European Commission

THE EU FISH MARKET

2024 EDITION

HIGHLIGHTS
THE EU IN THE WORLD
MARKET SUPPLY
CONSUMPTION
IMPORT – EXPORT
LANDINGS IN THE EU
AQUACULTURE

EUMOFA

European Market Observatory for Fisheries and Aquaculture Products

Maritime affairs and fisheries

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Scope

"The EU fish market" aims at providing an economic description of the whole European fisheries and aquaculture industry. It replies to questions such as what is produced/exported/imported, when and where, what is consumed, by whom and what are the main trends.

A comparative analysis allows to assess the performance of fishery and aquaculture products in the EU market compared with other food products. In this report, value and price variations for periods longer than five years are analysed by deflating values using the GDP deflator (base=2015); for shorter periods, nominal value and price variations are analysed.

This publication is one of the services delivered by the European Market Observatory for Fisheries and Aquaculture Products (EUMOFA).

This edition is based on data available as of November 2024. The analyses included in this report do not take into account possible updates occurred in the sources used after this date.

More detailed and complementary data are available in the EUMOFA database: by species, place of sale, Member State, partner country. Data are updated daily.

EUMOFA, developed by the European Commission, represents one of the tools of the Market Policy in the framework of the Common Fisheries Policy. [Regulation (EU) No 1379/2013 on the common organisation of the markets in fishery and aquaculture products, Article 42].

As a market intelligence tool, EUMOFA provides regular weekly indicators, 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 all 24 EU languages.

EUMOFA website, publicly available as from April 2013, can be accessed at www.eumofa.eu.

Foreword

Welcome to the 2024 edition of the EU Fish Market report. As the European Commission embarks on a new chapter in its fisheries and ocean journey, the 2024 edition of the EU Fish Market report provides a timely and comprehensive overview of the EU market for fishery and aquaculture products. The past year has seen the European fishery and aquaculture sector continue to navigate the complexities of a rapidly changing world. Despite these challenges, the EU remains a global actor in the production, consumption, and trade of fishery and aquaculture products.

As we look to the future, the European Commission's Directorate-General for Maritime Affairs and Fisheries (DG MARE) is set to launch several key initiatives under the new College. The European Oceans Pact, a groundbreaking effort to provide for a holistic approach to the ocean, will be a cornerstone of our work. In parallel, we will be undertaking a comprehensive evaluation of the Common Fisheries Policy (CFP).

In this context, market intelligence will be instrumental in informing our policy decisions. The European Union Market Observatory for Fisheries and Aquaculture Products (EUMOFA) plays a crucial role in providing us with the data and insights we need to understand the complexities of the EU market for aquatic food and the impacts of our policies. This report, which details the production, consumption, and trade of fishery and aquaculture products in the EU and globally, is an essential companion for policymakers, industry stakeholders, and anyone interested in the EU seafood sector.

The EU Fish Market report is more than just a collection of market data – it is a rich and one of the most comprehensive sources of information on the trends, challenges, and opportunities shaping our sector. With a rich heritage of centuries-old traditions, EU producers and processors are well-equipped to supply the market with a wide variety of high-quality products. By combining this knowledge with innovative thinking and sustainable management practices, they can continue to thrive in a rapidly changing market. This report will provide them with a deeper understanding of market trends, enabling them to make informed decisions and to strengthen their competitiveness in the global market.

I wish you insightful reading.

***Charlina Vitcheva**, Director General of Directorate-General for Maritime Affairs and Fisheries*

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METHODOLOGICAL BACKGROUND

The present report is mainly based on consolidated and exhaustive volume and value data collected through different sources and published by EUMOFA at all stages of the supply chain. Within EUMOFA, data on fisheries and aquaculture products are harmonised into "Main commercial species", each referring to "Commodity groups", in order to allow comparisons along the different supply chain stages. At the following links, users can view and download:

- The list of EUMOFA Main commercial species and Commodity groups

  https://eumofa.eu/documents/20124/35680/Metadata+2+-+DM+-+Annex%2B1_%2BList%2Bof%2BMCS%2Band%2BCG.pdf/0d849918-162a-4d1a-818c-9edcbb4edfd2?t=1580806413808

- The correlation table used for harmonizing data on fish species at ERS[1] code level (data on catches, landings, aquaculture production) to the EUMOFA standards

  https://eumofa.eu/documents/20124/35680/Metadata+2+-+DM+-+Annex+3+Corr+of+MCS_CG_ERS.PDF/1615c124-b21b-4bff-880d-a1057f88563d?t=1618503978414

- The correlation table used for harmonizing data at CN-8 code level[2] (data on EU trade) to the EUMOFA standards

  https://eumofa.eu/documents/20124/35680/Metadata+2+-+DM+-+Annex+4+Corr+CN8-CG-MCS.pdf/ae431f8e-9246-4c3a-a143-2b740a860291?t=1697717528452

MAIN SOURCES OF DATA

EUMOFA, EUROSTAT, national administrations of the EU, FAO, OECD, Federation of European Aquaculture Producers (FEAP), Europanel/Kantar/GFK, Trade Data Monitor (TDM) and Euromonitor. The sections below in this Methodological background provide detailed information on the sources used.

CATCHES

Catches include all products fished by a country's fleet in any fishing area (both marine and inland waters), independently from the area of landing/selling. Data excludes marine mammals, crocodiles, corals, pearls, mother-of-pearl, shells, and sponges. Catches data are provided in this report in live weight equivalent.

The main sources of data on catches are FAO (for non-EU countries) and Eurostat (for EU Member States, online data code: fish_ca_main, extraction made on 3th June 2024). In line with Eurostat's guidelines on the production and dissemination of statistical data by Commission services after the UK withdrawal from the EU, since the most recent reference period is year 2022, UK is excluded from the EU aggregations of each year. For the purpose of properly conducting an analysis on EU-27 catches, since

1 The acronym "ERS" refers to the Electronic Reporting System established by Council Regulation (EU) N° 1966/2006.
2 The acronym "CN" refers to the Combined Nomenclature, i.e. the goods classification used within the EU for the purposes of foreign trade statistics. This classification is based on the Harmonised Commodity Description and Coding System (HS) managed by the World Customs Organisation (WCO). The HS uses a six-digit numerical code for the coding of products and the Combined Nomenclature is further breaking down the coding into an eighth digit level according to EU needs.

Eurostat does not provide data on catches in inland waters, EUMOFA has integrated EU data with data collected from the FAO database.

In addition, in case data for some species were confidential on Eurostat, figures from FAO were used, if available. The list below reports such instances (for all other instances not reported in this list, only Eurostat data were used):

- Denmark: 2018-2019 data on Northern prawn.
- Greece: 2016, 2017, and 2018 data on several species.
- Ireland: 2018-2019-2020-2021-2022 data on several species, as well as 2010-2011 data on horse mackerels other than Atlantic horse mackerel.
- Latvia: 2021 data on cod and 2017, 2018, 2019 and 2022 data on several species.

Moreover, other issues to consider are the following:

- data include FAO forecasts for most of non-EU and EU countries.
- for some EU Member States, Eurostat data include estimates and provisional figures, as below listed:
    - Bulgaria: 2017 and 2020 data are national estimates.
    - Denmark: data on Northern prawn are national estimates for 2017, while those of 2021 are provisional.
    - Germany: 2017 data for almost all species are provisional.
    - Ireland: 2017 data on saithe, haddock and "anglerfishes nei" are national estimates.
    - France: 2018-2019-2020-2021 data are provisional.
    - Italy: 2018 data, 2020 data, and most of 2019 data are provisional.
    - Romania: 2017 data are national estimates.

Finland: 2016 and 2017 data are national estimates, and 2020-2021 data are provisional.

AQUACULTURE

The main source used by EUMOFA for aquaculture data of EU countries is Eurostat (online data codes fish_aq2a and fish_aq2b, extraction made on 5th September 2024). For non-EU countries, it is FAO, and most of them represent estimates or forecasts.
As aquaculture data are available up to 2022, in line with Eurostat's guidelines on the production and dissemination of statistical data by Commission services after the UK withdrawal from the EU, UK is excluded from the EU aggregations of each year.
For the purpose of properly conducting an analysis on aquaculture production in the EU, in some instances EUMOFA has integrated Eurostat EU data with data deriving from FAO database, national sources and sector associations. The list below reports such instances, as well as those instances for which data are estimates or provisional figures. For all other instances not reported in this list, only Eurostat data were used.

- Belgium

  2016 Eurostat confidential data were integrated with FAO estimates.
  2017-2022 data were collected from FAO.

- Bulgaria

  2013 and 2014 data on mussel Mytilus spp. and pike were collected from FAO.
  2014 data on freshwater crayfish were collected from FAO.
  2016-2017 values for seaweed and eel were collected from FAO.
  2018 data for seaweed were collected from FAO.
  2019-2020 data for oyster were collected from FAO.
  2020 data on the grouping "other freshwater fish" were integrated with figures from FAO.

- Czechia

  2020 data on freshwater catfish were integrated with figures from FAO.

- Denmark

  Data on salmon were collected from FAO.
  2013 data on turbot, char, sturgeon, and pike-perch were collected from FAO.
  2015-2018 data for seaweed were collected from FAO, those of 2015 and 2016 being forecasts.
  2014, 2015 and 2016 Eurostat confidential data were integrated with figures from FAO (those on eel for 2016 being forecasts).
  2011, 2017 and 2018 data for pike-perch were collected from FAO.
  2017-2018 data for the groupings "other salmonids" and "other freshwater fish" were collected from FAO.
  2018 data on eel are FAO forecasts.
  2019 and 2021 data on values were integrated with figures from FAO, those on 2021 being estimates.
  2020 and 2022 data on most of the species were integrated with figures from FAO.

- Germany

  2013-2022 Eurostat confidential data for several species were integrated with figures from FAO.
  2011 Eurostat confidential data for trout, pike, pike-perch and eel were integrated with figures collected from the national source (DESTATIS).

- Estonia

  2014-2022 Eurostat confidential data for some species were integrated with figures from FAO.

- Ireland

  For 2014, values are National estimates available in Eurostat except from scallop and the grouping "Other molluscs and aquatic invertebrates", whose confidential values were integrated with figures from FAO.
  For 2015, Eurostat confidential values of the grouping "Other molluscs and aquatic invertebrates" were integrated with figures from FAO.
  2016 data on the grouping "other molluscs and aquatic invertebrates" were collected from FAO.
  2017-2018 data are National estimates available in Eurostat.
  2020 data for molluscs were integrated with figures from FAO.

- Greece

  2013, 2015 and 2016 Eurostat confidential data on some species were integrated with figures from FAO.
  2017 data are National provisional figures available in Eurostat.
  2022 data were integrated with figures from FAO.

- Spain

  2019-2020 data on most of the species were integrated with figures from FAO.

  2022 data on eel and whiteleg shrimps were collected from FAO.

- France

  For sole, data are FAO forecasts.
  For salmon, 2015-2017 data are FAO forecasts. 2010-2014 data were integrated with figures provided by FEAP and respective values were estimated by multiplying the volumes to its 2008-unit price, as available in Eurostat.

For turbot, 2015-2017 data are FAO forecasts. 2009-2014 data were integrated with figures provided by FEAP and respective values were estimated by multiplying the volumes to its 2008-unit price, as available in Eurostat.
2013 and 2016-2017 data on carp, catfish and other freshwater fish include National estimates available in Eurostat.
2018-2019 data on values of carp, pike, pike-perch and on the grouping "other freshwater fish" include National estimates available in Eurostat.
2019-2020 data for abalone are FAO's forecasts.

- Croatia

  2020 data the grouping "other freshwater fish" were integrated with figures from FAO.
  2021 data were collected from FAO.
  2022 confidential data on trout were integrated with figures from FAO.

- Hungary

  2016 data for the grouping "other freshwater fish" were collected from FAO.
  2020 data for freshwater catfish were integrated with figures from FAO.

- Italy

  2015 data are National estimates and forecasts available in Eurostat.
  2017 data on grooved carpet shell are FAO forecasts.
  2020 data for warmwater shrimps were collected from FAO.

- Latvia

  2014-2015 and 2017-2018 Eurostat confidential data were integrated with figures from FAO.
  2019 data for pike and pike-perch were collected from FAO.

- Lithuania

  2019-2020 data for pike-perch were collected from FAO.

- Netherlands

  For eel, freshwater catfish and the grouping "other marine fish", 2015, 2018 and 2019 values are National estimates available in Eurostat.
  For mussel, data of 2012 and 2014-2016 are National estimates available in Eurostat.
  For turbot, 2013-2017 data are FAO forecasts.
  For pike-perch, all data are FAO forecasts.
  2019-2020 data on most of the species were integrated with figures from FAO.

- Austria

  2013-2019 Eurostat confidential data were integrated with figures from FAO.

- Poland

  2016 data on tilapia are FAO forecasts.
  2019-2020 data on the grouping "other freshwater fish" were integrated with FAO's forecasts.
  2021 data were collected from FAO, most of them being estimates.

- Portugal

  2013 and 2014 data on clam are National estimates available in Eurostat.
  For 2015, data on trout and clam are National estimates available in Eurostat while data on all other species are National provisional figures available in Eurostat.
  2015-2018 data on sea mussels were collected from FAO.

2020 data on the grouping “other marine fish” were integrated with figures from FAO.

- Romania

  2015 data are National estimates available in Eurostat.
  For turbot, 2015-2016 data are FAO forecasts.
  2019 data are National estimates available in Eurostat.
  2020 data on freshwater catfish and on the grouping “other freshwater fish” were integrated with FAO’s forecasts.

- Slovenia

  2013- 2022 Eurostat confidential data on several species were integrated with figures from FAO.

- Slovakia

  For 2019, data on pike and pike-perch are FAO forecasts. In addition, data on the following species were integrated with FAO forecasts: carp, freshwater catfish, trout.
  2020 data for most of the species were integrated with FAO’s forecasts.
  2021 data for most of the species were integrated with FAO’s estimates, including Eurostat confidential data on catfish.

- Sweden

  Salmon data 2013, 2014 and 2016 were collected from FAO.
  2019, 2021 and 2022 Eurostat confidential data on several species with figures from FAO.

SUPPLY BALANCE SHEET

The supply balance is a proxy that allows to follow the evolutions of the EU internal supply of fishery and aquaculture products destined for human consumption and their “apparent consumption”. In the light of this, the supply balance and apparent consumption should be used in relative terms (e.g. analysing trends) rather than in absolute terms. The supply balance is built on the basis of the following equation, calculated in live weight equivalent:

(catches + aquaculture production+ imports) – exports

=

apparent consumption

Data included in the supply balance available in EUMOFA are broken down by commodity group and main commercial species. Possible discrepancies in totals are due to rounding. The sources used are as follows:

- Catches: products caught by fishing vessels of the EU Member States. Amounts of catches not destined for human consumption were estimated using proxies based on destination use of landings (as available in EUROSTAT). Catches data are available in live weight equivalent. Source: EUROSTAT for catches in marine areas (reference dataset: fish_ca_main), integrated with FAO for catches in inland areas.

- Aquaculture production: products farmed in the EU Member States. Aquaculture data are available in live weight equivalent. Source: EUROSTAT (reference dataset: fish_aq2a). The data cover the aquaculture sector from the point of view of farm-gate production available for human consumption. An exception from the "for human consumption" criteria is being made since the reference year 2016 for aquatic plants, which are included regardless of their

final use. To be noted, however, that seaweed in the EU is almost exclusively harvested. Data are integrated with data from FAO, FEAP and national administrations (for sources' details by year and country, please refer to the related section of this methodological background).

- Imports - Exports: fishery and aquaculture products imported/exported by the EU Member States from/to non-EU countries. Non-food use products are not included. Import and export data are available in net weight. For the supply balance purposes, net weight is converted into live weight equivalent in order to have a harmonized supply balance sheet (for conversion to live weight equivalent, please refer to the specific section below in this methodological background). Through the assessment of origin of imports and exports in terms of production method, it is possible to estimate the share of imports/exports originating from aquaculture and captures by making use of FAO data (for the method applied, please refer to the specific section below in this methodological background). Source: EUROSTAT–COMEXT (reference dataset: DS-045409).
- Apparent consumption (total and per capita): amount of fishery and aquaculture products estimated to be consumed in the EU. Per capita consumption indicates the amount by each individual person in the EU.

CONVERSION OF NET WEIGHT INTO LIVE WEIGHT EQUIVALENT

Since EUROSTAT provides production data in live weight, import/export net volumes are converted by using conversion factors (CF) for the purpose of building a harmonized supply balance sheet.
Example of CF for the item whose CN8 code is 03044410: this item corresponds to "Fresh or chilled fillets of cod '*Gadus morhua, Gadus ogac, Gadus macrocephalus'* and of fish of the species *"Boreogadus saida"*". The CF is set at 2,85, representing an average of those found for skinned and boned fillets for this species in EUROSTAT and FAO publications.
For the complete list of CFs used for the EUMOFA purposes, please refer to the Metadata published within the EUMOFA website at the link https://eumofa.eu/documents/20124/35680/Metadata+2+-+DM+-+Annex+7+CF+per+CN8.pdf/7e98ac0c-a8cc-4223-9114-af64ab670532?t=1681387953349

ASSESSMENT OF ORIGIN OF IMPORTS AND EXPORTS IN TERMS OF PRODUCTION METHOD

The objective of the assessment of origin in terms of production methods is to quantify the role of aquaculture in the EU supply balance analysis. For each EU Member State, on the basis of the total volumes of extra-EU imports and extra-EU exports, the production methods of the countries of origin of imports and destination of exports is assessed, averaging the latest three years of production volumes in terms of catches and aquaculture.
Further assessment provides an estimate of a weighted average share of aquaculture in the total production (aquaculture + capture) and it is expressed as a coefficient.
Through this proxy, the origin of imports and destinations of exports in terms of production methods is determined, i.e. if imports/exports of a given EU Member State derive from farming or fishery activities.

EXPENDITURE AND PRICES FOR FISHERY AND

EU expenditure data are provided by EUROSTAT. These data are compiled basing on a common methodology elaborated within the "EUROSTAT – OECD PPP Programme"

AQUACULTURE PRODUCTS

(http://www.oecd.org/std/prices-ppp/eurostat-oecdmethodologicalmanualonpurchasingpowerparitiesppps.htm).

In "The EU fish market" report, the "Nominal expenditure (in euro)" and the "Nominal expenditure per inhabitant (in euro)" have been used. The "expenditure" is taken as a component of the Gross Domestic Product and concerns the final consumption expenditures on goods and services consumed by individual households.

Expenditure is provided in Purchasing Power Parities (PPPs) which are spatial deflators and currency converters that eliminate the effects of the differences in price levels between Member States/countries, thus allowing volume comparisons of GDP components and comparisons of price levels. For the countries outside the Euro-zone, Price Level Indices (PLIs) are used for harmonising different currencies in a single currency (euro in this case). PLIs are obtained as ratios between PPPs and current nominal exchange rates, therefore, PPPs and PLIs values coincide in the Euro-zone countries.

Price indices refer to the Harmonised Index of Consumer Prices (HICP) which gives comparable measures of inflation. It is an economic indicator that measures the change over time of the prices of consumer goods and services acquired by households. In other words, it is a set of consumer price indices calculated according to a harmonised approach and a set of definitions as laid down in Regulations and recommendations.

"Food" is an aggregate of products, corresponding to COICOP 01.1 (https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=HICP_2019&StrLanguageCode=EN&IntPcKey=43907206&StrLayoutCode=HIERARCHIC). It includes all food products purchased for consumption at home. In this report, analyses are provided for the following items belonging to the "Food" aggregate:

- "Fishery and aquaculture products", corresponding to COICOP 01.1.3. It includes "fresh or chilled", "frozen", "dried, smoked or salted", and "other preserved or processed products", as well as land crabs, land snails and frogs, as well as fish and seafood purchased live for consumption as food.
- "Meat", corresponding to COICOP 01.1.2. It includes "fresh, chilled or frozen, dried, salted or smoked meat and edible offal" and "other preserved or processed meat and meat-based preparations". It also includes meat and edible offal of marine mammals and exotic animals, as well as animals and poultry purchased live for consumption as food.

HOUSEHOLD CONSUMPTION OF FRESH FISHERY AND AQUACULTURE PRODUCTS

Data are collected from EUROPANEL and refer to households' purchases of selected fresh species in 11 EU Member States, which are then aggregated for the EUMOFA purposes into "Main commercial species".

Households' purchases are recorded daily by a sample of households in supermarkets, discount shops, micro-markets, groceries, fishmongers and online sales (Amazon Fresh included), who reports to EUROPANEL many information, among which species, quantities and values.

The sample of households (i.e., "panel") is composed in order to be representative of the population of each country and to appropriately estimate its characteristics. Below, specifications regarding panels from which data derive are provided:

Member State	Sample size (Households)
Denmark	3.000
Germany	30.000
Ireland	5.650
Spain (excluding Canary Islands)	12.000
France	20.000
Italy	10.000
Hungary	4.000
Netherlands	10.000
Poland	8.000
Portugal (excluding Madeira and Azores Islands)	4.000
Sweden	4.000

For each country surveyed (except Hungary), household consumption data cover a selection of most consumed fresh species *plus* the additional item "other unspecified products", aggregating all other fresh species recorded by household panels but not available at disaggregated level. Products monitored include either packaged or loose fish, always without any additional ingredients. Below the complete lists of "main commercial species" monitored for each country is reported:

Denmark	France	Germany	Ireland
Cod	Cod	Alaska pollock	Cod
Dab	Gilthead seabream	Carp	Haddock
Flounder	Hake	Cod	Hake
Halibut	Mackerel	Herring	Mackerel
Mackerel	Monk	Mussel *Mytilus*	Saithe (=Coalfish)
Mussel *Mytilus*	Saithe (=Coalfish)	Plaice	Salmon
Salmon	Salmon	Saithe (=Coalfish)	Shrimps
Trout	Sardine	Salmon	Other unspecified products
Other unspecified products	Trout	Shrimps	
	Whiting	Trout	
	Other unspecified products	Other freshwater fish	
		Other unspecified products	

Italy	Netherlands	Poland	Portugal
Anchovy	Cod	Carp	Clam
Clam	Herring	Mackerel	European seabass
European seabass	Mackerel	Salmon	Gilthead seabream
Gilthead seabream	Mussel *Mytilus*	Trout	Hake
Hake	Pangasius	Other unspecified products	Mackerel
Mussel *Mytilus*	Plaice		Octopus
Octopus	Salmon		Salmon
Salmon	Shrimp Crangon spp		Sardine
Squid	Other shrimps		Scabbardfish
Swordfish	Trout		Shrimps
Other unspecified products	Other unspecified products		Other unspecified products

Spain	Sweden	Hungary
Cod	Cod	Unspecified products
European seabass	Flounder	
Gilthead seabream	Haddock	
Hake	Halibut	
Mackerel	Herring	
Monk	Pike-perch	
Salmon	Salmon	
Sardine	Other salmonids	
Sole	Other unspecified products	
Tuna		
Other unspecified products		

RETAIL SALES AND OUT-OF-HOME CONSUMPTION

Data for retail sales and out-of-home consumption are provided by Euromonitor International[1] (https://www.euromonitor.com/), whose data and estimates could be different from other statistics available at national level, as different methodological approaches may be used. They refer to "unprocessed" and "processed" products.

Unprocessed products

Data are provided for the category "fish and seafood", as well as for the sub-categories finfish, crustaceans and molluscs and cephalopods, more detailed below:

Fish and seafood: This is the aggregation of finfish, crustaceans and molluscs and cephalopods. This category includes packaged and unpackaged unprocessed fish and seafood (fresh, chilled, frozen). Chilled and frozen fish and seafood can be cleaned, gutted, peeled/trimmed/filleted/cut to a different extent, but not cooked and no sauces, herbs or condiments can be added.

- Crustaceans: includes all fresh, chilled and frozen but uncooked crustaceans (i.e. animals living in water with firm body and have a hard-outer shell) such as lobsters, shrimps and crabs, whether sold packaged or unpackaged.
- Finfish: includes all fresh, chilled and frozen but uncooked freshwater and marine finfish (wild caught or farmed), whether sold packaged or unpackaged, cut or whole.
- Molluscs and cephalopods: includes all fresh, chilled and frozen but uncooked molluscs (shellfish such as oysters and clams) and cephalopods (such as the octopus, squid, cuttlefish), whether sold packaged or unpackaged.

Processed products

Data are provided for the category "processed fish and seafood", as well as for the subcategories shelf-stable seafood, chilled processed seafood and frozen processed seafood, more detailed below:

Fish and seafood: This is the aggregation of shelf-stable, chilled and frozen fish and seafood.

- Shelf-stable: includes shelf-stable fish, shellfish and seafood typically sold in cans, glass jars or aluminium/retort packaging. It is also usually preserved in oil, brine, salt water or with a sauce (e.g. sardines in tomato sauce). Pickled fish/seafood sold ambient is also included. Product types include: cod, haddock, mackerel, sardines, tuna, prawns, crab, mussels, anchovies, caviar etc.
- Chilled processed: includes all packaged processed chilled fish/seafood products and smoked fish sold in the self-service shelves of retail outlets. Processed fish/seafood products sold together with a sauce and cooked prawns are included. Note: herring products sold in chiller/refrigerator cabinets, and which have a shelf-life of more than 6 months are excluded. These products, which are very common in Scandinavian countries, are included in shelf-stable seafood as they have similar shelf-life to shelf-stable fish sold ambient.
- Frozen processed: includes all processed fish and seafood products which are further prepared with the addition of other ingredients, including breading/batter, sauce, seasoning, etc. Product types include: fish fingers, fish pies, battered or breaded fish, fish with any type of sauce, fish balls, cuttlefish balls, scampi, calamari, etc.

IMPORT-EXPORT

The trade flows of fishery and aquaculture products are analysed for the items referring to the list of CN-8 codes at the link https://eumofa.eu/documents/20124/35680/Metadata+2+-+DM+-+Annex+4+Corr+CN8-CG-MCS.pdf/ae431f8e-9246-4c3a-a143-2b740a860291?t=1697717528452.

The source used for collecting import-export data is EUROSTAT – COMEXT (online data code: DS-045409, extraction made on 22nd April 2024). For more information on the methodology and principles behind EUROSTAT's recording of "country of origin" and "country of destination", please visit EUROSTAT's "Quality Report on International Trade Statistics", at https://ec.europa.eu/eurostat/web/products-statistical-reports/w/ks-ft-22-010.

It must be specified that data do not comprehend instances in which volumes or values are not reported due to confidentiality. The principle of statistical confidentiality of Eurostat is explained at the link: https://ec.europa.eu/eurostat/about-us/statistical-confidentiality#:~:text=Statistical%20confidentiality%20is%20a%20fundamental,their%20use%20for%20statistical%20purposes.

EXTRA-EU TRADE FLOWS

They encompass all transactions between European Union (EU) Member States and countries outside the EU (non-member countries). The source used for these trade flows is EUROSTAT - COMEXT. In line Eurostat's guidelines on the production and dissemination of statistical data by Commission services after the UK withdrawal from the EU, and since most recent reference period is year 2023, UK is excluded from the EU aggregations of each year. This means that UK is dealt with as extra-EU country of origin/destination of EU-27 imports and exports.

Finally, it is important to underline that while imports are reported as such by Eurostat-COMEXT according to flows recorded by national customs, in most cases the EU Member States are not the actual destinations. Rather, they are "points of entry" for the fisheries and aquaculture products imported to the EU, which are then traded within the internal market.

INTRA-EU TRADE FLOWS

They encompass all transactions declared by Member States of the European Union (EU) with one another. For the analysis of intra-EU trade, only export flows have been considered. The source used for these trade flows is EUROSTAT - COMEXT.

In general, bilateral comparisons between Member States of intra-EU flows reveal major and persistent discrepancies, thus comparisons dealing with intra-EU trade statistics and related results must be taken into account cautiously and should consider the existence of these discrepancies. This is the official explanation from Eurostat: considering that the intra-EU trade data are based on common and largely harmonised rules, one might expect the intra-EU trade balance to be zero or at least close to it. However, it is worth underlining that a perfect match is made impossible first of all by the CIF/FOB[3] approach: the import value should be higher than the mirror export value as it includes extra transport costs.

A close match could nevertheless be legitimately expected given that trading partners within the EU are often neighbouring countries, but deliveries to vessels and aircraft are another methodological reason preventing this: such movements of goods create asymmetries in intra-EU ITGS as specific legal provisions state that only dispatches are to be reported.

At global level, most methodological reasons for asymmetries disappear. The remaining issues are in data reporting (e.g. missing Intrastat declarations, and trade in specific goods like sea-going vessels and aircraft not being properly captured).

LANDINGS

Eurostat data regarding landings (online data code: fish_ld_main, data collected on 3rd June 2024) comprise the initial unloading of any fisheries products from on board a fishing vessel to land in a given EU Member State. As landings data are available up to 2022, in line with Eurostat's guidelines on the production and dissemination of statistical data by Commission services after the UK withdrawal from the EU, UK is excluded from the EU aggregations of each year. Data include landings made by vessels from EU Member States and from Canada, Faroe Islands, Greenland, Kosovo, Iceland, Norway and the UK. Data also include landings of species not destined for human consumption and seaweed.

The following issues should be mentioned regarding data used for the "Landings in the EU" chapter:

- Confidentiality. As indicated by national data providers to Eurostat, landings are confidential when they originate from less than three vessels. Therefore, in some instances, Member States provide data at more aggregated level, in others data are just not available. The EUMOFA system discards the records having volume or value equal to zero, because such records would represent partial information invalidating any analysis of data. The following instances, broken down by country, year and species involved, are not included in the analysis as they are affected by confidentiality issues:

  - Denmark
    For 2017, details on the destination use and/or presentations/preservations of some specific species belonging to the following main commercial species are confidential: eel, pike, cod, sole, sardine, bluefin tuna, crab, cold-water shrimps, Norway lobster, oyster, clam and the groupings "other freshwater fish", "other groundfish", "miscellaneous small pelagics" and "miscellaneous tunas". Only totals are available, and were collected from Statistics Denmark.

[3] Cost, Insurance and Freight (CIF) and Free on Board (FOB) are international shipping agreements used in the transportation of goods. The CIF rule places an obligation on the seller to arrange insurance for the consignment. If the FOB rule is used, once the goods have been loaded on board, risk transfers to the buyer, who bears all costs thereafter.

For other years, data do not include the following confidential figures:
2019:
- for blue whiting, landings of the Irish fleet
- for herring, landings of the German and UK fleets destined for industrial use
- for Atlantic horse mackerel, landings of the Danish fleet destined for industrial use
- for sandeels, landings of the German fleet
- for sprat (= Brisling), landings of the German and Estonian fleets as well as landings of the Latvian fleet destined for industrial use.

2020:
- for herring and sprat, landings of the German fleet destined for industrial use and animal feed, respectively.
- for sprat, landings of the Lithuanian and Polish fleets destined for animal feed and industrial use, respectively.
- for blue whiting, landings of the UK fleet.
- for clam, landings of the species *Spisula solida* of the Danish fleet.

2021:
- for blue whiting, landings of the Irish and Icelandic fleets
- for herring, landings of the Dutch fleet.
- for clam, landings of the species *Spisula solida* of the Danish fleet
- for sandeels, landings of the German fleet
- for boarfishes (included in the main commercial species "Other marine fish"), landings of the UK fleet.

2022:
- for boarfishes (included in the main commercial species "Other marine fish"), landings of the Danish and UK fleet
- landings of capelin (included in the main commercial species "Miscellaneous small pelagics")
- landings of herring destined for human consumption of the Icelandic and UK fleets, as well as landings of herring for unknown destination use of the Danish fleet
- landings of sprat destined for industrial use of the German, Finnish and Polish fleets
- landings of solid surf clam
- landings of blue whiting destined for industrial use of the Irish and Icelandic fleets

- Ireland
  - 2018 data are confidential for the following main commercial species: abalone, dab, dogfish, European flounder, grenadier, Atlantic halibut, ray's bream, redfish, sardine, scabbardfish, sea cucumber, European seabass, seabreams, swordfish, bluefin tuna and weever. Furthermore, for all other main commercial species, some confidential figures are excluded, related to vessels' flag, destination use and/or presentations/preservations of some specific species.
  - 2019 data are confidential for the following main commercial species: anchovy, European flounder, grenadier, Greenland halibut, mussel Mytilus spp., sardine, sea urchin, warmwater shrimps, swordfish. Furthermore, for all other main commercial species, several confidential figures are excluded, related to vessels' flag, destination use and/or presentations/preservations of some specific species.

- 2020 data are confidential for the following main commercial species: eel, European flounder, grenadier, haddock, Atlantic halibut, herring, horse mackerel, redfish, sea cucumber, bigeye tuna, weever. Furthermore, for all other main commercial species, several confidential figures are excluded, related to vessels' flag, destination use and/or presentations/preservations of some specific species.
- 2021 data are confidential for the following main commercial species: Greenland halibut, mussel *Mytilus* spp. (blue mussel), salmon, sardine, swordfish, and bluefin tuna. Furthermore, for all other main commercial species, several confidential figures are excluded, related to vessels' flag, destination use and/or presentations/preservations of some specific species.
- 2022 data are confidential for the following main commercial species: anchovy, redfish and trout. Furthermore, for all other main commercial species, several confidential figures are excluded, related to vessels' flag, destination use and/or presentations/preservations of some specific species.
- In addition, the following data were collected from SFPA (Sea-Fisheries Protection Authority) and Central Statistics Office:
  - 2013, 2014, 2018 and 2019 data regarding hake
  - 2014 data regarding mackerel
  - 2016 data regarding herring
  - 2018 data regarding blue whiting and monk
  - 2019 data regarding the value of mackerel and blue whiting

- Greece
  2016 and 2017 data are confidential for those landings made by one single vessel operating in Atlantic, Eastern Central regarding the following main commercial species: cuttlefish, flounder (other than European flounder), John dory and the grouping "other flatfish". Only for 2017, data do not include confidential figures for frozen deep-water rose shrimp.
  Furthermore, for 2016, 2017 and 2018, some confidential figures are excluded related to destination use and/or presentations/preservations of some specific species. They concern:
  - For 2016-2017: some species belonging to the following main commercial species: octopus, red mullet, seabream (other than gilt-head seabream), squid, and the groupings "other sharks" and "other marine fish". Only for 2017, data do not include confidential figures for some species belonging to the grouping "warmwater shrimps".
  - For 2018: some species belonging to the following main commercial species: crab, John dory, octopus, red mullet, squid, seabream (other than gilthead seabream) and the grouping "other marine fish".

- Malta
  All data regarding landings made by vessels with Cyprus flag are excluded as they are confidential.

➢ Provisional data

- France
  2018, 2019, 2020 and 2021 volumes and values are provisional data available in Eurostat.

- Italy

2018, 2019 and 2020 volumes and values are provisional data available in Eurostat.

- Estimates

  - Bulgaria
    2017 and 2020 volumes and values are national estimates available in Eurostat.

  - Denmark
    Values for 2019, 2020, 2021 and 2022 include national estimates available in Eurostat.

  - Ireland
    Volumes and values for 2017, and values for 2020 and 2022, include national estimates available in EUROSTAT.

