fishes | 6,115 | 10,881 | 12,022 | 9,673 | 1.1% | Misc marine fish |
| Fish body oils, nei | Marine fishes not identified | 6,854 | 1,232 | 20,089 | 9,392 | 1.0% | Meals and oils |
| Fish dried, whether or not salted, nei | Marine fishes not identified | 8,288 | 6,677 | 11,247 | 8,737 | 1.0% | Misc marine fish |
| Mackerels nei, frozen | Miscellaneous pelagic fishes | 3,857 | 14,789 | 5,087 | 7,911 | 0.9% | Small pelagics |
| Shrimps and prawns, prep. or pres., in airtight containers | Shrimps, prawns | 4,223 | 6,430 | 10,666 | 7,106 | 0.8% | Shrimp |
| Mackerel prepared or preserved, not minced, nei | Miscellaneous pelagic fishes | 6,322 | 5,660 | 7,240 | 6,407 | 0.7% | Small pelagics |
| Fish fillets, frozen, nei | Marine fishes not identified | 3,058 | 7,794 | 8,104 | 6,319 | 0.7% | Misc marine fish |
| Shrimps and prawns, dried, salted or in brine, smoked nei | Shrimps, prawns | 7,644 | 6,402 | 4,842 | 6,296 | 0.7% | Shrimp |

| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 20-22 exports (000 USD) | % of total | Group |
|---|---|---|---|---|---|---|---|
| Rock lobster & other sea crawfish (Palinurus,Panulirus,Jasus), live, fresh or chilled, nei | Lobsters, spiny-rock lobsters | 11,004 | 4,506 | 1,138 | 5,550 | 0.6% | Lobster |
| Crabs nei, frozen | Crabs, sea-spiders | 4,461 | 5,233 | 5,088 | 4,928 | 0.5% | Crab |
| Sea-cucumber, frozen | Sea-urchins and other echinoderms | 4,149 | 5,134 | 4,783 | 4,689 | 0.5% | Other products |
| Catfish fillets, frozen | Miscellaneous freshwater fishes | 9,141 | 2,640 | 2,014 | 4,598 | 0.5% | Freshwater fish |
| Crustaceans nei, dried, salted or in brine, smoked | Miscellaneous marine crustaceans | 4,895 | 6,307 | 2,543 | 4,582 | 0.5% | Misc crustaceans |
| Carps, eels and snakeheads, fillets, frozen | Miscellaneous freshwater fishes | 7,189 | 4,212 | 1,788 | 4,396 | 0.5% | Freshwater fish |
| Eels, frozen | River eels | 4,038 | 5,793 | 2,772 | 4,201 | 0.5% | Other products |
| Sea-cucumber, prepared or preserved | Sea-urchins and other echinoderms | 351 | 451 | 11,649 | 4,150 | 0.5% | Other products |
| Tunas nei, frozen | Tunas, bonitos, billfishes | 5,898 | 1,105 | 4,893 | 3,965 | 0.4% | Tuna |
