European Commission

Monthly Highlights

No. 9 / 2023

EUMOFA
European Market Observatory for Fisheries and Aquaculture Products

In this issue

During January–July 2023, 15 EU Member States (MS), Norway and the United Kingdom reported first-sales data for 10 commodity groups.

In the reporting countries covered by the EUMOFA database, first sales of "salmonids" totalled a value of EUR 0,2 million and a volume of 27 tonnes, representing a 45% increase in value and 11% decrease in volume compared to July 2022

Over the 36-month observation period (August 2020 to July 2023), the weighted average first-sales price of Atlantic salmon in Estonia was 9,25 EUR/kg, 78% higher than in Latvia (5,19 EUR/kg) and 64% higher than in Sweden (5,65 EUR/kg).

In 2023, the volume of fresh dab consumed in Denmark was 89% lower than the same period in 2020, while prices increased by 43%.

Around 230 fish species have been recorded in the Baltic Sea (including the Kattegat and the Sound), of which 90 reproduce regularly in the Baltic Sea and the Sound.

In 2022, EU imports from Vietnam came to 238.086 tonnes at a value of EUR 1,3 billion (+55% in value compared to 2021).

On 4th September 2023, the EU announced its readiness to exchange fisheries control data using a new common global standard recognised by the United Nations.

Contents

Find all data, information, and more at:
www.eumofa.eu
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1. First sales in Europe

During **January–July 2023**, 14 EU Member States (MS)[1], Norway and the United Kingdom reported first-sales data for 10 commodity groups[2]. First-sales data are based on sales notes and data collected from auction markets. First-sales data analysed in the section "*First sales in Europe*" are extracted from EUMOFA[3].

1.1. January–July 2023 compared to the same period in 2022

Increases in value and volume: Belgium, Cyprus, Denmark, Estonia, Latvia and the United Kingdom recorded an increase in both first-sales value and volume. Highest increases were observed in Estonia and Cyprus. Herring and sprat were principally responsible for increases in Estonia, while in Cyprus increases were due to albacore tuna and swordfish.

Decreases in value and volume: France, Italy, the Netherlands, Spain and Sweden recorded decreases in first-sales value and volume. Poland and Sweden stood out with the most significant drops in absolute terms, due to lower first sales of sprat and European flounder in Poland and of sprat and herring in Sweden.

Table 1. **JANUARY–JULY OVERVIEW OF FIRST SALES FROM THE REPORTING COUNTRIES (volume in tonnes and value in million EUR) ***

	January – July 2021		January – July 2022		January – July 2023		Change from January – July 2022	
Country	**Volume**	**Value**	**Volume**	**Value**	**Volume**	**Value**	**Volume**	**Value**
Belgium	7.268	35,9	7.718	48,4	8.796	53,7	14%	11%
Bulgaria	2.748	1,6	1.600	1,0	1.858	0,9	16%	-10%
Cyprus	533	2,3	305	1,6	446	2,1	46%	29%
Denmark	454.129	237,4	410.209	250,1	483.035	283,0	18%	13%
Estonia	39.651	10,5	23.225	7,1	42.925	14,5	85%	103%
France	155.004	383,3	165.318	429,8	150.480	412,0	-9%	-4%
Germany	31.840	51,5	18.030	48,8	21.085	31,6	17%	-35%
Italy	52.247	214,6	46.673	218,1	39.169	181,8	-16%	-17%
Latvia	27.427	5,9	22.410	4,8	25.112	6,7	12%	38%
Lithuania	1.482	0,8	747	0,5	277	0,6	-63%	21%
Netherlands	103.819	156,5	117.942	136,3	114.040	113,4	-3%	-17%
Portugal	57.834	149,4	58.278	174,7	64.486	173,2	11%	-1%
Spain	301.372	872,6	270.439	920,3	260.723	859,0	-4%	-7%
Sweden	97.872	47,7	67.958	41,1	36.853	31,2	-46%	-24%
Norway	1.780.231	1531,7	1.742.580	1.973,7	1.745.676	1754,8	0%	-11%
United Kingdom	174.808	313,8	157.688	345,0	180.768	361,8	15%	5%

Possible discrepancies in % changes are due to rounding.
** Volumes are reported in net weight for EU Member States, and in live weight equivalent (LWE) for Norway. Prices are reported in EUR/kg (without VAT). For Norway, prices are reported in EUR/kg of live weight. Data for Denmark are subject to confidentiality measures, so they may not fully correspond to total first sales in the country.*

[1] First sales data for Poland is not included in this MH issue due to data consolidation process..
[2] Bivalves, other molluscs and aquatic invertebrates, cephalopods, crustaceans, flatfish, freshwater fish, groundfish, other marine fish, salmonids, salmonids, tuna and tuna-like species.
[3] First sales data updated on 15.09.2023.

1.2. July 2023 compared to July 2022

Increases in value and volume: First sales increased in Bulgaria, Cyprus, Denmark, Lithuania, and Portugal. The highest increases were observed in, Bulgaria and Lithuania. In Bulgaria increased were caused by sprat and red mullet, while in Lithuania they were mainly due to herring and sprat.

Decreases in value and volume: First sales decreased in Belgium, Estonia, France, Germany, Italy, Latvia, Sweden and the United Kingdom. Germany and Latvia presented the most significant drops. The sharp decrease in Germany was mainly due to falls in first sales of cod and the shrimp *Crangon* spp., while in Latvia it was mainly due to herring and sprat.

Table 2. **JULY OVERVIEW OF FIRST SALES FROM THE REPORTING COUNTRIES (volume in tonnes and value in million EUR) ***

	July 2021		July 2022		July 2023		Change from July 2022	
Country	**Volume**	**Value**	**Volume**	**Value**	**Volume**	**Value**	**Volume**	**Value**
Belgium	1.027	6,7	1.166	8,4	968	7,2	-17%	-14%
Bulgaria	744	0,4	174	0,1	474	0,2	173%	53%
Cyprus	240	0,7	104	0,4	185	0,6	77%	53%
Denmark	24.834	26,6	11.994	24,0	16.091	27,4	34%	14%
Estonia	274	0,5	230	0,5	140	0,3	-39%	-35%
France	27.806	58,4	31.256	60,0	24.717	54,2	-21%	-10%
Germany	8.879	15,8	3.019	18,8	441	2,7	-85%	-86%
Italy	8.958	36,2	8.620	38,1	7.895	34,4	-8%	-10%
Latvia	972	0,2	1.601	0,3	833	0,1	-48%	-48%
Lithuania	4	0,003	2	0,003	4	0,008	83%	199%
Netherlands	11.786	20,7	11.385	20,4	12.899	14,3	13%	-30%
Portugal	15.902	29,1	14.657	31,2	17.310	31,4	18%	1%
Spain	54.030	167,8	39.619	137,6	39.992	136,0	1%	-1%
Sweden	454	3,7	877	4,2	566	3,3	-36%	-22%
Norway	126.505	126,1	104.129	159,4	109.257	110,7	5%	-31%
United Kingdom	20.979	54,2	19.795	55,3	19.369	50,7	-2%	-8%

Possible discrepancies in % changes are due to rounding.
** Volumes are reported in net weight for EU Member States and the UK, and in live weight equivalent (LWE) for Norway. Prices are reported in EUR/kg (without VAT). For Norway, prices are reported in EUR/kg of live weight. Data for Denmark are subject to confidentiality measures, so they may not fully correspond to total first sales in the country.*

The most recent weekly first-sales data **(up to week 41 of 2023)** are available via the EUMOFA website and can be accessed **here**.
The most recent monthly first-sales data **for September 2023** are available via the EUMOFA website and can be accessed **here**.

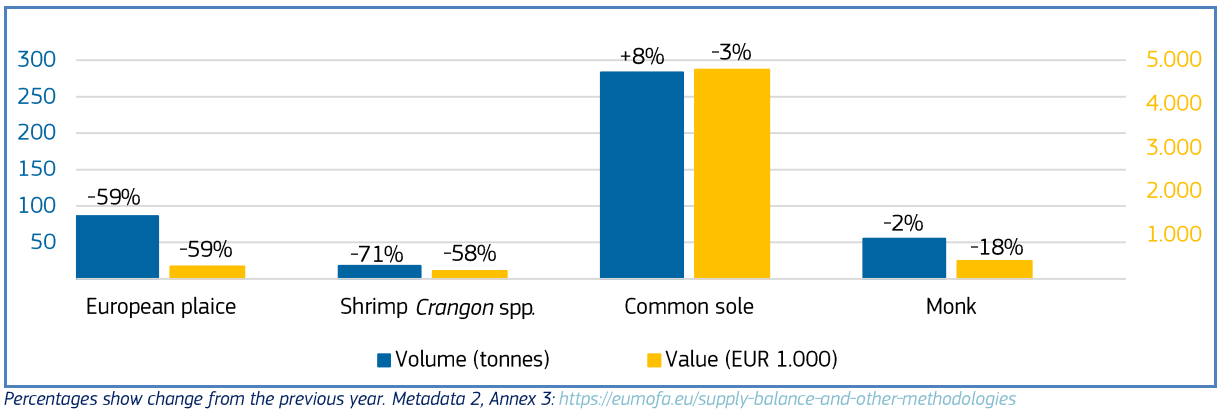
1.3. First sales in selected countries

First sales data analysed in this section are extracted from EUMOFA[4].

Table 3. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN BELGIUM**

Belgium	First-sales value / trend %	First-sales volume / trend %	Main contributing species
Jan-Jul 2023 vs Jan-Jul 2022	EUR 53,7 million, +11%	8.796 tonnes, +14%	Common sole, squid, cuttlefish, red mullet.
Jul 2023 vs Jul 2022	EUR 7 million, -14%	968 tonnes, -17%	European plaice, shrimp *Crangon* spp., common sole, monk.

Figure 1. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN BELGIUM, JULY 2023**

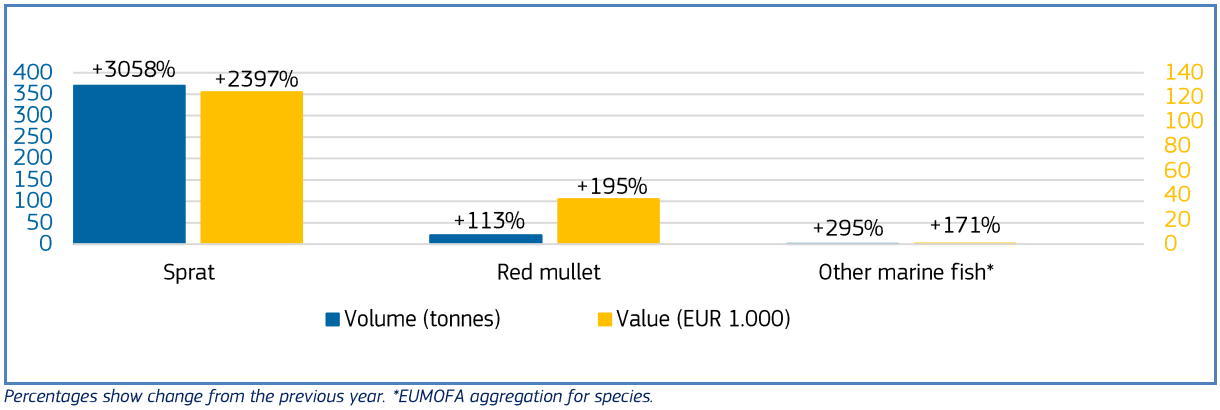


Percentages show change from the previous year. Metadata 2, Annex 3: https://eumofa.eu/supply-balance-and-other-methodologies

Table 4. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN BULGARIA**

Bulgaria	First-sales value / trend %	First-sales volume / trend %	Main contributing species
Jan-Jul 2023 vs Jan-Jul 2022	EUR 0,9 million, -10%	1.858 tonnes, +16%	Clam, red mullet.
Jul 2023 vs Jul 2022	EUR 0,2 million, +53%	474 tonnes, +173%	Sprat, red mullet, other marine fish*.

Figure 2. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN BULGARIA, JULY 2023**



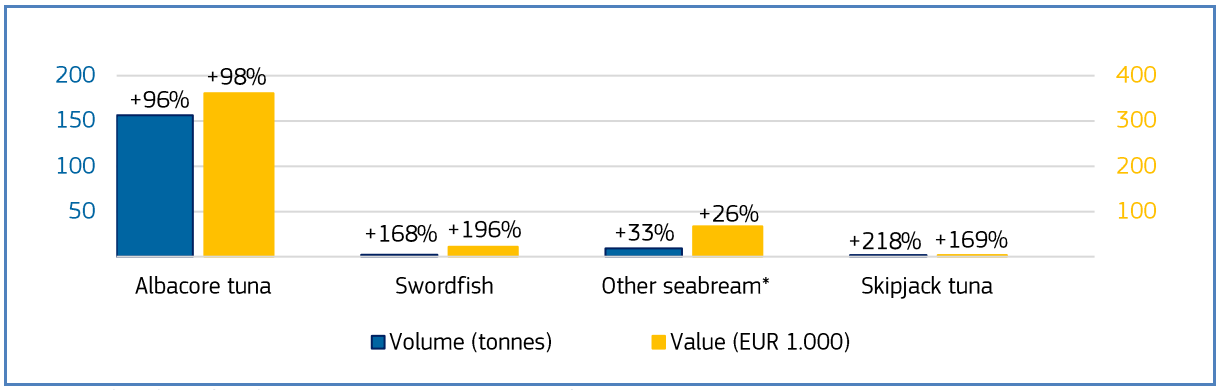
*Percentages show change from the previous year. *EUMOFA aggregation for species.*

[4] First-sales data updated on 15.9.2023.

Table 5. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN CYPRUS**

Cyprus	First-sales value / trend %	First-sales volume / trend %	Main contributing species	Notes
Jan-Jul 2023 vs Jan-Jul 2022	EUR 2,1 million, +29%	446 tonnes, +46%	Albacore tuna, swordfish, other seabream*, other marine fish*.	In July 2023 first sales of **swordfish** increased substantially compared to July 2022. In Cyprus swordfish is mainly caught by the surface longline fleet, which is active primarily in spring and summer. In July, the longline fleet of Cyprus primarily targets albacore tuna (*Thunnus alalunga*). Swordfish is thus mainly a bycatch species of the albacore fishery in July. It is possible that the increases observed in both value and volume from July 2022 to July 2023 are due to improved status of swordfish resulting from the recovery plan implemented by ICCAT (Rec. 2016-05).[5] However, it is important to stress that according to the last evaluation carried out by ICCAT in 2020[6], the stock was still overfished.
Jul 2023 vs Jul 2022	EUR 0,6 million, +53%	185 tonnes, +77%	Albacore tuna, swordfish, other seabream*, skipjack tuna.	

Figure 3. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN CYPRUS, JULY 2023**



*Percentages show change from the previous year. *EUMOFA aggregation for species.*

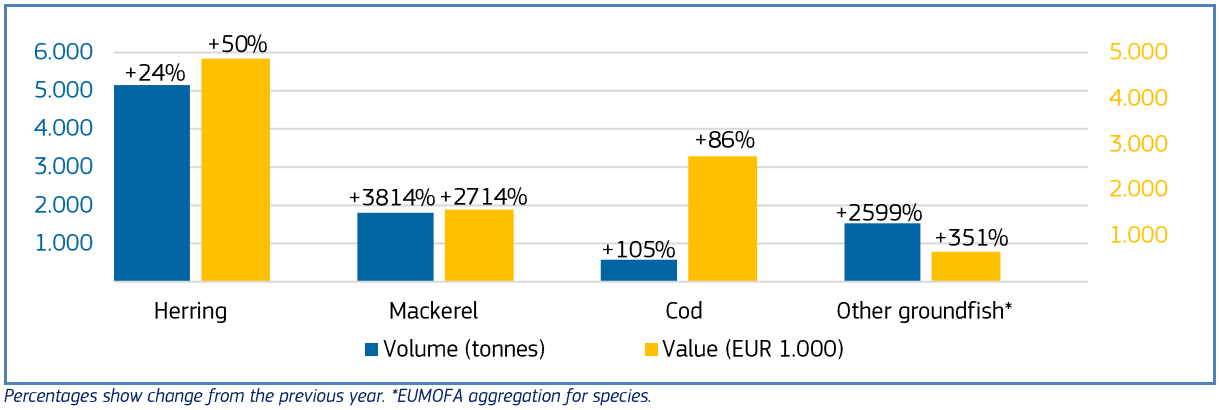
Table 6. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN DENMARK**

Denmark	First-sales value / trend %	First-sales volume / trend %	Main contributing species	Notes
Jan-Jul 2023 vs Jan-Jul 2022	EUR 283 million, +13%	483.035 tonnes, +18%	Blue whiting, other groundfish*, cod, haddock.	In July 2023 first sales of **mackerel** increased substantially compared to July 2022. It is a highly migratory species, and its abundance can vary significantly from one year to another. Fishing for mackerel in the North Sea typically begins in August. However, given its rather good stock status, it appears that the fishing season started earlier this year, with a 66% increase in production for the entire area. High quality landings were observed during the last week of July, especially in
Jul 2023 vs Jul 2022	EUR 27 million, +14%	16.091 tonnes, +34%	Herring, mackerel, cod, other groundfish*.	

[5] https://www.iccat.int/Documents/Recs/compendiopdf-e/2016-05-e.pdf
[6] https://www.iccat.int/Documents/SCRS/ExecSum/SWO_MED_ENG.pdf

				Norway and Denmark. In July 2023, the MCS grouping of **other groundfish** recorded an increase in first sales compared to July 2022. The production of other groundfish increased from 57 tonnes in July 2022 to approximately 1.530 tonnes in July 2023. On top of July 2021 production of 2.735 tonnes and July 2020 production of 1.650 tonnes, this makes the July 2022 production the exception. The decrease is due to a significant quota reduction in 2022. The difference in price clearly indicates that different species were involved over the two years (average price of 2.56 Euro/kg vs. 0.43 Euro/kg in 2023). The primary species involved is sandeel. Categorized under "Other Groundfish," sandeel is primarily targeted by the Danish pelagic fleet between April and July, with the bulk of production between April and June (235.000 tonnes in 2020, 95.000 tonnes in 2021, 84.000 tonnes in 2022, and 137.000 tonnes in 2023). While the relative difference between July 2022 and July 2023 appears significant (1.470 tonnes), it is actually low in absolute terms.

Figure 4. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN DENMARK, JULY 2023**

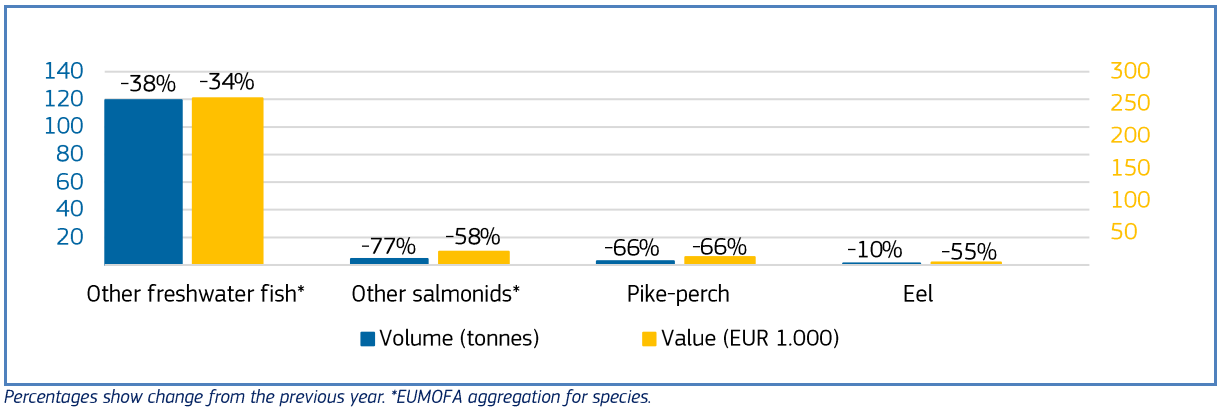


*Percentages show change from the previous year. *EUMOFA aggregation for species.*

Table 7. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN ESTONIA**

Estonia	First-sales value / trend %	First-sales volume / trend %	Main contributing species
Jan-Jul 2023 vs Jan-Jul 2022	EUR 14,5 million, +103%	42.925 tonnes, +85%	Herring, sprat, smelt.
Jul 2023 vs Jul 2022	EUR 0,3 million, -35%	140 tonnes, -39%	Other freshwater fish*, other salmonids*, pike-perch, eel.

Figure 5. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN ESTONIA, JULY 2023**

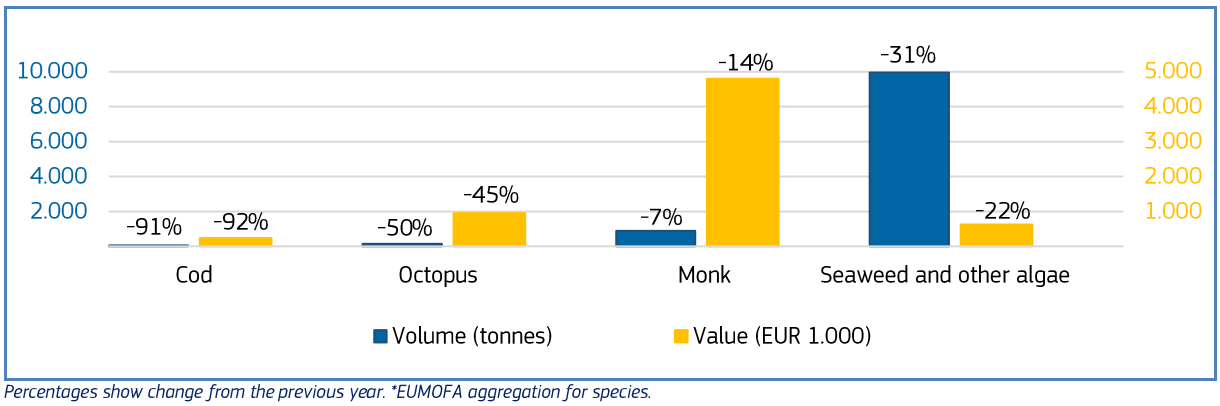


*Percentages show change from the previous year. *EUMOFA aggregation for species.*

Table 8. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN FRANCE**

France	First-sales value / trend %	First-sales volume / trend %	Main contributing species
Jan-Jul 2023 vs Jan-Jul 2022	EUR 412 million, -4%	150.480 tonnes, -9%	Hake, Norway lobster, eel, seaweed and other algae.
Jul 2023 vs Jul 2022	EUR 54,2 million, -10%	24.717 tonnes, -21%	Cod, octopus, monk, seaweed and other algae*.

Figure 6. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN FRANCE, JULY 2023**

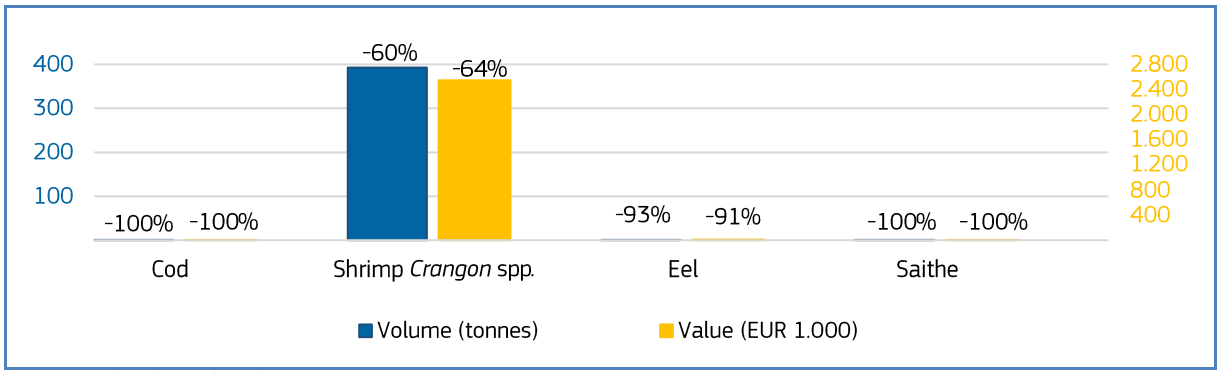


*Percentages show change from the previous year. *EUMOFA aggregation for species.*

Table 9. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN GERMANY**

Germany	First-sales value / trend %	First-sales volume / trend %	Main contributing species
Jan-Jul 2023 vs Jan-Jul 2022	EUR 31,6 million, -35%	21.085 tonnes, +17%	**Value**: shrimp *Crangon* spp., cod, herring. **Volume:** blue whiting, mackerel, Greenland halibut.
Jul 2023 vs Jul 2022	EUR 2,7 million, -86%	441 tonnes, -85%	Cod shrimp *Crangon* spp., eel, saithe.

Figure 7. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN GERMANY, JULY 2023**

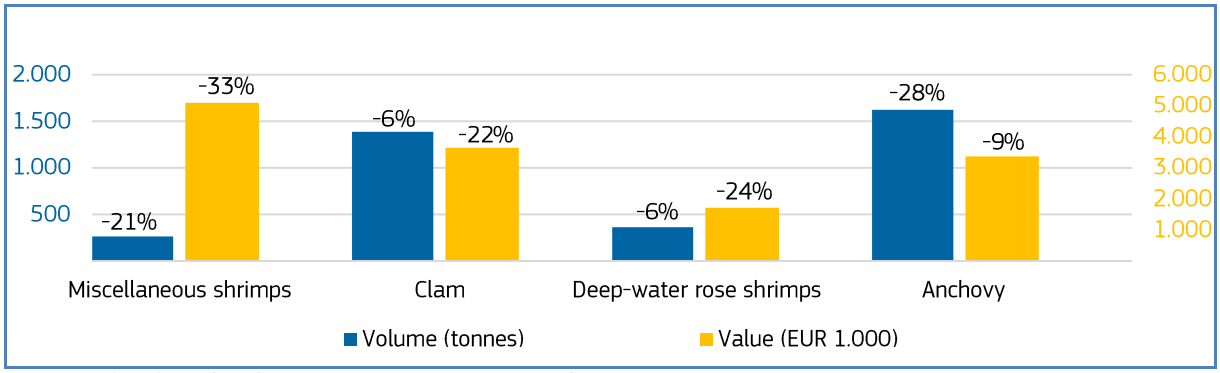


Percentages show change from the previous year.