  - Lithuania
    Volumes and values for 2017 are national estimates available in EUROSTAT.

  - Netherlands
    Volumes and values for 2017, 2018, 2019, 2020, 2021 and 2022 include national estimates available in Eurostat.

  - Portugal
    Volumes and values for 2018, 2019, 2020, 2021 and 2022 include national estimates available in Eurostat.

  - Romania

Volumes and values for 2017 are national estimates available in Eurostat.

HIGHLIGHTS

RISING PRICES CONTINUE TO IMPACT EU HOUSEHOLD EXPENDITURE AND CONSUMPTION OF FISH

In 2023, household spending on fishery and aquaculture products in the EU-27 rose to EUR 62,3 billion, a 6% increase over 2022, continuing the upward trend that began in 2018. This growth was seen across all Member States except Sweden, where its 4% decline registered as the only decrease in household fish expenditure in the EU since 2021. While the spending increases in 2020 and 2021 were driven by COVID-19 restrictions, the surge in 2022 was fuelled by inflation linked to a tense geopolitical context. In 2023, although inflationary pressures eased slightly from 2022, fish prices continued to rise, contributing to higher household expenditures. According to Europanel/Kantar/GfK data, total at-home fish consumption had been declining since 2021 and decreased, in the highest consuming EU countries, by over 5% from 2022 to 2023.

EU TRADE FLOWS DECREASED IN VALUE FOR THE FIRST TIME SINCE 2020

In 2023, the EU trade flows[4] of fishery and aquaculture products experienced a decrease of 4% in volume and of 2% in nominal value compared with 2022, translating into a 6% decrease in real terms.

Extra-EU imports amounted to 5,9 million tonnes, a 3% decrease from 2022, while their value dropped by 6% to EUR 30,1 billion, remaining well below pre-pandemic levels. Despite this decline, extra-EU imports accounted for 43% of the total value of EU trade flows, highlighting their continued importance.

On the other hand, extra-EU exports were the only trade flows to increase in value, rising by 1% to over EUR 8 billion, although their volume decreased by 3% to 2,2 million tonnes, the lowest level in a decade.

Intra-EU exchanges totalled 5,8 million tonnes and EUR 31,8 billion, representing 45% of the total trade value. While their volume remained stable, their real value increased by 45% over the past decade, outpacing the growth rates of 25% for extra-EU imports and 13% for exports. Notably, intra-EU trade exceeded extra-EU imports in value for the second time in the last decade, first occurring in 2021.

The 2023 trade figures marked a shift from the significant value growth observed in 2022, which had been a standout year in the 2014–2023 decade, driven by inflationary pressures and geopolitical tensions. The 2023 trade flows reflected broader economic trends, including easing inflation, which, by December 2023, dropped to 3,4 from the 10,4% recorded a year earlier. However, trade volumes continued to decline, underscoring persistent challenges in supply chains and the economic aftermath of the Russian invasion of Ukraine. It is important to note that while most purchases are made in US dollar (USD) or Norwegian krone (NOK), they are reported in euro (EUR) in this report. Exchange rates fluctuations played a significant role in recent years, with the EUR stabilizing against the USD after historic lows in late 2022 and peaking against the NOK in 2023. These currency shifts influenced the value of imports, particularly for key products such as salmon from Norway, which made up 23% of the value of extra-EU imports.

[4] Extra-EU imports + extra-EU exports + intra-EU trade flows.

MPROVEMENT OF THE EU TRADE BALANCE AND OTHERS MAIN NET IMPORTERS OF FISH

Due to a larger 6% decrease in the value of imports compared with a 1% increase in exports, the EU trade deficit[5] was 8% or EUR 1,85 billion lower in 2023 than in 2022. On a longer decade perspective, in the 2014–2023 decade, the deficit grew by 30% in real terms.

However, from 2022 to 2023, both imports and exports saw a 3% decline in volume. All EU countries with deficits greater than EUR 1 billion saw positive growth compared with 2022, with the notable exception of Sweden which, as a key entry point for high-value Norwegian products, plays an important role in the EU's trade network.

Meanwhile, the trade deficit also narrowed in the United States and Japan, which are the second and third largest net importers of fishery and aquaculture products in the world after the EU. In the US, the deficit shrank to EUR 17 billion, a decrease of more than 20% from 2022, while at the same time Japan totalled just above EUR 10,5 billion, down 13%.

2022: FALL IN APPARENT CONSUMPTION, ACROSS ALL SUPPLY SOURCES

In 2022, apparent consumption[6] of fishery and aquaculture products in the EU decreased to an estimated 10,48 million tonnes LWE, a slight 1% drop from 2021. This decrease was linked to a general reduction of imports, catches, and farmed production. Since 2020, a remarkable shift has emerged in the composition of apparent consumption. While farmed products are gaining ground, the share of wild products in total consumption reached its lowest level of the 2013–2022 decade in 2022. Per capita apparent consumption of farmed products edged up to its highest point of the decade, increasing from 6,80 kg LWE in 2021 to 6,82 kg LWE in 2022. Meanwhile, consumption of wild products declined to its lowest level, dropping from 16,91 kg LWE to 16,70 kg LWE.

Landings of fishery products, including species not destined for human consumption and seaweed, have been following a downward trend since 2018. The volume of 2022 landings in the EU totalled 3,17 million tonnes worth EUR 6,21 billion, which was the lowest volume recorded in the 2013–2022 decade. That same year, the EU also saw a decrease of around 90.000 tonnes LWE from 2021, for both imports and exports.

According to EUMOFA and national estimates, Portugal's apparent per capita consumption of fishery and aquaculture products[7] stands out as the highest in the EU, as confirmed in 2022. In line with the decrease estimated at EU level from 2021 to 2022, decreases were observed for the major EU consuming countries, including Portugal, with the exception of Croatia and France, which recorded increases of 7% and 1%, respectively, compared with 2021.

Moreover, estimated apparent consumption has also been increasing in some of the countries that have traditionally shown lower levels of per capita apparent consumption. For example, it increased every year of the last decade in Hungary, Romania, and Slovakia.

RECENT DYNAMICS FOR SOME MAIN SPECIES

In 2023, imports of salmon in the EU decreased by 4% from 2022, reaching their lowest level since 2019 The decrease was influenced by the 3% drop in European Atlantic salmon production from 2022 to 2023 and the 2,5% decrease in the global production of Atlantic salmon. Meanwhile, catches of wild Pacific salmon reached a record high in 2023. EU imports of wild Pacific salmon remain low in volume. Pacific salmon has served as an affordable raw material for the EU processing sector. Despite

[5] Extra-EU exports *minus* extra-EU imports. Every year, EUMOFA estimates the total supply of fishery and aquaculture products for EU consumers by adding catches + aquaculture production + imports. Then, by subtracting exports, this formula provides an approximation of EU apparent consumption. As consolidated data on EU production of fishery and aquaculture products are available up to 2022, the estimates have been made up to 2022 as well

[6] The definition of "apparent consumption" is available in the "Supply balance sheet" section of the Methodological background.

[7] It is worth underlining that the methodologies for estimating apparent consumption at EU and Member State levels are different, the first based on data and estimates as described in the Methodological background, the latter also requiring the adjustment of abnormal trends due to the higher impact of stock changes.

the decline in import volume, the overall value of salmon imports remained stable at EUR 8,4 billion, matching 2022 levels. Of note, import values in 2022 and 2023 were the highest ever recorded and represented a doubling over the last decade.

After a slow start, Atlantic salmon production in Europe in 2024 showed an upward trend, with output expected to increase by 3–5% compared with 2023. In stark contrast, catches from wild Pacific salmon fisheries were alarmingly low in 2024, dropping by more than 50% from 2023.

Shrimps[8], the third most consumed aquatic species in the EU in 2022, accounted for 10% of the volume and 13% of the value of EU. However, in 2023, shrimps saw a 5% drop in import volume and 18% drop in import value compared with 2022. Warmwater shrimps[9], primarily sourced from Ecuador, comprised 54% of the import volume and 53% of the value for all shrimps. These were followed by other shrimp species[10], representing 34% of the volume and 38% of the value, with key suppliers Argentina, India, and Vietnam accounting for 34%, 14%, and 10% of the volume, respectively. Finally, coldwater shrimps[11] accounted for 11% of volume and 7% of value, with 86% of their volume imported from Greenland. In 2023, Ecuador and Argentina increased their market shares by 3% and 1% in volume, respectively, while India's share declined by 1%. Together, these three trade partners accounted for more than half of the shrimps' import volume to the EU in 2023, namely 52% of the total.

Cod is one of the most popular species among EU consumers. In 2023, the Northeast Arctic cod quotas were reduced by 20%, following a similar cut in 2022, leading to a 7% drop in foreign supply to the EU market. The average product price for cod increased by 3%, going from 6,48 EUR/kg to 6,71 EUR/kg, while cod import value fell by close to 4% from 2022. In 2024, market prices for cod have remained high, averaging 6,82 EUR/kg in the first three quarters. The prices are expected to remain high for a while – as Northeast Arctic cod quotas were reduced by an additional 25% for 2025.

Tuna[12] tops the list of main consumed products in the EU with per capita consumption of 2,96 kg (LWE). In 2023, tuna accounted for 9% of the total volume and value of fish imports into the EU, though import volumes dropped by 12% and values by 8% compared to 2022.

Skipjack tuna accounted for 56% of the imported tuna volume and 52% of the value, followed by yellowfin tuna with 29% for both. Bluefin tuna, mainly farmed for fattening, commanded the highest average product price at 11,90 EUR/kg, 11% lower than in 2022. Ecuador remained the EU's main supplier of tuna, holding a 24% share in both import volume and value in 2023. Prepared and preserved products dominate EU tuna imports, with their share steadily rising – increasing from 71% in 2021, to 73% in 2022, and to 78% of the import volume in 2023.

Alaska pollock is a key species for the EU processing industry. In 2023, its import volume rose by 6% to 287.000 tonnes, while its value fell by 5%. Volume of market shares also shifted notably from 2021 to 2023 – driven by price reductions from the two biggest suppliers, China and Russia, whose combined import shares grew from 66% in 2021 to 80% in 2023. Meanwhile, the US, the third largest Alaska pollock supplier, saw its share halved in the same period, ending at 16% in 2023. While Russian and US products had similar import prices in 2021, the gap widened by 2023, with both countries primarily supplying frozen fillets. The average import price in 2023 was 3,15 EUR/kg for Russian products and 4,02 EUR/kg for US products.

[8] Shrimps include warmwater shrimp, coldwater shrimp, deep-water rose shrimp, shrimp *Crangon* spp., and miscellaneous shrimp.
[9] Shrimps of the genus *Penaeus*.
[10] The most imported product in this group was "Frozen shrimps and prawns, even smoked, whether in shell or not, incl. shrimps and prawns in shell, cooked by steaming or by boiling in water (excl. "Pandalidae", "*Crangon*", deepwater rose shrimps "*Parapenaeus longirostris*" and "*Penaeus*")", CN8 code: 03061799.
[11] Shrimps of the genus *Pandalus*.
[12] Tuna includes skipjack tuna, yellowfin tuna, bigeye tuna, albacore tuna, bluefin tuna and miscellaneous tuna.

MACROECONOMIC TRENDS

In 2023, the euro (EUR) appreciated by 3% against the American dollar (USD)[13], but the euro's position against other currencies of importance to operators in the fishery and aquaculture industry varied widely. For example, it appreciated by 9% against the Norwegian krone (NOK), depreciated by 1% against the British pound (GBP), and maintained its position against the Icelandic króna (ISK). During the first three quarters of 2024, the euro appreciated 1,9% against the USD, 2,1% against the NOK, and 1,1% against the ISK. Compared with GBP, the euro depreciated by 2,5%.

The European Central Bank (ECB) interest rate was raised from 0% to 4% from July 2022 to September 2023 in order to combat inflation. From the peak in September 2023, the interest rate was gradually lowered and, on October 2024, the ECB lowered the interest rate to 3,25%.

From an annual average inflation rate of 9,2%[14] for the EU-27 in 2022, inflation in the euro area decelerated in 2023 – down to 2,9% in December 2023 (year-on-year percentage change). The inflation rate continued to decrease in 2024 – with inflation trending around 2% in October 2024. While there were some fluctuations in marine fuel prices through 2023, European fuel prices averaged slightly lower by the end of 2023 (0,7 EUR/l) compared with the end of 2022. They also trended on a far lower level than observed for 2022 which saw an average of around 1,00 EUR/l. In the 10 first months of 2024, marine fuel prices continued their downward trend, falling by around 15% in the period.

Since its 2022 peak, inflation for fishery and aquaculture products in the EU fell significantly in 2023, growing by 4,5% from January to December[15]. Consumer prices for fresh seafood products rose by 3,4% while an even lower growth rate of 1,4% was observed for frozen seafood. The inflation rate continued down in the first eight months of 2024 – with consumer prices for fishery and aquaculture products rising by 1,5%. A similar trend was observed for processors of fish, crustaceans, and molluscs [16], which saw 2023 producer prices grow slightly more than consumer prices for fishery and aquaculture products (5,4%). Further, the producer prices in the first three quarters of 2024 ended slightly lower (0,7%).

[13] European Central Bank (ECB) https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/index.en.html
[14] Eurostat (2023). *HICP – inflation rate*. https://ec.europa.eu/eurostat/databrowser/view/tec00118__custom_7876880/default/table?lang=en
[15] Eurostat (2024). *HICP - monthly data (annual rate of change) [PRC_HICP_MANR__custom_8708230]*. https://ec.europa.eu/eurostat/databrowser/view/PRC_HICP_MANR__custom_13701697/default/table?lang=en
[16] Eurostat 2024. Producer prices in industry, total – quarterly data https://ec.europa.eu/eurostat/databrowser/view/sts_inpp_q__custom_13703503/default/table?lang=en

1/ THE EU IN THE WORLD

1.1 GLOBAL PRODUCTION

From 2021 to 2022, total world production[17] from catches[18] and aquaculture increased by 2%. Of this, the total volumes produced rose from 218,2 million tonnes to a ten-year high of 222,9 million tonnes. This growth was driven by aquaculture, which saw a 4% increase and also hit a ten-year high of 130,9 million tonnes. Meanwhile, wild catches, which had seen decreases in 2019 and 2020 but rebounded in 2021, dipped a slight 1% in 2022, settling at 92 million tonnes.

All the major Asian producers recorded increases. China maintained its position as the top producer, with aquaculture growing by 4% while wild catches remained stable. India saw robust growth, with its aquaculture production rising by 9% and wild catches increasing by 10%. Indonesia experienced a 3% increase in wild catches, which contributed to a slight overall rise. Vietnam followed a similar pattern, with aquaculture up by 9% and catches rising by 1%.

In contrast, the EU saw a 4% decline in total production, primarily due to a 3% drop in catches. Similarly, Peru, Russia and Japan recorded production decreases of 18%, 3% and 5%, respectively, due to a drop in their catches. On the other hand, while the Republic of Korea recorded a 5% drop, it was mainly linked to a decrease in its aquaculture production. Myanmar recorded the strongest overall growth, with aquaculture surging by 29% and wild catches increasing by 12%.

TABLE 1

TOP-15 PRODUCERS IN 2022 (1.000 TONNES)

Source: Eurostat (online data codes: fish_ca_main and fish_aq2a) and FAO. Data include both food and non-food use. Possible discrepancies in % changes and totals are due to rounding. More details can be found in the Methodological background.

	Catches	Aquaculture	Total production	% of total	% evolution of total production 2022/2021
China	13.179	75.388	88.567	40%	+3%
Indonesia	7.398	14.633	22.031	10%	+1%
India	5.539	10.235	15.774	7%	+9%
Viet Nam	3.590	5.170	8.760	4%	+6%
Peru	5.368	141	5.509	2%	-18%
Russian Federation	4.992	348	5.340	2%	-3%
Bangladesh	2.028	2.731	4.759	2%	+3%
United States of America	4.263	479	4.742	2%	+0.2%
EU	**3.466**	**1.089**	**4.554**	**2%**	**-4%**
Norway	2.614	1.648	4.262	2%	+1%
Chile	2.690	1.524	4.214	2%	+10%
Philippines	1.768	2.349	4.118	2%	+0.1%
Japan	2.968	943	3.910	2%	-5%
Republic of Korea	1.259	2.308	3.567	2%	-5%
Myanmar	1.865	1.197	3.062	1%	+18%
Others	29.065	10.702	39.767	18%	+3%
TOTAL	**92.050**	**130.885**	**222.936**	**100%**	**+2%**

[17] The source of production data for non-EU countries is FAO. To be noted that in this chapter, in line with FAO database, Russian figures included in the European production encompass total production in Russia.

[18] Catches include all products fished by a country's fleet in any fishing area (both marine and inland waters), independently from the area of landing/selling. In line with Eurostat's guidelines on the production and dissemination of statistical data by Commission services after the UK withdrawal from the EU, since the most recent reference period is year 2021, UK is excluded from the EU aggregations of each year. In addition, EU data include Croatia since 2013, date of the EU's enlargement to this country.

Aquaculture's share of total world production has increased continuously since 2000, and since 2013, aquaculture production has been higher than that of catches. Another key milestone was reached in 2022, when aquaculture for food consumption exceeded fisheries for the first time. This trend has been driven by Asian countries, where aquaculture production accounted for more than 91% of the world's total farmed production in 2022.

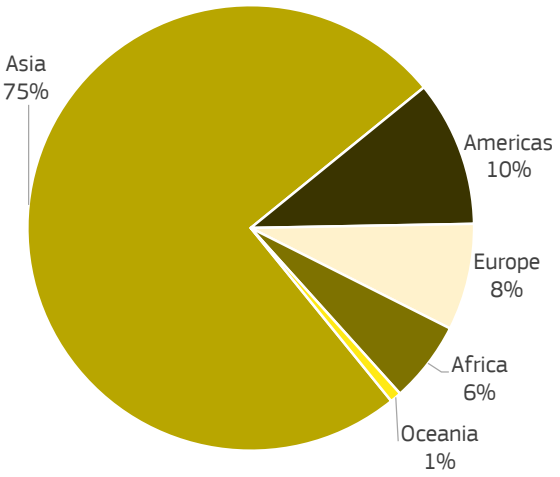
Asia is home to the world's four top-producing countries and, in each, the majority of production is from aquaculture. This includes China, where aquaculture accounts for 85% of production, Indonesia where it accounts for 66%, India where it reaches 65% and Vietnam where it is close to 60%. By contrast, in the Americas, Europe (including EU and non-EU countries) and Africa, aquaculture only accounts for one fifth of total production. Aquaculture's share of total production is even lower in Oceania, where it only reaches around 15%.

CHART 1

WORLD PRODUCTION BY CONTINENT IN 2022

Source: Source: Eurostat (online data codes: fish_ca_main and fish_aq2a) and FAO. More details can be found in the Methodological background.

Continent	Volume (1.000 tonnes)	% catches	% aquaculture
Asia	167.115	28%	72%
Americas	23.582	79%	21%
Europe	17.271	80%	20%
Africa	13.144	81%	19%
Oceania	1.823	86%	14%
World	**222.936**	**41%**	**59%**



ASIA

In addition to leading the world in aquaculture, Asia also leads in fisheries production. In 2022, Asia's farmed production reached 120 million tonnes, marking a 4% rise from 2021 and hitting the highest level of the decade. It also was its first year of growth in catches since 2019, reaching 47 million tonnes, a 1% increase from 2021.

A significant portion of Asia's fishery production comes from bony fish (*Actinopterygii*), which make up over a quarter of the continent's total. Between 2021 and 2022, bony fish saw the largest increase in catches, particularly in Indonesia, Myanmar and China. Other notable increases included skipjack tuna, with higher catches in Vietnam and Japan, and mackerel, particularly in Indonesia and India.

China stands out as Asia's top producer in both fisheries and aquaculture and a significant shaper of the region's overall trends. Indeed, it is responsible for 28% of Asia's fishery production and 64% of its aquaculture production. On a global scale, China leads in both sectors, followed distantly by Indonesia, which contributes 8% of global catches and 11% of farmed production. In 2022, China produced 75,4 million tonnes of farmed products and 13 million tonnes of wild catches, which accounted for 58% of global aquaculture and 14% of global fishery production.

Seaweed, China's most farmed species, is destined for both food and non-food use and comprises 30% of its aquaculture production. Seaweed farming alone surged by

130%, from 9,8 million tonnes in 2021 to 22,5 million tonnes in 2022, following a 53% drop between 2020 and 2021. This made 2022 the highest production year for seaweed in the past decade. Carp farming reached 18,7 million tonnes in 2022, up by 2% from the 18,4 million tonnes farmed in 2021.

If compared with the global farmed production of these two species, China accounted for more than 85% of carp and 62% of seaweed. By comparison, the EU farmed 72.167 tonnes of carp in 2021, which represented only 0,3% of the global farmed production of this species. It also harvested almost 75.000 tonnes of seaweed. That said, EU seaweed production largely originates from wild harvesting and is mainly meant for non-food purposes, which limits the relevance of its comparison with Chinese production.

AMERICAS

Production of fishery and aquaculture products in the Americas – namely North, Central and South America – is the second highest of the five continents. In 2022, the region produced 23,6 million tonnes, reflecting a slight 2% decline from the previous year. The bulk of this – some 18,5 million tonnes – came from wild catches, with much of it driven by Peru's harvest of anchoveta (*Engraulis ringens*), which is used in fishmeal production. Despite a 22% drop from 2021, Peru's anchoveta production still reached 4,1 million tonnes in 2022, accounting for 85% of global anchoveta output and 26% of total catches in the Americas.

US catches of Alaska pollock also recorded a decrease in 2022, dropping 16% from 2021 and ending at almost 1,2 million tonnes. In contrast, catches of Chilean jack mackerel, which is mainly processed into fishmeal or oil, surged by 27%, especially in Chile and Peru, reaching almost 1 million tonnes. A comparison with the EU is less relevant here, as all Alaska pollock and Chilean jack mackerel consumed in the EU are imported. Additionally, the EU's 2022 anchovy catches, totalling 100.692 tonnes, consist only of the species *Engraulis encrasicolus*, which is used for human consumption.

American aquaculture production, on the other hand, reached 5 million tonnes in 2022, the highest of the decade, largely comprising warmwater shrimp production in Ecuador and salmon production in Chile. Ecuador's warmwater shrimp production totalled 1,1 million tonnes in 2022, accounted for 22% of the total aquaculture production of the entire continent, and was 25% higher than in 2021. Salmon production in Chile reached 758.953 tonnes for a slight 5% increase from 2021 which also accounted for 15% of the total farmed production in the Americas.

By comparison, the EU's 2022 farmed production was much smaller, with only 253 tonnes of warmwater shrimp and 13.300 tonnes of salmon.

EUROPE

Production of fishery and aquaculture products in Europe – including both EU and non-EU countries – is the third highest in the world. Production in the three years from 2020 to 2022 saw slight fluctuations, but remained stable. In 2022, it reached 17,3 million tonnes, which was an

0,2% increase over 2021. Of this, 13,8 million tonnes came from catches, up 1% from 2021. Farmed products accounted for the remaining 3,5 million and showed a 2% decrease from 2021.

Total EU fishery and aquaculture production amounted to 4,5 million tonnes, which represented more than one fourth of European production. Similar shares were observed in terms of catches, with the EU accounting for 25% of total European catches, and for 31% of European aquaculture production.

Five species represent more than half of Europe's total fishery production. These include: herring with 2 million tonnes produced in 2022 for an increase of 12% from 2021; Alaska pollock with 1,9 million tonnes produced and a 9% increase; and mackerel with 1,2 million tonnes and a 1% increase. Cod also had a 1,2 million production but it

represented an 8% decrease from 2021 while blue withing showed a production of slightly more than 1 million tonnes which was a drop of 16%. Capelin, which in 2022 accounted for 5% of total European catches, experienced an extraordinary 222% growth over 2021 to 2022, reaching 648.051 tonnes of which 70% was recorded in Iceland.

European catches of Alaska pollock come exclusively from the Russian fleet in the Pacific Ocean. In the case of herring, EU production – primarily from Denmark, the Netherlands and Sweden – totalled around 453.200 tonnes which was 22% of Europe's total. However, non-EU countries Norway and Russia each accounted for about 30% of Europe's herring production in 2022, with Russia recording 591.616 tonnes and Norway recording 580.232 tonnes.

Norway also recorded the highest mackerel catches in 2022, reaching 294.086 tonnes and covering almost one fourth of the total. It was followed by Russia and the United Kingdom, which totalled 218.228 tonnes and 197.003 tonnes, respectively. EU catches of mackerel amounted to 238.901 tonnes in 2022, which was down 9% from 2021.

As for cod, almost all European catches in 2022 were made by Russia which reported 470.762 tonnes; Norway with 354.527 tonnes; and Iceland with 243.991 tonnes, while the EU catches only amounted to 40.505 tonnes.

For blue whiting, EU catches of 234.432 tonnes ranked first, followed closely by the Faroe Islands with 220.251 tonnes, and Norway with 194.973 tonnes. Both the Faroe Islands and Norway experienced notable declines in 2021 and 2022, with drops of 38% and 45% from 2020, respectively.

Aquaculture production in Europe decreased a slight 2% from 2021 to 2022, reaching 3,5 million tonnes, 44% of which was represented by production of farmed salmon in Norway. It is worth noting that of the total volumes of wild and farmed salmon[19] produced in the world, Norwegian farmed salmon accounted for 40% of the global total. This was followed by salmon farmed in Chile accounting for 26%, wild salmon produced by Russia and the United States accounting for 9% and 8% respectively, and UK's farmed salmon accounting for 4%.

AFRICA

Africa ranks fourth globally in fishery and aquaculture production, having reached 13,1 million tonnes in 2022, a 3% increase from 2021. This growth was mainly driven by wild catches, which rose by 2% and accounted for 81% of Africa's total fishery production.

An increase in sardine[20] catches played a key role, as sardines are the most significant species produced in Africa. In 2022, their catches totalled 2,3 million tonnes and accounted for 22% of the continent's wild fishery. Morocco led the continent with 2022 sardine catches of 991.103 tonnes that equalled a 25% increase from 2021. This was followed by Mauritania, where its catch of 503.296 tonnes was an 8% rise over 2021. In contrast, EU sardine catches were much lower, reaching only 174.283 tonnes, down 3% from 2021 to 2022.

Aquaculture in Africa is primarily focused on Nile tilapia, which accounts for more than 50% of the total production which increased by 2% in 2022 and reached 1,4 million tonnes. Egypt remains the top producer, contributing 71% of Africa's total production of the species.

OCEANIA

Oceania contributes just 1% to the world's total fishery and aquaculture production. In 2021, its production reached 1,82 million tonnes, 86% of which was wild caught. While

[19] Farmed salmon production largely includes Atlantic salmon (*Salmo salar*).
[20] In 2022, most sardine catches in Africa were European pilchards, accounting for 58% of the total. Madeiran sardines followed with 14%, while Round sardines made up 7%, and Pacific sardines accounted for 1%. The remaining 20% were classified as "sardinellas nei", for which more specific details were unavailable.

recent years have seen a general trend of declining catches and growing aquaculture production, the pattern reversed in 2022: wild catches increased by 6%, while aquaculture production fell by 6%.

Skipjack tuna, by far the main species caught in Oceania, accounted for nearly 45% of total catches, with 694.911 tonnes recorded in 2022 which was almost four times larger than the EU's skipjack tuna production. Kiribati, Micronesia and Papua New Guinea are the region's top producers of this species.

Oceania is also responsible for more than half of the world's grenadier catches. In 2022, New Zealand led Oceania's catch of grenadier, with 95.712 tonnes.

1.2 IMPORT-EXPORT[21]

EU

In 2023, the EU's trade in fishery and aquaculture products – the sum of its imports and exports with third countries – decreased 3% in volume and 4% in value, reaching 8,1 million tonnes with a total value of EUR 38,2 billion. Looking over a longer period, the trade volume hit its lowest level of the past decade in 2023, while in terms of both real and nominal value, it was the second-highest recorded in the 2014-2023 decade under analysis.

Despite the decrease, the EU's trade volume remained second only to China. The EU had surpassed China in 2020 during the COVID-19 pandemic but lost the lead in 2021. By 2023, China had reached a trade volume of 12,1 million tonnes with a value of EUR 41,3 billion.

The EU is a net importer. Its trade deficit in 2023 amounted to EUR 22 billion, an 8% decrease from 2022. While both import and export volumes declined, the improvement in the overall deficit was due to a decrease in import values, alongside a slight increase in export values. In 2023, EU imports amounted to 5,9 million tonnes, worth EUR 30,1 billion, which reflected a 3% decrease in both volume and value from 2022. Conversely, exports totalled 2,2 million tonnes and EUR 8,1 billion, with a 3% decrease in volume but a 1% increase in value.

This section focuses on the fishery and aquaculture trade flows (imports + exports) of the world's top five non-EU traders of fishery and aquaculture products: China, the US, Norway, Japan and Thailand. It ranks the countries by value and compares their trade flows with the EU.

Of note: Chapter 4 of this report presents detailed analyses of EU Member States' imports and exports by partner country as well as a focus on the development of main currency exchange rates.

CHINA

In 2023, China's market volume showed positive growth, increasing by 5% to reach its highest level since 2019. However, the market value had declined by 8% from 2021 to 2022 when it had experienced a record 31% growth.

In 2023, both imports and exports exhibited similar trends, with volumes increasing and values decreasing. In fact, Chinese trade volumes seemed to return to pre-pandemic levels, especially for imports. Yet, while import volumes reached 7,03 million tonnes which was a 6% increase over 2022, their value decreased by 3% to EUR 21,6 billion after nearly doubling from 2021 to 2022. Comparing 2019 to 2022, Chinese imports grew by 12% in volume and 31% in value.

This growth was largely driven by increased imports from the Russian Federation, China's primary supplier of fishery and aquaculture products. From 2022 to 2023,

[21] Sources used in this chapter are Eurostat for the EU (online data code DS-045409) and Trade Data Monitor (TDM) for non-EU countries.

imports from Russia surged by 35% in volume and 3% in value. China's main import from Russia is frozen whole Alaska pollock, which is processed and re-exported as frozen fillets or blocks. However, it was the significant increase in miscellaneous small pelagics[22] imports which notably impacted the growth in the overall volume. In addition to Russia, China primarily imports from Ecuador, closely followed by Peru and Vietnam. From Ecuador, 94% of imports consist of miscellaneous shrimps, with fishmeal making up the remainder. Fishmeal, crucial for China's thriving fish-farming industry, is mainly imported from Peru and Vietnam. In 2023, fishmeal accounted for 66% of total import volumes from Peru and 45% from Vietnam.

The EU ranks only tenth among China's suppliers of fishery and aquaculture products. In 2023, China's fish import from the EU reached 178.520 tonnes valued at EUR 661 million. More than half of this comprised products not destined for human consumption[23], while blue whiting, halibut and herring made up 7%, 5% and 4% of the total volume, respectively.

Chinese exports in 2023 amounted to 5,06 million tonnes worth EUR 19,8 billion. This marked a 4% increase in volume over 2022, marking the first year of growth since the COVID-19 outbreak. In terms of value, however, they decreased by 14% after two years of growth. Comparing 2019 with 2023 shows that China's exports recorded a 7% decrease in volume and a 4% increase in value.

As for the main destinations of Chinese exports, 14% were destined to the EU, 10% to both the Republic of Korea and Japan, and 8% to the United States.

In terms of volumes sold to the EU, the largest shares were represented by products not fit for human consumption (44%), mainly to the Netherlands, and frozen fillets of Alaska pollock (20%), mainly to Germany. China's main exports to Japan were frozen prepared and filleted marine fish[24], which accounted for 37% of the total export volume and 27% of the total export value to Japan in 2023.

UNITED STATES

In 2023, the total volume of fishery and aquaculture products flows (imports plus exports) in the US decreased to 6,1 million tonnes. This was 3% less than in 2022, and continued the downward trend that began in 2020. The value also fell to EUR 31,5 billion, a 14% decrease from 2022. This decline was mainly driven by reduced US imports of fishery and aquaculture products, which totalled 3,5 million tonnes worth EUR 24,3 billion in 2023. This represented an 8% or 308.148 tonne loss in volume and a significant 17% or EUR 5,1 billion loss in value. Conversely, volume of US exports increased slightly for the first time since the pandemic, reaching 2,6 million tonnes, up 4% from 2022, while the total value of EUR 7,2 billion was 2% less than 2022. As a result, the US trade deficit stood at EUR 17 billion in 2023, representing a 22% decrease from 2022.

In 2023, the EU ranked ninth among US suppliers in terms of value, following Canada, Chile, India, Indonesia, Ecuador, Viet Nam, China, Norway and Thailand. Most of the value of US imports from the EU included salmon, especially fresh and frozen fillets, octopus and seabass, which accounted for 42%, 10% and 5%, respectively.

The top three destinations for US exports by value in 2023 were Canada, China and the EU, which accounted for 21%, 18% and 15% of the total value of US fishery and aquaculture products exports, respectively. As for US exports to Canada, non-food-use products[25] made up 56% of the total volumes, while salmon accounted for 29% of the total value. Exports to China also primarily consisted of non-food-use products[26] which

[22] No further detail is available in terms of species.
[23] This category is composed by fishmeal, that accounted for 7% of the total; while there is not detail available in terms of species for the rest.
[24] No further detail is available in terms of species.
[25] This category is composed by fishmeal, that accounted for 6% of the total; and fish oil, which accounted for 5%, while there is not detail available in terms of species for the rest.
[26] This category is composed by fishmeal, that accounted for 14% of the total; while there is not detail available in terms of species for the rest.

represented 52% of the total volume and more than 30% of the total value. US exports to the EU mainly consisted of frozen fillets of Alaska pollock, which accounted for 26% of the total volume and value, followed by hake, which accounted for 12% in volume and 8% in value, and salmon which accounted for 6% in volume and 7% in value.

NORWAY

In 2023, Norway's total trade flows amounted to EUR 17,7 billion and a volume of 4,1 million tonnes, which reflected a slight 1% increase in value but a 3% decrease in volume from 2022. The trade surplus remained stable at EUR 12,6 billion, thanks to exports outpacing imports. Notably, Norway's exports ranked second globally after China in both volume and value, primarily driven by salmon exports. In 2023, salmon exports reached EUR 10,6 billion and 1,2 million tonnes, which represented 70% of the total export value and 40% of the volume, while, compared to the previous year, they decreased by 2% in volume but increased 2% in value.

Norway's total exports in 2023 were 2,9 million tonnes, marking a 3% decrease from 2022. However, the export value increased a slight 1% to EUR 15,1 billion. The slight decrease in salmon exports, together with the reduction in exported quantities of herring, mackerel and cod were the main factors behind the overall volume decrease, although their unit values rose by 4%, 19%, 5%, and 4%, respectively, from 2022 to 2023. The EU is the major destination for Norway's exports, accounting for 58% of their value and 52% of their volume. Other main destinations for exported fishery and aquaculture products from Norway are China, the United Kingdom and the US which accounted for 6%, 5% and 4% of the total exported volumes, respectively.

