

Fish Trade Practices: Southeast Asian Perspective

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In 1998, the Southeast Asian Fisheries Development Center (SEAFDEC) established the Working Group on Regional Fisheries Policy (WGRFP) at the SEAFDEC Secretariat in Bangkok, Thailand, to support the center-wide function of SEAFDEC. Comprising the high-caliber middle-level government officers seconded by the Member Countries, the WGRFP had been specifically tasked to give timely advice to the SEAFDEC Secretary-General and Department Chiefs on relevant regional and global issues, and to suggest appropriate actions to be undertaken if necessary; prepare regional fisheries policy recommendations on emerging issues for the Southeast Asian region; and coordinate the implementation of regular and extra-budgetary funded regional projects with the relevant SEAFDEC Departments. While most of the members of the WGRFP were stationed at the SEAFDEC Secretariat, other countries opted to designate virtual members operating mainly through the email platform. After eight years of its existence, the WGRFP was transformed into the Regional Fisheries Policy Network (RFPN) with members stationed at the SEAFDEC Secretariat subject to availability of funds otherwise the appointment of virtual members had also been pursued. Nevertheless, the assignment of RFPN Members to be based at the SEAFDEC Secretariat was maximized with the funding support provided by the Government of Japan through the Japanese Trust Fund as well as from the Government of Sweden through the SEAFDEC-Sida Project and the subsequent SEAFDEC-Sweden Project. As part of their assigned tasks, the RFPN Members had been carrying out thorough compilation of information related to the fisheries situation of their respective countries. More specifically, the RFPN Members in 2019 were assigned to compile data and information on the fish trade of their respective countries, the results of which had been summarized for this article to depict the perspective of fish trade practices in the Southeast Asian region. However, the information about fisheries trade of Malaysia is not included in this review considering that Malaysia was unable to second its member to the RFPN in 2019.

The Southeast Asian region has been one of the top producers of fish and fishery products worldwide. In 2017 for example, the region's total production of 45.50 million t accounted for 22.2 % of the world's total fisheries production of 206.50 million t (**Table 1**). Moreover, with the region's fisheries production in 2017 which was valued at USD 50.57 billion, and using the established estimates that the share of exports in total production in 2019 was 37.6 % (FAO, 2020a), this would imply that the Southeast Asian countries could have exported a total of about 17.11 million t of fish and fishery products bringing substantial foreign exchange to the coffers of the Southeast Asian countries.

During 2013-2017, the exportation trend of fish and fishery products of the Southeast Asian region decreased in 2015 but started to increase again until 2017 in terms of quantity and value, while the importation trend had been slowly increasing from 2013 to 2017 except for the slight decrease in 2015 (**Figure 1**). In terms of average quantity and value during the same period, **Figure 2** shows that Viet Nam, Thailand, and Indonesia were the top exporting countries, while the top importing countries include Thailand, Viet Nam, Singapore,

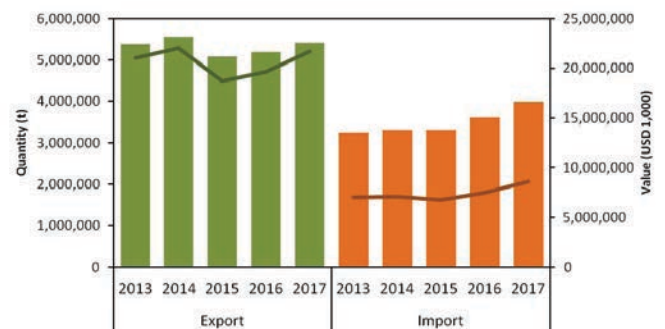


Figure 1. Annual quantity (t) and value (USD 1,000) of fish and fishery products exported and imported by Southeast Asia in 2013-2017 (FAO, 2020c)

Table 1. Total fisheries and aquaculture production by continent from 2013 to 2018 (million t)

	2013	2014	2015	2016	2017	2018
World	186.0	191.2	196.6	199.0	206.5	211.9
Africa	10.2	10.6	10.9	11.5	12.3	12.4
Americas	22.3	20.8	21.3	20.0	21.4	24.5
Asia	*135.5	*141.3	*145.5	*148.8	*153.0	**155.0
Southeast Asia	40.4	42.1	44.0	45.3	45.5	NA
Europe	16.5	16.9	17.3	17.0	18.1	18.4
Oceania	1.4	1.6	1.6	1.7	1.7	1.6

Source: FAO (2020b); SEAFDEC (2018)

* Excludes Southeast Asia

** Includes Southeast Asia

NA: not available

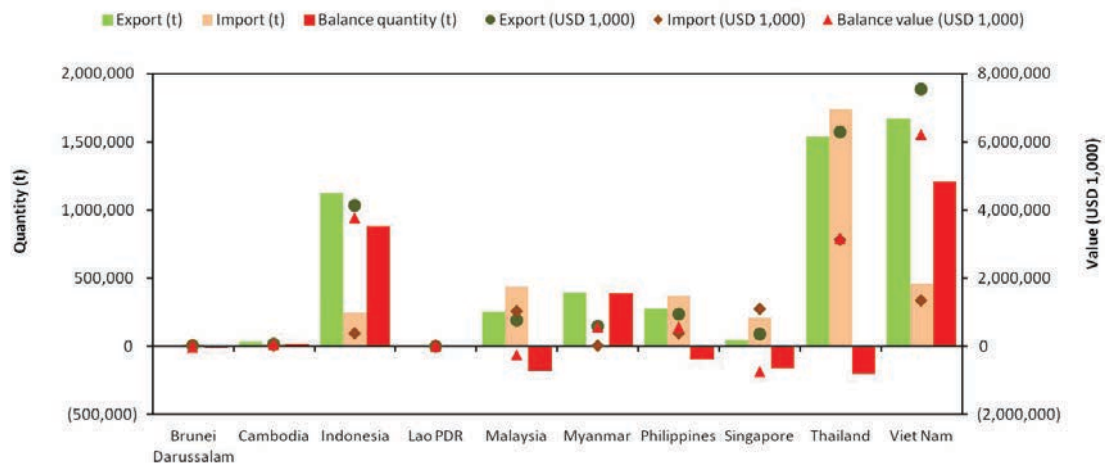


Figure 2. Average quantity (t) and value (USD 1,000) of fish and fishery products exported and imported by the ASEAN Member States between 2013-2017 (FAO, 2020c)

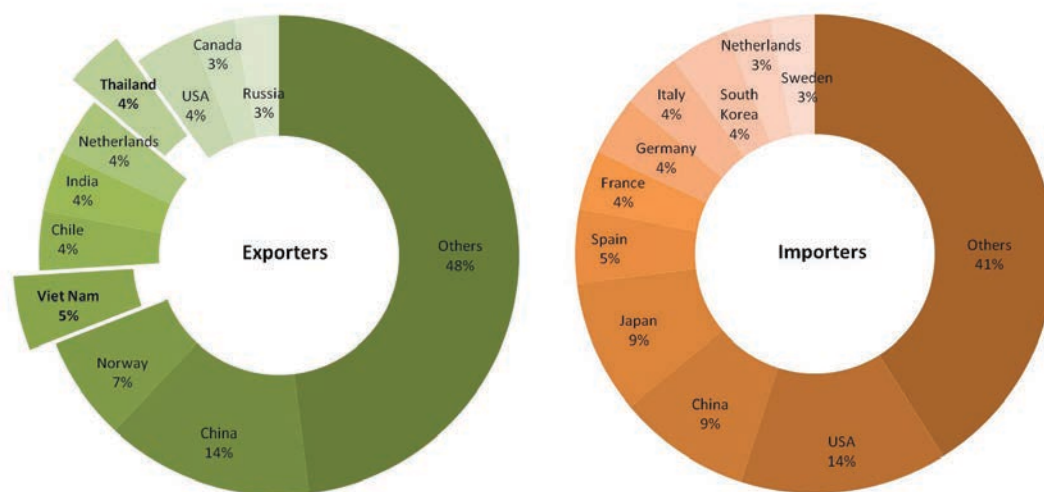


Figure 3. Top exporters (left) and importers (right) of fish and fishery products in 2018 by value (FAO, 2020a)

and Malaysia. For trade balance, Brunei Darussalam, Malaysia, Philippines, Singapore, and Thailand had deficit in terms of the quantity of exported fish and fishery products; while Brunei Darussalam, Malaysia, and Singapore had deficit in the trade value. This indicates that exports of these respective countries are not adequate to compensate their imports of fish and fishery products.