Table 10. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN ITALY**

Italy	First-sales value / trend %	First-sales volume / trend %	Main contributing species
Jan-Jul 2023 vs Jan-Jul 2022	EUR 182 million, -17%	39.169 tonnes, -16%	Miscellaneous shrimps, clam, anchovy, swordfish.
Jul 2023 vs Jul 2022	EUR 34,4 million, -10%	7.895 tonnes, -8%	Miscellaneous shrimps*, clam, deep-water rose shrimps, anchovy.

Figure 8. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN ITALY, JULY 2023**

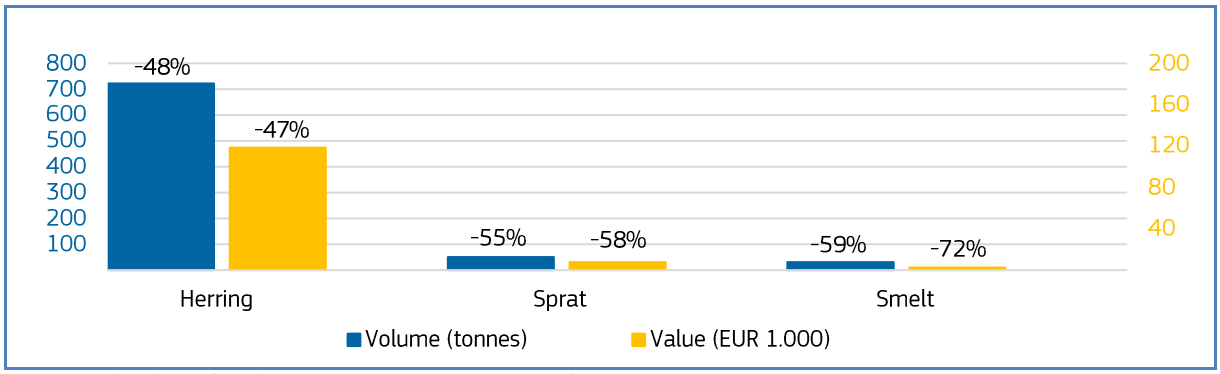


*Percentages show change from the previous year. *EUMOFA aggregation for species.*

Table 11. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN LATVIA**

Latvia	First-sales value / trend %	First-sales volume / trend %	Main contributing species
Jan-Jul 2023 vs Jan-Jul 2022	EUR 6,7 million, +38%	25.112 tonnes, +12%	Herring, sprat, other marine fish*, European flounder.
Jul 2023 vs Jul 2022	EUR 0,1 million, -48%	833 tonnes, -48%	Herring, sprat, smelt.

Figure 9. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN LATVIA, JULY 2023**

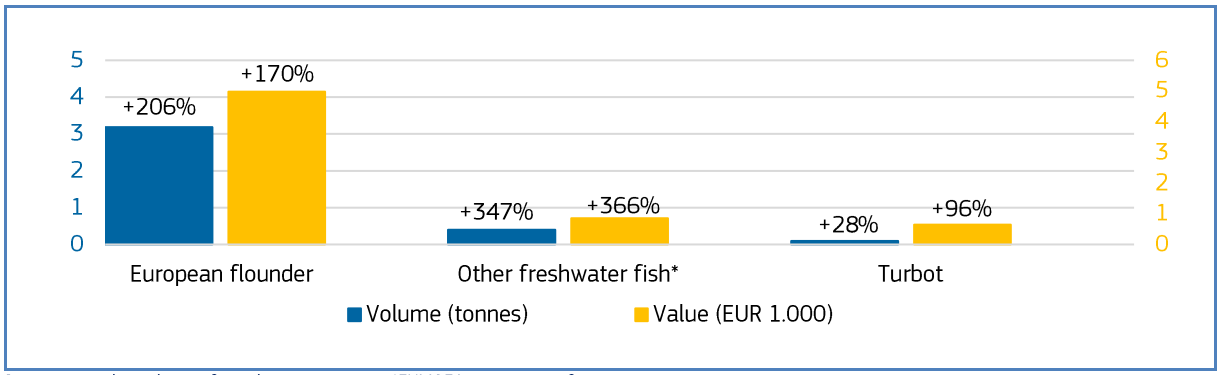


*Percentages show change from the previous year. *EUMOFA aggregation for species.*

Table 12. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN LITHUANIA**

Lithuania	First-sales value / trend %	First-sales volume/ trend %	Main contributing species	Notes
Jan-Jul 2023 vs Jan-Jul 2022	EUR 0,6 million, +21%	277 tonnes, -63%	**Value**: Smelt, turbot, miscellaneous small pelagics. **Volume:** Herring, sprat, other groundfish*.	In July 2023 first sales of **European flounder** increased compared to July 2022. In both July 2023 and 2022 all flounder sales suppliers operated within the small-scale fisheries segment. It is worth noting that the higher supply of flounder in July 2023 slightly exceeded 2 tonnes. European flounder is not covered by TAC, and catches are not regulated. Existing fishing capacity and fish stock availability in the coastal area allowed for an increase in the volume of landings compared to the period from July 2022 to July 2023. A slight increase in fishing activities was noted, causing an insignificant increase in the volumes of flounder supplied to the market. European flounder is popular for local consumption, and due to its reasonable price, consumption increased.
Jul 2023 vs Jul 2022	EUR 0,008 million, +199%	4 tonnes, +83%	European flounder, other freshwater fish*, turbot.	

Figure 10. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN LITHUANIA, JULY 2023**

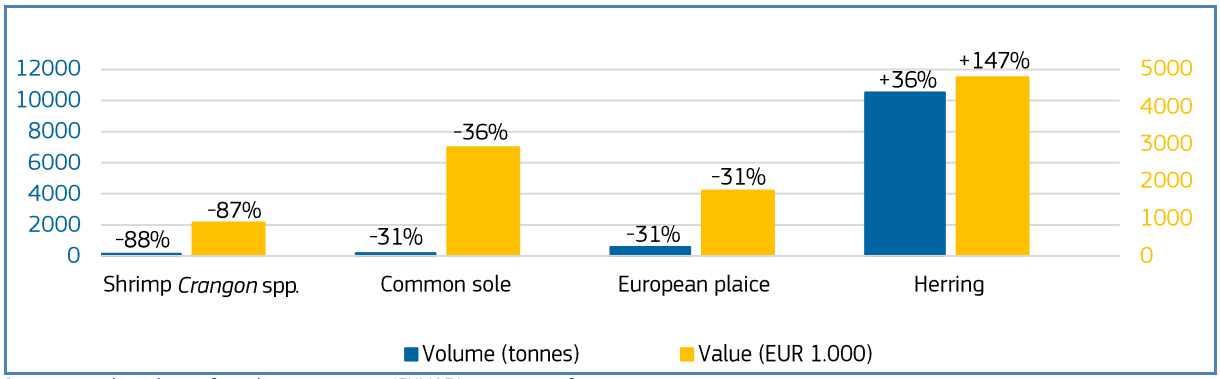


*Percentages show change from the previous year. *EUMOFA aggregation for species.*

Table 13. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN THE NETHERLANDS**

the Netherlands	First-sales value / trend %	First-sales volume / trend %	Main contributing species
Jan-Jul 2023 vs Jan-Jul 2022	EUR 113 million, -17%	114.040 tonnes, -3%	Common sole, shrimp *Crangon* spp., Atlantic horse mackerel, European plaice.
Jul 2023 vs Jul 2022	EUR 14,3 million, -30%	12.899 tonnes, +13%	**Value**: shrimp *Crangon* spp., common sole, European plaice. **Volume:** herring, miscellaneous small pelagics*, blue whiting.

Figure 11. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN THE NETHERLANDS, JULY 2023**

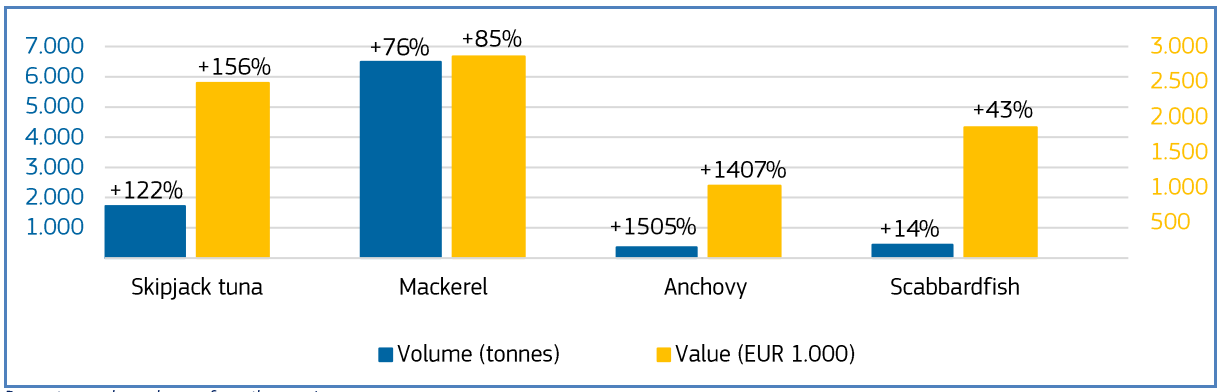


*Percentages show change from the previous year. *EUMOFA aggregation for species.*

Table 14. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN PORTUGAL**

Portugal	First-sales value / trend %	First-sales volume / trend %	Main contributing species	Notes
Jan-Jul 2023 vs Jan-Jul 2022	EUR 173 million, -1%	64.486 tonnes, +11%	**Value**: octopus, squid, sardine, Atlantic horse mackerel. **Volume:** mackerel, skipjack tuna, blue whiting, cuttlefish.	In July 2023, there was a strong increase in first sales of **anchovy** compared to July 2022. The fishing of small pelagic fish is a boom-and-bust process highly influenced by the season. In July 2023, the biomass of anchovy appeared a bit earlier than the previous month. This is not an infrequent event. The level of landings reported in July 2023 is similar to that of 2021 and 2016. The stock is in good biological condition, a fact supported by reported catches.
Jul 2023 vs Jul 2022	EUR 31 million, +1%	17.310 tonnes, +18%	Skipjack tuna, mackerel, anchovy, scabbardfish.	

Figure 12. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN PORTUGAL, JULY 2023**

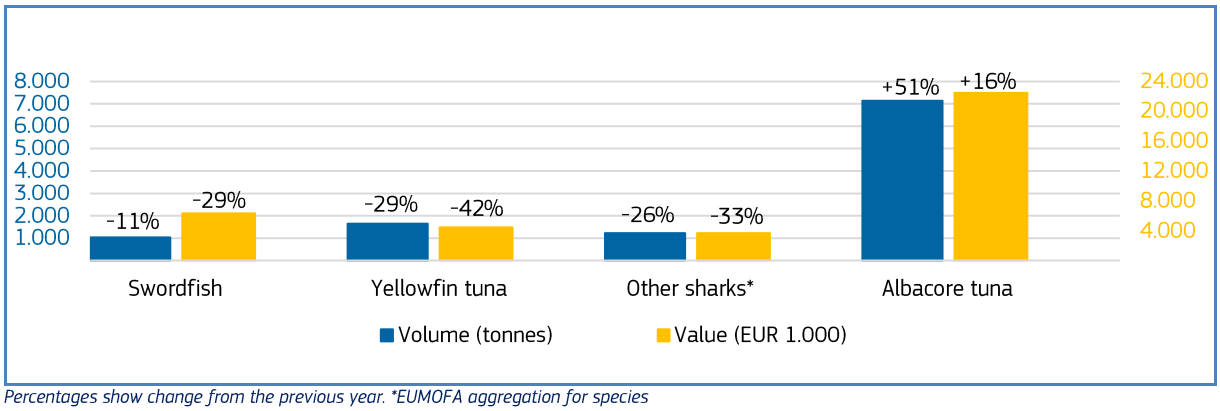


Percentages show change from the previous year.

Table 15. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN SPAIN**

Spain	First-sales value / trend %	First-sales volume / trend %	Main contributing species
Jan-Jul 2023 vs Jan-Jul 2022	EUR 859 million, -7%	260.723 tonnes, -4%	Swordfish, mackerel, yellowfin tuna, Atlantic horse mackerel.
Jul 2023 vs Jul 2022	EUR 136 million -1%	39.992 tonnes, +1%	**Value:** swordfish, yellowfin tuna, other sharks*, sardine, **Volume:** albacore tuna, hake, bigeye tuna, mackerel.

Figure 13. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN SPAIN, JULY 2023**

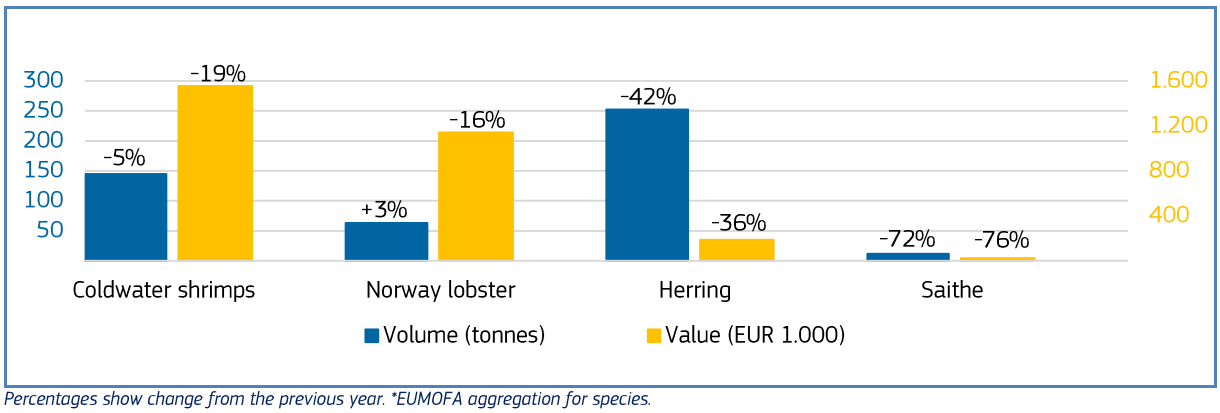


*Percentages show change from the previous year. *EUMOFA aggregation for species*

Table 16. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN SWEDEN**

Sweden	First-sales value / trend %	First-sales volume / trend %	Main contributing species
Jan-Jul 2023 vs Jan-Jul 2022	EUR 31,2 million, -24%	36.853 tonnes, -46%	Sprat, herring, cold-water shrimps, mackerel.
Jul 2023 vs Jul 2022	EUR 3,3 million, -22%	566 tonnes, -36%	Coldwater shrimps*, Norway lobster, herring, saithe.

Figure 14. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN SWEDEN, JULY 2023**

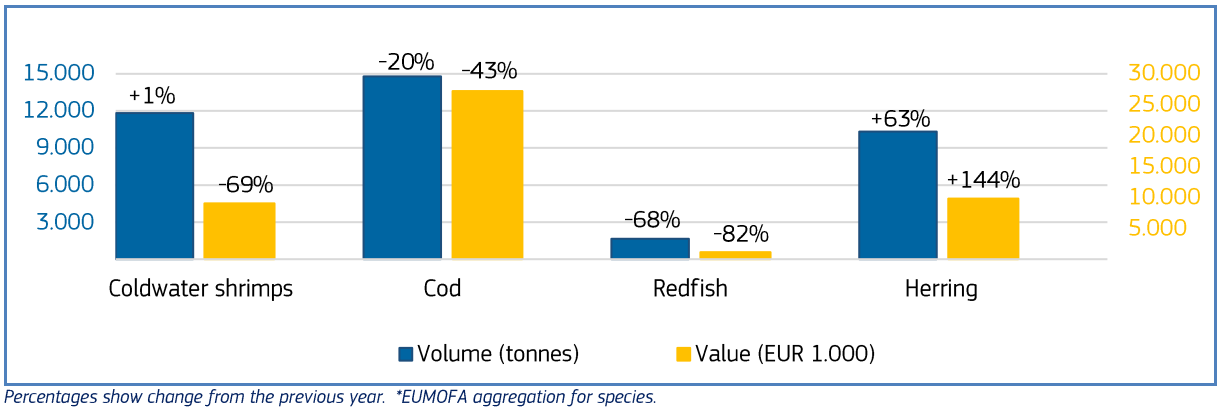


*Percentages show change from the previous year. *EUMOFA aggregation for species.*

Table 17. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN NORWAY**

Norway	First-sales value / trend %	First-sales volume / trend %	Main contributing species
Jan-Jul 2023 vs Jan-Jul 2022	EUR 1.755 million, -11%	1745.676 tonnes, 0%	**Value:** cod, crab, haddock. **Volume:** blue whiting, cod, herring.
Jul 2023 vs Jul 2022	EUR 111 million -31%	109.257 tonnes, +5%	**Value:** cod, coldwater shrimps, redfish. **Volume:** herring, other marine fish*, mackerel.

Figure 15. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN NORWAY, JULY 2023**

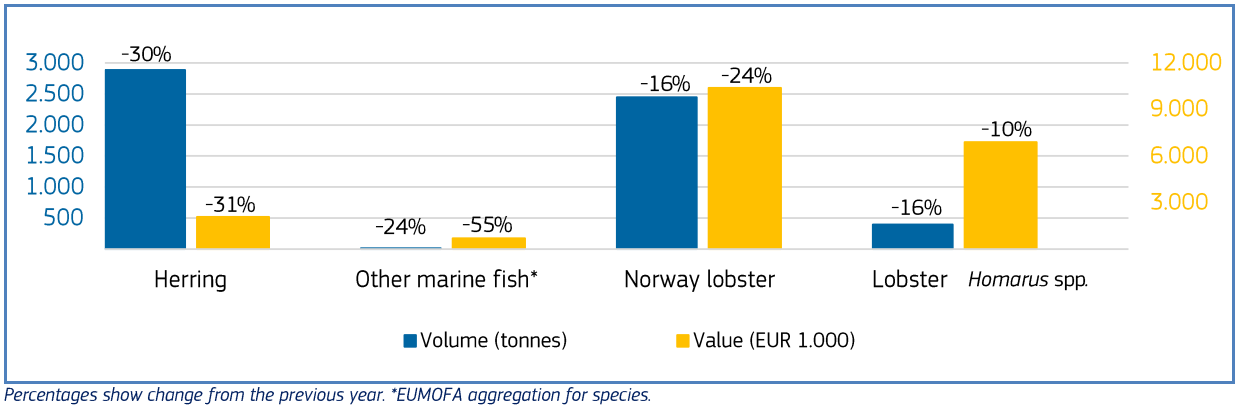


*Percentages show change from the previous year. *EUMOFA aggregation for species.*

Table 18. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN THE UNITED KINGDOM**

The United Kingdom	First-sales value / trend %	First-sales volume / trend %	Main contributing species
Jan-Jul 2023 vs Jan-Jul 2022	EUR 362 million, +5%	180.768 tonnes, +15%	Cod, Norway lobster, blue whiting, mackerel.
Jul 2023 vs Jul 2022	EUR 51 million, -8%	19.369 tonnes, -2%	Herring, other marine fish*, Norway lobster, lobster *Homarus* spp.

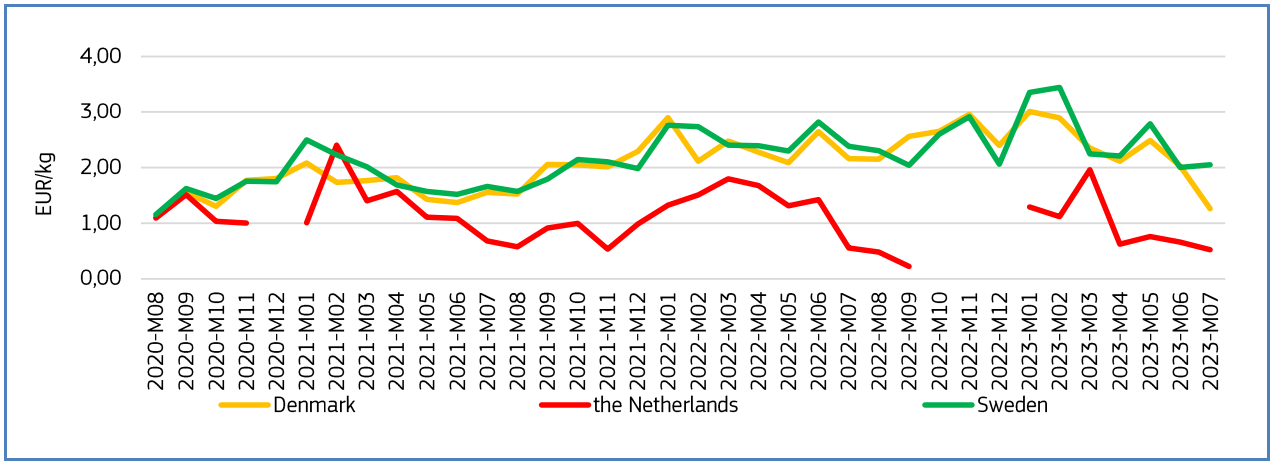
Figure 16. **FIRST SALES OF THE MAIN COMMERCIAL SPECIES IN THE UNITED KINGDOM, JULY 2023**



*Percentages show change from the previous year. *EUMOFA aggregation for species.*

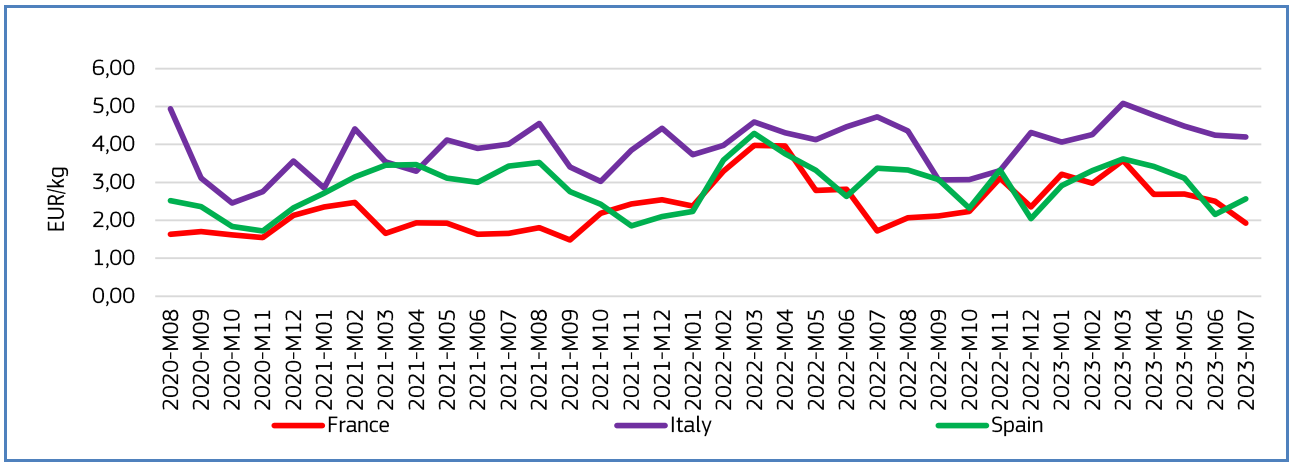
1.4. Comparison of first sales prices of selected species in selected countries[7]

Figure 18. **FIRST SALES PRICES OF SAITHE IN DENMARK, THE NETHERLANDS AND SWEDEN**



EU first sales of **saithe** (*Pollachius virens*) occur in several countries such as **Denmark**, **the Netherlands** and **Sweden**. In July 2023, the average first-sales prices of saithe were: 1,26 EUR/kg in Denmark (down by 38% from the previous month and by 42% from July 2022); 0,52 EUR/kg in the Netherlands (down by 20% from previous month and by 5% from July 2022) and 2,05 EUR/kg in Sweden (up by 2% from the previous month and down by 14% from the previous year). In July 2023, supply increased in Denmark (+33%) and the Netherlands (+485%) while it decreased in Sweden (-72%) relative to the previous year. Supply fluctuates greatly in the three countries analysed. In Denmark major peaks in volume seem to occur in March-May and August-September. In the Netherlands volumes fluctuate strongly over the year with peaks in July and August, while in Sweden peaks in volume occur in March-April and September-October. Between 08/2020 to 07/2023, prices increased up to January 2023 and February 2023 in Denmark and Sweden respectively then started to decrease until July 2023. In the Netherlands prices fluctuated strongly, peaking between February and March.

Figure 19. **FIRST SALES PRICES OF WEEVER IN FRANCE, ITALY AND SPAIN**

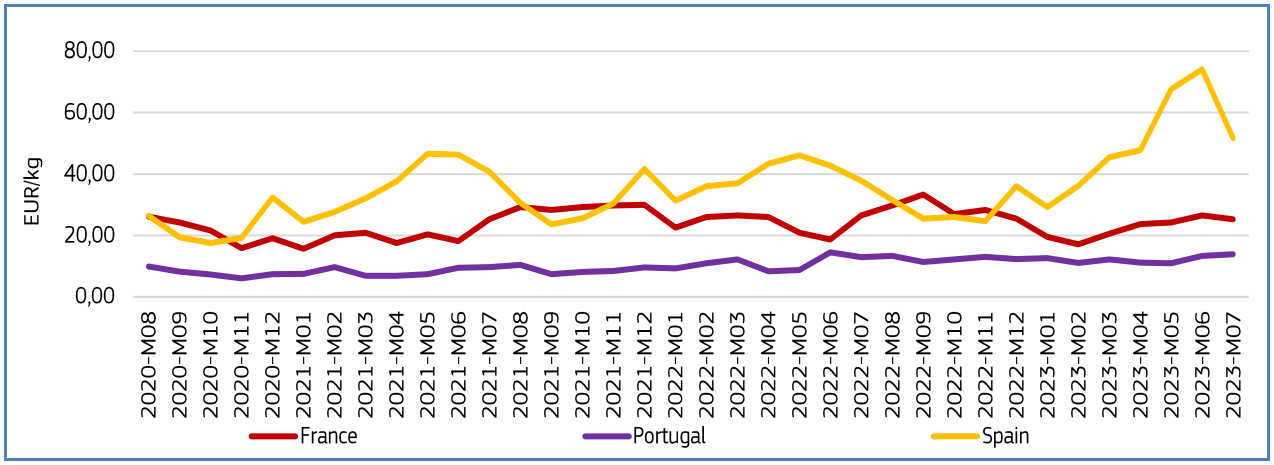


EU first sales of **weever** (*Trachinus* spp.) occur in several countries including **France**, **Italy** and **Spain**. In July 2023, the average first-sales prices of weever were 1,92 EUR/kg in France (down by 23% from the previous month and up by 12% from the previous year), 4,20 EUR/kg in Italy (down from June 2023 by 1% and from July 2022 by 11%), and 2,56 EUR/kg in Spain (up from the previous month by 19% and down by 24% from July 2022). In July 2023, supply relative to the previous year increased in Italy (+25%) and Spain (+29%) while it remained stable in France (0%). In the three countries analysed, seasonality in volumes is seen with peaks in similar periods of the year: in France between July and August, in Italy between May and June and in Spain between June-August and November-December. Between months 08/2020 to 07/2023, prices fluctuated greatly in the three countries with seasonal peaks in France between February and April. Seasonal drops in price in Italy seem to occur in September

[7] First sales data updated on 20.9.2023.

and October with the lowest value of 2,46 EUR/kg in October 2020. In Spain prices fluctuated in accordance with available supply reaching the highest price of 4,29 EUR/kg in March 2022.