In terms of imports, Norway reached 1,2 million tonnes valued at EUR 2,5 billion from 2022 to 2023, representing a 1% decrease in volume but a 5% increase in value. This marked the first decline in imports since 2019. The EU, as Norway's main supplier of fishery and aquaculture products, accounted for about one-fourth of its total imports in 2023. Brazil, the UK, Iceland and the Faroe Islands followed, covering 21%, 16%, 14% and 10% of the total volume of imports, respectively.

Most of Norway's imports of fishery and aquaculture products include fishmeal and fish oil used for breeding salmonids in the aquaculture industry, which has a growing demand for fish feed. With more than 910.000 tonnes valued at EUR 1,95 billion, these products accounted for around 75% of both the volume and value of Norway's imports of fishery and aquaculture products in 2023.

JAPAN

Japan's trade flows decreased by 9% in volume and 14% in value from 2022 to 2023, thus reaching 2,8 million tonnes and EUR 15 billion.

Its trade deficit was slightly above EUR 10,5 billion, which was 13% less than 2022. This was mainly due to the decreased value of the import flow, which in general has the largest weight of Japan's trade flows. In 2023, it declined 5% or 111.986 tonnes in volume, and 13% or EUR 2 billion in value, thus reaching EUR 12,8 billion and 2,3 million tonnes, and covering 82% of total volume and 86% of the total value of Japan's trade flows in 2023.

The main products imported by Japan were frozen shrimps, frozen whole or gutted salmon, and frozen and prepared-preserved marine fish[27]. The imported products not destined for human consumption[28] accounted for 17% of the total volume in 2023 but covered only 5% of the total value. Most of the volumes of fishery and aquaculture products imported in Japan were from China, the US, Chile, Thailand and Norway. The EU ranked eighth among Japan's suppliers in value, and tenth in volume. The main

[27] No further detail is available in terms of species.
[28] This category is composed by fishmeal, that accounted for 48% of the total; and fish oil, which accounted for 6%, while there is not detail available in terms of species for the rest.

Japanese imports from the EU consisted of frozen bluefin tuna from Malta, Spain and Croatia.

Also, Japan's exports experienced an important decline in 2023. Compared with 2022, they decreased 25% in volume and 16% in value, ending at 489.553 tonnes worth EUR 2,2 billion. Its most traded species are scallops and small pelagics[29] exported to other Asian countries, namely China, Republic of Korea, Thailand, Hong Kong, Vietnam and Taiwan. The US is another important market in value terms for Japan, mainly due to exports of frozen fillets of marine fish[30]. The EU is a minor market for Japan exports.

THAILAND

In 2023, Thailand's total trade flows in fishery and aquaculture products reached 3,6 million tonnes, valued at EUR 9,3 billion. The country remained a net exporter, with a trade surplus of nearly EUR 1 billion, although this represented a 20% decrease from 2022.

Imports saw a 2% increase in volume, totalling 2,2 million tonnes, but a 6% decrease in value which amounted to EUR 4,2 billion. In comparison, Thailand's imports were just over a third of the EU's in volume, but almost eight times less in value. Notably, skipjack tuna imports from neighbouring countries such as Taiwan, Nauru and the Maldives accounted for about 20% of both volume and value.

Major suppliers included China, Myanmar and India, with China providing non-food use products and frozen cephalopods[31], Myanmar mainly supplying Thailand with fresh whole marine fish[32], and India mainly supplying frozen whole marine fish[33].

Exports, in contrast, decreased by 4% in volume and 9% in value from the previous year, totalling 1,5 million tonnes and EUR 5,1 billion. Miscellaneous tuna exports comprised 31% of the volume and 38% of the value. Products not intended for human consumption made up 21% of the volume but only 7% of the value, while miscellaneous shrimps accounted for 9% of the volume and 23% of the value. The primary markets for Thailand's exports were China, the United States and Japan.

[29] No further detail is available in terms of species.
[30] *Ibidem*
[31] *Ibidem*
[32] No further detail is available in terms of species.
[33] *Ibidem*

TABLE 2

EXPORTS OF FISHERIES AND AQUACULTURE PRODUCTS OF MAIN WORLD TRADERS (VOLUME IN MILLION TONNES AND NOMINAL VALUE IN EUR BILLION) AND % OF EXPORTS DESTINED FOR THE EU ON TOTAL IN 2023

Source: EUMOFA elaboration of data from EUROSTAT (for EU trade flows, online data code DS-045409) and Trade Data Monitor (for non-EU countries). Possible discrepancies in % changes are due to rounding.

	2019		2020		2021		2022		2023		2023 / 2022	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
China	5,44	18,95	4,91	17,11	4,86	19,24	4,87	22,97	5,06 (14% to the EU)	19,77 (10% to the EU)	+4%	-14%
Norway	2,72	10,89	2,73	9,87	3,10	11,94	2,95	15,03	2,86 (52% to the EU)	15,13 (58% to the EU)	-3%	+1%
EU	**2,56**	**7,29**	**2,57**	**7,01**	**2,42**	**6,76**	**2,30**	**8,07**	**2,22**	**8,13**	**-3%**	**+1%**
US	2,87	6,41	2,74	5,59	2,74	6,21	2,52	7,38	2,61 (11% to the EU)	7,22 (15% to the EU)	+4%	-2%
Thailand	1,48	5,33	1,59	5,13	1,51	4,69	1,54	5,64	1,48 (2% to the EU)	5,13 (3% to the EU)	+4%	-9%
Japan	0,61	2,05	0,61	1,80	0,66	2,17	0,65	2,58	0,49 (1% to the EU)	2,18 (3% to the EU)	-25%	-16%

TABLE 3

IMPORTS OF FISHERIES AND AQUACULTURE PRODUCTS OF MAIN WORLD TRADERS (VOLUME IN MILLION TONNES AND NOMINAL VALUE IN EUR BILLION) AND % OF IMPORTS ORIGINATING FROM THE EU ON TOTAL IN 2023

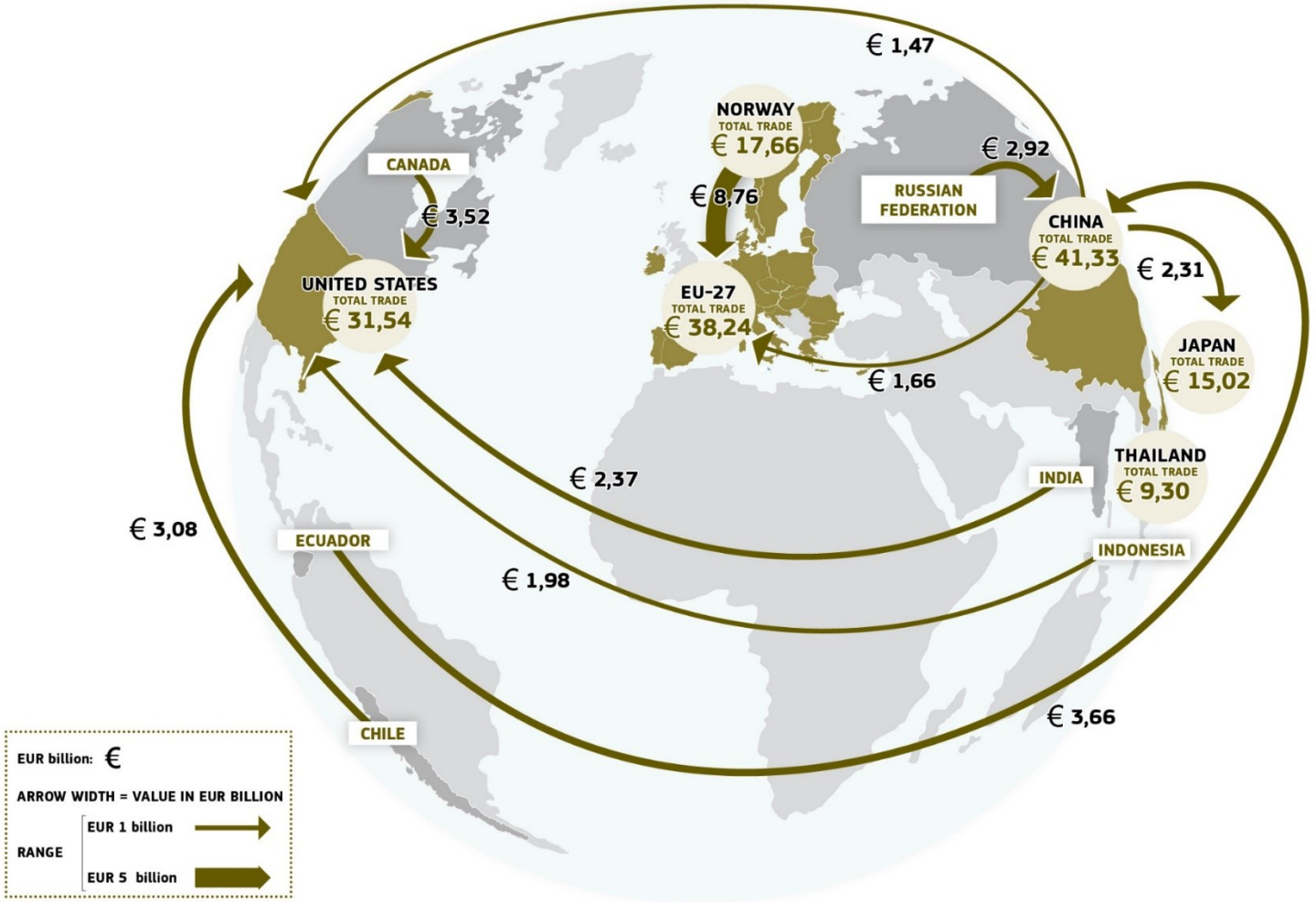
Source: EUMOFA elaboration of data from EUROSTAT (for EU trade flows, online data code DS-045409) and Trade Data Monitor (for non-EU countries). Possible discrepancies in % changes are due to rounding.

	2019		2020		2021		2022		2023		2023 / 2022	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
EU	**6,18**	**26,05**	**6,16**	**24,20**	**6,24**	**25,85**	**6,13**	**31,90**	**5,91**	**30,11**	**-3%**	**-6%**
US	3,21	20,29	3,30	19,47	3,80	24,63	3,84	29,41	3,53 (5% from the EU)	24,32 (6% from the EU)	-8%	-17%
China	6,29	16,50	5,75	13,53	5,89	15,14	6,62	22,15	7,03 (3% from the EU)	21,57 (3% from the EU)	+6%	-3%
Japan	2,60	13,88	2,40	12,03	2,36	12,33	2,38	14,80	2,27 (4% from the EU)	12,84 (5% from the EU)	-5%	-13%
Thailand	2,08	3,66	2,21	3,47	2,16	3,46	2,13	4,45	2,17 (3% from the EU)	4,17 (4% from the EU)	+2%	-6%
Norway	0,70	1,36	0,83	1,48	1,19	1,88	1,22	2,42	1,20 (24% from the EU)	2,53 (27% from the EU)	-1%	+5%

CHART 2

TOP-10 TRADE FLOWS IN VALUE OF FISHERY AND AQUACULTURE PRODUCTS IN THE WORLD (2023, NOMINAL VALUES)

Source: EUMOFA elaboration of data from EUROSTAT (for EU trade flows, online data code DS-045409) and Trade Data Monitor (for non-EU countries).



1.3 CONSUMPTION

According to the OECD-FAO Agricultural Outlook forecasts 2024-2033[34], in 2024 the EU ranks 17th in terms of per capita consumption of fish[35], though it is expected to increase by 3% in two years. On the other hand, when looking at total consumption of fishery and aquaculture products[36], the EU ranked 4th below two major consumers, namely China and India, and almost at the same level of Indonesia.

TABLE 4

PER CAPITA CONSUMPTION OF FISH, TOP-20 OECD COUNTRIES (FORECASTS, VOLUMES IN KG). COUNTRIES ARE RANKED ACCORDING TO 2024 PER CAPITA CONSUMPTION.

Source: OECD

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Malaysia	56,04	55,88	56,18	56,27	56,09	56,93	57,13	57,71	57,18	58,20
Korea	54,61	54,96	54,36	54,13	53,19	53,63	53,83	53,78	53,07	53,78
Norway	52,98	52,55	51,65	51,34	50,45	50,81	50,94	50,82	50,02	50,56
China	44,22	43,96	44,25	44,90	45,83	46,52	47,10	47,53	48,06	48,70
Japan	42,98	44,06	44,89	44,93	44,53	45,17	45,68	45,97	45,70	46,61
Viet Nam	42,66	42,67	42,43	42,73	42,47	43,17	43,62	43,90	43,78	44,44
Indonesia	41,94	43,30	44,58	45,10	45,47	45,82	46,12	46,39	46,18	46,46
Thailand	30,37	30,74	31,53	31,60	31,28	31,80	32,15	32,31	32,07	32,67
New Zealand	26,40	26,60	26,15	25,82	25,25	25,31	25,27	24,98	24,50	24,67
Peru	26,22	25,60	26,14	26,13	24,28	26,20	26,46	26,59	24,88	27,90
Israel	25,94	26,30	26,43	26,45	25,74	26,33	26,37	26,36	25,24	26,27
Australia	25,16	25,14	24,98	24,82	24,68	24,56	24,54	24,49	24,41	24,54
Philippines	24,30	24,75	25,31	25,40	25,24	25,56	25,70	25,71	25,50	25,87
United States	22,81	23,59	23,97	23,96	23,68	23,90	24,06	24,08	23,81	24,16
Egypt	22,22	22,50	22,78	23,41	23,88	24,18	24,39	24,52	24,37	24,72
Canada	21,31	21,91	22,12	21,94	21,53	21,62	21,83	21,93	21,75	22,13
EU	**20,96**	**21,44**	**21,54**	**21,49**	**21,20**	**21,42**	**21,52**	**21,54**	**21,35**	**21,65**
Russia	19,86	20,23	20,41	20,31	20,05	20,13	20,15	20,09	19,86	20,01
United Kingdom	16,95	17,44	17,75	17,89	17,76	18,04	18,26	18,40	18,27	18,74
Switzerland	16,04	16,00	15,96	15,92	15,89	15,86	15,84	15,82	15,80	15,79
World	**20,76**	**20,87**	**20,98**	**21,06**	**21,08**	**21,22**	**21,30**	**21,32**	**21,24**	**21,41**

TABLE 5

TOTAL CONSUMPTION OF FISH, TOP-20 OECD COUNTRIES (FORECASTS, VOLUMES IN 1.000 TONNES). COUNTRIES ARE RANKED ACCORDING TO 2024 TOTAL CONSUMPTION.

Source: OECD

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
China	67.799	67.413	67.839	68.793	69.984	70.940	71.754	72.261	72.801	73.595
India	14.549	15.075	15.524	15.851	16.056	16.254	16.452	16.622	16.793	17.106
Indonesia	11.983	12.479	12.940	13.184	13.371	13.574	13.757	13.926	13.933	14.104
EU	**10.660**	**10.817**	**10.855**	**10.817**	**10.679**	**10.783**	**10.828**	**10.847**	**10.737**	**10.870**
United States	9.368	9.663	9.840	9.877	9.807	9.924	10.024	10.072	10.007	10.162
Japan	6.505	6.608	6.682	6.646	6.543	6.595	6.630	6.630	6.547	6.623
Viet Nam	6.220	6.226	6.224	6.271	6.234	6.324	6.385	6.424	6.401	6.503
Peru	4.005	5.539	5.567	5.575	3.971	5.595	5.614	5.627	4.083	5.323
Russia	3.641	3.692	3.714	3.697	3.654	3.663	3.664	3.652	3.614	3.632
Thailand	2.929	2.975	3.040	3.043	2.998	3.028	3.054	3.059	3.030	3.065
Korea	2.924	2.942	2.907	2.892	2.837	2.856	2.862	2.853	2.809	2.838
Philippines	2.910	3.009	3.121	3.177	3.199	3.283	3.346	3.390	3.406	3.498
Egypt	2.553	2.625	2.698	2.815	2.914	2.993	3.063	3.122	3.147	3.237
Mexico	2.219	2.229	2.253	2.274	2.234	2.282	2.355	2.383	2.354	2.411
Malaysia	2.094	2.106	2.136	2.156	2.164	2.211	2.236	2.273	2.266	2.320
Brazil	1.962	1.991	2.014	2.028	2.032	2.056	2.078	2.096	2.104	2.133
Chile	1.782	2.269	2.265	2.255	1.771	2.200	2.204	2.193	1.697	2.141
Norway	1.714	1.712	1.681	1.704	1.759	1.764	1.799	1.830	1.886	1.928
Nigeria	1.617	1.652	1.666	1.680	1.698	1.713	1.733	1.751	1.768	1.788
United Kingdom	1.334	1.383	1.411	1.426	1.403	1.444	1.463	1.475	1.448	1.501
World	**193.359**	**197.898**	**200.460**	**202.793**	**202.224**	**207.023**	**209.380**	**211.031**	**209.632**	**214.229**

[34] There is no consolidated data available at the time of writing, so forecasts are used to indicate the annual trend. Data in this section are collected from the OECD website (Organization for Economic Co-operation and Development). More details available at the link https://data-explorer.oecd.org/

[35] This includes the commodity "Fish and other fishing products".

[36] This includes the commodity "Fish and other fishing products" and, to a lesser extent, the commodities "Edible fishmeal" and "Fats and oils and their fractions, of fish, other than liver oils".

2/ MARKET SUPPLY

2.1 SUPPLY BALANCE AND SELF-SUFFICIENCY OVERVIEW

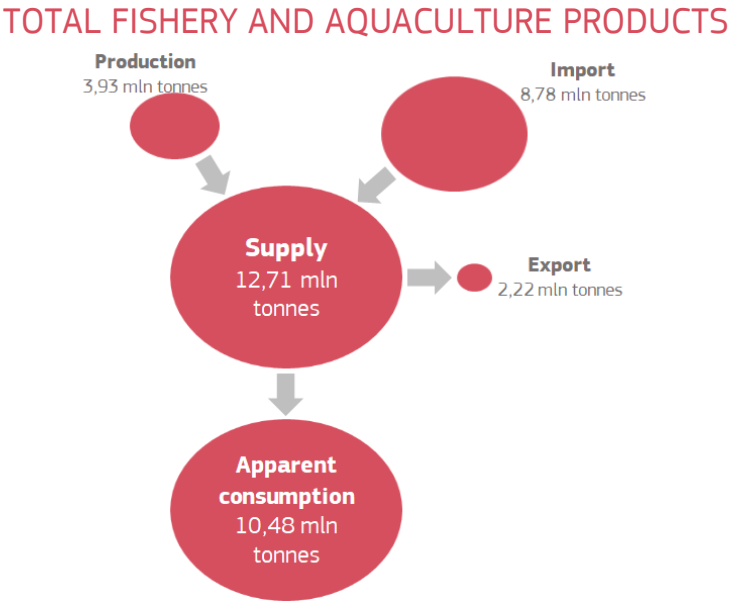
The EU[37] supply of fishery and aquaculture products for human consumption includes both domestic production and imports. In 2022, this supply totalled 12,71 million tonnes in live weight equivalent (LWE), which was a 2% drop of 211.089 tonnes LWE from 2021.

While this represented a slight decline, the overall supply has remained relatively stable in recent years, with modest year-on-year fluctuations. However, when compared with its 10-year average of circa 13,5 million tonnes LWE, the supply in 2022 was significantly lower.

The supply had been declining since 2018 except for a brief uptick between 2020 and 2021. However, that growth came after a sharp drop in 2020 due to the COVID crisis, which affected catches, aquaculture production and imports. Between 2021 and 2022, the supply from all sources dropped again, though to a lesser extent. Catches and imports each fell by more than 80.000 tonnes LWE, representing decreases of 3% and 1%, respectively. Aquaculture production saw a 4% decline of roughly 40.000 tonnes LWE.

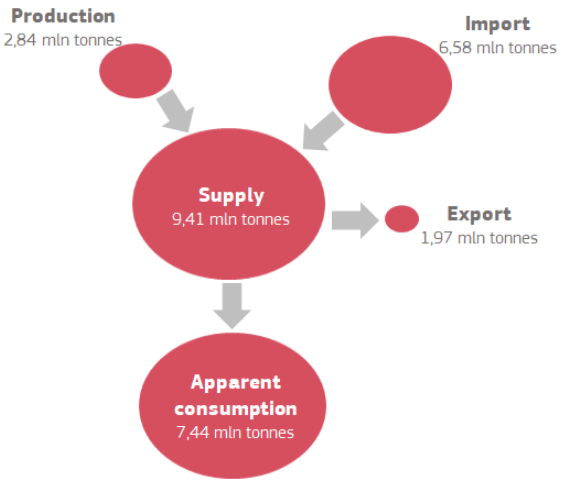
Of additional note, exports registered a 4% decrease of more than 90.000 tonnes LWE, ending at 2,22 million tonnes LWE in 2022. Consequently, the EU's apparent consumption[38] was estimated to have slightly decreased from 10,60 million tonnes LWE to 10,48 million tonnes LWE. Moreover, its apparent consumption in 2022 was around 550.000 tonnes lower than its 10-year average of circa 11,30 million tonnes LWE.

CHART 3
EU SUPPLY BALANCE (2022, LIVE WEIGHT EQUIVALENT, FOOD USE ONLY)
Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409) and FAO data. Details on the sources and on the methodological approach used for assessing the production method of imports and exports and the destination use of catches can be found in the Methodological background.



[37] In line with Eurostat's guidelines on the production and dissemination of statistical data by Commission services after the UK withdrawal from the EU, since the most recent reference period is year 2021, UK is excluded from the EU aggregations of each year. In addition, EU data include Croatia since 2013, date of the EU's enlargement to this country.
[38] The definition of "apparent consumption" is available in the "Supply balance sheet" section of the Methodological background.

FISHERY PRODUCTS



AQUACULTURE PRODUCTS

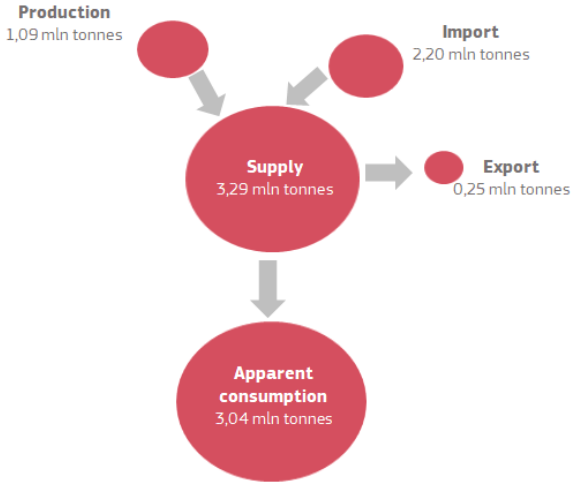


TABLE 6

EU SUPPLY BALANCE FOR FISHERY AND AQUACULTURE PRODUCTS BY COMMODITY GROUP AND PRODUCTION METHOD (2022, LIVE WEIGHT EQUIVALENT, FOOD USE ONLY)

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409) and FAO data. Details on the sources and on the methodological approach used for assessing the production method of imports and exports and the destination use of catches can be found in the Methodological background.

Commodity group	Production (tonnes)		Import (tonnes)		Export (tonnes)		Apparent consumption (tonnes)			Apparent consumption per capita (kg)		
	Wild	Farmed	Wild	Farmed	Wild	Farmed	Wild	Farmed	Total	Wild	Farmed	Total
Bivalves and other molluscs and aquatic invertebrates	174.304	522.020	174.147	183.111	37.495	22.677	310.956	682.454	993.409	0,70	1,53	2,23
Cephalopods	111.918	0	669.074	0	86.991	0	694.001	0	693.999	1,56	0	1,56
Crustaceans	131.057	749	459.228	452.031	148.688	3.959	441.597	448.821	890.418	0,99	1,01	2,00
Flatfish	88.549	13.186	162.098	890	85.625	482	165.022	13.594	178.616	0,37	0,03	0,40
Freshwater fish	92.385	103.485	63.251	213.620	6.985	5.546	148.651	311.559	460.211	0,33	0,70	1,03
Groundfish	478.950	0	2.323.100	504	462.549	0	2.339.501	504	2.340.005	5,25	0	5,25
Miscellaneous aquatic products	69.992	1.122	322.106	0	67.062	0	325.036	1.122	326.158	0,73	0	0,73
Other marine fish	210.648	236.215	387.935	109.220	137.868	41.438	460.715	303.997	764.712	1,03	0,68	1,72
Salmonids	8.575	192.808	63.679	1.243.653	535	170.688	71.719	1.265.773	1.337.493	0,16	2,84	3,00
Small pelagics	1.092.274	0	671.637	0	622.269	0	1.141.642	0	1.141.642	2,56	0	2,56
Tuna and tuna-like species*	379.807	19.087	1.280.133	481	315.100	8.740	1.344.840	10.828	1.355.667	3,02	0,02	3,04
Total	**2.838.459**	**1.088.672**	**6.576.388**	**2.203.510**	**1.971.167**	**253.530**	**7.443.680**	**3.038.652**	**10.482.330**	**16,70**	**6,82**	**23,51**

Data as of August 2023. Data may differ from those currently available on the EUMOFA website as these are constantly updated.
Possible discrepancies in totals are due to rounding.
* Apparent consumption of the commodity group "tuna and tuna-like species" includes 97% tuna and 3% swordfish.

The average EU citizen was estimated to have consumed 23,51 kg LWE of fishery and aquaculture products in 2022, which represented a 1% decrease from 2021. Most EU consumption of fishery and aquaculture products consists of wild products and, more specifically, of imported fishery products[39]. Indeed, wild products accounted for 16,70 kg LWE of total per capita apparent consumption, and farmed products accounted for the remaining 6,82 kg LWE.

This data on catches, which is included in the supply balance and analysed in this chapter only refers to catches for human consumption. It should be noted that catches of the EU fleet can also be destined for non-food use. According to EUMOFA estimates, catches for both food use and non-food use decreased from 2021 to 2022[40]. Specifically, the catches for food use decreased by 82.000 tonnes LWE, or 3%, while those for non-food use decreased a slight 44.000 tonnes LWE, or 7%. The decrease in the food use supply was mainly linked to decreased catches of blue whiting, mackerel and skipjack tuna. In

[39] For the assessment of the origin of imports and exports in terms of production method, please refer to the Methodological background.
[40] For the estimation of the catches considered not to be destined to human consumption, please refer to the Methodological background.

contrast, the drop in non-food use supply was mainly due to decreased catches of Norway pout and sprat.

TABLE 7

EU PRODUCTION (TONNES, LIVE WEIGHT)

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main and fish_aq2a) and FAO data. Details on the sources and on the methodological approach used to assess the destination use of catches can be found in the Methodological background. Possible discrepancies in totals are due to rounding.

		2018	2019	2020	2021	2022
Food use	Catches	3.815.202	3.502.245	2.963.236	2.920.197	2.838.459
	Aquaculture	1.134.819	1.126.709	1.088.398	1.129.157	1.088.672
Total production destined for food use		**4.950.021**	**4.628.954**	**4.051.634**	**4.049.354**	**3.927.131**
Non-food use	Catches	840.197	703.690	905.728	671.050	627.169

The EU is mainly able to maintain a high level of apparent consumption of fishery and aquaculture products by importing them from other regions of the world.
Self-sufficiency, defined as the capacity of EU Member States to meet demand through their own production, can be estimated by calculating the ratio of domestic production to domestic apparent consumption.

TABLE 8

SELF-SUFFICIENCY RATES BY COMMODITY GROUP

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409), FAO, national administrations and FEAP data. Details on the sources used can be found in the Methodological background.

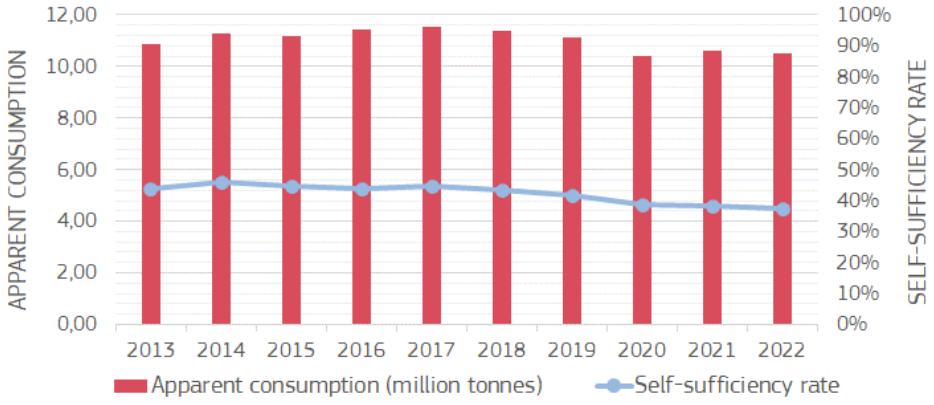
Commodity groups and share of total apparent consumption in 2022	Self-sufficiency rates									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Groundfish (22%)	22%	25%	26%	23%	26%	24%	23%	22%	21%	20%
Tuna and tuna-like species (13%)	34%	40%	32%	34%	32%	38%	33%	29%	31%	29%
Salmonids (13%)	19%	18%	17%	19%	18%	18%	17%	17%	16%	15%
Small pelagics (11%)	111%	124%	115%	103%	104%	101%	98%	96%	95%	96%
Bivalves and other molluscs and aquatic invertebrates (9%)	55%	57%	63%	65%	75%	77%	80%	73%	74%	70%
Crustaceans (8%)	17%	18%	17%	17%	16%	19%	17%	16%	14%	15%
Other marine fish[41] (7%)	74%	71%	68%	66%	65%	61%	60%	59%	60%	58%
Cephalopods (7%)	20%	21%	18%	14%	13%	12%	12%	13%	12%	16%
Freshwater fish (4%)	30%	34%	36%	38%	42%	39%	39%	45%	47%	43%
Miscellaneous aquatic products (3%)	21%	18%	7%	17%	14%	14%	24%	17%	25%	22%
Flatfish (2%)	72%	68%	70%	65%	66%	63%	64%	67%	62%	57%
Total	**43,7%**	**46,1%**	**44,6%**	**44,0%**	**44,6%**	**43,4%**	**41,7%**	**38,9%**	**38,2%**	**37,5%**

During the 2013–2022 decade, the EU's self-sufficiency in fishery and aquaculture products showed significant variation. It reached a high point of 46,1% in 2014, largely driven by strong production, particularly in the fisheries sector. However, a clear downward trend emerged in 2018. Self-sufficiency dropped 2% between 2017 and 2018, and then decreased 4% in 2019, bringing the rate to 41,7%.
In 2020, despite a decrease in imports, self-sufficiency fell again, dropping to 38,9%, largely due to a significant decline in catches. By 2021, the self-sufficiency rate had

[41] Species belonging to this group are gilthead seabream and other seabreams, seabass, monk, sharks, ray, red mullet, gurnard, scabbardfish, cusk-eel, dogfish, picarel, John Dory, smelt, ray's bream, weever, cobia, and marine species not included in other commodity groups. For more information, please consult the "Harmonisation" page of the EUMOFA website at the link http://www.eumofa.eu/harmonisation.

plummeted to 38,2% and the trend continued in 2022, with the self-sufficiency rate dropping to 37,5%, the lowest point in the entire period and 5% below its decade average. This ongoing decline was primarily driven by the continuous reduction in domestic production, from both fisheries and aquaculture.

CHART 4
EU APPARENT CONSUMPTION AND SELF-SUFFICIENCY RATES FOR FISHERIES AND AQUACULTURE PRODUCTS
Source: EUMOFA, based on EUROSTAT (online data codes: online data codes: fish_ca_main, fish_aq2a and DS-045409), FAO, national administrations and FEAP data.
Details on the sources used can be found in the Methodological background.



2.2 ANALYSIS BY MAIN SPECIES

TABLE 9
SELF-SUFFICIENCY RATES OF TOP-15 MOST CONSUMED PRODUCTS IN THE EU (2022)
Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409) and FAO data.
Details on the sources used can be found in the Methodological background.

Products[42] and share of total apparent consumption	Per capita consumption (kg, live weight equivalent)	Self-sufficiency rate
Tuna (13%)	2,96	29%
Salmon (11%)	2,51	1%
Shrimps (7%)	1,68	11%
Alaska pollock (7%)	1,67	0%
Cod (7%)	1,63	5%
Mussel (5%)	1,21	78%
Hake (4%)	1,03	41%
Herring (4%)	0,87	84%
Squid (3%)	0,73	19%
Surimi[43] (3%)	0,60	n.a.
Sardine (2%)	0,55	69%
Mackerel (2%)	0,54	85%
Trout (2%)	0,46	85%
Scallop (2%)	0,37	31%
Saithe (=Coalfish) (2%)	0,37	11%

Meeting the demand for fishery and aquaculture products in the EU chiefly relies on imports, mainly of tuna, salmon, shrimps, Alaska pollock and cod. In 2022, the EU had an overall self-sufficiency of just 9% for these five species, which together represented 44% of the EU's total apparent consumption of fishery and aquaculture products.
The segments below focus on the evolution of self-sufficiency for the 15 products with the highest apparent consumption in the EU.

[42] Some species are grouped in a single product, namely: mussel (*Mytilus* spp. + other mussels), tuna (skipjack, yellowfin, albacore, bigeye, bluefin and miscellaneous) and shrimp (warmwater shrimps, coldwater shrimps, deep-water rose shrimps, shrimp *Crangon* spp. and miscellaneous shrimps).
[43] As surimi is made of different species and there are no statistics specifically referring to surimi production, the self-sufficiency rate cannot be calculated for this product.

TUNA

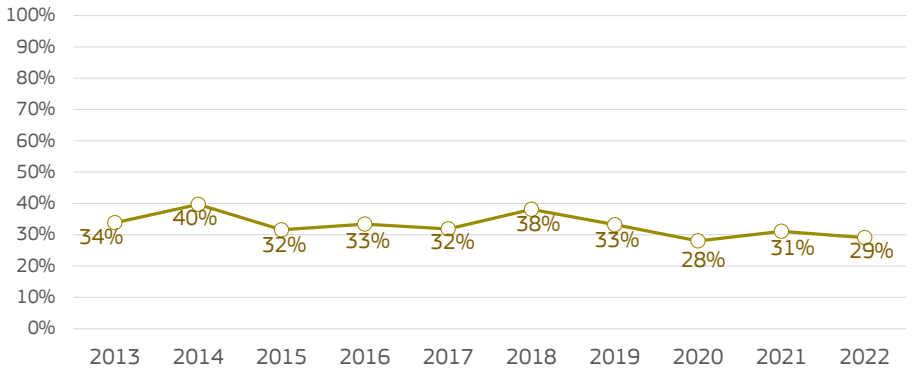
Apparent consumption of the commodity group "tuna and tuna-like species" includes 97% tuna and 3% swordfish. Overall, the self-sufficiency rate of this category was 29% in 2022, the same as the level of tuna only.