Figure 3 shows the top exporters and importers of fish and fishery products in 2018, highlighting the two Southeast Asian countries, Viet Nam and Thailand, which are among the major exporters. In recent years, Viet Nam has maintained steady growth because of strong trading connections with Chinese market, expansion of the aquaculture of Pangas catfish (*Pangasius* spp.) in the Mekong Delta, and thriving processing and re-exporting industry. Thailand, however, has experienced a significant decline in exports since 2012, mainly because of decrease in shrimp production caused by disease outbreaks which negatively affected its competitiveness at the global market (FAO, 2020a).

Fish Trade Practices of Southeast Asian Countries

The summary of information with respect to trading practices of fish and fishery products by the Southeast Asian countries, which were compiled by the Members of the Regional Fisheries Policy Network (RFPN) assigned at the SEAFDEC Secretariat in Bangkok, Thailand in 2019, is shown below:

Cambodia

The traditional processed freshwater fish in Cambodia include fish paste, fermented fish, dry salted fish, smoked fish, fish sauce, and dried fish for animal feed. Two freshwater fish species, namely: *Cirrhinus siamensis* and *C. lobatus* are the most popular fishes processed for the domestic market. For marine fishes, the main commercial species are mackerels, scads, anchovies, snappers, shrimps, blue swimming crab, cuttlefish, squid, green mussels, oysters and blood cockles (FAO, 2020d). The majority of fish and fishery products in Cambodia is consumed domestically or marketed at low value in international markets.

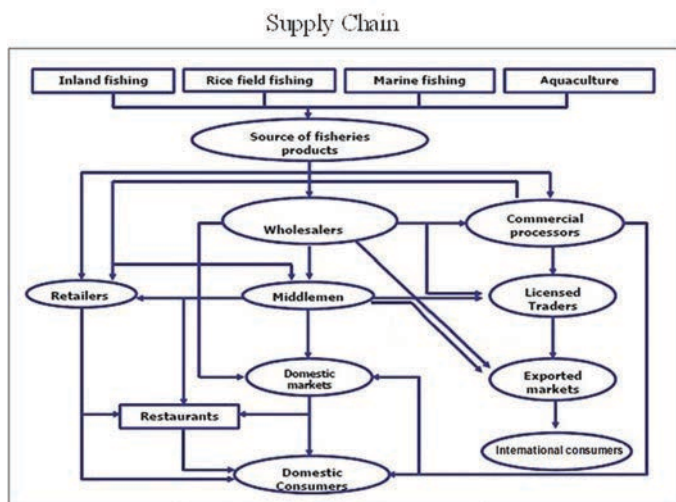


Figure 4. Supply chain of fish and fishery products of Cambodia (FIA, 2017)

The country's supply chain of fish and fishery products from inland fishing, rice field fishing, marine fishing, and aquaculture is illustrated in **Figure 4**. Fish and fishery products of Cambodia are exported in three different ways. First, chilled fish are exported via land using trucks or cars. Second, live freshwater fish species are exported using cages in big boats via water-ways. Third, high-value live fish and some fish products are exported by air (FAO, 2011).

The most important landing sites for freshwater fish are Chong Khneas and Kampong Khleang in Siem Reap and Kampong Chhnang Province for export to Thailand via Poipet, and Viet Nam via Phnom Penh, and Kratie for export to Lao PDR and then to Thailand via Stung Treng. **Figure 5** shows the export routes of inland fish and fishery products by land and boat to neighboring countries. For marine fishes, the country has a total of 131 landing sites. However, harbor facilities and services are limited and poor because most of the ports are small and located in rural areas. Fresh and live marine fish are

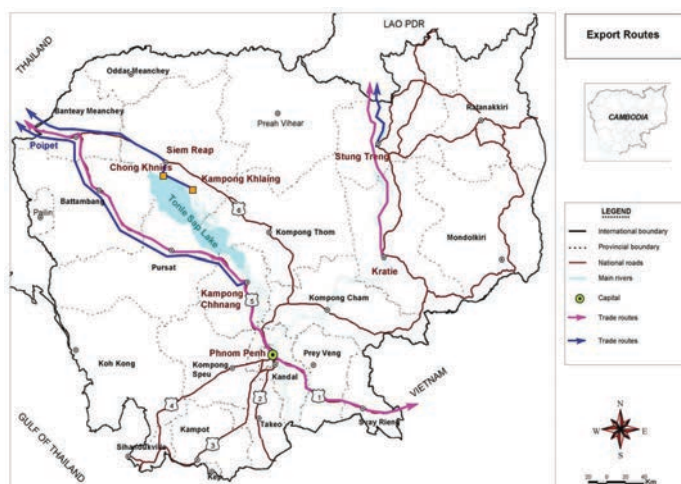


Figure 5. Export routes of inland fish and fishery products from Cambodia: Blue arrow indicates direct route and the pink arrow indicates indirect route (Rab, Hap, Seng, Ahmed, & Viner, 2006)

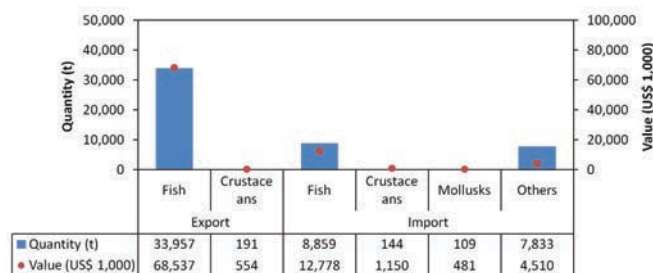


Figure 6. Quantity (t) and value (USD 1,000) of exported and imported fish and fishery products of Cambodia in 2017 (FAO, 2020d)

exported using the international airport in Phnom Penh while frozen products are exported through Sihanoukville seaport.

In 2017, Cambodia exported about 33,957 t of fish and about 191 t of crustaceans with the approximate value of USD 68.5 million and USD 0.6 million, respectively (**Figure 6**). The main export markets are Thailand and Viet Nam followed by Singapore, Malaysia, China, Hong Kong, Taiwan, Japan, USA, and Australia. Moreover, Cambodia imported around 8,859 t (USD 12.8 million) of fish, 144 t (USD 1.2 million) of crustaceans, 109 t (USD 0.5 million) of mollusks, and 7,833 t (USD 4.5 million) of other fishery products from Viet Nam, Thailand, China, Japan, Canada, Germany, USA, Singapore, Indonesia and Ecuador.

Indonesia

Figure 7 shows the supply chain in freshwater aquaculture and capture fisheries in Indonesia. For the freshwater aquaculture supply chain, the producers at Tier 1 determine the successful production of good fish eggs or larvae of fish. The spreaders at Tier 2 cultivate the spawned fish larvae and enlargers at Tier 3 culture the fish until the desired size is reached for human consumption. The collectors or wholesalers at Tier 4 buy the fish with ready-to-consume size and sell it to retailers (Tier 5) in fish ponds, markets, and restaurants. In some areas, however, Tier 2 and Tier 3 are not present in the supply chain because of strict requirements to comply with the standards of aquaculture products.

