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Organization of the
United Nations



GLOBEFISH

HIGHLIGHTS

International markets for fisheries
and aquaculture products



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2024

with January–September
2023 statistics

GLOBEFISH

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International markets for fisheries
and aquaculture products

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Global fish economy

● Returning consumer confidence a boon for the sector moving into 2024

Encouraging indications pointing to a stabilization of commodity prices are emerging from a number of major markets for fisheries and aquaculture products. Following what has been an extended period of high inflation and falling consumer confidence, indices for the United States of America, the European Union and Japan fell in the latter months of 2023, with high global rates of rising inflation giving way to dis-inflation (when prices continue to increase, but at a slower rate than before). Prices for food, fuel and feedstuffs are expected to continue to decline, easing pressure on food security and disposable income.

The international market remains vulnerable, and still faces considerable headwinds to a smooth recovery. Following close on the heels of the 2021–2023 global supply chain difficulties, the Suez Canal crisis which surfaced in late 2023 as well as restrictions on capacity in the drought-hit Panama Canal, have sent shockwaves through international commerce and caused freight rates to jump. Read more in our Special Feature on the impact of the Red Sea crisis on shipping costs. Additionally, reduced supply as a result of the El Niño weather event will continue to restrict not only the availability of fishmeal and fish oil, but also other commodities such as sugar and coffee (although it should boost soybean harvests), while conflict and insecurity could rapidly re-instate volatility in international food and energy markets.

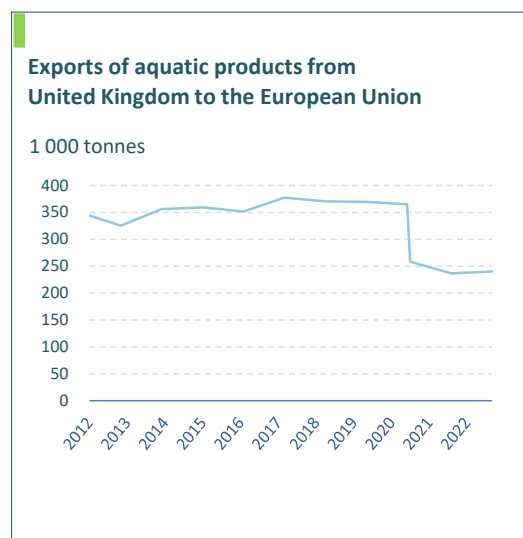
There was overall stagnation in 2023 for the fisheries and aquaculture sector, characterized by weak demand, lower quotas for certain key wild capture fisheries, and reduced growth in aquaculture investment. Production did see a slight increase of 0.6 percent on 2022 levels, with a marginal expansion in aquaculture production offsetting a fall in capture fisheries. Trade volumes, meanwhile, fell to 65 million tonnes, a 4.3 percent decline compared with 2022 levels. The value of global trade in aquatic products in 2023 was USD 183.7 billion, a 2.6 percent decline. Much of this drop is attributable to the afore-mentioned lower quotas on key wild capture fisheries.



The FAO Fish Price Index stood at 113 points in September 2023, with softening prices leading to a nine-point decline in the index since the beginning of the year. The differing dynamics affecting the various segments of the fisheries and aquaculture sector have been reflected in the divergent trends for different species. While limited supplies have kept prices for whitefish high, overall prices for aquaculture species have declined steadily after their peak in April 2022. Farmed shrimp prices, in particular, have registered significant reductions, with the ready supply brought by continued expansion of Ecuadorian production keeping prices low. As is to be expected, the cyclical El Niño weather event has been causing severe disruption for the Peruvian anchoveta fishery, which has pushed fish oil prices sky-high.

New regulations for border controls on European Union-origin goods imported into the United Kingdom of Great Britain and Northern Ireland (United Kingdom) came into force on 31 January 2024. Although goods originating from the United Kingdom and the European Union are not subject to tariffs and quotas in the other's markets, all food products will now be subject to checks to ensure that they meet national standards. The full range of Customs as well as sanitary and phytosanitary (SPS) checks on goods from the European Union coming into the United Kingdom will

be rolled out in phases over the coming nine months, with European exporters now having to confront many of the same issues that their British peers have been living with for the past three years. Bureaucracy and restrictions have caused extraordinary headaches for British exporters to the European Union; the graph below shows the steep decline in exports of aquatic products from the United Kingdom to the European Union following the introduction of additional European Union Customs checks in 2021.



Source: Author's own elaboration based on GTT, 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

FAO GLOBEFISH is pleased to announce the recent revival of the GLOBEFISH Insights series, providing analysis on current events and other topics of interest. Recent editions have covered the [impact of trade restrictions on Japanese aquatic products](#), seafood supermarkets in Shanghai and the [current crises affecting international shipping](#). Future editions are in the pipeline for the first half of 2024, with anticipated coverage of trade in fisheries and aquaculture by-products, the market for salmon in Asia and trade in live fish. We would also like to bring our readers' attention to the wide-ranging analysis published by the GLOBEFISH project, including our regular publications the [European Price Report](#) and the [Chinese Fish Price Report](#), and other GLOBEFISH information products such as the [GLOBEFISH Market Profiles](#) and the [GLOBEFISH European Price Dashboard](#).





GLOBAL FISH ECONOMY | overview

OVERALL PRODUCTION

185.4
MILLION TONNES **+0.6%**



WILD CAPTURE FISHERIES

89.6 MILLION TONNES

-1.7%



AQUACULTURE

95.8 MILLION TONNES

+2.8%



AVERAGE GLOBAL CONSUMPTION

20.6 KG **+0.3%**



CAPTURE FISHERIES

8.9 KG **-1.8%**

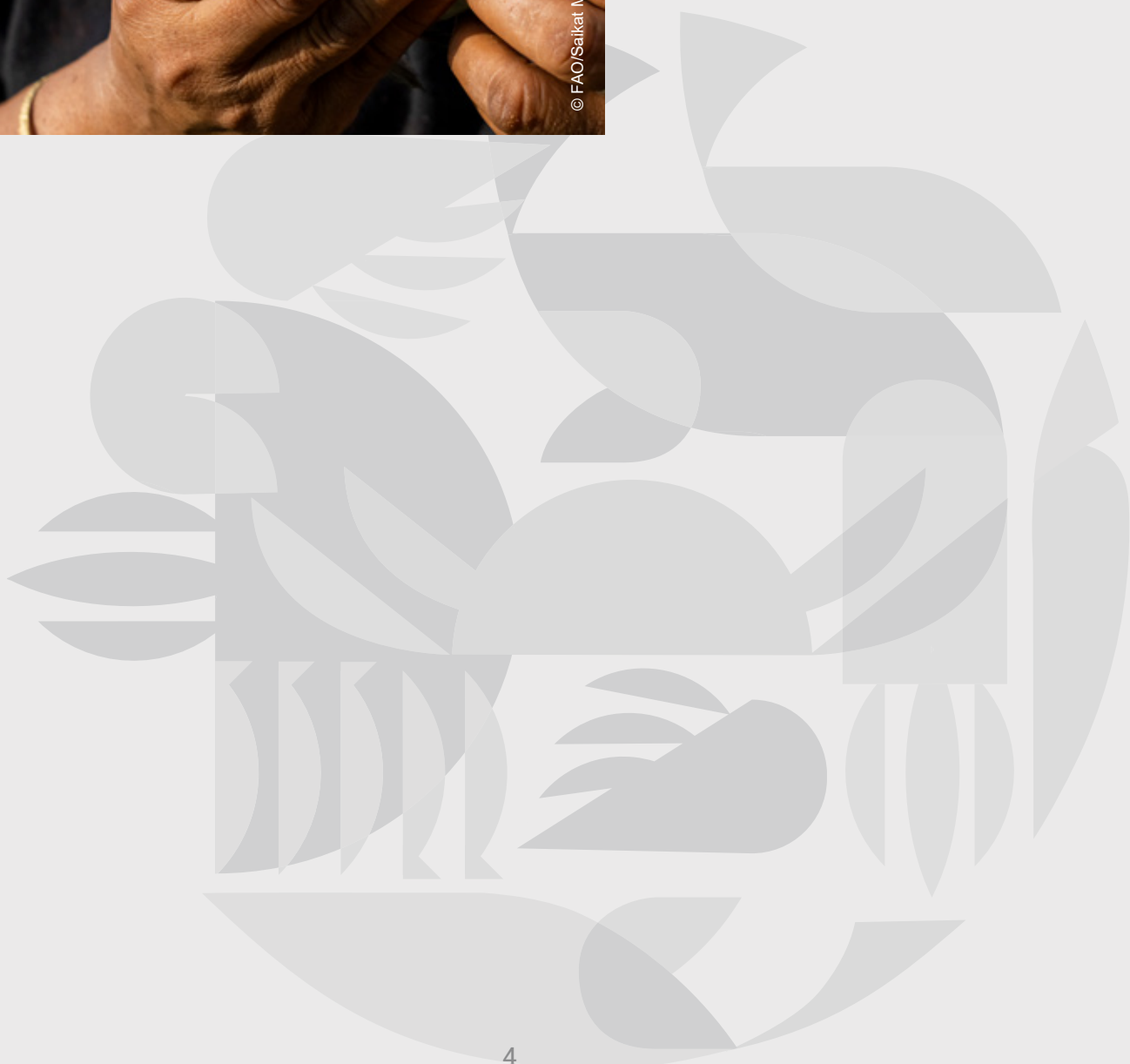
AQUACULTURE

11.8 KG **+1.9%**

FISH PRICE INDEX

125.5 **+21%**







Bivalves

Bivalve demand remains strong, but supplies affected in some sectors

Demand for bivalves was strong in the closing months of 2023, especially just before the Christmas period. Although prices rose in tandem with the demand, consumers still appeared to regard them as good value for money.

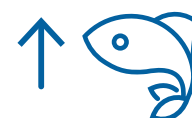
In some parts of Europe, climate change and other negative influences (such as the invasive blue crab which is eating up young mussels and clams in the Adriatic Sea) have led to lower catches and production

Bivalves are good for the marine environment

There is one strong argument in favour of bivalves: their contribution towards ecological balance. The shells of bivalves such as oysters, mussels, scallops and clams contain a calcareous material (calcium carbonate), made partly from carbon dioxide (CO₂) in the ocean. For a marketed oyster weighing 85 grams, that represents almost nine grams of pure carbon stored in its shell. Another advantage of bivalves is that because they filter seawater continuously, they help to de-pollute sea water; for example, an oyster filters five litres of water per hour. Since 2014, New York City has been carrying out a project to place one billion oysters in the waters of its bay for this purpose. To date, 122 million molluscs have been re-introduced into the estuary, from which they had disappeared at the beginning of the twentieth century.

Mussels

Mussels are an important species for the French seafood market, with some 180 000 tonnes per year (liveweight equivalent) consumed, representing nearly three kg per capita per year. Eight out of ten consumers say that they eat it at least once a year, with mussels and chips (moules-frites) being a popular dish.



© FAO/GMB Akash

In terms of value created in France, there is a large number of producers (mussel farmers) and processors adding value to the product in specialized processing plants.

Meanwhile, mussel producers in France have to deal with rising costs, level selling prices, and declining margins. During 2023, the production of mussels in the country recovered after a difficult 2022, when a period of drought had adversely impacted mussel growth. Prices of mussels have declined somewhat after the price highs experienced in 2022. France is the second major producer of mussels in Europe, after Spain.

Mussel trade recovered in France in 2023, following the rebound in production from the low season in 2022, as mentioned above. Globally, in the first nine months of 2023, an additional 20 000 tonnes of mussels entered international trade, reaching 272 000 tonnes. During the same period, the Kingdom of the Netherlands exported some 5 000 tonnes more mussels, while New Zealand also increased shipments by 4 000 tonnes. In terms of imports, a lower volume of mussels entered France in the first nine months of 2023 over the same period in the previous year, as domestic production replaced the need for supplies from other countries.

Oysters

Oysters are an important commodity in France, with the year-end festivities being a major consumption period. Unfortunately for farmers, food poisoning caused by oysters prompted the French health authorities during the holiday season to ban the production and sale of oysters in several sectors. In the northern part of the Bay of Bourgneuf in Loire-Atlantique, the ban lasted a month. Oysters from the Pays-de-Retz have been back on the shelves since the beginning of Monday, January 15. However, consumers remain wary, and it will be a difficult task to recover their confidence in the short-term.

World oyster trade declined slightly in the first nine months of 2023, when compared to the same period of 2022. Some 54 240 tonnes were imported, with the United States as the main market, albeit reporting a 19 percent reduction in imports during the period under review. In terms of exports, France was the main supplying country with some 11 400 tonnes shipped, on par with the corresponding 2022 figure. The Republic of Korea was the second biggest supplier of oysters with almost 9 000 tonnes exported during the first nine months of 2023, a five percent increase over the same period of 2022.

Mussels imports

World +8% ↑

Oysters imports

World -35% ↓

Scallops

China closed the domestic scallop market for imports from Japan, expressing concerns related to the release of water from the Fukushima nuclear reactor in 2023. As a result, Chinese imports of Japanese scallops declined by 36 percent in the first nine months of 2023 compared to the same period of 2022. Consequently, Japanese producers had to look for new markets, and found the United States as a good outlet. This was mainly due to lower production of scallops in that country, especially from New England. The last quarter of 2023 saw a sharp increase in exports from Japan to the US market, in time for the year-end festivities.

Overall, international scallop trade declined in 2023. Some 140 000 tonnes were imported in the first nine months of the year, with China taking 39 percent, down from the 46 percent reported in the same period of 2022. The United States and the Republic of Korea, which are the other top importers of scallops, both reported a drop in imports. France, which used to be the third major importer of scallops, had a 25 percent reduction in imports. Meanwhile, China and France, the main exporting countries of scallops, both declared lower shipments.

Scallops imports

World	-23%	↓
China	-35%	↓
United States	-18%	↓

Clams

During the year, there are two important periods for clam sales in Italy: a few days in mid-August and the 20 days between Christmas and Epiphany. Towards the end of 2023, clams from domestic production were not available due to predation by the invasive blue crab. Consequently, the demand was satisfied by imported clams, although at very high prices. Italian fishers and farmers hope that the authorities will declare a state of emergency so that measures can be implemented, such as the suspension of mortgages.

Companies operating in the retail market report difficulty finding fresh Italian bivalves to meet consumer demand. According to rumours, this is not only be due to lower supplies arising from the Atlantic blue crab invasion, there is talk among traders of a deliberate delay in sowing by clam farmers. At the same time, producers are selling the raw material to foreign markets, especially France and Portugal, and for this reason the prices of shellfish have skyrocketed. Whatever the cause, it appears certain that there will be insufficient availability of clams compared to demand.

China is the world's biggest clam producer, and also the main exporter. During the first nine months of 2023, China exported some 80 000 tonnes, some nine percent less than in the same period of 2022 and world trade of clams fell by about 10 000 tonnes. All major clam purchasers reported lower imports in 2023, with Japan importing only 27 250 tonnes, some 10 percent less than in 2022. Thus Japan, which was the top importer of clams in 2021, is now number three, having been over-taken by the Republic of Korea and Spain.

Clams imports

China	-9%	↓
Japan	-10%	↓

Outlook

During the Christmas festivities, high bivalve consumption was reported in Europe, especially for luxury items such as oysters. The demand for bivalves is likely to stay strong, albeit with some lingering consumer concern regarding food poisoning. Prices of bivalves are expected to rise in Italy due to the far lower current and expected production caused by the predatory blue crab species. The US market is likely to increase scallop imports from Japan, leading to pressure on prices, and which will in turn, impact domestic producers.

World imports and exports of scallops January–September, 2021–2023 (1 000 tonnes)

	2021	2022	2023
Imports			
China	78.93	84.05	54.50
United States of America	18.59	20.63	16.98
Republic of Korea	9.56	11.59	10.13
Other countries	56.47	65.62	57.75
Total imports	163.55	181.88	139.37
Exports			
China	26.20	29.71	27.83
France	6.97	8.91	9.13
Canada	4.63	5.93	5.60
Other countries	29.72	25.97	21.02
Total exports	67.53	70.53	63.58

Source: Author's own elaboration based on GTT. 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

World imports and exports of oysters January–September, 2021–2023 (1 000 tonnes)

	2021	2022	2023
Imports			
United States of America	10.99	13.80	11.23
Italy	6.67	6.98	6.72
Japan	4.37	4.41	4.95
Other countries	27.33	31.06	31.37
Total imports	49.36	56.26	54.27
Exports			
France	10.42	11.78	11.38
Republic of Korea	8.63	8.51	8.96
China	6.50	7.90	7.17
Other countries	27.79	32.97	33.42
Total exports	53.34	61.17	60.92

Source: Author's own elaboration based on GTT. 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

World imports and exports of mussels January–September, 2021–2023 (1 000 tonnes)

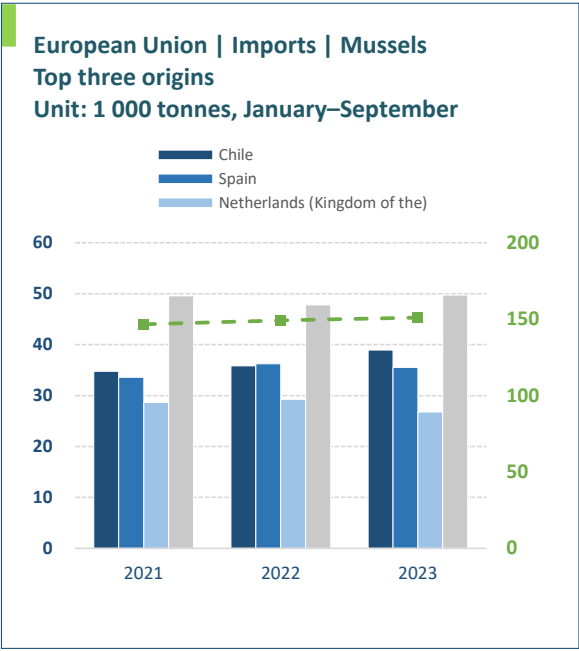
	2021	2022	2023
Imports			
France	42.33	44.06	41.80
Italy	29.24	29.61	32.05
United States of America	31.64	30.04	30.25
Other countries	150.71	115.36	118.77
Total imports	253.93	219.07	222.87
Exports			
Chile	82.89	76.38	80.15
Spain	37.53	42.41	41.66
Netherlands (Kingdom of the)	30.46	33.67	38.56
Other countries	109.65	104.62	112.06
Total exports	260.53	257.08	272.43

Source: Author's own elaboration based on GTT. 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

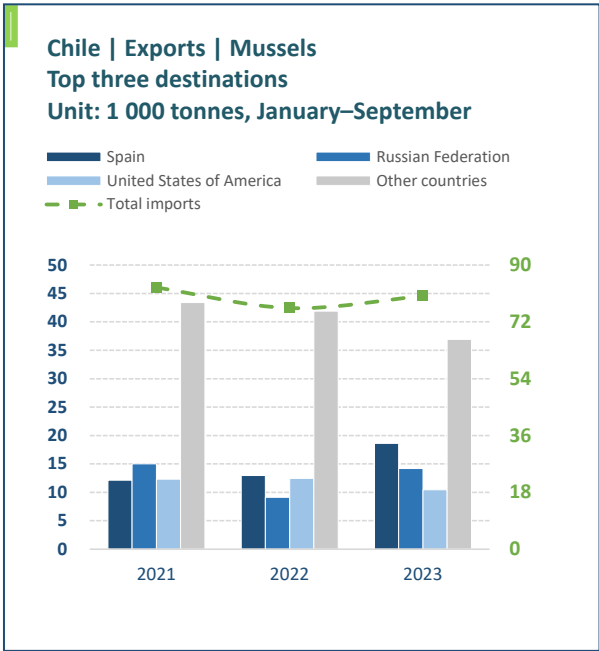
World imports and exports of clams January–September, 2021–2023 (1 000 tonnes)

	2021	2022	2023
Imports			
Republic of Korea	30.51	33.32	31.95
Spain	31.42	39.06	31.90
Japan	45.81	30.36	27.25
Other countries	91.21	101.67	101.58
Total imports	198.96	204.41	192.67
Exports			
China	96.95	87.33	79.85
Canada	9.30	9.98	11.74
Republic of Korea	11.08	7.55	10.60
Other countries	60.80	65.36	58.17
Total exports	178.13	170.22	160.37

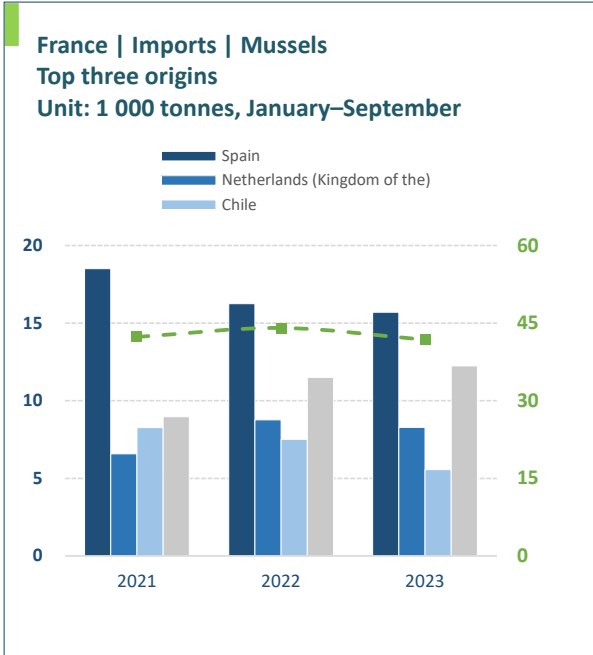
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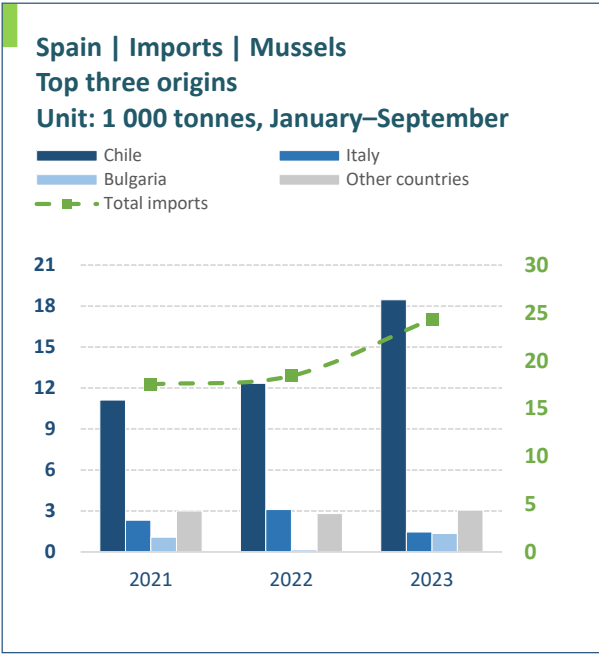
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Source: Author's own elaboration based on the European Price Report, 2024, GLOBEFISH. [Cited 5 January 2024], www.globefish.org





Cephalopods

Tighter supplies of octopus

Global octopus landings are down, continuing the declining trend that has been seen for several years. Moreover, as quotas have been reduced, supplies are expected to become even tighter. However, at the same time, demand has weakened, probably as a result of worldwide inflation. Prices for octopus have fallen slightly but are expected to recover. Meanwhile, global squid supplies are varied. Landings of squid in South America are increasing, except in Argentina, where 2023 landings were lower than in previous years.

Octopus

Having started officially on 1 January 2024, the Moroccan octopus season looked promising at the beginning as initial reports from various vessels indicated that catches have been abundant. However, the quota for the 2024 season was set in late December 2023 at 23 300 tonnes, which is rather low.