The establishment of free trade agreements with major producing countries, coupled with the increase of the Autonomous Tariff Quotas (ATQs)[44] for tuna from 2013 to 2014, contributed to higher imports. Consequently, due to increased imports of yellowfin and skipjack tuna, the level of self-sufficiency dropped from 40% in 2014 to 32% in 2015, remained almost stable until 2017 and then rose again in 2018, reaching 38%. This increase was driven by increased catches of skipjack tuna by the Spanish and French fleets and reduced imports. However, these catches began to decline in 2019, continuing into 2020, which meant a further drop in self-sufficiency. Between 2020 and 2021, self-sufficiency recovered slightly, rising from 29% to 31%, due to lower imports – the lowest since 2016 – and increased catches. In 2022, however, a further decline in catches and an increase in imports caused self-sufficiency to drop again, reaching 29% or 1% lower than in 2020, which had been the lowest level of the decade.

CHART 5

SELF-SUFFICIENCY RATE FOR TUNA

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409) and FAO data. Details on the sources used can be found in the Methodological background.



SALMONIDS

SALMON, TROUT

It is estimated that in 2022, only 1% of the salmon consumed in the EU was produced internally, as Norway is responsible for most of the salmon supplied to the EU as well as globally.

As for trout[45], the EU maintained a good level of close to 90% of self-sufficiency during the 2013–2022 decade.

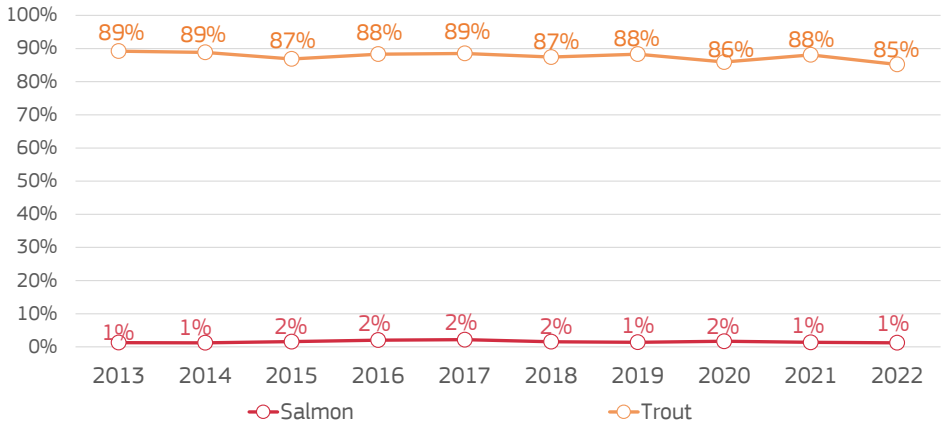
[44] Autonomous Tariff Quotas aim to stimulate economic activity of Union industries, improving competitive capacity, creating employment, modernising structures etc. They are normally granted to raw materials and semi-finished goods or components which are available in the EU but in insufficient quantities. More information is available at the link https://taxation-customs.ec.europa.eu/customs-4/calculation-customs-duties/customs-tariff/quota-tariff-quotas-and-ceilings_en.

[45] This consists of freshwater and ocean farmed trout.

CHART 6

SELF-SUFFICIENCY RATE FOR MOST CONSUMED SALMONIDS

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409) and FAO data. Details on the sources used can be found in the Methodological background



GROUNDFISH

COD, ALASKA POLLOCK, HAKE, SAITHE

Four groundfish species, namely cod, Alaska pollock, hake and saithe, had a combined per capita apparent consumption of 4,70 kg LWE in 2022, which accounted for close to 28% of the EU's total apparent consumption of products from wild fishery. Of note, this share drops to 20% if also considering consumption of products from aquaculture. As all Alaska pollock available in the EU is imported, Member States are completely dependent on non-EU countries to meet their demand.

For the other three species of this group, EU self-sufficiency totalled 14% in 2022.

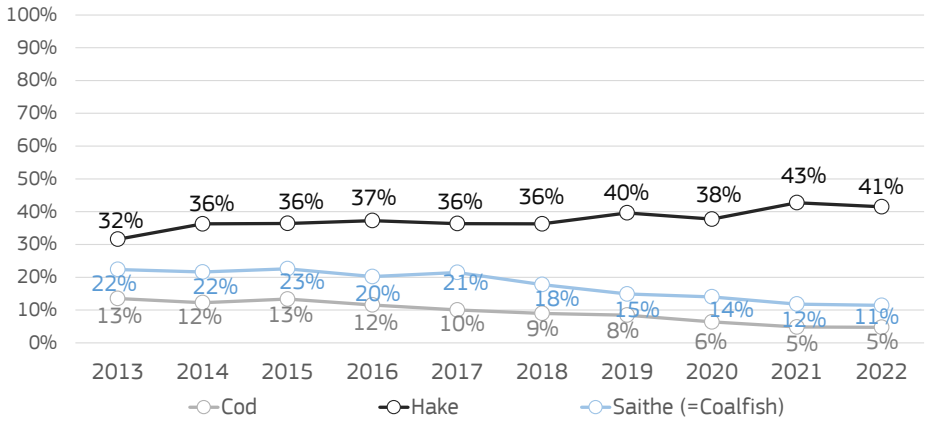
Cod, the second most consumed species in the EU after salmon, saw its self-sufficiency remain at 5% for the second consecutive year, which was its lowest level in a decade and nearly half of the 10-year average of 9%. This decline was largely driven by a downward trend in catches from Spain, Denmark, France, Portugal and Poland. However, Spanish and Portuguese cod catches did increase between 2020 and 2021. On the other hand, saithe self-sufficiency continued to decline, hitting its lowest level of the decade at 11% in 2022, nearly one-third below the decade's average of 18%. This drop was largely driven by rising apparent consumption that relied on imports, while EU catches steadily decreased over time. However, from 2021 to 2022, catches remained stable, with the French fleet, the main producer of saithe, even reporting a slight 3% increase over the previous year. The overall decline in self-sufficiency was primarily due to a 7% rise in imports.

After peaking at 43% in 2021, hake self-sufficiency fell to 41% in 2022. However, this was still above the 10-year average of 38%. The decline was primarily due to a drop in catches by the Spanish fleet. Although imports also decreased from 2021 to 2022, it didn't counterbalance the drop in Spanish catches.

CHART 7

SELF-SUFFICIENCY RATE FOR MOST CONSUMED GROUNDFISH

Source: EUMOFA, based on EUROSTAT data (online data codes: fish_ca_main and DS-045409). Details on the sources used can be found in the Methodological background.



SMALL PELAGICS

HERRING, MACKEREL SARDINE

With 1,09 million tonnes LWE of catches, small pelagics accounted for 28% of the total volume of all fishery and aquaculture products produced in the EU in 2022, a share that increases to 38% if only considering the total EU wild production. This is much higher than EU imports of small pelagic species, which totalled just above 670.000 tonnes LWE in the same year. In other words, this means the EU is fully capable of meeting the overall EU demand for small pelagics. Indeed, when looking at the three most consumed species of this group, namely herring, sardine and mackerel, in some years the EU had a combined self-sufficiency of 100% or higher.

In 2022, herring self-sufficiency increased to 84%, a significant rise from 72% in 2021, though still below the 10-year average of 88%. This increase was primarily due to reduced imports.

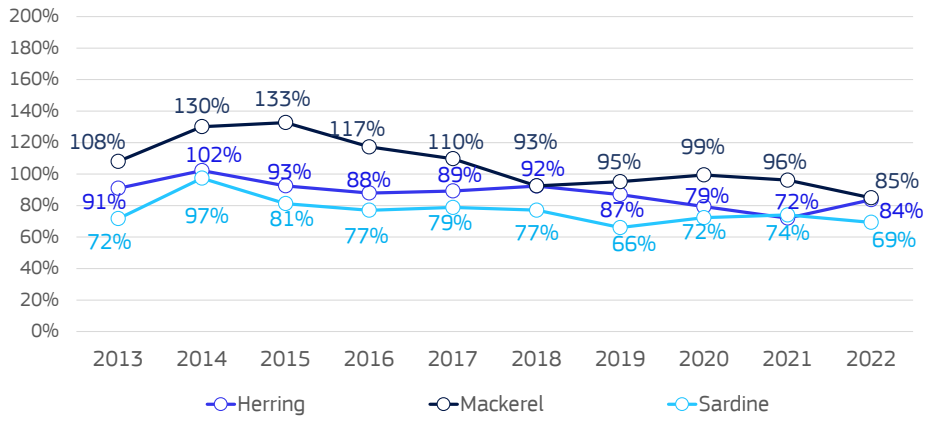
For mackerel, the EU met its total demand with self-sufficiency rates above 100% from 2013 to 2017. However, in 2018, self-sufficiency fell to 93%, before rising again in 2019 and 2020, and then declining in 2021 and 2022, reaching a decade low of 85%. Indeed, catches of mackerel have been experiencing a decreasing trend since 2018, which has also meant a slight decrease in self-sufficiency.

Regarding sardines, EU self-sufficiency dropped to 69% in 2022 after two years of increases. From 2018 to 2019, catches dropped and imports rose, driving self-sufficiency down from 77% to 66%. In 2020, major producers – Croatia, France, Spain, the Netherlands, and Portugal – boosted their catches, offsetting declines from Italian and Greek fleets and a further rise in imports. In 2021, both imports and catches decreased slightly, but in 2022, catches dropped by 5% while imports rose by 1%, contributing to the decline in self-sufficiency.

CHART 8

SELF-SUFFICIENCY RATE FOR MOST CONSUMED SMALL PELAGICS

Source: EUMOFA, based on EUROSTAT data (online data codes: fish_ca_main and DS-045409). Details on the sources used can be found in the Methodological background.



BIVALVES

MUSSEL, CLAM

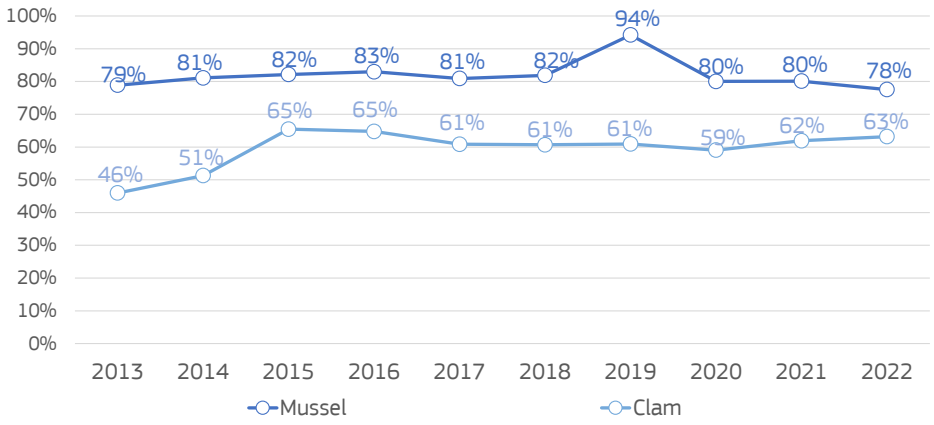
Among the EU's most consumed species, mussel is one of the few that has a high level of self-sufficiency. From 2013 to 2018, its level averaged 81%, increased to 94% in 2019, fell to 80% in both 2020 and 2021, and then dropped to 78% in 2022, reaching the lowest level of the decade. This trend reflected the decline of Spanish farmed production.

As for clams, self-sufficiency rose steadily until 2016 when it peaked at 65%. Over the next three years, it stabilised at an average of 61%, mainly due to declining aquaculture production in Italy, the leading producer. Despite increased wild fishery production in Italy from 2019 to 2020, EU self-sufficiency dropped to 59%, its lowest in six years. However, in 2021 and 2022, it recovered to 63%, driven by significant increases in wild production in the Netherlands and Denmark.

CHART 9

SELF-SUFFICIENCY RATE FOR MOST CONSUMED BIVALVES

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409), FAO and national administrations data. Details on the sources used can be found in the Methodological background.



OTHER PRODUCTS OF DIFFERENT COMMODITY GROUPS

SHRIMPS, SQUID, SURIMI

Other highly consumed products in the EU include shrimps (of the group crustaceans), squid (cephalopods) and surimi (miscellaneous aquatic products).

Of these, the EU is highly dependent on imports of shrimps and squid.

The self-sufficiency for shrimps averaged 12% in the 10-year period analysed, without showing notable variations. The most consumed shrimp species, which are mainly supplied through imports, are warmwater shrimps and Argentine red shrimp, in the form of frozen or prepared/preserved products.

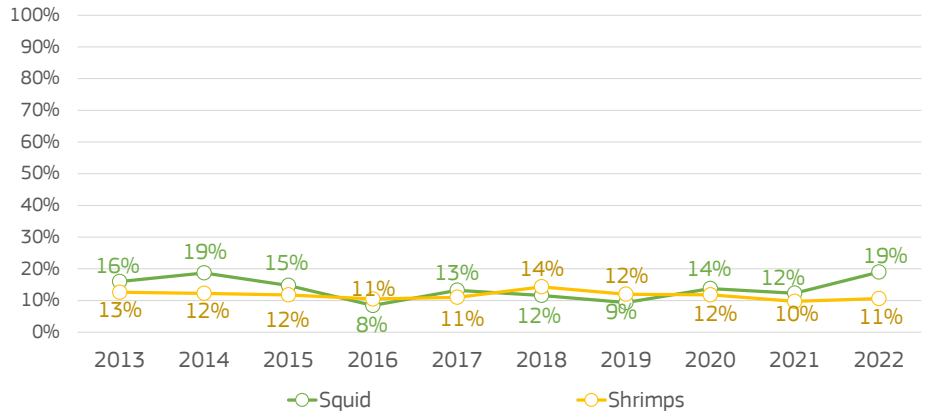
In the case of squid, self-sufficiency reached 19% in 2022, a remarkable jump from 12% in 2021. This growth was largely due to a significant rise in catches, particularly by the Spanish fleet.

Surimi, on the other hand, being a human-made combination of species, lacks specific production statistics, making it impossible to calculate a self-sufficiency rate. The EU's production and consumption of surimi rely heavily on imports of surimi-base from outside the EU, particularly from Alaska pollock.

CHART 10

SELF-SUFFICIENCY RATE FOR OTHER MOST CONSUMED PRODUCTS

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409) and FAO data. Details on the sources used can be found in the Methodological background.



3/ CONSUMPTION

3.1 OVERVIEW FOR TOTAL FISHERY AND AQUACULTURE PRODUCTS

APPARENT CONSUMPTION

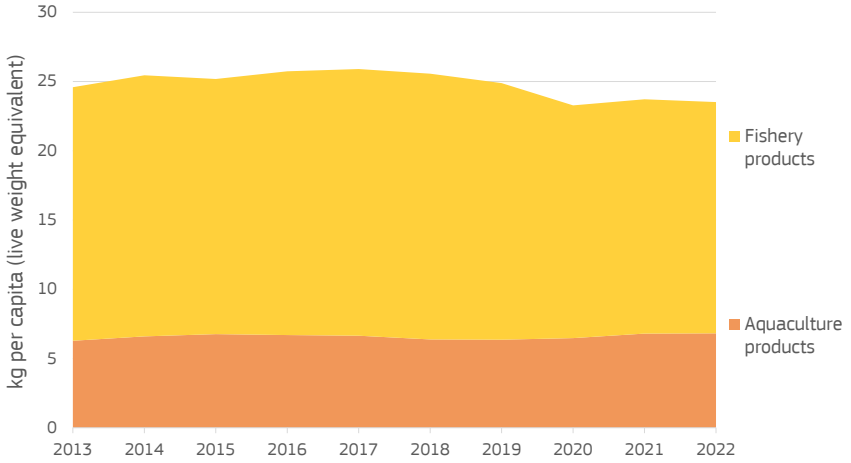
The EU's 2021 increase in the apparent consumption[46] of fishery and aquaculture products in the EU[47] has proven to be an exception. Its increase followed three years of decline from the 2017 peak that had registered 11,54 million tonnes LWE. In 2022, consumption returned to a downward trend, dropping to an estimated 10,48 million tonnes—a 1% decrease compared to 2021.

In 2022, after a brief recovery in 2021, apparent consumption of fishery and aquaculture products in the EU decreased again to an estimated 10,48 million tonnes LWE.

The overall decline in EU apparent consumption from 2021 to 2022 was tied to a general drop in catches, aquaculture production, and imports. Both imports and catches saw reductions of over 80.000 tonnes LWE, while farmed production dropped by 40.000 tonnes LWE. The sharpest declines in catches were for blue whiting, mackerel, and skipjack tuna, while the most affected farmed products were mussel *Mytilus* spp. and trout. As for imports, blue whiting, cod, and herring saw the largest decreases. Even an export reduction of around 92.000 tonnes LWE – mainly driven by mackerel and blue whiting – was insufficient to counterbalance the overall drop. From 2013 until 2022, the 10-year period under analysis, the shares of wild and farmed products in total consumption remained stable until 2019, with wild products steady at around 75% and farmed products at 25%. However, since 2020, EU fisheries production has declined, resulting in the share of wild products in apparent consumption dipping to just over 70%. As the same time, per capita apparent consumption of farmed products increased slightly from 6,80 kg LWE in 2021 to 6,82 kg LWE in 2022, marking the highest level of the decade. In contrast, per capita consumption of wild products reached its lowest point of the decade, dropping from 16,91 kg LWE to 16,70 kg LWE.

CHART 11
PER CAPITA APPARENT CONSUMPTION OF FISHERY AND AQUACULTURE PRODUCTS

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409) and FAO data. Details on the sources and on the methodological approach used for assessing the production method of imports and exports and the destination use of catches can be found in the Methodological background.



[46] The definition of "apparent consumption" is available in the "Supply balance sheet" section of the Methodological background.
[47] In line with Eurostat's guidelines on the production and dissemination of statistical data by Commission services after the UK withdrawal from the EU, since the most recent reference period is year 2021, UK is excluded from the EU aggregations of each year. In addition, EU data include Croatia since 2013, date of the EU's enlargement to this country.

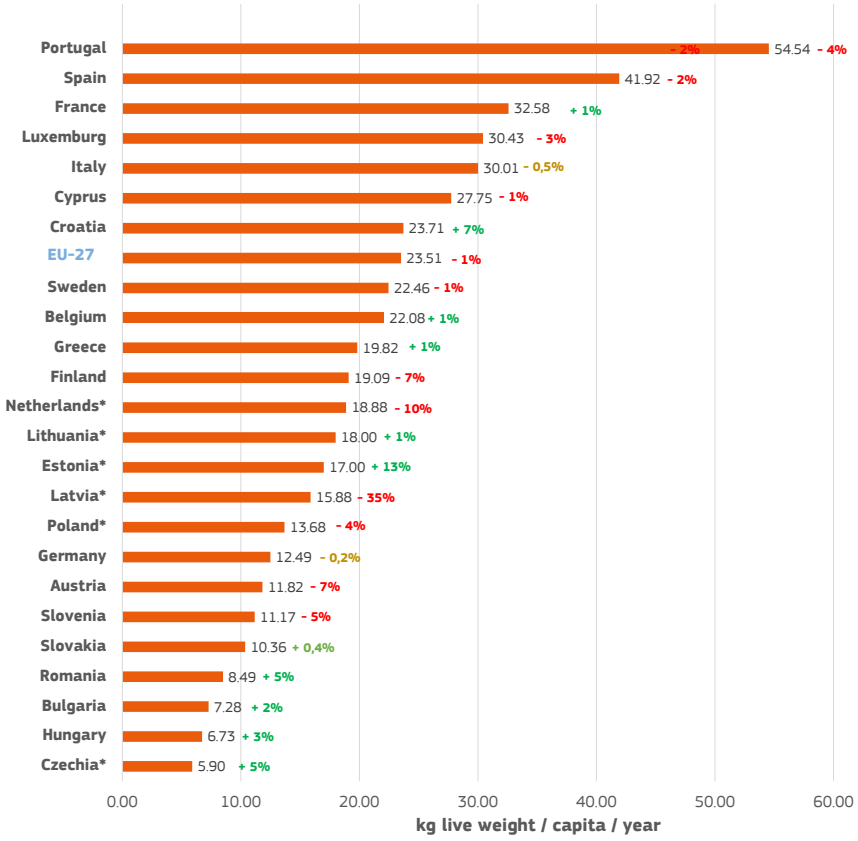
According to EUMOFA and national estimates[48], Portugal stands out as the major EU consumer of fishery and aquaculture products. This was confirmed in 2022, although its per capita apparent consumption peaked in 2018 at close to 61,00 kg LWE but has been on a downward trend since.

This decline mirrors broader trends seen across major EU consuming countries, with most experiencing a drop in consumption between 2021 and 2022, with Croatia being a notable exception. However, it is worth highlighting that estimates have been increasing in some of the countries which traditionally show lower levels of per capita apparent consumption. For example, Hungary, Romania, and Slovakia increased every year of the decade under analysis.

CHART 12

PER CAPITA APPARENT CONSUMPTION OF FISHERY AND AQUACULTURE PRODUCTS BY MEMBER STATE IN 2022 AND % VARIATION 2022/2021

Source: EUMOFA estimates.



*Data were provided by the following National sources: CZSO Czech Statistical Office (Czechia), Estonian Institute of Economic Research - EKI (Estonia), Latvia University of Life Science and Technology and Ministry of Agriculture of Latvia (Latvia), Agricultural Data Center (Lithuania), Dutch Fish Marketing Board (Netherlands) and Institute of Agricultural and Food Economics - National Research Institute (Poland).

Denmark, Ireland Malta are not included in this Chart. For Denmark, the Danish Fisheries Agency could not provide any estimates but, 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. For Ireland, the Sea Fisheries Protection Authority could not provide estimates, but EUMOFA has estimated that the average per capita apparent consumption over the last three years has been around 20,00 kg LWE.

For Malta, given the significant relevance of imports of frozen fish likely used directly as fish feed in the Maltese bluefin tuna fattening industry, available data and information for Malta do not allow to produce precise estimates. Also, in small countries such as Malta, the presence of tourists has a relevant impact on total consumption. Considering this, annual per capita apparent consumption can be estimated between 30-40 kg LWE.

[48] It is worth underlining that the methodologies for estimating apparent consumption at EU and Member State levels are different, the first based on data and estimates as described in the Methodological background, 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. These are marked with a * in Chart 12.

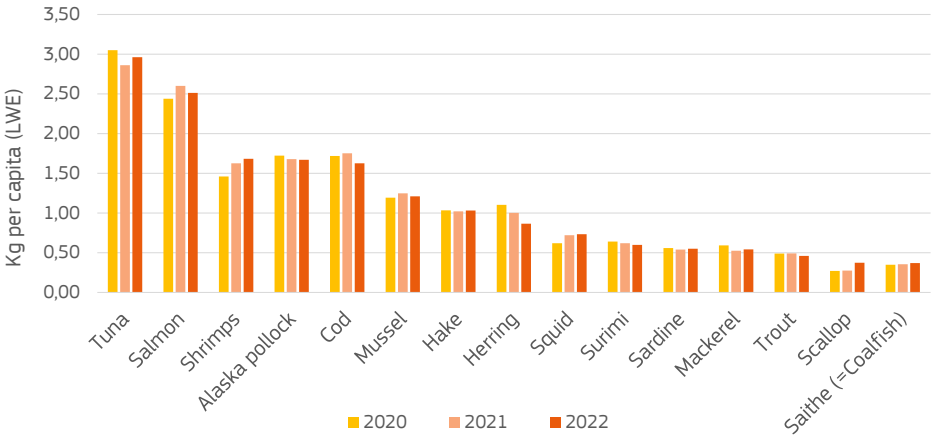
Salmon was by far the species showing the highest apparent consumption throughout the whole 10-year period under analysis. That said, the reader should bear in mind that in this chapter, the product "tuna" includes several main commercial tuna species[49], which result in it having higher apparent consumption than salmon. The same applies to the aggregation of shrimp and prawn species included in the product "shrimps".
Table 10 shows EUMOFA's estimates of per capita apparent consumption for the 15 most consumed fishery and aquaculture products in the EU.

TABLE 10
APPARENT CONSUMPTION OF TOP-15 MOST CONSUMED PRODUCTS (2022)
Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409) and FAO data. Details on the sources and on the methodological approach used for assessing the production method of imports and exports and the destination use of catches can be found in the Methodological background.

Products	Per capita consumption (kg, LWE)	Consumption evolution 2022/2021	% wild	% farmed
Tuna	2,96	+4%	99,2%	0,8%
Salmon	2,51	-3%	5,7%	94,3%
Shrimps	1,68	+4%	43,0%	57,0%
Alaska pollock	1,67	-1%	100%	0%
Cod	1,63	-7%	99,9%	0,1%
Mussel	1,21	-3%	6,4%	93,6%
Hake	1,03	+1%	100%	0%
Herring	0,87	-14%	100%	0%
Squid	0,73	+2%	100%	0%
Surimi	0,60	-3%	100%	0%
Sardine	0,55	+2%	100%	0%
Mackerel	0,54	+3%	100%	0%
Trout	0,46	-6%	0,7%	99,3%
Scallop	0,37	+36%	80,7%	19,3%
Saithe (=Coalfish)	0,37	+4%	100%	0%
Other products	6,32	-1%	71,5%	28,5%
Total	**23,51**	**-1%**	**29,0%**	**71,0%**

ANALYSIS BY MAIN SPECIES

CHART 13
APPARENT CONSUMPTION OF TOP-15 MOST CONSUMED PRODUCTS, THREE-YEAR TREND
Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and) and FAO data. Details on the sources and on the methodological approach used for assessing the production method of imports and exports and the destination use of catches can be found in the Methodological background.



Tuna's apparent consumption in the EU peaked at 3,12 kg LWE in 2019, due to a significant increase in imports. Indeed, EU self-sufficiency averaged 33% during the last decade, meaning that EU tuna consumption is largely supported by imports and,

[49] Skipjack, yellowfin, albacore, bigeye, bluefin and miscellaneous tunas.

TUNA

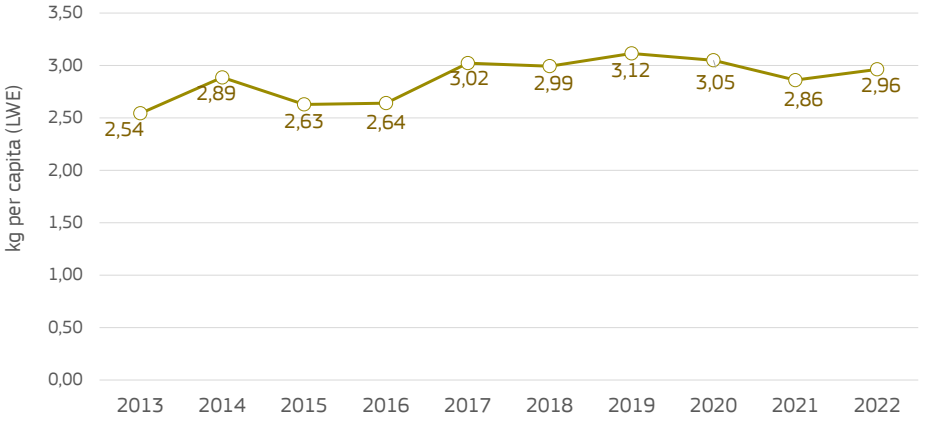
to a lesser extent, by internal production which mainly consists of Spanish and French catches of skipjack tuna. Of note, a significant share of these Spanish and French catches is landed abroad, where it is processed – mainly into canned tuna – and then re-exported.

In 2020 and 2021, tuna consumption declined, largely due to 2020's drop in catches and 2021's reduction in imports. However, in 2022, the trend reversed, and apparent consumption rose to 2,96 kg LWE, mainly driven by an increase in imports alongside a decrease in exports.

CHART 14

APPARENT CONSUMPTION OF TUNA

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409) and FAO data. Details on the sources and on the methodological approach used for assessing the production method of imports and exports and the destination use of catches can be found in the Methodological background.



SALMONIDS

SALMON, TROUT

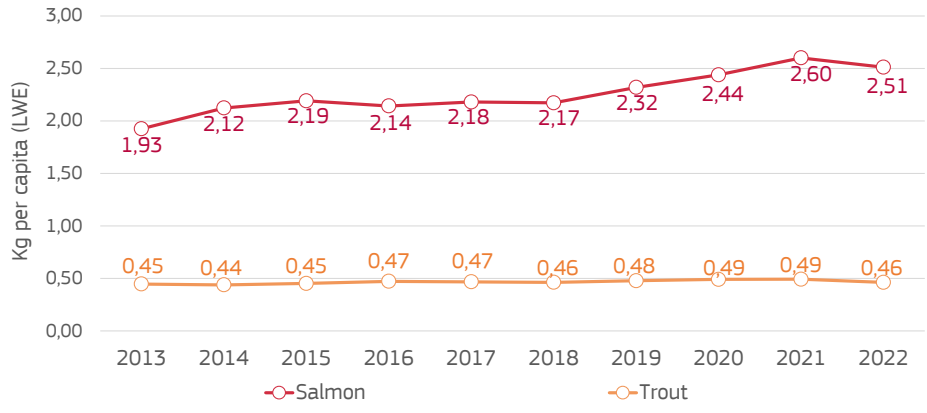
Apparent consumption of salmon had been on the rise throughout the 2013–2022 decade, primarily supported by imports from Norway and, to a much lesser extent, by aquaculture production in Ireland. However, in 2022, it decreased for the first time since 2018, driven by fall in Atlantic salmon production in Europe. Indeed, on average, each person in the EU is estimated to have consumed 2,51 kg LWE of salmon in 2022, which was still higher than the average in 2020. Despite several challenges, this indicates that European producers, traders, and processors of salmon managed to maintain a robust supply chain during the outbreak of the pandemic in 2020 as well as the following year.

Apparent consumption of trout in the EU also saw a slight decrease in 2022, dipping to 450 grams LWE, while it remained close to 500 grams LWE per capita for each year of the decade analysed. This decline aligns with the slight decrease in farm production recorded in 2022.

CHART 15

APPARENT CONSUMPTION OF MOST CONSUMED SALMONIDS

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409) and FAO data. Details on the sources and on the methodological approach used for assessing the production method of imports and exports and the destination use of catches can be found in the Methodological background.



GROUNDFISH

COD, ALASKA POLLOCK, HAKE, SAITHE (=COALFISH)

Four groundfish species – cod, Alaska pollock, hake, and saithe (coalfish) – account for one fifth of EU apparent consumption of fishery and aquaculture products.

EU cod consumption is mainly supplied by imports from Norway, Iceland, and Russia. It has been decreasing since its 2016 peak of 2,06 kg LWE per capita, with a slight increase in 2021, due to the downward trend of supply from imports and catches in the 2017–2022 period. In 2022, the average consumption of cod was estimated at around 1,63 kg LWE per capita, down from the 1,75 kg LWE estimated for 2021, primarily due to decreased catches. For comparison, cod catches in 2022 were only one-third of those recorded in 2016.

Since the EU does not catch Alaska pollock, apparent consumption is estimated as the total of imports *minus* exports. During the decade analysed, this averaged at 1,69 kg LWE.

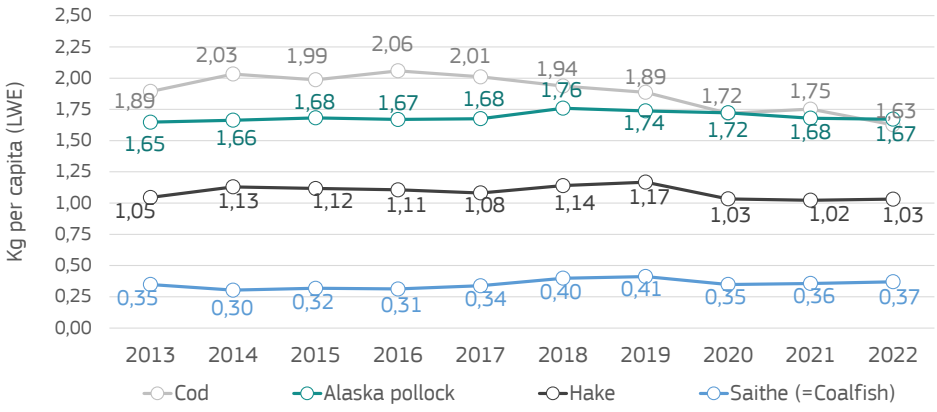
Apparent consumption of hake peaked in 2019, when both catches and imports were at their highest. However, they both dropped in 2020, leading to a decline in apparent consumption. Since then, the situation has remained stable. In 2022, while both catches and imports decreased, exports fell more significantly, resulting in an unexpected slight increase in consumption from 1,02 kg LWE to 1,03 kg LWE.

Apparent consumption of saithe, which is largely supplied by imports from Norway and Iceland, did not show significant variations during the decade analysed. It maintained an average of 350 grams LWE per capita.

CHART 16

APPARENT CONSUMPTION OF MOST CONSUMED GROUNDFISH

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, and DS-045409). Details on the sources and on the methodological approach used for assessing the production method of imports and exports and the destination use of catches can be found in the Methodological background.



SMALL PELAGICS

HERRING, MACKEREL, SARDINE

The EU produces significant quantities of small pelagics, including: herring, mainly caught by Netherlands and Denmark; mackerel, mainly caught by Irish vessels; and sardines, primarily fished by the Croatian and Spanish fleets. The availability of these species in the EU market is largely sustained by imports from non-EU countries, particularly Norway and the UK for herring and mackerel, and Morocco for sardines. Also of note, EU exports play an important role in the supply balance for these species.

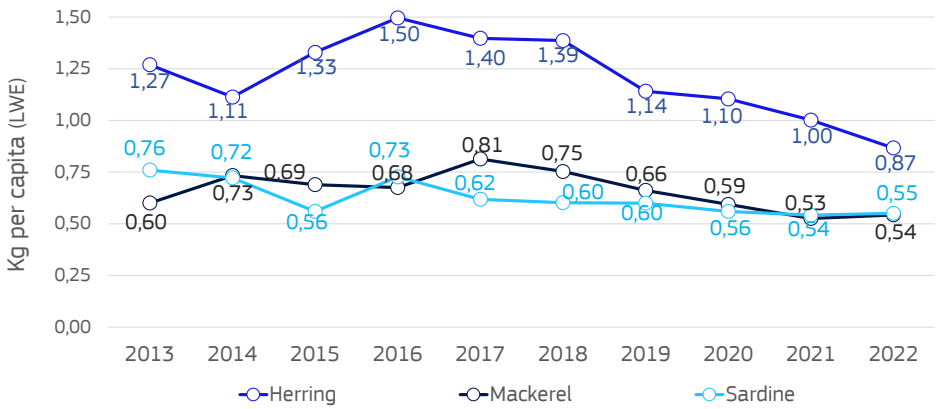
In 2022, apparent consumption of herring dropped to a 10-year low of 0,87 kg LWE per capita, continuing the downward trend that began in 2019. This decline was primarily due to reduced imports and increased exports.

For mackerel and sardine, apparent consumption per capita throughout the decade remained relatively stable, averaging between 660 and 620 grams LWE per capita. In 2022, their apparent consumption was estimated at 540 grams LWE per capita for mackerel and 550 grams LWE per capita for sardines.

CHART 17

APPARENT CONSUMPTION OF MOST CONSUMED SMALL PELAGICS

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, and DS-045409). Details on the sources and on the methodological approach used for assessing the production method of imports and exports and the destination use of catches can be found in the Methodological background.