| Cuttlefish and squid, dried, salted or in brine, smoked nei | Squids, cuttlefishes, octopuses | 4,200 | 4,171 | 3,232 | 3,868 | 0.4% | Squid / cuttlefish |
| Fish meat, whether or not minced nei, fresh or chilled | Marine fishes not identified | 715 | 5,233 | 4,870 | 3,606 | 0.4% | Misc marine fish |
| Tilapia fillets, frozen | Tilapias and other cichlids | 2,526 | 3,171 | 5,028 | 3,575 | 0.4% | Freshwater fish |
| Shark fins, prepared or preserved | Sharks, rays, chimaeras | 2,749 | 3,859 | 3,970 | 3,526 | 0.4% | Sharks, rays |
| Other aquatic invertebrates, prepared or preserved, nei | Miscellaneous aquatic invertebrates | 1,800 | 6,168 | 1,752 | 3,240 | 0.4% | Other products |
| Anchovies, Indian mackerels, seerfishes, jacks, crevalles, silver pomfrets, Pacif. saury, scads, capelin, Kawakawa, bonitos, marlins, sailfishes, spearfish, frozen | Miscellaneous pelagic fishes | 3,625 | 2,067 | 3,846 | 3,179 | 0.4% | Small pelagics |
| Saltwater fish nei, live | Marine fishes not identified | 5,093 | 3,834 | 509 | 3,145 | 0.4% | Misc marine fish |
| Crustaceans nei, even smoked, frozen | Miscellaneous marine crustaceans | 2,434 | 3,829 | 2,249 | 2,837 | 0.3% | Misc crustaceans |
| Crustacean meal, nei | Miscellaneous marine crustaceans | 5,864 | 2,146 | 314 | 2,775 | 0.3% | Meals and oils |
| Cuttlefish and squid, live, fresh or chilled, nei | Squids, cuttlefishes, octopuses | 2,469 | 1,879 | 3,886 | 2,744 | 0.3% | Squid / cuttlefish |
| Oysters, live | Oysters | 2,743 | 2,450 | 2,265 | 2,486 | 0.3% | Other molluscs |
| Fish live, nei | Marine fishes not identified | 1,630 | 2,646 | 2,979 | 2,418 | 0.3% | Misc marine fish |
| Fish paste | Marine fishes not identified | 1,655 | 2,249 | 3,301 | 2,402 | 0.3% | Other products |
| Miscellaneous demersal fish, nei, frozen | Miscellaneous demersal fishes | 1,012 | 847 | 5,302 | 2,387 | 0.3% | Misc marine fish |
| Albacore (=Longfin tuna), frozen, nei | Tunas, bonitos, billfishes | 3,203 | 2,581 | 692 | 2,159 | 0.2% | Tuna |
| Fish fillets, dried, salted or in brine, nei | Marine fishes not identified | 3,819 | 1,989 | 376 | 2,061 | 0.2% | Misc marine fish |
| Rock lobster and other sea crawfish (Palinurus, Panulirus, Jasus), even smoked, frozen, nei | Lobsters, spiny-rock lobsters | 3,659 | 1,719 | 733 | 2,037 | 0.2% | Lobster |