Figure 20. **FIRST SALES PRICES OF COMMON PRAWN IN FRANCE, PORTUGAL AND SPAIN.**

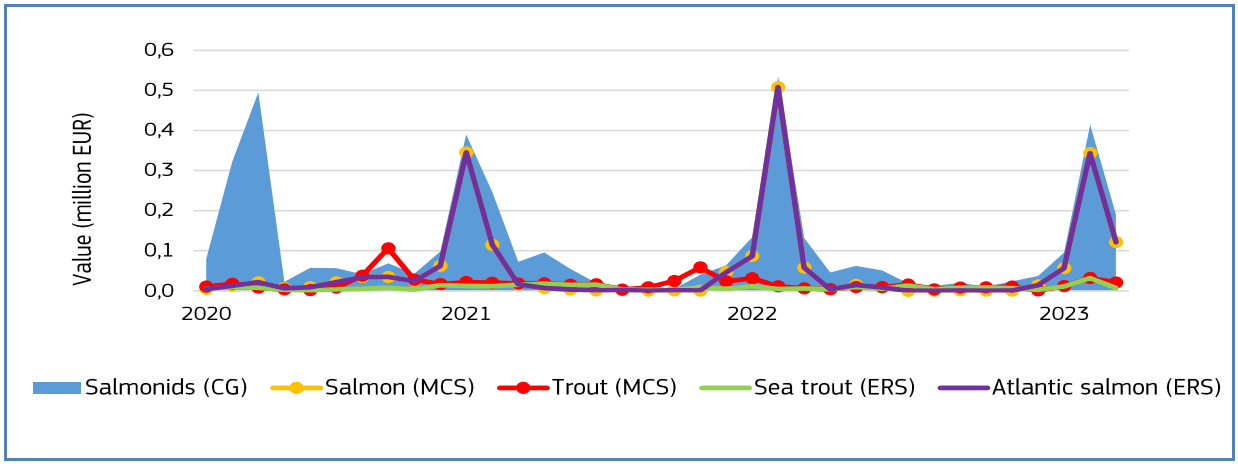


EU first sales of **common prawn** (*Palaemon serratus*) occur prominently in **France**, **Portugal** and **Spain**. In July 2023, the average first-sales prices of common prawn were 25,26 EUR/kg in France (down both from the previous month and year by 5%), 13,91 EUR/kg in Portugal (up from the previous month by 4% and from July 2022 by 8%), and 51,59 EUR/kg in Spain (down by 30% from June 2023 and up by 37% from July 2022). In July 2023, supply increased in Portugal (+5%) and decreased in France (–2%) and Spain (-55%) relative to the previous year. Supply shows strong seasonal behaviour with peaks occurring most often between November and January in France, between January and March in Portugal and between September-December in Spain. Over the period analysed supply has been decreasing in France and Portugal. Between 08/2020 to 07/2023, prices fluctuated strongly in the three markets analysed and have been increasing in Portugal and Spain. Prices in Spain show seasonal peaks in May and June with the highest peak in price of 74,1 EUR/kg reached in June 2023. The minimum price of 6,06 EUR/kg was recorded in Portugal in November 2020, while prices in France fluctuated strongly between 15,66 EUR/kg and 33,33 EUR/kg.[8]

[8] https://www.eumofa.eu/documents/20178/540461/MH+4+2023+EN.pdf/00988033-b4d5-5815-90ae-6c670125ca50?t=1682515933952

1.5. Commodity group of the month: salmonids[9]

Figure 21. **FIRST-SALES COMPARISON AT CG, MCS, AND ERS LEVELS FOR REPORTING COUNTRIES[10], AUGUST 2020 – JULY 2023**



In July 2023, the "**salmonids**" commodity group (CG[11]) recorded the lowest first-sales value and volume out of the 10 CGs in the countries monitored by EUMOFA[12]. In the reporting countries covered by the EUMOFA database, first sales of "salmonids" totalled a value of EUR 0,2 million and a volume of 27 tonnes, representing a 45% increase in value and 11% decrease in volume compared to July 2022. In the past 36 months, the highest first-sales value of salmonids was registered in June 2022 at about EUR 0,5 million.

Salmonids include three MCS: salmon, trout and other salmonids[13]. At the Electronic Recording and Reporting System (ERS) level, Atlantic salmon (64%) and sea trout (4%) together accounted for 68% of the total first-sales value for "salmonids" recorded in July 2023.

1.6. Focus on Atlantic salmon

Atlantic salmon (*Salmo salar*) is a carnivorous species of ray-finned fish in the family Salmonidae. It is found in the North Atlantic on both European (Portugal to Russia) and North American sides, and in rivers that flow into the Atlantic and, due to human introduction, in the north Pacific Ocean[14]. Atlantic salmon follow an anadromous migration pattern, meaning that while they feed and grow primarily in saltwater, adults return to spawn in native freshwater streams. Spawning occurs from October to January, and individuals can live for 4 to 6 years[15]. Today, all fishing of wild Atlantic salmon in rivers and saltwater is highly regulated. The North Atlantic Salmon Conservation Organization (NASCO) is responsible for the conservation, restoration and management of the species. In Europe, which is the major global producing region of Atlantic salmon, the species is mainly targeted by the fishers in Norway, Iceland, the UK, Sweden, Finland and Ireland. Management measures include fisheries closures in many countries to reduce levels of exploitation, Total Allowable Catches[16] and minimum conservation reference sizes[17]. Minimum conservation reference size is set at 60 cm in almost all EU fishing areas, and 50 cm in the Bothnian Bay in Finland[18]. The main fishing gears used for catching Atlantic salmon are driftnets, gillnets and similar nets, hooks and lines, and pots and traps. Most of today's catches of wild Atlantic salmon are by recreational fisheries in rivers, where catch and release are common. In countries of the European Union maximum levels of certain contaminants in food are determined for Atlantic salmon. For mercury the maximum level is 0,3 mg/kg for wet weight of the species[19].

[9] First sales data updated on 10. 10. 2023.
[10] Norway and the UK excluded from the analyses.
[11] Annex 3: http://eumofa.eu/supply-balance-and-other-methodologies
[12] More data on commodity groups can be found in Table 1.2 of the Annex.
[13] *EUMOFA aggregation for species (Metadata 2, Annex 3: ***http://eumofa.eu/supply-balance-and-other-methodologies***).
[14] http://www.fao.org/fishery/culturedspecies/Salmo_salar/en
[15] https://ec.europa.eu/fisheries/marine_species/farmed_fish_and_shellfish/salmon_en
[16] Council Regulation (EU) 2020/1579 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2020.362.01.0003.01.ENG
[17] ICES, (2017). "Report of the Working Group on North Atlantic Salmon (WGNAS)." 29 March–7 April 2017, Copenhagen, Denmark. ICES CM 2017/ACOM: 20. 296
[18] https://fish-commercial-names.ec.europa.eu/fish-names/species_en?sn=32300#ecl-accordion-header-conserv-meas
[19] Commission Regulation (EU) 2023/915 https://eur-lex.europa.eu/eli/reg/2023/915/oj

We have covered **Atlantic salmon** in previous *Monthly Highlights*:

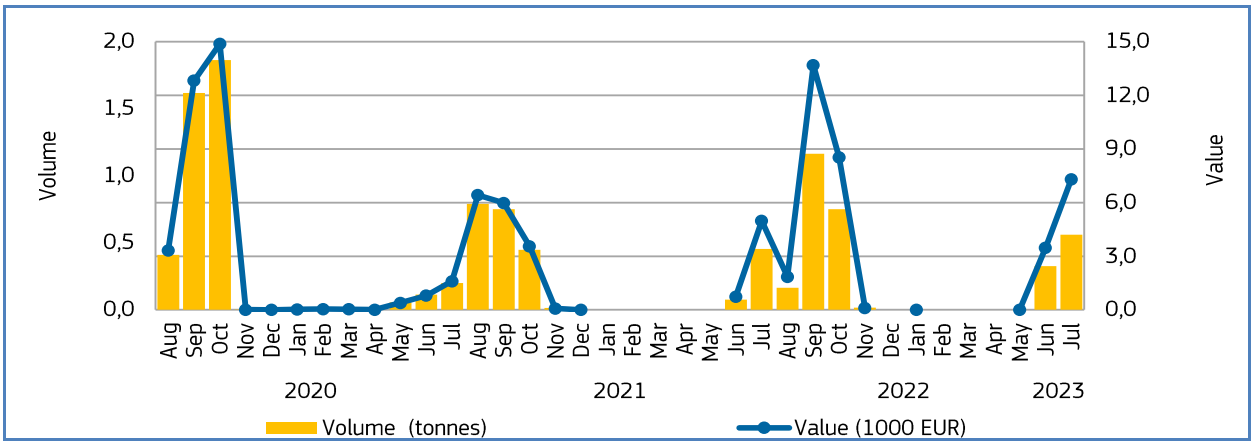
First sales: MH 5/2019 (DK, PL, SE), MH 9/2021 (EE, FR, LV)
Case study: Salmon in Europe (2/2018), Smoked salmon in France (MH2/2016), Farmed salmon in France (October 2013).

Selected countries

Table 20. **COMPARISON OF ATLANTIC SALMON FIRST-SALES PRICES, MAIN PLACES OF SALE, AND CONTRIBUTION TO OVERALL SALES OF "SALMONIDS" IN SELECTED COUNTRIES**

Atlantic salmon		Changes in Atlantic salmon first sales Jan-Jul 2023 (%)		Contribution of Atlantic salmon to total "salmonids" first sales in July 2023 (%)	Principal places of sale Jan-Jul 2023 in terms of first-sales value
		Compared to Jan-Jul 2022	Compared to Jan-Jul 2021		
Estonia	**Value**	+88%	+269%	26%	Juminda, Tsitre
	Volume	+67%	+126%	11%	*Responsible for 100% of sales.*
Latvia	**Value**	+32%	-96%	100%	Salacgriva, Jurmalciems, Ventspils, Roja.
	Volume	-8%	-97%	100%	*Responsible for 100% of sales.*
Sweden	**Value**	-27%	-5%	90%	*Not available.*
	Volume	-34%	-48%	89%	

Figure 22. **ATLANTIC SALMON: FIRST SALES IN THE ESTONIA, AUGUST 2020 – JULY 2023**



Over the past 36 months, the highest first-sales value of Atlantic salmon in **Estonia** occurred in October 2020 when 1,9 tonnes were sold for about EUR 15.000. First sales were typically higher in the summer and autumn (mainly September-October) when the fishing season is at its peak. In the first quarter of the year, reported salmon catches are low per fisher, mostly as bycatch.

Figure 23. **FIRST SALES: COMPOSITION OF "SALMONIDS" (ERS LEVEL) IN ESTONIA IN VALUE AND VOLUME, JULY 2023**

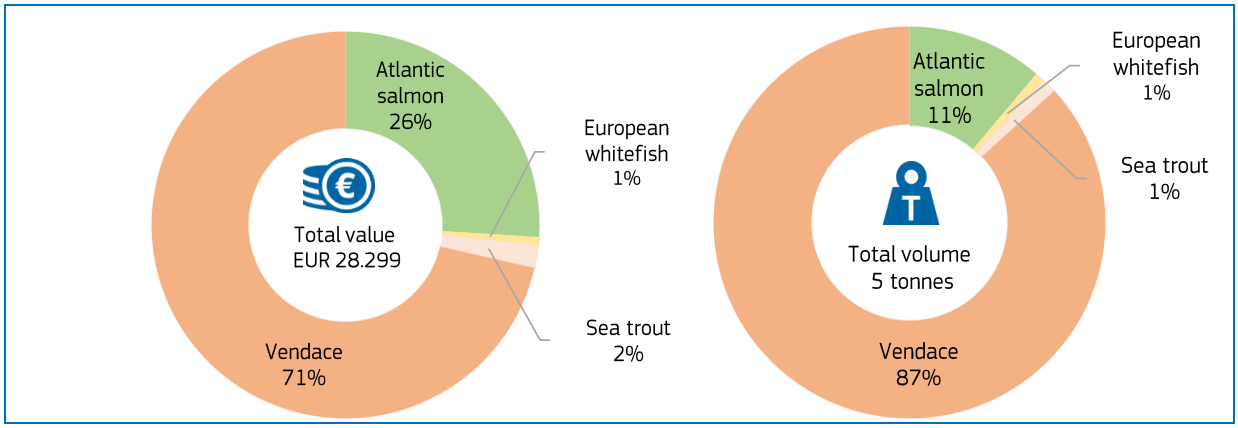
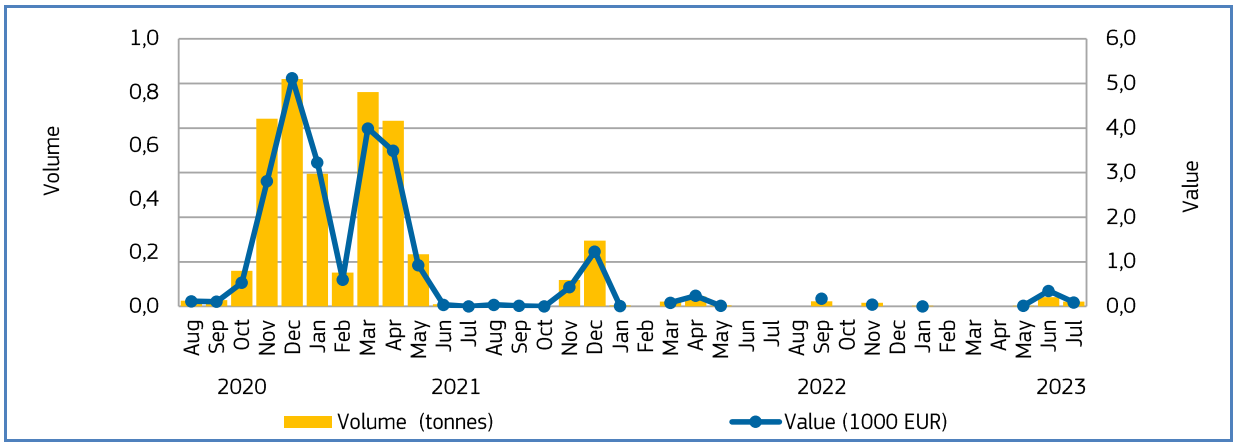
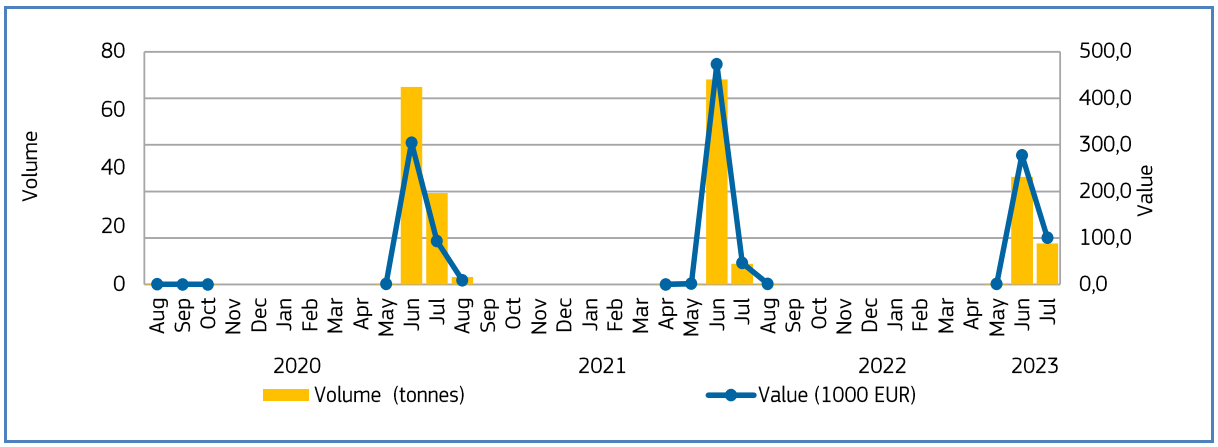


Figure 24. **ATLANTIC SALMON: FIRST SALES IN THE LATVIA, AUGUST 2020 – JULY 2023**



Over the past 36 months in **Latvia**, the highest first-sales volume of Atlantic salmon were in late 2020 and early 2021. The peak was registered in December 2020 when about 849 kg were sold for about EUR 5.100. There were no recorded first sales in the summer. In 2023 the salmon fishery in the Baltic Sea is limited to unavoidable by-catches, with no directed fisheries permitted other than for scientific investigation, with special conditions and derogations in some areas.[20] Of salmonid species caught and sold in Latvia in July 2023, Atlantic salmon was the only species represented with 18 kg valued at about EUR 90,00.

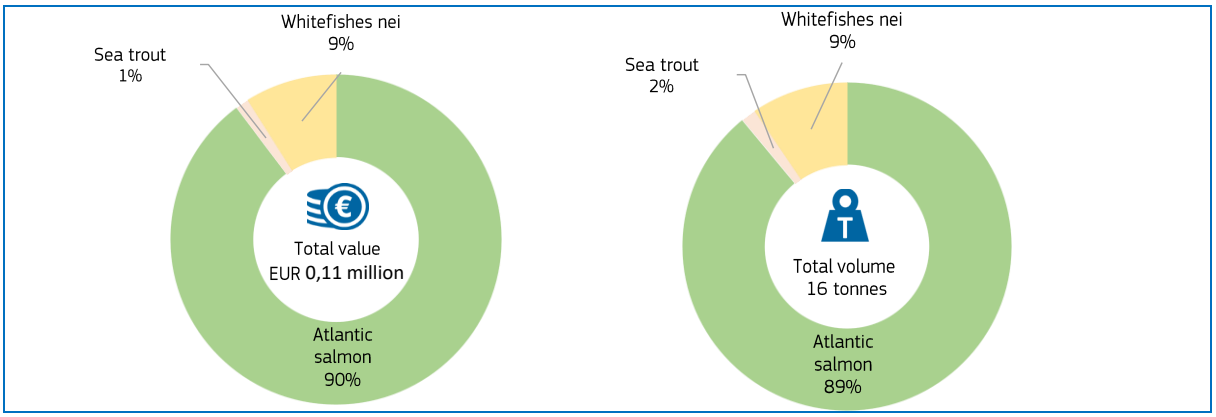
Figure 25. **ATLANTIC SALMON: FIRST SALES IN SWEDEN, AUGUST 2020 – JULY 2023**



[20] Council Regulation (EU) 2022/2090 of 27 October 2022 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32022R2090

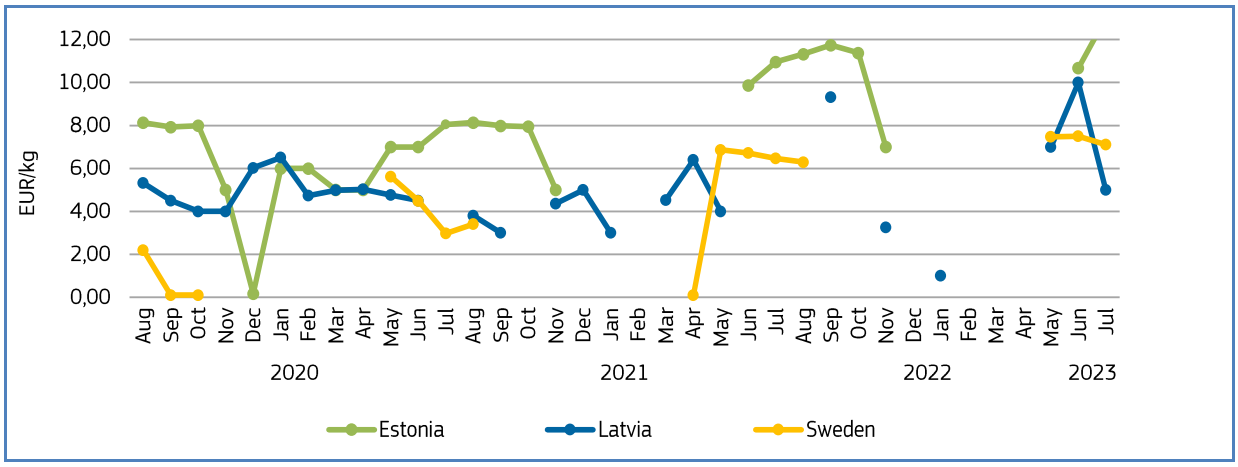
In **Sweden**, first sales of Atlantic salmon are registered only from April to August, whereas during the rest of the year there are very minor or no catches due to the closed season which starts as soon as the quota is exhausted. The highest first sales were recorded in June 2021 when 70,5 tonnes were sold for about EUR 473 thousand. In Sweden, most of the commercial catch of salmon was from coastal fishing with trap-nets and fyke nets, located mainly in the Gulf of Bothnia. The fishing coincides with the salmon migration in the rivers and outside the rivers when the fish reach the area in May–June. Sweden has a small quota, so fishing is closed at some point in July and August.

Figure 26. **FIRST SALES: COMPOSITION OF "SALMONIDS" (ERS LEVEL) IN SWEDEN IN VALUE AND VOLUME, JULY 2023**



Price trend

Figure 27. **ATLANTIC SALMON: FIRST-SALES PRICES IN SELECTED COUNTRIES, AUGUST 2020 – JULY 2023**



Over the 36-month observation period (August 2020 to July 2023), the weighted average first-sales price of Atlantic salmon in **Estonia** was 9,25 EUR/kg, 78% higher than in **Latvia** (5,19 EUR/kg) and 64% higher than in **Sweden** (5,65 EUR/kg). In **Estonia** in July 2023, the average first-sales price of Atlantic salmon (13,01 EUR/kg) increased by 19% compared to July 2022, and by 62% compared with July 2021. Over the past 36 months, apart from the exceptional price of 0,16 EUR/kg[21] for 10 kg in December 2020, the average price ranged from 5,00 EUR/kg to 13,01 EUR/kg. In **Latva** in July 2023, the average first-sales price of Atlantic salmon was 5,00 EUR/kg, while there were no sales of in the same months of 2022 and 2021. In the period observed, the lowest average price at 1,00 EUR/kg[22] for 3 kg was registered in January 2023, while the highest average price (10,00 EUR/kg for 35 kg) was recorded in June 2023. In **Sweden** in July 2023, the average first-sales price of Atlantic salmon (7,11 EUR/kg) increased by 10% compared to July 2022 and by 139% compared to July 2021. During the period observed, the average price ranged from 2,20 EUR/kg for 273 kg in August 2020 to 7,50 EUR/kg for 37 tonnes in July 2023. The unusual price of 0,10 EUR/kg was recorded in September and October 2020 and in April 2022, when 3,5 and 8 kg were sold, and this should not be considered a representative price.

[21] Average price at 0,16 EUR/kg in December 2020 is non-representative value and potential reporting error
[22] Average price at 1,00 EUR/kg in January 2023 is non-representative value and potential reporting error

1.7. Focus on sea trout

Sea trout, an anadromous form of brown trout (*Salmo trutta*), is a migratory species belonging to the Salmonidae family. It is widely distributed in Europe along the Atlantic and Baltic coasts, around the United Kingdom and Iceland, and is also found in the Black and Caspian Seas and as far north as the Barents and Kara Seas in the Arctic Ocean. Sea trout lives in cold rivers and lakes, and spawns in rivers and streams with clean gravel beds. It reaches an average length of 60 cm but can grow to as long as 130 cm and weigh up to 20 kg under favourable conditions.

Sea trout feed mainly on fish and crustaceans. It usually spawns in late autumn (November–December) when it reaches 1–2 years of age[23]. Most sea trout products on the EU market come from aquaculture. Wild trout in the EU is mainly targeted by recreational and sport fishers, while in commercial fishers it is mainly taken as bycatch in the gillnet fishery[24]. The main EU fishing nations for sea trout are Denmark, Poland and France. Sea trout fisheries are regulated through several management approaches: fishing season restrictions (closing periods), gear limitations (mesh size), minimum reference size (40 cm), bag limits (the number of a particular species that an individual fisher can harvest and possess in a given day) and protected areas[25].

Sea trout falls under Council Regulations in the European Union. It is prohibited for fishing vessels to fish for sea trout beyond four nautical miles measured from the baseline in the Baltic Sea (subdivision 22-32). When fishing for salmon beyond four nautical miles measured from the baselines in the Gulf of Finland, by-catches of sea trout must not exceed 3% of the total catch of salmon and sea trout at any moment on board or landed after each fishing trip[26].

We have covered **sea trout** in previous *Monthly Highlights*:

First sales: Denmark, France Poland, the UK (5/2019), Denmark, Estonia, Poland (MH 9/2020).