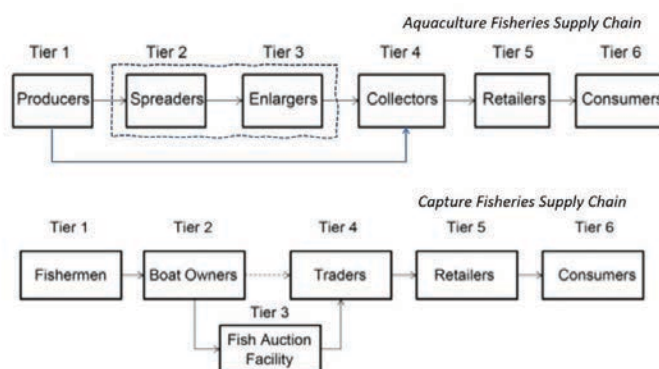


Figure 7. Supply chain of aquaculture (top) and capture fisheries (bottom) of Indonesia (Guritno & Tanuputri, 2017)

With regard to the capture fisheries supply chain, Tier 1 and Tier 2 usually have direct connection with the traders at Tier 4. However, in an area where there is fish auction facility, the Government conducts fish auction at Tier 3. At Tier 4, the traders take control of the market for fish and fishery products (Guritno & Tanuputri, 2017).

Exportation of fish and fishery products from Indonesia is facilitated by the national government agencies (**Figure 8**). During the pre-harvest, the Ministry of Marine Affairs and Fisheries (MMAF) issues the Catch License, the Ministry of Transport issues the Vessel License, and the Ministry of Labor

issues the Foreign Labor License to the exporters. Before exporting the fish and fishery products, the exporters (e.g., cargo forwarders, trader companies, producers/exporters) should secure the following required documents: CITES clearance from the Ministry of Environment and Forestry, Company License and Certificate of Origin from the Ministry of Trade, and Export Announcement from the Ministry of Finance. Meanwhile, the importation of selected fish and fishery products is managed by the Fish Quarantine Agency, Fishery Product Quality and Safety Control, an agency under MMAF. The agency is responsible for issuing the documents required for marketing of imported fish and fishery products

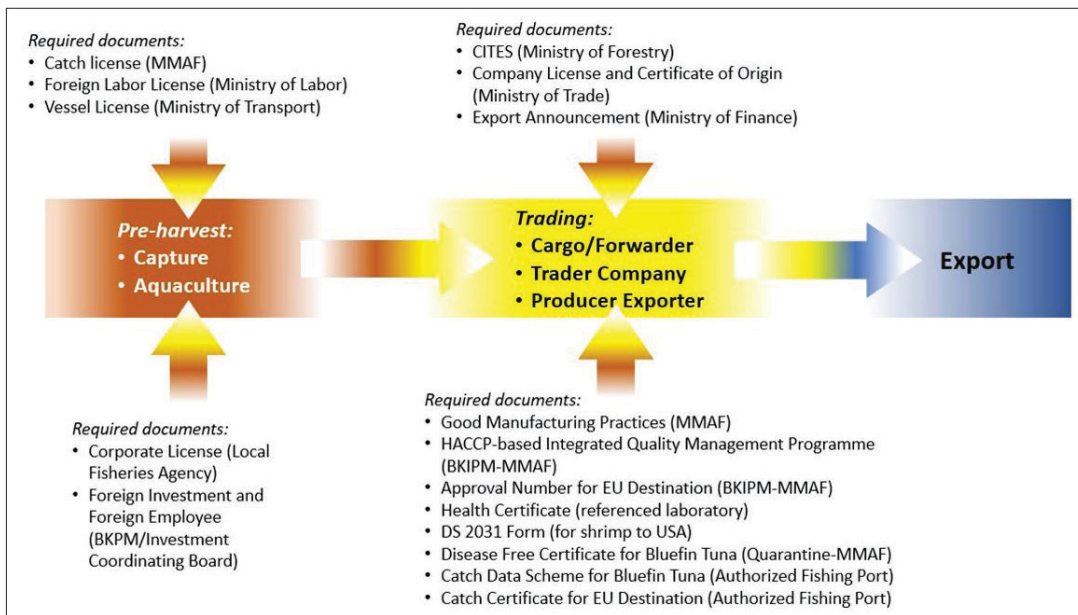


Figure 8. Management of exporting fish and fishery products from Indonesia (Pramono, Fathoni, & Marpaung, 2015)



Figure 9. Management of importing fish and fishery products to Indonesia (KKP, 2019a)

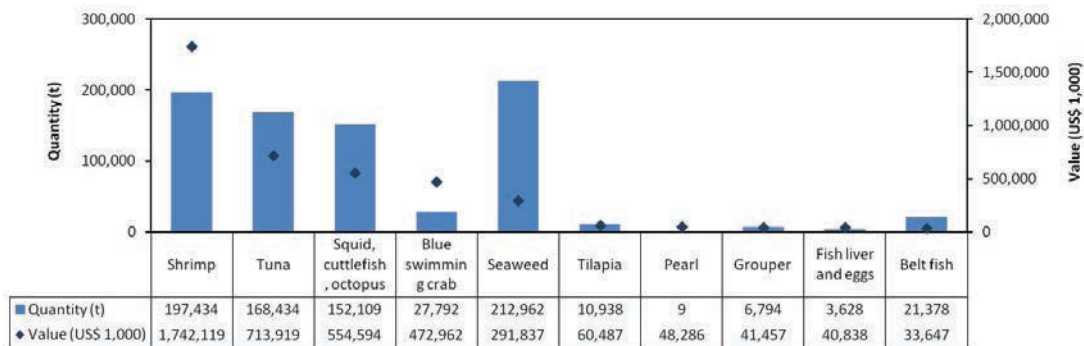


Figure 10. Quantity (t) and value (USD 1,000) of top 10 fish and fishery products exported by Indonesia in 2018 (ranking was based on value) (KKP, 2019b)

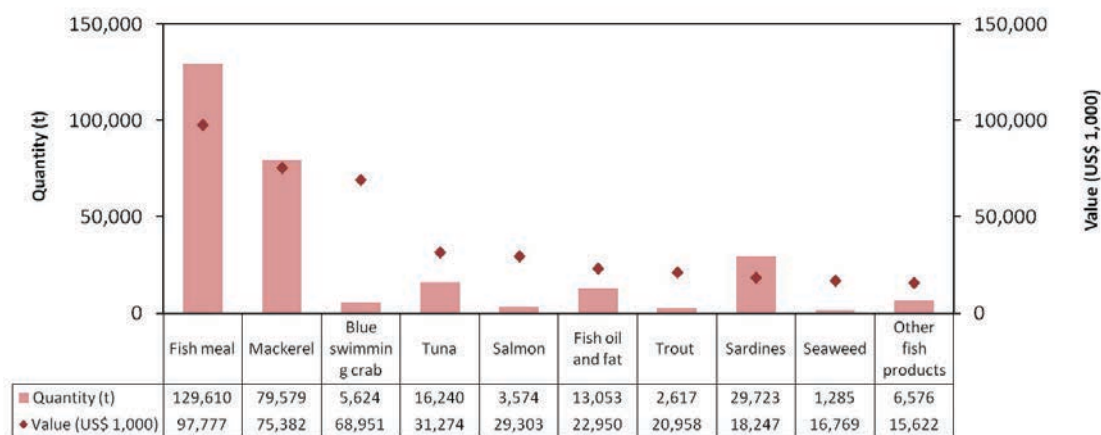


Figure 11. Quantity (t) and value (USD 1,000) of top 10 fish and fishery products imported by Indonesia in 2018 (ranking was based on value) (KKP, 2019b)

following the five major steps (Figure 9) to clear the imported products before entering the Indonesian domestic market.

In 2018, the top 10 exported fish and fishery products of Indonesia include shrimp, tuna, squid, crab, seaweed, tilapia, pearl, grouper, fish liver, and belt fish in terms of value (Figure 10) which were destined to USA, Japan, China, Thailand, and Viet Nam, Italy, Taiwan, Malaysia, UK, and Saudi Arabia. For the top 10 imported fish and fishery products in terms of value, these include fish meal, mackerel, blue swimming crab, tuna, salmon, fish oil and fat, trout, sardines, seaweed, and others (Figure 11), which came from China, USA, South Korea, Canada, Norway, Thailand, Japan, Viet Nam, Chile, and Russia.