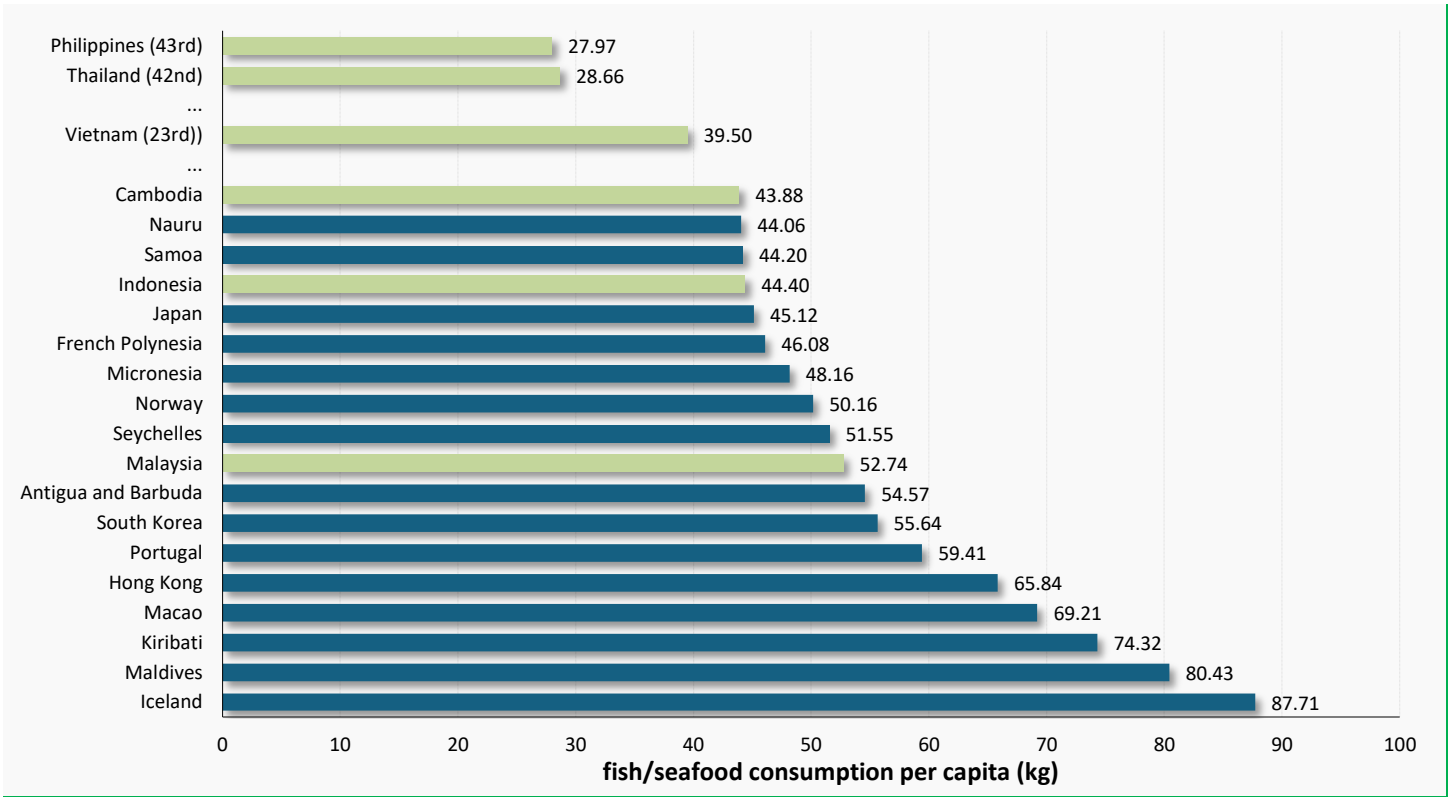
| Seafood Commodity | ISSCAAP group name | 2020 | 2021 | 2022 | Avg 20-22 exports (000 USD) | % of total | Group |
|---|---|---|---|---|---|---|---|
| American/European lobsters (Homarus spp.), nei, even smoked, frozen | Lobsters, spiny-rock lobsters | 1,050 | 2,518 | 2,445 | 2,005 | 0.2% | Lobster |
| Fish for culture incl. ova, fingerlings etc. | Marine fishes not identified | 2,433 | 2,262 | 1,286 | 1,994 | 0.2% | Misc marine fish |
| Yellowfin tuna, frozen, nei | Tunas, bonitos, billfishes | 2,417 | 2,016 | 1,304 | 1,912 | 0.2% | Tuna |
| Abalone meat, prepared or preserved | Abalones, winkles, conchs | 1,528 | 1,848 | 2,095 | 1,824 | 0.2% | Other molluscs |
| Abalone (Haliotis spp.), frozen | Abalones, winkles, conchs | 2,105 | 1,690 | 1,255 | 1,683 | 0.2% | Other molluscs |
| Other | | 46,183 | 43,651 | 43,731 | 44,522 | 5.0% | Other |
| **Grand Total** | | **859,236** | **904,444** | **930,329** | **898,003** | **100%** | |