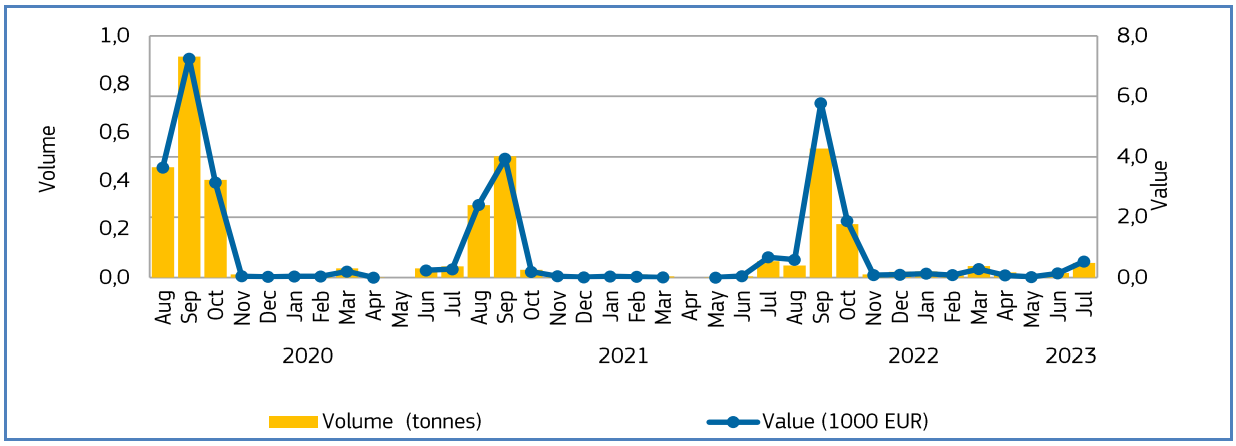
Selected countries

Table 21. **COMPARISON OF SEA TROUT FIRST-SALES PRICES, MAIN PLACES OF SALE, AND CONTRIBUTION TO OVERALL SALES OF "SALMONIDS" IN SELECTED COUNTRIES**

Sea trout		Changes in sea trout first sales Jan-Jul 2023 (%)		Contribution of sea trout to total "Salmonids" first sales in July 2023 (%)	Principal places of sale Jan-Jul 2023 in terms of first-sales value
		Compared to Jan-Jul 2022	Compared to Jan-Jul 2021		
Estonia	**Value**	+57%	+56%	2%	Juminda, OÜ Goldfish, Kärdla.
	Volume	+90%	+28%	1%	
France	**Value**	+154%	+30%	9%	St Jean-de-Luz, Adour (ens. Communes), Port-en-Bessin-Huppain.
	Volume	+116%	-55%	18%	
Germany	**Value**	+52%	+19%	79%	Freest, Prerow, Greifswald.
	Volume	+48%	-4%	88%	

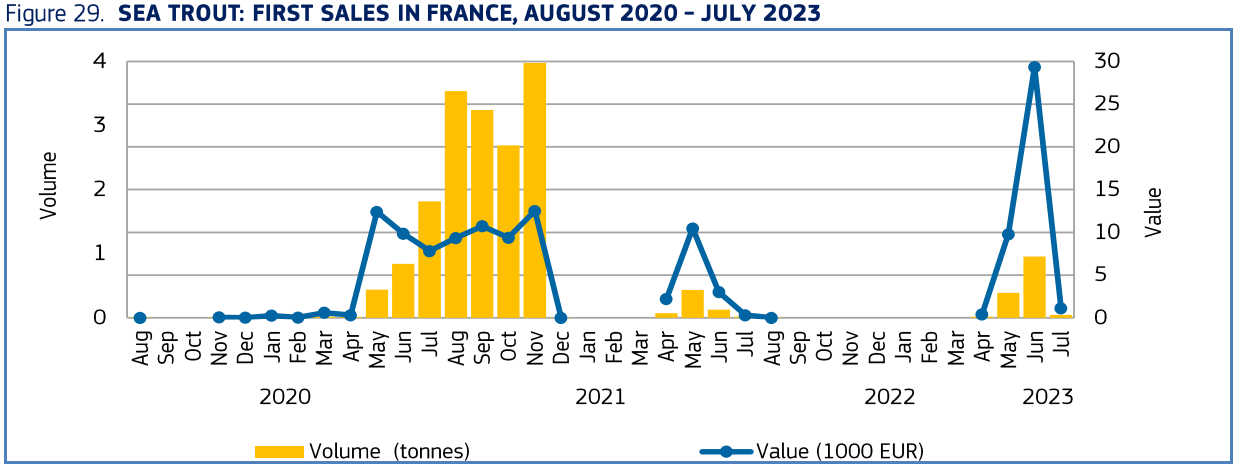
[23] https://ec.europa.eu/fisheries/marine_species/farmed_fish_and_shellfish/trout
[24] http://ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/trs.27.22-32.pdf
[25] https://www.fiskepleje.dk/service/english_version_fiskepleje/seatrout_stocks_denmark
[26] COUNCIL REGULATION (EU) 2022/2090: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32022R2090

Figure 28. **SEA TROUT: FIRST SALES IN ESTONIA, AUGUST 2020 – JULY 2023**



In **Estonia** over the observed 36-month period, the highest first-sales value and volume of sea trout were recorded in September 2020 at about EUR 7.000 for 914 kg. The trout season is in the warmer period of the year, as are first sales.

Figure 29. **SEA TROUT: FIRST SALES IN FRANCE, AUGUST 2020 – JULY 2023**



In **France** over the past 36 months, the first-sales value of sea trout was highest in June 2023 with EUR 29.300 for 954 kg sold. The highest first-sales volume was recorded in the second half of 2021, peaking in November 2021 when about 4 tonnes were sold for EUR 12.500. In general, first sales occur during the fishing season that occurs in summer. It is possible that some of the reported first sales of sea trout in France are from imported farmed sea trout reported in sales notes/auction sales.

Figure 30. **FIRST SALES: COMPOSITION OF "SALMONIDS" (ERS LEVEL) IN FRANCE IN VALUE AND VOLUME, JULY 2023**

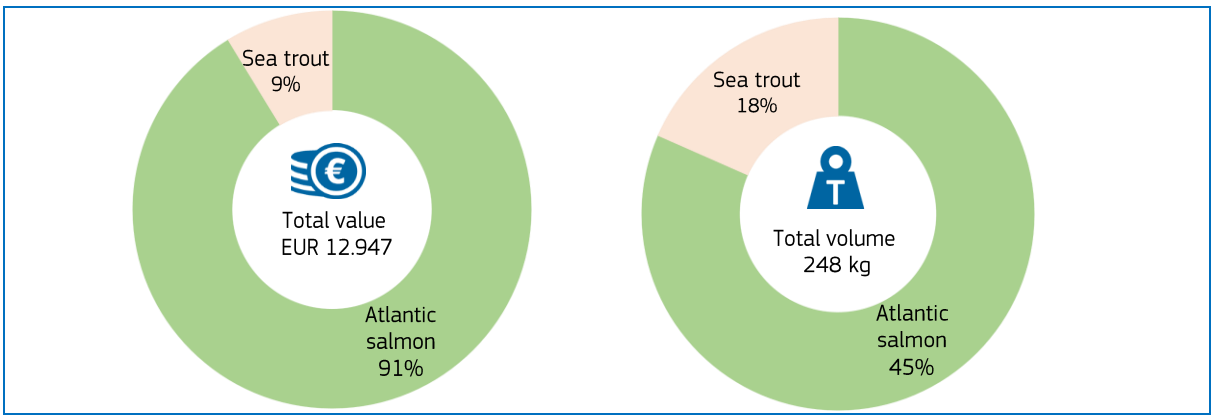
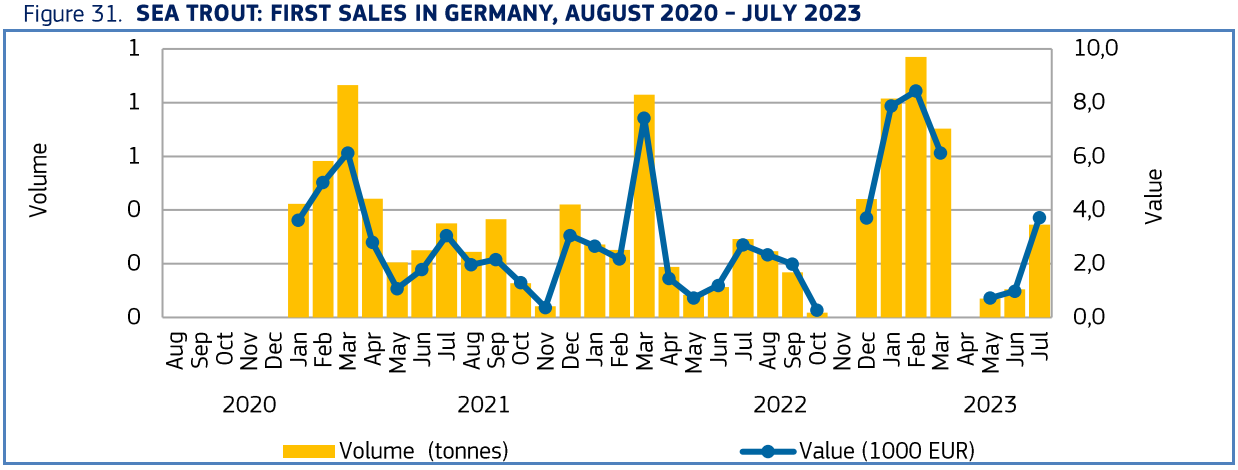
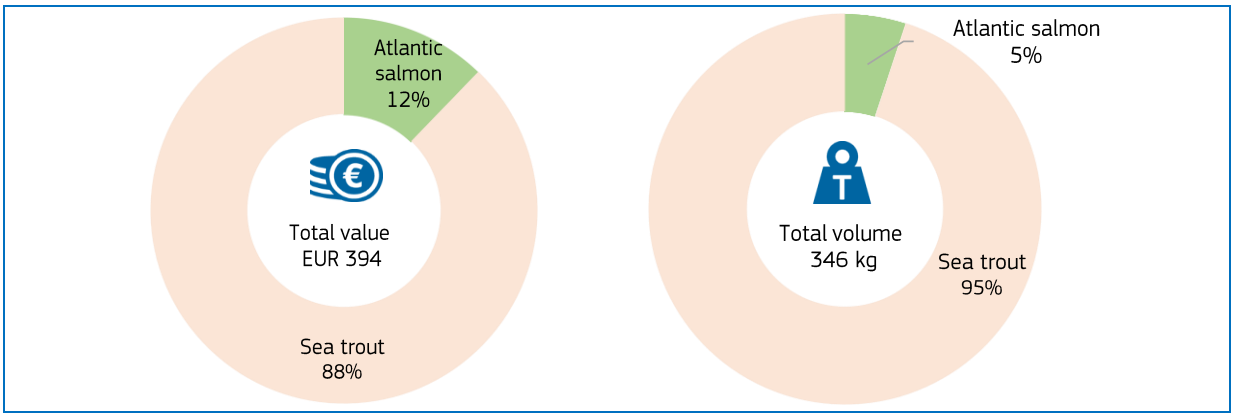


Figure 31. **SEA TROUT: FIRST SALES IN GERMANY, AUGUST 2020 – JULY 2023**



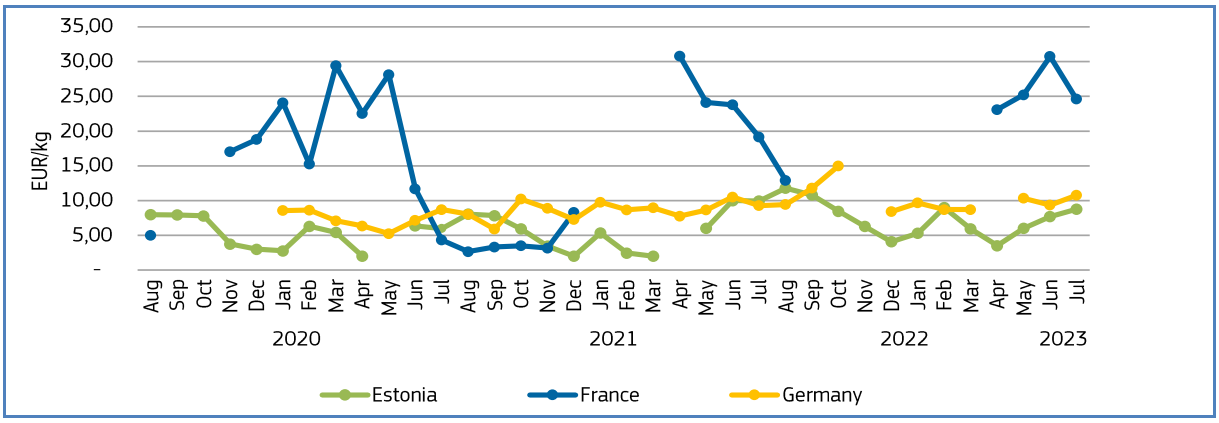
In **Germany** over the past 36 months, there were no registered first sales of sea trout from August to December 2020, November 2021 and April 2023. In the reporting period the highest first-sales value and volume were recorded in February 2023, when 970 kg were sold for about EUR 8.400. Generally, first sales were higher in the winter when the fish is mostly caught in the Baltic Sea.

Figure 32. **FIRST SALES: COMPOSITION OF "SALMONIDS" (ERS LEVEL) IN GERMANY IN VALUE AND VOLUME, JULY 2023**



Price trend

Figure 33. **SEA TROUT: FIRST-SALES PRICES IN SELECTED COUNTRIES, AUGUST 2020 – JULY 2023**



Over the 36-month observation period (August 2020 – July 2023), the weighted average first-sales price of sea trout in **Germany** was 8,49 EUR/kg, 4% higher than **Estonia** (8,15 EUR/kg), and 22% above the average price in **France** (6,97 EUR/kg). There were no registered first sales of sea trout in Germany in the period August 2020-February 2021.

In **Estonia** in July 2023, the average first-sales price of sea trout (8,76 EUR/kg) decreased by 12% compared to July 2022 and increased by 47% compared to July 2021. The lowest price in the past 36 months was 2,00 EUR/kg for less than 10 kg recorded in April and December 2021, as well as in March 2022. The highest price at 11,79 EUR/kg for 51 kg was recorded in August 2022.

In **France** in July 2023, the average first-sales price of sea trout was 24,62 EUR/kg, 29% and 472% up over July 2022 and 2021 respectively. The lowest price in the past 36 months was 2,64 EUR/kg for 3,5 tonnes recorded in August 2021. The highest price of 30,81 EUR/kg for about 70 kg was recorded in April 2022.

In **Germany** in July 2023, the average first-sales price of sea trout was 10,76 EUR/kg. That was 16% more than the first sales price in July 2022 and 24% higher than in July 2021. The lowest average price from March 2021 to July 2023. was recorded in May 2021 at 5,25 EUR/kg for 205 kg. The highest average price of 15,00 EUR/kg for 18 kg was recorded in October 2022.

2. Extra-EU imports

The weekly extra-EU import prices (weighted average values per week, in EUR per kg) for nine different species are examined every month. The three most relevant species in terms of value and volume remain consistent: fresh whole Atlantic salmon from Norway, frozen Alaska pollock fillets from China, and frozen tropical shrimp (*Penaeus* spp.) from Ecuador. The other six species change each month; three are chosen from the commodity group of the month, and three are randomly selected. The commodity group for this month is "salmonids"[27].

Data analysed in the section "Extra-EU imports" are extracted from EUMOFA, as collected from the European Commission[28].

Table 22. **EVOLUTION OF WEEKLY PRICE AND VOLUME OF THE THREE MOST RELEVANT FISHERIES AND AQUACULTURE PRODUCTS IMPORTED INTO THE EU**

Extra-EU Imports		Week 34/2023	Preceding 4-week average	Week 34/2022	Notes
Fresh whole **Atlantic salmon** imported from **Norway** (*Salmo salar*, CN code 03021400)	**Price (EUR/kg)**	6,51	6,88 (-5%)	6,14 (+6%)	From weeks 01/2023 to 34/2023 prices have been fluctuating and showing a decreasing trend. In the period analysed prices show seasonality with the highest peaks occurring between weeks 10 and 18. Price ranged between 11,28 EUR/kg (week 16/2022) and 4,32 EUR/kg (week 44/2020).
	Volume (tonnes)	17.589	14.677 (+20%)	17.847 (-1%)	Volumes show strong fluctuation with values ranging between 5.672 tonnes (week 15/2022) and 19.497 tonnes (week 35/2022). Supply is seasonal with peaks occurring most often in weeks 35/37, 40/42 and 49/50. Lowest peak seems to occur in weeks 13/15 and 51/52.
Frozen **Alaska pollock** fillets imported from **China** (*Theragra chalcogramma*, CN code 03047500)	**Price (EUR/kg)**	2,71	2,86 (-5%)	3,77 (-28%)	Between weeks 01/2023 and 34/2023 prices showed some fluctuations and following a decreasing trend. The minimum price of 1,84 EUR/kg over the period analysed was registered in week 48/2022 with maximum value of 4,03 EUR/kg in week 41/2022.
	Volume (tonnes)	2.230	1.501 (+49%)	3.024 (-26%)	Weekly volumes over the last three years ranged between 843 tonnes (week 17/ 2022) to 6.758 tonnes (week 48/2022). Supply shows strong fluctuations but does not seem to follow a clear seasonality.
Frozen **tropical shrimp** imported from **Ecuador** (genus *Penaeus*, CN code 03061792)	**Price (EUR/kg)**	5,09	5,06 (0%)	6,28 (-19%)	From week 01/2023 and week 34/2023 prices fluctuated slightly while they showed an increasing trend over the past three years. Prices fluctuated strongly between 4,27 EUR/kg (week 38/2020) to 7,19 EUR/kg (week 41/2022).
	Volume (tonnes)	3.972	4.163 (-5%)	2.781 (+43%)	In the period analysed volumes showed high fluctuations, with minimum 891 tonnes (week 09/2023) and maximum 4.925 tonnes (week 33/2021). Peaks in supply seem to occur most often between weeks 14/17, 20/22, 30/33 and 45/46.

[27] The featured species of the commodity group of the month are frozen Atlantic and Danube salmon from Chile, frozen fillets of Pacific salmon, Atlantic salmon and Danube salmon from Norway and prepared or preserved salmon from United States. The three randomly selected species this month are prepared or preserved herring from Norway, frozen fillets of tilapia from China and frozen mussles, even in shell from New Zealand .
[28] Last update: 18.9.2023

Figure 34. **IMPORT PRICE OF FRESH AND WHOLE ATLANTIC SALMON FROM NORWAY, 2020 – 2023**

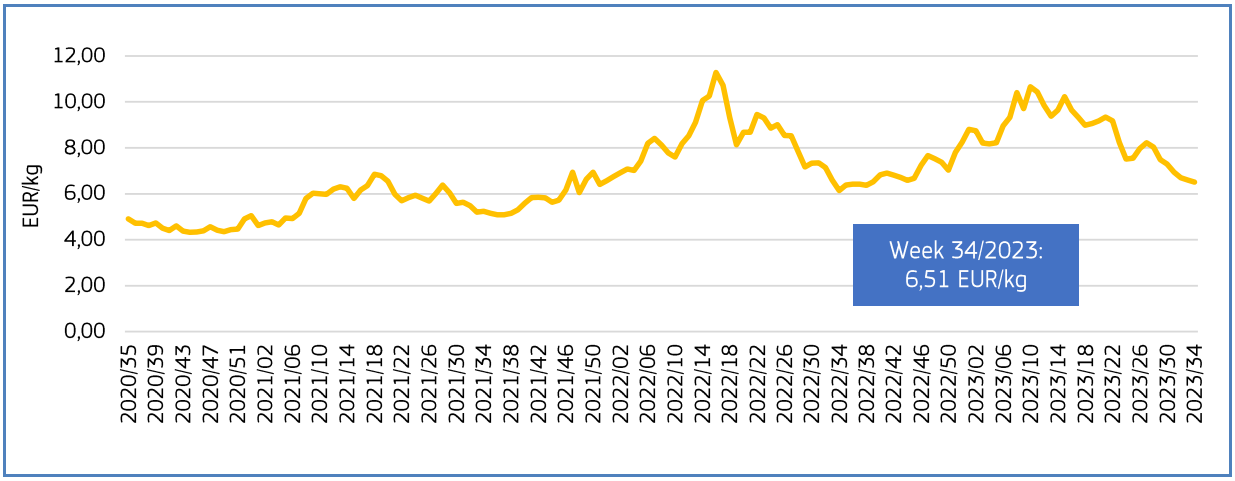


Figure 35. **IMPORT PRICE OF FROZEN ALASKA POLLOCK FILLETS FROM CHINA, 2020 – 2023**

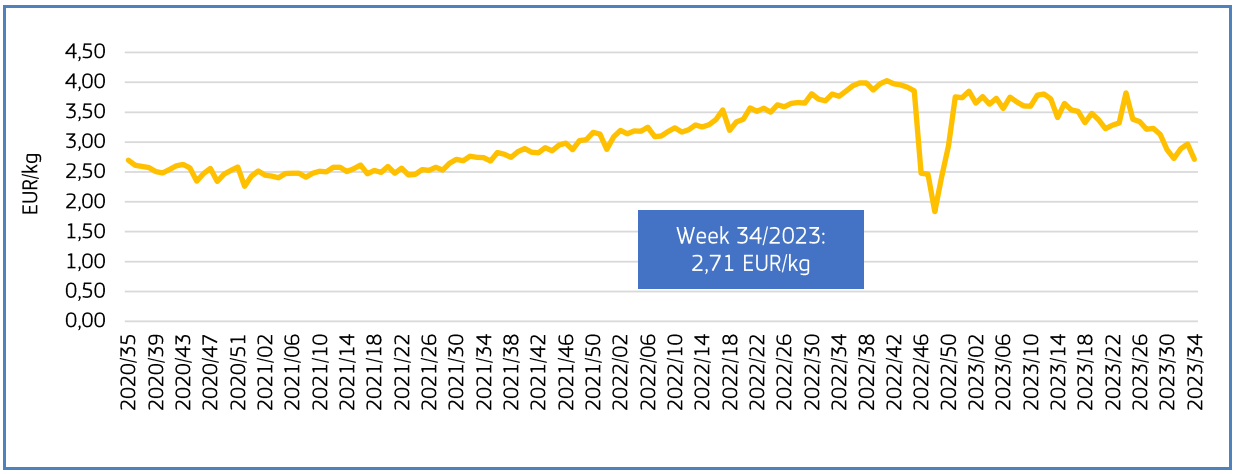


Figure 36. **IMPORT PRICE OF FROZEN TROPICAL SHRIMP FROM ECUADOR, 2020 – 2023**

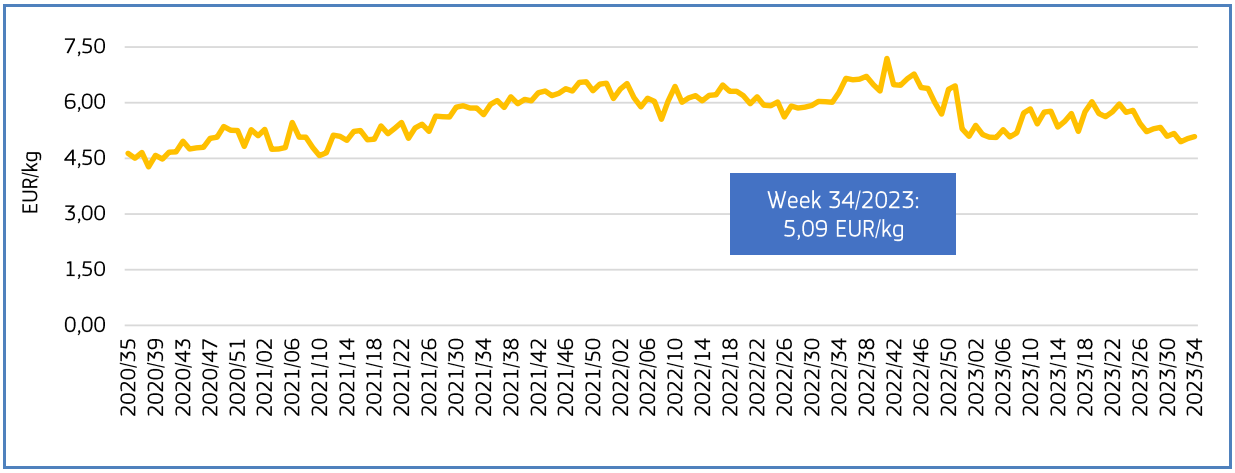


Table 23. **EVOLUTION OF WEEKLY PRICE AND VOLUME OF THIS MONTH'S THREE FEATURED COMMODITY PRODUCTS IMPORTED INTO THE EU**

Extra-EU Imports		**Week 34/2023**	**Preceding 4-week average**	**Week 34/2022**	**Notes**
Frozen Atlantic **salmon** and Danube salmon from **Chile** (*Salmo salar, Hucho hucho* CN code 03031300)	**Price (EUR/kg)**	4,22*	6,12 (-31%) **	6,79(-38%) ***	Between weeks 35/2020 and 34/2023 prices followed an increasing trend up to week 38/2022 reaching the maximum price of 8,89 EUR/kg to then start decreasing. The minimum price of 2,00 EUR/kg over the period analysed was recorded in week 01/2021. 42% of the weekly prices were between 5,00 EUR/kg and 7,00 EUR/kg EUR/kg.
	Volume (tonnes)	53*	47 (+12%) **	50 (+6%) ***	Volumes show high fluctuations ranging from 5 tonnes (week 12/2021) to 382 tonnes (week 19/2022). 47% of the weekly supply was less than 50 tonnes. Supply shows strong fluctuations with highest peaks in the period analysed registered in 2022.
Frozen fillets of Pacific **salmon**, Atlantic salmon and Danube salmon from **Norway** (*Oncorhynchus nerka, Oncorhynchus gorbuscha, Oncorhynchus keta, Oncorhynchus tschawytscha, Oncorhynchus kisutch, Oncorhynchus masou and Oncorhynchus rhodurus, Salmo salar, Hucho huco* CN code 03048100)	**Price (EUR/kg)**	13,11	12,86 (+2%)	12,65 (+4%)	Between weeks 35/2020 and 34/2023 prices showed strong fluctuations following an increasing trend. Prices ranged from 7,47 EUR/kg (week 14/ 2021) to 14,64 EUR/kg (week 14/2023). 39% of the weekly prices were higher than 12,00 EUR/kg.
	Volume (tonnes)	417	322 (+30%)	422 (-1%)	Volumes show high fluctuations ranging from 39 tonnes (week 52/2022) to 941 tonnes (week 52/2021). 13% of the weekly supply was more than 600 tonnes. No clear seasonality is registered. However, in 2020 and 2021 highest peaks were registered in week 52 and 51 respectively.
Prepared or preserved **salmon**, whole or in pieces (excl. minced) from **United States** (CN code 16041100)	**Price (EUR/kg)**	6,47*	8,94 (-28%) **	6,29 (+3%) ***	Prices fluctuated strongly in the period analysed ranging between 4,72 EUR/kg (week 38/2020), and 46,44 EUR/kg (week 42/2022). The high fluctuation in prices is directly related to volumes. 44% of the weekly prices were below 8,00 EUR/kg.
	Volume (tonnes)	14*	14 (-1%) **	46 (-69%) ***	Very high fluctuations in supply from 0,34 kg (week 01/2021) to 143 tonnes (week 09/2021). 42% of the weekly supply was lower than 10 tonnes.