Mauritania is harvesting approximately eight percent of the global supplies of octopus with an annual average production of 35 000 tonnes during 2019–2021. Most of this is exported to Spain.

The discussion about octopus farming is on-going. The world's first commercial octopus farm is being built in the Canary Islands and seems to be on track despite massive criticism. According to the farm owner, the technology is now in place, and the farm is expected to raise one million octopus a year, which would be equal to about 3 000 tonnes.

Trade

Supplies of octopus on the international market were tight during the first nine months of 2023. Japanese imports fell by 6.5 percent to 27 792 tonnes, down from 29 739 tonnes during the same period in 2022. There were some big changes in the ranking of suppliers.



Octopus production

Mauritania 35 000 tonnes

Imports

Japan -6.5% ↓

Mauritania jumped to the top of the list of suppliers, and increased shipments to Japan by over 40 percent to 8 069 tonnes in the period under review; while the second largest supplier, China, saw a reduction of 9.3 percent, from 7 881 tonnes during the first nine months of 2022 to 7 150 tonnes during the same period in 2023. Morocco suffered a massive reduction in shipments to Japan, from 6 731 tonnes in January to September 2022, to just 3 248 tonnes during the corresponding period in 2023 (–51.7 percent).

The Republic of Korea also imported less octopus during the first nine months of 2023. Imports amounted to 49 101 tonnes, which was 3.5 percent less than during the same period in 2022. The largest supplier, China, increased shipments by 12.2 percent to 23 267 tonnes, which was 47.4 percent of the total. The other major suppliers, Viet Nam and Thailand, both shipped less; Viet Nam supplied 17 493 tonnes (–11.8 percent), while Thailand shipped 3 543 tonnes (–29.2 percent). Imports of octopus from Mauritania increased by almost 75 percent, from 1 136 tonnes to 1 680 tonnes.

Squid

The Argentine *Illex* squid season opened in early January 2024. However, catches have been very low so far. The fleet consists mainly of Argentina-flagged vessels owned by Asian companies.

According to official data from the Argentine Ministry of Agriculture, Livestock and Fishery, the Argentine fleet landed some 52 500 tonnes of *Illex* squid in the third quarter of 2023. This was an increase compared to the same period in 2022, when only 61 tonnes were landed.

However, in October, landings dropped to almost nothing: just 6 tonnes! This represented a 92 percent decrease compared to the 79 tonnes landed in October 2022.

Argentine vessels reported weak catches during the opening of the *Illex* squid season, as did Chinese vessels operating just outside the Argentine EEZ. The latter started operating on 20 December 2023, while Argentine vessels started on 12 January 2024. The prospect of poor catches will put pressure on European and North American buyers, with the likely result being higher prices.

Trade

During January–September 2023, prices in China for Argentine *Illex* squid were low up to early March 2023, after which they started to climb until the middle of May, and since then they have maintained high levels.

US imports of squid and cuttlefish have been on a declining trend since 2019. During January–September 2023, there was a 26 percent drop compared to the

Squid production

Argentina 52 500 tonnes

same period in 2022, with a further fall in October 2023. All the largest suppliers registered decreases: China (–39.7 percent), Argentina (–12 percent) and India (–41 percent). Similarly, US import prices, which had been climbing steadily until January 2022, have been on a downward rollercoaster ride since then.

Japanese imports of squid and cuttlefish in the first nine months of 2023 amounted to 121 064 tonnes, a drop of 3.8 percent compared to the same period in 2022. The major supplier, China, saw a decline of 6.3 percent by volume; nevertheless, China still accounted for almost 57 percent of total Japanese imports by quantity. In contrast, Peru and Chile registered increasing shipments to Japan. Imports from Peru went up from 18 332 tonnes in January–September 2022 to 23 592 tonnes in the same period in 2023, while imports from Chile increased from 7 409 tonnes to 7 820 tonnes during the same period.

In the period under review, Chinese imports of squid and cuttlefish increased significantly to 359 446 tonnes (up by 40 percent) from 256 817 tonnes during January–September 2022. The largest supplier was Peru, which increased shipments from 15 324 tonnes in 2022 to a massive 144 217 tonnes in 2023. In contrast, imports from Indonesia fell by 13.8 percent to just 52 170 tonnes. The third largest supplier to China, the United States, increased shipments from 30 926 tonnes in the first nine months of 2022 to 33 201 tonnes during the same period in 2023 (+7.4 percent).

However, domestic consumption of squid in China is not increasing. On the contrary, it is falling, and this is creating a problem for traders, who are left with a growing inventory. Thus, the outlook for the Chinese squid market is rather bleak.

Chinese exports, on the other hand, fell by 14.8 percent, from 447 483 tonnes during the first nine months of 2022 to 381 159 tonnes in the same period in 2023. Shipments to all the major markets registered decreases: Japan down 6.7 percent to 75 867 tonnes; Thailand down 16.2 percent to 53 193 tonnes; and the Republic of Korea down 10.2 percent to 41 657 tonnes.

Squid imports into the Republic of Korea increased by 9.3 percent, from 117 380 tonnes during January–September 2022 to 128 263 tonnes during the same period in 2023. The largest suppliers were Peru (40 percent of the total), China (32.8 percent of the total) and Chile (9.6 percent of the total).

The largest market for squid in Europe, Spain, showed a modest five percent growth in imports, from 215 667 tonnes in January–September 2022 to 226 253 tonnes in the same period of 2023. Peru and the Falkland Islands (Malvinas) were the biggest suppliers, followed by Morocco.

Squid and cuttlefish imports

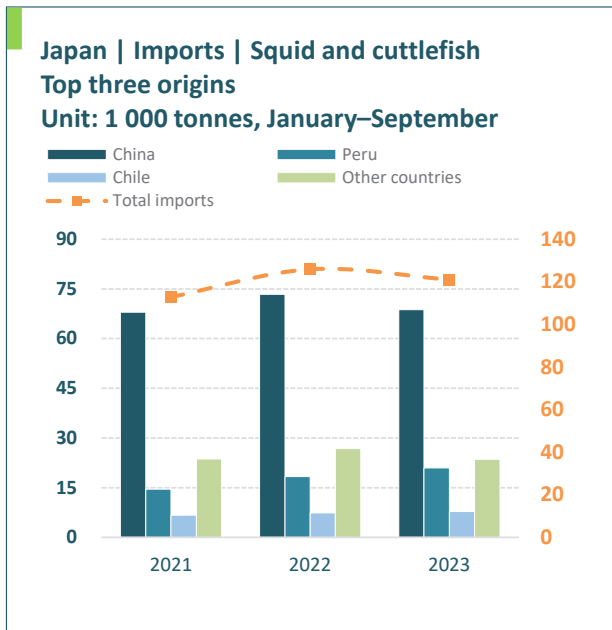
United States –26%↓

China +40%↑

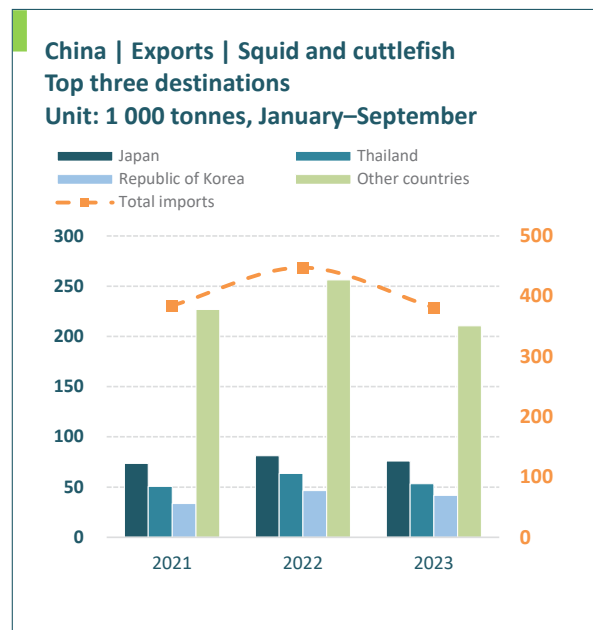
Outlook

Octopus supplies will be tight, and prices will stay high. For squid, the situation is slightly better, but supplies from Argentina are low. Prices are expected to remain high or even rise.

China will be more active on the international market: the country is importing a lot of supplies but not exporting as much as previously. Total supplies of squid in 2024 are expected to be lower than last year as fishing off Argentina has been disappointing so far.



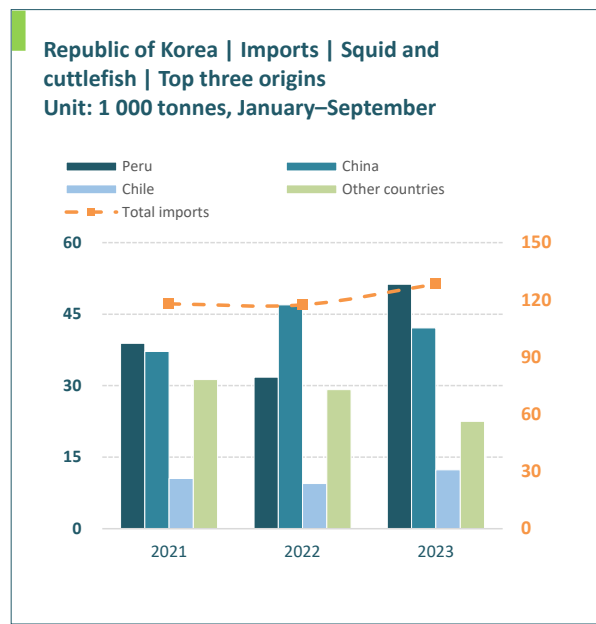
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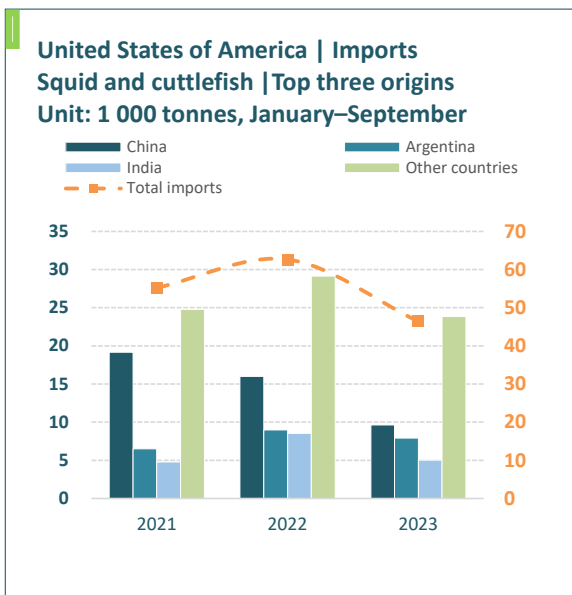
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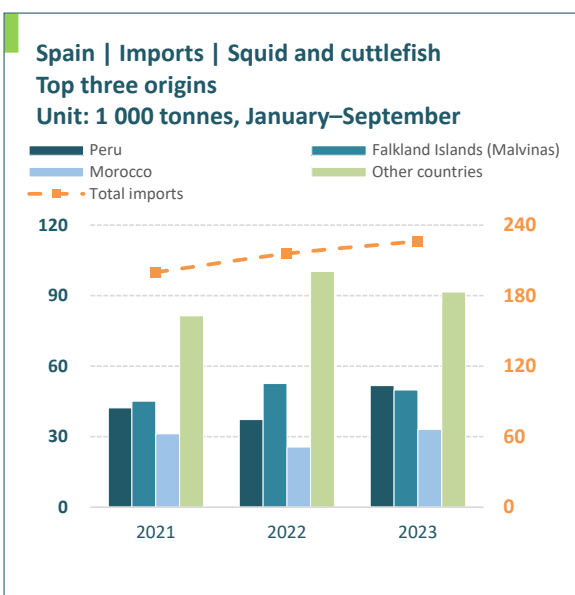
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Crab

King crab, snow crab supplies low

Supplies of king crab are envisaged to be tight in 2024, mainly because the fishery in the Bering Sea is closed. Landings in the Russian Federation are good but as Russian king crab is banned from the North American market, these supplies are going mainly to Asia. Snow crab supplies are slightly better and demand is good.



Supplies

The king crab fishery in the Barents Sea may also be in trouble. The Norwegian Institute of Marine Research (IMR) had performed a survey of the area in 2023 and found a significant decline in the king crab population. Consequently, the IMR had recommended that the 2024 quota be cut by a hefty 60 percent to 966 tonnes, down from 2 375 tonnes in 2023. This recommendation was confirmed by the Norwegian Ministry of Trade, Industry and Fisheries just before Christmas.

With regard to snow crab, in mid-December 2023, the Norwegian Ministry of Trade, Industry and Fisheries announced an increase of 32 percent in the 2024 quota in the Barents Sea, to 10 300 tonnes. In addition, the annual fishing moratorium will be extended by a month and will now run from 1 July through 30 November 2024.

The US State of Alaska re-opened the Bristol Bay red king crab fishery on 15 October 2023, following a two-year closure due to a decline in stocks over the prior several years. Pressure on the authorities had been mounting to re-open the fishery; however, the quota is relatively low at just 2.6 million pounds (1 180 tonnes), down from the 3.8 million pounds (1 724 tonnes) quota in 2019.

The Alaska snow crab population in the Eastern Bering Sea declined by 50 percent from 2018 to 2019, and further in the following years. While this drop came as a surprise to some in the industry, scientists have concluded that it was caused by a marine heatwave in 2018–2019.

The National Oceanic and Atmospheric Administration (NOAA) of the United States is undertaking annual surveys of the snow crab population in the Bering Sea. In 2018, the NOAA estimated that the snow crab population in the Bering Sea amounted to 12.2 billion crabs. In 2019, the number had dropped to just five billion individuals. In 2020 there was no survey because of the COVID-19 pandemic; but in 2021, the snow crab population had dropped to just over 1 billion. Needless to say, this has caused much concern among the crabbers, and the outlook is not good at all.

In early November 2023, Alaska's Department of Fish and Game (ADF&G) announced that their advice on the guideline harvest levels for the tanner crab fishery off Kodiak Island would be set at three million pounds (1 379 tonnes), a 48 percent cut compared to the 2023 TAC of 5.8 million pounds (2 630 tonnes). In 2023, the combined harvest levels for Kodiak, the South Peninsula and Chignik were set at 7.3 million pounds (3 310 tonnes), making them the largest crab fisheries in Alaska.

Regarding Dungeness crab, the California Department of Fish and Wildlife (CDFW) announced just before Christmas 2023 that the fishery in northern California would open on 5 January 2024, after having been delayed since mid-November 2023 because of humpback whale migration. The opening of the Dungeness crab fishery in Oregon was also delayed. It was scheduled to open on 1 December 2023 but was delayed for a few weeks because of low meat yield.

Market

The popularity of frozen ready-to-eat seafood products in China is growing rapidly, and this also includes crab products. Consumers point out that compared to the traditionally-preferred live crab, frozen products are about half the price, and the taste is just as good. This sector is expected to grow strongly in Chinese urban areas.

The limited availability of king crab and snow crab in the US market, and the resultant rising prices, do not seem to be discouraging consumers from buying crab. On the contrary, US consumer interest in king crab and snow crab is on the upswing.

The decline in the Bering Sea crab fisheries could lead to future market problems for the Alaska industry. Climate change, irregular harvests, and delays in opening seasons because of whale migration has made this fishery unreliable to the extent that buyers must depend on other fisheries such as the snow crab fishery in Eastern Canada, for future supplies.

International trade

The global crab trade (all types and product forms) increased by 11.2 percent during the first nine months of 2023 compared to the same period in 2022. A total of 344 395 tonnes of crab were imported, with the largest importers being the United States (97 336 tonnes or 28.3 percent of the total); China (90 122 tonnes or 26.2 percent of the total); and the Republic of Korea (37 501 tonnes or 10.9 percent of the total). China had the strongest growth (+32 percent), while the United States only had a 3.3 percent increase compared to the same period in 2022.

Chinese imports of Russian king crab and snow crab have multiplied over the past year. During the first nine months of 2023, China imported 20 614 tonnes of live crab worth USD 678.7 million from the Russian Federation. This represented an increase of 60.7 percent in volume and 39.5 percent in value, respectively, compared to the same period in 2022. However, prices in 2023 were down by 20 percent compared to 2022, one reason being that the Russian exporters experienced competition from North American suppliers increasingly targeting the Chinese market. Nevertheless, imports of Russian king crab into China are expected to increase considerably in 2024.

In a fairly new development, Russian crab exporters have begun to ship live king crab to China by air. In October 2023, the first shipment of some eight tonnes of live Russian king crab were flown from Moscow to Qingdao. Some of the crab was sent on to Beijing and Shanghai.

Russian crab producers remain unable to ship product to Western countries due to their ban on imports of seafood from the Russian Federation.

Last year (2023) was good for the Norwegian crab industry. During the year, Norway exported 2 450 tonnes of king crab with an FOB value of NOK 1.2 billion (USD 116 million) and 5 026 tonnes of snow crab with an FOB value of NOK 510 million (USD 50 million). By volume, this represented a growth of 56 percent for king crab and 33 percent for snow crab. The largest markets were the United States, China, Hong Kong SAR, Viet Nam and the European Union.

Crab imports

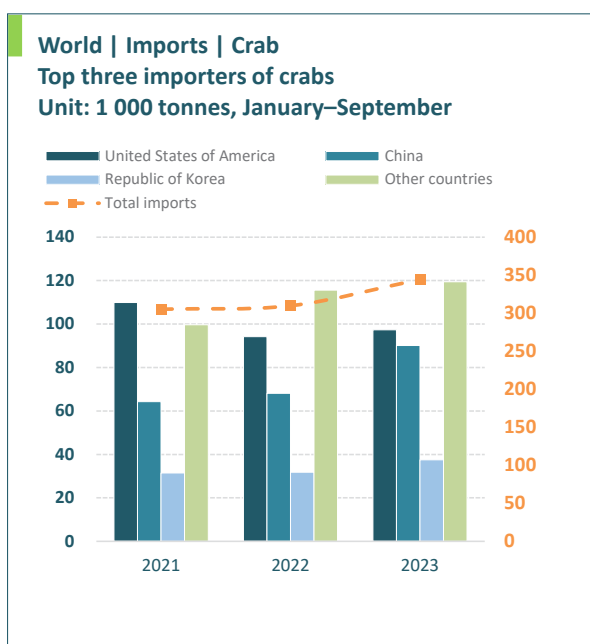
World	+11.2%	↑
United States	+3.3%	↑
China	+32%	↑

Outlook

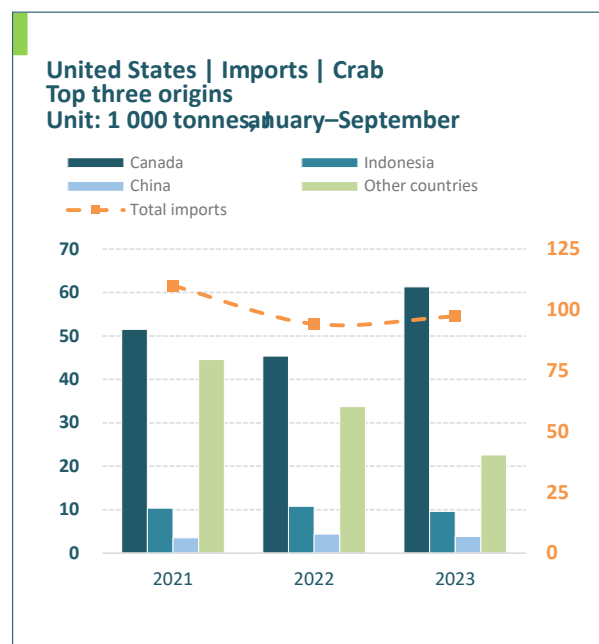
Supplies of king crab will be limited in 2024, and prices are bound to rise. For snow crab, the supply situation will be somewhat better, with increases in the Barents Sea, but lower catches in the Bering Sea. Landings in Eastern Canada should be good.

Demand for crab is on the way up in China, and there are signs that the country will soon dominate the market totally. Western suppliers are pushing product to China as the European market is relatively weak. The US market is under-supplied from domestic production and is now importing more from Norway and Canada.

Price developments will be mixed. Prices for king crab are expected to go up, while snow crab prices may be somewhat softer.



Source: Author's own elaboration based on GTT. 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

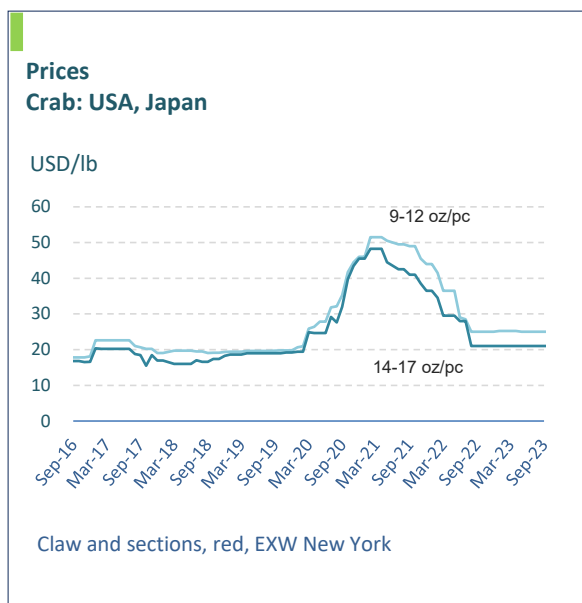


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Fishmeal and fish oil

Supplies remain exceptionally tight, especially for fish oil

The re-opening of the main anchoveta fishing grounds in Peru provided some welcome relief for critically-limited global supplies of fishmeal and fish oil. However, this has not been sufficient to alleviate shortages. Fish oil, in particular, has been limited not only by low catches but also historically-low oil yields, leading to a global shortfall of several hundreds of thousands of tonnes in 2023.

With a weakening of El Niño weather conditions, those in the industry are anxiously hoping for an easing of supply in 2024. China remains the largest market for fishmeal and fish feeds, with its large aquaculture and agricultural sectors underpinning a major proportion of global demand. A special update on the Chinese market for feed has been prepared for this issue of the GLOBEFISH Highlights; read more on page 87.



Production

Catches of Peruvian anchoveta, the main global source of both fishmeal and fish oil worldwide, improved marginally in the second half of 2023. Meanwhile, the second 2023 anchoveta season in the north-centre region of Peru closed on 13 January 2024, landing 75 percent of the quota that had been set at 1 682 000 tonnes. Although the total quota was far lower than the seasonal average, it represented a welcome reprieve for global supplies, bringing an estimated 300 000 tonnes of fishmeal and 5 000 tonnes of fish oil onto the market. As is to be expected, the cyclical El Niño weather event has been causing severe disruption for the Peruvian anchoveta fishery, although initial reports in early 2024 point to an easing of these conditions. Indeed, fishers are somewhat fortunate to have a quota at all as the strong 2014–2016 El Niño phenomenon had led to the cancellation of the second season at that event.

The Peruvian authorities responsible for monitoring and managing the stock, Instituto del Mar del Peru (IMARPE) and Ministerio de la Producción (PRODUCE) respectively, have been, as usual, closely monitoring the biomass and composition of the stock. Both government agencies and various industry representatives have emphasized the primary importance of ensuring the sustainability of the stock. The high catch rates of juveniles, in particular, have been cause for concern, and were one of the major contributing factors behind the cancellation of the first 2023 season. The limited catches in the second 2023 season follow on the heels of the cancelled first 2023 season and low catches throughout 2022. In the second season of 2023, the quota was 800 000 tonnes lower than the one in the corresponding period in 2022, with bad weather also severely hampering fishing operations and the warm El Niño waters driving the anchoveta shoals into deeper, less-accessible waters.