Lao PDR

In Lao PDR, fish and fishery products are sold at the domestic markets near the landing sites along the Mekong River and its tributaries (*i.e.*, Ou, Xieung, and Khan Rivers). However, the market operations in some landing sites are seasonal, thus the fish and fishery products are sold directly to restaurants. For export (Figure 12), the companies submit relevant documents to the Department of Livestock and Fisheries at the District or Provincial Office and the documents are approved at the National Office. Then, the fish and fishery products are

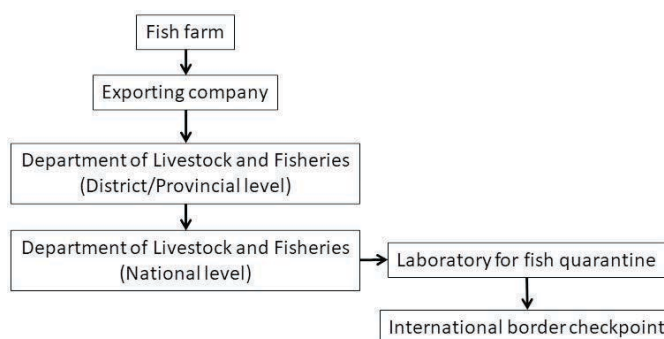


Figure 12. Fisheries supply chain of Lao PDR (LARReC, 2003)

quarantined at laboratories and cleared at border checkpoints before transporting them to the international markets.

In 2017, Lao PDR exported a total of 12 t (USD 44,000) of fish and crustaceans both as fresh and processed, which was only a tenth of the total exported volume during the past three years (Figure 13). Lao PDR imported fish and fishery products from neighboring countries such as Thailand, Viet Nam, Cambodia, Myanmar, and China. During the four-year period, the imported quantity and volume fluctuated from 515 t (USD 2.3 million) in 2014 to 737 t (USD 2.1 million) in 2017 (Figure 14). However, the accuracy of the data could not be verified because of the lack of official reports during the recent years.

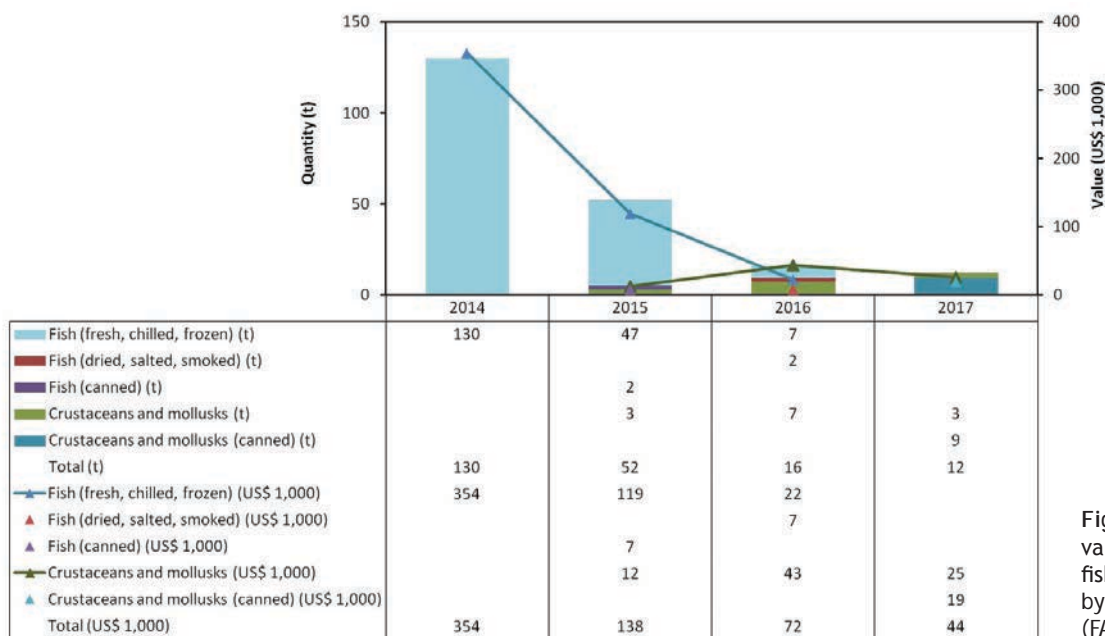


Figure 13. Quantity (t) and value (USD 1,000) of fish and fishery products exported by Lao PDR in 2014-2017 by (FAO, 2020c)

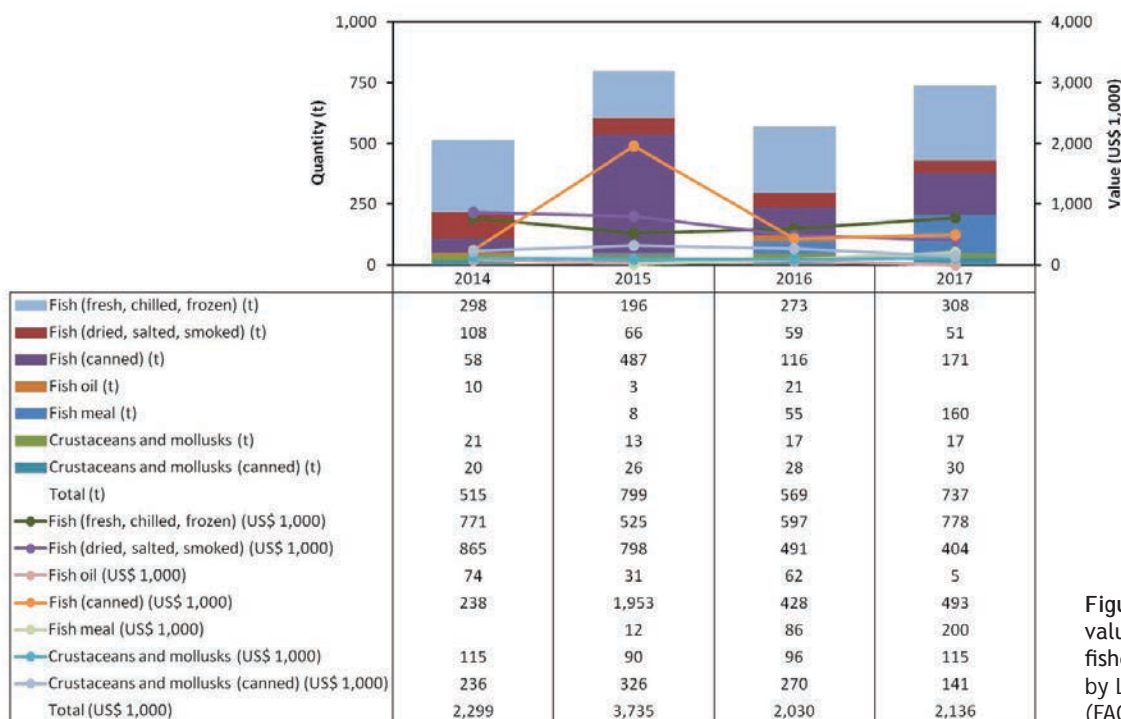


Figure 14. Quantity (t) and value (USD 1,000) of fish and fishery products imported by Lao PDR in 2014-2017 by (FAO, 2020c)

Myanmar

In Myanmar, the fish and fishery products are transported to the landing sites or jetties for auction/wholesale/retail in the markets and processed for export (Figure 15). The main jetties which were approved by the EU are located in Shwe Zin Yaw Hein and Annawa Aung in Yangon. Complying with



Figure 15. Supply chain for export of fish and fishery products from Myanmar (STIP, 2019)

good manufacturing practices (GMP) and the Hazard Analysis and Critical Control Points (HACCP), the Shwe Zin Yaw Hein jetty serves as the main source of exported raw materials and caters to more than 180 vessels.

The major exported fish and fishery products include fish, prawn, and others, e.g. crab, eel, dried prawn, and fish meal (Figure 16). In 2017-2018, Myanmar exported 10 % of its total fish production which was around 568,227 t with the value of about USD 711 million, with Thailand, China, Singapore, Malaysia, Saudi Arabia, Japan, USA, UAE, UK, and Bangladesh as the top 10 countries of destination (Figure 17).