*03031300: *Data refers to week 33 2023 (the most recently available). **Data refers to weeks 29, 30, 31, 32 of 2023. ***Data refers to weeks 33 of 2022.*
*16041100: *Data refers to week 32 2023 (the most recently available). **Data refers to weeks 29, 30, 31 of 2023. ***Data refers to weeks 32 of 2022.*

Figure 37. **IMPORT PRICE OF FROZEN ATLANTIC SALMON AND DANUBE SALMON FROM CHILE, 2020 – 2023**

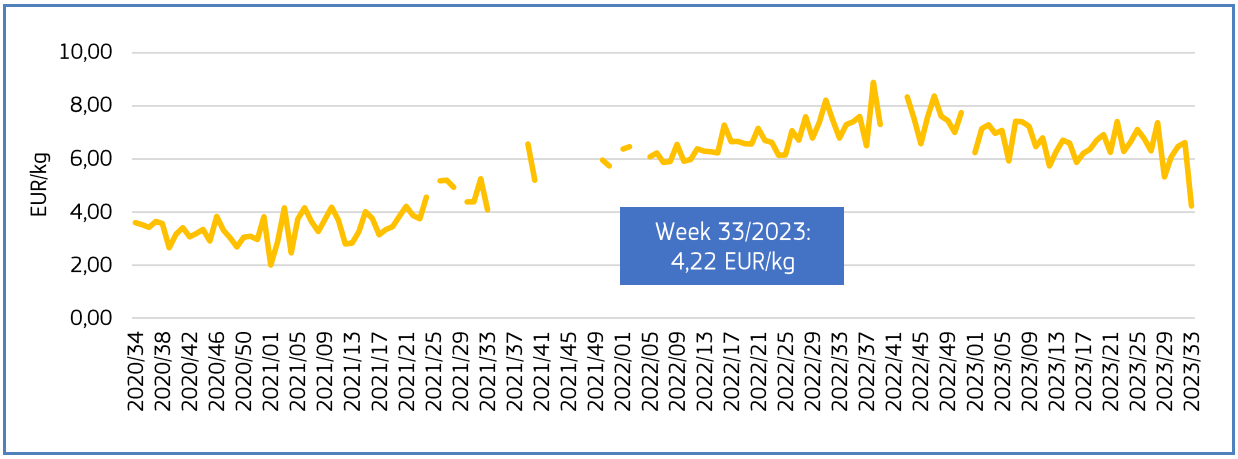


Figure 38. **FROZEN FILLETS OF PACIFIC, ATLANTIC AND DANUBE SALMON FROM NORWAY, 2020 – 2023**

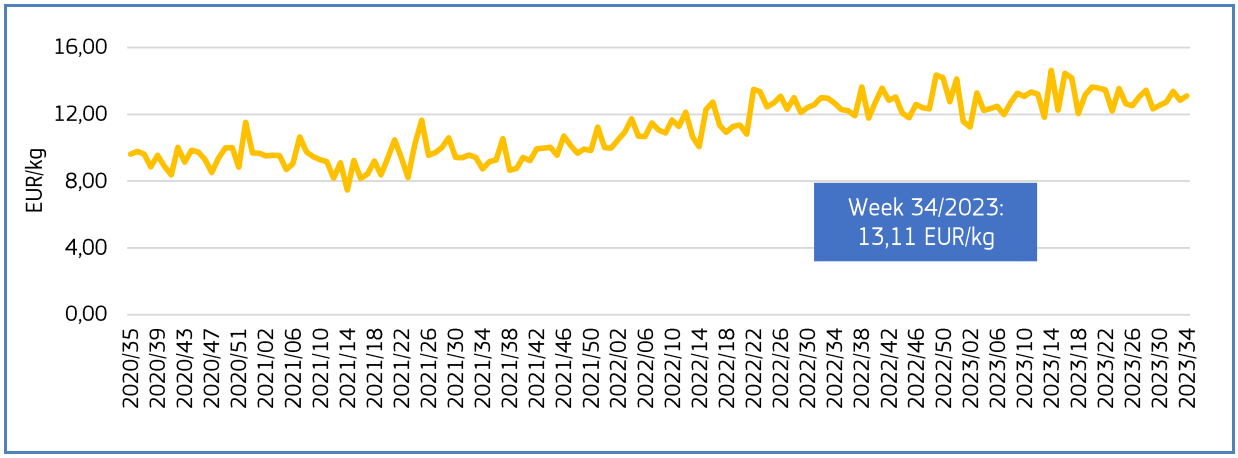
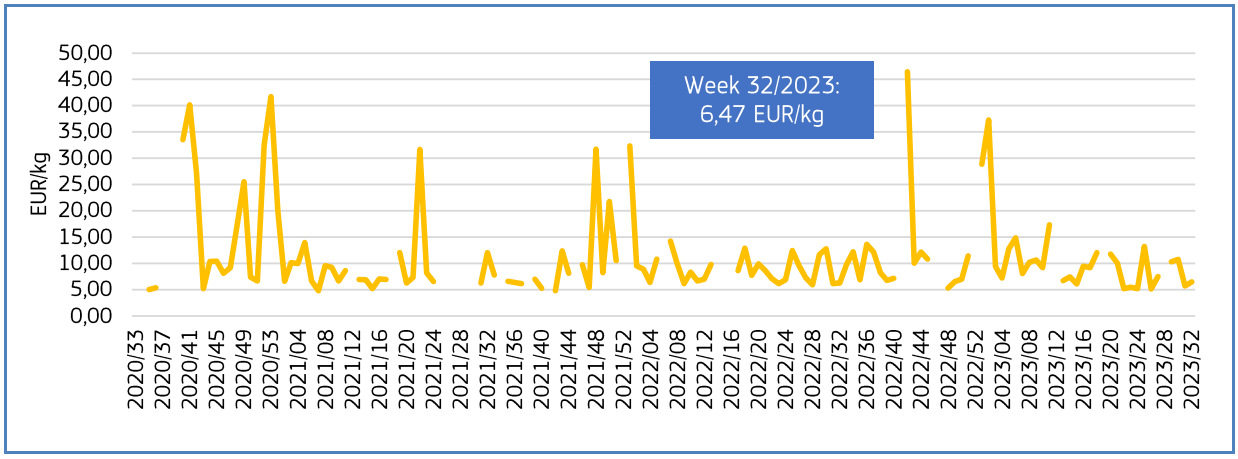


Figure 39. **IMPORT PRICE OF PREPARED OR PRESERVED SALMON FROM UNITED STATES, 2020 – 2023**



Between weeks 01/2023 and 33/2023, the price of frozen **Atlantic** and **Danube salmon** from **Chile** showed a downward trend. The price ranged from 4,22 to 7,43 EUR/kg, and volume highly fluctuated between 18 to 250 tonnes.

Between week 01/2023 and week 34/2023, the price of frozen fillets of **Pacific, Atlantic** and **Danube salmon** from **Norway** fluctuated and increased. The price ranged from 11,24 to 14,64 EUR/kg. Supply fluctuated strongly between 192 tonnes and 663 tonnes.

In 2023, the price of prepared or preserved **salmon** from **United States** showed a downward trend. Price ranged from 5,16 to 37,27 EUR/kg, and volume fluctuated strongly between 4 kg and 112 tonnes.

Table 24. **EVOLUTION OF WEEKLY PRICE AND VOLUME OF EU IMPORTS OF THREE OTHER FISHERIES AND AQUACULTURE PRODUCTS RELEVANT TO THE EU MARKET**

Extra-EU Imports		Week 34/2023	Preceding 4-week average	Week 34/2022	Notes
Herrings prepared or preserved, whole or in pieces from **Norway** (CN code 16041299)	**Price (EUR/kg)**	1,53	1,51 (+2%)	1,51 (+2%)	Between weeks 35/2020 and 34/2023 prices fluctuated between 0,96 EUR/kg (week 48/2020), and 2,67 EUR/kg (week 22/2022). 72% of the weekly prices were between 1,00 EUR/kg and 1,50 EUR/kg.
	Volume (tonnes)	405	305 (+33%)	349 (+16%)	Supply fluctuated greatly ranging from 41 tonnes (week 34/2021) to 1.395 tonnes (week 45/ 2020). Supply seems to increase towards the end of the year with highest peaks registered between weeks 44 and 48. 55% of the weekly supply was less than 400 tonnes.
Frozen fillets of **tilapia** from **China** (*Oreochromis* spp., CN code 03046100)	**Price (EUR/kg)**	2,63	2,65 (-1%)	3,82 (-31%)	In the period analysed prices fluctuated following an increasing trend up to the maximum price of 4,75 EUR/kg in week 27/2022 followed by a decreasing trend. The minimum price recorded of 1,67 EUR/kg was registered in week 49/2020. 41% of the weekly prices were between 2,50 and 3,50 EUR/kg.
	Volume (tonnes)	263	151 (+74%)	587 (-55%)	Volumes showed high fluctuations ranging from 0,340 tonnes (week 25/2021) to 587 tonnes (week 34/2022). Supply does not show specific seasonality while the highest peaks were registered in 2022. 73% of the weekly supply was below 200 tonnes.
Frozen **mussels**, even in shell from **New Zealand** (*Perna* spp., CN code 03073290)	**Price (EUR/kg)**	6,77	7,00 (-3%)	6,41 (+6%)	Between weeks 35/2020 and 34/2023 prices showed fluctuations ranging from 4,49 EUR/kg (week 45/2021) to 8,17 EUR/kg (week 46/2022). 69% of the weekly prices were between 5,00 EUR/kg and 7,00 EUR/kg.
	Volume (tonnes)	51	99 (-48%)	35 (+45%)	Highest peaks in supply over the period assessed were registered in 2023. Volumes showed high fluctuations ranging from 0,38 tonnes (week 52/2020) to 265 tonnes (week 23/2023). 42% of the weekly supply was less than 50 tonnes

Figure 40. **IMPORT PRICE OF PREPARED OR PRESERVED HERRING FROM NORWAY, 2020 - 2023**

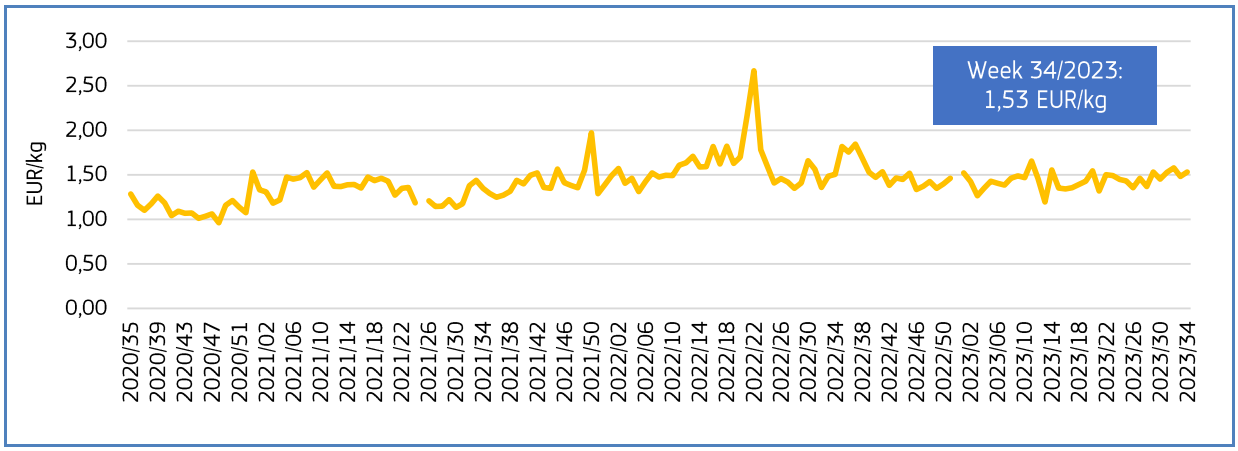


Figure 41. **IMPORT PRICE OF FROZEN FILLETS OF TILAPIA FROM CHINA, 2020 - 2023**

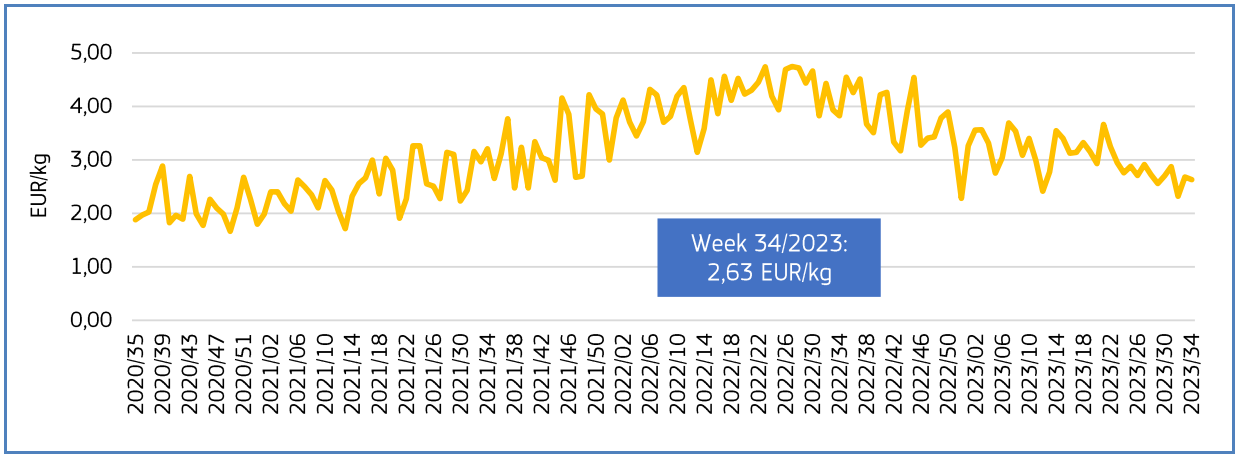
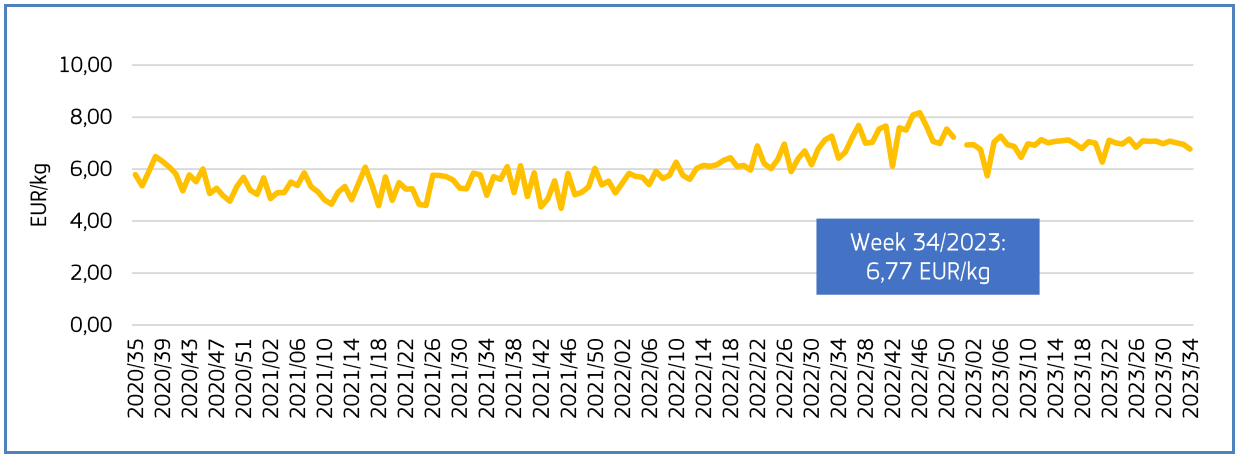


Figure 42. **IMPORT PRICE OF FROZEN MUSSELS, EVEN IN SHELL FROM NEW ZEALAND, 2020 - 2023**



Between weeks 01/2023 and 34/2023, the price of prepared or preserved **herring** from **Norway** showed a stable trend. The price ranged from 1,19 to 1,58 EUR/kg, and volume highly fluctuated following a downward trend between 167 to 417 tonnes.

Between week 01/2023 and week 34/2023, the price of frozen fillets of **tilapia** from **China** decreased ranging from 2,32 to 3,69 EUR/kg. Supply fluctuated strongly between 45 tonnes and 355 tonnes.

In 2023, price of frozen **mussels** from **New Zealand** showed a slight downward trend. Price ranged from 5,75 to 7,27 EUR/kg, and volume fluctuated strongly between 9 and 266 tonnes.

3. Consumption

3.1. HOUSEHOLD CONSUMPTION IN THE EU

Data analysed in the section "*Consumption*" are extracted from EUMOFA, as collected from Europanel[29].

In July 2023 compared with July 2022, household consumption of fresh fisheries and aquaculture products decreased in France, Hungary, and Italy in both volume and value, while in Germany, Portugal, and Sweden an increase was observed in both parameters. Mussel *Mytilus spp.* (118% of volume and 162% of value) and other freshwater fish (156% of volume and 130% of value) were the main species responsible for the increase observed in Germany, while in Sweden mainly pike-perch (464% of volume and 266% of value) and herring (107% of volume and 168% of value) contributed to the increase. The highest decrease was detected in Hungary due to lower consumption of other unspecified products (35% of volume and 29% of value).

Table 25. **JULY OVERVIEW OF THE HOUSEHOLD CONSUMPTION OF FRESH FISHERY AND AQUACULTURE PRODUCTS IN THE REPORTING COUNTRIES (volume in tonnes and value in million EUR)**

Country	Per capita apparent consumption 2021* (live weight equivalent, LWE) kg/capita/year	July 2021		July 2022		March 2023		July 2023		Change from July 2022 to July 2023	
		Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Denmark	20,00-25,00	961	17,63	962	17,62	838	17,25	885	18,06	8% ▼	3% ▲
France	32,18	17.788	199,15	15.891	189,08	14.119	186,07	13.978	182,38	12% ▼	4% ▼
Germany	12,51	5.983	89,43	3.810	66,19	4.088	76,28	4.398	79,39	15% ▲	20% ▲
Hungary	6,55	237	1,50	240	1,76	154	1,54	155	1,24	35% ▼	29% ▼
Ireland	14,56	893	13,77	840	14,02	1.035	19,30	835	15,14	1% ▼	8% ▲
Italy	30,15	22.047	238,10	20.763	226,82	21.359	253,99	17.876	213,62	14% ▼	6% ▼
Netherland	21,08	3.266	47,00	2.713	46,37	2.949	60,37	2.672	48,11	2% ▼	4% ▲
Poland	14,26	2.734	19,33	2.344	18,43	2.475	23,34	2.309	24,19	1% ▼	31% ▲
Portugal	56,52	6.519	43,65	5.445	39,61	5.324	38,94	5.635	41,54	3% ▲	5% ▲
Spain	42,98	46.648	392,20	39.721	358,04	38.941	386,43	39.128	384,24	1% ▼	7% ▲
Sweden	22,71	795	10,76	442	7,74	597	9,27	504	8,42	14% ▲	9% ▲

** EUMOFA estimates. The supply balance is built on the basis of the equation catches + aquaculture production + imports – exports = apparent consumption and is calculated in live weight equivalent. The methodologies for estimating apparent consumption at EU and Member State levels are different, the first based on data and estimates, the latter also requiring the adjustment of abnormal trends due to the higher impact of stock changes. Where EUMOFA estimations on per capita apparent consumption continued to show high annual volatility even with these adjustments, national contact points were contacted to confirm these estimates or to provide their own figures. For the Netherlands and Poland, sources are the Dutch Fish Marketing Board and Institute of Agricultural and Food Economics - National Research Institute, respectively. The estimate for Denmark was provided by the University of Copenhagen.*

Over the past three years, the average household consumption of fresh fisheries and aquaculture products in July has been below the annual average in both volume and value in all countries except Portugal, where volume increased by 5% and value by 4%.

The most recent weekly consumption data (up to **week 39 of 2023**) are available on the EUMOFA website and can be accessed **here**.

[29] Last update: 23.09.2023.

3.2. Dab

Habitat: Common dab (*Limanda limanda*) is a demersal marine fish that lives mainly in sandy bottoms from a few meters to about 100 m. It feeds mainly on crustaceans and small fishes[30].
Catch area: It is mainly found in the Northeast Atlantic Ocean: from the Bay of Biscay to Iceland and Norway, the Barents and White seas, and also in the Baltic Sea[31].
Producing countries in the EU: The Netherlands, Denmark and Germany[32].
Production method: Caught.
Main consumers in the EU: the Netherlands, Denmark, Germany, France and Belgium[33].
Presentation: Whole, filleted.
Preservation: Fresh, dried or salted, smoked and frozen[34].
Means of preparation: Steamed, fried, baked and boiled.

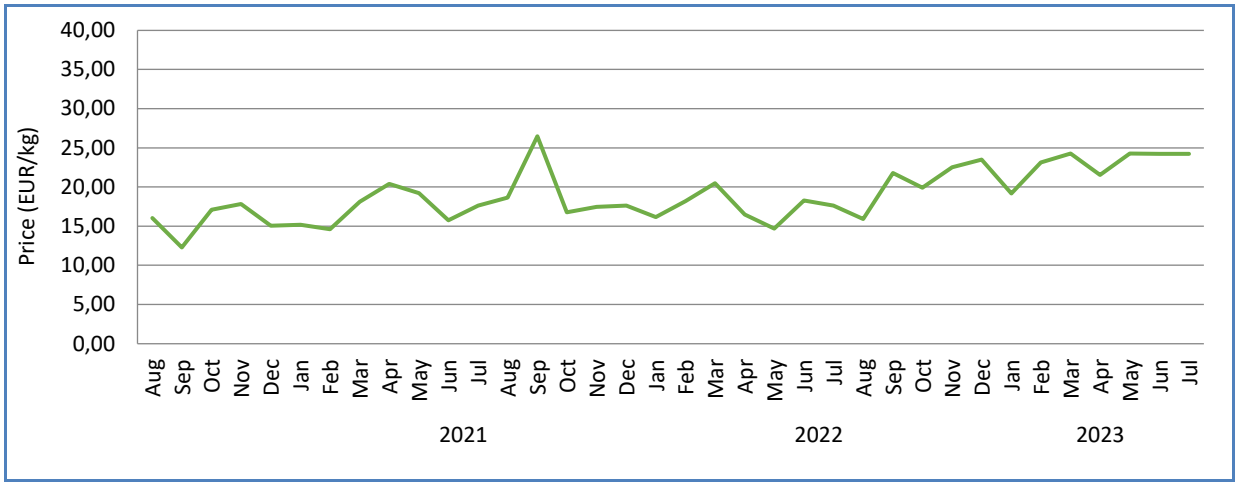
3.2.1. Overview of household consumption in Denmark

According to estimates made by the University of Copenhagen for the latest years, per capita apparent consumption in Denmark has been between 20,00-25,00 kg LWE, which is in line with the EU average of 23,28 kg LWE.

Over the past three years, household consumption of fresh dab in Denmark was 128 tonnes, which is an average of 43 tonnes/year. However, in 2023 the volume of consumption was 89% lower than the same period in 2020, while prices have increased by 43%. When compared to the previous year, the volume of consumption has decreased by 83%, while price increased by 32%.

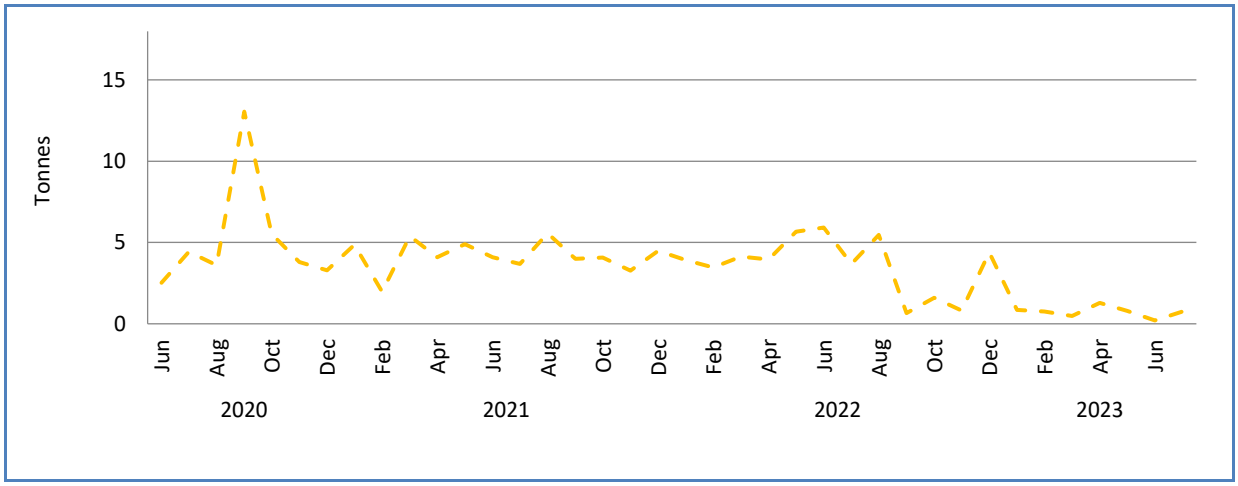
We have covered **dab** in previous *Monthly Highlights*:
Consumption: Denmark 5/2017.