Production in Chile, the second most important source of fishmeal and fish oil, saw significant variation throughout 2023, with bad weather and fishing bans interrupting harvests. Overall supply for reduction declined slightly year-on-year, totalling over 1 600 000 tonnes, which is about two percent lower than the volume in 2022. Anchoveta catches have been further supplemented by trimmings, much of which comes from the country's thriving salmon processing industry, as well as higher catches of jack mackerel. While fishmeal production was stable, improved oil yields supported greater output. Chilean fish oil production in 2023 rose by some 20 000 tonnes, a 15 percent increase year-on-year. Chile's anchoveta fisheries are further south of the equator than Peru's, and is thus less affected by the warmer waters brought by the El Niño weather event which is strongest in the Equatorial Pacific.

Catches in the North Atlantic, the third most important source of fishmeal and fish oil, remained high in 2023. Reduced quotas for several stocks, most notably blue whiting and sand eel, were complemented by increased quotas for capelin and herring. Fishmeal supply saw a marked improvement, rising to 530 000 tonnes (+20 percent, year-on-year). However, the different composition of these quotas has led oil yields to fall. While the region supplied about 170 000 tonnes of fish oil in 2022, this volume fell to 150 000 tonnes in 2023.

Trade

It was an abysmal period for trade in fishmeal and fish oil in the first nine months of 2023. Peruvian exports of both commodities fell dramatically, totalling just 480 000 tonnes of fishmeal and 31 000 tonnes of fish oil. By comparison, from January–September 2021, Peru had exported 1 102 000 tonnes of fishmeal and 203 000 tonnes of fish oil.

Chilean exports of fishmeal stood at 206 000 tonnes in the first nine months of 2023, a 20 percent increase over the same period of 2022. The composition

Anchoveta production

Chile **−2%** ↓

Peru exports

Fishmeal **−52%** ↓

Fish oil **−73%** ↓

of these exports also changed, shifting towards super prime-grade (more than 68 percent protein) fishmeal. Exports of super prime-grade fishmeal were 130 000 tonnes, up by 54 percent. Meanwhile, trade in both prime-grade (66-68 percent protein) and standard-grade fishmeal fell significantly to 53 000 tonnes (-9 percent year-on-year) and 24 000 tonnes (-14 percent year-on-year) respectively.

Chinese demand has remained muted, with low prices for pork and shrimp depressing the market. Chinese imports of fishmeal in the first nine months of 2023 amounted to around 1 290 000 tonnes, down from 1 416 000 tonnes in the same period of 2022. The lack of Peruvian supplies has prompted a concerted drive for diversification, opening opportunities for secondary producers. While Peruvian supplies still account for close to a third of the volume of imports, trade fell from 711 000 tonnes in the first nine months of 2022 to 380 000 tonnes in the same period of 2023. Much of this shortfall is being made up by other suppliers; in order of importance these are Viet Nam, the Russian Federation and Chile. Imports from Viet Nam, in particular, have increased considerably. Viet Nam exports about 280 000 tonnes of fishmeal annually, with China absorbing more than two-thirds of this.

Fish oil imports in Norway, the largest market for the product, fell substantially in 2023. Many Norwegian salmon producers are now facing acute pressure not only from high fish oil prices, but also the Norwegian Government's recently-enacted tax on the salmon farming industry. The continued weakening of the Norwegian krone has made salmon exports more competitive, especially on the US and EU markets. At the same time, it has also made imports of fish oil marginally less affordable.

Prices

Limited supply continued to push up prices for fishmeal; on the other hand, fish oil prices plateaued towards the end of 2023 but remained far higher than many would have imagined possible. While progress in feed optimization has greatly reduced the content of fishmeal and fish oil in many feed formulations, they remain a vital cornerstone of many agricultural activities, especially for species such as poultry, salmon, shrimp and swine. Especially during the ongoing period of elevated inflationary pressure, it is worth noting the potential knock-on effects of these high prices for other food commodities.

Fishmeal prices continued to rise across all grades, reaching USD 2 200 per tonne in October 2023 (super prime, Peru FOB), up from USD 1 900 per tonne in October of the previous year.

Fish oil prices remain elevated, with the second half of 2023 seeing a marked divergence across different grades. Prices for feed-grade fractions plateaued in September, reaching USD 7 500 per tonne (Peru FOB). Meanwhile, the premium paid for high-content Omega-3 oil also rose, with prices recorded at USD 9 300 per tonne in October 2023.

Fishmeal exports

Chile +20% ↑

Fishmeal imports

China -9.8% ↓

Fish oil imports

Norway -9.8% ↓

Prices

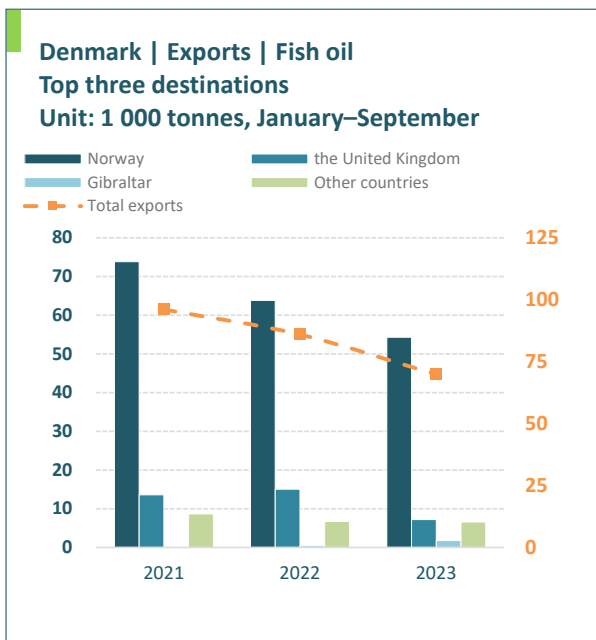
Fishmeal +15.8% ↑

Fish oil +121.95% ↑

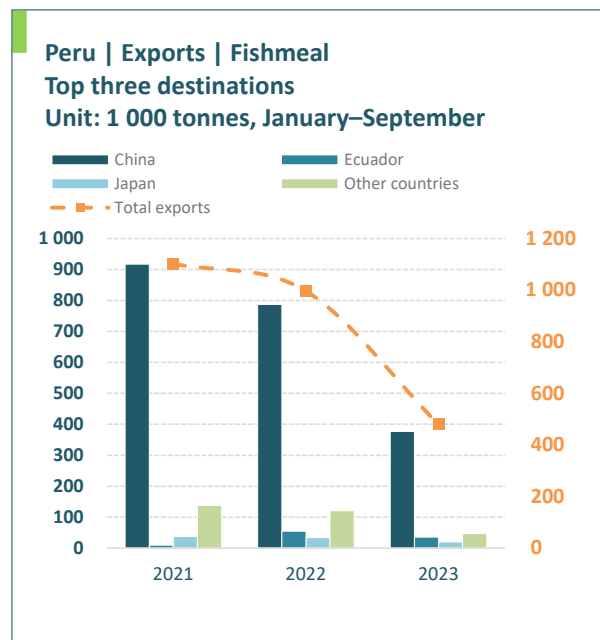
Outlook

There is reason to be optimistic for a gradual softening of the market in the first half of 2024, followed by the possibility of a strong recovery in the second half of the year. This would depend in large part on a continued weakening of El Niño weather conditions. It is worth noting that El Niño weather events are generally followed by good harvests for several years, and a considerable quota for the first 2024 season in Peru’s north-centre region would see greater supply. However, the stock is currently under assessment, and quotas are unlikely to be announced before April 2024. Additionally, high catches of juveniles were already hampering production, with authorities keeping a close eye on stocks and imposing numerous mini-fishing bans. Continued high rates of juvenile catches would slow supplies, and also keep fish oil supplies low by limiting yields.

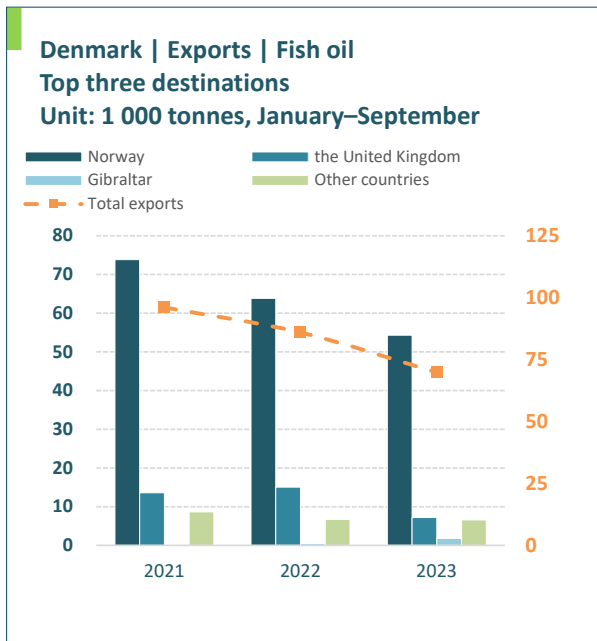
As of the time of writing, the outcome of negotiations on the pelagic fisheries in the North-East Atlantic are still ongoing; these will, to a certain extent, underpin supplies from Europe and the Atlantic North America. Aggregate quotas for a number of these stocks have consistently exceeded recommendations from the International Council for the Exploration of the Sea (ICES).



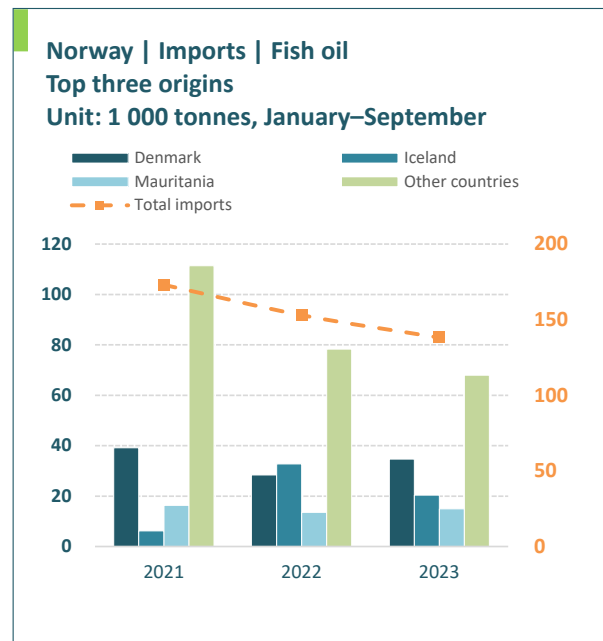
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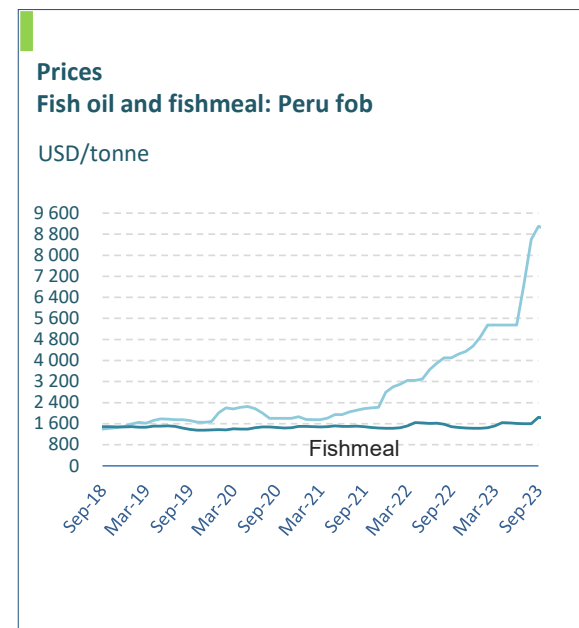
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Source: Author's own elaboration based on the data from the IFFO, 2023. International Fishmeal and Fish Oil Organisation. [Cited 5 January 2024]. www.iffo.com



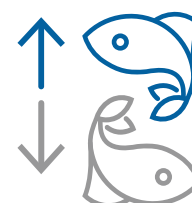
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● Groundfish

▮ Supplies of cod down, pollock slightly up

Supplies of cod will be significantly reduced in 2024, while Alaska pollock supplies will increase slightly. This will cause cod prices to rise even further, while Alaska pollock prices are expected to soften. Surimi production will go up, and surimi producers in Asia are worried about price developments.



Supplies

Projections presented at the Groundfish Forum in Athens in October indicate that there will be a dramatic reduction in the supplies of Atlantic cod in 2024. The International Council for the Exploration of the Sea (ICES) has recommended that the Barents Sea cod quota, which is split between the Russian Federation and Norway, should be reduced by 14 percent in 2024, to 791 000 tonnes. This continues the decline from 1.081 million tonnes in 2022 and 921 000 tonnes in 2023.

The haddock quota will also be reduced, from 296 000 tonnes in 2021 and 280 000 tonnes in 2023 to just 267 000 tonnes in 2024.

The situation for saithe is a bit better, though, and the ICES quota advice for 2024 is actually up by a very modest 1.6 percent, from 368 000 tonnes in 2023 to 382 000 tonnes in 2024.

In December, Russian authorities announced a ban on Pacific cod fishing in the two important fishing zones, West Bering Sea and Chukotka, with effect from 19 December through 15 April. Russian landings of cod have declined in recent years. As of the beginning of December 2023, landings amounted to 364 800 tonnes, down 17 percent from 2022.

These reductions will have an impact on the industry itself and the market. Cod prices are sky high, but how much more is the consumer willing to pay for cod? In addition, there will be competition for raw material among the processors. There is already competition between the producers of traditional products (saltfish, klippfish and stockfish) and the filleting industry. Export prices are already considerably up.

Barents Sea quota

Cod	+14%	↑
Haddock	-5.4%	↓
Saithe	+1.6%	↑

Alaska pollock, which is the largest species in terms of volume, is predicted to grow by three percent in 2024, to 3.79 million tonnes. Most of the increase is expected to come from the Russian Federation, where a catch of over 2 million tonnes is forecast.

Total marine groundfish production in 2024 is estimated to be just under seven million tonnes.

Market

The trade conflict between the United States of America and China is by no means over. In December the Ban China's Forbidden Operations in the Oceanic Domain bill was introduced. This bill is the most extreme yet and seeking to investigate how Chinese fishing companies and processors are using forced labour. The bill would, if passed, ban all Chinese seafood, including both wild-caught and aquaculture products, from entering the US market until the Congress receives a report showing that Chinese operators are not using forced labour, and that the Chinese government is not subsidizing its fishing fleet.

US seafood exporters are not very optimistic about a quick end to the trade conflict. The United States is reviewing the effects of the tariffs imposed on Chinese seafood over the past four years, and which have been as high as 25 percent. The review is overdue, and US exporters are now losing faith in seeing any change soon.

Just before Christmas, US President Biden signed an executive order to ban imports of Russian-caught seafood which is processed in other countries (especially China) and exported to the United States.

After having successfully run the "Wild Alaska Pollock" campaign for four years, the Association of Genuine Alaska Pollock Producers (GAPP) has decided to commit more funding in 2024 to this campaign to increase global demand for Alaska pollock.

At the same time, the Norwegian Seafood Council is launching a broad campaign to promote UK consumption of whitefish in general, and Norwegian whitefish in particular.

Trade

Norway's exports of cod declined in 2023. The exported volume during the year sank by almost 15 percent to 162 113 tonnes, while the value increased by 0.2 percent, indicating strong price increases. Exports of saithe increased by 4.2 percent in volume and 8.9 percent in value. However, these price increases are measured in Norwegian Kroner (NOK), which have been particularly weak against US dollars and Euros throughout 2023.

Exports of whole frozen cod from Norway declined by 29 percent during the first nine months of 2023, to 37 675 tonnes. While there was a 10 percent increase in exports to the United States, exports to China dropped by a massive 62 percent.

Chinese imports of whole frozen cod fell by 8.7 percent during this period, to 99 076 tonnes. Imports from the major suppliers (the Russian Federation and Norway) went down, while imports from the United States registered an increase of 77 percent.

Chinese exports of frozen cod fillets also showed a decrease, from 74 202 tonnes during the first nine months of 2022 to 58 755 tonnes during the same period in 2023 (-20.8 percent). Exports to the United States, Germany, Spain, France and Sweden were down, while exports to the United Kingdom went up marginally.

In mid-October, the Norwegian Food Safety Authority suspended all Russian seafood imports through the Storskog border crossing. Storskog is the most important Russian land route to the European market. While no reference was made to the ice-cold relation between the countries, the Food Safety Authority claimed that the border crossing checkpoint "did not have the physical facilities required to conduct controls in accordance with the law and regulations".

The ban on trade with the Russian Federation following the conflict in Ukraine, is taking its toll for European processors. They are just not getting enough raw material. Consequently, the EU Fish Processors and Traders Association and the European Federation of National Organizations of Importers and Exporters of Fish (AIPCE-CEP) have asked the European Commission for a transition period of one year to enable the value chain to adjust to the significant market impact and its consequences, specifically to be able to import Russian raw material for their processing industry for another year under the autonomous tariff quota (ATQ) programme. This would enable the processors to obtain Russian fish, which under this scheme would be exempt from sanctions.

China's exports of double frozen Alaska pollock fillets are declining. Exports peaked in 2019, with a total of 275 000 tonnes. However, in 2024 it is expected that exports of this product will fall below 200 000 tonnes. China imports around 600 000 tonnes of Alaska pollock raw material (H&G) per year.

Norway exports

Cod -15% ↓

Saithe +4.2% ↑

China imports

Whole frozen cod -8.7% ↓

Frozen cod fillet -20.8% ↓

Of this, about 400 000 tonnes go to processing for exports, leaving about 200 000 tonnes for domestic consumption. Chinese processors expect Alaska pollock prices to decline further as it is expected that landings will increase in 2024.

Russian exports of whole frozen Alaska pollock dropped by 14.6 percent during the first nine months of 2023. Shipments to the Republic of Korea went down by 53 percent, but exports to China increased by 9 percent. Chinese exports of frozen Alaska pollock fillets were almost equal to 2022 (+2.5 percent). There were increases to the most important markets except for the United States, where shipments dropped by some 39 percent.

Due to the falling Alaska pollock fillet prices, Russian processors have moved to exports of frozen whole Alaska pollock and frozen Alaska pollock surimi.

Prices

The estimated higher production of Alaska pollock in 2024 is expected to put more pressure on prices, and Russian producers, in particular, fear that this will affect their sales.

In the cod sector, it is quite a different story. The landings in 2024 of Atlantic cod are forecast to be lower than in 2023 and Chinese processors fear that this will push prices further up. Prices for cod raw material for the Chinese processing industry are now expected to start moving up.

However, at the end of 2023, prices for Norwegian H&G cod dropped suddenly after peaking in October 2023 and approached Russian price levels. But prices are still expected to rise in 2024.

Chinese exports of processed Alaska pollock are expected to soften during 2024 due to stronger supplies and weakening demand domestically as well as in export markets.

Surimi

Asian producers of tropical surimi are worried about the market development for surimi. As Russian pollock producers are switching to surimi production, and the global production of Alaska pollock expected to increase by about 200 000 tonnes in 2024, it is expected that global supplies of surimi will be very strong, and that prices will go down. Global demand for surimi does not appear to show any growth at the moment, and Asian surimi producers expect slower demand from Europe and North America for tropical surimi.

Russia exports

Whole frozen Alaska pollock

–14.6% ↓

The market outlook for surimi in China is brighter, though. Chinese consumers are turning to convenience products like frozen surimi-based products and ready-to-eat seafood dishes, and they are buying a growing share of this through e-commerce platforms. Meanwhile sales through traditional supermarkets are declining. Frozen surimi products are increasingly becoming part of the daily diet of Chinese consumers.

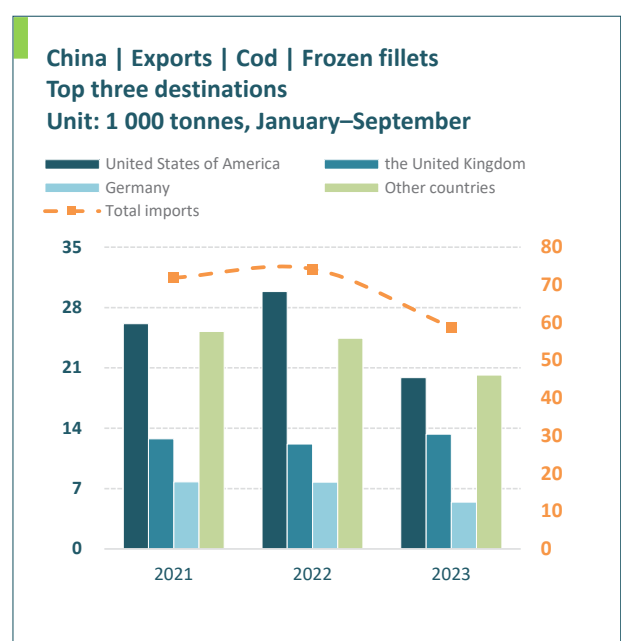
US exports of Alaska pollock surimi to Japan increased by 42 percent by volume during the first nine months of 2023 (31 414 tonnes) compared to the same period in 2022 (22 123 tonnes). However, prices were down considerably, so the increase in export value was just 27 percent.

Outlook

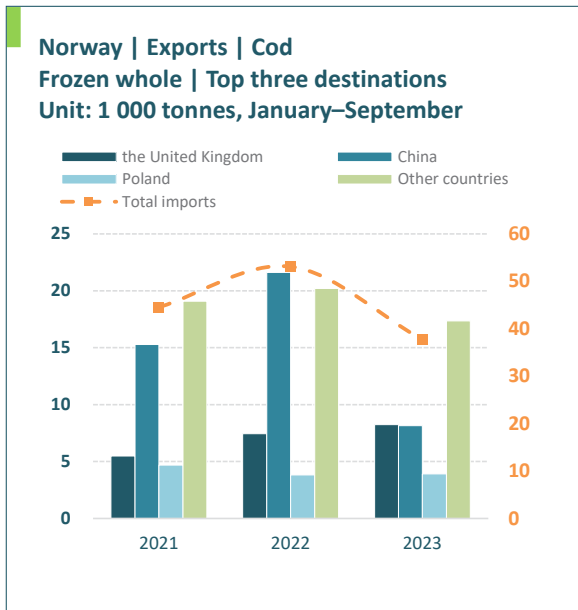
The groundfish outlook is mixed. There will be plenty of Alaska pollock on the market, but quite tight supplies of cod, haddock and saithe. This will result in falling prices for Alaska pollock products, but rising prices for cod, and this may in turn push some consumers to switch from cod to pollock. With the present economic situation in Europe, such a switch can be expected to affect other high-priced seafood products, too.