BIVALVES

MUSSEL, CLAM

Mussel is by far the main product farmed in the EU in volume terms – especially in Spain. It is followed at a distance by trout. However, in terms of apparent consumption, salmon plays a more significant role due to the amounts imported from Norway.

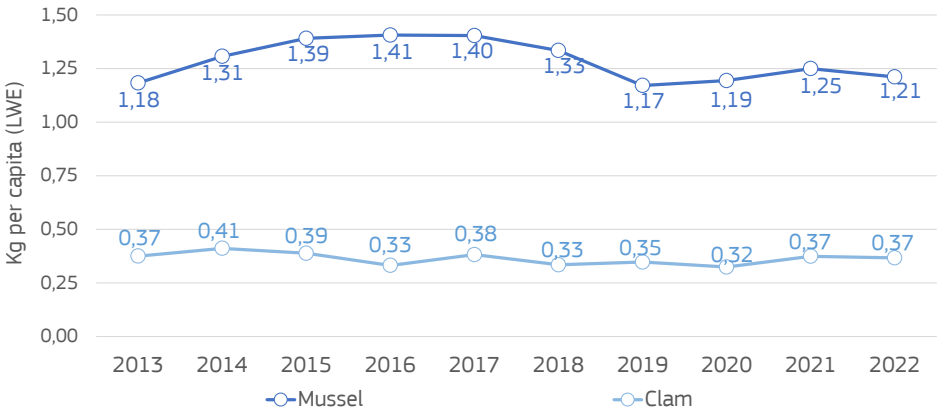
In 2022, mussel's apparent consumption decreased slightly from 2021 and, further, its estimated 1,21 kg LWE per capita was lower than the 1,28 kg LWE per capita average of the 2013–2022 decade. This drop was mainly driven by reduced farmed production.

As for clams, their apparent consumption in the EU hovered just above 300 grams LWE per capita during 2018, 2019, and 2020, reflecting the relatively stable trend in imports and production. Notably, 2017 had been one of the highest levels of the decade, reaching nearly 400 grams LWE, thanks to aquaculture production in Italy. In 2021 and 2022, apparent consumption rose to 370 grams LWE per capita, a 15% increase from 2020, primarily due to higher wild production in the Netherlands and Denmark.

CHART 18

APPARENT CONSUMPTION OF MOST CONSUMED BIVALVES

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409) and FAO data. Details on the sources and on the methodological approach used for assessing the production method of imports and exports and the destination use of catches can be found in the Methodological background.



OTHER PRODUCTS OF DIFFERENT COMMODITY GROUPS

SHRIMPS, SQUID, SURIMI

Apparent consumption of shrimp in the EU is evenly split between wild and farmed products, with imports playing a crucial role. The main suppliers include Ecuador, India, Vietnam, Thailand, Indonesia, Argentina, and Greenland. After peaking at 1,60 kg LWE per capita in 2018, shrimp consumption in the EU dropped below 1,50 kg LWE per capita in 2019 and 2020, primarily due to reduced production of *Crangon* shrimp in the Netherlands and Germany. However, for the most imported shrimp species – frozen or prepared/preserved warmwater shrimp and Argentine red shrimp – consumption remained relatively steady during this period.

In 2021, shrimp consumption began to rise again, reaching 1,63 kg LWE per capita, driven by increased imports from Ecuador and Argentina. By 2022, it hit a new high of 1,68 kg LWE per capita, thanks to higher catches in the Netherlands, Spain, and Estonia, alongside a surge in imports.

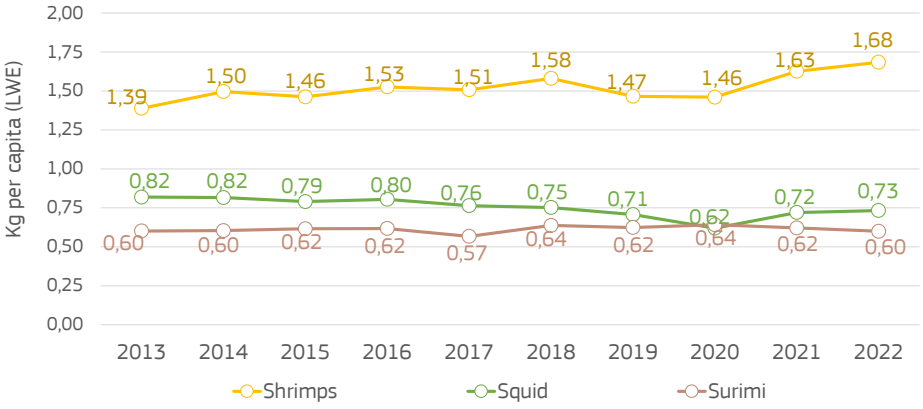
As for squid, its apparent consumption in the EU is largely dependent on imports. In 2020, consumption dropped due to a decrease in imports from the Falkland Islands, the EU's main supplier of this species. However, in 2021, imports from the Falkland Islands increased and its apparent consumption grew to 720 grams LWE per capita. In 2022, consumption rose further, reaching an estimated 730 grams LWE per capita, driven by a significant rise in catches from Spain and, to a lesser extent, France.

As concerns surimi, no statistics concerning its production are available, as it is made ofa combination of different species. Therefore, its apparent consumption is calculated based on imports *minus* exports. During the decade under analysis, per capita apparent consumption of surimi in the EU averaged 610 grams LWE, largely comprising surimi imported from the United States.

CHART 19

APPARENT CONSUMPTION OF OTHER MOST CONSUMED PRODUCTS

Source: EUMOFA, based on EUROSTAT (online data codes: fish_ca_main, fish_aq2a and DS-045409) and FAO data. Details on the sources and on the methodological approach used for assessing the production method of imports and exports and the destination use of catches can be found in the Methodological background.



HOUSEHOLD EXPENDITURE AND PRICES

In 2023, household expenditure on fishery and aquaculture products in the EU reached EUR 62,3 billion, marking a 6% increase over 2022 and continuing the upward trend that had begun in 2018[50]. Of note, as shown in Chart 20, in 2023 all EU Member States with the exception of Sweden experienced an increase. Sweden recorded a decrease of 4% from the previous year, making it the only EU Member State to record a decrease in household expenditure of fish products since 2021.

In 2023, household expenditure on fish increased 6%, continuing to reflect the trends of previous years.

Household expenditure on fish in 2023 reflected the trends of previous years. While increases in 2020 and 2021 were driven by COVID-19 restrictions, the spike in 2022 was fuelled by economic and geopolitical factors. In 2023, inflationary pressures remained high, albeit slowing down compared to 2022[51], but still leading to further increases in fish prices. According to Europanel/Kantar/GfK data, total consumption of fish at home had been declining since 2021 and decreased by more than 5% in the highest consuming EU countries from 2022 to 2023.

Italy, which had historically led in total expenditure on fishery and aquaculture products, saw the largest absolute increase in household spending on fish products, rising by EUR 783 million in 2023, 6% more than in 2022. Spain also recorded a 6% increase, amounting to EUR 661 million. France ranked third in total expenditure on fish, with a 7% increase of EUR 618 million.

Portugal, the largest per capita consumer of fishery and aquaculture products in the EU, saw its per capita expenditure reach EUR 456 in 2023, more than three times the EU average of EUR 138, and EUR 191 more than second-ranked Luxembourg, which surpassed Spain in 2023. Spain ranked third in per capita fish consumption, with expenditure at EUR 239, a 5% or EUR 11 increase from 2022.

[50] In this report, value and price variations for periods longer than five years are analysed by deflating values using the GDP deflator (base=2015); for shorter periods, nominal value and price variations are analysed.
[51] Eurostat, "December 2023. Annual inflation up to 2.9% in the euro area": https://ec.europa.eu/eurostat/documents/2995521/18343103/2-17012024-AP-EN.pdf

Portugal and Luxembourg also had the highest increases in per capita expenditure in the EU, growing by EUR 28 and EUR 14, respectively.

CHART 20

HOUSEHOLD NOMINAL EXPENDITURE ON FISHERY AND AQUACULTURE PRODUCTS IN 2023 AND % VARIATION 2023/2022 (out-of-home consumption is excluded)

Source: EUROSTAT (online data code: prc_ppp_ind)
Purchasing Power Parities
PPPs – nominal expenditure

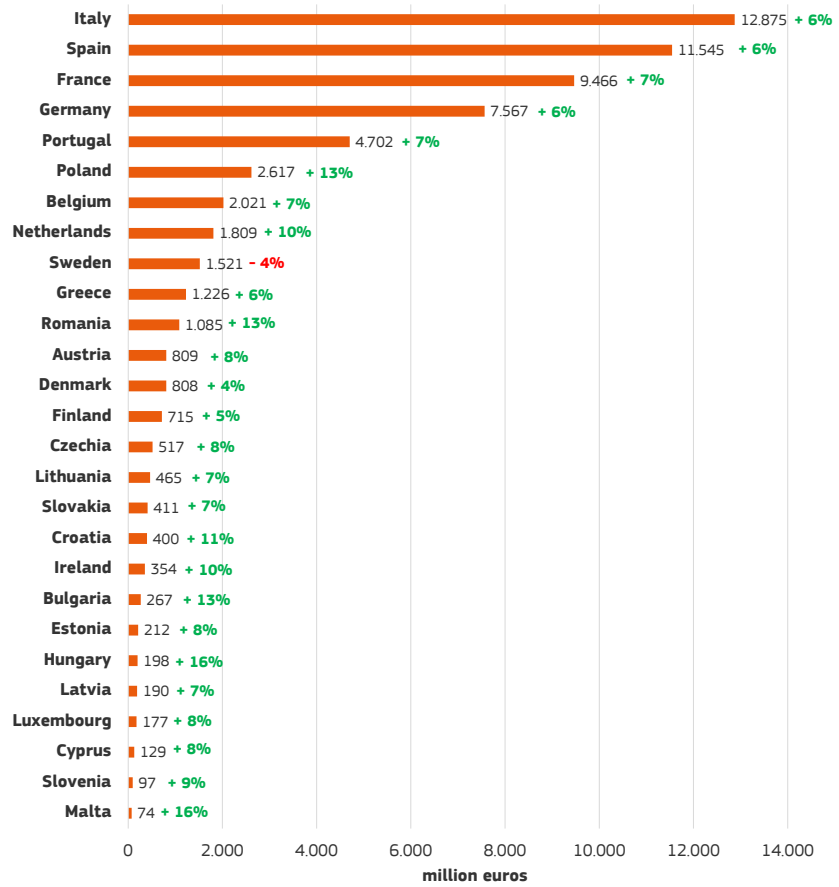
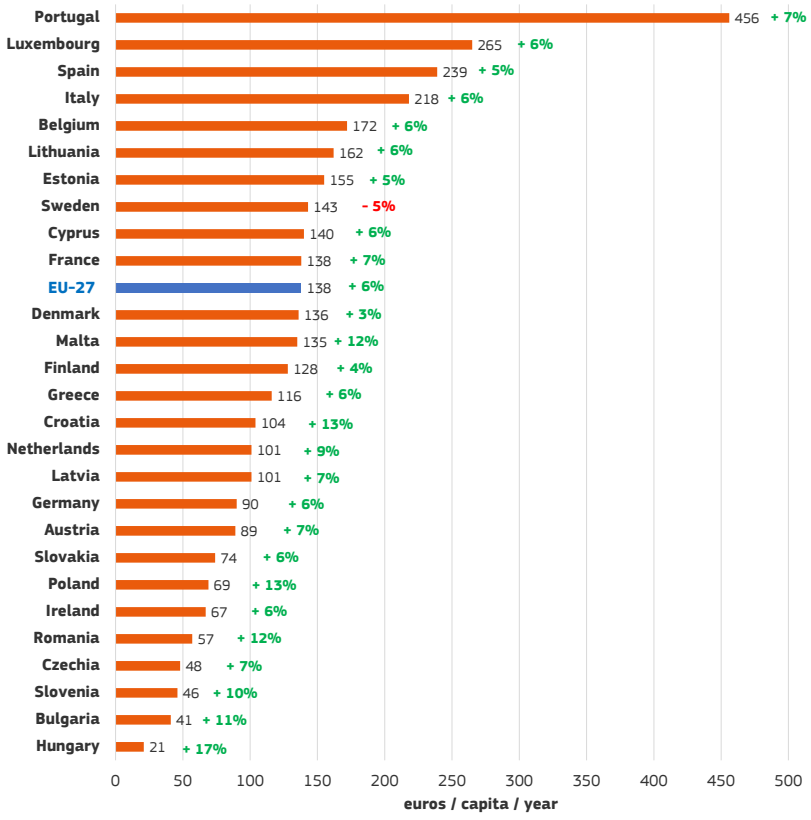


CHART 21

PER CAPITA HOUSEHOLD NOMINAL EXPENDITURE ON FISHERY AND AQUACULTURE PRODUCTS IN 2023 AND % VARIATION 2023/2022 (out-of-home consumption is excluded)

Source: EUROSTAT (online data code: prc_ppp_ind)
Purchasing Power Parities
PPPs – nominal expenditure per inhabitant



FISHERY AND AQUACULTURE PRODUCTS VS. MEAT AND FOOD IN GENERAL

In all EU countries, expenditure on meat is historically higher than expenditure on fishery and aquaculture products – a pattern that also holds true for consumption volumes[52]. On average, EU households expenditure on fish and aquaculture products is about one fourth of what they spend on meat. In 2023, EU households allocated EUR 247 billion to meat and EUR 62 billion to fishery and aquaculture products.

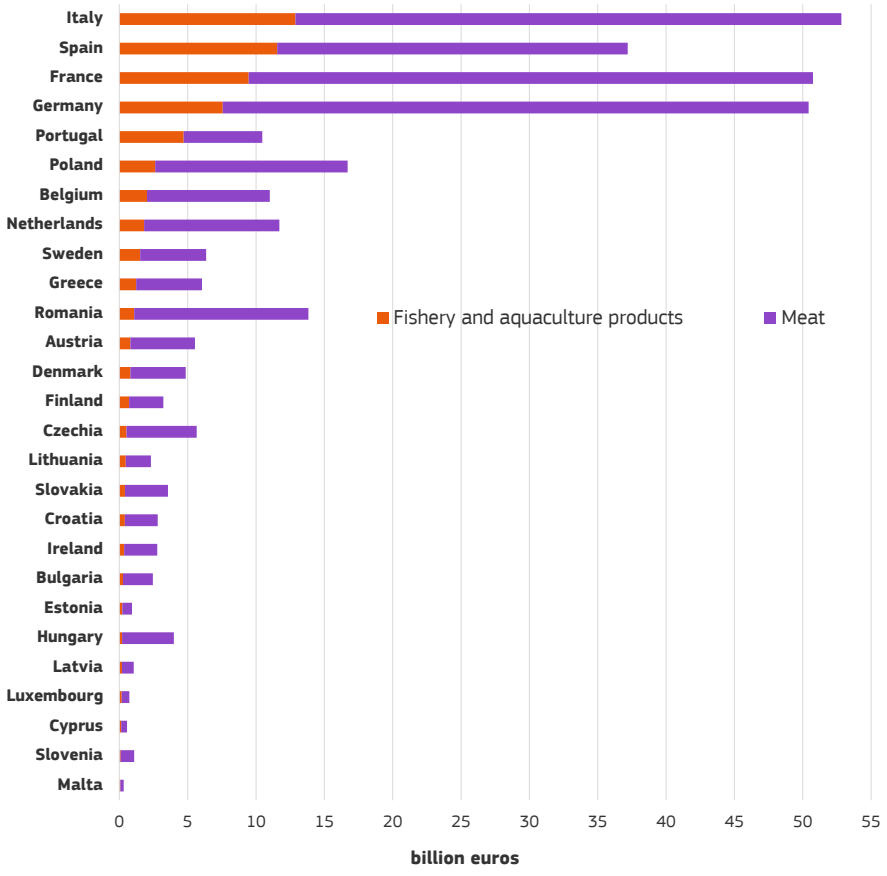
Among the Member States, Portugal showed the most balanced spending ratio between these two categories, as illustrated in Chart 22. In 2023, Portuguese households spent 45% on fish and 55% on meat. The largest disparities were observed in Hungary, with only 5% spent on fishery and aquaculture products, and in Romania, Czechia and Slovenia, where spending was 8%, 9% and 9% respectively.

In the four countries with the highest nominal fish consumption – namely Italy, Spain, France, and Germany – different spending habits emerge. Italian households spend about one fourth as much on fish as they do on meat. In Spain, fish expenditure accounts for 31% of the total, slightly less than one third of meat expenditure. In France, households spend less than one fifth on fish compared to meat, while in Germany, it is around one seventh.

CHART 22

HOUSEHOLD NOMINAL EXPENDITURE ON FISHERY AND AQUACULTURE PRODUCTS VS. MEAT IN THE EU IN 2023 (out-of-home consumption is excluded)

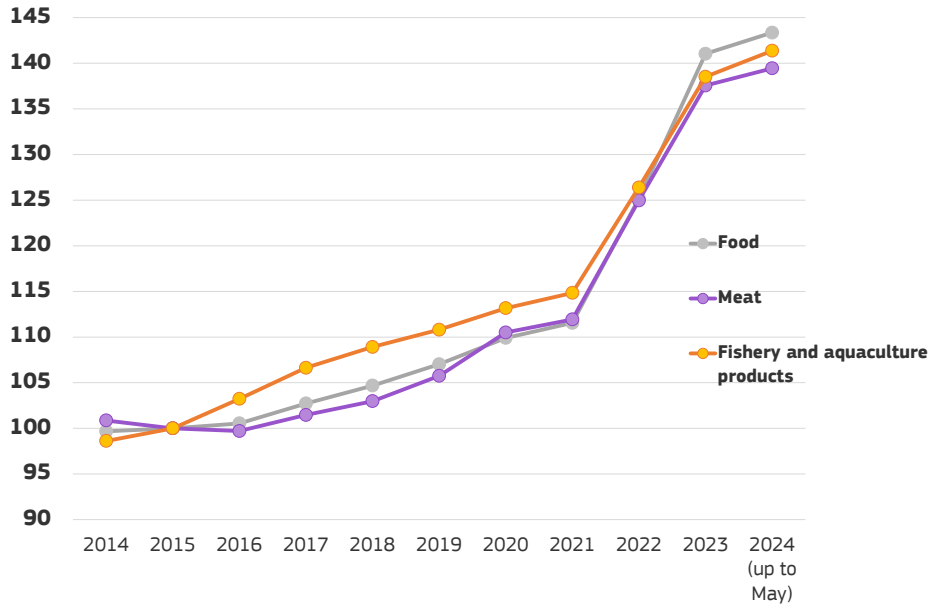
Source: EUROSTAT (online data code: prc_ppp_ind)
Purchasing Power Parities
PPPs – nominal expenditure



Graph 23 below clearly shows how prices rose sharply in 2022 and how they continued to rise throughout 2023. In the early months of 2024, prices showed signs of slowing, but remained significantly higher than in previous years.

[52] This is confirmed by OECD (link: https://stats.oecd.org/viewhtml.aspx?datasetcode=HIGH_AGLINK_2019&lang=en#).

CHART 23
CONSUMER PRICES INDICES (2015=100)
Source: EUROSTAT (online data code: prc_ppp_ind)
Purchasing Power Parities PPPs – nominal expenditure



The prices of fishery and aquaculture products continued to rise in 2023, following the steep increase of 2022, with an overall growth of more than 9,5% over 2021. Interestingly, fish prices increased less than the prices of meat and food in general during both years. From 2022 to 2023, food prices surged by more than 12,5% and meat prices rose by 10%. However, recent data indicate that in the first five months of 2024, fish prices increased by 2,1%, while meat and general food prices rose by 1,4% and 1,6%, respectively, reversing the trend.

From 2014 to 2024[53], consumer prices of fishery and aquaculture products increased by an average of 3,7% per year. This was slightly higher than the 3,4% growth rate recorded for meat prices but lower than the 3,8% growth rate for all food commodities. However, as shown in Table 11, while consumer prices increased significantly in all categories over the last five years, the smallest increase was recorded for fish products. As a result, in 2023, consumer prices for food in general exceeded those for fish for the first time since 2014.

Looking at the decade-long perspective, the average prices of fish began to increase significantly in 2016, and by 2023, they had risen by 40,5% in real terms compared with 2014. This price growth was aligned with the increased prices of imported products, as the EU relies heavily on imports to meet consumer demand for fishery and aquaculture products. During the same period, meat prices spiked by 36,4% and general food prices by 41,5%. This surge was largely driven by the sharp increases recorded in 2022 and 2023. Although there were signs of a slowdown in the first months of 2024, prices had not yet stabilised.

TABLE 11
YEARLY EVOLUTION OF CONSUMER PRICES (2015=100)
Source: EUROSTAT (online data code: prc_fsc_idx)
Harmonised Index of Consumer Prices HICP

Sector	2019	2020	2021	2022	2023	2024 (up to May)	2024 / 2019
Food	+2,2%	+2,7%	+1,5%	+12,2%	+12,7%	+1,6%	**+33,9%**
Meat	+2,7%	+4,5%	+1,3%	+11,6%	+10,1%	+1,4%	**+31,9%**
Fishery and aquaculture products	+1,7%	+2,1%	+1,5%	+10,1%	+9,6%	+2,1%	**+27,6%**

[53] Data as of May 2023.

RELEVANCE BY PRESERVATION STATE

With regard to statistics concerning household expenditure for fishery and aquaculture products, Eurostat provides *"shares of the total household final monetary consumption expenditure"*[54] for four preservation states, which are listed in Table 12.

TABLE 12
ITEM WEIGHTS OF EU HOUSEHOLD EXPENDITURE ON "TOTAL GOODS AND SERVICES"
Source: EUROSTAT (online data code: prc_hicp_inw)
Harmonised Index of Consumer Prices HICP.

Category	2022	2023
FOOD (Meat + Fishery and aquaculture products + Other food)	15,871%	15,641%
Meat	3,759%	3,559%
Fishery and aquaculture products	0,976%	0,904%
Fresh or chilled	*48%*	*43%*
Frozen	*20%*	*21%*
Dried, smoked or salted	*10%*	*10%*
Other preserved or processed and preparations	*22%*	*26%*
Other food	11,136%	11,178%
OTHER GOODS AND SERVICES	84,129%	84,359%
TOTAL GOODS AND SERVICES	100%	100%

Fishery and aquaculture products account for less than 1% of all goods and services purchased by EU households, significantly lower than meat's 3,6% share. Overall, expenditure on food commodities decreased a slight 1,5% from 2022 to 2023. Spending on both meat and fish products declined, with meat down 5% and fish down 7% from the previous year. Of note, the drop in fish expenditure was primarily driven by reduced spending on fresh or chilled products. On the other hand, expenditure on other food products saw a modest increase of 0,4%.

At the national level, the share of expenditure on fishery and aquaculture products within total goods and services declined in most EU Member States. The largest relative decreases were seen in Austria and Hungary with both recording a 25% drop, mainly due to reduced spending on fresh products across all conservation categories. In countries with higher fish consumption, such as Portugal, Spain and Italy, expenditure on fish products fell by 12%, 22% and 13%, respectively, marking their lowest shares in the past five years. For Portugal, the decline was driven mainly by fresh and frozen fish and seafood, while Spain saw reductions across all categories. In Italy, the decrease was primarily due to reduced spending on fresh products. Looking at the early months of 2024, the trend appeared to be stabilising in Portugal and Italy, while in Spain, expenditure on fish products continued to decline.

[54] Metadata are available at https://ec.europa.eu/eurostat/cache/metadata/en/prc_hicp_esms.htm.

3.2 HOUSEHOLD CONSUMPTION OF FRESH FISHERY AND AQUACULTURE PRODUCTS

OVERVIEW

The household consumption[55] of fresh fishery and aquaculture products is monitored in 11 EU Member States, namely Spain, Italy, France, Portugal, Germany, Poland, Netherlands, Ireland, Denmark, Sweden and Hungary. Ranked according to their volumes of fish consumption, these 11 countries[56] accounted for 86% of the total EU expenditure on fishery and aquaculture products in 2023[57].

In 2023, despite a continued decrease in household consumption, down by 5,5% over 2022, its overall value remained unchanged.

As shown in Table 13, the volume of fresh fish consumed by households decreased by almost 5,5% between 2022 and 2023. The table also reveals two distinct patterns that emerged from 2019 until 2023, the 5-year period of interest. Initially, from 2019 to 2021, there was a notable upsurge in consumption, primarily attributed to the impact of COVID-19. Quarantine restrictions heavily affected the HoReCa sector, prompting a shift towards home consumption. Then, 2022 saw a contrasting trend emerge, characterised by an overall decrease in household consumption. Indeed, all countries surveyed experienced a decline in consumption during both 2022 and 2023. In fact, by 2023, household consumption of fresh fish had plummeted to its lowest level within the considered period for each country, dipping below pre-pandemic levels. The year-on-year rate of decline was significant, reaching 18% in 2022, although it moderated to 6% in 2023.

After increasing during the COVID-19 outbreak, the total value of household fresh fish consumption decreased 11% from EUR 14,8 billion in 2021 to EUR 13,2 billion in 2022,. However, in 2023, it stabilised at EUR 13,3 billion, showing a marginal increase of 0,1% from 2022. At the same time, the sector saw a general increase in unit values, reaching five-year peaks for most species in both 2022 and 2023. This increase in prices likely helped offset the impact of reduced consumption, as values did not fall as much as volumes.

This downward trend in household consumption can largely be attributed to the current economic and geopolitical climate, which has led to an increase in inflation, weighing heavily on consumers' purchasing power at the retail level. Several factors influenced the rise in inflation, including the economic recovery after the COVID-19 crisis, which increased demand, and Russian military aggression against Ukraine, which affected energy costs and trade flows.

[55] Data analysed in this chapter originate from representative household panels that record volumes and values of every item purchased. More details can be found in the Methodological background.
[56] For ten of these countries (namely Denmark, Germany, Spain France, Italy, Ireland, the Netherlands, Poland, Portugal and Sweden) as well as for Austria, Belgium and Romania, EUMOFA also collects online shops retail prices of a selection of products. Data can be consulted at https://eumofa.eu/online-retail-prices.
[57] EU expenditure data are provided by EUROSTAT. These data are compiled based on a common methodology elaborated within the "EUROSTAT – OECD PPP Programme" (http://www.oecd.org/std/prices-ppp/eurostat-oecdmethodologicalmanualonpurchasingpowerparitiesppps.htm). More details can be found in the Methodological background.

TABLE 13

HOUSEHOLD CONSUMPTION OF FRESH FISHERY AND AQUACULTURE PRODUCTS, IN VOLUME (TONNES) AND NOMINAL VALUE (1.000 EUR)

Source: EUMOFA elaboration of Europanel/Kantar/GfK data. Possible discrepancies in totals and % changes are due to rounding.

Member state	2019		2020		2021		2022		2023		2023 / 2022	
	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume
Spain	4.696.180	590.559	5.326.492	645.631	5.156.691	590.616	4.505.083	486.679	4.698.834	477.317	4,3%	-1,9%
Italy	3.455.738	333.585	3.224.659	308.035	3.548.918	324.426	3.262.448	279.537	3.005.536	245.113	-7,9%	-12,3%
France	2.499.538	216.180	2.643.167	221.443	2.763.768	231.195	2.504.751	196.749	2.492.463	188.083	-0,5%	-4,4%
Portugal	462.169	71.773	506.155	76.966	504.384	73.639	466.015	61.736	456.157	58.906	-2,1%	-4,6%
Germany	979.918	67.497	1.189.691	78.626	1.217.243	84.157	974.033	60.835	980.170	57.336	0,6%	-5,8%
Poland	297.857	48.581	310.104	48.862	344.837	50.186	341.934	44.252	405.871	43.132	18,7%	-2,5%
Netherlands	520.569	33.307	611.861	38.039	665.126	40.532	638.665	35.326	639.735	32.694	0,2%	-7,5%
Ireland	198.287	13.333	196.773	13.160	201.230	13.110	191.518	11.678	204.287	11.514	6,7%	-1,4%
Denmark	199.941	12.177	225.935	13.620	238.041	13.819	213.282	11.703	222.530	11.128	4,3%	-4,9%
Sweden	124.171	9.310	153.626	12.385	145.468	11.016	114.718	7.745	116.344	7.474	1,4%	-3,5%
Hungary	32.635	6.085	34.710	6.316	36.869	6.035	32.347	4.395	31.401	3.543	-2,9%	-19,4%
Total	**13.467.004**	**1.402.386**	**14.423.175**	**1.463.082**	**14.822.575**	**1.438.731**	**13.244.795**	**1.200.635**	**13.253.328**	**1.136.239**	**0,1%**	**-5,4%**

FOCUS ON THE TOP THREE CONSUMING COUNTRIES

In 2023, Spain, Italy and France together accounted for 77% of the total volume and 80% of the total value of fresh fishery and aquaculture products consumed by households in the 11 countries surveyed.

SPAIN

Spain alone accounted for 42% of the total volume and 35% of the total value of household consumption of fresh products in the 11 countries under analysis. In 2023, Spanish households consumed 477.316 tonnes of fresh fish with a value of EUR 4,70 billion, representing a 2% decrease in volume but a 4% increase in value compared to 2022.

During the five-year period shown in Table x, consumption of fresh fishery and aquaculture products by Spanish households generally decreased, with the exception of a consumption peak in 2020, which was mainly due to the quarantine restrictions associated with the COVID-19 pandemic. From 2019 to 2023, consumption volume in Spanish households decreased by just under 20%, while its value remained practically unchanged. Further, although consumption of most of the monitored species in Spain decreased in 2022, increases were seen in 2023 for some key species.

Consumption of salmon, which had grown steadily since 2019, peaked in 2021 at 68.449 tonnes when it became the main species consumed in Spanish households, but then fell by 29% in 2022, to 48.536 tonnes. This sudden decrease after several years of growth, observed in all the countries surveyed in 2022 for salmon, was mainly due to a price increase, driven by general inflation[58]. That said, other contributing factors included a slight decrease in European salmon production, a higher share of European salmon production being sold to non-EU markets than in previous years, and the lifting of COVID-19 restrictions on the HoReCa sector. In 2023, however, its consumption showed signs of recovery, increasing by 3% in volume and 14% in value compared with 2022. This increase was possibly linked to Spain's 2023 salmon imports increasing 1,4%, with its unit value increasing 11% from 2022 and peaking at 13,59 EUR/kg.

Hake consumption, on the other hand, has been decreasing every year since 2020, despite being the most important species in Spanish households for most of the period analysed. In 2019, its volume attested at 78.283 tonnes, while, in 2023, it dropped to 50.144 tonnes, its lowest level of the surveyed period. Of note, the decrease from 2022 to 2023 was only 5%, whereas in previous years, the average drop had been around 12%. This downward trend in hake consumption may be attributed to the increase in prices, presumably linked to the reduction in the European hake quota and the reduced availability of imported hake.

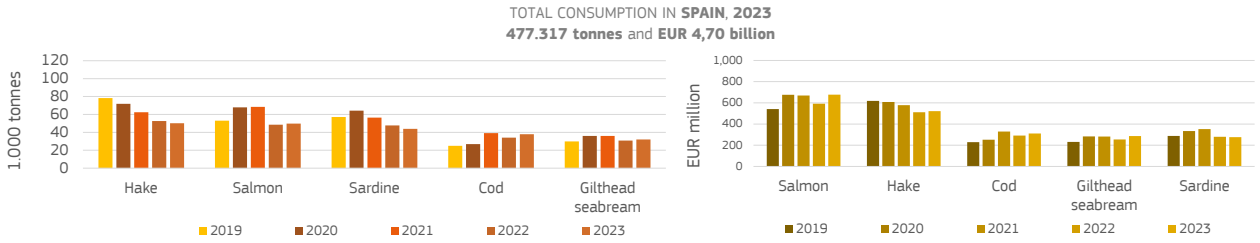
[58] The average unit value for salmon, in the 11 countries included in this analysis, increased by 11% over 2022, reaching 17,51 EUR/kg.

The unit value, which has increased every year since 2019, reached a 5-year high of 10,41 EUR/kg, up 7% from 2022. However, for the first time in the period considered, the total value of hake consumption increased, showing a 2% rise from 2022 to 2023.
Sardines are the third most consumed fresh species in Spanish households. In 2023, their consumption declined by 8% in volume and 2% in value, hitting their lowest values of the 2019–2023 period, although their unit value peaked at 6,29 EUR/kg, increasing 7% from 2022, when it attested at 5,86 EUR/kg. They accounted for 9% of total consumption, slightly less than hake's 10,5% and salmon's 10,4%.
Cod and gilthead seabream together account for approximately 15% of total fresh fish consumption by Spanish households. In 2023, cod consumption increased by 11% in volume and 7% in total value compared to 2022, while its unit value experienced a slight decrease of 4%, dropping to a 5-year low of 8,20 EUR/kg. Similarly, consumption of gilthead seabream grew 4% in volume and 11% in value compared to the previous year. Its unit value also increased, peaking at 8,93 EUR/kg, which was an 8% rise from 2022. These two species, which followed similar patterns over the years surveyed, were the only ones for which consumption grew in absolute terms from 2019 to 2023. Cod saw a significant increase of 52% in volume and 36% in value, while gilthead seabream experienced a growth of 7% in volume and 23% in value.
In 2023, consumption also increased for European seabass, tuna and mackerel, which together accounted for more than 10% of total consumption. Tuna and mackerel witnessed a consumption increase of 10% and 5%, respectively, compared to 2022. However, they experienced slight decreases in unit value, with tuna dropping to 11,29 EUR/kg, and mackerel dropping 3% to 5,72 EUR/kg. On the other hand, European seabass recorded a 1% growth in volume, while its unit value rose by 7%, peaking at 10,50 EUR/kg.
Sole and monk represent 6% of Spanish household consumption. In 2023, their consumption decreased by 14% and 2%, respectively, compared to 2022. However, the unit values of both reached 5-year highs, with sole priced at 11,29 EUR/kg, a 7% increase, and monk priced at 13,16 EUR/kg, a 1% increase.

CHART 24

TOP-FIVE FRESH SPECIES (IN VOLUME AND NOMINAL VALUE) CONSUMED BY HOUSEHOLDS IN SPAIN

Source: EUMOFA elaboration of Europanel/Kantar data



ITALY

The level of household consumption of fresh fish in Italy was volatile during the 5-year period analysed, but in 2022 and 2023 the trend stabilised downwards. In 2022, consumption was 14% lower than in 2021, attesting at 26.558 tonnes, while in 2023, it dropped a further 12% from 2022, reaching 245.112 tonnes.
Moreover in 2023, Italy recorded the largest decrease of all surveyed countries, with an overall decline of almost all monitored species[59]. This drop in consumption was probably linked to the surge in inflation, pushing up retail prices, which in Italy were already among the highest in the EU.
The first and second most consumed species in Italian houses, namely gilthead seabream and mussel *Mytilus* spp., recorded the largest decreases and fell well below

[59] Only hake consumption, among all the species covered, experienced a 2% increase in Italian households from 2022 to 2023.

their 2019 pre-COVID-19 consumption level. Between 2022 and 2023, gilthead seabream and mussel consumption decreased by 11% and 18% respectively.