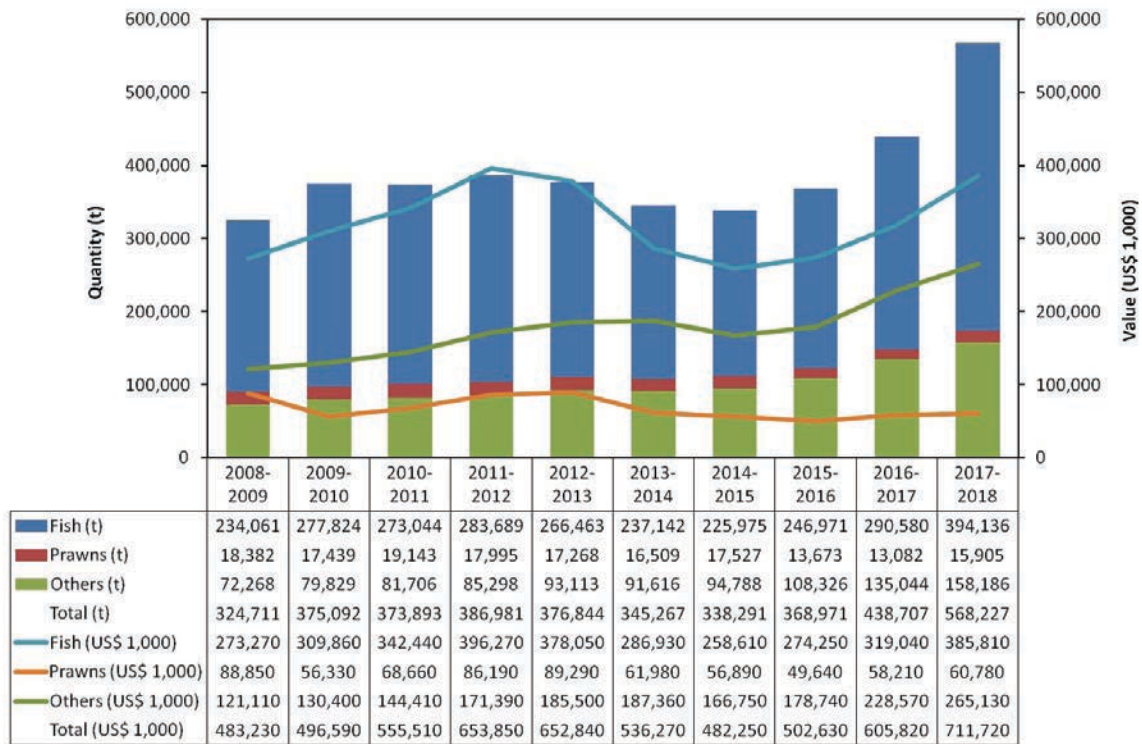


Figure 16. Quantity (t) and value (USD 1,000) of fish and fishery products exported by Myanmar from fiscal year 2008-2009 to fiscal year 2017-2018 (DoF, 2018)

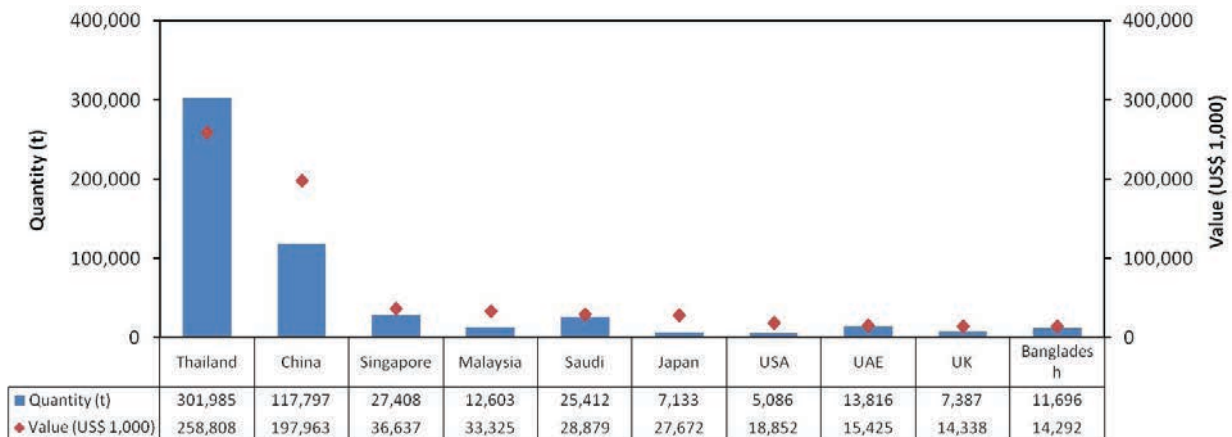


Figure 17. Top ten countries of destination of fish and fishery products exported by Myanmar in fiscal year 2017-2018 (ranking was based on value) (DoF, 2018)

Philippines

The fish and fishery products from capture fisheries and aquaculture of the Philippines undergo post harvest handling and processing before ending up in markets (**Figure 18**). The major fish ports in the country are being managed by the Philippine Fisheries Development Authority (PFDA). Particularly, the General Santos Fish Port Complex is equipped with processing and refrigeration facilities and cater to tuna hand line boats, purse seiners, and huge capacity refrigerated foreign vessels, which is designed for unloading and marketing of marine fish and fishery products both for local and foreign markets (PFDA, 2019). Currently, a number of fish ports and landing areas in the country are proposed

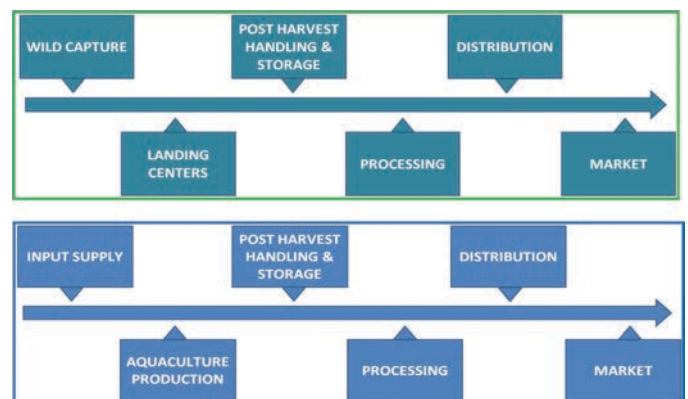


Figure 18. Supply chain of capture fisheries (top) and aquaculture (bottom) (BFAR, 2018)

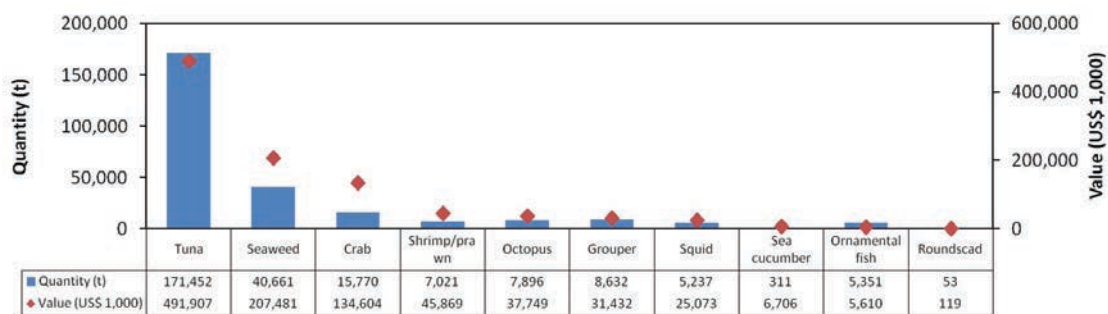


Figure 19. Quantity (t) and value (USD 1,000) of major fish and fishery products exported by Philippines in 2018 (BFAR, 2018)

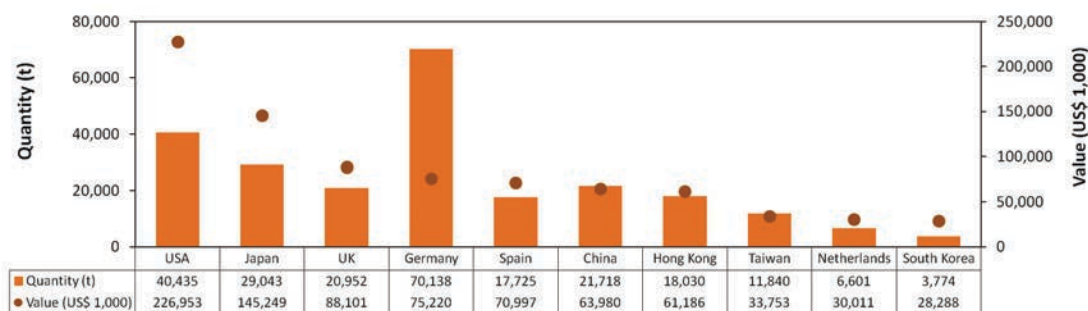


Figure 20. Top 10 countries of destination of fish and fishery products exported by Philippines in 2018 by quantity (t) and value (USD 1,000) (ranking was based on value) (BFAR, 2018)

for construction and improvement to enhance competitive advantage in the region.