Source: Author’s own elaboration based on GTT. 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com



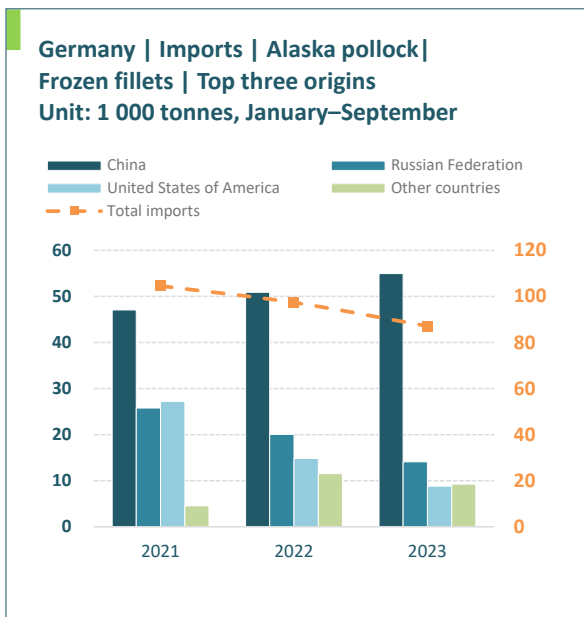
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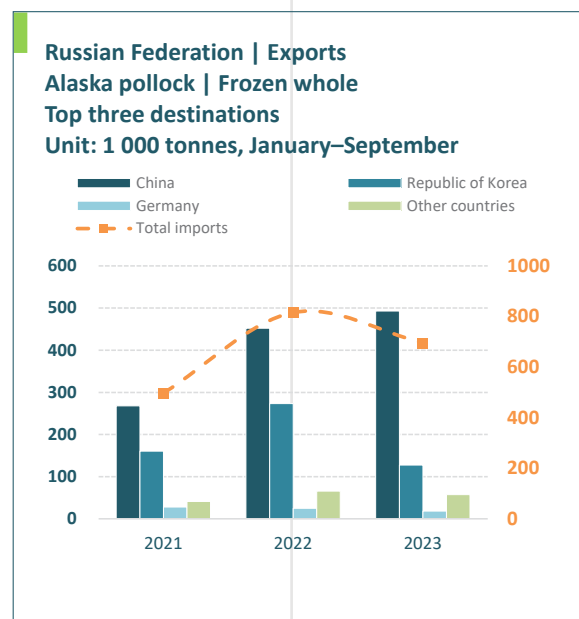
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Source: Author's own elaboration based on NSC data, 2024.
Norwegian Seafood Council. [Cited 5 January 2024]. www.seafood.no



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● Lobster

▮ Trade is slowing down

During the first nine months of 2023, the international lobster trade showed signs of slowing down, with exports from the two largest producers, Canada and the United States, declining compared to the previous year. At the same time, prices are going up, and this may cause a further slowdown in demand.



Supplies

Global lobster landings have been relatively stable for some time at around or just above 300 000 tonnes annually (all species included). However, supplies of North American lobster (*Homarus americanus*) had a dip in 2020, but production increased in 2021 before declining again in 2022. It now looks like the supply situation may be tight for some time.

While 2023 landings on the Atlantic coast were slightly up compared to 2022, the outlook for 2024 is uncertain. Bad weather has stopped fishers from going out, and consequently landings are down and prices rising. If this continues, consumer resistance may kick in and create a problem for the industry. In addition, economic development in the world is not optimistic, and a poor economy could hurt a luxury segment such as the lobster industry.

The lobster fishery in Canadian Lobster Fishing Area (LFA) 33 and 34 (off the southeastern and southwestern coasts of Nova Scotia) was expected to start on 27 November. But the weather forecast was very bad and the fishery was therefore delayed. The same happened in 2022, when the LFA 33 fishery was delayed by one day and in LFA 34 by six days. The catch in 2023 was probably lower than in 2022, and 2022 was not a great year.

This is not the only worry that the lobster industry in the area is facing, though. International demand for lobster is expected to weaken because of global inflation, although some niche markets may not be much affected.

As much as 80 percent of the catch landed in LFAs 33 and 34 is sold live, mostly to the export market. That means that about 20 percent is sold to processors in the region. But the processors have difficulty obtaining enough raw material. Recently, one of the most important processors on the

southwestern coast of Nova Scotia closed down. This is clearly a problem for the harvesters, who will now have to transport that part of the catch to processors farther away.

Markets

The global inflation is having its impact on seafood markets. Consumers in Europe as well as Asia are more sensitive to price increases than they were a year ago. This is particularly true for luxury products like lobster, and with tighter supplies, prices will go up. In late July, export prices to China, for example, were up by 13 percent compared to end of June, but still 22 percent below the five-month high in early April.

International trade

World exports of lobsters declined during the first nine months of 2023 to 121 510 tonnes down from 132 176 tonnes in the same period of 2022 (–8 percent). The biggest exporters, Canada and the United States, both registered declines. Australia, on the other hand, had a 21 percent increase in exports. On the import side, China registered an 11.7 percent growth from 33 256 tonnes to 37 140 tonnes, while both the United States and Canada had declining imports.

Canada is by far the largest exporter of live and frozen North American lobsters (*Homarus americanus*), followed by the United States. However, Canada is now facing stronger competition from US exporters on both European and Asian markets. US exporters offer “firm-shell” live lobsters at prices well below Canadian “hard-shell” lobsters. (Firm-shell lobsters have not yet grown their shells to hard-shell status, and are suffering from a much higher mortality rate, often between 10 and 20 percent. Hard-shell lobsters are also considered to be of a higher quality than firm-shell lobsters. The lowest grade is soft-shell lobsters, which are used mainly for processing.)

The price difference at the wholesale level was quite pronounced last autumn, with hard-shell lobsters from Canada obtaining between USD 9.95 and USD 10.25 per pound, while US firm-shell lobsters were sold for between USD 7.50 and USD 7.75 per pound. Prices tend to peak in late winter and early spring but decline notably in May. In late July prices for live hard-shell lobsters rise again as supplies are hard to find.

While 2022 was not a great year for Canadian lobster exports, 2023 looks no better. Canadian exports of live and frozen lobster amounted to 71 878 tonnes

Lobster exports

World	–8%	↓
Canada	–6.4%	↓
United States	–3.4%	↓

during the first nine months of 2023, compared to 76 795 tonnes during the same period in 2022 (-6.4 percent).

2022 was a poor year for US exports, too. US exports of live and frozen lobsters amounted to 23 353 tonnes during the first nine months of 2022. This was 11.5 percent less than the same period in 2021, and in 2023, exports dropped by a further 3.4 percent to 22 549 tonnes.

A bright note is that demand for lobster in China seems to be good. Total Chinese lobster imports during the first nine months of 2023 amounted to 37 091 tonnes, an 11.4 percent increase over 2022. China's imports of lobsters from Canada jumped from 16 343 tonnes during the first nine months of 2022 to 21 687 tonnes during the same period in 2023 (+32.7 percent). Chinese imports from the United States also shot up during this period, from 3 418 tonnes in 2022 to 6 403 tonnes in 2023 (+87.3 percent).

After showing a healthy growth in 2022, European (EU27) lobster imports decreased by 11.4 percent during the first nine months of 2023. Both Canada and the United States registered lower exports to the European Union, while European suppliers showed growth.

After Australia suggested that China's role in the origins of COVID-19 should be investigated, China banned imports of seafood from Australia in 2020. However, Australian rock lobsters are still finding their way into mainland China through secondary locations, such as Hong Kong SAR. At the moment, there are rumours that the ban on Australian seafood might soon be lifted by China. Australian rock lobsters are popular in China and compete well with North American lobsters from Canada and the United States.

Outlook

Demand on the Chinese market will remain strong in the coming years, and demand in the United States may grow again. One uncertainty factor is how the economy develops, but some observers believe that lobster consumers will in general be less affected by inflation than the "average" consumer.

Lobster is a luxury item, and sensitive to the general economic development. In Europe, the outlook is therefore not very good because most of Europe is hit by strongly increasing costs of just about everything, especially food and energy. Consequently, European demand for lobsters may be negatively affected. The demand situation in China is strong at the moment. There are many wealthy Chinese consumers who do not seem to mind paying a high price for a good product.

Prices are expected to remain relatively high for live lobster, but production of frozen tails and "quarters" is uncertain because of the price dispute between harvesters and processors.

Lobster trade

United States exports -11.5% ↓

China imports +11.4% ↑

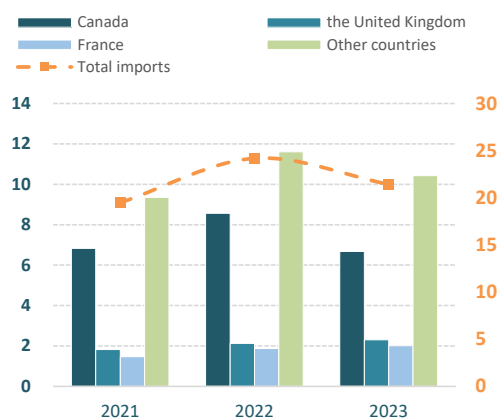
European Union imports -11.4% ↓

World imports and exports of lobsters January–September, 2021–2023 (1 000 tonnes)

	2021	2022	2023
Imports			
United States of America	46.94	40.22	37.80
China	31.23	33.25	37.14
Canada	16.19	12.35	10.80
Other countries	39.03	45.02	42.20
Total imports	133.39	130.85	127.94
Exports			
Canada	75.17	76.85	71.89
Egypt	1.03	3.72	26.69
United States of America	26.39	23.45	22.55
Other countries	34.00	30.30	33.17
Total exports	136.59	134.31	154.30

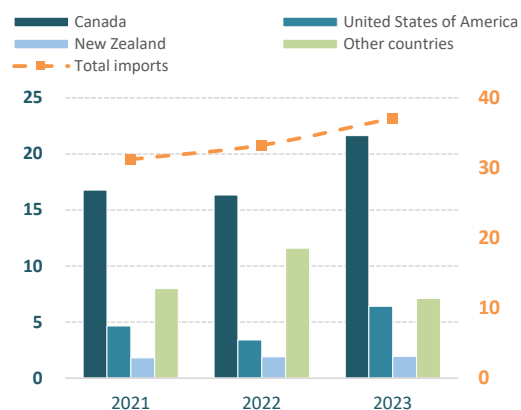
Source: Author's own elaboration based on GTT, 2024, Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

European Union | Imports | Lobster
Top three origins
Unit: 1 000 tonnes, January–September



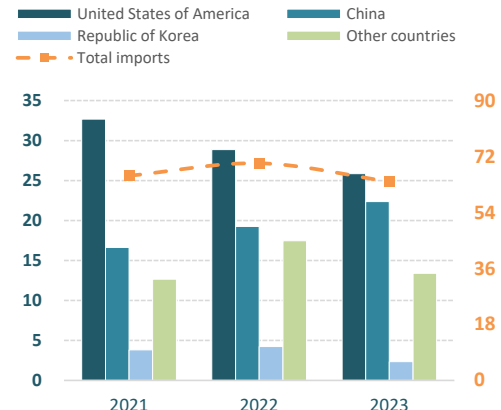
Source: Author's own elaboration based on GTT, 2024, Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

China | Imports | Lobster
Top three origins
Unit: 1 000 tonnes, January–September

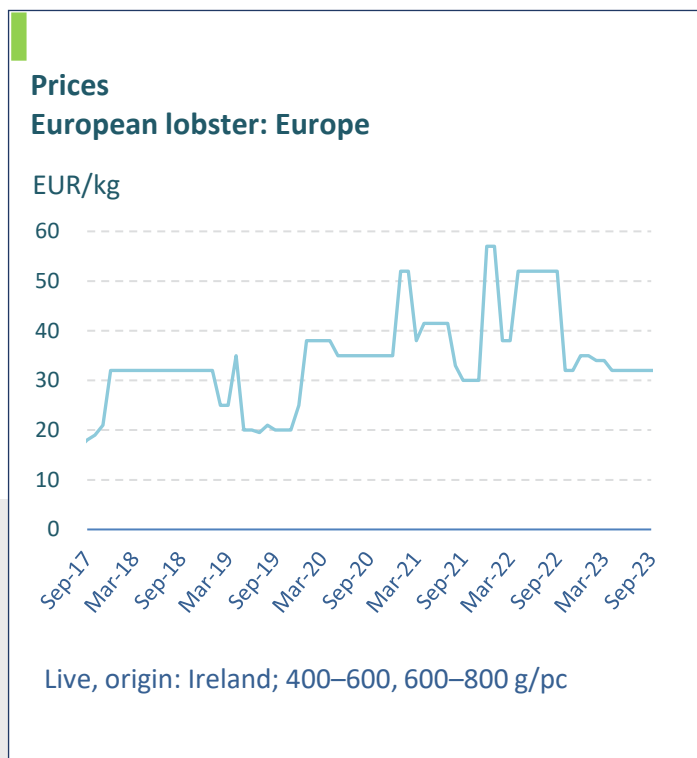


Source: Author's own elaboration based on GTT, 2024, Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

Canada | Exports | Lobster
Top three destinations
Unit: 1 000 tonnes, January–September

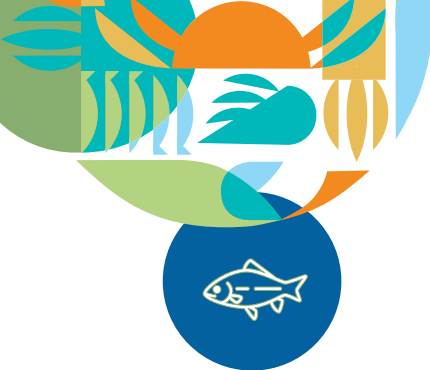


Source: Author's own elaboration based on GTT, 2024, Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com



Source: Author's own elaboration based on the European Price Report. 2024. GLOBEFISH. [Cited 5 January 2024]. www.globefish.org

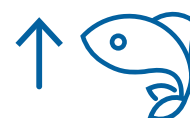




Pangasius

Pangasius is in for a market recovery in 2024

Despite challenges in 2023, leading producers expect a recovery in 2024 on top of expansion in farming areas in Viet Nam. Positive consumer confidence index coupled with seasonal consumption demand is expected to fuel anticipated growth in exports.



Production

In spite of a challenging year in 2023 with rising production costs, decreased demand and depressed prices, global production of pangasius is expected to recover through 2024. The planned expansion of farming areas in Viet Nam this year is a contributory factor.

According to Viet Nam's Deputy Minister of Agriculture and Rural Development Phùng Đức Tiến, production of tra fish in the country this year is expected to reach 1.7 million tonnes valued at USD 2 billion. Meanwhile, the Vietnam Pangasius Organization (VINAPA) is seeking the support of the Ministry of Finance to lower taxes on material used in animal feed production, a move which is envisaged to lower production costs, help farmers to reduce their expenses and improve the value chain for the sustainable development of the pangasius industry, particularly amid the current challenging circumstances.

Elsewhere, pangasius production in Bangladesh rose from 155 000 tonnes in 2010–2011 to 395 000 tonnes in the 2021–2022 fiscal year. The artificial breeding of pangasius introduced in the 1990s by the Bangladesh Fisheries Research Institute (BFRI) played a crucial role in making the fish popular among the middle- and lower-income groups and the urban poor in the country. There are plans for exports as value-added products targeting the markets of the United States, the European Union and Asia.

Trade and markets

During January–September 2023, global imports of frozen pangasius from the world’s major supplier Viet Nam were estimated at approximately 420 000 tonnes, down 28 percent from the same period in 2022. By region, Asia accounts for the largest share of imports (51 percent) followed by the United States with 14 percent and the European Union countries with 13 percent. China alone accounts for 60 percent of the total Asian imports and 30 percent of global imports, thus maintaining its position as the single largest importer of Vietnamese pangasius.

According to the Vietnam Association of Seafood Exporters and Processors (VASEP), total exports of pangasius, with frozen fillets comprising the largest share, during January–September 2023 were valued at USD 1.4 billion, down 31 percent from the same period in 2022. VASEP said that exports had declined to most markets in terms of value against the same period in 2022 due to the overall lull in demand. China imported 127 504 tonnes during January–September 2023, down 39.76 percent from a year ago. Nevertheless, China still maintained its position as the top destination, followed by the United States, the European Union, other Asian countries, Brazil and Mexico. Furthermore, industry sources opine that the Chinese demand for pangasius remains strong, particularly for value-added products.

Vietnamese pangasius exports to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) countries¹ during the review period totalled 68566 tonnes, up 24 percent from the same period in 2022. The import tax on most Vietnamese seafood (including pangasius) to the CPTPP countries is zero, after more than five years since the Agreement was signed in December 2018. According to VASEP, the tariff elimination, the strength of Viet Nam’s value-added processing sector and its geographical position, all enhance the country’s competitiveness within the CPTPP bloc. Meanwhile, exports declined to most Member Countries except for Singapore and Chile. Singapore imported 12 359 tonnes, absorbing 24.2 percent of the total volume of frozen pangasius exports from Viet Nam to CPTPP members, followed by Mexico (23.7 percent), Canada (15 percent) and Malaysia (14.85 percent).

During January–September 2023, 60 572 tonnes of frozen Vietnamese pangasius valued at USD 224 million were imported into the United States, once the single largest market for the product. In that period, US imports of frozen pangasius declined by 43 percent compared to the previous year. This is primarily attributed to the high prices experienced in 2022, coupled with a consecutive dip over four months in the consumer confidence index till September 2023. The average import price of frozen pangasius fillets was USD 3.50 per lb in 2022; although prices softened in 2023 to around USD 2.00 per lb, it did not encourage imports. According to the National Fisheries Institute (NFI), pangasius is the sixth most favourite seafood among Americans.

Pangasius trade

Global imports –28% ↓

Vietnam exports –31% ↓

United States imports –43% ↓

1. Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Viet Nam. The United Kingdom may become the twelfth Member of the CPTPP after having formally agreed to join the bloc in July 2023.

The European Union imported a total of 55 097 tonnes of frozen pangasius from Viet Nam during the review period, down by 2.28 percent from a year ago. Although the total imports declined, several individual countries within the European Union imported more during the review period. Germany had the largest share, followed by France.

Meanwhile, pangasius continues to be promoted in existing and new markets. In Algeria recently, the promotion of Vietnamese products, namely coffee and pangasius, was coordinated by the Viet Nam Trade Office and a major supermarket chain in the centre of Algiers. Several activities such as video presentations on processing the fish as well as tasting sessions were held to introduce and promote pangasius fillets at the supermarket.

While in general, frozen pangasius imports fell in most markets in January–September 2023, positive trends were noted in smaller markets. In Asia, the Philippines and Singapore experienced 9.28 percent and 12.66 percent growth respectively, during the review period. In Europe, the United Kingdom imported 6.61 percent more while Germany saw an increase of 53.33 percent over the same period in 2022.

Pangasius imports

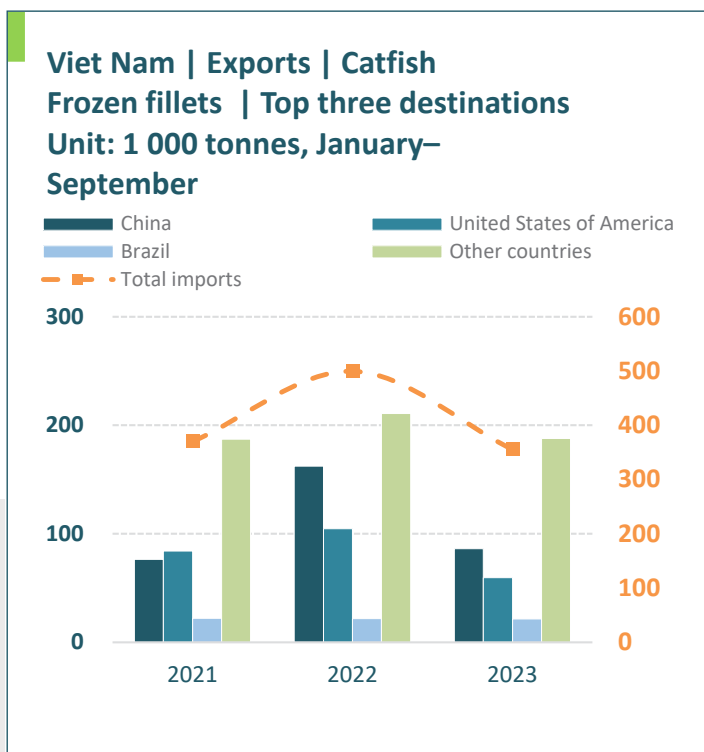
European Union	–2.28%	↓
Philippines	+9.28%	↑
Singapore	+12.66%	↑

Prices

Ex-farm prices of pangasius in Viet Nam during the third quarter of 2023 declined to around VND 26 500/kg (USD 1.08) due to the overall lull in demand, compared to the usual VND 28 000–VND 28 500/kg (USD 1.15–1.17) range leading up the Lunar New Year. It is worth mentioning that the average import prices in Europe and Asia differ by about 60 percent; in other words, the average import prices of frozen pangasius fillets in Europe are approximately USD 3.32 per kg compared with USD 2.068 per kg in Asia, which could be attributed to the different levels of glazing applied, but also to higher transport costs.

Outlook

The Lunar New Year celebration in February 2024 is reported to have triggered sales of pangasius in the Chinese market during the review period. Although the growing trade between China and Viet Nam, coupled with the strengthening of bilateral ties discussed recently between the two countries, is expected to trigger an in imports of pangasius and with gradual rises in price levels. Meanwhile, the consumer confidence index in the United States is reported to have increased by 2.2 percent in January 2024 from a year ago and 2.3 percent from December 2023. With the traditional rise in demand for seafood expected during Lent, a positive shift in the US import trends for pangasius may be seen in the months to come.



Source: Author's own elaboration based on GTT, 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com



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● Salmon

▮ Lower salmon production

Global salmon production fell slightly in the first nine months of 2023. However, in 2024, the main producing countries Norway, Chile, and the United Kingdom should see rises in output and trade though some uncertainty remains due to the farmed salmon tax issue in Norway and the algal blooms in Chile. The United States, the European Union and China will continue to be the biggest markets.



Global production

Atlantic salmon

Global salmon production accounted for 2 040 700 tonnes during January-September 2023, representing a marginal decrease of 1.4 percent compared to the same period in the previous year. According to Kontali, global supply is expected to show a slight decrease of 0.4 percent when 2023 figures are closed, compared to the 2022 final figure.

Some countries are showing signs of recovery and production growth while others continue to have significant challenges that impact their output. Norway and Scotland are included in the first category, while Chile appears in the middle (although with positive prospects) and Canada continues to have the greatest difficulties due to the closure of farms in key producing areas in British Columbia.

The main producer, Norway, recorded an output of 1 065 100 tonnes in the first nine months of 2023, down 0.3 percent compared to January-September 2022. Meanwhile, Chile registered an accumulated harvest of 575 367 tonnes during the same review period, up two percent year-on-year.

Salmon production

World	-1.45%	↓
Norway	-0.3%	↓
Chile	+2%	↑

Other salmonids

The accumulated harvests of Chilean coho salmon reached 134 760 tonnes in the first nine months of 2023, up 22 percent compared to the same period of 2022. Rainbow trout harvests totalled 39 274 tonnes, a drop of 10 percent year-on-year.

Wild salmon

According to the Alaska Department of Fish and Game (ADF&G)'s preliminary figures for the 2023 Alaska commercial salmon fishery, a total of 230.2 million salmon were harvested and valued at USD 398.6 million, up 43 percent in volume but down 44.6 percent in value compared to the 2022 harvest. The institution pointed out that international market conditions significantly impacted the pricing of salmon State-wide.

Sockeye salmon accounted for approximately 45 percent of the total value share (USD 181.1 million) and 23 percent of the harvest (51.8 million fish) while pink salmon represented 29 percent of the value (USD 113.7 million), and 66 percent of the harvest (152.4 million fish). In addition, chum salmon accounted for 19 percent of the value (USD 74.6 million) and 10 percent of the harvest (23.5 million fish).

Salmon production

Alaska wild salmon +43% ↑

Production and markets, by country

Norway

Although at the beginning of 2023 there had been some optimism, the final numbers in that year could show a one percent drop in production due to factors such as colder water temperatures affecting feed use and harvest planning.

Some of the most important Norwegian salmon companies continue to express their opposition to the salmon tax plan imposed by Parliament in 2023, but remain keen to discuss with the authorities and decision-makers on what they feel would be a more appropriate plan for the sector.

Issues such as these continue to impact the industry and the global market, affecting product availability as well as generating uncertainty about pricing and contract dynamics. With demand remaining strong and supply being limited, prices are expected to remain high.

United Kingdom

The United Kingdom is seeing an increase in salmon production following an important investment in smolt technology.