**Notes:** (1) Does not consider alligators, plants, marine mammals, etc. (2) Small pelagics related commodities are shaded green.

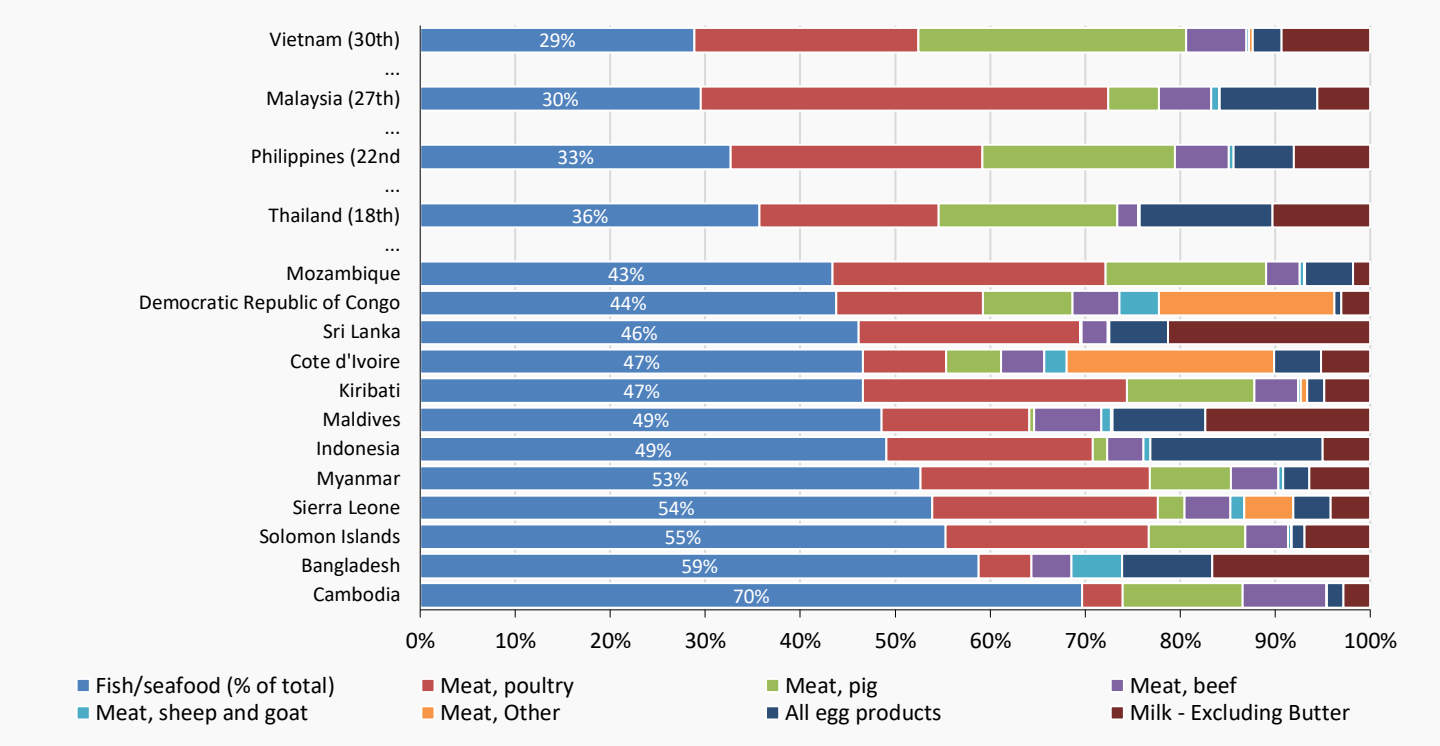
## Appendix 2 | Figures



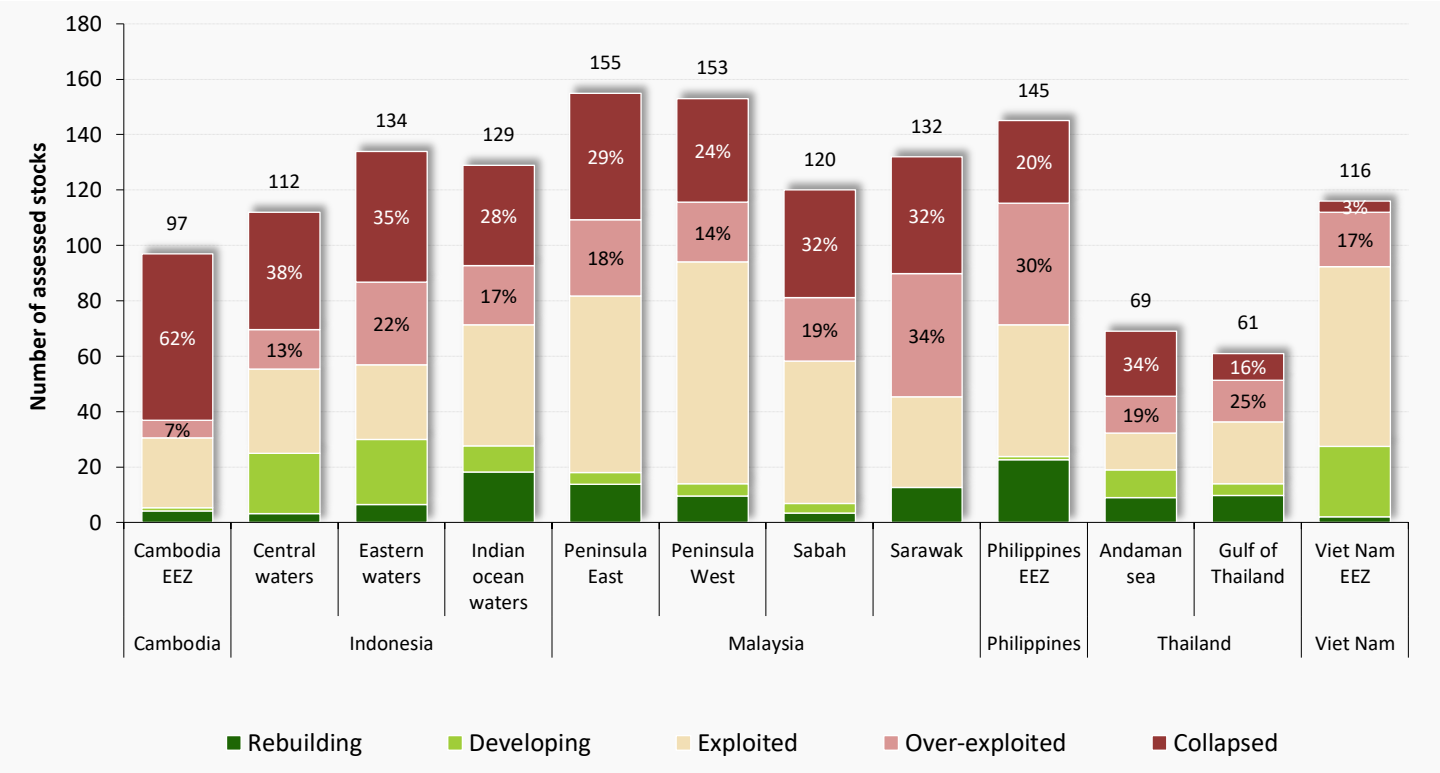

App Figure 1 | Reported marine capture in 2022 (thousand tonnes) by main producing country.




**App Figure 2 |** Estimated fish and seafood consumption per capita, by country and for 2021. Note: countries under the scope of the current work are shaded green. Source: Ritchie and Roser 2021.




App Figure 3 | Percent of each protein item out of the total animal protein intake per capita. Source: Ritchie and Roser 2021.




App Figure 4 | Estimated number of stocks in the EEZs of the studied countries, categorized by stock condition (3-year running average, 2019. **Source: Sea Around Us** (Pauly et al., 2024).

## Appendix 3 | List of tables and figures in the Supplementary Information (SI)

Note: These tables and figures in the Supplementary Information are provided in an Excel file and grouped per each main topic in separate tabs.

**SI 1-A | Some global and regional statistics on seafood production (tab name "SI-1_A_SEA_stats")**

- SI 1A-1 | 2022 production (million tonnes), wild and farmed, per geographical region.
- SI 1A-2 | 2022 production (million tonnes, mmt), wild and farmed, in Southeast Asia.
- SI 1A-3 | Estimated annual catches (million tonnes) by Large Marine Ecosystem (LME) between 210 and 2019, for the four LMEs bordering Southeast Asia.
- SI 1A-4 | Estimated 2019 catches (million tonnes) by Large Marine Ecosystem (LME), fishing sector and reporting level, for the four LMEs bordering Southeast Asia.

**SI 1-B | Statistics on overall seafood production per country, production source, end use and FAO area (tab name "SI-1_B_2022 catches per country")**

- SI 1B-1 | Total wild capture (tonnes) per country in 2022, for FAO regions 57 and 71.
- SI 1B-2 | Total capture production (tonnes) per country and source (inland, marine) in 2022, for FAO regions 57 and 71.
- SI 1B-3 | Total reported marine capture production (tonnes) per country in 2022.
- SI 1B-4 | Reported inland and inland production (tonnes) per country in 2022, by production source (aquaculture, capture).