In 2018, tuna products (fresh, chilled, frozen, smoked, dried, or canned), seaweed, crab, shrimp/prawn, octopus, grouper, squid, sea cucumber, ornamental fish, and round scad were the top exported commodities in terms of value (Figure 19). The major countries of destination of exported fish and fishery products in terms of value include the USA, Japan, UK, Germany, Spain, China, Hong Kong, Taiwan, Netherlands, and South Korea (Figure 20).

Tuna, mackerel, and sardines (fresh, chilled, or frozen) were the top commodities imported by the Philippines in 2018, followed by prawn feeds as well as flour, meals, and pellets of fish, crustaceans, and mollusks fit and unfit for human consumption (Figure 21). The top ten countries where imported fish and fishery products originated include China, Viet Nam, Papua New Guinea, Japan, Taiwan, South Korea, USA, Micronesia, Chile, and Indonesia (Figure 22).

Thailand

The fisheries supply chain in Thailand is composed of three stages, namely: 1) Up stream – production of fish and fishery products from capture and aquaculture, 2) Middle stream – fish and fishery products are transported to ports and fish markets, and 3) Down stream – domestic consumption and export of fish and fishery products (Figure 23). The Fish Quarantine and

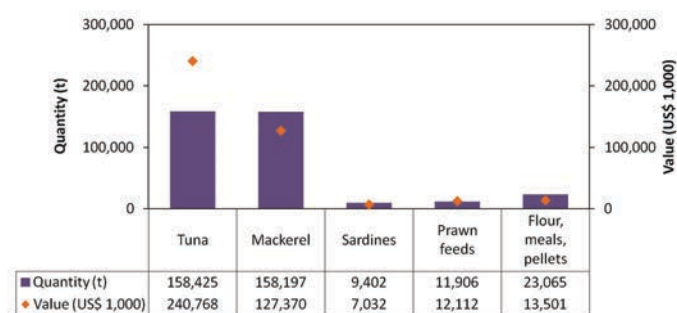


Figure 21. Major fish and fishery products imported by Philippines in 2018 by quantity (t) and value (USD 1,000) (BFAR, 2018)

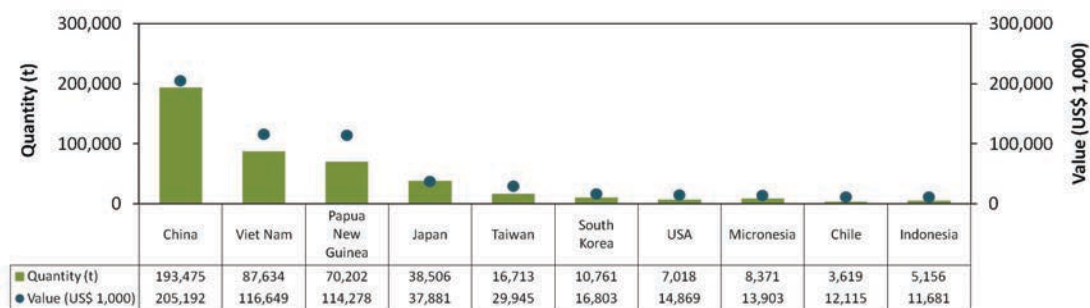


Figure 22. Top 10 countries of origin of fish and fishery products imported by Philippines in 2018 by quantity (t) and value (USD 1,000) (ranking was based on value) (BFAR, 2018)

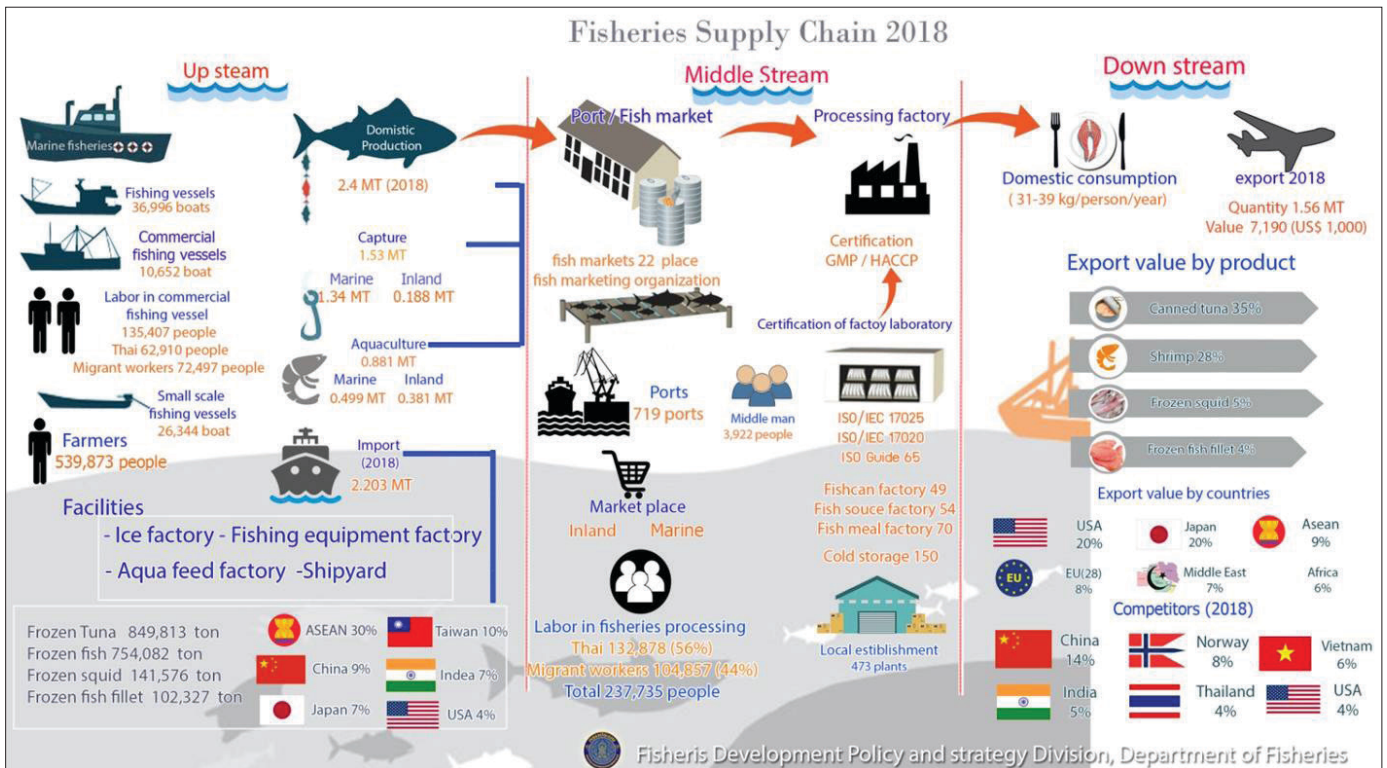


Figure 23. Fisheries supply chain of Thailand in 2018 (DOF, 2019)

Inspection Division (FIQD) of the Department of Fisheries of Thailand is responsible for the management of the operations related to the control, export, and import of aquatic animals and aquatic products.