Demand for salmon continues to grow and it remains the most popular seafood among UK consumers. From September 2022–September 2023, salmon (with a value of GBP 1.25 billion) comprised 30 percent of all fish purchased in the United Kingdom, according to Salmon Scotland, the organization which gathers producers and companies from across the Scottish salmon supply chain. Salmon sales during the same period grew by 3.2 percent year-on-year. Of the top ten species in the chilled seafood sector, salmon increased its market value share to 48.7 percent (+0.9 percent), selling around four times more than its nearest competitor, warm-water prawns. In addition, while inflation has driven the prices of all seafood higher, the levels for salmon increased at a lower rate than other commodities in the overall food and drink category.

Iceland

The Government of Iceland has submitted a new bill with a legal framework for the development of the country's salmon farming industry, partly to control and minimize its environmental impact. The bill includes taxes for the use of natural resources and allows for a single operator in each fjord. According to media reports, the Government will offer financial incentives to encourage operators to invest in equipment, qualified personnel and jobs; while funds raised will be used for research, licensing and monitoring. It should be noted that 103 000 tonnes of Atlantic salmon can currently be produced in pens in Iceland and if the plan is approved, no new licenses will be granted until 2028. The action plan will be updated annually when the policy comes into force.

Argentina

The Argentine aquaculture sector has been taking important steps to reach international markets for rainbow trout. According to Servicio Nacional de Sanidad y Calidad Agroalimentaria (Senasa), a new processing plant has received official authorization to export whole trout and fillets to the European Union, being the first facility in the North Patagonia region to send aquaculture products to that market. This move represents the reactivation of aquaculture product exports to the European Union after some years. In addition, China has authorized the entry of frozen rainbow trout following verification of health and safety requirements by the General Administration of Customs of China (GACC). Negotiations with the Chinese authorities are continuing for the export of fresh/chilled trout to that market.

Salmon exports

United Kingdom +3.2% ↑



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Chile

The latest algae blooms that began in November 2023 have had an impact on the salmon industry and also on price stability. However, the industry and the government, through the Servicio Nacional de Pesca y Acuicultura (Sernapesca) and other entities, have designed a coordination work plan and measures to address the situation and prevent possible mass mortalities.

In August 2023, the first salmon farm in the southern hemisphere that runs entirely on renewable energy was inaugurated by Chilean fish farming company, Ventisqueros. It was described as a historic event for the Chilean aquaculture industry. According to the company, during a production period of 21 months, the clean energy (generated by a combination of solar and wind energy) will reduce the facility's carbon dioxide emissions by 427 tonnes, in addition to lowering the oil consumption by 180 000 litres. Ventisqueros said that it plans to replicate this clean energy technology in its other farming centres. However, some industry sources have commented that there is still a lack of infrastructure in the south of Chile and urged greater public-private collaboration.



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China

Importers, supermarkets and restaurants recorded poor sales and consumption of salmon in the later part of 2023, with the excess supply causing price drops in the market. This was attributed to the slow economy and consumers apparently being wary about the discharge of nuclear plant waste water from Fukushima (Japan). The salmon market only began to gradually recover in mid-December 2023.

However, packaged fillets of Chilean origin are becoming increasingly popular among Chinese consumers. With the end of the "zero-COVID" policy, Chinese airlines have resumed cargo charter flights from Chile; this has had a positive impact on shipments of Chilean salmon to the Asian giant. Air transportation costs for salmon from Chile to China have dropped to around USD 2.50 per kg.

United States of America

The US market continues to receive large quantities of fresh farmed salmon fillets, especially from Chile, but also some from Norway and the Faroe Islands. According to several market studies, salmon remains the most-requested seafood product by US consumers. As an example, according to the consulting company 210 Analytics, salmon sales in the third quarter of 2023 were more than double that of crab, both in volume and value.

However, significant changes are expected for fresh salmon in the American retail sector due to the economic situation, the decline in wholesale prices and an increase in imports; these could have a direct impact on salmon prices, with new falls. Fresh salmon prices fell 1.3 percent year-on-year but are still better than the average price for fresh crab, which was down 10.9 percent, and fresh cod which was down 4.7 percent as compared to 2022.

International trade

Norway

The Norwegian Seafood Council (NSC) will heavily invest in the promotion and marketing of seafood in 28 international markets during 2024, with more than half of the budget (NOK 270 million) allocated to salmon and trout. Viet Nam and the Middle East will be specially targeted, as well as Indonesia and the Philippines. Another important objective is to compete with Chile in the US market in order to increase the market share.

Meanwhile, significant growth was observed in the US and Asian markets in January–September 2023, with greater demand recorded for China. However, shipments to Europe decreased. The re-opening of the Chinese market after the end of the zero-COVID policy, is boosting sales of salmon, with the restaurant sector as a key outlet for a large amount of fresh product.

Norwegian exports of salmon totaled 993 000 tonnes (round weight) worth NOK 88.3 billion during the period under review, which meant a decline of 2.6 percent in terms of volume but an increase of 17.8 percent in value. The growth measured in NOK is mainly explained due to the devaluation of the Norwegian krone and the general price increase in international markets, but not so much an increase in demand.

United Kingdom

International demand for fresh Scottish salmon continues to grow and the product remains the UK’s main seafood export commodity. According to Salmon Scotland, in the first nine months of 2023, 53 000 tonnes of Scottish salmon were exported to more than 50 countries, with a value of GBP 478 million (+GBP 33 million year-on-year). The European Union remains the main destination for exports, absorbing 60 percent of the share in terms of value. France retained its ranking as the biggest single market in the European Union, taking 44 percent of the total; although more exports are now going to other EU markets such as the Kingdom of the Netherlands, or directly to more distant markets.

Exports outside the European Union increased by 15 percent in the period under review, with one in five salmon heading to the US market (at GBP 113 million, representing an increase of 11 percent in value). Meanwhile, exports to

Salmon exports

Norway -2.6% (volume) ↓
 $+17.8\%$ (value) ↑

United Kingdom -2.6% ↓

Asia rose by 41 percent in value and 42 percent in volume to GBP 66 million and 5 400 tonnes, respectively. To further boost the reputation of Scottish salmon, Salmon Scotland explained that it is taking action to protect premium product from food fraud, particularly in cases where sub-standard products with lower environmental and food safety standards are imported and could be sold as “Scottish” salmon.

Chile

The sector remains optimistic about market opportunities, especially in key markets such as Brazil and the United States. According to the National Customs Service, during January–September 2023, Chile exported 544 483 tonnes of salmonids worth USD 4 755 million. These figures represented an increase of 2.4 percent in volume compared to the same period of the previous year, but a slight fall of 0.2 percent in terms of value, particularly in the month of September (–15 percent). The monthly drop is explained by the significant decline in shipments of coho, especially to the main buyer, Japan. Furthermore, Chilean export companies noticed a significant downward trend in international prices, particularly during the third quarter of 2023.

The United States remains the main market for Chilean salmonids, taking 34.4 percent of the volume, followed by Brazil (17.5 percent) and Japan (14.2 percent). In year-on-year terms, the US market fell slightly by 1.1 percent due to the rise in international prices, while Brazil grew 4.4 percent due to higher shipments of coho salmon. However, Japanese imports fell a significant 19 percent due to the notable decrease in coho shipments. Addressing the need to boost export volume, industry actors have expressed their intention to invest more in technological innovations, research, science and sustainable development.

Meanwhile, the country has signed an agreement with China to increase the export of aquaculture products to the Asian giant, in line with a new protocol for inspection, quarantine and veterinary health requirements. Coho salmon, along with other fishery products, will now be able to be exported to China in fresh form since the General Administration of Customs of China (GACC) in that country recognizes the certification of Sernapesca.

China

Salmon imports into China are estimated to have reached around 85 000 tonnes in 2023, a figure not that far from the last pre-pandemic data (88 000 tonnes in 2019). Projections indicate that the market will improve in 2024.

United States of America

Total US salmonid imports during January–September 2023 accounted for 375 332 tonnes worth USD 4 787 million, up 2.6 percent and 2.85 percent, respectively, compared to the same period of 2022. In terms of value, the main imported Atlantic salmon products were fresh farmed fillets (USD 2 134 million),

Salmon exports

Chile +2.4% (volume) ↑
–0.2% (value) ↓

followed by frozen fillets at USD 1 009. In terms of volume, the biggest category was fresh farmed salmon Atlantic fillets which recorded 162 026 tonnes.

In the period under review, Chile maintained its position as the main provider of salmon products to the US market, with 184 841 tonnes worth USD 2 314 million, representing marginal increases of 1.09 percent and 0.3 percent, respectively. Imports from Norway continued to grow, recording 53 741 tonnes (up 12.6 percent), worth USD 848 million (up 18 percent). In contrast, Canadian exports to the US market were 55 097 tonnes worth USD 549 million, down by 19.2 percent and 21.6 percent, respectively, compared to the same period of 2022.

Prices

Norwegian salmon prices began to rise strongly during the first week of 2024, after two weeks of limited harvests (weeks 51 and 52 of 2023). Undercurrent News reported prices of EUR 10.45 per kg for 3–4 kg salmon, EUR 10.65 per kg for 4–5 kg salmon, and EUR 11.35 per kg for superior-grade head-on, gutted salmon, which represented increases of 18.75 percent, 19.65 percent and 26 percent, respectively, compared to the last week in December 2023.

On the other hand, market sources also indicated that Scottish spot prices were skyrocketing from GBP 7.90–8.00 per kg in week 52 to GBP 8.80 per kg by the first week of 2024 for 3–6 kg salmon.

In Chile, the algae bloom occurrence is having an impact on the prices and affecting stability prospects. However, spot prices for Chilean salmon exported to the US market in the first week of 2024 increased strongly and further price increases are expected due to slow production and strong demand. Analysts note that the price level figures so far are replicating the trends observed at the beginning of 2022 and 2023, where prices were similarly strong and high.

Outlook

The volume of Atlantic salmon harvested in the fourth quarter of 2023 was about 3.8 percent higher compared to the corresponding period in 2022, reaching 824 068 tonnes. The total production in 2023 thus was 2 864 768 tonnes, almost unchanged compared to 2022. Experts forecast an increase of 4.5 percent in the global salmon supply for 2024 compared to last year.

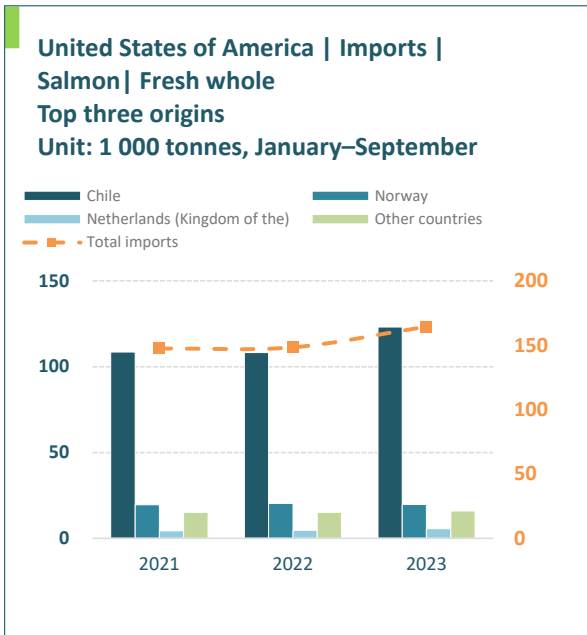
Norway could record a recovery in production growth in 2023 (up 0.5 percent year-on-year) to reach around 1 519 722 tonnes, and increasing further in 2024 to 1 580 142 tonnes. Chilean Atlantic salmon production in 2023 is estimated at 759 226 tonnes, representing marginal growth of 0.2 percent but this is

Salmon IMPORTS

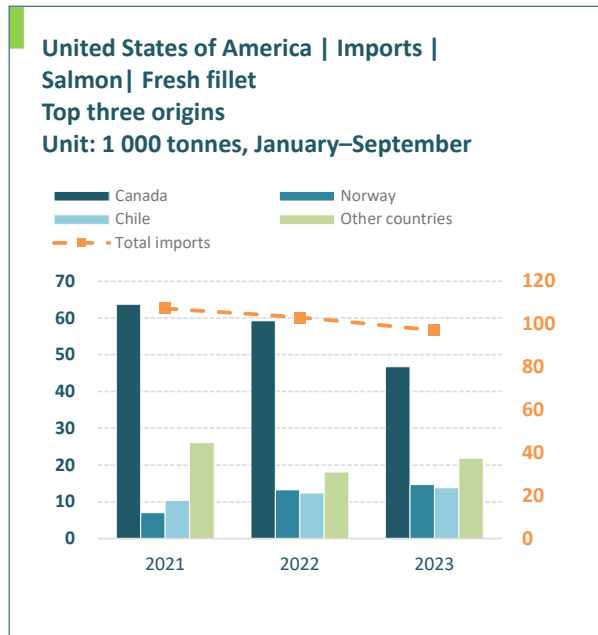
United States +2.6% (volume) ↑
 +2.85% (value) ↑

expected to rise by two percent by 2024. Meanwhile, the declining salmon production trend in Canada is forecast to continue.

Some key events such as the impact of the farmed salmon tax plan in Norway and the algal blooms in Chile will influence the evolution of the world salmon market this year in terms of supplies and prices.



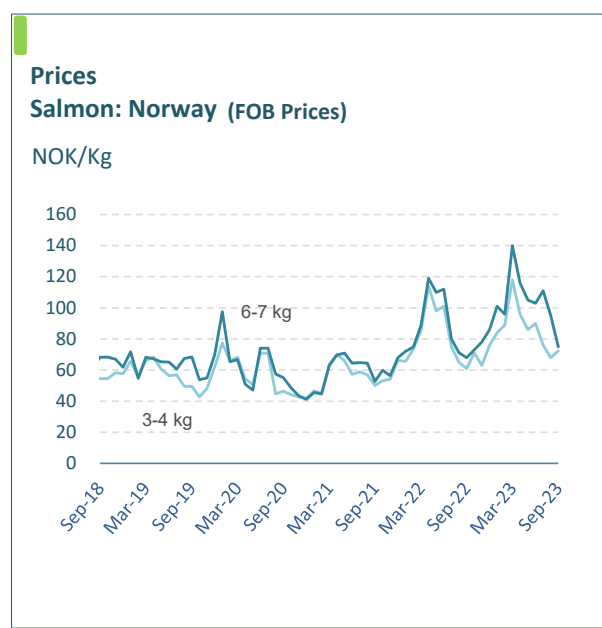
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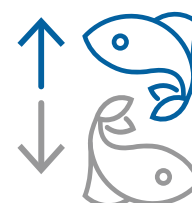
Source: Author's own elaboration based on the European Price Report, 2024. GLOBEFISH. [Cited 5 January 2024]. www.globefish.org



● Seabass and seabream

▮ Stable seabass and seabream markets

The global trade for European seabass and gilthead seabream remains stable, with prices seeing limited variations in major markets such as Spain and Italy. Overall, supply growth has remained positive, showing a slight increase during the first nine months of 2023. Major producers continue to invest in production capacity as well as maintaining focus on improving the quality of the fish.



Production

The Mediterranean Sea hosts a thriving farming industry for European seabass and gilthead seabream. Of the producing countries, Türkiye, Spain, Italy, and Portugal stand out with their adoption of advanced technology, which contributes to their large output and market supply. In Spain and other Western Mediterranean countries, juveniles are increasingly being held longer in grow-out on-land facilities in order to maintain the health of the stocks.

By the end of 2023, the global harvest of seabass is projected to reach 263 800 tonnes, while for seabream, the figure is estimated at 309 200 tonnes.

From January to September 2023, overall consumption of seabass and seabream remained stable, with varying trends across countries. Greece witnessed a seven percent decline in seabass consumption but a five percent increase in seabream consumption. Similarly, Portugal experienced a notable nine percent rise in seabream demand, while seabass consumption decreased by three percent during the first nine months of 2023.

Global production projection

Seabass 263 000 tonnes

Seabream 309 000 tonnes

Market and trade

The seabass market showed positive growth in the first nine months of 2023. The volume of seabass traded in the Mercamadrid market increased by 14 percent year-on-year, reaching a total of 9 021 tonnes.

Seabass imports

Spain +14% ↑

Italy experienced a 30 percent surge in the quantity of fresh seabass imports from Türkiye and a 11 percent decrease from Greece during the first nine months of 2023. Italian seabream supply domestically in the first nine months plummeted approximately by 24 percent in volume compared to the previous year. At the same time, Italian seabass sales, including exports and domestic markets, saw a two percent increase, driven by growth in other markets.

Türkiye maintains its position as a major exporter of seabream, following Greece, with a five percent year-on-year increase in volume during the first nine months of 2023. Türkiye's exports of whole fresh seabream saw significant year-on-year increases of 13 percent, 30 percent, and 30 percent in volume for July, August, and September 2023, respectively. Italy primarily imports seabass from Greece and Türkiye, holding the majority of the market share with 37 percent and 31 percent, respectively.

Prices

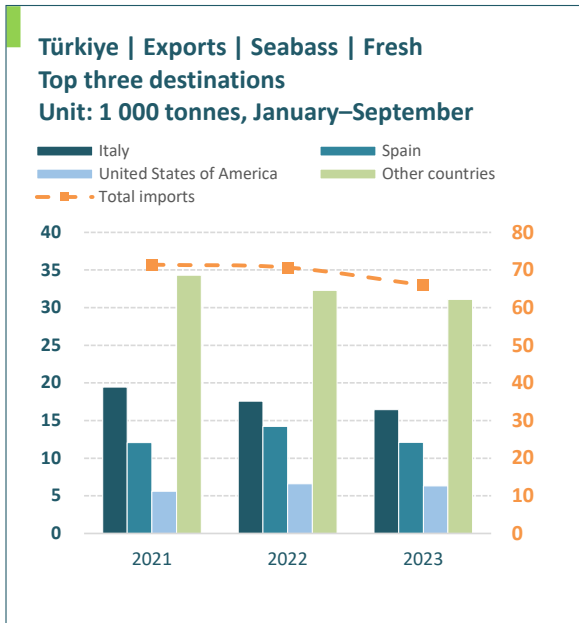
Prices for medium-sized seabass and seabream in Mercamadrid, Spain, have remained largely steady, indicating consistent availability of supply. However, other markets exhibited significant price drops since the third quarter in 2023, leading to increased competition among buyers and decreased profits for suppliers. In the second half of 2023, smaller and medium sizes of seabass showed a decline. Seabream prices dropped significantly from EUR 6.90 in April to EUR 4.60 per kg in October 2023 for fresh fish weighing 300–400g, remaining stable through the end of 2023. In Türkiye, farmed medium-sized seabream (whole fresh) experienced a historical drop in the third-quarter of 2023 to about EUR 4.73 per kg, marking a 29 percent decrease from the beginning of the year and a 16 percent year-on-year decline.

Outlook

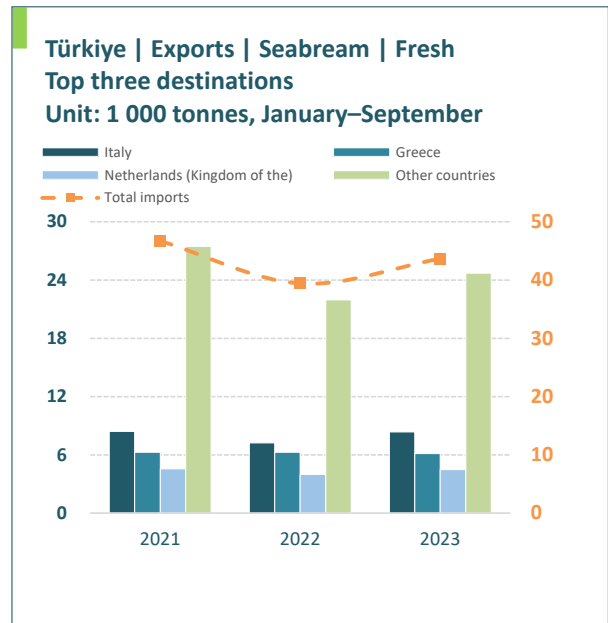
During the first nine months of 2023, demand for seabass and seabream exhibited a positive, albeit slow, upward trend. Total consumption reached 590 000 tonnes by the end of 2023, reflecting a three percent increase compared to 2022. The abundance of fish supply has helped maintain stability in key markets, a trend that is likely to continue into 2024. While other major markets may experience minor price fluctuations for seabass and seabream throughout the year, these variations are expected to remain relatively small.

Seabass exports

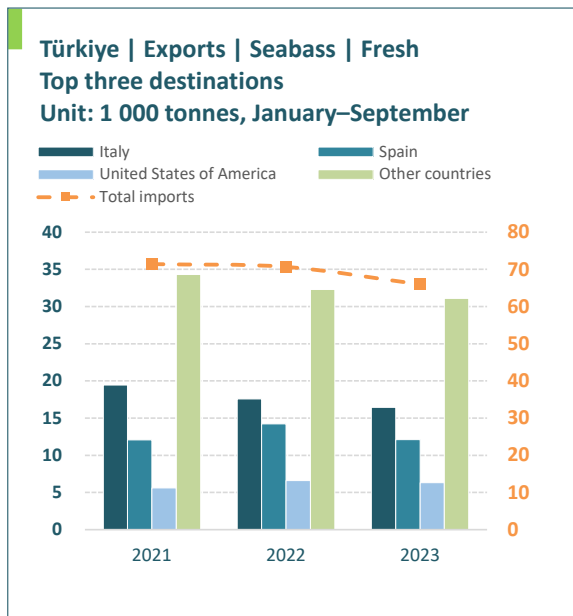
Türkiye +5% ↑



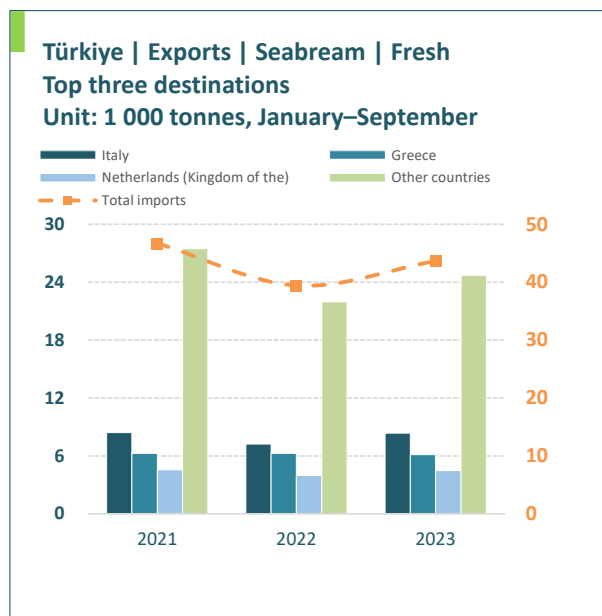
Source: Author's own elaboration based on GTT. 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com



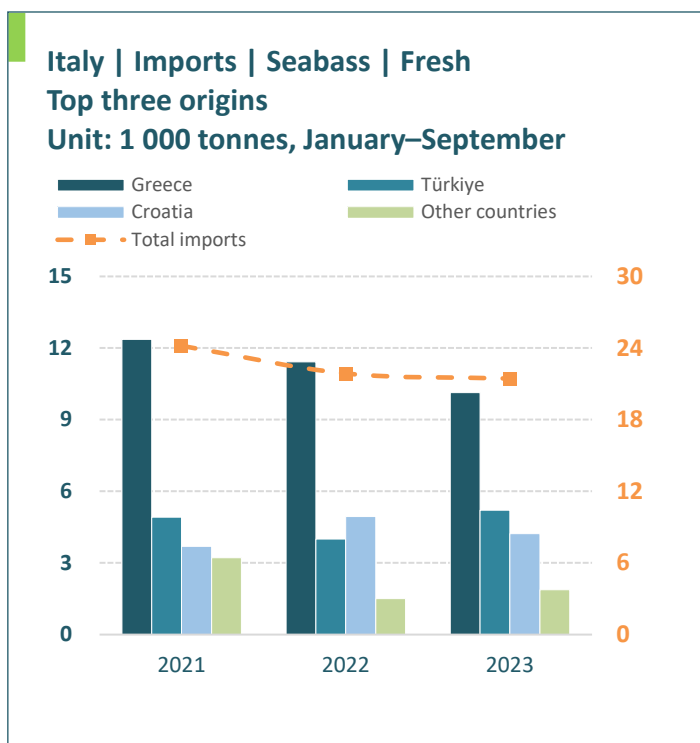
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● Shrimp

▮ China: New record for Chinese imports

Global inflation, economic stagnation and reduced consumer disposable incomes in North America and Europe curbed demand for shrimp in 2023, affecting its trade in other markets. Despite the low price levels in the international trade, shrimp imports declined across the board worldwide except in China, the leading shrimp importer in 2022 and 2023.