Figure 43. **PRICES OF FRESH DAB PURCHASED BY DANISH HOUSEHOLDS**



[30] https://www.fishbase.se/summary/Limanda-limanda.html
[31] https://www.fishbase.se/summary/Limanda-limanda.html
[32] https://www.eumofa.eu/documents/20178/103807/Monthly+Highlights+-+No.+5-2017.pdf
[33] https://www.eumofa.eu/documents/20178/103807/Monthly+Highlights+-+No.+5-2017.pdf
[34] https://www.fishbase.se/summary/Limanda-limanda.html

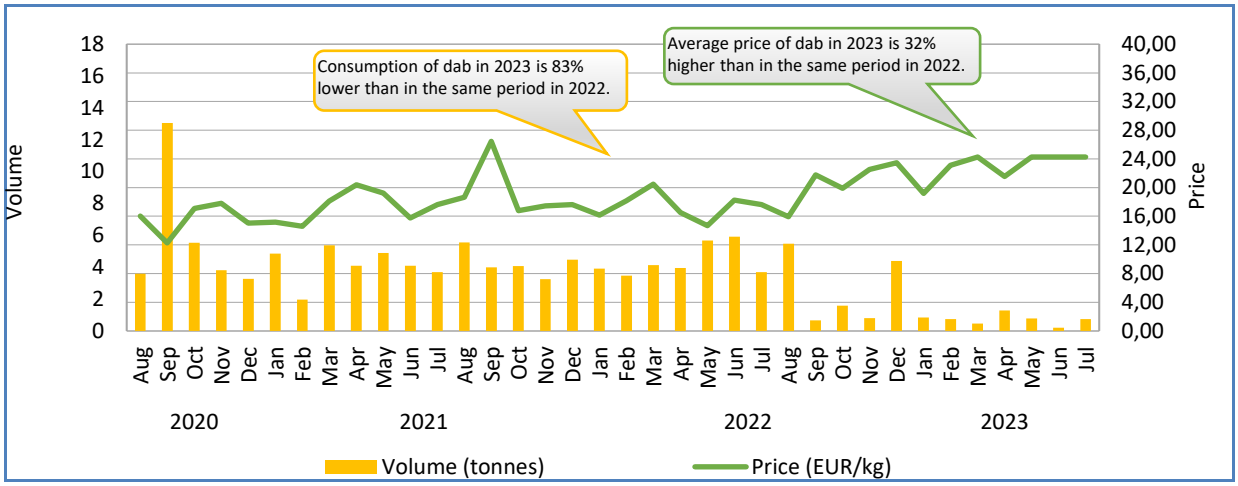
Figure 44. **HOUSEHOLD PURCHASES OF FRESH DAB IN DENMARK**



3.2.2. Household consumption trends in Denmark

Long-term trend (May 2020 to July 2023): Downward trend in volume and upward trend in price.
Yearly average price: 15,86 EUR/kg (2020), 18,16 EUR/kg (2021), 18,79 EUR/kg (2022).
Yearly consumption: 75 tonnes (2020), 50 tonnes (2021), 44 tonnes (2022).
Short-term trend (January to July 2023): Stagnating volume and price.
Price: 22,98 EUR/kg.
Consumption: 5 tonnes.

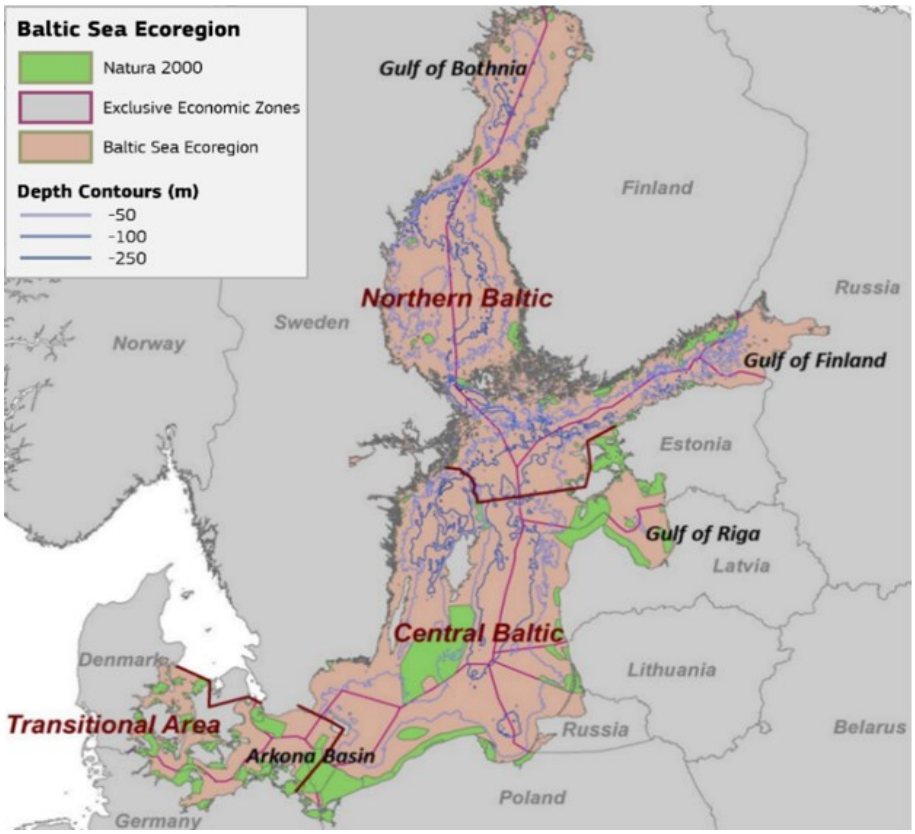
Figure 45. **RETAIL PRICE AND VOLUME OF FRESH DAB PURCHASED BY HOUSEHOLDS IN DENMARK, AUGUST 2020 – JULY 2023**



4. Impact of pollution on fisheries in the Baltic Sea

The Baltic Sea is an arm of the North Atlantic Ocean and is one of the world's largest brackish waters, covering 420.000 km^2 with a coastline of about 8.000 km[35]. The Baltic Sea borders nine countries: Denmark, Sweden, Finland, Russia, Estonia, Latvia, Lithuania, Poland and Germany. The average depth in the Baltic Sea is around 60 metres and the sea is characterised by strong temperature and salinity gradients. The Baltic Sea is relatively isolated and has only a narrow connection to the North Sea through the Sound, Belt Sea, Skagerrak and Kattegat. Due to its isolation, it takes approximately 30 years for the water in the Baltic Sea to be completely exchanged[36].

The salinity of the Baltic Sea is low compared to the world's oceans due to the inflow of fresh water from rivers in surrounding countries and its shallow average depth. Saline water mainly enters the Baltic Sea through winter storms, which contribute to better oxygen conditions in the deeper regions. The biodiversity of the Baltic Sea is quite low, partly because the brackish water creates physiological stress for marine species, but also because the sea is geologically young[37].



Source: ICES. The Baltic Sea ecoregion, showing exclusive economic zones and larger Natura 2000 sites.

Over the last decades, important commercial fish stocks in the Baltic Sea, such as cod and herring, have declined due to high fishing pressure and various environmental factors such as eutrophication, climate change and non-indigenous species that outcompete native species. The management of the most commercially important species (herring, sprat and cod) is based on total allowable catches (TACs) and a quota system (sharing of TACs between EU Member States), as well as other effort-regulating measures such as technical conservation measures, effort regulation and a management plan[38]. Various measures have been taken to preserve fish stocks by both the European Union and the Helsinki Commission (HELCOM). These are measures that deal with, among other things, a reduction in TAC, a ban on fisheries targeting cod and temporal area closures to protect cod spawning.

The Baltic Sea is very sensitive to the environmental impacts of human activities due to its special geographical, climatological and oceanographic characteristics[39]. A strategic programme of measures and actions to achieve good environmental status of the ocean, and which ultimately should lead to a healthy state of the Baltic Sea, was adopted in

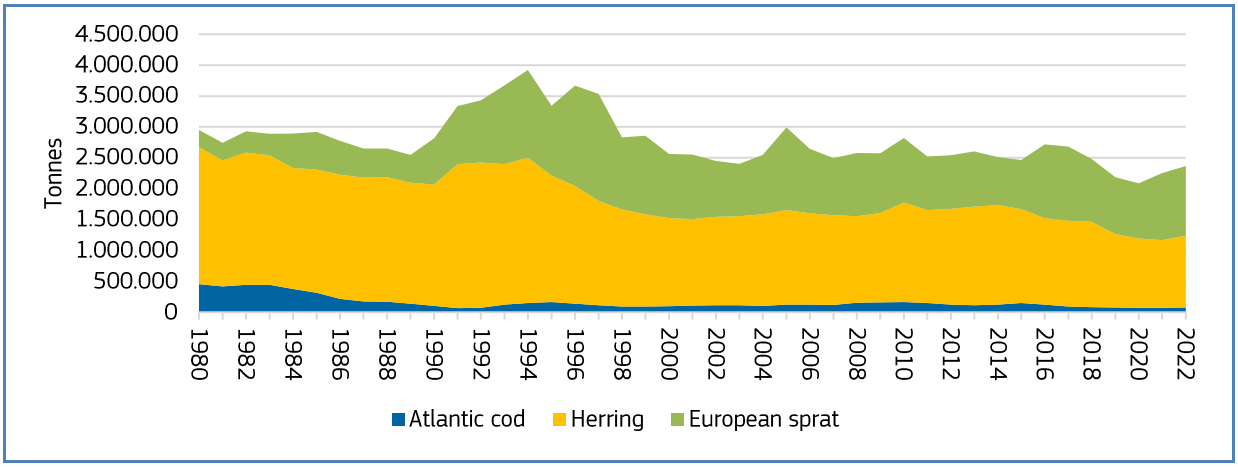
[35] ICES. (2022). *Baltic Sea ecoregion – ecosystem overview*. ices-library.figshare.com
[36] Mutton, A.F.A., Couper, A.D. (2023). *Baltic Sea*. https://www.britannica.com/place/Baltic-Sea
[37] HELCOM. (2023). *Biodiversity – thematic assessment 2016-2021*. helcom.fi
[38] European Commission. (2022). *TACs and quotas 2023*. https://oceans-and-fisheries.ec.europa.eu/fisheries/rules/fishing-quotas/tacs-and-quotas-2023_en
[39] HELCOM. (2023). The nature of the Baltic Sea. iwlearn.net

2007 by HELCOM contracting parties[40]. The Baltic Sea Action Plan (BSAP) was updated in 2021. Since its adoption in 2007, the BSAP has resulted in several environmental improvements.

4.1. Fisheries in the Baltic Sea ecoregion

Around 230 fish species have been recorded in the Baltic Sea (including the Kattegat and the Sound), of which 90 reproduce regularly in the Baltic Sea and the Sound[41]. Thirty to forty freshwater fish species occur in the inner Baltic Sea and coastal areas. The composition and diversity of the open-sea fish community is structured along the salinity gradient, with a higher diversity in the west compared to the east and north. Up to 80% of the biomass in the open-sea fish communities used to be shared between three species: cod, herring and sprat, with herring and sprat dominating the open-sea pelagic ecosystem. In recent years the size of the cod stocks has decreased substantially.

Figure 46. **ESTIMATED SPAWNING STOCK BIOMASS OF ATLANTIC COD, ATLANTIC HERRING AND EUROPEAN SPRAT IN THE BALTIC SEA (SDs 22-32) (volume in tonnes)**



Source: ICES.

Coastal fish communities often show a greater species diversity than open-sea fish communities, due to the addition of freshwater species (perch, pikeperch, pike, whitefish and cyprinids) and the introduced round goby[42]. Changes in the species composition of coastal fish communities in past decades are linked to increasing water temperature and decreasing salinity.

In 2021, total catches by EU MS in the Baltic Sea ecoregion (including the Transition Area – Divisions 27.3.B.23 and 27.3.C.22) amounted to 502.032 tonnes LWE. European sprat and herring were the principal species targeted by commercial fisheries, which together made up about 88% of the total catch in 2021[43]. Other fish species with local economic importance are cod, salmon, plaice, dab, brill, turbot, flounder, pikeperch, pike, perch, vendace, whitefish, eel and sea trout. In 2021, flounder made up 3% of total catches and sandeel (both great and small sandeel) accounted for 1% of total catches.

Table 26. **TOTAL CATCHES BY EU MS IN THE BALTIC SEA ECOREGION (SDs 27.3.B, 27.3.C AND 27.3.D) BY SPECIES (volume in tonnes LWE)**

Species	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
European sprat	220.383	249.424	223.944	218.217	211.655	243.134	262.712	271.150	214.694	227.577
Herring	240.966	255.683	274.241	321.215	355.853	335.069	364.283	304.040	261.364	216.071
European flounder	14.585	20.182	19.637	15.893	19.835	15.234	19.734	20.330	18.520	16.974
European smelt	2.519	4.047	2.597	2.533	2.074	2.656	4.233	6.215	7.065	4.857
European perch	4.925	5.041	6.017	5.367	5.700	5.225	4.244	4.474	3.457	3.669

[40] HELCOM. (2021). *Baltic Sea action plan.* helcom.fi
[41] ICES. (2022). *Baltic Sea ecoregion – ecosystem overview.* ices-library.figshare.com
[42] ICES. (2023). *Baltic fisheries assessment working group (WGBFAS).* ices-library.figshare.com
[43] Eurostat statistics.

Small sandeel			0,04	0,3	0,1	378	585	576	5.639	3.270
Blue mussel	11.209	13.250	16.256	22.141	24.869	22.007	21.376	17.979	7.893	3.062
Great sandeel										2.782
Atlantic cod	63.848	41.175	39.421	47.465	37.006	26.788	18.465	13.286	3.856	1.503
Other	23.794	25.210	26.173	27.062	28.040	21.881	23.926	25.733	24.288	22.269
Total	**582.228**	**614.012**	**608.285**	**659.894**	**685.033**	**672.372**	**719.560**	**663.783**	**546.777**	**502.032**

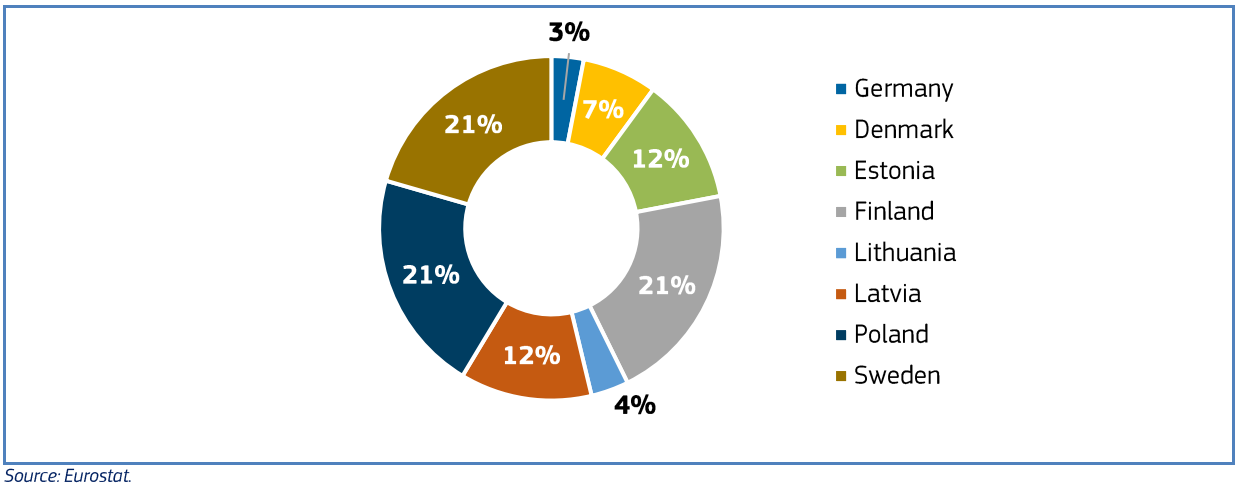
*Source: Eurostat. * Totals might not align due to rounding.*

Of EU MS, Finland caught the biggest share of herring, accounting for 36% of EU catches in 2021[44]. Sweden and Estonia followed behind with shares of 22% and 13%, respectively. Compared to 2020, EU MS reduced their combined catches by 17%. Decreased catches were mainly related to reduced TAC and catches of the central Baltic herring stock (-25% caught).

In 2021, European sprat was mainly caught by Poland (29%), followed by Sweden (19%) and Latvia (13%). Together, EU catches increased by 6% when compared to 2020, with Poland, Germany and Finland contributing most to the volume increase.

EU fisheries for cod, herring and sprat in the Baltic Sea are regulated by a multiannual plan (MAP)[45] as well as the Common Fisheries Policy (CFP)[46] and specific regulations on the Baltic Sea[47]. TACs for these stocks are shared with Russia who does not have a MAP in place for any of the stocks.

Figure 47. **CATCHES OF HERRING AND SPRAT BY EU MS IN 2021**



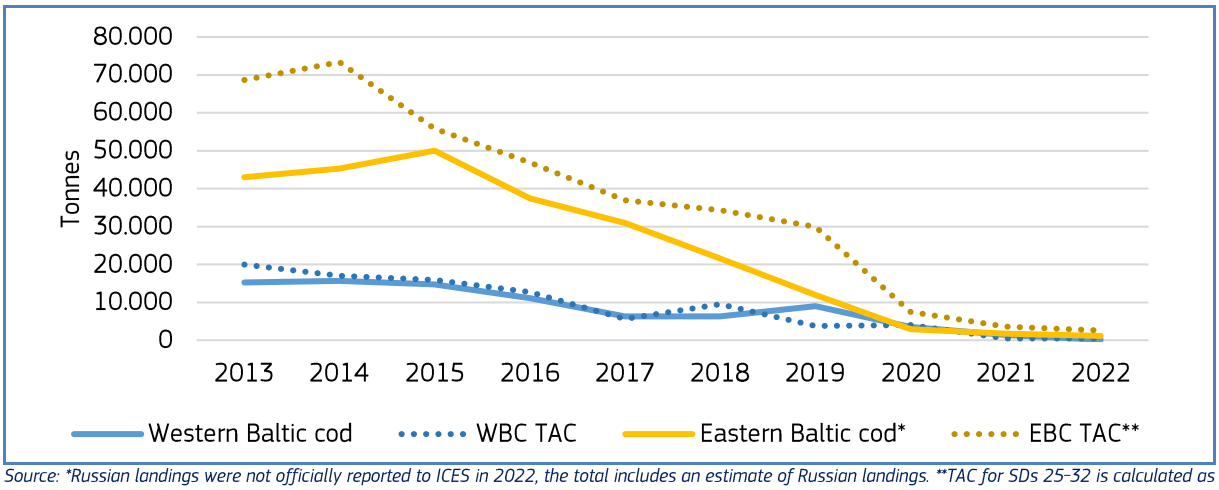
Source: Eurostat.

[44] Eurostat statistics.
[45] Regulation (EU) 2016/1139. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016R1139
[46] Regulation (EU) No 1380/2013. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32013R1380
[47] COUNCIL REGULATION (EU) 2022/2090: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32022R2090

Cod fishery in the Baltic Sea

There are two biologically distinct cod stocks in the Baltic Sea with two distinct management areas – the one for western Baltic cod located in subdivisions (SDs) 22-24 and the one for eastern Baltic cod located in SDs 25-32[48]. The two stocks co-occur in SD 24, which poses challenges for fisheries management. The stock in the western Baltic has historically been much smaller than the eastern Baltic stock.

Figure 48. **TOTAL EU AND RUSSIAN CATCHES OF ATLANTIC COD IN SDS 22-32 AND TACS SET FOR WESTERN AND EASTERN BALTIC COD (volume in tonnes)**



*Source: *Russian landings were not officially reported to ICES in 2022, the total includes an estimate of Russian landings. **TAC for SDs 25-32 is calculated as EU + Russian autonomous quotas (information on Russian quota in 2022).*

The eastern Baltic cod has traditionally been caught in directed fisheries with demersal trawls, semi-pelagic trawls and gillnets[49]. This is also true for western Baltic cod, except in SD 23 where there has been a trawling ban in place since 1932. Thus, in SD 23 most commercial catches of western Baltic cod come from gillnetters. Over the past decade, recreational fishing has accounted for a large part of the total catch (~30%) of western Baltic cod, reaching an all-time high in 2022 with 68%[48]. The increased share of recreational fishing was mainly caused by the EU's prohibition of all commercial fishing targeting cod in SDs 24-32 since the second half of 2019 and also in SD 22-23 since 2022, due to the poor condition of the cod stocks. Recreational fisheries of western Baltic cod will be prohibited in 2024 and have been prohibited for eastern Baltic cod since 2020. Bycatch of cod from pelagic and demersal fisheries is still allowed and regulated by total allowable catches (TACs). Both stocks have experienced a high degree of fishing mortality over many years. However, since the ban on targeted fisheries, both stocks are experiencing the lowest fishing mortality in recorded history (since the 1950s). Despite the low fishing mortality, both stocks are still declining due to biological changes in the stock, including poor nutritional condition, reduced growth and a high natural mortality rate[50].

Since 2015 there has been a landing obligation[51] in place for cod in the Baltic Sea and there is a minimum conservation size (MCRS) of 35 cm[50]. Cod below MCRS cannot be sold for human consumption and must be landed as a separate fraction of the catch. In 2022, total EU landings of cod for human consumption in SDs 22-32 amounted to 1.281 tonnes. Most of the eastern Baltic cod landings in 2020-2022 were taken by Russia, as the closure of targeted cod fisheries applies only to the EU countries.

The eastern Baltic cod stock is in danger of collapse and is estimated not to recover above B_{lim}[52] in the medium term even with no fishing[50]. The low growth, poor condition and high natural mortality of cod are related to changes in the ecosystem, which include: poor oxygen conditions that can affect cod directly via altering metabolism and via shortage of benthic prey, and additionally affect the survival of offspring; low availability of fish prey in the main distribution area of cod, as sprat and herring are distributed further north with little overlap with cod, especially in autumn; high infestation with parasites,

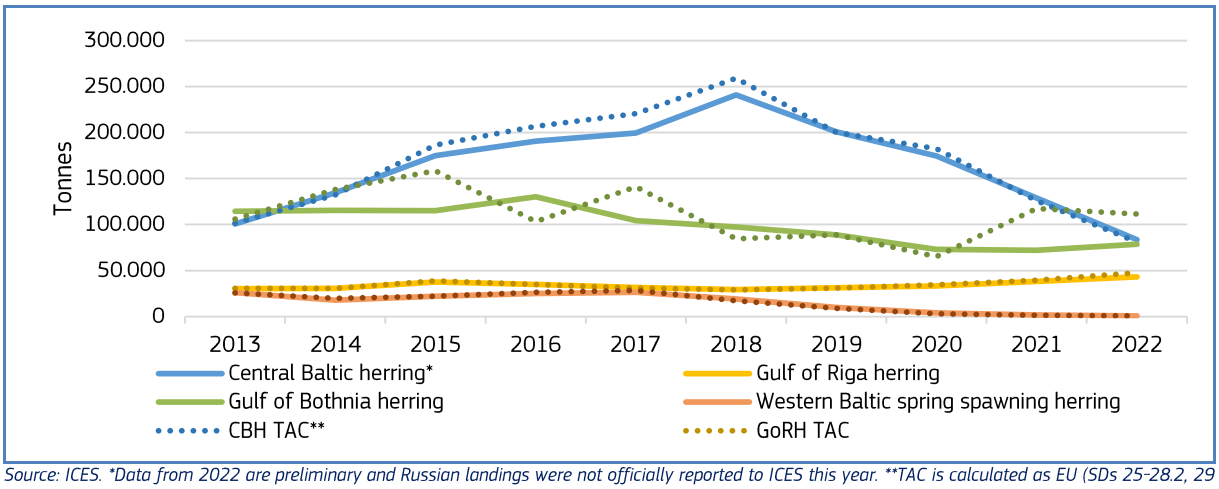
[48] ICES. (2023). *Baltic fisheries assessment working group (WGBFAS).* ices-library.figshare.com
[49] ICES. (2019). *Stock annex: cod (Gadus morhua) in subdivisions 24-32, eastern Baltic stock.* ices-library.figshare.com
[50] ICES. (2023). *Baltic fisheries assessment working group (WGBFAS).* ices-library.figshare.com
[51] European Commission. (2023). *Discarding in fisheries.* oceans-and-fisheries.ec.europa.eu
[52] Reference point to indicate stock size below which the stock is in danger of collapse.

which is related to increased abundance of grey seals. The western Baltic cod stock has also been below B_{lim} for many years and the biomass index shows a decreasing trend.[53] There are conflicting signals for the stock development, the reasons of which are not well understood, notably a seemingly high unaccounted natural mortality that cannot be quantified,

Herring fishery in the Baltic Sea

There are four herring stocks in the Baltic Sea: central Baltic herring, Gulf of Riga (SD 28.1) herring, Gulf of Bothnia (SDs 30 & 31) herring and western Baltic spring spawning herring (SDs 22-24)[50]. The central Baltic herring stock is the largest and located in SDs 25-28.2, 29 & 32. Both autumn and spring spawning components make up this stock, some of which are genetically distinct. The spawning stock biomass (SSB) has declined since the 1970s and is presently at a low level. Individuals of the southern components have declined over the last years and the northern components, with relatively smaller individuals, have dominated the landings. Pelagic stocks in SDs 25-29 & 32 are mainly taken in mixed pelagic trawl fisheries for herring and sprat[54]. Some fisheries that target herring for human consumption also use coastal gill nets, trap nets and purse-seines. Over the past decade, Sweden (26% average), Poland (21%), Finland (18%) and Russia (14%) have accounted for the largest shares of the central Baltic herring fishery.

Figure 49. **TOTAL EU AND RUSSIAN CATCHES OF ATLANTIC HERRING IN SDS 22-32 AND TACS SET FOR CENTRAL BALTIC, GULF OF RIGA, GULF OF BOTHNIA AND WESTERN BALTIC HERRING (volume in tonnes)**



*Source: ICES. *Data from 2022 are preliminary and Russian landings were not officially reported to ICES this year. **TAC is calculated as EU (SDs 25-28.2, 29 & 32) + Russian autonomous quotas.*

The SSB of the Gulf of Riga herring stock started to increase in the late 1980s, going from a range of 40.000-60.000 tonnes to 70.000-150.000 tonnes in recent years50. Hydro-meteorological conditions greatly influence the year class abundance and mild winters in the second half of the 1990s supported the increase in biomass. Only Latvia and Estonia take part in the Gulf of Riga herring fishery, with Latvia accounting for the largest share over the past decade (56% in 2022)[55]. Herring in this area is usually caught with trawl or trap nets. During the peak spawning time from May-June trawling is banned in the Gulf of Riga (Estonia has implemented an additional trawl ban from 15th June to 15th September) and trap nets are used to capture spawning fish exclusively. Latvia relies mostly on the trawl fishery and about 80-85% of the herring comes from this fishery, while in Estonia the trapnet fishery is of greater importance, accounting for around 50% of the catch.