Anchovies and squid also recorded declines in 2023, dropping 18% and 20%, respectively, from 2022. However, their consumption has been on a downward trend since 2020, with their 44% decrease for anchovies and a 45% decrease for squid during the 2019–2023 period indicating that their consumption in Italian households almost halved in five years.

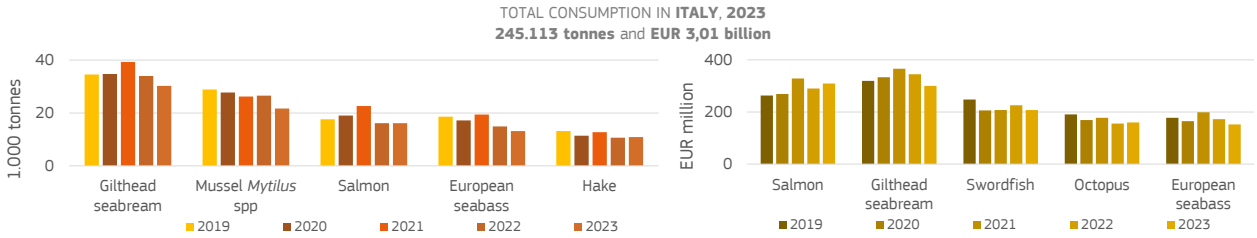
Total value of Italian in-house fish consumption dropped by 8% from 2022 and attested at EUR 3,01 billion. This was accompanied by a steady increase in unit values, which could be one of the main reasons that the total value of consumption did not drop as much as the volume. That said, gilthead seabream, a notable exception, recorded a slight of 2% decline in its unit value compared to 2022 and attested at 9,92 EUR/kg. Mussel *Mytilus* spp. showed the highest relative increase in its unit value, growing by 16% from the previous year and reaching 4,12 EUR/kg. Its unit value more than doubled in the five years from 2019 to 2023.

Household consumption of salmon in Italy, as in most of the other countries analysed, reached its peak in 2021, and dropped to its lowest volume in 2022. Moving into 2023, its consumption remained stable, decreasing a mere 0,1% from 2022, while its unit value grew by 7%, reaching 19,17 EUR/kg, for a total of 16.134 tonnes with a value of EUR 309 million.

CHART 25

TOP-FIVE FRESH SPECIES (IN VOLUME AND NOMINAL VALUE) CONSUMED BY HOUSEHOLDS IN ITALY

Source: EUMOFA elaboration of Europanel/GfK data



FRANCE

In 2023, household consumption of fresh fish and aquaculture products in France reached 188.083 tonnes with a total value of EUR 2,49 billion. This marked a 5-year low and a decrease of almost 4,5% in volume and 0,5% in value from 2022.

All monitored species, with the exception of saithe, recorded a decrease in their consumption. The most affected were cod, trout and hake, which together accounted for roughly 30% of the 2023 drop[60]. Cod consumption decreased by 7%, trout by 12% and hake by 21% compared to 2022. In 2023, salmon, by far the most consumed species in French households, decreased a slight 1% from 2022 to 2023. This followed a 21% decrease from 2021 to 2022, suggesting a slowdown in the rate of decline. On the other hand, gilthead seabream, whiting, sardines and monk consumption, which account for less than 10% of the total consumption of fresh fish in French households, continued the downward trend that started in 2022. Compared to 2021, French consumption decreased 5% for gilthead seabream, 11% for whiting, 9% for sardines and 11% for monk.

Value, on the other hand, remained relatively unchanged compared with the previous year, as rising prices could have partially softened the impact of reduced consumption. The unit value reached its highest level over the 5-year period analysed for almost all the species monitored, with the exception of gilthead seabream and sardine. The

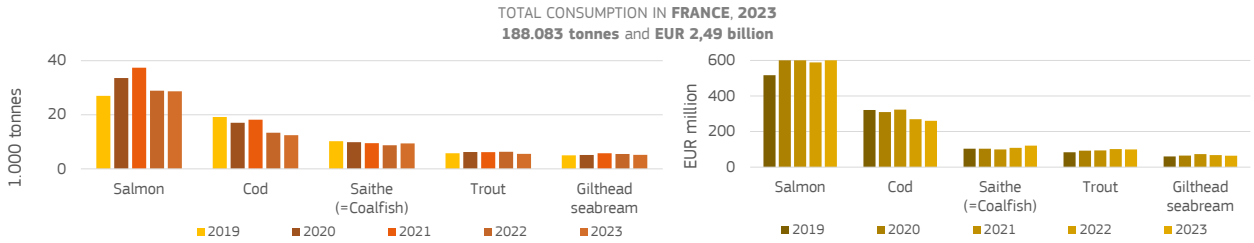
[60] Cod, trout and hake accounted together for 28% of the difference, while the category of "undefined other products", an aggregation of all other fresh species recorded by household panels but not available at disaggregated level, accounted for 56%. The remaining 16% is the outcome of the decrease in household consumption aggregated among the other species covered by the analysis.

average growth rate of unit value in 2022–2023 stood at 4%. Of note, salmon, which accounts for one fourth of the overall value, recorded a 6% increase from 2022 in its unit value, which reached 21,48 EUR/kg with a total consumption value of 617 EUR.

CHART 26

TOP-FIVE FRESH SPECIES (IN VOLUME AND NOMINAL VALUE) CONSUMED BY HOUSEHOLDS IN FRANCE

Source: EUMOFA elaboration of Europanel/Kantar data



MAIN TRENDS IN OTHER COUNTRIES

PORTUGAL

In Portugal, 2023 household consumption continued to follow the downward trend started in 2021. Compared to 2022, it decreased by 5% in volume and 2% in value, reaching a level lower than the pre-pandemic one. This was linked to a decrease in both volume and value for several monitored species, in particular sardines and mackerel.

In 2023, household consumption of sardines decreased by 22% in volume and 25% in value compared to 2022, while its unit value fell by 4% to 5,09 EUR/kg. Mackerel consumption went down by 14% in volume and 1% in value from 2022 to 2023. However, its 2023 unit value reached 4,59 EUR/kg, which was a 14% increase from 2022. On the other hand, the most popular species consumed in Portugal's households, namely gilthead seabream and shrimps, increased a slight 1% and 7% respectively from 2022. The unit values of both reached 5-year peaks, with a 1% increase to 6,61 EUR/kg for gilthead seabream and a 3% increase to 10,91 EUR/kg for shrimps.

Consumption of salmon, which is less popular in Portugal than in the other countries surveyed, increased a mere 0,2% between 2022 and 2023 (+0,2%), but was still 20% lower than before the 2019 COVID-19 outbreak. Meanwhile, its unit value continued to increase, reaching a peak of EUR 12,13/kg, an increase of 8% from 2022.

GERMANY

In 2023, consumption of fresh fish in Germany decreased by 6% in volume arriving at 57.336 tonnes, while remaining stable in value from 2022. This decrease meant a slowdown in the negative trend that had started in 2022, when fresh fish consumption in Germany plummeted 28% after three consecutive years of growth. This was due to a general decline in volumes for most species, except for salmon, whose consumption remained stable from 2022 and accounted for more than a third of the total volume. However, in 2023, salmon consumption was still 1% lower than before the 2019 COVID-19 outbreak. That said, its unit value has continued to soar, growing steadily since 2019 and reaching a new high of 21,79 EUR/kg in 2023.

From 2022 to 2023, trout, cod and carp consumption had decreased by 13%, 12% and 21%, respectively, accounting for roughly 50% of the total loss. At the same time, the unit values for these species were the highest since 2019, namely 14,84 EUR/kg for trout, 21,79 EUR/kg for cod and 9,55 EUR/kg for carp.

POLAND

In 2023, Polish household consumption totalled 43.132 tonnes, which was a slight 2,5% decrease from 2022. The main driver of this decrease was trout, which saw consumption fall by 21% after a steady increase during the previous 4 years. Its 9,31 EUR/kg unit value, up 36% from 2022, was the highest since 2019.
In 2023, salmon and mackerel consumption grew by 4% and 3,5%, respectively, after experiencing a heavy drop in 2022, of 21% for salmon and 14% for mackerel. Their unit values reached 5-year highs, with salmon increasing 24% and reaching 16,37 EUR/kg, and mackerel increasing 10% and reaching 5,28 EUR/kg. Consumption of carp, on the other hand, continued to follow the downward trend that began in 2020, decreasing 5% from 2022, while its unit value dropped 3% to 7,20 EUR/kg.
The overall value of household consumption in Poland grew 19% from 2022 to 2023, attesting at EUR 406 million and reaching a 5-year pinnacle. Salmon consumption accounted for slightly less than 40% of the total and, in 2023, its value increased by a staggering 29% from 2022, reaching EUR 159 million.

NETHERLANDS

In 2023, household consumption of fresh fishery and aquaculture products in the Netherlands decreased by 7%, reaching 32.694 tonnes. This decline was driven by an overall decrease of all species monitored. Salmon, which alone accounts for almost a third of total Dutch household consumption, experienced an 8% drop compared to the previous year and continuing a downward trend that started in 2022. Its consumption has fallen below its pre-COVID-19 level, while at the same time its unit value peaked at 26,63 EUR/kg, an increase of 13% compared to 2022.
Among the other species, cod showed the largest decrease in consumption, down 15% from 2022. Further, from 2022 to 2023, its value decreased by 8%, although its unit value increased by 9% to 20,55 EUR/kg, reaching a 5-year high.
Meanwhile, the total value of in-house consumption remained stable, increasing a mere 0,2% from 2022. This was possible because all the main species consumed, namely salmon, herring, cod, shrimps and mackerel, which together account for 68% of the total value and 58% of total volume, reached their highest unit value of recorded in the 2019-2023 period, with an average increase of 8% from 2022.

IRELAND

Household consumption in Ireland, which had been stable in recent years, dropped 11% between 2021 and 2022. In 2023, it remained relatively stable, decreasing by only 1% in volume but increasing by 7% in value from 2022. Salmon, which accounts for around half of Irish fresh fish consumption and was the key driver of the 2022 drop, remained stable in volume but grew by 8% in value. Its unit value reached a 5-year high of 20,75 EUR/kg, which was an 8% increase from 2022.
In 2023, consumption of cod, mackerel and saithe, which account for 15% of the total, decreased by 12%, 26% and 11% respectively compared to 2022. On the other hand, consumption of haddock and shrimps, which represent another 14% of the total, increased by 4% and 11% respectively from the previous year. Consumption of hake remained unchanged, accounting for 6% of the total.
In 2023, all unit values increased with an average growth of 7%, except for haddock, which remained stable.

DENMARK

In 2023, Danish's household consumption of fresh fishery and aquaculture products dropped 5% in volume but rose 4% in value from 2022. Consumption in Denmark is notably dominated by salmon, which accounts for more than a third of the total. However, in 2022, salmon consumption plunged from 5.071 to less than .000 tonnes and in 2023 it lowered again, dropping to 3.778 tonnes. This was a 5-year low while representing a 5% drop from 2022. To note, the price of fresh salmon in Denmark is the highest of the countries surveyed. It began to increase in 2022, but in 2023 it peaked at 28,51 EUR/kg, rising 9% from the previous year.

Flounder is the second most consumed species in Denmark. Its consumption started to decrease in 2020 and has not yet stopped, reaching a 30% decrease from 2022 to 2023. Between 2019 and 2023, its consumption decreased by 58% in volume and 49% in value.

SWEDEN

Since 2021, the consumption of fresh fish in Sweden has shown a strong decline. In 2023, it decreased by 5% in volume but increased by 1% in value compared to 2022. In comparison with the 30% drop from 2021 to 2022, these figures may indicate a slowing of the negative trend. This downward trend is mainly related to the decrease in the consumption of salmon, which is by far the most consumed species in Sweden, although its share in the total consumption decreased from 67%, recorded both in 2020 and 2021, to only 60% in 2022 and 2023.

HUNGARY

In 2023, household consumption of fresh fishery and aquaculture products[61] in Hungary plummeted 19%, reaching 3.543 tonnes, following a downward trend that started in 2021. From 2019 to 2023, total consumption decreased by 42%, indicating that consumption of fresh fish in Hungary nearly halved in five years. However, value decreased only 4% from 2022, reaching EUR 31,4 million.

3.3 RETAIL SALES AND OUT-OF-HOME CONSUMPTION

The fishery and aquaculture industry supplies fish and seafood to consumers through different sales channels: retail, which mostly includes fishmongers and large-scale retailers (LSRs); foodservices, which includes catering, restaurants and take-away sales; and institutional channels, which include schools, canteens, hospitals and prisons. Foodservice and institutional channels are referred to as "out-of-home consumption".
This section[62] of The EU Fish Market analyses the retail sales and consumption of processed[63] products through the foodservice channels of all EU countries[64].
In addition, it provides analyses of the retail sales and all out-of-home consumption channels of unprocessed[65] fishery and aquaculture products in five of the highest consuming EU countries – Spain, Italy, France, Germany, Poland[66] – and in the UK.

PROCESSED PRODUCTS

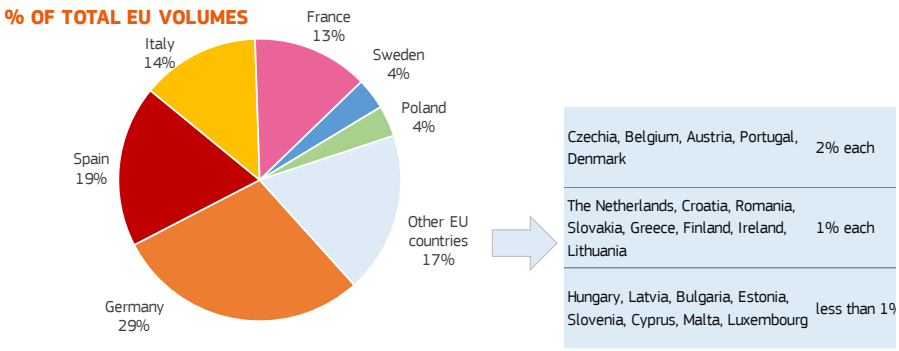
In the EU, consumption of processed fish and seafood through foodservices and retail sales reached almost 2,2 million tonnes in 2023. The consumption was highly concentrated in the top four consuming countries, namely Germany, Spain, Italy and France which accounted for 74% of the total. Germany alone accounted for close to 30% of the total, followed by Spain with 19%, Italy with 14% and France with 13%. However, in terms of per capita consumption, the situation was more diversified. For example, Italy, France and Poland are ranked lower while Denmark is ranked higher, namely in fourth place after Spain, Germany and Sweden.

[61] For Hungary, total consumption is monitored without details by species. According to EUMOFA estimates on "apparent consumption", carp is by far the main species consumed in the country.
[62] Data analysed in this section are collected from Euromonitor international (https://www.euromonitor.com/). For more details, see the Methodological background.
[63] Processed products are defined as the aggregation of shelf-stable, chilled processed and frozen finfish, crustaceans, molluscs and cephalopods. For more details, see the Methodological background.
[64] The UK is excluded from the EU aggregate each year.
[65] Unprocessed products are defined as the aggregation of fresh, chilled and frozen finfish, crustaceans, molluscs and cephalopods, packaged and unpackaged. For more details, see the Methodological background.
[66] For Poland, no detail is available in terms of sale channel.

CHART 27

LARGEST EU CONSUMING COUNTRIES OF PROCESSED PRODUCTS IN 2023: % OF TOTAL VOLUMES SOLD THROUGH RETAIL AND FOODSERVICES

Source: Euromonitor International, Staple Foods, Industry Edition, 2024



The retail channel accounted for the largest shares of total sales of processed fish and seafood in almost all countries, with coverage ranging from a minimum of 56% in Greece to a maximum of 91% in Italy.

As can be seen in Chart 28, retail sales and consumption through foodservices have followed different evolutions since 2019. Due to the outbreak of COVID-19, retail sales increased significantly in 2020 against a consistent drop in sales through the foodservices. Starting from 2021, along with gradual re-openings, opposite trends were recorded. While the foodservice channel started to grow, retail sales began a slow decline, driving volumes from their peak in 2020 down to their lowest level in 2023. Since 2021, retail sales decreased and, in 2023, they reached around 1,5 million tonnes, a decrease of 1% from 2022. Retail volumes of most countries in 2023 reached levels close to those of 2019, although the top four consuming countries showed different trends, influencing the overall trend at EU level which dropped lower than the pre-pandemic figures. Germany recorded a slight increase of 1% over 2022, while in Spain retail sales remained almost unchanged. Italy and France, on the other hand, recorded a drop in retail sales of 5% and 2%, respectively, from 2022, reaching their lowest levels of the period surveyed.

On the other hand, out-of-home consumption, after reaching its lowest point in 2020, increased by 7% from 2022 to 2023 to more than 550.000 tonnes. All countries, except for Poland, recorded an increase. Germany, Spain and France grew by 7%, 10% and 13%, respectively, for a cumulative growth of more than 30.000 tonnes.

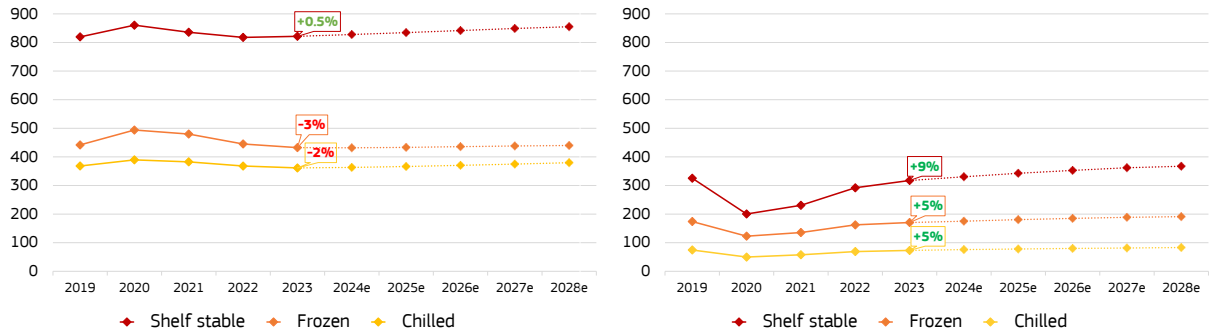
However, despite the two different trends, neither of these channels have managed to match their pre-pandemic levels, with foodservices 2% and retail 1% below their respective 2019 sales volumes. Euromonitor estimates[67] that these levels will not be reached again until 2024 for foodservices and 2025 for retail, with some exceptions at country level.

[67] Euromonitor International blends statistical modelling with local market observations and judgment-based predictions. Euromonitor analysts firstly identify factors driving the growth in the past: both hard/macro drivers (demographics, GDP, taxation, inflation, population etc.) and soft drivers (category growth trends, product life cycle, consumer lifestyles, price, manufacturer perspective, weather, regulation etc.). Combined with their knowledge of the market, Euromonitor then speaks to the industry players about these factors along with gauging the potential for new factors to arise. Finally, the analysts further gather information about projected sales of major players in the next five years and/or projected forecasts of industry growth, and begin to generate a consensus estimate of industry growth in the forecast period.

CHART 28

SALES OF PROCESSED PRODUCTS THROUGH RETAIL (LEFT) AND FOODSERVICES (RIGHT) BY CATEGORY. VOLUMES IN 1.000 TONNES. % VARIATIONS ARE FOR 2023 VS. 2022

Source: Euromonitor International, Staple Foods, Industry Edition, 2024

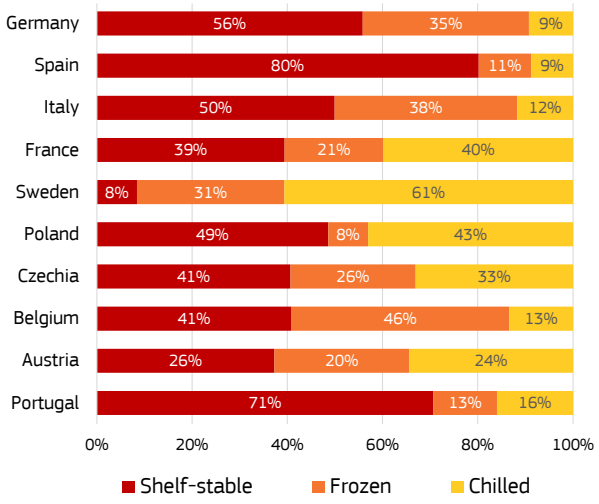


Shelf-stable[68], the main category of processed fish and seafood products sold via retail and foodservice channels, totalled more than 1,1 million tonnes of sales across the EU in 2023, followed by almost 600.000 tonnes of frozen products and more than 400.000 tonnes of chilled products. Shelf-stable products' share of total processed fish and seafood varied among countries in 2023, ranging from 80% in Spain, where they ranked first in terms of preference, to 8% in Sweden, where chilled products are preferred. Nevertheless, the median share of sales of shelf-stable products in EU countries in 2023 was 39%, indicating a broad preference.

CHART 29

MAIN CATEGORIES OF PROCESSED PRODUCTS SOLD THROUGH RETAIL AND FOODSERVICES IN 2023 (% OF TOTAL VOLUMES IN TOP-10 EU COUNTRIES IN TERMS OF TOTAL CONSUMPTION)

Source: Euromonitor International, Staple Foods, Industry Edition, 2024



Consumption of shelf-stable products through foodservice and retail channels was by far the highest in Germany and Spain, accounting for 31% and 28%, respectively, of total shelf-stable products' sales, with each reaching over 320.000 tonnes. Italy and France followed with 13% and 10%, respectively, of the total, and had sales of almost 300.000 tonnes each. Together, they covered more than 80% of the total sales of this category. However, Spain's per capita shelf-stable products' consumption of almost 7 kg was by far the highest in the EU, while Germany's was just over 4 kg. Italy recorded a per capita consumption of around 2,5 kg and France a lower one of slightly more than 1,5 kg.

As for consumption of frozen products, Germany had the highest, with more than 200.000 tonnes sold in 2023, followed by Italy with around 110.000 tonnes. Croatia

[68] Shelf-stable products include products typically sold in cans, glass jars or aluminium/retort packaging and usually preserved in oil, brine, salt water or with a sauce. Pickled products sold ambient are also included.

had the highest per capita consumption of frozen fish and seafood, with more than 3,5 kg consumed per capita in 2023, followed by Germany with around 2,5 kg, and then by Sweden, Austria and Italy which each had consumption of just above 2 kg per capita.

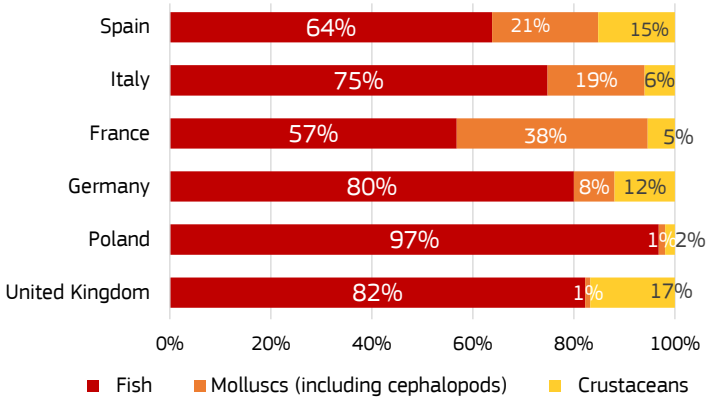
For chilled products, France was the main EU consumer, with over 110.000 tonnes sold in 2023, accounting for 27% of total sales. France was followed by Germany and Sweden with sales of just under 60.000 tonnes and 50.000 tonnes, respectively, which together represented 23% of the total. Spain, Italy and Poland each accounted for 8% of the total with around 35.000 tonnes each. However, data on per capita consumption showed a different picture, with the Baltic countries posting the highest amounts: Sweden ranked first, with a per capita consumption of around 4,5 kg in 2023. Lithuania was next with more than 3 kg per capita, followed by Estonia with 3 kg per capita, Denmark with just over 2 kg, Latvia with 2 kg, and Slovakia and France with less than 2 kg per capita.

UNPROCESSED PRODUCTS

As mentioned at the beginning of this chapter, sales of unprocessed products through all channels – retail, foodservice, institutional – were analysed in Spain, Italy, France, Germany, the UK and Poland[69].

Finfish had a pivotal role in all countries surveyed, followed at a distance by molluscs (which include cephalopods) and crustaceans. The mollusc products played a more notable role in the southern Member States: cephalopods and mussels in Spain, oysters and mussels in France, and clams, mussels, and cephalopods in Italy. Crustaceans, on the other hand, commanded relatively low shares.

CHART 30
SALES OF UNPROCESSED PRODUCTS THROUGH RETAIL, FOODSERVICE AND INSTITUTIONAL CHANNELS IN 2023 (% OF TOTAL VOLUME)
Source: Euromonitor International, Fresh Food, Industry Edition, 2024



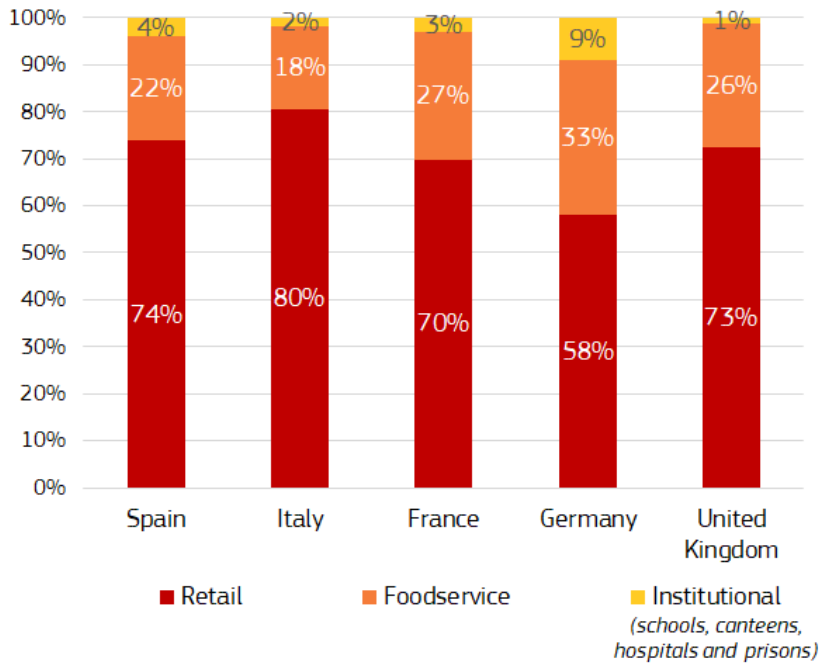
As with processed fish, the retail channel accounted for the largest shares of total sales for unprocessed fish in five of the surveyed countries[70].

[69] Ranked in descending order in terms of 2023 sales.
[70] No detail by sale channel is available for Poland.

CHART 31

SALES OF UNPROCESSED FISHERY AND AQUACULTURE PRODUCTS BY CHANNEL IN 2023 (% OF TOTAL VOLUME)

Source: Euromonitor International, Fresh Food, Industry Edition, 2024



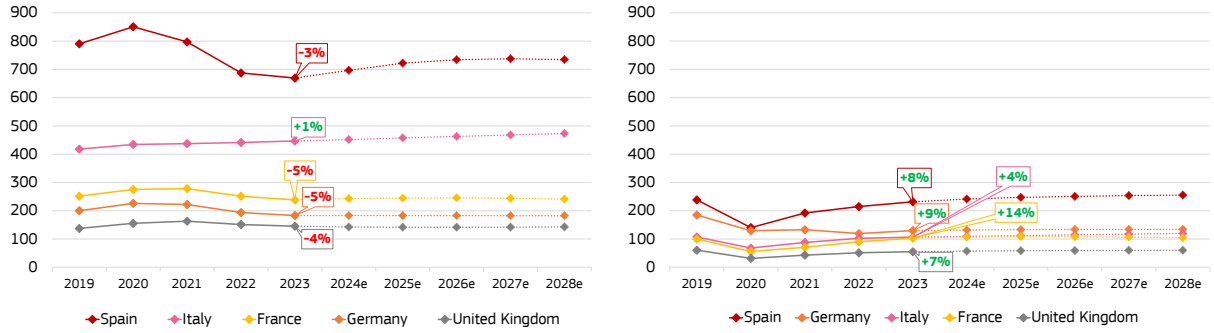
The impact of the COVID-19 pandemic is quite evident when looking at the annual evolution of retail sales and out-of-home consumption. As in the case of processed products, out-of-home consumption fell dramatically in 2020 in all countries surveyed, before rising again in 2021. Although the trend has generally been positive, foodservice sales of both unprocessed and processed products had not returned to pre-pandemic levels by 2023. Euromonitor estimates that for unprocessed products, this will not happen for another five years. Looking directly at the individual countries surveyed, Chart 32 shows the recorded increases in foodservice sales from 2022 to 2023 ranged from 14% in France to 4% in Italy. France is the only country that is back to pre-pandemic sales levels, with a 3% increase over 2019. Germany is the country farthest away from pre-COVID volumes, with its sales down 32% from 2019. In terms of retail sales, all countries surveyed recorded a decrease in 2023, except for Italy. The retail channel for unprocessed products has been following a downward trend since the softening of the COVID-19 restriction in 2021, and in 2022 recorded a 9% drop compared to the previous year. In 2023, it decreased again, dropping 2% from 2022.

Chart 32 also shows that Spain's retail sales and out-of-home consumption of unprocessed products in 2023 reached 900.000 million tonnes equal to 18,7 kg per capita which was outstanding compared with other countries surveyed. Italy was second but followed at a distance, with 553.000 tonnes sold or 9,4 kg per capita.

CHART 32

SALES OF UNPROCESSED PRODUCTS THROUGH RETAIL (LEFT) AND OUT OF-HOME CONSUMPTION (FOODSERVICE+ INSTITUTIONAL CHANNELS, RIGHT). VOLUMES IN 1.000 TONNES. % VARIATIONS ARE FOR 2023 VS. 2022

Source: Euromonitor International, Fresh Food, Industry Edition, 2024



FOCUS ON ORGANIC PRODUCTS

Organic products represent a niche market for seafood in the EU. This section focuses on the four EU countries with highest consumption of fish – Germany, Spain, France and Italy – as well as the UK, which has a leading role in European production of organic salmon and is a major supplier of the EU market.

According to Euromonitor, an average 1,9% of the total consumption of unprocessed[71] fish and seafood through retail, foodservice and institutional channels was organic in these five countries in 2022. More in detail, the coverage was 2,9% in the UK, 2,8% in France, 2,7% in Germany, 0,6% in Italy and 0,3% in Spain. All these shares have shown increases in the last ten years according to Euromonitor. In absolute terms, France consumed the largest amounts of organic fish and seafood, corresponding to around 10.000 tonnes in 2022, followed by Germany with 8.500 tonnes, and the UK with just above 6.000 tonnes. Italy and Spain followed at a distance with less than 3.500 tonnes each.

By comparing the development of retail sales and out-of-home consumption of all unprocessed fish and seafood with those of organic products, it emerges that from 2019 to 2020, the average 2% decrease observed for organic products was less significant than the overall 5% decrease reported for all unprocessed fish and seafood. However, the sector did not show the same resilience in 2022 and, according to stakeholders, it suffered a drop in demand due to inflation.

On the production side, according to Eurostat[72], the total organic aquaculture production[73] in the EU was close to 99.950 tonnes in 2021[74], accounting for 9% of the total EU aquaculture production. More than two thirds of organic production takes place in three countries: Ireland which produced almost 33.000 tonnes in 2021, mainly salmon and mussel; Italy 23.700 tonnes, mainly mussel and finfish; and the Netherlands 15.300 tonnes, mainly mussel. Thanks to the growth in organic mussel production, the overall EU organic production of fish and seafood increased notably from 2015, when it was just over 46.000 tonnes. The increase from 2020 to 2021 was mainly driven by the increased production of organic mussels in Italy and the Netherlands.

[71] It is worth underlying that the most important organic species in these countries are salmon and trout, and to a lesser extent tropical shrimps and mussel, which are for a large share marketed as processed products (such as smoked salmon, smoked trout, cooked shrimp, etc.), so not included in the data analysed in this report.
[72] Source: Eurostat (online data code: org_aqtspec)
[73] To note, organic fish and seafood is by definition farmed.
[74] The total does not include France, whose data is not available at the time of writing. In 2020, with just above 9.100 tonnes, production in France was the third highest in the EU. Also, the total does not include Sweden, whose data is not available due to confidentiality.

3.4 EU QUALITY SCHEMES: GEOGRAPHICAL INDICATIONS AND TRADITIONAL SPECIALTIES

The EU registers quality schemes that recognize and promote the geographical or traditional aspects of specific products. Currently, two of the registered schemes have geographical indications (GIs), namely the Protected Designations of Origin (PDOs) and Protected Geographical Indications (PGIs). A third scheme – the Traditional Specialties Guaranteed (TSG) – recognizes the traditional aspects of products. According to the EU's 2024[75] registry, of the 76 names registered under EU quality schemes in the seafood sector, 48 or 63% are PGIs, 23 or 30% are PDOs, and 5 or 7% are TSGs. Further, the number of registered schemes in 2024 is double the 38 that were registered in 2014. Beyond the seafood sector, the number of GIs registered across the EU has also risen for all agri-food products, increasing 43% from 2014 to 2024.

Four names were registered during the last year[76], of which three are finfish and one is shellfish. These are:

- PGI "Huître de Normandie" in France (October 2023). This covers an oyster farmed in the Normandy region, which is a significant production area for oyster in France. This is the second PGI in the French oyster sector, the other being "Huitre Marennes Oléron" registered in 2008, which is a major PGI at EU level in the seafood sector.
- PGI "Lappländsk Fjällröding" in Sweden (July 2024). This includes a farmed Arctic char grown in five districts of Swedish Lapland. The product is sold whole or filleted.
- PDO "Hjälmargös" in Sweden (July 2024). This refers to a wild-caught pike-perch from Lake Hjälmaren, which must be at least 45 cm long and 800 gr. The fish is sold fresh or frozen, whole, or filleted.
- TSG "Sardeluță marinată" in Romania (July 2024). This covers processed and marinated sprat. The TSG encompasses three types of sprat-based products including those that are marinated in wine, in sunflower oil, or in sunflower oil with chili.

"Lappländsk Fjällröding" and "Hjälmargös" are the sixth and seventh GIs registered in Sweden in the seafood sector. In Sweden, there are five GIs for freshwater species – pike-perch, Arctic char, vendace (two GIs) and whitefish (*Coregonus ssp.*) – plus two for marine species (shellfish).

In 2024, among the 71 registered GIs, 50 or 70% originated from EU countries and 21 or 30% originated from non-EU countries. All five TSG applications originated from EU countries. The EU countries with the largest number of names registered are Germany, France, Sweden, Italy, Spain, Romania, and Hungary, each with four to seven registered names. These are followed by Czechia, Croatia, Latvia, and Finland, which each have two names. Belgium, Ireland, Greece, the Netherlands, Poland, and Portugal each have one name. In non-EU countries, 14 of the registered names come from the UK, followed by China with five, and Norway and Vietnam with one each.