**SI 2 | FAO production statistics. Country: Cambodia (tab name: "SI-2 | Catch_Cambodia_FAO")**

- SI 2-1 | 2022 marine catches (t) in Cambodia by species, FAO area (57, 71) and reporting level (species, genus, order or above)
- SI 2-2 | 1950-2022 catches (million t) in Cambodia per main production source
- SI 2-3 | Percent of total wild capture (marine) for Cambodia per reporting level, between 2000 and 2022
- SI 2-4 | Catches (t) by Cambodia in FAO 71 for the top capture species, between 2000 and 2022

**SI 3 | Sea Around Us database wild capture production statistics. Country: Cambodia (tab name: "SI-3 | Catch_Cambodia_SAU")**

- SI 3-1 | Total wild capture (thousand tonnes) in 2019 by species fishing sector and gear type, for the species within the scope of this analysis. Country: Cambodia
- SI 3-2 | 2019 production in Cambodia per gear type.
- SI 3-3 | 2019 production (thousand tonnes) in Cambodia per species and commercial group. Source: SAU database. Main small pelagics are highlighted
- SI 3-4 | 2019 production (thousand tonnes) in Cambodia, per end use type and gear type. Source: SAU database

- SI 3-5 | 2019 production (thousand tonnes) per species, for the species used for Fishmeal and fish oil . Source: SAU database
- SI 3-6 | 2019 catches in thousand tonnes (reported and unreported) for the Philippines, by fishing sector and gear type
- SI 3-7 | 2019 reported and unreported catches (thousand tonnes and % of reported+unreported) per fishing sector. Country: Cambodia

**SI 4 | Overall trade exports statistics (tab name: "SI - 4 | Overall trade_exports")**

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- SI 6-3 | 2022 total miscellaneous marine fish exports in thousand USD by Cambodia, per partner country.
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**SI 8 | FAO imports statistics for Cambodia – by partner country. (tab name: "SI-8 | KHM bilateral imports")**

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- SI 10-3 | Percent of total wild capture (marine) for Indonesia per reporting level, between 2000 and 2022
- SI 10-4 | Catches (t) by Indonesia in FAO 57 and 71 combined for the top capture species, between 2000 and 2022
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- SI 11-2| 2019 wild capture production (thousand tonnes) in Indonesia per gear type.

- SI 11-3| 2019 production (thousand tonnes) in Indonesia per species and commercial group. Main small pelagics species are highlighted
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- SI 11-5 | 2019 reported and unreported catches (thousand tonnes and % of reported and unreported) per fishing sector. Country: Indonesia
- SI 11-6| 2019 catches in thousand tonnes (reported and unreported) for Indonesia, by fishing sector and gear type.

**SI 12 | FAO exports statistics for Indonesia – aggregated data. (tab name: "SI - 12 | Exports_FAO_Indonesia")**

- SI 12-1 | Total exports by commodity by quantity (tonnes), between 2020 and 2022 (annual average). Country: Indonesia.
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- SI 13-4 | Reported 2022 total crab exports in thousand USD by Indonesia, per partner country.
- SI 13-5 | Reported 2022 total small pelagics related exports in thousand USD by Indonesia, per partner country.
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**SI 14 | FAO imports statistics for Indonesia – aggregated data. (tab name: "SI - 14 | Imports_FAO_Indonesia")**

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- SI 16-1 | Final Seafood Watch recommendations for the evaluated blue swimming crab fisheries in 2023.
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**SI 17 | FAO production statistics. Country: Malaysia (tab name: "SI-17 | Catch_Malaysia_FAO")**

- SI 17-1 | 2022 marine catches (t) in Malaysia by species, FAO area (57, 71) and reporting level (species, genus, order or above)
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- SI 17-3 | Percent of total wild capture (marine) for Malaysia per reporting level, between 2000 and 2022.
- SI 17-4 | Catches (t) by Malaysia in FAO 57 and 71 combined for the top capture species, between 2000 and 2022.
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**SI 18 | Sea Around Us database wild capture production statistics. Country: Malaysia (tab name: "SI-18 | Catch_Malaysia_SAU")**