Due to the increased fishing mortality starting in the early 1990s, the SSB of the Gulf of Bothnia herring has had an overall decreasing trend since 1994[56]. In 2021-2022, recruitment was poor and SSB was estimated to be below the threshold for management actions, such as reduced fishing pressure. The decrease in SSB is presumed to be largely a consequence of a change in the food chain, which caused a remarkable decrease in weight at age, deteriorated body condition and even starvation and possible death, especially amongst larger herring. The herring stock in the Gulf of Bothnia is caught using pelagic (single and pair trawling) and demersal trawls as well as trap nets (spawning fishery). The fishery is split between

[53] ICES (2023), Stock assessment of Cod (Gadus morhua) in subdivisions 22–24, western Baltic stock (western Baltic Sea)
[54] ICES. (2023). *Stock annex: Herring (Clupea harengus) in SDs 25-29 & 32, excluding the Gulf of Riga.* ices-library.figshare.com
[55] ICES. (2023). *Stock annex: Herring (Clupea harengus) in SD 28.1.* ices-library.figshare.com
[56] ICES. (2023). *Baltic fisheries assessment working group (WGBFAS).* ices-library.figshare.com

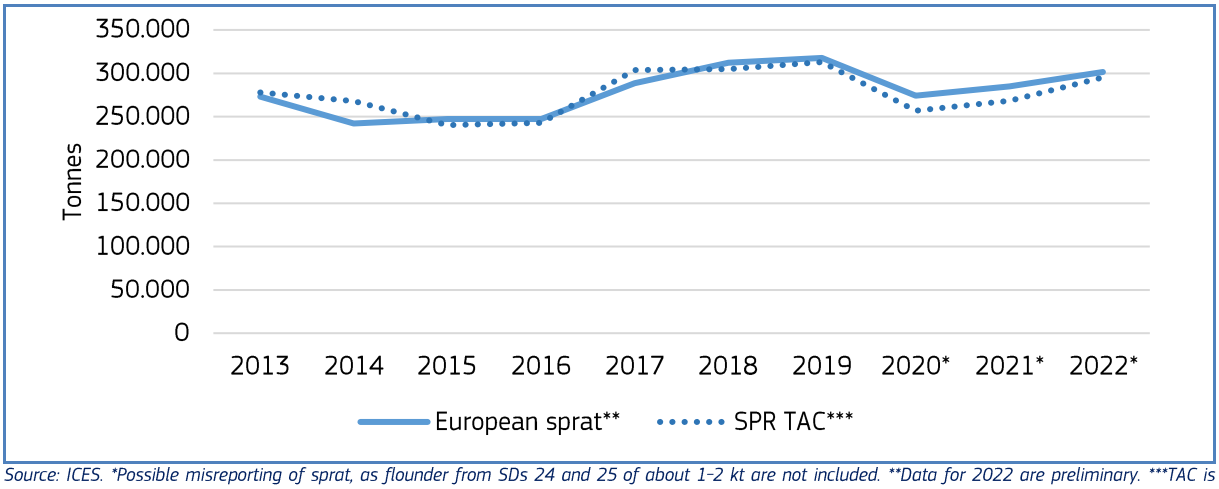
Finland and Sweden (a minor share went to Denmark in 2022), with Finland accounting for most of the catches (84% average over the past decade).

The biomass of the western Baltic spring spawning herring stock has declined consistently since the mid-2000s to a historical low in 2019, with a biomass at around 51.000 tonnes[57]. Stock recruitment has been impaired since 2007 but has shown a small sign of recovery since 2021. As the stock is caught across three different management areas (areas 4aE+b, 3a and SDs 23-24 in the Baltic Sea), catches of the stock must be minimized in all areas for recovery to be effective[58]. Historically, the stock has been important for Danish, German, Swedish and Polish fisheries in the Baltic Sea, Kattegat and Skagerrak areas.

Sprat fishery in the Baltic Sea

Sprat in the Baltic Sea (SDs 22-32) is managed as a single stock[56]. The biomass of the sprat stock is closely linked to the size of the cod stock (due to predation mortality). At the beginning of the 1990s, the biomass of the sprat stock started to increase rapidly as the size of the cod stock declined, with the maximum observed SSB peaking in 1996-1997 at 1,7 million tonnes. Increased stock size led to increased catches, which in turn caused the stock to decline. Since 2000, the year classes have still been above average, but the year classes of 2021-2022 were very poor.

Figure 50. **TOTAL EU AND RUSSIAN CATCHES OF EUROPEAN SPRAT IN SDS 22-32 AND TAC SET FOR EUROPEAN SPRAT (volume in tonnes)**



*Source: ICES. *Possible misreporting of sprat, as flounder from SDs 24 and 25 of about 1-2 kt are not included. **Data for 2022 are preliminary. ***TAC is calculated as EU + Russian autonomous landings.*

The sprat stock in the Baltic Sea is shared between the EU and Russia[59] and is caught in a mixed sprat-herring fishery[56]. Pelagic trawls are the main fishing gear used for sprat in the Baltic Sea, but some demersal trawl fisheries for sprat exist as well[60]. The main fishing season is during the first half of the year, but the fishery takes place year-round. Most of the sprat catch was taken by Poland (27% average), Sweden (17%) and Russia (14%) over the past decade[59].

4.2. Pollution in the Baltic Sea ecoregion

The Baltic Sea is nearly surrounded by land, making it more endangered due to pollution from land than from marine sources[61]. The southern part of the Baltic Sea is highly populated with large agricultural areas which contribute to heightened pollution in this area. Pollution in the Baltic Sea arises from various sources including agricultural, industrial, and municipal waste discharged either directly into the sea or through rivers.

[57] ICES. (2023). *Herring assessment working group for the area south of 62° N (HAWG).* ices-library.figshare.com
[58] ICES. (2023). *Herring (Clupea harengus) in subdivisions 20-24, spring spawners (Skagerrak, Kattegat, and western Baltic).* ices-library.figshare.com
[59] ICES. (2023). *Sprat (Sprattus sprattus) in subdivisions 22-32 (Baltic Sea).* ices-library.figshare.com
[60] ICES. (2023). *Stock annex: sprat (Sprattus sprattus) in SDs 22-32.* ices-library.figshare.com
[61] Dobrzycka-Krahel, A. and Bogalecka, M. (2022). *The Baltic Sea under anthropopressure – the Sea of paradoxes.* mdpi.com

Eutrophication

Human-induced eutrophication is a widespread and prolonged pressure that demands significant effort to promote ecosystem recovery[62]. Excessive nutrient input into the marine environment enhances the growth of phytoplankton, leading to reduced light conditions in the water, oxygen depletion at the seafloor, and a cascade of other ecosystem changes. Since the mid-20th century, excessive human-induced nitrogen and phosphorus loads have been responsible for widespread eutrophication symptoms in the Baltic Sea. This includes alterations in species composition, increased turbidity, and oxygen depletion, all of which affect the provision of ecosystem services. In the period from 2011 to 2016, at least 97% of the Baltic Sea was evaluated as eutrophic according to the integrated status assessment[63].

While fish are not predicted to immediately react to shifts in nutrient concentrations, eutrophication can impact them through indirect pathways[64]. Fish recruitment and productivity can be influenced if eutrophication modifies the suitability of spawning and juvenile environments, or the accessibility of food resources. In addition, low oxygen levels can affect the physiology of the fish, and changes in the clarity of the water can influence their ability to hunt effectively. This can potentially change their distribution patterns or hamper their growth. In the Baltic Sea, the gradual shifts observed in coastal fish communities have been partly linked to species that can withstand the impacts of eutrophication, gaining advantages over more delicate species as nutrient enrichment continues to rise.

Eutrophication can lead to oxygen deficiency in the water, and some areas are completely depleted of oxygen, leading to what are known as dead zones[65]. For species using these areas for spawning and reproduction, this is particularly harmful. This is a problem for cod in the Baltic Sea, as they require deeper regions with high salinity for the survival of their eggs, enabling successful reproduction. Loss of spawning grounds due to hypoxia has resulted in a decline in the ability of cod populations to reproduce, leading to reduced reproductive rates and a reduction in the distribution of cod. Cod eggs are directly affected by the decreased oxygen levels. Additionally, the increased occurrence of hypoxia in the Baltic Sea has triggered a decrease in the benthic fauna that is important for the food webs. Given that these benthic communities are already limited by the low salinity within the Baltic Sea, the presence of hypoxia makes the situation even more challenging. Low oxygen conditions have been correlated with decreased availability of benthic food sources and in turn to decreased growth of young Baltic cod, particularly in combination with reduced availability of sprat.

Regionally coordinated measures have resulted in significantly reduced loading, but the input is still too high[63]. Due to relatively low water exchange rate and the build-up of nutrients over time, full recovery of the Baltic Sea to good eutrophication status is expected to take decades. This even after the supply of nutrients has reached the target level.

In terms of regional approach, HELCOM has been a significant driving force in reducing nutrient loading in the Baltic Sea[66]. An action plan has been developed containing a comprehensive management process with the aim of achieving concrete improvements in the Baltic Sea. The goal is based on the most up-to-date scientific information and is supported by a decision-making tool based on modelling. Key indicators with associated thresholds indicating favourable conditions regarding eutrophication are primarily formulated using data collected through monitoring efforts. So far, most of the reductions have been achieved through measures targeting point sources, such as industries and wastewater treatment facilities, as well as airborne nitrogen input[67]. This is mainly the result of reduced emissions within the energy and transport sectors. Nevertheless, there has not been a significant reduction in input from diffuse sources over the past two decades. Approximately 35% of the total nutrient input to the rivers comes from diffuse runoff. Agriculture, with its substantial potential for reduction, is currently the main contributor to this diffuse nutrient input to the Baltic Sea.

Hazardous substances

HELCOM has an overarching goal of achieving a Baltic Sea where life is undisturbed by hazardous substances[67]. Pollution from hazardous substances refers to a wide variety of human-made substances ending up in the marine environment. This includes substances not naturally found there, as well as substances existing in concentrations exceeding natural levels.

[62] HELCOM. (2023). Eutrophication. stateofthebalticsea.helcom.fi
[63] Bergström, L. et al. (2023). *Fish community responses to restoration of a eutrophic coastal bay.* springer.com
[64] ICES. (2022). *Baltic Sea ecoregion – ecosystem overview.* ices-library.figshare.com
[65] FishSec (2022). *The Decline of Cod in the Baltic Sea.* fishsec.org
[66] HELCOM. (2018). *Eutrophication - supplementary report.* stateofthebalticsea.com
[67] HELCOM. (2021). *Baltic Sea action plan.* helcom.fi

Even though monitoring indicates a significant reduction in the load of certain hazardous substances, the issues persist. The concentration of certain new substances, such as perfluorinated compounds, has even increased.

Once these hazardous substances are released into the Baltic Sea, they can persist in the marine environment for extended periods of time[67]. They possess the ability to accumulate within the food chain, potentially leading to toxic levels for marine organisms. These harmful compounds result in adverse effects within the ecosystem, such as diminished overall animal health, decreased reproduction rates particularly among top predators, and elevated levels of contamination in fish for human consumption.

In certain parts of the Baltic Sea, specific fish species are unsuitable for consumption due to their content of hazardous substances surpassing accepted threshold levels[67]. Some of these pollutants can be hazardous due to their impact on hormone and immune systems, as well as their toxicity, persistence, and capacity to accumulate in organisms over time. Even though fish like salmon, trout, and herring from the Baltic Sea offer beneficial nutritional value, their consumption, especially those caught in the Gulf of Bothnia and the Gulf of Finland, can expose consumers to elevated amounts of dioxins and PCB compounds, which pose health risks[68]. Additionally, predatory fish such as pike, whether caught in inland waters or at sea, can contain higher-than-normal levels of methylmercury. The accumulation of contaminants increases with the age of the fish. Therefore, the Finnish Food Authority has issued measures deviating from the general dietary recommendations regarding fish consumption. Children, young people and persons of fertile age may not eat herring longer than 17 cm, or alternatively, Baltic Sea caught salmon or trout more than once or twice a month. Pregnant and breastfeeding women should avoid consuming pike altogether due to accumulated mercury. Those who consume fish from inland waters daily are advised to reduce their intake of other predatory fish that accumulate mercury.

The Baltic Action Plan (BSAP) includes several measures to achieve desired goals and objectives regarding hazardous substances[67]. These are measures that involve developing a strategic approach, creating action plans, strengthening regulation, raising public awareness, and establishing monitoring measures. The goal is to reduce the release of hazardous substances, improve ecosystem health, and promote international cooperation for a healthier Baltic Sea environment. The objectives of the BSAP concerning hazardous substances will be met when chemicals introduced to the marine environment through human activities do not disrupt the marine ecosystem, causing issues such as mutations or disturbance in biochemical processes and food chains. Achieving a desired healthy state of the Baltic Sea, or good environmental status, also requires that the presence of hazardous substances does not endanger the functioning of ecosystem services or pose any human health risks.

[68] Finnish food authority. (2019). *Safe use of fish.* https://www.ruokavirasto.fi/en/foodstuffs/instructions-for-consumers/safe-use-of-foodstuffs/safe-use-of-fish/

Non-indigenous species

Over the past few decades, many non-indigenous species (NIS) have established themselves strongly in the Baltic Sea ecosystem[69]. In many cases, these species have a greater tolerance to changes in climate conditions, including warmer and possibly less saline water, which is also influenced by other factors such as eutrophication. The consequences of these species for the ecosystem vary, from filling vacant ecological niches to potentially outcompeting native species. This can have an impact on the entire food web structure and its functioning. The European Union aims to prevent, limit and reduce the impacts that these species have on natural biological diversity and ecosystem services[70]. The goal is also to minimize social and economic harm. The EU Biodiversity Strategy for 2030 implies a commitment to effectively manage already established invasive alien species and reduce by 50% the number of threatened species on the Red List they threaten by 2030.

Since 2010, 102 non-indigenous and cryptogenic species have been introduced into the Baltic Sea. The highest proportion occurred during the period 2014-2015, with the largest number of species recorded in Germany. Germany also ranks as the country with the highest number of NIS from 2010 to 2023, followed by Denmark and Poland.

NIS typically do not spread naturally but instead rather reach new environments through human-mediated transport, known as vectors[71]. Harbours and ports are key locations for the introduction of non-indigenous species, as they offer extended periods for stationary ships and often provide suitable areas for these species to establish themselves in shallow waters or modified environments. In the Baltic Sea, aquaculture and shipping are the most likely vectors for NIS. These species are often transported in ballast water and released when the water is exchanged, or they attach themselves to the hulls of ships.

When a NIS is initially introduced to a new ecosystem, there is a high likelihood of further spread[72]. An example is the round goby originating in the Caspian Sea and Black Sea, and which is a successful and widespread invader worldwide. The round goby is considered one of the most invasive NIS in the Baltic Sea and was first observed here in 1990. After a period of low abundance, the species experienced a significant increase and has now become the dominant species in many areas of the Baltic Sea. The round goby can influence interactions within the benthic food web.

Table 27. **NUMBER OF OBSERVED NON-INDIGENOUS SPECIES IN THE BALTIC SEA BY YEAR OF FIRST RECORD AND RECIPIENT COUNTRY**

	Denmark	Estonia	Finland	Germany	Latvia	Lithuania	Poland	Russia	Sweden
2010 - 2011	4	3		6		1	7	2	2
2012 - 2013	2	1	1	4	1	1		1	2
2014 - 2015	3	2		11	5	1	5		2
2016 - 2017	5		1	3			1		1
2018 - 2019	2	1		3			4		1
2020 - 2021	4	2	2	1			1		
2022 - 2023		1	1	1					
Total	**20**	**10**	**5**	**29**	**6**	**3**	**18**	**3**	**8**

Source: AquaNIS.

It can sometimes be challenging to differentiate the impact of non-indigenous species from the consequences of other environmental stressors[70]. For example, economic consequences may arise due to loss of fishing opportunities and removal of biofouling. Public health effects may also occur with the introduction of toxic algae or pathogens.

[69] Earth System Dynamics. (2022). *Human impacts and their interactions in the Baltic Sea region.* esd.copernicus.org
[70] European Commission. *Invasive alien species.* europa.eu
[71] HELCOM. *Non-indigenous species.* State of the Baltic Sea Second HELCOM holistic assessment
[72] Kotta, J. et al. (2015). *Shipping and natural environmental conditions determine the distribution of the invasive non-indigenous round goby* Neogobius melanostomus *in a regional sea*:https://www.sciencedirect.com/science/article/abs/pii/S0272771415301517?via%3Dihub

4.3. Status and future prospects

The Baltic Sea faces significant environmental challenges, with pollution being a common denominator. This pollution has led to eutrophication, habitat alterations, and harm to marine life. Additionally, non-indigenous species have established themselves, further disrupting the ecosystem. As of 29thJune 2023, approximately one-third of the collaborative regional initiatives (90 out of 273) and a small portion of the individual national initiatives (29 out of 428) outlined in the Baltic Sea Action Plan had been confirmed as completely executed by all HELCOM Contracting Parties (Denmark, Estonia, the EU, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden)[73]. Every six years, a thorough and complete evaluation of the condition of the Baltic Sea is carried out[74]. These reports are the product of cooperative efforts involving HELCOM Contracting Parties, scientific specialists, and organizations committed to the preservation of the Baltic Sea. They play a fundamental role in HELCOM's activities and decision-making processes, assisting in the assessment of the implementation of the Baltic Sea Action Plan and its overall effectiveness. On 31st October 2023, HELCOM will publish a summary report State of the Baltic Sea covering the period of 2016-2021.

In 2020, the Our Baltic Conference was held for the first time. The agenda focused on addressing a wide range of environmental and sustainability challenges in the Baltic Sea Region, from pollution and climate change to sustainable fisheries and financing mechanisms[75]. Several measures have been initiated to restore the Baltic Sea ecosystem based on research and available data. Since the adoption of the Baltic Sea Action Plan, there have been several environmental improvements, including a reduction in nutrient input into the sea, improved biodiversity conditions, and a decrease in maritime incidents and emissions. The second edition of Our Baltic Conference was hosted by the European Commission in Palanga (Lithuania) on 29 September 2023[76]. The event was a gathering place for ministers from the eight EU Member States surrounding the Baltic Sea. The main topics of the conference were environment & fisheries, economic activities related to the ocean ("blue economy") and unexploded munitions.

On 24 October, the Council of the European Union reached an agreement on the fishing opportunities in the Baltic Sea for 2024, following the Commission proposal made in August. The Council has followed the proposal as regards total allowable catches (TACs) for three stocks – plaice (rollover), salmon in the Gulf of Finland (+7%) and main basin salmon (-15%). The Council has decided to set by-catch allowances for the stocks of western herring, western cod and eastern cod, which means they can only be taken when accidentally caught while fishing for other stocks. For more information, please visit a news article **here**.

[73] HELCOM. *Follow Up of HELCOM Agreements*. helcom.fi
[74] HELCOM. (2023). *HOLAS 3 thematic assessment unveil Baltic Sea ecosystem health*. helcom.fi
[75] European Commission. (2020). *Our Baltic Conference*. europa.eu
[76] European Commission (2023). *Our Baltic conference*. europa.eu

5. Case study: Fisheries and aquaculture in Vietnam

Vietnam is located in the eastern part of the Indochina peninsula, bordered by China in the north, the South China Sea in the east and south, the Gulf of Thailand in the southwest, and Cambodia and Lao People's Democratic Republic in the west. The total area of the country is 331.052 km². The country is divided into 64 provinces grouped into eight regions from north to south: North West, North East, Red River Delta, North Central Coast, South Central Coast, Central Highland, South East and Mekong River Delta. In 2021 the total population was 97,5 million. Vietnam has a coastline of about 11.409 km and the exclusive economic zone is around 237.800 km². The country has about 2.370 rivers including the Red River with a basin area of about 1,9 million ha and the Mekong River with a basin of about 4,1 million ha.

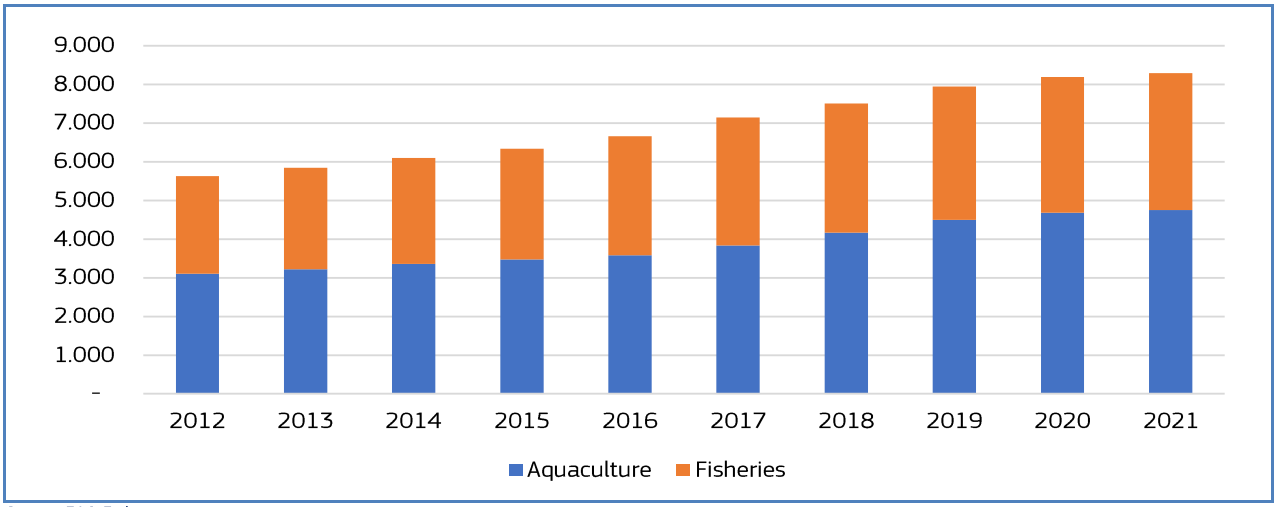
Vietnam is a large player in the global seafood industry, being amongst the top 10 of countries in world capture production and amongst the top 5 in world aquaculture production. In 2019, the gross domestic product from fisheries was 3,4 % and the fish available for consumption was 38 kg/capita. Vietnam is also a net exporter of seafood products in value terms mostly thanks to its shrimp and catfish farming sector which is primarily export oriented. EU is the 4th biggest destination for Vietnamese exports, with 238.086 tonnes at a value of EUR 1,3 billion imported in the EU-27 in 2022 (following a strong increasing trend), mostly including frozen and preserved shrimps as well as frozen catfish fillets.

5.1. Fishery and aquaculture production

Fishery and aquaculture in Vietnam are diverse and production from both is significant. In 2021, the total fishery and aquaculture production reached 8,3 million tonnes, marking an increase of 47% in comparison to 2012. This increase is primarily attributed to the increase of the aquaculture sector which grew by 53% over the period, whereas total catches increased by 40%.

In 2021, aquaculture was the most important in terms of production volume (57% of the fishery and aquaculture production in 2021). Inland fisheries are not significant compared to marine fisheries, with a contribution of about 4% of the total national catches.

Figure 51. **CONTRIBUTION OF AQUACULTURE AND FISHERIES IN TOTAL PRODUCTION (volume in 1.000 tonnes)**



Source: FAO Fish stat

Fisheries

The Vietnamese EEZ is divided into four principal fishing grounds: (1) The Gulf of Tonkin in the north; (2) the South China Sea in the central part and (3) south-eastern part and (4) the Gulf of Thailand to the southwest. The marine fisheries are mostly small-scale, multi-species and multi-gear, most of it taking place in the coastal waters.

The domestic fleet consists of approximately 110.000 vessels, with 70% belonging to the coastal fleet and 30% to the offshore fleet. The number of vessels will be reduced to 95.000 by 2030, with a plan to increase efficiency, shift from wooden to steel vessels, and modernise receiving harbours[77].

In 2021, catches from the fishery sector totaled more than 350.000 tonnes, providing about 43% of the country's total fish production. Most of the catches are reported as aggregated in large groups of species. The most important species in terms of volume is marine fishes nei, with 2,4 million tonnes, accounting for 67% of total catches, followed by tuna-like fishes nei (11% of total catches) and cephalopods nei (10%). Over the 2012-2021 period, total catches increased by 40%. The main species contributing to that trend were marine fishes nei (+54%), tuna-like fishes nei (+47%) and cephalopods (+25%). However, freshwater species experienced an 8% decrease over the decade. The construction of new dams and reservoirs has had a significant negative impact on inland fisheries[78].

[77] https://www.europarl.europa.eu/RegData/etudes/STUD/2018/629175/IPOL_STU(2018)629175_EN.pdf
[78] https://www.fao.org/fishery/fr/facp/vnm?lang=en

Table 28. **CATCHES BY MAIN SPECIES IN VIETNAM (volume in 1.000 tonnes)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Marine fishes nei	1.542	1.580	1.645	1.744	1.892	2.091	2.390	2.207	2.348	2.369
Tuna-like fishes nei	254	287	307	313	330	340	233	365	365	374
Cephalopods nei	287	300	314	336	339	369	259	360	360	360
Natantian decapods nei	141	144	148	140	138	144	126	132	137	139
Freshwater fishes nei	146	142	148	128	130	141	140	130	132	133
Marine molluscs nei	40	40	44	48	54	47	33	66	57	61
Marine crabs nei	28	31	35	39	46	47	25	51	51	51
Yellowfin tuna	17	20	16	22	24	22	25	19	18	17
Natantian decapods nei	17	17	19	19	19	21	16	16	16	17
Skipjack tuna	44	55	61	62	94	86	91	87	12	12
Others	7	8	9	9	12	7	7	6	9	8
Total	**2.524**	**2.624**	**2.744**	**2.861**	**3.078**	**3.314**	**3.346**	**3.441**	**3.506**	**3.540**

Source: FAO Fish stat. Totals do not correspond exactly to actual sums because of rounding.

Aquaculture

Vietnam has been and remains the main producer of pangasius globally since 1940, when production started. Production occurs mainly in the Mekong River Delta in southern Vietnam. Vietnamese pangasius is mostly "basa" (*Pangasius bocourti*) or "tra" (*Pangasius hypophthalmus*). In recent years, the sector has consolidated, resulting in more large-scale producers and the closure of several small-scale producers.

The three main on-growing monoculture systems are (1) earth ponds (ranging from 1.000 to 10.000 m^2) with a simple design, sited near river tributaries; (2) net cages (ranging from 50 to 1.600 m^3) also sited near tributaries of the Mekong River Delta; and (3) net pens with a stocking density at 40–60/m^2. The small-scale, integrated-pond, polyculture system is being phased out[79].

Vietnam is also a notable producer of warm-water shrimp, mostly of whiteleg (*vannamei*) and giant tiger prawn (*monodon*). Most of the aquaculture production in Vietnam occurs in the interior (90%)[80].