Among the 76 current denominations, 56 or 73,7% cover finfish, 18 or 23,7% cover molluscs, and two or 2,6% cover crustaceans. Further, of these denominations, 35 or 46% refer to marine species, 30 or 39% refer to freshwater species, and ten or 13% refer to migratory species with life cycles that alternate between the marine

[75] Source: EU register eAmbrosia, September 2024 – https://ec.europa.eu/info/food-farming-fisheries/food-safety-and-quality/certification/quality-labels/geographical-indications-register/

[76] From October 2023 to September 2024.

environment and fresh water. One GI – the Belgian PGI "Escavèche de Chimay" – includes both marine and freshwater fish.

The main species covered by GIs and TSGs include carp with 13 names registered, notably in Germany and Hungary; mussels with 8 names in France, Italy, Spain, Sweden, Croatia, the UK, and China; oyster with 6 names, notably in France and the UK; salmon with 5 names, including 4 in the UK and 1 in Ireland; anchovy and vendace each with 4 products; and trout and tuna, each with 3 products.

TABLE 14
QUALITY SCHEMES REGARDING FISHERIES AND AQUACULTURE PRODUCTS REGISTERED UP TO SEPTEMBER 2024
Source: based on eAmbrosia, DG AGRI

Country	Protected Designations of Origin (PDO)		Protected Geographical Indications (PGI)		Traditional Specialties Guaranteed (TSG)		TOTAL
	Number	Species concerned	Number	Species concerned	Number	Species concerned	
Germany			7	Carp (5 PGIs), Herring, Trout			**7**
France	1	Mussel	5	Oyster, Anchovy, Scallop, Whelk	1	Mussel	**7**
Sweden	6	Vendace (roes), whitefish (*Coregonus* spp.), oyster, mussel, sprat	1	Arctic char			**7**
Italy	3	Mussel, Tench, Anchovy	3	Trout, Arctic char, Anchovy			**6**
Spain	1	Mussel	4	Tuna (mojama) (2 PGIs), Tuna, Mackerel			**5**
Romania			3	Carp, Pontic shad, other Danube delta species (roes)	2	Carp, sprat	**5**
Hungary	1	Carp	3	Brown trout, Carp, Carp & pike-perch			**4**
Czechia	1	Carp	1	Carp			**2**
Croatia	2	Oyster, mussel					**2**
Latvia			2	Lamprey			**2**
Finland	1	Vendace	1	Vendace			**2**
Belgium			1	Several species			**1**
Ireland			1	Salmon			**1**
Greece	1	Grey mullet (roes)					**1**
Netherlands					1	Herring	**1**
Poland	1	Carp					**1**
Portugal					1	Cod	**1**
United Kingdom	4	Pollan, Mussel, Oyster, Scallop	10	Salmon (4 PGIs), Sea trout, Eel, Sardine, Cod, Haddock, Oyster			**14**
China			5	Freshwater crayfish (2 PGIs), Mussel, Clam, Japanese seabass			**5**
Norway			1	Cod			**1**
Vietnam	1	Anchovy (sauce)					**1**
TOTAL	**23**		**48**		**5**		**76**

More than half or 54% of the products covered by GIs/TSGs are wild products consisting mainly of anchovy, cod, tuna, and vendace, while 46% are farmed products, mainly including carp, shellfish and salmon[77]. In 2013, 18 names were registered for both wild-caught and farmed products. Between 2013 and 2024, wild-caught products saw an increase of 23 names while farmed products increased by only 14 names. Three names covering both wild-caught and farmed products were also registered between 2017 and 2021.

Almost 45% of the names refer to unprocessed products, even if some of them may be used as ingredients in processed products, such as the Spanish mussel PDO "Mejillón de Galicia" used by the canning industry. More than 34% of the names cover specifically processed products, for example the newly registered TSG "Sardeluță marinată" which covers marinated sprat Further, 21% of the names cover both

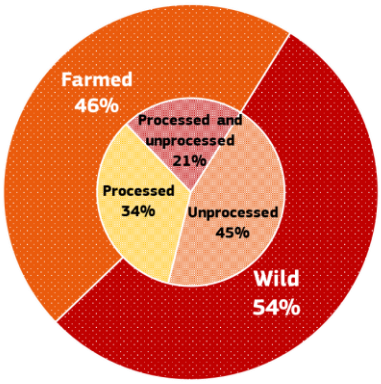
[77] This includes three names which cover both farmed and wild fish.

processed and unprocessed products[78], such as the Czech PGI "Třeboňský kapr", which is placed on the market live, fresh or processed, smoked, or marinated.

CHART 33

TYPES OF PRODUCTS UNDER EU QUALITY SCHEMES IN THE SEAFOOD SECTOR (SEPTEMBER 2024)

Source: based on eAmbrosia, DG AGRI



	Unprocessed	Processed	Processed and unprocessed	Total
Wild	12	22	7	**41**
Farmed	22	4*	9	**35**
Total	**34**	**26**	**16**	**76**

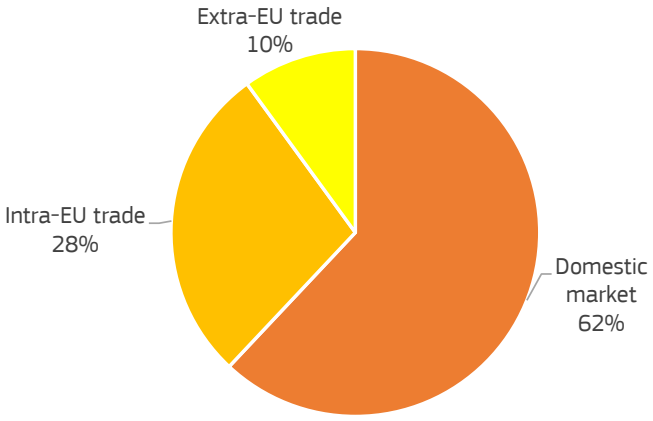
*The PGIs "London Cure Smoked Salmon" (2017, the United Kingdom), "Escavèche de Chimay" (2021, Belgium) and TSG "Salată tradițională cu icre de crap"(2021) are based on both wild caught and farmed products.

Sales of fish, molluscs, and crustaceans under GI/TSG reached an estimated 246.709 tonnes and EUR 1,42 billion at EU-28 level[79,80] in 2017. This accounted for about 4% of the sales value in the EU-28 seafood sector[81]. The domestic market accounted for EUR 0,88 billion or 62% of the sales value, followed by intra-EU trade which reached EUR 0,4 billion or 28%, and extra-EU trade which reported EUR 0,14 billion, or 10%.

CHART 34

SHARE OF SALES VALUE BY MARKET FOR FISH, MOLLUSCS AND CRUSTACEANS UNDER GI/TSG IN 2017 (EU-28)

Source: Study on economic value of EU quality schemes, geographical indications (GIs), and traditional specialties guaranteed (TSGs), AND International for DG AGRI, 2019



PGIs accounted for 71% of the sales value, followed by TSGs with 22%, and PDOs with 7%. The average economic size of each TSG and PGI tends to be higher than the average size of each PDO, with TSGs amounting to EUR 36 million, PGIs to EUR 32 million, and PDOs to EUR 8 million in 2017.

[78] Processed products cover filleted, smoked, dried, salted or preserved products, as well as other types of preparations (for instance fish roes or fish-based products). Unprocessed products may be live, fresh (gutted or not) or frozen.

[79] Source: Study on economic value of EU quality schemes, geographical indications (GIs) and traditional specialties guaranteed (TSGs), AND International for DG AGRI, 2019 - https://op.europa.eu/en/publication-detail/-/publication/a7281794-7ebe-11ea-aea8-01aa75ed71a1 and country fiches - https://op.europa.eu/fr/publication-detail/-/publication/73ad3872-6ce3-11eb-aeb5-01aa75ed71a1/language-fr

[80] This covers the 43 GIs/TSGs registered at EU-28 level before 2017.

[81] Based on EUROSTAT and EUMOFA data, sales value of the fishery and aquaculture sector at EU-28 level can be estimated between EUR 28 billion (processing and preserving activities only) and EUR 40 billion (processing and preserving activities + landings + aquaculture; this is however an overestimate with double counts).

More recent data are available in some Member States:

- France[82]. Seafood products under quality schemes[83] reached EUR 339 million sales in 2022., with some significant products registered in the shellfish sector: PGI "Huîtres Marennes Oléron" (oyster), TSG "Moules de Bouchot" (mussel), PDO "Moules de bouchot de la baie du Mont-Saint-Michel" (mussel), and in 2023, PGI "Huître de Normandie" (oyster).
- Spain[84]. Seafood products under GIs reached sales values of EUR 65 million and 24.323 tonnes in 2022. The most important GIs were the PGI "Mejillón de Galicia" (mussel) with a value of EUR 41 million, followed by the PGI "Caballa de Andalucía" (preserved mackerel fillets) with EUR 15 million. The three PGIs registered for tuna products, which had sales values ranging from EUR 2 million to EUR 4 million, included: "Melva de Andalucía", "Mojama de Barbate", and "Mojama de Isla Cristina".

[82] Source : INAO - https://www.inao.gouv.fr/Publications/Donnees-et-cartes/Informations-economiques
[83] PDO, PGI, TSG and the French scheme « Label Rouge », which may be used jointly with a PGI.
[84] Source : Ministerio de Agricultura, Pesca y Alimentación - https://www.mapa.gob.es/es/alimentacion/temas/calidad-diferenciada/

4/ IMPORT - EXPORT

From 2014 to 2023[85], the total value of EU trade flows[86] of fishery and aquaculture products increased at a compound annual growth rate of 3% in real terms.

This included imports and exports between the EU and the rest of the world, as well as exchanges between EU Member States. Compared with 10 years before, the value in 2023 was 32% higher in real terms[87], while volume only increased by 3%. Between 2022 and 2023, the trade volume decreased by 4% and the nominal value by 2%, resulting in a 6% drop in real value terms.

After peaking in 2022, the total value of EU trade flows decreased by 2% in 2023.

Intra-EU exchanges amounted to 5,8 million tonnes worth EUR 31,8 billion in 2023, which represented 45% of the total value and 42% of the total volume of EU trade flows. In real value terms, intra-EU trade grew by 45% compared with ten years earlier, marking the largest increase among the trade flows analysed. Of note, this compares with a 25% increase in the value of extra-EU imports and a 13% increase in extra-EU exports over the same period. It is also worth noting that in 2023, intra-EU trade exceeded extra-EU imports in value for only the second time in the 2014–2023 decade, the first having been in 2021.

Extra-EU imports in 2023 accounted for 43% of the value and 42% of the volume of all fishery and aquaculture products traded with third countries. The value of these imports reached EUR 30,1 billion, marking a 6% decrease from 2022. The volume also decreased by 3%, dropping to 5,9 million tonnes, which was well below pre-pandemic levels.

As for the extra-EU exports, they played a far less important role, making the EU a net importer. In 2023, when their value reached more than EUR 8 billion, it represented only 12% of the total value of EU trade. Further, this was the only trade flow to increase in value between 2022 and 2023, rising by 1%. In terms of volume, however, extra-EU exports decreased by 3% to 2,2 million tonnes, reaching the lowest level in the ten years analysed.

The 2023 figures, which showed a decrease in both volume and value for almost all EU trade flows, have to be interpreted in the wider context of the economic and geopolitical climate of recent years. From 2021 to 2022, trade flows experienced a 20% increase in value and a 2% decrease in volume, reflecting rising inflation caused by a number of factors[88]. Inflation started to ease in 2023 and by December, the EU inflation rate stood at 3,4, well below the 10,4 recorded in December 2022[89]. As for total value, even though it was slightly lower in 2023 than in the previous year, it was still the second highest of the last ten years. On the other hand, 2023 volumes followed the downward trend that had begun in 2022, and fell below pre-pandemic levels.

[85] In line with Eurostat's guidelines on the production and dissemination of statistical data by Commission services after the UK withdrawal from the EU, since the most recent reference period is year 2023, UK is excluded from the EU aggregations of each year. This means that UK is dealt with as country of origin/destination of EU imports and exports.

[86] Sum of extra-EU imports, extra-EU exports and intra-EU exchanges. Intra-EU exchanges are based on intra-EU exports. For more details, please refer to the Methodological background.

[87] In this report, value and price variations for periods longer than five years are analysed by deflating values using the GDP deflator (base=2015). For shorter periods, nominal value and price variations are analysed.

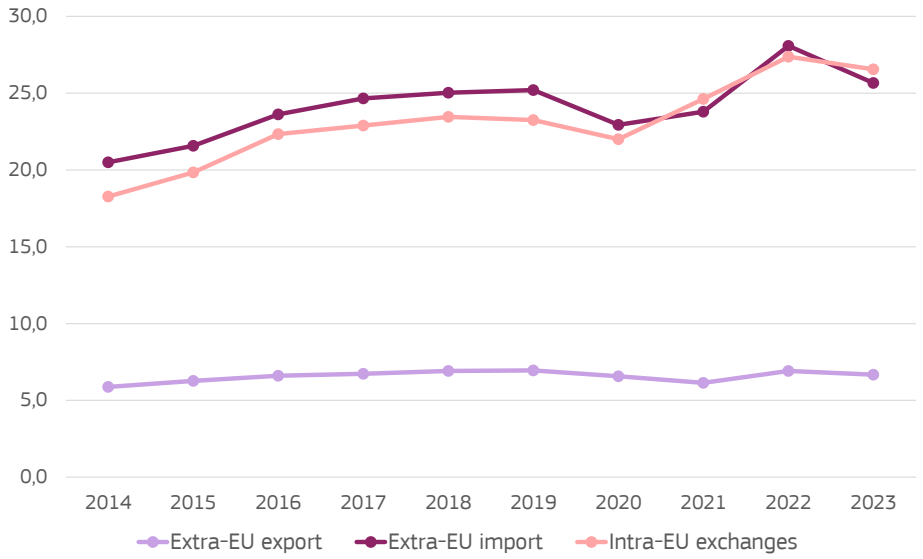
[88] The increase of demand and prices during the post COVID-19 recovery, coupled with reduced supply due to lower quotas of major species and heightened competition for raw materials. In addition, the Russian military invasion of Ukraine which began in February 2022 heavily contributed to the rise in value, affecting energy costs, therefore affecting production costs and contributing to the spike in inflation

[89] Eurostat, "Annual inflation up to 2.9% in the euro area", January 2024: 9d885442-f323-cdde-e149-17ed99a63a6f (europa.eu)

CHART 35

EU TRADE FLOWS OF FISHERY AND AQUACULTURE PRODUCTS, IN VALUE (EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409). Values are deflated by using the GDP deflator (base=2015).



This chapter of The EU Fish Market provides detailed data and analyses of extra-EU imports, extra-EU exports and intra-EU exchanges, focusing on the major species traded and countries involved. It is important to note that, since the most recent reference period of available data for EU trade is year 2023 – well after UK's withdrawal from the EU – UK data is excluded from the EU aggregations for each year analysed in this chapter. This means that UK is dealt with as a country of origin/destination of extra-EU imports and extra-EU exports, and thus excluded from the analysis of intra-EU exchanges.

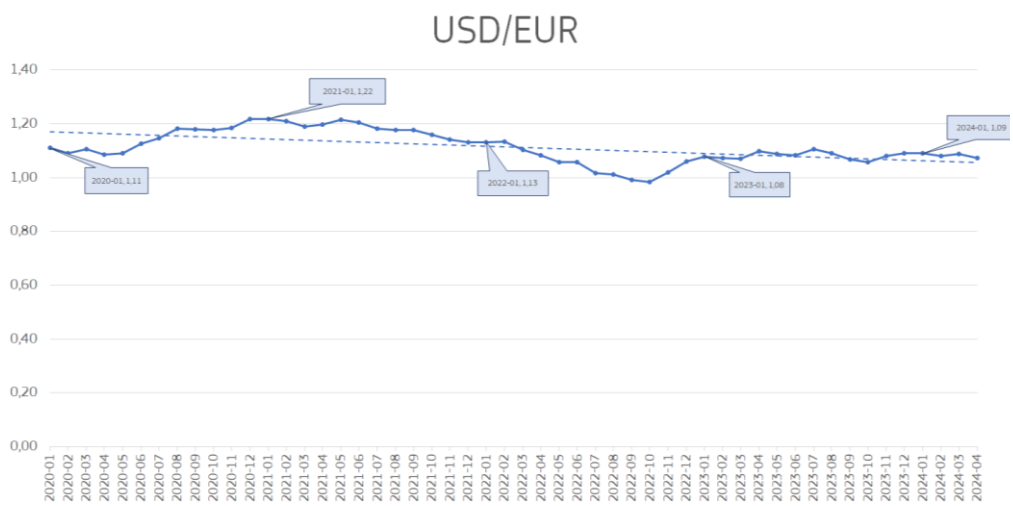
Before moving on, it is also important to note that the value of imports and exports is included in this report in EUR, regardless of the currency used in the transactions. Indeed, these purchases can be made into different currencies. The charts below show the trend of the USD/EUR exchange rate during the 2020–2023 period as well as of the NOK/EUR exchange rate, given the relevance of EU imports of salmon from Norway, which in 2023 made up 23% of the value and 14% of the volume of all extra-EU imports of fishery and aquaculture products.

Charts 36 and 37 illustrate the trends of monthly exchange rates, showing how since February 2022, the EUR has followed a downward trajectory, partially due to the fear of an economic recession that was also linked to the Russian aggression against Ukraine. In the months of September and October 2022, the USD/EUR exchange rate reached an historic low, dropping below the threshold of USD=EUR (1;1), for the first time since the early days of the EUR currency. In the beginning of 2023, however, the EUR recovered and has been stable ever since. In the case of the NOK/EUR exchange rate, it peaked at almost 12:1 in November 2023, its highest value of the last four years.

CHARTS 36 AND 37

EXCHANGE RATES US DOLLAR/EUR AND NOK/EUR

Source: European Central Bank



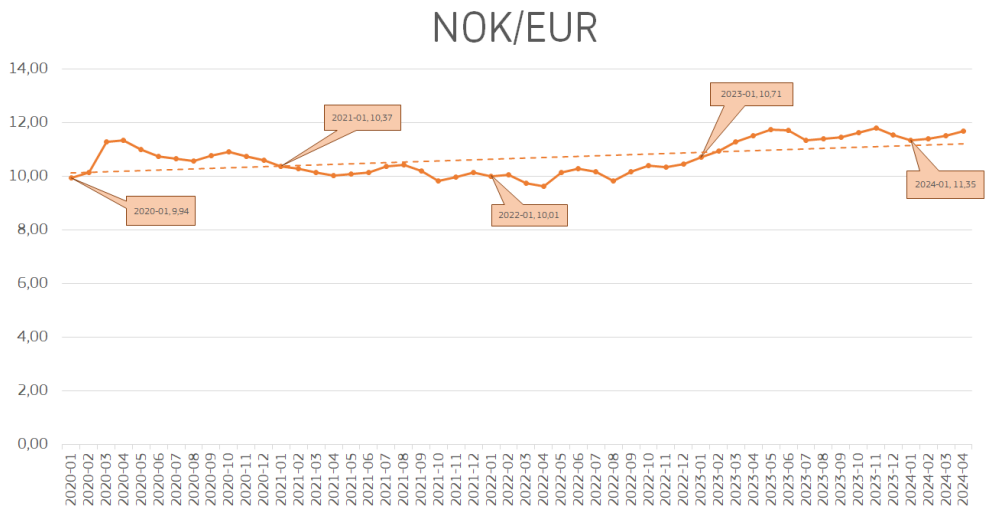


CHART 38

TOP-10 EXTRA-EU TRADE FLOWS IN 2023, IN NOMINAL VALUE (EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409).

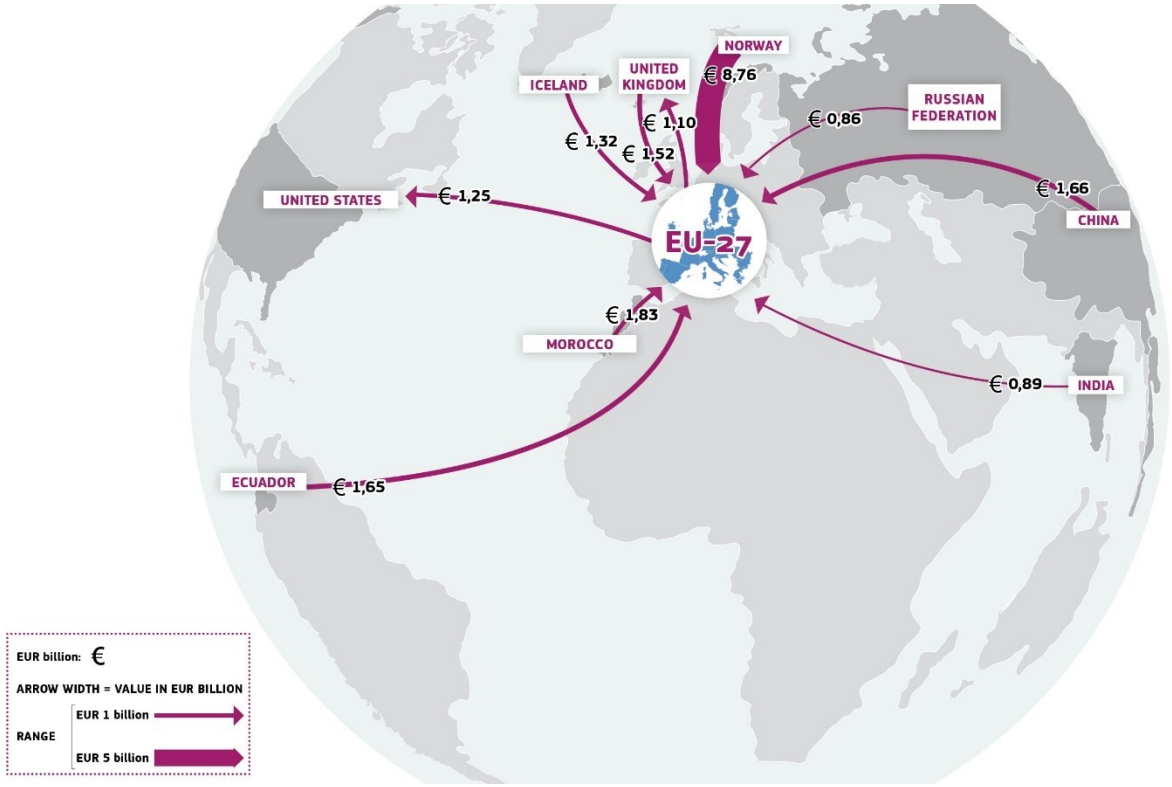
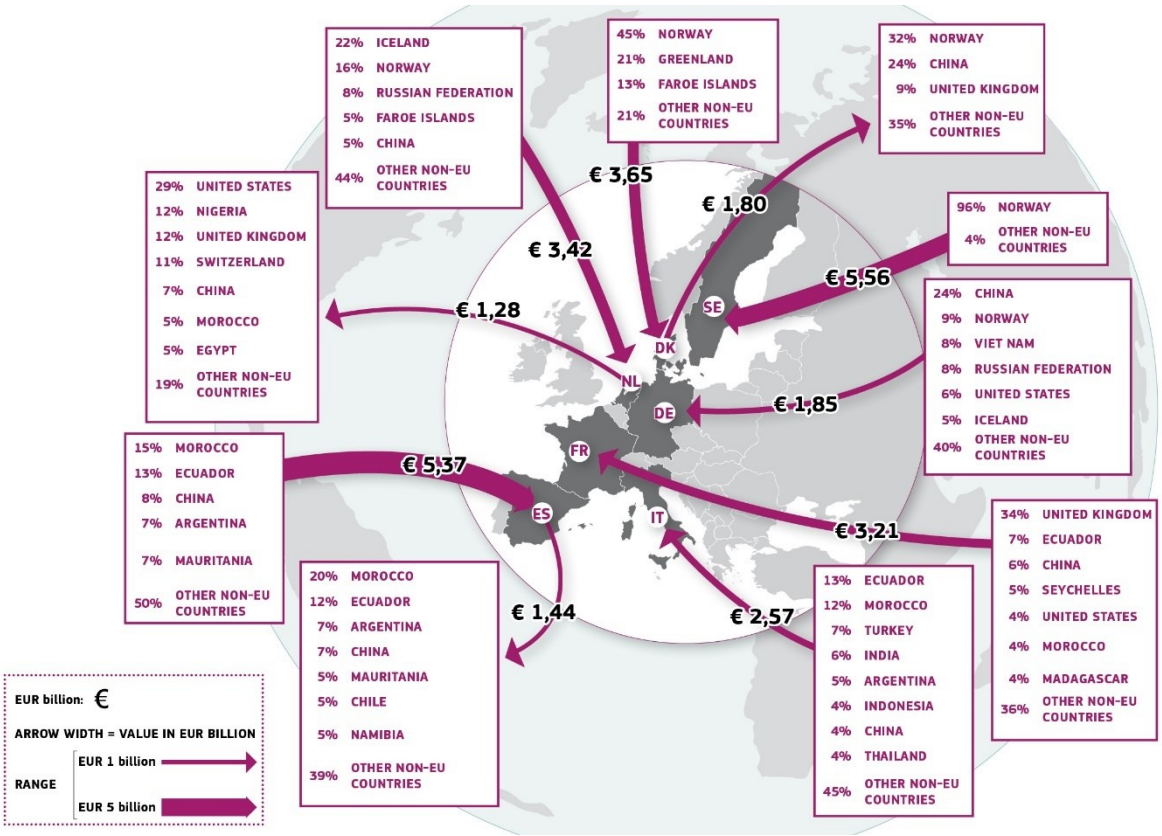


CHART 39

MOST RELEVANT EXTRA-EU TRADE FLOWS BY MEMBER STATE IN 2023, IN NOMINAL VALUE (EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409).T



4.1 EXTRA-EU TRADE BALANCE

In 2023, the extra-EU trade balance[90] showed a smaller deficit than in 2022 due to the larger 6% decrease of the value of imports rather than the 1% increase in the value of exports. However, in terms of volume, both imports and exports decreased by 3%. The deficit was 8% or EUR 1,85 billion lower than the previous year and almost all the EU countries, with the notable exception of Sweden[91], recorded a positive growth when compared with 2022. To note, the countries listed in Table 15 are also major entry points for high-value products originating outside the EU and destined for the internal market. Sweden, for example, is the major entry point for high-value Norwegian products destined for the internal market.

In a longer perspective, the deficit grew by 30% in real terms from 2014 to 2023.

TABLE 15

TRADE BALANCE FOR FISHERY AND AQUACULTURE PRODUCTS OF THE EU AND MAIN EU NET IMPORTERS (NOMINAL VALUE IN EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409).

	Trade balance 2022	Trade balance 2023	Variation 2023-2022
EU-27	**-23,82**	**-21,98**	**+1,85**
Sweden	-5,26	-5,46	-0,20
Spain	-4,48	-3,93	+0,54
Denmark	-1,97	-1,85	+0,12
Netherlands	-2,26	-2,14	+0,12
France	-3,21	-2,76	+0,45
Italy	-2,43	-2,25	+0,18
Germany	-1,60	-1,33	+0,27

The deficit also decreased in the United States and Japan, which are the second and third largest net importers of fishery and aquaculture products in the world after the EU. That said, when looking at absolute values, China is the world's third largest importer after the EU and the US, but it is not reported here because it is a net exporter country.

For a more detailed comparative analysis of EU trade and the trade of other main players in the world, see Chapter 1.3.

TABLE 16

TRADE BALANCE FOR FISHERY AND AQUACULTURE PRODUCTS OF MAJOR NET IMPORTERS (NOMINAL VALUE IN EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT (online data code:: ds-045409) and Trade Data Monitor data.

	Trade balance 2022	Trade balance 2023	Variation 2023-2022
EU-27	**-23,82**	**-21,98**	**+1,85**
United States	-22,03	-17,11	+4,92
Japan	-12,22	-10,63	+1,59

[90] Extra-EU exports *minus* extra-EU imports.

[91] Also Austria, Cyprus, Croatia, Estonia and Latvia saw a worsened situation in 2023 from 2022 in terms of deficit. Together, they account for 5% of extra-EU exports and 1% of imports.

The reasons for the improvement in the trade balance of the EU-27 become clearer when examining the details by commodity groups, as illustrated in Table 17. Most groups reduced their trade deficits which collectively contributed to the overall positive trend. The most significant improvements were seen in the categories of crustaceans, cephalopods, and tuna and tuna-like species. However, not all categories showed such favourable changes. For example, the trade balance for small pelagics deteriorated significantly, a consequence of both an increase of imports and a decrease of exports.

Most other product groups showed slight improvements or remained stable over the period. The miscellaneous aquatic products[92] category not only avoided a deficit, it actually recorded a positive trade balance. This indicates a degree of self-sufficiency in this group, in contrast to the general deficit trend in the other categories.

TABLE 17
TRADE BALANCE FOR FISHERY AND AQUACULTURE PRODUCTS BY COMMODITY GROUPS (NOMINAL VALUE IN EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409).

	Trade balance 2022	Trade balance 2023	Variation 2023-2022
EU-27	**-23,82**	**-21,98**	**+1,85**
Salmonids	-7,27	-7,24	+0,03
Non-food use	-0,28	-0,28	0,00
Tuna and tuna-like species	-2,25	-2,04	+0,21
Small pelagics	-0,03	-0,18	-0,15
Crustaceans	-4,84	-3,81	+1,03
Other marine fish	-0,89	-0,84	+0,05
Miscellaneous aquatic products	+0,09	+0,17	+0,08
Groundfish	-4,24	-4,20	+0,04
Cephalopods	-2,81	-2,45	+0,36
Flatfish	-0,16	-0,16	0,00
Bivalves and other molluscs and aquatic invertebrates	-0,62	-0,48	+0,14
Freshwater fish	-0,53	-0,47	+0,06

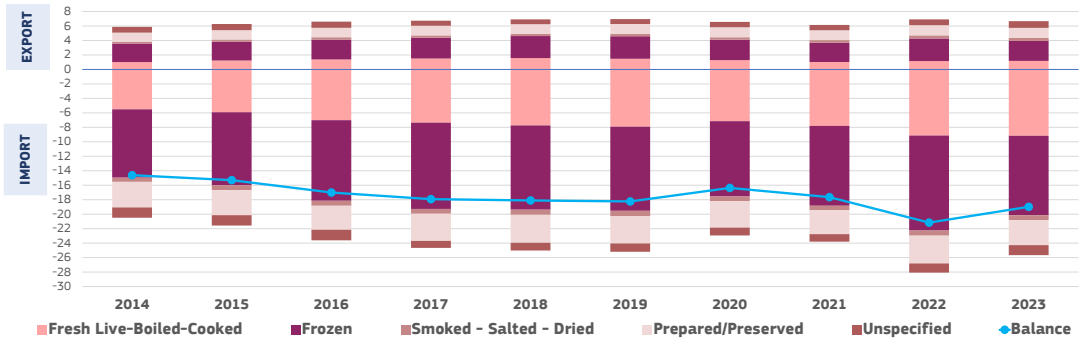
Frozen products accounted for the largest deficit, reaching EUR 8,20 billion or 43% of the total, closely followed by fresh products which, with a deficit of EUR 7,99 billion, covered 42% of the total. The prepared-preserved products category had a deficit of EUR 2,09 billion, representing 11% of the total. Of note, the trade deficit decreased in all categories between 2022 and 2023, with the exception of fresh products, which remained almost unchanged.

[92] This commodity group includes surimi, caviar, livers and roes, seaweed and other algae and other products.

CHART 40

EXTRA-EU TRADE BALANCE FOR FISHERY AND AQUACULTURE PRODUCTS BY PRESERVATION STATE, (EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409. Values are deflated by using the GDP deflator (base=2015).



4.2 COMPARISON BETWEEN IMPORTS OF FISHERY AND AQUACULTURE PRODUCTS AND MEAT

In 2023, the combined value of EU imports of agri-food *plus* fishery and aquaculture products reached EUR 188,68 billion[93]. Of this, fish accounted for 13% and meat for 3%[94]. The EU is a net importer of fishery and aquaculture products, but a net exporter of meat.

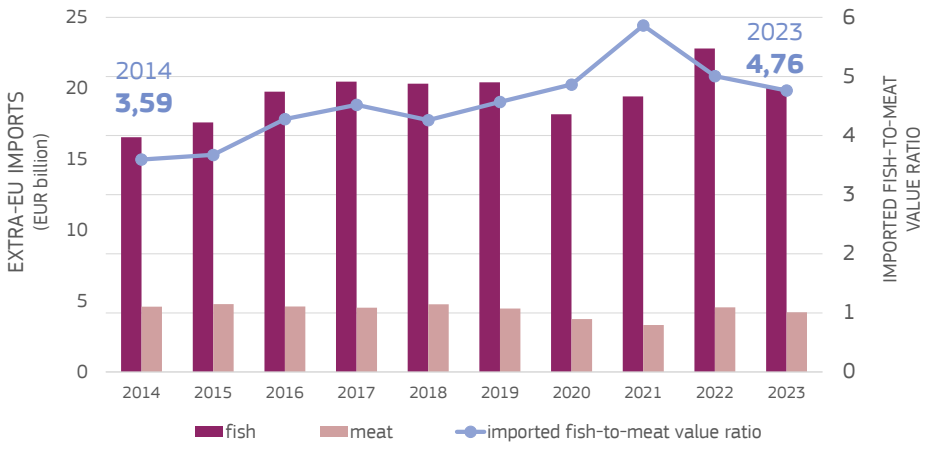
Chart 41 compares the values of fish and meat imports from 2014 to 2023, excluding prepared and non-edible products[95]. The chart's blue line illustrates the evolution of the ratio between the value of imports of fish and meat, showing that the ratio plummeted to just below 5 in 2022. In other words, this meant that the value of imported fish was nearly five times higher than the value of imported meat.

The upward trend from 2018 to 2021 was due to the value of meat imports decreasing more than the value of fish imports. From 2021 to 2022, the value of imported meat and fish both grew notably, but the 17% increase in real terms recorded for fish was far less significant than the 37% increase in real terms recorded for meat. In 2023, the value of imported fish decreased by 12% while that of imported meat decreased by 8%, resulting in another – but less significant – decline in the ratio.

CHART 41

EXTRA-EU IMPORTS TREND AND RATIO OF IMPORTED FISH VS. MEAT, IN VALUE (EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT (online data code: ds-045409) and DG AGRI data. Values are deflated by using the GDP deflator (base=2015).



[93] This includes extra-EU imports of the items referring to fishery and aquaculture products monitored by EUMOFA (list by CN-8 code available at the link https://eumofa.eu/documents/20124/35680/Metadata+2+-+DM+-+Annex+4+Corr+CN8-CG-MCS.pdf/ae431f8e-9246-4c3a-a143-2b740a860291?t=1697717528452) and extra-EU imports of agri-food products (source: DG AGRI).

[94] For the sake of clarity, the comparison refers to "Fish" (which includes all items reported under chapter "03 - Fish and crustaceans, molluscs and other aquatic invertebrates" of the Combined Nomenclature commodities) and "Meat" (which includes all items reported under chapter "02 - Meat and edible meat offal") of Section I "Live animals; animal products" of the Combined Nomenclature commodities.