The FIQD coordinates with relevant agencies within the country as well as foreign agencies in order to comply with international laws and agreements. Moreover, the Government

has established 31 Port-in Port-out (PIPO) Control Centers in 22 coastal provinces for the inspection of aquatic animals upon entry to the ports to ensure traceability of aquatic animals and fishery products throughout the supply chain. To comply with the port State measures under the Fisheries Royal Ordinance Section 95, the country has designated 25 ports for entry of foreign vessels. The good quality fish and fishery products of Thailand are acceptable in the world market and the country

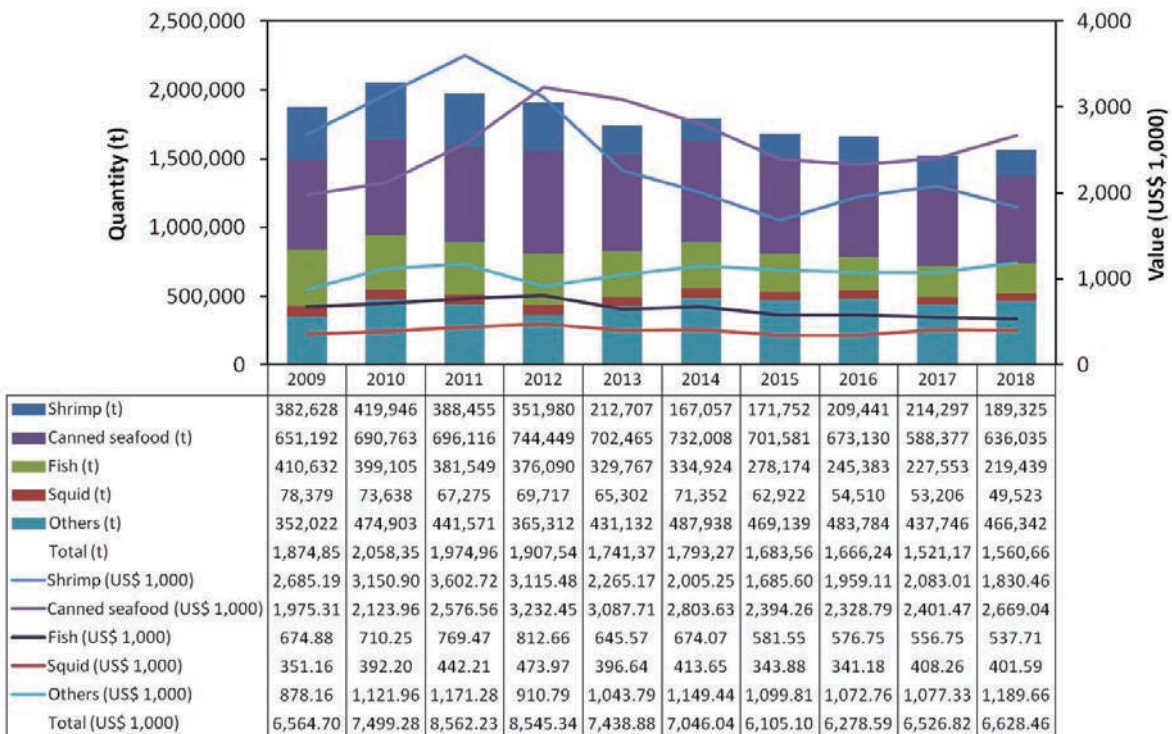


Figure 24. Quantity (t) and value (USD 1,000) of fish and fishery products exported by Thailand in 2009-2018 (DOF, 2019)

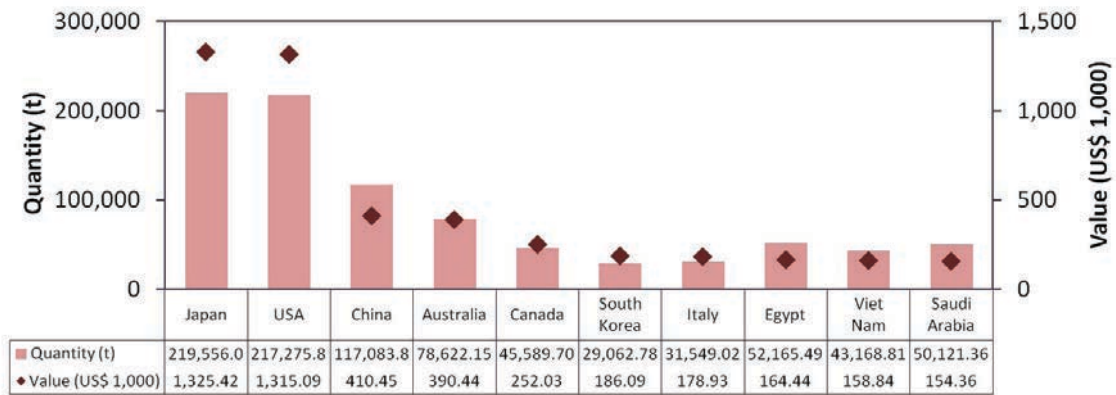


Figure 25. Top 10 countries of destination of fish and fishery products exported by Thailand in 2018 by quantity (t) and value (USD 1,000) (ranking was based on value) (DOF, 2019a)

is gaining average revenue of more than USD 6.32 billion per year. The main fish and fishery products exported by Thailand include shrimp, canned seafood, fish, and squid (Figure 24). In terms of value, Japan, USA, China, Australia, Canada, South Korea, Italy, Egypt, Viet Nam, and Saudi Arabia were the top

10 countries of destination of fish and fishery products from Thailand in 2018 (Figure 25).

From 2009 to 2018, Thailand imported fish, squid, shrimp, and other fishery products with an average volume of 1.75 million t

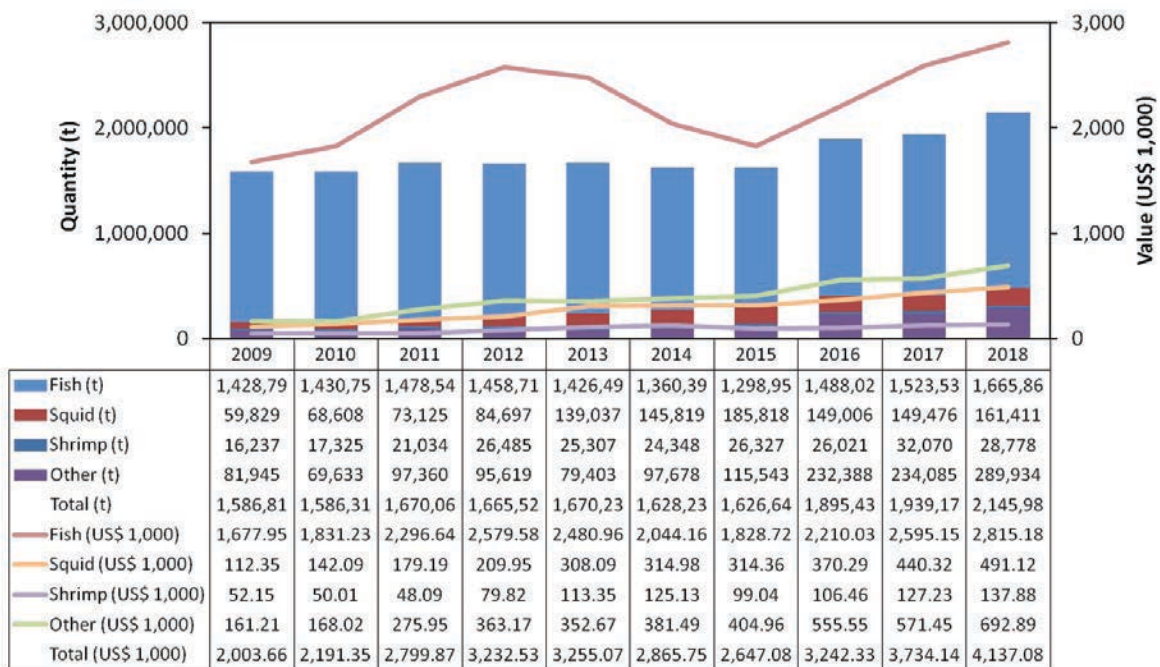


Figure 26. Quantity (t) and value (USD 1,000) of fish and fishery products imported by Thailand in 2009-2018 (DOF, 2019)