Supply

During the 2023 aquaculture season, a total of 1.8 million tonnes of farmed shrimp was produced in Latin America, with the bulk of the supply from Ecuador. In fact, Ecuador was the only country in the world which sustained a growth trend, recording an output of 1.5 million tonnes of farmed vannamei shrimp in comparison with 1.2 million tonnes in 2022. The increased production forced the Ecuadorian industry to sell bigger volumes at lower prices, pushing down shrimp prices worldwide. Significant increases in operating costs throughout the shrimp value chain also affected the sector's competitiveness.

In contrast, production in most Asian countries recorded a decline in 2023. Struggling with rising production costs, falling ex-farm prices and shrinking demand in the global shrimp market, farmers opted for conservative farming. At about five million tonnes, Asian production during the 2023 aquaculture season is estimated to be lower than in 2022. Due to the falling global prices and demand for vannamei, as well as strong competition posed by the cheaper supplies from Ecuador, shrimp farmers in India, Viet Nam and Indonesia turned to farming black tiger shrimp for better financial returns. Affected by falling domestic production, Viet Nam and Thailand imported 58 000 tonnes and 30 000 tonnes of frozen shrimp respectively in 2023 for their processing sectors; Ecuador and India were the main suppliers.

Shrimp production

Ecuador +25% ↑

International trade

Official statistics on annual shrimp imports and exports in 2023 are yet to be available in many countries. However, with the presence of many unfavourable parameters (weak demand, reduced global production and falling market prices) the international trade in shrimp in 2023 is estimated at 3.64 million tonnes, 2.6 percent lower than the previous year.

Strong demand in China, the world's number one importer of shrimp, resulted in a 12.2 percent rise in imports exceeding one million tonnes in 2023, while imports declined in the other large markets (the United States, the European Union, Japan, and the Republic of Korea) in comparison with 2022.

Exports

From January–September 2023, the top five exporters of shrimp were Ecuador, India, Viet Nam, Indonesia and China. Shrimp exports from Ecuador, India, and China increased during this period. There was a 19 percent rise in exports of head-on shrimp (142 582 tonnes) from Ecuador, of which China was the leading importer, followed by the United States, Spain and France.

Notably, the quantitative gap in exports widened between the top two exporting countries (Ecuador and India) from 272 000 tonnes in 2022 to 380 000 tonnes during this review period. However, exports declined from Viet Nam and Indonesia due to weaker demand for value-added products in the European and North American markets. Viet Nam also lost its market share in China due to a 71 percent decline in exports to this market. Meanwhile, demand for processed shrimp declined in Japan, Australia, and New Zealand.

Overall exports of sea-caught shrimp from Argentina increased during the review period, although with two varied directions in the trade. Exports of head-on shrimp declined by 30 percent to the top market, Spain, but increased by 50 percent to China. Headless shrimp exports increased by 30 percent; China and Spain were the top two markets.

Shrimp trade imports

World -2.6% ↓

China +12.2% ↑

Exports

Ecuador +13.86% ↑

India +0.29% ↑

Viet Nam -13.1% ↓

Indonesia -9% ↓

China +0.80% ↑

Imports

Excluding the top market, China, shrimp imports fell behind 2022 levels in most markets worldwide during January–September 2023. China was the top importer during this period.

China

Shrimp imports into China increased during the second half of 2023, reaching one million tonnes in the whole of that year.

Consumer demand for shrimp was high across the country during October–December 2023, in celebration of the Mid-Autumn Festival and National Day Holiday in October, as well as the year-end and New Year celebrations in December 2023 and January 2024.

Supported by good domestic demand, steady supplies at cheaper prices and low competition from the western markets, China retained its position as the biggest global importer of shrimp during the first nine months of 2023. Cumulative imports were 23 percent higher year-on-year at 814 166 tonnes during this period. In 2023, the monthly imports of shrimp in China averaged 90 665 tonnes.

In terms of origin, imports of farmed shrimp into the market during this period increased by 37 percent from Ecuador, 28 percent from Thailand, 91 percent from Saudi Arabia and 33 percent from Indonesia, but declined from India (–0.3 percent) and Viet Nam (–71.6 percent). Imports of sea-caught cold-water shrimp also increased in the market, sourced from Canada (+10 percent) and Argentina (+188.7 percent) during January–September 2023.

During the first nine months in 2023, Ecuador’s market share for shrimp in China increased to 66.5 percent in comparison with 60 percent in the same period in 2022. Meanwhile, Ecuador continues to promote its shrimp in China which helps to increase its share in this giant market. In 2023, almost two dozen Ecuadorian shrimp producing and exporting companies participated in the World Seafood Shanghai Exhibition to re-launch their product in China. The event was attended by representatives of the Ecuadorian Embassy in China, leaders of the Ecuadorian shrimp industry, importers, distributors and media with the aim to consolidate commercial links between both the nations.

United States of America

During the first nine months of 2023, shrimp imports into the United States totaled 575 538 tonnes valued at USD 4 748 million, representing drops of 10.9 and 22 percent respectively, year-on-year. India was by far the main supplier, with 215 350 tonnes (down 7.1 percent), followed by Ecuador (154 405 tonnes) and Indonesia (107 068 tonnes).

Shrimp imports

China +23% ↑

United States –10.9% (volume) ↓
 –22% (value) ↓

In terms of product forms, the share of raw shell-on shrimp increased by 14.6 percent to 196 245 tonnes, but declined by 2.8 percent for raw peeled shrimp at 273 506 tonnes and 21.8 percent for processed shrimp at 129 875 tonnes.

The Christmas and New Year celebrations, in addition to the college and professional football seasons of the National Football League (NFL), were important events that induced shrimp consumption due to the notable increase in gastronomic activity in restaurants, bars, hotels, casinos and at home.

Since the beginning of 2024, shrimp trade in the United States has been showing signs of recovery after a prolonged period of declines in 2023. Although prices abroad show some signs of strengthening and stabilization, this has not yet translated into changes in the US market.

The European Union

The demand-supply imbalance continues in European shrimp trade. As of January 2024, shrimp markets in the European Union are over-supplied with vannamei shrimp, in addition to a steady supply of cheaper offers from Ecuador.

In the European Union during January-September 2023, there was a 6.6 percent decline in shrimp imports at 588 300 tonnes in comparison with the same period in 2022. The combined share of the top five markets Spain, France, Denmark, Italy, and the Kingdom of the Netherlands had a 68 percent share in this total.

The share of extra-EU supply in the total EU imports was also lower at 72 percent or 424 195 tonnes, down by 7.16 percent year-on-year. Among the top supply sources, imports increased marginally from Ecuador but declined from India, Greenland, Viet Nam and Argentina. The import shortfall was higher for processed and value-added shrimp from extra-EU sources (-15 percent at 80 209 tonnes), affecting overall exports from Viet Nam, Indonesia, and Thailand to the EU market.

The estimated annual imports of shrimp into the European Union were 77 067 tonnes for the whole of 2023 against 835 900 tonnes in 2022 and 741 200 tonnes and 2021.

Shrimp imports

European Union -6.6% ↓

World top exporters of shrimp
January-September, 2021-2023 (1 000 tonnes)

	2021	2022	2023	% change 2022/21
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Source: Author's own elaboration based on GTT. 2024. Global Trade Tracker. [Cited 5 January 2024], www.globaltradetracker.com

World top importers of shrimp
January-September, 2021-2023 (1 000 tonnes)

	2021	2022	2023	% change 2022/23
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Source: Author's own elaboration based on GTT. 2024. Global Trade Tracker. [Cited 5 January 2024], www.globaltradetracker.com

January–September 2021–2023

	2021	2022	2023	% change 2023/2022
The United Kingdom	60 387	60 030	54 405	-10.0
The Russian Federation		38 725	53 148	+37.3
Ukraine	13 314	5 638	12 285	+117.9
Norway	12 916	10 778	9 721	-9.7
Switzerland	5 948	6 608	6 301	-4.7

Source: Author’s own elaboration based on GTT. 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

Other countries in Europe

Among the five important markets outside the European Union, import trends were positive in the Russian Federation and Ukraine but weakened in the United Kingdom, Norway and Switzerland.

Japan

Once the top importer of shrimp, the role of Japan continues to weaken every year in the global shrimp market. During the first nine months of 2023, imports were at a five-year low at 140 445 tonnes and 12.5 percent less year-on-year. In this period, imports were at record-low levels for raw shell-on and peeled shrimp at 96 785 tonnes, and processed shrimp at 42 275 tonnes.

Over the decades, home consumption of shrimp has reduced in Japan, and demand in the catering trade became more seasonal; these trends have contributed to the falling per capita consumption of shrimp in this market.

The preliminary data on 2023 annual imports indicated a 10.8 percent fall, at 200 000 tonnes against the 2022 data.

Other Asia-Pacific markets

The 2024 Lunar New Year/Chinese New Year celebrations that commenced on 10 February and will persist till end of the month, has created strong intra-regional trade for farmed and sea-caught shrimp in South-east Asia and the Far East. Earlier, during the fourth quarter of 2023, imports of frozen shrimp had increased in many regional markets in preparation for the festivities.

Demand for large sizes of fresh shrimp (farmed and sea-caught) has increased significantly in the regional markets. These shrimps were exported at high prices from Thailand, Indonesia, and Viet Nam to the regional markets (China, Hong Kong SAR, Taiwan Province of China, the Republic of Korea, Singapore, and Malaysia). Increased domestic demand for fresh shrimp also contributed to the strong intra-regional trade.

Elsewhere in the region, shrimp imports declined in Australia and New Zealand.

Shrimp imports

Japan -12.5%↓

Prices

In Asia, ex-farm prices for vannamei shrimp bottomed-out in October 2023 but have yet to reach shrimp farmers' break-even points.

As of January 2024, the price recovery has been better in South-east Asia and the Far East following strong demand during the Chinese New Year celebration in February 2024. The retail price for large sizes fresh vannamei (30-40 pc/kg) was about USD 15/kg during early February, while the price for *Penaeus monodon* (200g/pc) was USD 25-30/kg.

Outlook

Due to the absence of a reasonable recovery in ex-farm prices and slow demand in the western markets, shrimp production in South and South-east Asia is likely to be low during the first half of 2024. However, the abundance of Ecuadorian production that reached 1.5 million tonnes in 2023 and which is still flooding the global market, is expected to keep prices low for the foreseeable future.

Meanwhile, the Indian aquaculture industry forecasts a 30 percent decline in shrimp production this year as vannamei farmers continue to adopt a conservative approach in pond seeding.

In Ecuador, the farming season will continue till March 2024 and dependency on the largest market, China, will continue. As of February 2024, a large number of containers full of Ecuadorian shrimp is destined to China without prior sales agreements or contracted at significantly-reduced prices. The presently difficult political situation in Ecuador is likely to impact negatively on shrimp supply from this country in the near future.

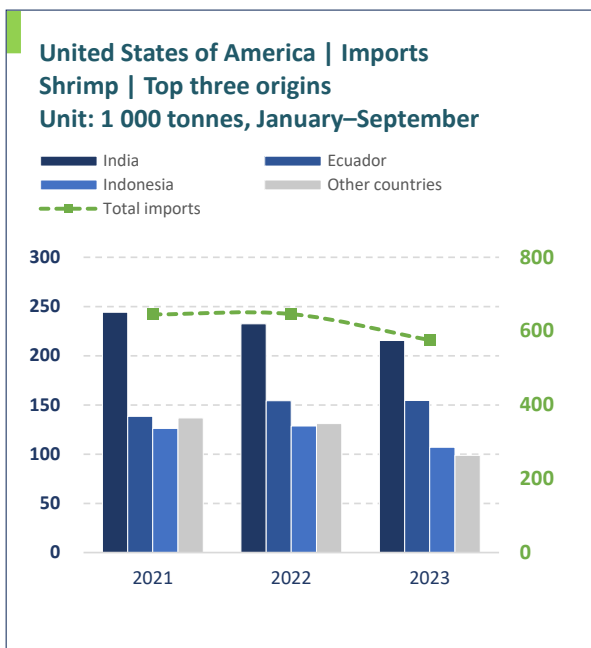
The inventory situation for imported shrimp in China will only be clearer in March 2024 when the Chinese New Year celebration is over. In the United States, as the import volume in 2023 had declined by 6.4 percent and domestic demand was good during November 2023 to February 2024, prices are expected to remain stable till at least the first quarter of this year.

Vannamei shrimp continues to be over-supplied in the European market. Demand remains low and is not expected to improve in the coming months.

Shrimp retail prices

Vannamei USD 15/KG

Black tiger USD 25-30/KG



Source: Author's own elaboration based on GTT. 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com



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China imports and exports of shrimp January–September 2021–2023 (1 000 tonnes)

	2021	2022	2023
Imports			
Ecuador	248.47	394.13	541.64
India	87.91	105.82	105.51
Canada	13.57	21.73	23.92
Other countries	91.44	142.04	151.62
Total imports	441.39	663.71	822.68
Exports			
Japan	26.72	17.17	15.21
Malaysia	5.57	9.95	13.55
China, Hong Kong SAR	14.53	11.24	11.67
Other countries	79.84	66.12	64.89
Total exports	126.66	104.48	105.31

Source: Author's own elaboration based on GTT. 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

India exports of shrimp, January–September 2021–2023 (1 000 tonnes)

	2021	2022	2023
Exports			
United States of America	256.16	211.66	215.33
China	94.11	107.95	110.82
Viet Nam	32.26	33.58	34.23
Other countries	163.23	182.28	176.64
Total imports	545.76	535.48	537.02

Source: Author's own elaboration based on GTT, 2024, Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

European Union imports and exports of shrimp January–September, 2021–2023 (1 000 tonnes)

	2021	2022	2023
Imports			
Ecuador	100.95	117.05	118.51
Greenland	52.49	58.49	53.22
India	35.78	44.85	41.63
Other countries	337.48	342.95	322.77
Total imports	526.71	563.34	536.13
Exports			
China	11.99	24.65	23.89
France	17.16	18.67	22.29
Germany	13.83	16.98	19.03
Other countries	155.80	151.33	139.88
Total exports	198.77	211.63	205.10

Source: Author's own elaboration based on GTT, 2024, Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com



Small pelagics

Reduced supplies of mackerel, herring and anchovy

Stocks of both mackerel and herring in the North Sea have been strongly exploited in recent years, to the point that scientists are now recommending reduced quotas. Elsewhere, in Peru, supplies of anchovy were significantly reduced when the country closed the second fishing season in January 2024, leaving 25 percent of the quota uncaught.

Researchers have warned that small pelagic species in the North Atlantic may be over-exploited. In recent years, the combined catches of mackerel, Atlanto-Scandian herring, blue whiting and capelin have exceeded scientific recommendations by more than 4.5 million tonnes.

With regard to mackerel, the North Sea coastal States have not been able to agree on quotas for several years, and this has led to the setting of unilateral quotas by several major fishing nations. Towards the end of 2023, there was agreement on the total quota but not on the distribution among the coastal nations.

Supplies of anchovy are uncertain. Peru's second anchovy season was cut short in January 2024, with 25 percent of the quota still uncaught; with this closure, there will be a shortage of raw material for the fishmeal and fish oil industry.

Mackerel

The coastal States have agreed on a Total Allowable Catch (TAC) of 739 387 tonnes for mackerel in the North Sea for 2024, which is in line with scientific advice.

As at the time of writing, the distribution of the total quota had not yet been agreed upon and is the subject of negotiations which will take place between January and February. Consequently, at the very end of 2023, the Norwegian Ministry of Trade, Industry and Fisheries had set a preliminary quota for mackerel at 100 000 tonnes in order for fishing to be able to commence in January 2024 prior to a decision on the final figure.



TAC for mackerel

North Sea 739 387 tonnes ↓

Trade

After seeing a modest increase in imports of whole frozen mackerel into China during the first nine months of 2022, there was a massive drop during the same period in 2023. Chinese imports fell by almost 45 percent, to 25 511 tonnes. All the largest suppliers suffered: Norway experienced a drop of 35.6 percent to 15 409 tonnes; Ireland saw a decline of 47 percent to 4 106 tonnes; and supplies from the United Kingdom were down by 55.8 percent to 1 715 tonnes.

Norwegian exports of whole frozen mackerel declined by 22 percent during the first nine months of 2023 compared to the same period in 2022. The total amounted to 155 375 tonnes, down from 199 151 tonnes in 2022. The largest markets were Japan (18.6 percent of the total), Viet Nam (11.9 percent of the total), and the Republic of Korea (11.4 percent of the total).

Norwegian exports of mackerel were off to a good start in the new year (2024), with prices and volumes rising, according to the Norwegian Seafood Council (NSC). However, the price picture is blurred by the effect of a very weak Norwegian krone (NOK) against major global currencies. While prices in NOK rose by 2.7 percent during the first week of the year compared to the same week in 2023, in US dollar terms, prices fell by 3.9 percent.

Herring

During a meeting in London in the middle of October 2023, the North Sea coastal States agreed on the 2024 quotas for Atlantic herring, mackerel and blue whiting. For herring, the quota for spring-spawning herring was set at 390 010 tonnes, to be divided between Norway, the Russian Federation, the European Union, the United Kingdom and the Faroe Islands. The 2024 quota represents a 24 percent decrease in TAC compared to the 2023 TAC of 511 171 tonnes.

Just before Christmas 2023, the Alaska Department of Fish and Game released its forecast for the 2024 Togiak herring fishery in the Bristol Bay area. The biomass forecast was set at 195 986 tonnes, and the TAC at 39 197 tonnes. Of this, the TAC for sac roe herring was forecast at 35 187 tonnes. This represents a reduction of 32 percent from the 52 090 TAC for the 2023 season.

However, it is still highly uncertain that any of this resource will be landed. Last year, processors were not interested in buying since they had no market for their products. Demand was down, and so were prices, especially in Asia. In fact, it was the first time in 30 years that this fishery was not exploited and the outlook for 2024 appears just as bleak as last year.

Small pelagics trade

China mackerel imports

–45% ↓

Norway mackerel exports

–22% ↓

Trade

Russian exports of whole frozen herring made a jump to 187 566 tonnes during the first nine months of 2023, from 119 791 tonnes during the same period in 2022. The reason for this was the fact that China had switched to Russian supplies: exports from the Russian Federation to China increased by 104 percent to 123 224 tonnes, thus accounting for almost two-thirds of the total imported by the latter. Exports to the Republic of Korea declined by 19 percent though, while exports to Nigeria increased by a healthy 56 percent.

Norwegian exports of whole frozen herring declined by 22 percent during the first nine months of 2023 compared to the same period in 2022. The total export volume dropped from 140 714 tonnes to 128 834 tonnes. The largest markets were Egypt (23 percent of the total), Poland (22 percent of the total) and Denmark (10.7 percent of the total).

Capelin

In spite of the icy relationship between the West (including Norway) and the Russian Federation, Russian and Norwegian marine scientists continue their close cooperation in the Barents Sea. The latest scientific research voyage showed that the capelin resource was in better shape than in the past several years, and that the 2020 year-class was particularly good. As a result, the Norwegian-Russian research group advised a tripling of the capelin quota for 2024 in the Barents Sea.

Anchovy

In November 2023, Peruvian fishers were becoming concerned about the number of juveniles caught during the second anchovy season, and they proposed to the Ministry of Production (PRODUCE) to close the fishery in order to safeguard the growth and reproduction of this species.

By mid-December 2023, 63 percent of the quota (1.07 million tonnes) for the second season had been caught. Total anchovy landings for the 2023 season were 53 percent lower than the volume landed in 2022.

The juvenile issue continued to concern the fishers, and they repeated their demand that the fishery be closed at the end of December. At that point in time, 361 000 tonnes of juvenile anchovetas had been caught.

The Peruvian Ministry of Production finally closed the second season of the fishery on 12 January 2024, after 75 percent of the quota had been caught. This decision is estimated to cost the industry about USD 1.4 billion in lost revenue, but it was considered justified as a measure to protect the resource in order to ensure future sustainable fisheries. One result of the closure is that the fishmeal industry will have a very tight raw material supply situation, and that fishmeal and fish oil production will be reduced.

Small pelagics exports

Russia herring +57% ↑

Surge in popularity of canned fish

A recent trend has appeared across the United States: the popularity of canned seafood is growing rapidly. Sales of canned seafood grew from USD 2.3 billion in 2018 to more than 2.7 billion during the first nine months of 2023.

Several species are being offered as canned products such as sardine in lemon sauce, mackerel in curry sauce, and various cephalopods products. This is probably an after-effect of the COVID-19 pandemic, during which consumers were forced to stay at home and prepare their own meals. Consequently, tinned products were a convenient alternative.

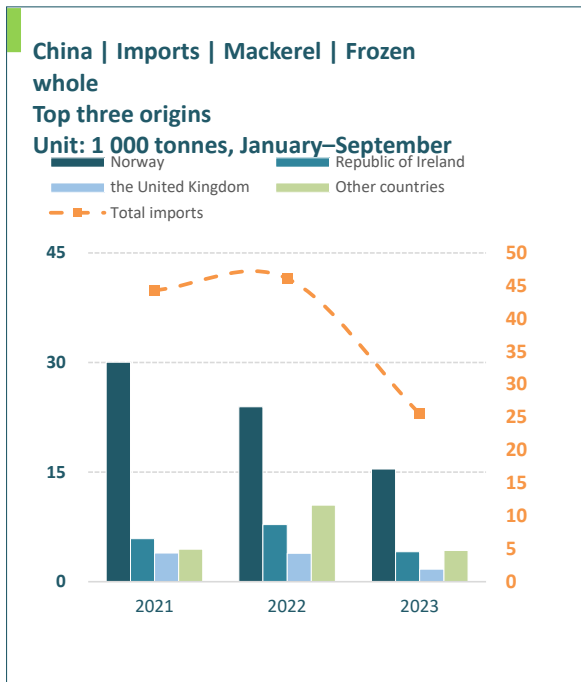


Outlook

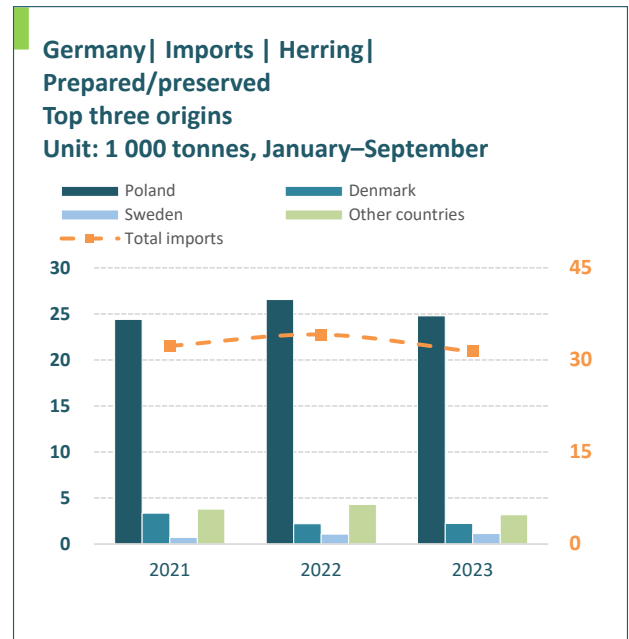
2024 looks to be a year of short supplies for the most important small pelagic species. The North Atlantic mackerel quota has been cut; the North Sea herring quota is down; and in South America, the anchovy season in Peru was cut short; consequently, there will be a serious supply problem for the fishmeal and fish oil industry. Mackerel prices are expected to go up, and herring prices as well, although not as much. Anchovy prices should also go up, especially for raw material to the meal and oil industry.