In 2021, aquaculture production reached more than 24,7 million tonnes. Panga was still by far the main farmed species with a production close to 1,5 million tonnes, accounting for 31% of the total aquaculture production. Other major farmed species were freshwater fishes nei (19%), whiteleg shrimp (14%) and cyprinids nei (10%). Between 2012 and 2021, aquaculture production increased significantly by 53%. The main species contributing to this trend were whiteleg shrimp (+350%), freshwater fishes nei (+72%), panga (+26%) and marine molluscs nei (+156%).

Table 29. **AQUACULTURE PRODUCTION BY MAIN GROUP OF SPECIES IN VIETNAM (volume in 1.000 tonnes)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Striped catfish (=Panga)	1.184	1.148	1.134	1.175	1.184	1.289	1.360	1.606	1.559	1.489
Freshwater fishes nei	532	594	437	628	638	647	776	594	858	914
Whiteleg shrimp	148	236	353	339	380	439	475	586	621	666
Cyprinids nei	450	406	446	365	377	398	430	444	461	478
Marine molluscs nei	134	181	189	233	263	282	298	213	327	344
Giant tiger prawn	164	186	240	251	244	263	290	263	263	266
Tilapias nei	197	216	244	219	220	235	260	288	191	187
Common carp	89	97	104	101	105	111	119	136	144	153
Others	207	157	207	165	170	167	154	371	258	253
Total	**3.105**	**3.221**	**3.355**	**3.475**	**3.582**	**3.832**	**4.163**	**4.501**	**4.681**	**4.749**

Source: FAO Fish Stat. Totals do not correspond exactly to actual sums because of rounding.

[79] https://www.fao.org/3/bm085e/bm085e.pdf
[80] https://www.fao.org/3/i5555e/i5555e.pdf

5.2. Processing and marketing

The Vietnamese fish processing industry is significant, with a large share of the production dedicated to processing, packing and freezing the main farmed species, namely shrimp and panga.

According to FAO Fish Stat, fish processing production amounted to 2,7 million tonnes in 2021. The main processed products were frozen shrimps and prawns (21%) and frozen catfish fillets (i.e., panga, 18%). Between 2012 and 2020, total production increased by 43%, following the increase from both aquaculture and fisheries. The main commodities contributing to this increasing trend were frozen shrimps (+127%) and fishmeals nei (+230%) whereas frozen catfish fillets experienced a 21% decrease over the period.

Table 30. **PRODUCTION OF PROCESSED FISHERY AND AQUACULTURE PRODUCTS IN VIETNAM (volume of net product weight in 1.000 tonnes)**

Commodity	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Shrimps and prawns, frozen, nei	254	288	380	405	420	465	485	478	542	575
Catfish fillets, frozen	650	680	690	650	700	700	740	693	445	497
Fishmeals, nei	86	117	162	145	288	295	308	310	307	283
Fish fillets, frozen, nei	181	214	208	209	220	235	226	243	240	251
Fish, frozen, nei	141	153	160	225	250	305	230	350	190	238
Fish body oils, nei	95	130	150	150	155	163	165	173	175	208
Fish nei, dried, unsalted	126	138	139	144	152	160	177	181	180	185
Crustaceans and molluscs, prepared or preserved, nei	100	130	170	145	138	156	128	139	165	181
Others	253	227	244	244	239	260	260	269	269	270
Total	**1.885**	**2.076**	**2.303**	**2.317**	**2.562**	**2.739**	**2.719**	**2.837**	**2.513**	**2.687**

Source: FAO Fish Stat. Totals do not correspond exactly to actual sums because of rounding.

5.3. Import-Export

Thanks to the export-oriented industry, Vietnam's trade surplus for fishery and aquaculture products is high, reaching EUR 5,9 billion in 2021, relatively stable compared to 2019 (+3%).

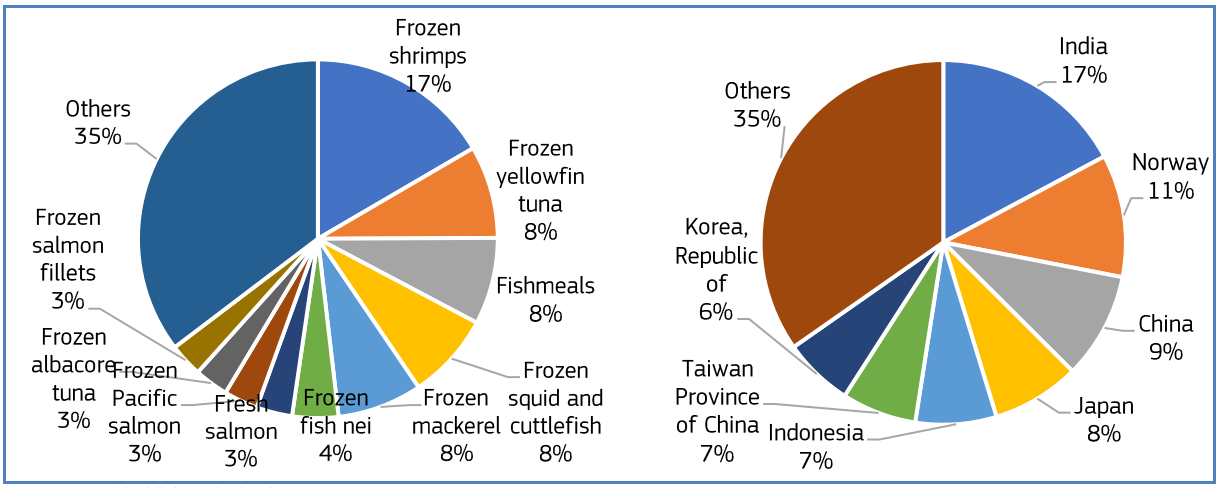
Table 31. **TRADE BALANCE FOR FISH AND SEAFOOD IN VIETNAM (in million EUR)**

	2019	2020	2021
Exports	**7.738**	**7.323**	**7.724**
Imports	**1.681**	**1.675**	**1.782**
Balance	**6.057**	**5.648**	**5.943**

Source: FAO global fish trade database. Totals do not correspond exactly to actual sums because of rounding.

In 2021, Vietnamese imports of fishery and aquaculture products amounted to 609.021 tonnes at a value of almost EUR 1,8 billion. In value terms, the main products imported were frozen shrimps (17% of total value), frozen yellowfin tuna, fishmeals nei, frozen cuttlefishes and squids nei, and frozen mackerels nei (8% each). The main countries of origin in value terms were India (17%, dominated by frozen shrimps), Norway (11%, dominated by frozen salmon fillets and frozen mackerel) and China (9%). Other important suppliers were Japan (8%), Indonesia and Taiwan (7% each).

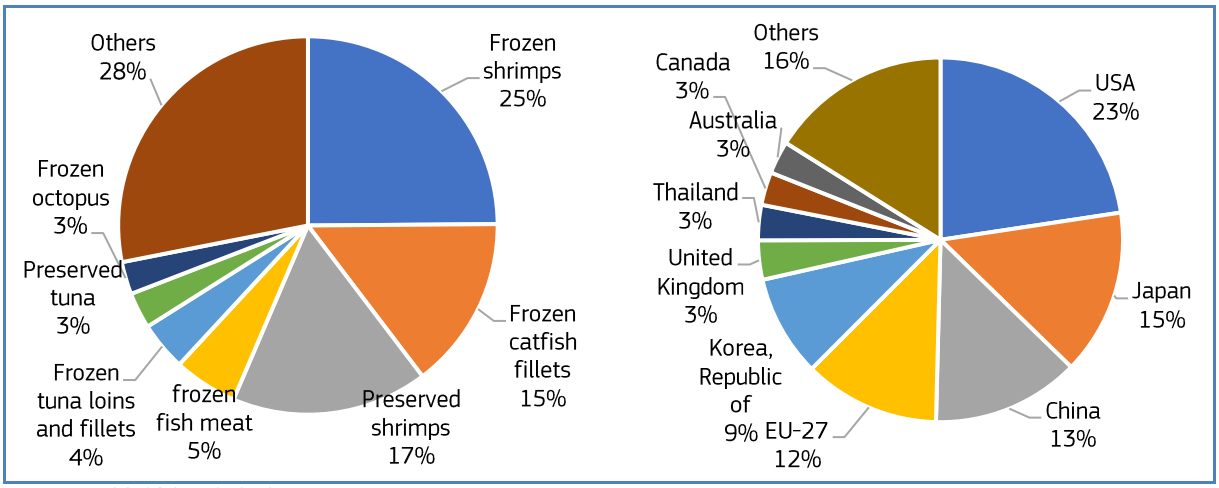
Figure 52. **MAIN FISH PRODUCTS IMPORTED IN VIETNAM (left) AND MAIN ORIGINS OF VIETNAMESE IMPORTS (right) IN 2021 IN VALUE TERMS**



Source: FAO global fish trade database.

Also in 2021, Vietnamese exports of fishery and aquaculture products reached 1,7 million tonnes at a value of EUR 7,7 billion. In value terms, the main fish products exported were frozen shrimps (25% of total export value), followed by preserved shrimps (17%) and frozen catfish fillets (15%). Other important exported products were frozen fish meat (5%), frozen tuna loins and fillets (4%), prepared and preserved tuna and frozen octopus (3% each). The top destination in value terms was the USA (23% of total export value) followed by Japan (15%), China (13%) and the EU-27 (12%).

Figure 53. **MAIN FISH PRODUCTS EXPORTED BY VIETNAM (left) AND MAIN DESTINATIONS OF VIETNAMESE EXPORTS (right) IN 2021 IN VALUE TERMS**



Source: FAO global fish trade database.

5.4. Trade flows with the EU

Vietnam is a net exporter to the EU for fishery and aquaculture products. Moreover, in 2022, the EU trade deficit with Vietnam in value terms increased strongly compared to 2018 (+48%), reaching a value of EUR 1,2 billion.

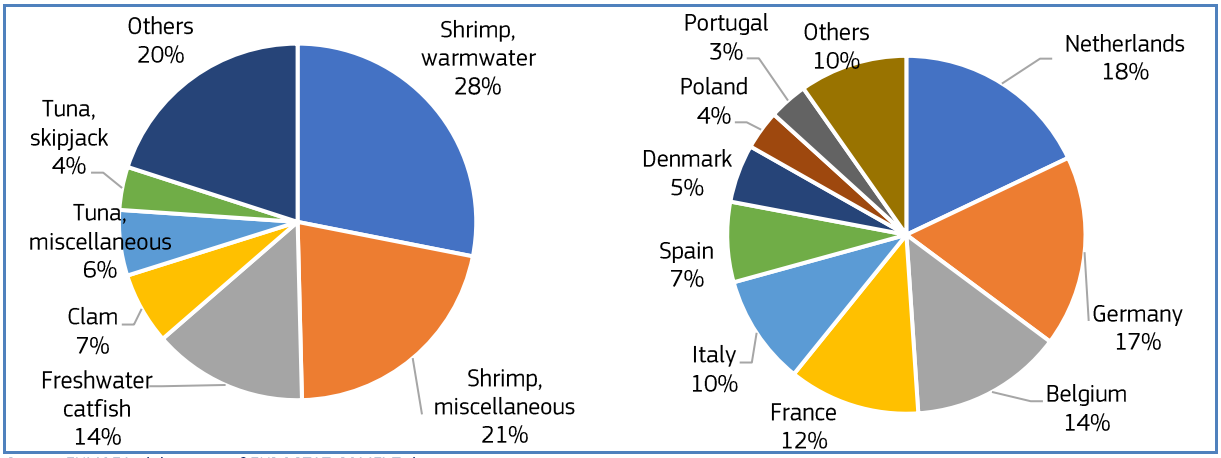
Table 32. **EU TRADE BALANCE WITH VIETNAM FOR FISHERY AND AQUACULTURE PRODUCTS (in million EUR)**

Trade-flow	2018	2019	2020	2021	2022
Exports	112	92	83	73	82
Imports	930	909	796	832	1.290
Balance	**-817**	**-817**	**-712**	**-758**	**-1.208**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data. Totals do not correspond exactly to actual sums because of rounding.

In 2022, EU imports from Vietnam amounted to 238.086 tonnes at a value of EUR 1,3 billion (+55% compared to 2021 in value terms). In value terms, frozen products accounted for 60% of total imports, followed by prepared/preserved products (37%). Shrimp products dominated EU imports (50% of total value, 28% for Penaeus shrimp and 21% for other shrimps). Other important species were freshwater catfish (panga, 14%), tuna (11%, all species combined) and clam (7%). The main importing countries in value terms were the Netherlands (18%), Germany (17%), Belgium (14%), France (12%) and Italy (10%). The Netherlands and Belgium, being trade hubs for seafood products imported in the EU, are not likely to be the final market destinations for these products in the EU.

Figure 54. **MAIN COMMERCIAL SPECIES IMPORTED IN THE EU FROM VIETNAM (left) AND MAIN IMPORTING MEMBER STATES (right) IN 2021 IN VALUE TERMS**



Source: EUMOFA elaboration of EUROSTAT-COMEXT data.

EU exports to Vietnam are much lower. In 2022, they amounted to 29.582 tonnes at a value of almost EUR 82 million. In value terms, salmon dominated EU exports to Vietnam (38% of the total export value, mostly frozen fillets), followed by other products (12%, mostly frozen fish fins, heads, tails, maws and other edible fish offal), trout (11%, mostly frozen whole large trout) and scallop (11%, mostly frozen). The main exporting Member States in value terms were Poland (38% of the total export value) and Denmark (23%).

5.5. Consumption

Fisheries and aquaculture products traditionally provide an important source of protein to the diet of the Vietnamese population. About 86% of the population eats fish or seafood at least once a week, and the country has one of the highest seafood consumption levels in the world with 37 kg per capita[81]. Fish for home consumption is generally purchased at the market or from specialized retailers[82]. Recent trends indicate that demand for premium seafood products is increasing. While a majority of its seafood imports are raw material for the local processing industry that are then reexported, a growing volume of imported seafood is high-value product destined for domestic consumption, with a growing quantity from Norway (salmon, king crab, mackerel) as well as from the USA, Canada and Ireland[83].

[81] https://asianews.network/vietnam-becomes-norways-largest-seafood-consumer-in-southeast-asia/
[82] https://www.fao.org/3/y4768e/Y4768e04.htm
[83] https://www.seafoodsource.com/news/premium/supply-trade/vietnam-s-swelling-middle-class-consuming-more-premium-seafood-imports

6. Global highlights

EU / Fishery: The High Seas Treaty, also known as the agreement on Biodiversity Beyond National Jurisdiction or 'BBNJ', was signed in New York on 20 September 2023, in the margins of the United Nations High Level Week, where the EU as well as many individual EU Member States signed the treaty. The agreement provides for the common governance of about half of the Earth's surface and 95% of the ocean's volume, the largest habitat on our blue planet, to promote equity and fairness, tackle environmental degradation, fight climate change, and prevent biodiversity loss in the high seas[84].

EU / Fishery: On 4 September 2023 the EU announced its readiness to exchange fisheries control data using a new common global standard recognised by the United Nations. This is an important milestone towards the modernisation of fisheries data exchange, as it is the first time this new global standard will be used for data sharing between a Contracting Party, the EU, and a Regional Fisheries Management Organisation, the North-East Atlantic Fisheries Commission (NEAFC). The harmonisation of data exchange formats reduces costs, and makes fisheries control more efficient and accessible to public authorities[85].

EU / Aquaculture: Aquaculture Europe 2023 was organized in Vienna from 18 to21 September 2023, where parallel sessions covered the full scope of European aquaculture scientific disciplines and species and comprised submitted oral and poster presentations. AE2023 also featured an international trade exhibition, industry forum, student sessions and activities, satellite workshops and updates on EU research. EUMOFA was also represented at the trade exhibition[86].

EU / Sustainability: On 18 September 2023, the Commission launched a new season of the #TasteTheOcean campaign, bringing sustainable fish and seafood to the tables of 9 EU countries for the following 4 weeks. As in previous editions, the Directorate General for Maritime Affairs and Fisheries (DG MARE) has been working with European celebrity chefs to create exclusive recipes from local, seasonal fish products from fisheries or aquaculture. This season Austria, Germany, Hungary, Luxembourg, Latvia, Malta, Poland, Slovakia and Slovenia will be discovered. With tasty recipes and practical tips, the campaign aims to encourage consumers to buy and enjoy sustainable fish and seafood, making better and more informed food choices[87].

Norway / Fishery: On 22 September 2023, the Norwegian Government launched a global ocean surveillance programme against fisheries crime. More than a third of the world's coastal states will be given access to Norwegian satellite data and expertise, which they can use to carry out surveillance in their own waters and detect fisheries crime. Norway will share AIS data from Norwegian satellites with all countries that have joined the Blue Justice Community. The information will be given to the countries free of charge, enabling them to analyse the data themselves and detect fisheries crime[88].

Iceland / Fishery: On 13 September 2023 the Icelandic government has signed an **agreement** with the World Trade Organization (WTO) on financial support for developing countries in establishing sustainable fisheries management. The fund is operated by the WTO with partner organizations, namely the Food and Agriculture Organization (FAO) of the United Nations, the International Fund for Agricultural Development and the World Bank Group, which bring to bear relevant expertise and allow the WTO to leverage its own expertise[89].

[84] https://oceans-and-fisheries.ec.europa.eu/news/win-ocean-high-seas-treaty-signed-united-nations-2023-09-20_en
[85] https://oceans-and-fisheries.ec.europa.eu/news/eu-announces-its-readiness-use-global-standards-sharing-fisheries-data-2023-09-15_en
[86] https://aquaculture.ec.europa.eu/events/aquaculture-europe-2023-ae2023-balanced-diversity-aquaculture-development
[87] https://oceans-and-fisheries.ec.europa.eu/news/launch-new-season-tastetheocean-campaign-2023-09-18_en
[88] https://www.regjeringen.no/en/aktuelt/norwegian-satellites-to-detect-illegal-fishing/id2993201/
[89] https://www.wto.org/english/news_e/pres23_e/pr932_e.htm

7. Macroeconomic Context

7.1. Marine fuel

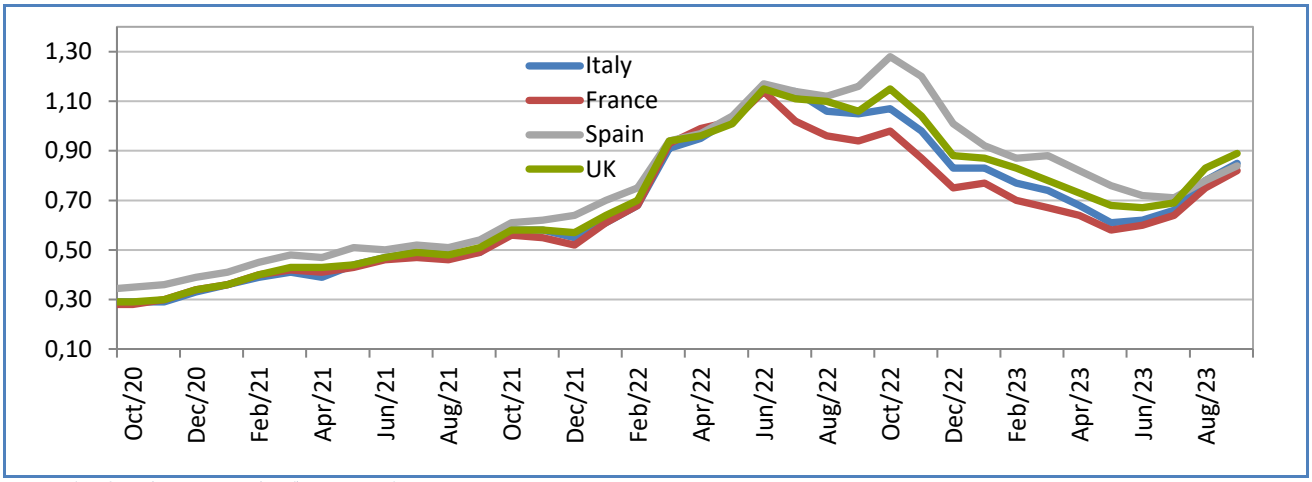
Average prices for Marine fuel in **September 2023** ranged between 0,82 and 0,89 EUR/litre in ports in **France, Italy, Spain** and the **UK**. Prices increased by an average of about 8,3% compared with the previous month, and they decreased by an average of 19,2% compared with the same month in 2022.

Table 33. **AVERAGE PRICE OF MARINE DIESEL IN ITALY, FRANCE, SPAIN, AND THE UK (EUR/litre)**

Member State	September 2023	Change from August 2023	Change from September 2022
France *(ports of Lorient and Boulogne)*	0,82	9%	-13%
Italy *(ports of Ancona and Livorno)*	0,85	9%	-19%
Spain *(ports of A Coruña and Vigo)*	0,84	8%	-28%
The UK *(ports of Grimsby and Aberdeen)*	0,89	7%	-16%

Source: Chamber of Commerce of Forlì-Cesena, Italy; DPMA, France; MABUX.

Figure 55. **AVERAGE PRICE OF MARINE DIESEL IN ITALY, FRANCE, SPAIN, AND THE UK (EUR/litre)**

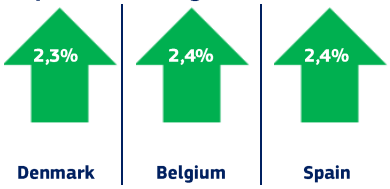


Source: Chamber of Commerce of Forlì-Cesena, Italy; DPMA, France; MABUX.

7.2. Consumer prices

The EU annual inflation rate was at 5,9% in August 2023, down from 6,1% in July 2023. A year earlier, the rate was 10,1%.

Inflation: lowest rates in August 2023, compared with August 2023.



Inflation: highest rates in August 2023, compared with August 2023.

Table 34. **HARMONISED INDEX OF CONSUMER PRICES IN THE EU (2015 = 100)**

	Aug 2021	Aug 2022	Jul 2023	Aug 2023	Change from Jul 2023		Change from Aug 2022	
Food and non-alcoholic beverages	111,22	126,78	140,81	140,32	↓	0,3%	↑	10,7%
Fish and seafood	115,38	129,29	139,14	139,49	↑	0,3%	↑	7,9%

Source: Eurostat.

7.3. Exchange rates

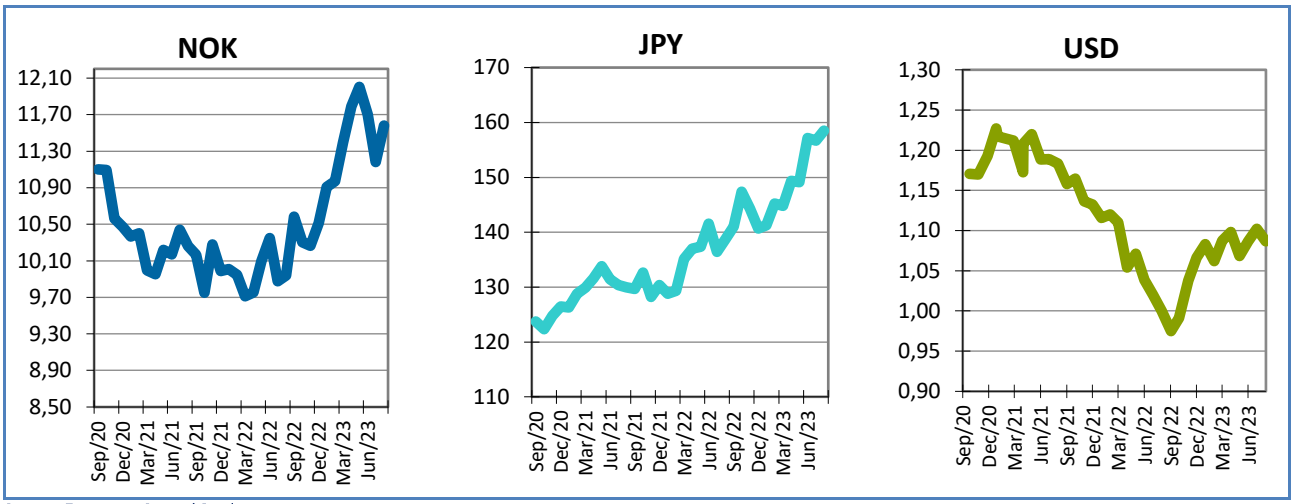
Table 35. **EURO EXCHANGE RATES FOR SELECTED CURRENCIES**

Currency	Aug 2021	Aug 2022	Jul 2023	Aug 2023
NOK	10,26	9,9388	11,1805	11,58
JPY	129,95	138,72	156,73	158,49
USD	1,1834	1,0000	1,1023	1,0868

Source: European Central Bank.

In Aug 2023, the euro appreciated against the Norwegian krone (3,6%) and the Japanese yen (1,1%) and depreciated against the US dollar (1,4%), relative to the previous month. For the past six months, the euro has fluctuated around 1,0883 against the US dollar. Compared with August 2022, the euro has appreciated 16,5% against the Norwegian krone, 14,3% against the Japanese yen and 8,7% against the US dollar.

Figure 56. **TREND OF EURO EXCHANGE RATES**



Source: European Central Bank.

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This report has been compiled using EUMOFA data and the following sources:

First sales: EUR-Lex, DG MARE – European Commission, EUR-Lex, ICES, FAO, Fiskepleje.dk.

Consumption: Dutch Fish Marketing Board, Polish Institute of Agricultural and Food Economics - National Research Institute, University of Copenhagen, FishBase.

Case studies: ICES, Britannica, HELCOM, FishSec, eur-lex, European Commission, MDPI, Springer, Finnish food authority, Earth System Dynamics, ScienceDirect, FAO, Eurostat, European Parliament, Asianews, Seafoodsource.

Global highlights: European Commission, Oceans and Fisheries, Government of Norway, World Trade Organisation, EU Aquaculture Assistance Mechanism

Macroeconomic context: EUROSTAT, Chamber of Commerce of Forlì-Cesena, Italy: DPMA, France: ARVI, Spain: MABUX, European Central Bank.

The underlying first-sales data is in an annex available on the EUMOFA website. Analyses are made at aggregated (main commercial species) level and according to the EU Electronic recording and reporting system (ERS).

In the context of this Monthly Highlight, analyses are led in current prices and expressed in nominal values.

The **European Market Observatory for Fisheries and Aquaculture Products (EUMOFA)** was developed by the European Commission, representing one of the tools of the new Market Policy in the framework of the reform of the Common Fisheries Policy. [Regulation (EU) No 1379/2013 art. 42].

As a **Market intelligence tool**, EUMOFA provides regular weekly prices, monthly Market trends, and annual structural data along the supply chain.

The database is based on data provided and validated by Member States and European institutions. It is available in 24 languages.

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