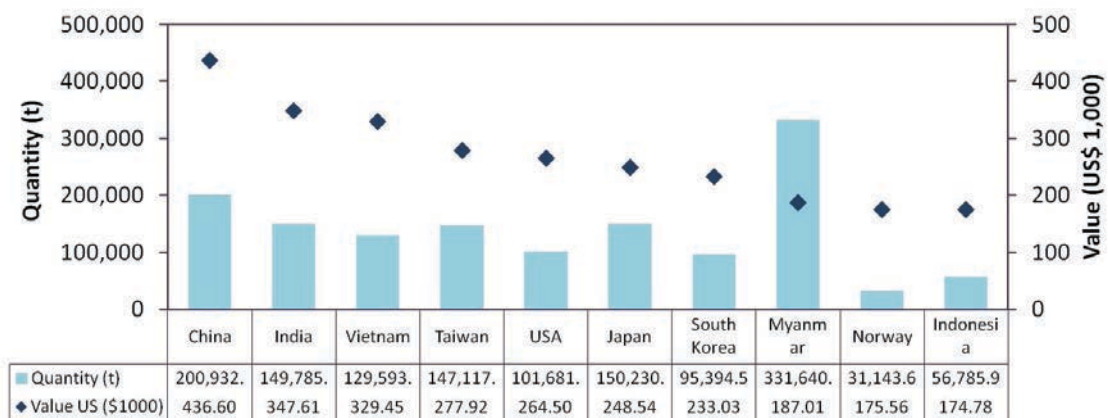


Figure 27. Top 10 countries of origin of fish and fishery products imported by Thailand in 2018 by quantity (t) and value (USD 1,000) (ranking was based on value) (DOF, 2019)

per year and average value of USD 2.97 million per year (Figure 26). In 2018, Myanmar was the top source of imported fish and fishery products in terms of quantity (more than 300 thousand t), however, China posted the highest value (about USD 400 thousand) of the country's imported fish and fishery products (Figure 27).

Viet Nam

In the fisheries supply chain of Viet Nam, the middlemen serve as bridge between the fishers/fish farmers and processors. For capture fisheries, the middlemen collect the catch right after landing at fishing ports and send to processors (Figure 28). As practiced, the middlemen lease their fishing vessels to fishers or hire the crew for fishing boats. For aquaculture, the Government has issued the Policy Plan No. 6390/KH-BNN-KTHT in 2018 which emphasized on the direct connection between production and processing (Figure 29). However, the middlemen still intervene and control the price as they usually provide the capital to fish farmers. There are 82 fishing ports all over Viet Nam which are located in 27 coastal provinces, and the major fishing ports include Au Thuyen-Tho Quang Fishing Port in Da Nang Province, Center for Managing Fisheries Facilities in Khanh Hoa Province, and Tac Cau Fishing Port in Ca Mau Province. Meanwhile, fish and fishery products are transported from the processing facilities and exported through the cargo ports. There are 49 cargo ports in the country, of which 10 are major cargo ports.

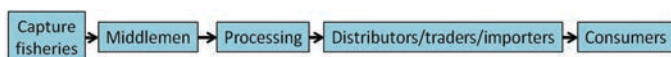


Figure 28. Supply chain of capture fisheries in Viet Nam (Lai, Tuan, Thuy, Tri, & Van, 2009)

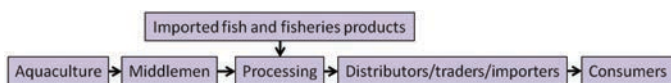


Figure 29. Supply chain of aquaculture in Viet Nam (Lai, Tuan, Thuy, Tri, & Van, 2009)

Viet Nam ranks among the top ten seafood exporters in the world. In the recent years, the country's seafood export turnover ranked fourth among the major export products including textiles, footwear, and crude oil. The top three fisheries commodities include shrimp (giant tiger prawn and white leg shrimp), Pangasius, and tuna, *i.e.* yellowfin tuna, bigeye tuna, longfin tuna, southern bluefin tuna, and tripped melon tuna (Figure 30). In 2018, approximately USD 8.3 million of fish and fishery products was exported by Viet Nam to more than 160 countries (Figure 31).

However, overexploitation of the fishery resources of the country has led to the low supply of raw materials for fish processing. Thus, the imported products are intended to augment the supply of raw materials. In 2018, the country imported fish and fishery products valued at around USD 1.7 million (Figure 32).

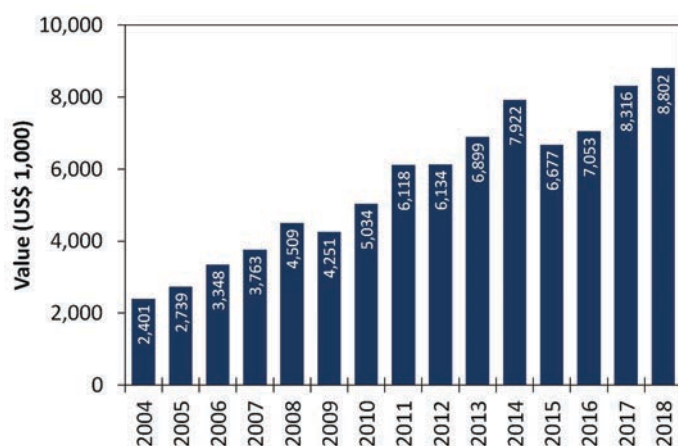


Figure 30. Value (USD 1,000) of fish and fishery products exported by Viet Nam in 2004-2018 (VASEP, 2019)

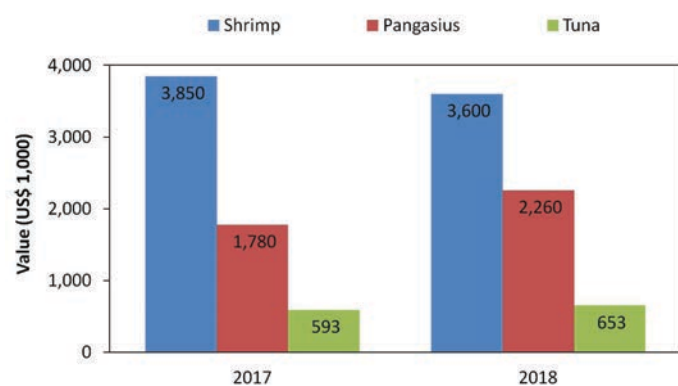


Figure 31. Value (USD 1,000) of top three fish and fishery products exported by Viet Nam in 2017 and 2018 (VASEP, 2019)

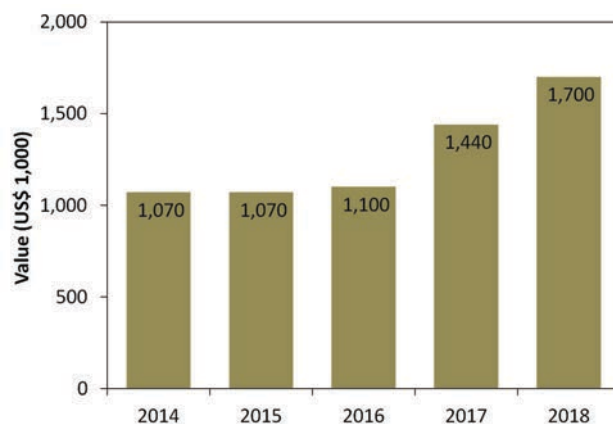


Figure 32. Value (USD 1,000) of fish and fishery products imported by Viet Nam in 2014-2018 (VASEP, 2019)

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