- SI 18-1 | Total wild capture (thousand tonnes) in 2019 by species fishing sector and gear type, for the species within the scope of this analysis. Country: Malaysia
- SI 18-2 | 2019 production in Malaysia per gear type. Source: SAU database
- SI 18-3 | 2019 production (thousand tonnes) in Malaysia, per end use type and gear type. Source: SAU database
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- SI 19-3 | Malaysia average annual 2020-22 exports per main group of seafood (top 95%) by quantity
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**SI 20 | FAO exports statistics for Malaysia – by partner country. (tab name: "SI-20 | MYS bilateral trade")**

- SI 20-1 | Reported 2022 total seafood exports in thousand USD by Malaysia, per partner country. Source: FishstatJ (FAO 2024d)
- SI 20-2 | Reported 2022 total miscellaneous marine fish exports in thousand USD by Malaysia, per partner country.
- SI 20-3 | Reported 2022 total shrimp exports in thousand USD by Malaysia, per partner country.
- SI 20-4 | Reported 2022 total meals and oils exports in thousand USD by Malaysia, per partner country.
- SI 20-5 | Reported 2022 total squid / cuttlefish exports in thousand USD by Malaysia, per partner country.
- SI 20-6 | Reported 2022 total small pelagics exports in thousand USD by Malaysia, per partner country.
- SI 20-7 | Reported 2022 total fish and bivalve sauce exports in thousand USD by Malaysia, per partner country.

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- SI 21-1 | Total imports by commodity by quantity (tonnes), between 2020 and 2022 (annual average). Country: Malaysia
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- SI 21-3 | Malaysia average annual 2020-22 imports per main group of seafood (top 95%) by quantity
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- SI 22-1 | Reported 2022 total seafood imports in thousand USD by Malaysia, per partner country. Source: FishstatJ (FAO 2024d)
- SI 22-2 | Reported 2022 total imports in thousand USD by Malaysia, per partner country, ISSCAAP group and commodity.
- SI 22-3 | Reported 2022 total miscellaneous marine fish imports in thousand USD by Malaysia, per partner country.
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**SI 23 | Seafood Watch recommendations for each of the evaluated wild captured species in Malaysia. (tab name: "SI-23 | SFW recs_Malaysia")**

- SI 23-1 | Final Seafood Watch recommendations for the evaluated longtail tuna fisheries in 2015.

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- SI 24-2 | 1950-2022 catches (million t) in the Philippines per main production source.

- SI 24-3 | Percent of total wild capture (marine) for the Philippines per reporting level, between 2000 and 2022.
- SI 24-4 | Catches (t) by the Philippines in FAO 71 for the top capture species, between 2000 and 2022.

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- SI 25-1 | Total wild capture (thousand tonnes) in 2019 by species fishing sector and gear type, for the species within the scope of this analysis. Country: Philippines.
- SI 25-2 | 2019 production in Philippines per gear type.
- SI 25-3 | 2019 production (thousand tonnes) in Philippines per species and commercial group. Source: SAU database. Main small pelagics are highlighted
- SI 25-4 | 2019 production (thousand tonnes) in Philippines, per end use type and gear type.
- SI 25-5 | 2019 production (thousand tonnes) per species, for the species used for Fishmeal and fish oil. Country: Philippines.
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- SI 26-3 | Philippines average 2020-22 exports of main groups of seafood (top 95%) by quantity.
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- SI 28-3 | Philippines average 2020-22 imports of main groups of seafood (top 95%) by quantity.
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- SI 29-1 | Reported 2022 total seafood imports in thousand USD by Philippines, per partner country.
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- SI 29-4 | Reported 2022 total small pelagics related imports in thousand USD by Philippines, per partner country.
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- SI 31-2 | 1950-2022 catches (million t) in Thailand per main production source.
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- SI 32-4 | 2019 production (thousand tonnes) in Thailand, per end use type and gear type.
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