Demand for small pelagics in Asia is good, but price increases for mackerel may pose a problem. For herring, prospects may be easier as prices have declined marginally recently.

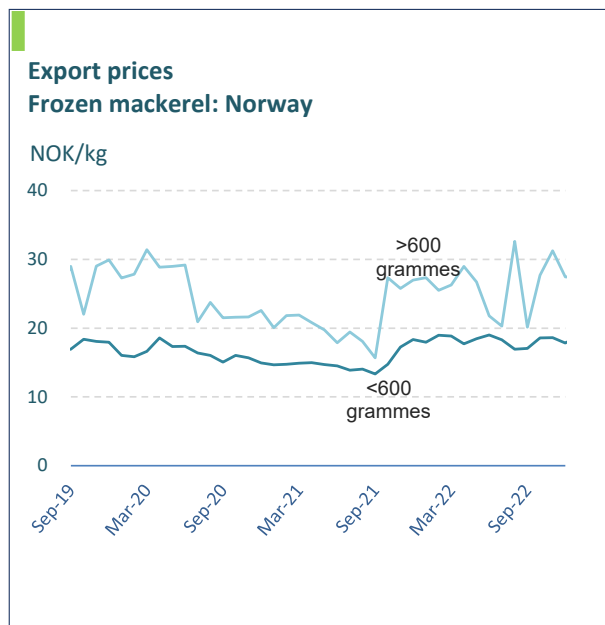
One interesting development is that the Russian and Norwegian researchers agree that the capelin quota in the Barents Sea should be increased massively, perhaps by as much as three-fold.



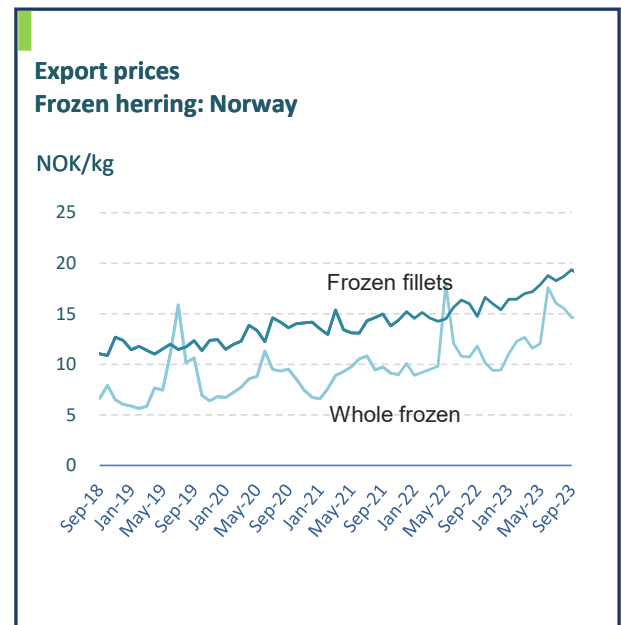
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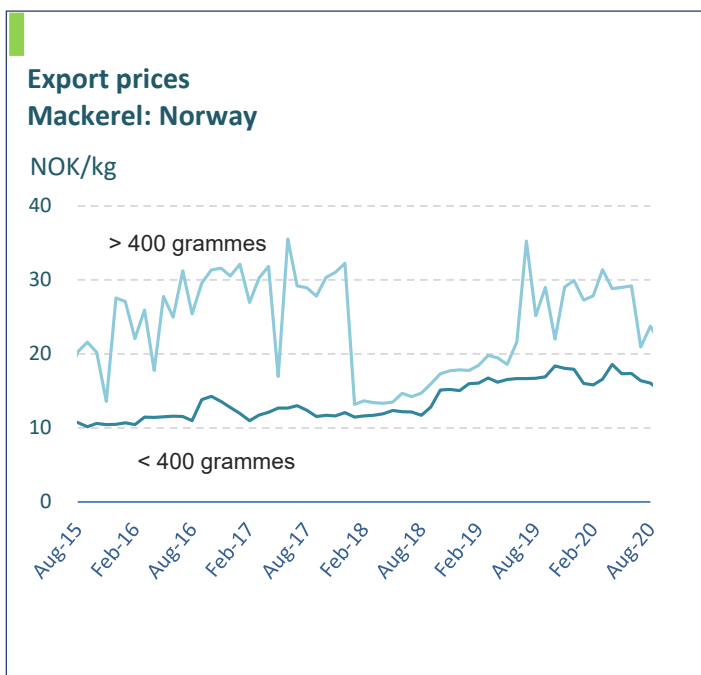
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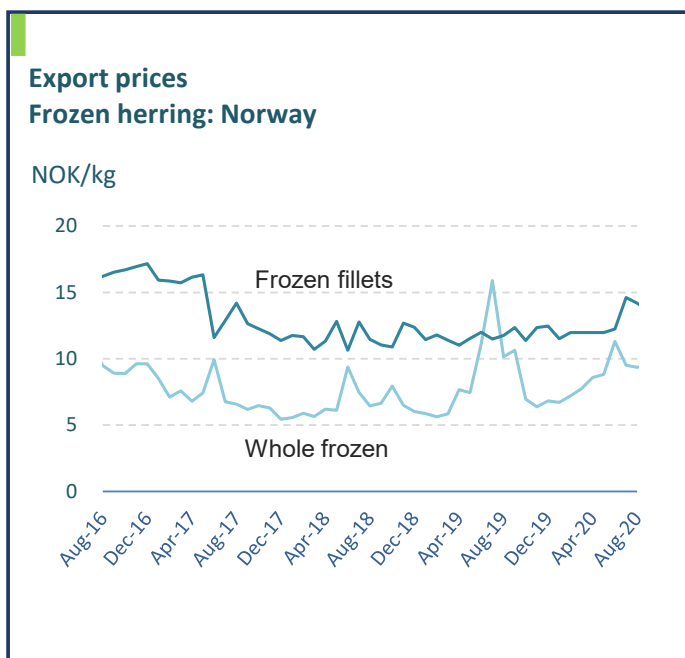
Source: Author's own elaboration based on NSC data. 2024. Norwegian Seafood Council. [Cited 5 January 2024]. www.seafood.no



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Norwegian Seafood Council. [Cited 5 January 2024]. www.seafood.no



Tilapia

Promising outlook: Tilapia prices set to rebound amid tight supply

During the first nine months of 2023, global tilapia trade saw a slight downtrend due to tight supply and increased production costs. However, the market is expected to remain positive in terms of trade and supply, and the outlook for a recovery in prices in 2024 is optimistic.

Production

In the third quarter of 2023, tilapia production in China has been considerably affected by increased raw material costs, partly due to a decline in Peruvian fishmeal production. Consequently, tilapia supplies tightened, causing farmgate prices to surge by over 30 percent compared to the previous year. Processors are now faced with the dilemma of either delaying contracts or breaking them to mitigate losses. To offset the expensive feed costs, Chinese farmers have adopted high-density farming techniques, raising concerns about the quality of the tilapia produced.

Elsewhere, Indonesia is emerging as the second-largest tilapia producer in Asia. African countries are also investing more in tilapia production, aiming to increase their contribution to the global tilapia supply. Farmers in Kenya and Zimbabwe are making strides in enhancing fingerling production; and launching programs to increase the output of higher-quality tilapia as well as stimulate domestic fish consumption. Meanwhile, Egyptian production is anticipated to exhibit a positive supply outlook for the upcoming year. In Latin America, tilapia supplies in Brazil and Honduras during the third quarter of 2023 were lower than envisaged due to fish mortality problems that could be linked to the impact of climate change or diseases in different regions.



Tilapia farm gate prices

+30% ↑

Market and trade

According to the National Oceanic and Atmospheric Administration (NOAA), tilapia imports in the United States for the first nine months of 2023 amount to 129 678 tonnes, valued at USD 489 million. This represents declines of three percent in terms of volume and 13.7 percent in value compared to the same period in the previous year. Additionally, fresh tilapia sales in the US market in the third quarter fell by around 10 percent, largely due to the higher prices.

China, the leading exporter of tilapia to the United States, saw a seven percent year-on-year decrease in the volume of frozen tilapia fillet exports but a 59 percent increase in frozen whole tilapia exports in the third quarter of 2023. It is predicted that by the end of 2023, Chinese market share in tilapia imports to the United States will likely drop by approximately 50 percent due to significant price increases, leading US customers to explore alternative seafood options. However, tilapia prices are expected to stabilize in 2024 as customers continue to seek more competitively-priced alternatives.

In China, the domestic seafood distribution channel has undergone changes, with live streaming and short videos gaining popularity. However, tilapia sales have not seen significant growth through this specific distribution channel despite its prevalence in the seafood industry. Additionally, although there is growing demand for ready-meal items in restaurants, tilapia convenience products are in small supply, with limited purchases. Holiday seasons are likely to drive the domestic tilapia market in the country, but the low re-purchase rate for this species indicates that demand is sluggish. This decreased consumer demand for tilapia has resulted in a decline in prices at restaurants serving the fish.

In the third quarter of 2023, Brazilian exports of farmed tilapia reached 1 578 tonnes valued at USD 6.8 million. Despite an 11 percent volume drop, there was a notable 48 percent increase in value. The rise was driven by surging sales of fresh and chilled tilapia fillets, with a remarkable growth of 276 percent and 365 percent, respectively. Whole fresh and chilled tilapia sales also saw significant growth, with a 515 percent increase in volume and an

With regard to imports, the Brazilian Association of Aquaculture (PEIXE BR) is reported to be committed to preventing the entry of tilapia from Viet Nam and other origins in the Brazilian market. The Association highlights that the national production chain, which involves numerous small companies and producers, creates over one million jobs in the country. Moreover, bearing in mind the ability of the domestic industry to supply safe and high-quality products, the Association refuses foreign tilapia imports on the grounds that potential economic and health risks could affect consumers. PEIXE BR emphasizes that Brazilian tilapia adheres to rigorous practices and safety standards, while maintaining consistent communication with the Ministry of Fisheries and Aquaculture to strongly advocate for domestic tilapia and discourage the entry of foreign products.

Tilapia trade

United States imports

−13.7% ↓
(volume)
−3% (value) ↓

China exports

Frozen tilapia fillets −7% ↓

Whole frozen tilapia +59% ↑

Brazil exports −11% ↓
(volume) +45% (value) ↑



astounding 1 094 percent increase in value. Average sales value rose across all tilapia products during Q3. Although tilapia exports to Japan declined by 27 percent in volume, the export value rose by 25 percent. Meanwhile, exports to Canada, ranking third by value in the third quarter, amounted to USD 143 991.

Elsewhere in Latin America, Colombia has further established itself as the second-largest tilapia supplier to the United States, exporting 13 020 tonnes of tilapia, valued at USD 86.2 million during the first nine months of 2023. This represents a 2.8 percent increase in volume and a 16.8 percent increase in value compared to the same period the previous year. Fresh chilled fillets continue to be in high demand as the preferred product.

Prices

In the third quarter of 2023, Chinese tilapia prices rose, reaching the highest levels seen in the corresponding review period in previous years. During July and September, whole live tilapia (300–500 g in size) in Guangdong province (DAP, Guangdong) were sold at CNY 6.65 (USD 0.92) per kg, reflecting an 11 percent increase from the previous quarter and a 12 percent increase year-on-year. Import prices in the United States for frozen fillets decreased by 16 percent, while fresh fillets increased three percent year-on-year in the third quarter of 2023. During the same period, average prices of tilapia products in Brazil increased sharply. Fresh whole tilapia saw a remarkable 93 percent increase, while fresh and frozen fillets both rose by 23 percent. This rise can be attributed to decreased production in key Latin American supplying countries like Colombia and Honduras.

Tilapia prices

Live tilapia +11% ↑

Frozen fillet -16% ↓

Outlook

The global tilapia market has encountered difficulties this year, including disease outbreaks and climate change challenges, resulting in a sluggish period. Despite inflation and high input costs driving up tilapia prices, global trade can be characterized as having positive prospects. China and major tilapia suppliers in Latin America faced production constraints and slower growth in the first nine months of 2023, leading to tight global tilapia supply. Efforts are underway for price recovery, with these key suppliers expecting production rebounds in addition to increased supply from African countries. With consumers having a wide range of seafood choices, it may lead to increased competition and potentially lower prices for tilapia in the upcoming year.

**China exports of frozen whole tilapia
January–September, 2021–2023 (1 000 tonnes)**

	2021	2022	2023
Frozen tilapia			
Côte d'Ivoire	38.71	34.19	44.47
United States of America	20.34	14.32	22.73
Mexico	11.08	5.40	6.55
Other countries	27.33	27.33	27.33
Total exports	97.46	81.24	101.08

Source: Author's own elaboration based on GTT, 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

**United States of America imports of chilled tilapia fillets,
January–September, 2021–2023 (1 000 tonnes)**

	2021	2022	2023
Chilled fillets			
Colombia	5.87	7.50	8.24
Honduras	6.26	6.64	3.98
Costa Rica	2.55	2.65	3.11
Other countries	2.89	1.57	2.23
Total imports	17.57	18.36	17.57

Source: Author's own elaboration based on GTT, 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

**United States of America imports of frozen tilapia fillets,
January–September, 2021–2023 (1 000 tonnes)**

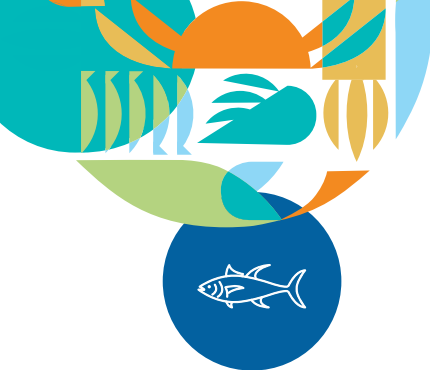
	2021	2022	2023
Frozen fillets			
China	64.29	67.82	63.23
Indonesia	3.88	5.15	4.91
Taiwan Province of China	1.07	1.03	0.94
Other countries	3.66	1.57	2.23
Total imports	72.89	75.57	71.31

Source: Author's own elaboration based on GTT, 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

**United States of America imports of frozen whole tilapia,
January–September, 2021–2023 (1 000 tonnes)**

	2021	2022	2023
Frozen whole			
China	20.34	14.32	22.73
Taiwan Province of China	9.32	8.12	7.19
Brazil	0.97	2.26	1.91
Other countries	1.99	4.07	4.80
Total imports	32.63	28.77	36.63

Source: Author's own elaboration based on GTT, 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com



Tuna

Chinese New Year celebrations create demand for sashimi tuna

Increased catches of tuna worldwide will result in steady supplies to canned tuna producers at prices much lower than in the last 2–3 years. Consumption of end-products is likely to improve as and when the price benefit of falling raw material prices reaches the retail sector.

Global supplies

Since the last quarter of 2023, tuna catches have increased in the major fishing areas worldwide. Meanwhile, squeezed by flat demand for end-products in the large conventional markets in North America and Europe, the prices of frozen tuna raw material (whole and cooked loins) have been declining in the international trade.

Raw material import trends

Echoing the negative demand pattern of January–June 2023, demand for tuna raw material worldwide remained low during the third and fourth quarters of the year, despite the softening in export prices.

In Thailand and Spain, the top two producers and exporters of ready-to-eat tuna, imports of frozen raw materials were low during the first nine months of 2023 in comparison with the corresponding period in 2022.

During January–September 2023, imports of whole frozen tuna into Thailand declined by 12.35 percent at 475 255 tonnes year-on-year, of which 76.8 percent comprised skipjack (365 721 tonnes), 14.5 percent yellowfin (68 810 tonnes) and 5.6 percent albacore (about 40 000 tonnes). Species-wise, the drops were noted for skipjack and yellowfin but not albacore, suggesting better demand for the higher value white-meat tuna. Cooked loin imports into Thailand also declined by 4.8 percent at 43 406 tonnes during this review period.



Tuna imports

Thailand

Whole frozen tuna -12% ↓

Cooked tuna loins -4.8% ↓

Spanish demand for frozen raw material was soft in January–September 2023. Of the total volume of raw material imports, cooked loins (which generally comprise the bigger share), declined by 12.4 percent at 78 468 tonnes, while the import shortfall was higher for whole frozen tuna (26.7 percent, at 62 245 tonnes.). Nevertheless, Spanish exports of processed tuna showed an increase.

Imports of cooked loins for the European canning industry also declined in Italy (–0.92 percent) and France (–45 percent) but increased in Portugal (+22 percent at 14 970 tonnes).

Tuna imports

Spain

Whole frozen tuna –26.7% ↓

Cooked tuna loins –12.4% ↓

Fresh and frozen tuna markets (non-canned)

In general, lower demand for non-canned tuna persisted throughout 2023 in North America and Europe, but improved in Southeast Asia and the Far East.

Main markets

Japan

After staying dormant for a long period, fresh tuna imports increased in Japan by 3.5 percent at 4 085 tonnes during January–September 2023.

Good seasonal demand in the catering and restaurant trade resulted in a 40 percent rise in fresh bluefin imports (3 000 tonnes), sourced from North America, the Mediterranean and Australia. Bluefin tuna had a 73 percent share in the total volume of air-flown tuna imports during the period under review. In contrast, lower volumes of fresh bigeye and yellowfin were imported as these species continue to face competition from fresh salmon, particularly in the retail trade.

During the review period, imports of frozen tuna (whole/dressed) into Japan were 14 percent higher year-on-year at 109 641 tonnes but there was a decline for deep-frozen fillets by 16.2 percent due to unsold local stocks from previous imports.

Japan +3.5% ↑

Japan: Imports of fresh and frozen tuna, January–September 2021–2023 (in tonnes)

Product forms	2021	2022	2023	Percent change 2023/2022
Fresh, whole/dressed	5 790	3 945	4 085	+3.55
Frozen, whole/ dressed	99 315	96 146	109 741	+13.54
Fillets, frozen	46 750	43 149	36 105	–16.2
Total	151 855	143 240	149 930	+4.67

Source: Author's own elaboration based on GTT. 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

United States of America

Overall US imports of non-canned tuna, fresh and frozen, increased marginally by 1.65 percent at 47 760 tonnes during the first nine months of 2023.

Fresh tuna imports increased slightly (+3.3 percent at 17 933 tonnes) in the US market during the review period. Imports of fresh yellowfin, which are generally processed into fillets and steaks for western-style restaurants and high-end retail outlets, were steady at 10 750 tonnes, representing a rise of one percent year-on-year.

This market is also characterized by a healthy demand for sashimi-grade tuna, as reflected in a 12 percent rise in imports of fresh bluefin tuna at 3 894 tonnes during January-September 2023 in comparison with the same period in 2022. The number of Japanese restaurants in the United States, which are major buyers of non-canned tuna, remained steady at around 22 600 during 2019 to 2023 despite the COVID-19 pandemic crisis.

Retail demand for middle-range frozen fillets and steaks weakened in 2023, leading to a 31.8 percent decline in imports, at 26 266 tonnes during the review period.

Europe

In general, European consumer demand was weak for higher-value seafood (including non-canned tuna) in the catering and retail trade throughout 2023. This was partly due to high inflation rates during the first nine months of 2023, which had curbed regional tourism in Europe.

In the European Union, imports of frozen tuna fillets declined by 32 percent at 29 027 tonnes during January-September 2023. Among the top ten individual markets, imports declined in all but Croatia. The trend was similar in the United Kingdom, Switzerland, Norway, and Ukraine during this period.

Asia-Pacific

Overall demand for non-canned tuna improved in Southeast Asia and the Far East during 2023, particularly in the Japanese restaurant business sector.

In China, restaurants were busiest during the third and fourth quarters of 2023 in celebration of the Golden Week festival in October and the year-end/Gregorian New Year holidays. During these periods, demand for high-value tuna, both fresh and frozen, increased significantly in China's HORECA (hotel, restaurant and catering) industry throughout the country's metropolises. Fresh bluefin imports in China were 20 percent and 33 percent higher in quantity and in value at 813 tonnes and USD 24.7 million during January-September 2023; the per kilogramme import price of these consignments ranged from USD 30 to USD 32. Japan was the top exporter of fresh bluefin into China, followed by Spain and the United States. Imports of frozen tuna fillets increased by a hefty 130 percent at 410 tonnes during this period. The

Tuna imports

United States +1.65% ↑

European Union

Whole frozen tuna -32% ↓

China

Fresh bluefin +20% ↑

top suppliers were the Republic of Korea, Spain, Indonesia, Japan, and Viet Nam.

With the re-opening of the tourism sector in Thailand after the pandemic, imports of sashimi-grade tuna also increased in the country during the period under review.

Canned tuna trade

International trade data on processed and canned tuna during January–September 2023 revealed negative import trends in the North America, Europe, and Australia, affecting the trade of ready-to-eat and semi-processed tuna. Among the top six producers/exporters of processed tuna, supplies declined from all except Spain.

Reduced demand for semi-processed cooked loins among the European tuna canners also impacted the overall exports of processed tuna (HS 160414 from Ecuador, China, the Philippines and Indonesia).

In comparison, demand for ready-to-eat tuna improved in the emerging markets in Latin America, the Near East and in South and Southeast Asia during the first three-quarters of 2023.

North and South America

Consumer demand for canned and pouched tuna remained dormant throughout 2023 in the United States, the world's single largest market for ready-to-eat tuna. Imports declined by 15.9 percent year-on-year during the first nine months of 2023. The affected product group was light-meat tuna (yellowfin and skipjack in-brine; however, demand for the white meat tuna (albacore increased during this period).

Imports also declined in Canada by 28.13 percent at 14 045 tonnes during this period.

Among the important markets of end-products in South America, imports increased in Chile (+84.6 percent at 11 522 tonnes) and Peru (+32.7 percent at 5 917 tonnes), but declined in Argentina (–25 percent at 2 390 tonnes), and Panama (–36 percent at 1 123 tonnes).

European Union

Demand for semi-processed raw materials (cooked loins and ready-to-eat products) was soft throughout Europe in 2023, including in the non-EU countries. During January–September 2023, the 27 Member Countries in the European Union imported 511 540 tonnes of processed and canned

Canned tuna imports

United States	–15.9%	↓
Canada	–28.13%	↓
Chile	+84.6%	↑
Peru	+32.7%	↑

tuna, including 138 255 tonnes of cooked loins. Processed and canned tuna registered a decline of 2.07 percent year-on-year; cooked loins were also lower during this period by 7.62 percent year-on-year. The main tuna canners were Spain, Italy, France and Portugal.

Among the top ten EU markets, imports increased in Italy, the Netherlands, Portugal, Denmark and in the Czech Republic.

Other European countries

During January–September 2023, the soft demand for ready-to-eat products persisted in the United Kingdom with a 10 percent drop in imports at 66 000 tonnes. Surprisingly, imports from Thailand increased by 172 percent at 2 331 tonnes and also from the Maldives by 65 percent at 3 480 tonnes.

However, imports into Switzerland, a small but high-end market in Europe, were 13 percent lower at 6 505 tonnes during this period.

MENA, Asia-Pacific and others

Demand for canned tuna was on the upswing in the Near East and North African (MENA) region during the third quarter of 2023. Imports into the large Egyptian market increased by 176 percent at 60 322 tonnes during January–September 2023. Thailand, the leading exporter of canned tuna to the MENA region, increased sales to Saudi Arabia, Kuwait, Oman, and Algeria.

In Japan, the top Asian market for ready-to-eat tuna, imports were steady during the review period. Imports also increased in the Republic of Korea, Malaysia, and China but declined in Taiwan (Province of China.) In contrast, there was a decline in imports in the value-added canned tuna markets of Australia and New Zealand.

Prices

In the Western and Central Pacific, frozen skipjack prices that had started to weaken in October 2023 (USD 1 700/tonne) continued to fall over the following three months, reaching USD 1 450/tonne, cfr Thailand in January 2024, which was a nearly 15 percent drop over the previous four months. Good catches in the Eastern Pacific Ocean also caused the prices of skipjack to fall in Manta (Ecuador) at USD 1 500/tonne. European market prices for skipjack fell to EUR 1 750/tonne, cfr Spain during the same period.

Nonetheless, worldwide demand for frozen raw materials from tuna canners did not improve.

Canned tuna imports

European Union **−2.07%** ↓

Egypt **+176%** ↑

Skipjack raw material

USD 1450

Outlook

As of late January 2024, good catches of skipjack continued to be seen in the Western and Central Pacific. However, shipments of raw fish are delayed due to the limited and slow availability of carrier ships caused by cargo congestion and the longer unloading period for shipments in Thailand. This may hold skipjack prices from falling for a short period but a further weakening in prices is forecasted during the first quarter of 2024.

Demand from restaurants for sashimi tuna in Southeast Asia and the Far East will be brisk in February 2024, in celebration of the Lunar New Year (Year of the Dragon) that falls from 10-12 February 2024.

In the western markets, recovery in the high-value fresh and frozen tuna trade will be limited during the first half of 2024.

Consumer demand for processed and canned tuna may improve as and when the benefits of falling raw material prices reach end-consumers.

Thailand exports of prepared and preserved tuna, January–September, 2021–2023 (1 000 tonnes)

	2021	2022	2023
Canned or preserved tuna			
United States of America	69.40	84.23	69.13
Japan	29.45	31.41	35.79
Libya	11.46	25.58	25.50
Other countries	232.88	244.65	194.26
Total imports	343.19	385.87	324.68

Source: Author's own elaboration based on GTT, 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com

European Union imports of prepared and preserved tuna, January–September, 2021–2023 (1 000 tonnes)

	2021	2022	2023
Canned or preserved tuna			
Ecuador	99.24	97.47	92.87
Spain	76.89	80.07	88.61
Papua New Guinea	36.27	32.85	28.69
Other countries	299.44	306.23	294.98
Total imports	511.84	516.62	505.15

Source: Author's own elaboration based on GTT, 2024. Global Trade Tracker. [Cited 5 January 2024]. www.globaltradetracker.com



WTO fisheries subsidies negotiations

● Final stages ahead of the 13th Ministerial Conference¹

The World Trade Organization's (WTO) 12th Ministerial Conference (MC12), held in Geneva from 12 to 17 June 2022, had led to the adoption of the WTO Agreement on Fisheries Subsidies that prohibits subsidies supporting illegal, unreported, and unregulated (IUU) fishing; bans support for fishing overfished stocks; and eliminates subsidies for fishing on the unregulated high seas. WTO Member Countries had also agreed at MC12 to continue negotiations on open matters and propose recommendations to the 13th Ministerial Conference (MC13) for additional provisions to strengthen the Agreement's disciplines. The pillars of over-capacity and over-fishing were some of the issues not agreed upon in MC12.

As WTO Member Countries prepare for negotiations before MC13 in Abu Dhabi from 26 to 29 February 2024, discussions continue to focus on fisheries subsidies. In tandem with efforts to address the open negotiation issues involving fisheries subsidies, WTO launched a "Fish Month" on 15 January 2024.



Before MC13, WTO Member Countries endorsed a draft text to serve as a foundational document for discussions and negotiations in the coming weeks, aimed at curbing subsidies contributing to over-capacity and over-fishing. The draft text was created by combining inputs from previous negotiation texts; WTO Member Countries' proposals; and plenary discussions. The draft text was circulated on 21 December 2023 together with its explanatory note. WTO Member Countries plan to hold sessions from 15 January to 9 February 2024 to discuss this draft text. The goal is to have a streamlined document to submit to Ministers by 14 February 2024 in preparation for MC13.

The draft text combines a list of subsidies contributing to over-capacity or over-fishing alongside criteria requiring countries to demonstrate measures in place which encourage sustainable fish stocks. It also contemplates a two-tier system in which the larger subsidy providers would face more scrutiny. The draft text also proposes special and differential treatment provisions for the least developed country (LDC) and developing country Members, including an exemption from subsidy prohibitions on developing country Members which harvest less than a certain threshold (to be negotiated) of the world's fish catch, among others. Furthermore, it proposes to exempt LDC WTO Members from the prohibition discipline.

Fifty-six² WTO Member Countries have formally accepted the WTO Agreement on Fisheries Subsidies as of 31 January 2024, which is over 50 percent of what is required for the Agreement to enter into force (two-thirds of the WTO membership).

¹ For more recent updates regarding the negotiations on fisheries subsidies, please check the dedicated WTO website on the topic.

² The list of countries that have submitted acceptance of the WTO Agreement on Fisheries Subsidies can be found on the WTO website.

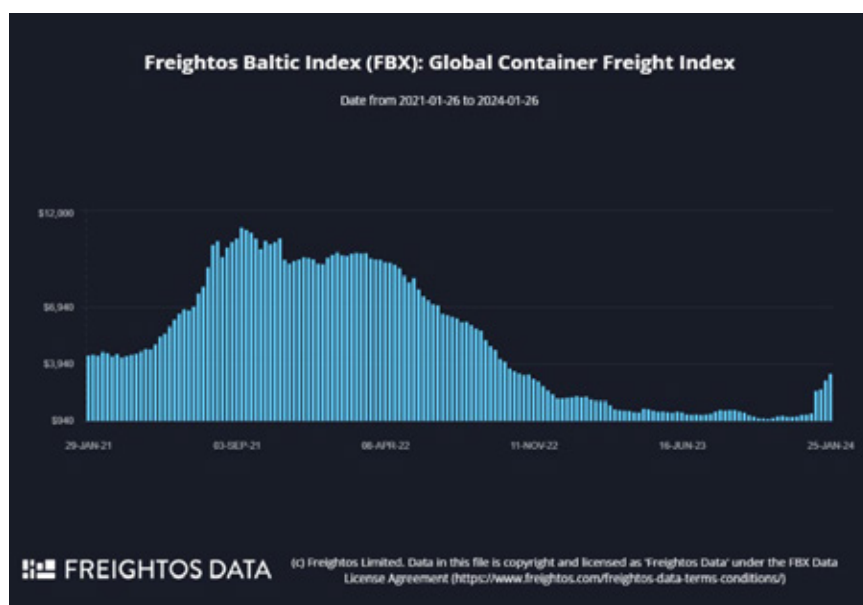


The Red Sea crisis: shipping costs soar

Just as we thought the worst is over in this post-COVID-19 era, shipping costs are escalating once again, but under different circumstances. The crisis in the Near East which surfaced in late 2023 is bringing about new challenges for industries shipping goods across the globe.

To avoid attacks by Yemeni Ansar Allah (Houthi) fighters, ships that usually travel via the Suez Canal are being re-routed around the Cape of Good Hope in Southern Africa, which lengthens the journey from Asia to Europe. Traffic through another major global shipping route via the Panama Canal is also affected due to a severe drought which has lowered water levels, prompting a limit to the number of ships that can pass through. The share of global maritime trade through the Red Sea and Panama Canal is estimated at 12 percent (USD 1 trillion) and five percent (USD 2.5 billion), respectively.

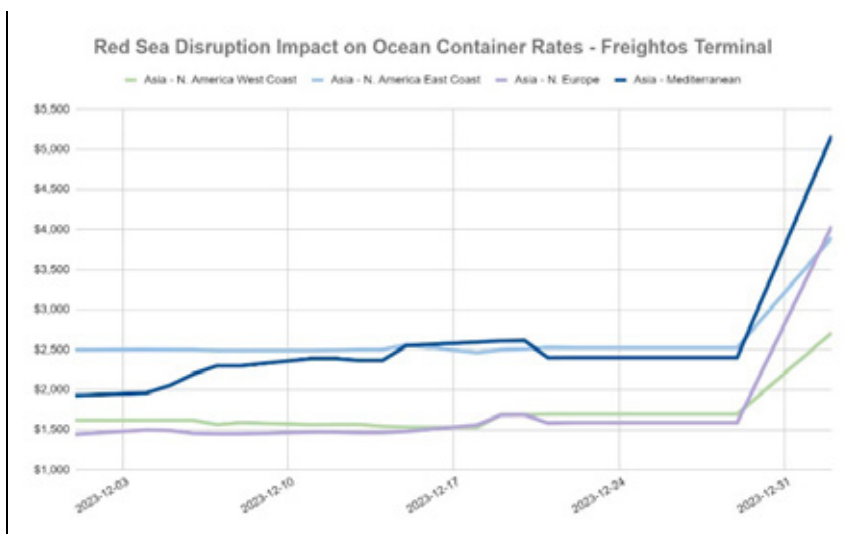
Concerns are rife about the ricocheting costs associated with this crisis such as increases in the prices of goods, fuel and labour, as well as higher refrigeration costs for perishables (including aquatic animal species) due to the longer travel times. Exporters are in the doldrums about how to cope with these added costs without burdening the end-consumers or breaking existing contracts. Meanwhile, there are already on-going delays in shipments.



Source: Author's own elaboration based on Freightos data. 2024. Freightos. [Cited 5 January 2024]. www.freightos.com

The Global Container Freight Index this week rose to as high as USD 3407, which is an increase of 211 percent since October 2023, but still much below the last peak of USD 11 188.60 in October 2021.

According to the Freightos Baltic Index (FBI), freight rates for shipping a standard container from China and the East Asian region to northern Europe was USD 5481 in the week of 23rd January 2024, up by 417 percent as compared to October 2023; USD 6141 from China/East Asia to the east coast of North America (+177 percent); USD 4047 from China/East Asia to the west coast of North America (+158 percent); and USD 6473 from China/East Asia to the Mediterranean region (+372 percent).



Source: Author's own elaboration based on Freightos data. 2024. Freightos. [Cited 5 January 2024]. www.freightos.com

The Suez Canal is of primary importance for trade between Asia and Europe, being the shortest sea route between South-east Asia and Europe. Being a region that is home to about 60 percent of the world's population, Asia plays an important role in the global seafood supply and marketing.

Aquatic product imports from Asia	November 2022		November 2023	
	Tonnes	USD 1000	Tonnes	USD 1000
EU-27	125 372	808 093	111 557	616 438
USA	131 606	1 021 506	124 121	910 139

Source: Trade Data Monitor

Analysts from Freightos opine that the situation in the foreseeable future will be characterized by over-capacity, delays, and additional costs to support the increased demand from the upcoming Chinese Lunar Year. The situation is also expected to trigger inflation, posing further hurdles.

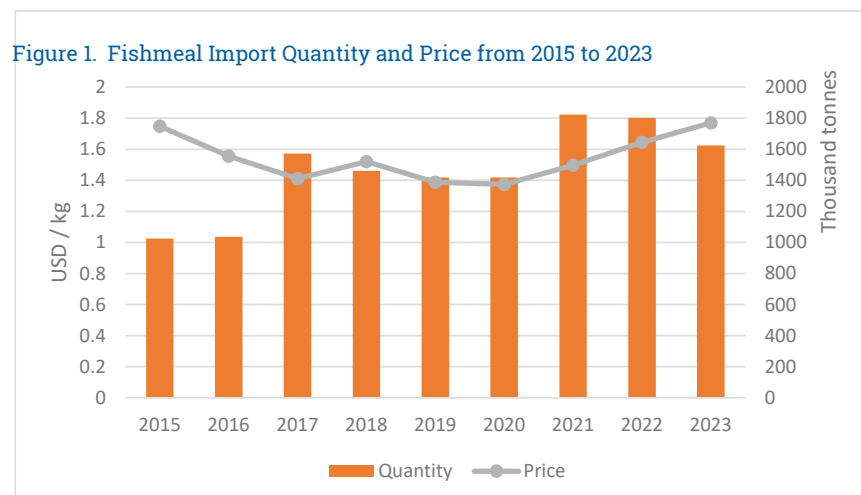
The changes in aquafeed usage in China

● Introduction

China's average annual growth in aquaculture production is 3.46 percent between 2015 and 2021. Of all the protein sources, fishmeal is reckoned to be the preferred protein source for feeds of aquatic and land animals because of the balanced amino acid profile, phospholipids and favorable fatty acids composition, good feed palatability and easy digestibility and absorption. Fish oil in feed is primarily responsible for providing fat to fish. Asia and China provide more than 80% of the aquaculture production worldwide, they consume 70% of the marine ingredients used in aquaculture but only 30 percent of the fish oil used in aquafeed.

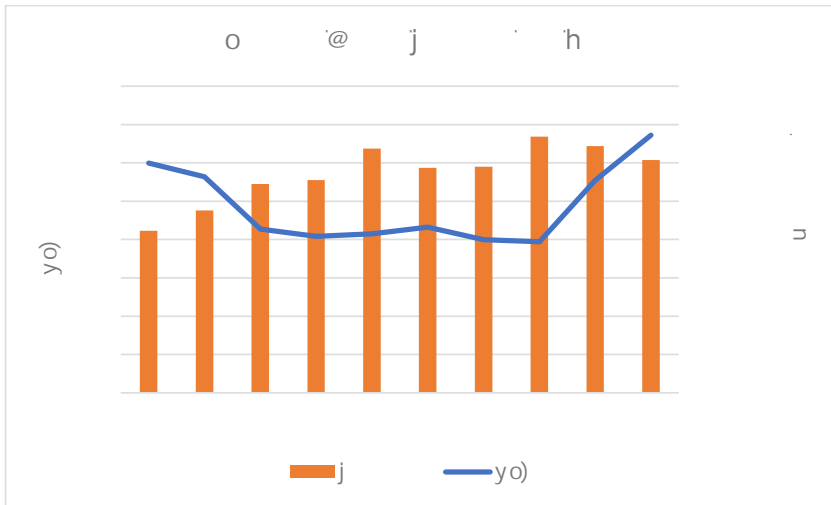
Currently, China's domestic fishmeal production only meets nearly one-third of the demand, resulting in a heavy reliance on imports. Figure 1 illustrates China's fishmeal importation, the import volume is over 1000 thousand tons in 2015 and 2016, afterwards projected to remain stable at around 1 400 to 1 800 thousand tons from 2017 to 2023. Additionally, the import price of fishmeal has increased annually since 2017. Aquaculture enterprises have sought alternative feeds to reduce costs. Roughly 80 percent of the soybeans imported by China are processed into soybean meal for use as animal feed. Soybean meal is an important source of vegetable protein and has a certain substitution effect on fishmeal. However, China's domestic soybean production capacity is also insufficient, resulting in a high degree of import dependence. In recent years, the import prices of soybeans have also remained at high levels. (Figure 2) The government is actively encouraging feed farming enterprises to promote low-protein diets.

Figure 1. Fishmeal Import Quantity and Price from 2015 to 2023



Source: General Administration of Customs of the People's Republic of China

Figure 2. Soybean Import Quantity and Price from 2013 to 2022



Source: International Trade Centre

Regulations

Several documents on reducing and substituting soybean meals have been issued by government departments and industry associations. On 27th December 2022, the China Feed Industry Association approved and published the 'Technical Specification for the Production of Low-Protein, Low-Soybean Meal Diversified Diets for Grass Carp', which provides technical guidance on the selection and utilization of diversified protein sources.

The purpose of technical specification is to encourage the widespread utilization of diversified feed ingredients, reduce the usage of soybean meal, and lower the crude protein content in feed. The main references include "Compound Feed for Grass Carp" (GB/T36205-2018) and a series of academic research achievements.

The technical specification gives details on various aspects including the categorization of growth stages for grass carp, nutritional requirements at different stages, selection and utilization of diversified protein sources, recommendations for limited use of soybean meal, as well as processing techniques for grass carp feed. (Table 1 demonstrated typical formulation of diversified diets with low protein and low soybean meal in Technical Specification)

It can be observed that during the pre-adult fish stage as well as the adult fish/late adult fish stage, there is less reliance on soybean meal and fish meal. Therefore, there is greater potential for the use of alternative feeds, during these two stages.

Table 1. Typical formulation of diversified diets with low protein and low soybean meal

	FRY <10 G	FINGERLING 10~<250 G		PRE-ADULT FISH 250~<1500 G		ADULT FISH/LATE ADULT FISH ≥1500 G
	Intensive culture	Intensive culture	Pond aquaculture	Intensive culture	Pond aquaculture	Pond aquaculture
Fish meal	5	2	2			
Meat meal	8	8	4	2		
Soybean meal	18	15	15	15	12	6
Rapeseed meal	21	18.5	19	20	20	20
Cottonseed meal	5	5	7	6	8	5
Peanut cake					2	2
CornDDGS	5	10	10	13	13	15
Beer grains		3	3	5	5	7
Wheat	15	13	8	14	8	15
Rice bran	12	14	19	15	21	16
Soybean oil	1.5	1	1	1	0.5	0.5
Lysine	0.2	0.2	0.23	0.2	0.22	0.21
Methionine	0.48	0.52	0.55	0.16	0.18	0.12
Threonine	0.17	0.15	0.2	0.25	0.28	0.32
Calcium dihydrogen phosphate	2	2	2	2	2	2
Choline chloride (50%)	0.2	0.2	0.2	0.2	0.2	0.2
Premix	2	2	2	2	2	2
Bentonite	4.45	5.43	6.82	4.19	5.62	8.65

Source: Technical Specification for the Production of Low-Protein, Low-Soybean Meal Diversified Diets for Grass Carp

On 12th April 2023, the Ministry of Agriculture and Rural Affairs of the People's Republic of China issued the 'Three-Year Action Plan for Reducing and Replacing Soybean Meal for Feeding Purposes' to encourage low-protein and low-soybean meal diets for aquaculture.

The main objectives of the Action Plan are as follows. First is to strive for an annual decrease of more than 0.5 percentage points in the proportion of soybean meals used in feed, with the aim of reducing the proportion from 14.5 percent in 2022 to below 13 percent by 2025. Secondly, by 2025, to approve the launch of 1 to 2 new microbial biomass protein products and to conduct pilot projects for the utilization of table scraps as feed in more than 20 large and medium-sized cities nationwide in China.

To achieve the goal, the Action Plan develop and refine comprehensive technical schemes for reducing soybean meal usage in the main livestock, poultry, and aquaculture animals, integrating and promoting key technical measures such as low-protein diets, precise feed formulation, and refined feed processing. Meanwhile, the action plan also compile and release diversified production technical specifications for low-protein, low-soybean meal diets covering the main types of livestock, poultry, and aquaculture breeding animals, and improve the standard system for high-quality feed with low protein content.

Substitution aquafeed in China

Common alternative protein sources for fishmeal that are widely used in the aquafeed industry are demonstrated in Table 2.

Table 2 . Substitution Aquafeed

SUBSTITUTION AQUAFEED	PROTEIN SOURCE
Plants seed meals	Soybean meal, fermented soya bean meal, extruded soya bean, corn germ meal, corn gluten meal, cottonseed meal, rapeseed meal
Non-fish animal protein	Poultry by-product meal, meat and bone meal, blood meal, feather meal, hydrolysed feather meal
Single-cell protein	Algae and yeast protein
Insect protein	Silkworm pupae, housefly maggot meal, yellow mealworm meal

There are also many studies have been carried out in the field of fishmeal and soybean meal substitution in China. (Table 3)

Grass carp is one of the major aquaculture species in China. As grass carp primarily relies on plant-based protein as its main protein source, the substitution of traditional feed with alternative feeds has shown promising results for grass carp. According to most studies, the substitution effect for grass carp is effective. However, for other species such as tilapia and whiteleg shrimp, excessive use of alternative feeds may damage their intestinal systems and affect growth.

Table 3. Alternative proteins in aquafeeds in Chinese aquaculture

PROTEIN SOURCE	Species	Initial fish size (g)	Fishmeal inclusion in basal diet (%)	Substitution rate	Reference
Plant seed meals					
Extruded soybean meal	Rainbow trout (<i>Oncorhynchus mykiss</i>)	4.0±0.04	50	60	(Lu <i>et al.</i> , 2010)
Soy protein concentrate	Soft-shelled Turtle (<i>Pelodiscus sinensis</i>)	4.6±0.09	50	<60	(Zhou <i>et al.</i> , 2015)
Soy protein concentrade	Japanese flounder (<i>Paralichthys olivaceus</i>)	2.5±0.01	74	<25	(Deng <i>et al.</i> , 2015)
Soybean meal	Large yellow croaker (<i>Pseudosciana crocea</i>)	10.6±0.4	55	45	(Zhang <i>et al.</i> , 2012)
Sesame seed meal	Whiteleg shrimp (<i>Litopenaeus vannamei</i>)	0.4	5~8	23.7~38.1	(Liu <i>et al.</i> , 2020)
Fermented cottonseed meal and fermented rapeseed meal=1:1 (or 2:1)	Black carp (<i>Mylopharyngodon piceus</i>)	6.04±0.18	10.97+10.97 or 6.92+13.82	75	(Chen <i>et al.</i> , 2023)
Mixture of soybean meal, rapeseed meal, corn gluten and broad bean mean (1:1:1:1)	Tilapia (<i>Oreochromis niloticus</i>)	7.2±0.8	24	75	(Zhong <i>et al.</i> , 2010)
Cottonseed protein concentrate	Grass carp (<i>Ctenopharyngodon idella</i>)	239.72±10.75	47.8	100	(Fan <i>et al.</i> , 2022)

PROTEIN SOURCE	Species	Initial fish size (g)	Fishmeal inclusion in basal diet (%)	Substitution rate	Reference
Insect protein					
Silkworm chrysalis meal	Grass carp (<i>Ctenopharyngodon idella</i>)	7.85±0.27	20	50	(Yu <i>et al.</i> , 2023)
Housefly maggot meal	White shrimp (<i>Litopenaues vannamei</i>)	2.2±0.2	28	40	(Cao <i>et al.</i> , 2012)
Yellow mealworm (Tenebrio molitor) meal	Nile tilapia (<i>Oreochromis niloticus</i>)	70±0.12	4.2	15	(Zhang <i>et al.</i> , 2023)
Maggot culture	Yellow caifish (<i>Peltobagrus fulvidraco</i>)	2.0	36	<20	(Wen <i>et al.</i> , 2013)
Single-cell protein					
Clostridium autoethanogenum protein	Grass carp (<i>Ctenopharyngodon idella</i>)	512.05±10.75	12.75	100	(Xue <i>et al.</i> , 2023)
Methylotrophic bacterial single-cell protein	Rainbow trout (<i>Oncorhynchus mykiss</i>)	15~16	Not mentioned	65	(Hardy <i>et al.</i> , 2018)
Other					
Fermented soybean residue	Largemouth bass (<i>Micropterus salmoides</i>)	17.1±0.19	9	16	(Jiang <i>et al.</i> , 2018)
Fermented brewer's grain	Hybrid tilapia (<i>Oreochromis aureus</i> × <i>Oreochromis niloticus</i>)	3±0.08	Not mentioned	54.1~55.4	(Li <i>et al.</i> , 2016)

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