[95] For methodological issues, this paragraph compares EUROSTAT codes 02 (meat) and 03 (fish) and not other codes for prepared and non-edible products.

4.3 EXTRA-EU IMPORTS

In 2023, total extra-EU imports of fishery and aquaculture products amounted to EUR 30,11 billion in value and 5,91 million tonnes in volume. This corresponded to a 6% or almost EUR 2 billion decrease in value from 2022, and a 3% or 210.947 tonne decrease in volume.

For major imported species like shrimp—which had seen significant growth in 2022—their value took a downturn in 2023. Volumes also decreased across all main imports, though to a lesser extent. At the same time, there were a few notable exceptions. For instance, the value of salmon imports remained almost stable, while their volume dropped by 4%, reaching the lowest level of the past four years. Also in terms of volume, salmon imports had hit a peak in 2021 before declining in 2022 and 2023, to their lowest level since 2015. Comparing 2014 and 2023, the volume of these imports experienced a slight decline of 0,3%, namely 16.924 tonnes. Conversely, their value had reached a high in 2022 before decreasing in 2023, although it still marked the second-highest value of the decade. Compared to 2014, their 2023 value had risen by 25% in real terms, equivalent to EUR 5,16 billion.

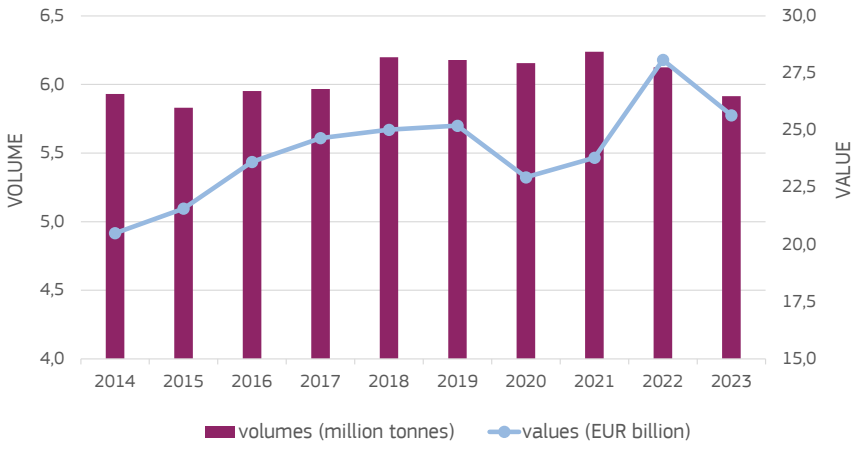
This general decline in import volumes and increase in values can be partially attributed to the widespread price increases that affected 2022 and part of 2023. However, it should be noted that in 2023, contrary to the historical trend, values decreased more than volumes. This can be attributed to various factors, including the appreciation of the EUR against the USD and the NOK compared with the previous year. Regarding the EUR/USD exchange rate, after reaching a historic low in 2022, which negatively impacted the purchasing power of the EUR, it stabilised in 2023. This made all trade exchanges that use USD as currency much less expensive than before. Similarly, the exchange rate for NOK increased in 2023 reducing the cost of trade exchanges as well. As a considerable portion of extra-EU imports originate from Norway, this factor contributed significantly to the overall increase in value.

To note, the EU market of fishery and aquaculture products heavily relies on imports from third countries, especially for the raw material used in the processing sector, such as canned tuna and sardines, frozen tropical shrimps, frozen cod and Alaska pollock, as well as fresh salmon, fresh cod and fresh saithe.

CHART 42

EXTRA-EU IMPORTS OF FISHERY AND AQUACULTURE PRODUCTS

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409). Values are deflated by using the GDP deflator (base=2015).



Salmon is by far the main species imported in the EU. In 2023 it accounted for 28% of total extra-EU imports of fish and aquaculture products in value and 17% in volume, mainly sourced from Norway, followed by the UK and the Faroe Islands.

Shrimps are the next most imported species, both in volume and value. This category includes warmwater shrimps (frozen shrimps of the genus Penaeus, mainly imported from

Ecuador), as well as miscellaneous shrimps and prawns[96]. It does not include the Pandalidae, *Crangon*, deep-water rose shrimps (*Parapenaeus longirostris*) or *Penaeus species,* which primarily originate from Argentina, India, Vietnam and Greenland.

Norway is the most important country of origin of EU imports of fishery and aquaculture products, thanks mainly to salmon, but also cod and herring. It is followed by China, the United Kingdom and Morocco. EU imports from China are primarily frozen fillets of Alaska pollock, while imports from the United Kingdom are mostly salmon.

Imports from Morocco are more diversified with sardine and fishmeal having the largest shares in volume while most of their value is represented by octopus, and by squid which largely originates from the Falkland Islands.

In 2023, EU imports from the Russian Federation constituted 3% of the total, both in volume and value, amounting to 195.028 tonnes and EUR 886 million. Of these imports, frozen cod and frozen Alaska pollock each accounted for 43% of the total volume. In terms of value, frozen cod made up 52%, while frozen Alaska pollock contributed 31%.

Following Russia's unprovoked aggression against Ukraine, an import ban on certain seafood from Russia, specifically crustaceans, caviar and caviar substitutes[97], went into effect in July 2022. Notably, Russia has never been a significant supplier of these products to the EU.

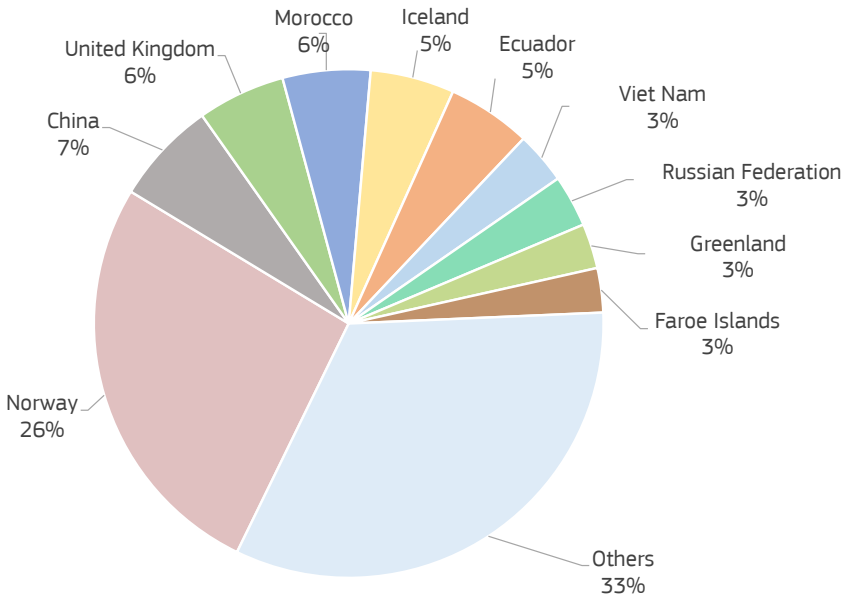
Previously, imports that had been around 500 tonnes in both 2019 and 2020 dropped by 48% to 270 tonnes in 2021 and then surged to 992 tonnes in the months leading up to the ban in 2022. Despite these fluctuations, Russian crustaceans had never accounted for more than 0,2% of the EU's total crustacean imports in the period surveyed.

From 2019 to 2022, Russia's share of caviar and caviar substitute imports to the EU increased but remained minimal. In 2019 and 2020, imports from Russia accounted for less than 1% of the total, amounting to 9 and 14 tonnes, respectively. By 2021, imports reached 40 tonnes, representing 1,8% of the total, and in 2022, the volume rose to 54 tonnes, making up 3,3% of the EU's caviar and caviar substitute imports, with most going to Germany. According to Eurostat-COMEXT, no imports from Russia were recorded in 2023.

CHART 43

TOP EXTRA-EU COUNTRIES OF ORIGIN IN 2022 (IN VALUE)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)



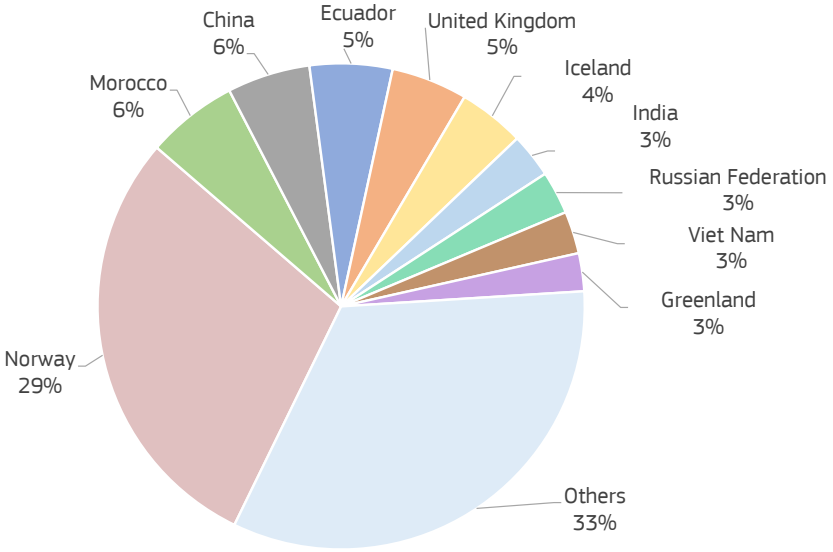
[96] No detail is available in terms of species.

[97] CN codes of banned products: 0306: Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked crustaceans, whether in shell or not, whether or not cooked before or during the smoking process; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine; 1604 31 00: Caviar, 1604 32 00: Caviar substitutes.

CHART 44

TOP EXTRA-EU COUNTRIES OF ORIGIN IN 2022 (IN VOLUME)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)



As mentioned, 2023 witnessed a decline in import values, following the steep price increases experienced in 2022. Chart 45 illustrates the trend from 2019 to 2023, showcasing the average import prices of the top-valued main commercial species imported in the EU. In 2022, all the top species considered had reached their highest prices of the last five years. However, by 2023, outcomes varied across species.

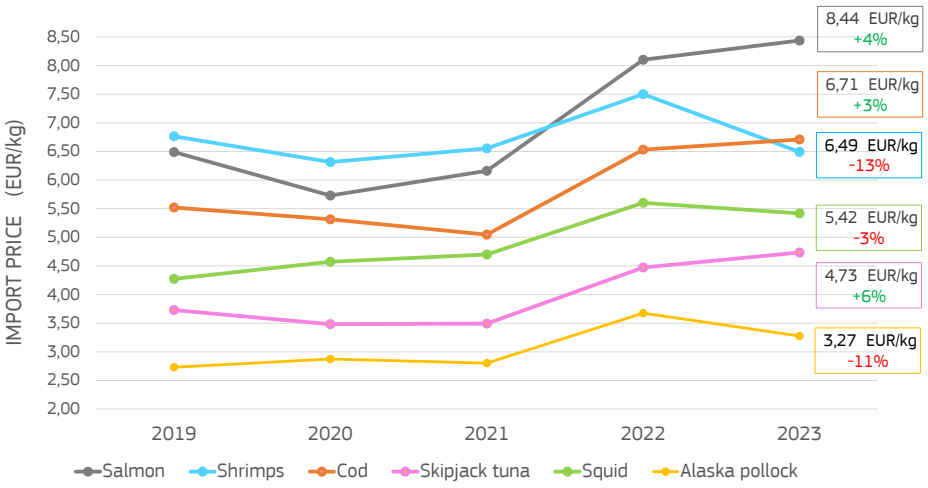
For the third consecutive year, the price of salmon increased, reaching 8,44 EUR/kg, a 4% increase from 2022. Until 2021, there had been a steady increase in salmon imports alongside a gradual decline in its average price. Then, from 2022 onwards, this pattern reversed and, in 2023, not only did the price increase, the volume decreased by 4%.

Alongside salmon, cod and skipjack tuna also recorded marginal price increases over 2022, growing by 3% and 6% respectively, mainly due to fluctuations in their import volumes. Shrimps, on the other hand, recorded a price decrease of 13%, selling at 6,49 EUR/kg. Their value fell by 18% from 2022 to 2023, while their volume decreased by 5%. Imports of Alaska pollock increased by 5%, while the price declined by 11%. Squid recorded a 13% decrease in volume and a 16% decrease in value, resulting in a 3% decrease in price.

CHART 45

NOMINAL UNIT VALUE OF SOME OF THE TOP VALUED MAIN COMMERCIAL SPECIES IMPORTED IN THE EU AND % VARIATIONS 2023/2022

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)



It is important to underline that imports are reported by Eurostat-COMEXT according to flows recorded by national customs. However, in most cases, the corresponding EU Member States are not the actual final destinations. Rather, these importing countries are points of

entry for the fishery and aquaculture products imported to the EU, which are then traded in the internal market[98].

Taking this into account, the top-five EU importers are Sweden, Spain, France, Denmark and the Netherlands. The precise amounts of the main EU importing Member States are shown in Charts 47 and 48. In 2023, Sweden surpassed Spain to become the top extra-EU importer in terms of value, with a 6% increase from 2022. This was primarily due to a rise in the value of salmon imports from Norway, Sweden's sole salmon supplier. Spain, on the other hand, recorded a 15% drop in value from 2022.

As illustrated in Chart 47, Sweden, along with Ireland and Malta, were the only Member States to report a growth in nominal value from 2022 to 2023 for imports. On the other hand, Chart 48 shows how, when import volumes were not higher than the previous year, they did not decline as sharply as values.

CHART 46

VALUE OF EXTRA-EU IMPORTS PER MEMBER STATE (EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409). Values are deflated by using the GDP deflator (base=2015).

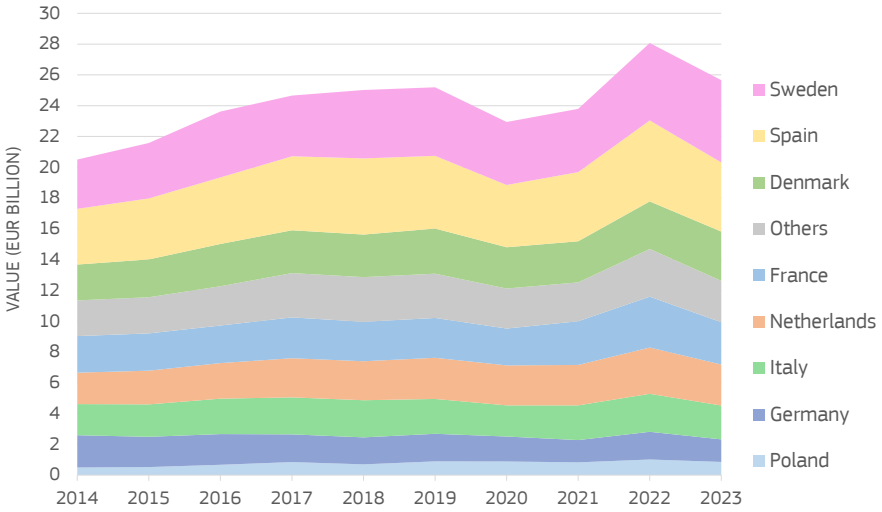
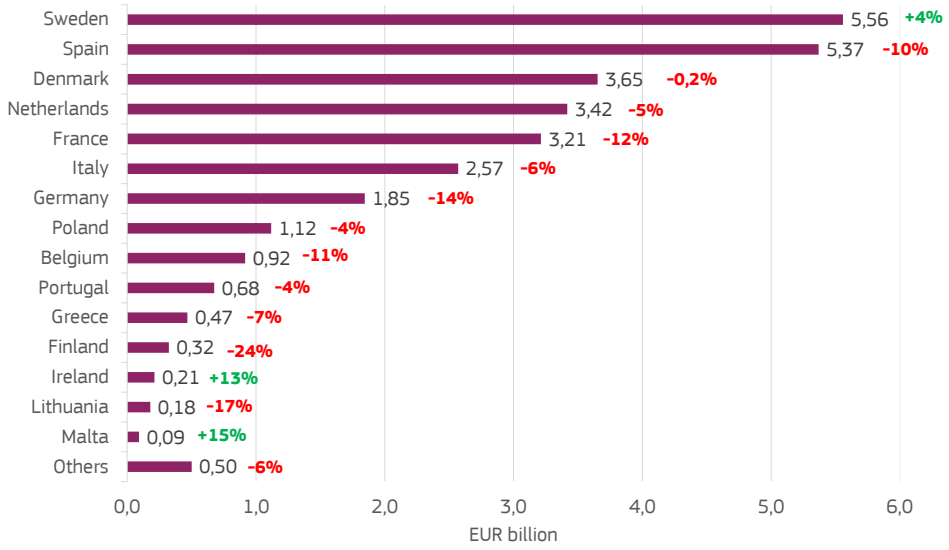


CHART 47

NOMINAL VALUE OF EXTRA-EU IMPORTS BY MEMBER STATE IN 2023 AND % VARIATION 2023/2022

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)

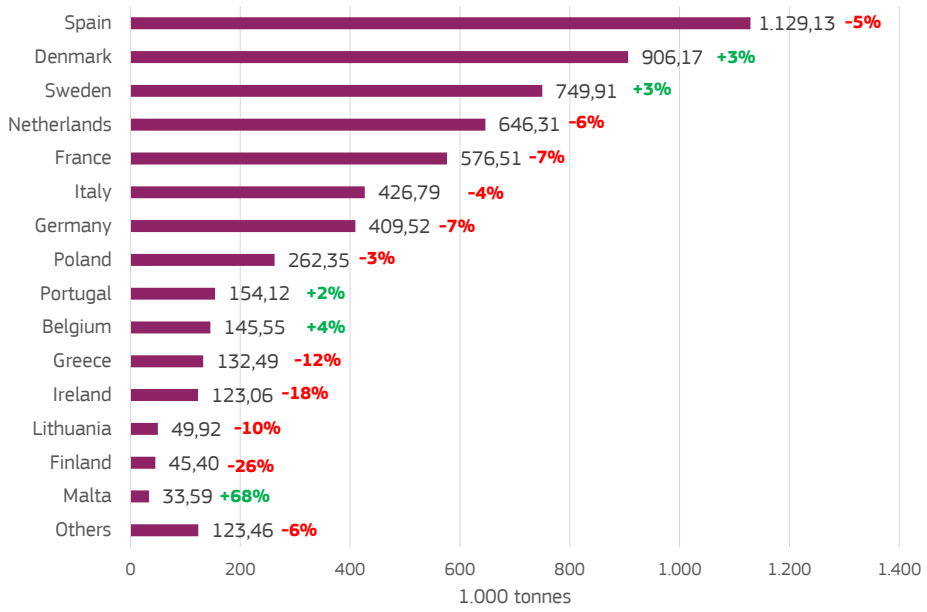


[98] This phenomenon is known as "the Rotterdam effect".

CHART 48

VOLUME OF EXTRA-EU IMPORTS BY MEMBER STATE IN 2023 AND % VARIATION 2023/2022

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)



4.3.1 ANALYSIS BY MAIN SPECIES

SALMONIDS

Salmon, the main species imported in the EU, was responsible for 17% of the total volume of extra-EU imports of fishery and aquaculture products in 2023, and 28% of the total value. Among imports of salmonids, which also include trout and other salmonid species, salmon represented 97% of the total in both volume and value.

SALMON

In 2023, imports of salmon showed a decrease of 4% from 2022, reaching 992.594 tonnes, their lowest level since 2018. However, their value remained almost unchanged from 2022, at EUR 8,38 billion, only decreasing a slight 0,1%. As a result, the unit value of salmon increased by 4%, reaching 8,44 EUR/kg, the highest of the last five years. Salmon is mainly imported as a fresh whole product, covering more than 86% of the total, followed by fresh and frozen fillets, which account for 13% of imports. Less than 1% of total imports are processed products such as those that are prepared/preserved and smoked.

Salmon imports mainly consist of fresh whole products from Norway, which in 2023 amounted to 737.012 tonnes worth EUR 5,86 billion, with Sweden as the main point of entry. Indeed, Norway accounted for 82% of the volume and 83% of the value of total extra-EU imports of salmon. From 2022 to 2023, these imports decreased by 2% in volume but rose by 2% in value. Overall, Norway's salmon imports grew at a compound rate of 2% in volume and 6% in value from 2014 until 2023.

The United Kingdom and the Faroe Islands rank second and third in terms of both volume and value of extra-EU salmon imports, together accounting for 9% of total volume and 11% of total value.

Imports of both dropped in 2023, as the two main salmon producers recorded a fall in production during 2022. The UK recorded a decrease of 19% in volume and 10% in value, totalling 48.040 tonnes worth EUR 467 million. Imports for the Faroe Islands decreased by 14% in volume and 8% in value, reaching 37.934 tonnes worth EUR 389 million.

Chart 49 provides an overview of extra-EU fresh whole salmon imports from Norway over the past decade. From 2017 to 2021, import volumes increased while values declined. However, this trend reversed from 2022 onwards as import volumes started to fall, while values soared, reaching their highest levels since 2014.

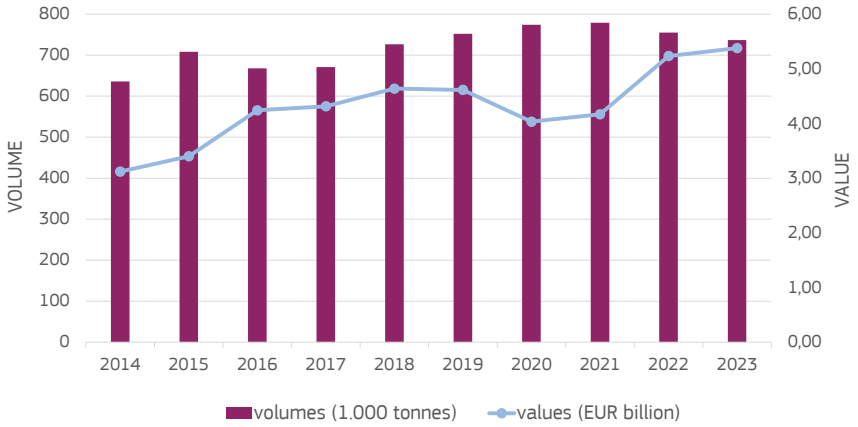
From 2022 to 2023, the average unit price of salmon from Norway grew by 5%, from 7,97 EUR/kg to 8,35 EUR/kg. Overall, imports from the Faroe Islands were the most expensive in terms of unit price, reaching 10,26 EUR/kg amounting to a 7% increase from 2022. The least expensive, from the US and mainly consisting of American wild Pacific salmon, saw

their unit price drop 29% to 6,83 EUR/kg. The United Kingdom, Iceland and China all recorded increases in their unit value, rising by 10%, 4% and 6% respectively.

CHART 49

FRESH WHOLE SALMON IMPORTED IN THE EU FROM NORWAY

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409). Values are deflated by using the GDP deflator (base=2015).



CRUSTACEANS

EU imports of crustaceans plunged in 2023, in contrast with the positive trend observed in 2021 and 2022. In total, they amounted to 646.505 tonnes worth EUR 4,59 billion in 2023 – falling below their 2021 level. Shrimps represent more than 90% of total volumes and 84% of total values of crustacean imports in the EU. They mostly include warmwater shrimps, as well as miscellaneous shrimps and prawns[99] (not including the *Pandalidae*, *Crangon*, deep-water rose shrimps "*Parapenaeus longirostris*" and "*Penaeus*" species). Both warmwater and miscellaneous categories had a significant impact on the decrease in crustacean imports recorded in 2023.

WARMWATER SHRIMPS

Warmwater shrimps imported in the EU consist of frozen shrimps of the genus *Penaeus*. In 2023, these imports reached 320.682 tonnes worth EUR 2,02 billion which represented a decrease of 2% in volume and 20% in value compared with 2022. Their average import price also decreased, dropping 18% to 6,29 EUR/kg, the lowest of the 2019–2023 period. This drop in unit prices in the EU also related to a fall in shrimp prices on the global market. Even with lower unit prices than 2022, this decrease in volume was linked to a low demand for shrimps on the EU market due to wide inflation.[100].

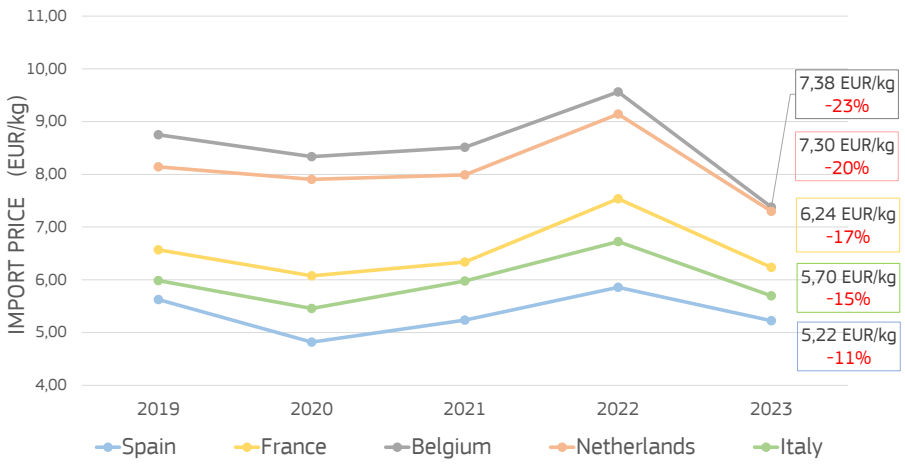
The EU imports of warmwater shrimps mainly came from Ecuador which provided 52% of the total volumes imported. Others included India with 13%, Venezuela with 12%, Vietnam with 7% and Bangladesh with 4%. Despite fluctuations in volumes, most of these countries witnessed a significant decrease in the value of warmwater shrimps. Although imports from Ecuador increased by 6% in volume, their value decreased by 9% from 2022. Further, Ecuador's unit price of 5,34 EUR/kg was one of the lowest among the top five countries of origin. The first points of entry for warmwater shrimps in the EU were Spain, France and the Netherlands, although it should be noted that these may not have been the final destinations. Indeed, Vigo in Spain and Rotterdam in the Netherlands are often transit points for further distribution to other EU Member States.

From 2022 to 2023, the unit price of warmwater shrimps from India dropped by 19% to 7,32 EUR/kg, while also recording an 8% decrease in volume and 26% decrease in value. However, the most significant decline was observed in imports from Vietnam which ranks third in the list of countries of origin. The volume and value of its imports plummeted by 32% and 44% respectively, resulting in an 18% decrease in the unit price, which reached 8,42 EUR/kg.

[99] No detail is available in terms of species.
[100] Shrimp market bleak | GLOBEFISH | Food and Agriculture Organization of the United Nations (fao.org)

Shrimps from Vietnam and India are primarily destined for the Netherlands and Belgium[101] and have higher prices than those from Ecuador. Indeed, Ecuador only produces whiteleg shrimp (*Penaeus vannamei*), while India and Vietnam also export the higher value giant tiger shrimp (*Penaeus monodon*). In addition, most of the shrimps exported from Ecuador are head-on-shell-on (HOSO), while the majority of shrimps exported from India are peeled.

CHART 50
NOMINAL IMPORT PRICES OF WARMWATER SHRIMPS IN THE TOP FIVE EU IMPORTERS AND % VARIATIONS 2023/2022
Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)



MISCELLANEOUS SHRIMPS

In 2023, EU imports of shrimps and prawns – not including the *Pandalidae*, Crangon, deep-water rose shrimps "*Parapenaeus longirostris*" and "*Penaeus*" species – hit 199.964 tonnes, their lowest level of the decade, which corresponded to a 9% drop from 2022. Of note, during the five years from 2019 to 2023, only 2021 saw an increase in import volumes
In terms of value, imports in 2023 dropped to EUR 1,46 billion, 18% less than 2022, and reversed the growth seen in 2021 and 2022.
This decline was driven mostly by a drop in imports from the top five countries of origin except for Argentina, which remained the top exporter of shrimps and prawns to the EU and recorded a 5% increase in volume but an 8% decrease in value.
Vietnam, India, Greenland and Morocco all experienced declines in their exports, both in volume and value. Vietnam's loss accounted for 50% of the decreased volume and nearly 40% of the decreased value. Consequently, the average unit value of shrimps and prawns also decreased in all the main countries of origin, reaching 7,25 EUR/kg which represented an average decrease of 10% from 2022 to 2023.

GROUNDFISH

In 2023, the EU imported 1,10 million tonnes of groundfish with a value of EUR 4,90 billion. Cod and Alaska pollock are by far the main species imported within this category. Accounting together for 58% of the total volume and 68% of the total value, they are also two of the EU's most imported fishery and aquaculture products.

COD

In 2023, extra-EU imports of cod reached a decade low of 353.857 tonnes, 6% less than in 2022. This decline was in line with the 2019–2023 trend, during which cod imports decreased by an average of 4% per year. In terms of value, imports decreased by 3% from 2022 to 2023, reaching EUR 2,37 billion, still the second-highest during the 2019–2023 period.
Among cod imports, 35% of the volume originated in Norway, 25% in Russia, 19% in Iceland, and 9% in China. Those from Norway and Iceland are more diversified, comprising similar shares of fresh, frozen and salted products, while imports from Russia and China largely include frozen products.
Cod imports from its major suppliers decreased, especially those from Norway, which exported 11% less cod to the EU in 2023 than in 2022, while their total value decreased

[101] The Netherlands and Belgium might not be the final destinations. Indeed, Rotterdam (NL) and Antwerp (BE) are important ports for landings of frozen fishery and aquaculture products from Far East suppliers, and these ports act as "hubs" for shrimps arriving in the EU, so the "actual" destinations might be other countries.

by 7%. The EU points of entry that imported less cod from Norway were Sweden and Denmark, while the Netherlands recorded a 5% increase in their cod imports and a staggering 28% increase in value.

Russian imports of cod decreased 4% in both value and volume in 2023. This decrease was primarily driven by Poland, which imported 32% less cod from Russia than in 2022. Further, while its value dropped by 34%, its unit value dropped 2% to 5,62 EUR/kg.

Iceland stood third in the ranking, with its EU cod exports plunging by 10% with a 5% decrease in value. The unit value of imported cod from Iceland is the highest of the countries of origin, reaching 8,48 EUR/kg in 2023, increasing 6% over 2022.

ALASKA POLLOCK

Imports of Alaska pollock grew by 7% compared with 2022, reaching 286.689 tonnes and marking their highest level of the past decade. However, their value decreased by 5%, settling at EUR 939 million, which was the second highest of the 2014 and 2023 decade, following the peak in 2022. Their unit value in 2023, stood at 3,27, a drop of 11% from 2022.

The majority of this species is imported as frozen fillets, especially from China, which covers 54% of frozen fillet imports, but also 50% of total imports of all preservation and presentation states. In 2023, Chinese imports of Alaska pollock frozen fillets saw an 18% increase in volume and a 3% increase in value, with their unit price remaining one of the lowest among other countries of origin at 3,13 EUR/kg, marking a 13% decrease from 2022.

EU imports of Alaska pollock from Russia rank second, accounting for 28% of the total and, for the second year in a row, surpassing the United States which covered only 20% of total imports. However, from 2022 to 2023, while EU imports of Alaska pollock from Russia slightly increased by 4%, reaching a decade peak of 83.953 tonnes, their value dropped 12% to EUR 265 million.

Germany was by far the main EU destination of all these main origin countries, covering 51% of the total volume of Alaska pollock imports, followed at a distance by France, the Netherlands and Poland, which accounted for 15%, 12% and 10% of the total, respectively.

TUNA AND TUNA-LIKE SPECIES

This group includes tunas and swordfish species. In 2023, total extra-EU imports of both totalled 571.649 tonnes, marking a 12% drop from 2022 and their lowest level from 2014 to 2023. In terms of value, these imports amounted to EUR 2,94 billion, a 9% decrease from 2022. The main driver of this decline was imports of yellowfin tuna, which accounted for more than half of the total loss in both value and volume.

Processed tuna – 26% frozen and 74% prepared-preserved products (mainly canned) – accounted for the largest share of this category in volume terms. In terms of species, skipjack tuna accounted for 55% of the total, followed by yellowfin tuna at around 28%. To be noted, these imports partly consist of tuna caught and landed by the Spanish and French fleets in remote places close to the fishing areas of Ecuador, El Salvador, Guatemala, Seychelles, Mauritius, Côte d'Ivoire and Ghana. The catches were processed in those countries and then re-imported into the EU as prepared-preserved products.

SKIPJACK TUNA

Almost all skipjack tuna imported in the EU is imported as prepared-preserved products.

Total extra-EU imports of skipjack tuna continued to follow a downward trend started in 2021, decreasing 7% from 2022 to reach 312.134 tonnes, while their value declined by a slight 2%, arriving at EUR 1,48 billion. Its main importers are Spain, Italy and Germany, followed by Netherlands and France.

Between 2022 and 2023, Spain recorded the largest decline, with imports falling by 18% in volume and 10% in value. This decrease was partly counterbalanced by the strong performance of Dutch imports. The Netherlands, which used to be the second point of entry of skipjack tuna in the EU, recorded a significant 46% drop in imports in 2022 but, in 2023, they bounced back with an increase of 16% in volume and 21% in value.

Ecuador remains the main country of origin, accounting for 30% of all extra-EU imports of prepared-preserved skipjack tuna, despite a 2% slight decrease from 2022. Skipjack tuna imports from Ecuador accounted for EUR 465 million and 94.132 tonnes in 2023.
The Philippines have surpassed Papua New Guinea and China, moving up to second place in the ranking. This shift is primarily due to significant declines from these latter countries, with Papua New Guinea recording a drop of 27% in volume and 25% in value, while China saw a decrease of 18% in volume and 10% in value. Combined, their losses amounted to 14.754 tonnes worth EUR 50,6 million.

YELLOWFIN TUNA

In 2023, extra-EU imports of yellowfin tuna hit their lowest point since 2014, totalling 158.116 tonnes valued at EUR 837 million. The unit value, however, soared to 5,29 EUR/kg, the highest in five years and an 8% increase from 2022.
The main countries of origin for this species in 2023 included Seychelles, which contributed 20% of the volume and 21% of the value, followed by Ecuador, Papua New Guinea and Côte d'Ivoire. In 2023, imports from Seychelles and Papua New Guinea, which had been rising steadily from 2020 to 2022, dropped by 21% and 28% in volume and by 5% and 17% in value, respectively. In contrast, yellowfin tuna from Ecuador continued its upward trend from 2021, with a 2% increase in volume and a 4% rise in value. Over the 2019–2023 period, the average unit value of these imports peaked at 5,94 EUR/kg, a 2% rise from 2022 and the highest over the other main countries of origin. In 2023, imports from the Philippines, which have been highly volatile in recent years, hit their lowest level of the decade in both volume and value. Compared to 2022, these imports more than halved, dropping by 55% in volume and 53% in value.
Almost two thirds of these imports, 65%, were composed of prepared-preserved products while frozen tuna accounted for 34% of the total. Of note, frozen tuna imports, predominantly from Seychelles and Mexico, plunged by 39% in volume and 43% in value, accounting for almost 80% of the total loss for 2023.
In 2023, prepared-preserved products sold at 6,43 EUR/kg, which was more than twice the 2,85 EUR/kg price of frozen product. For frozen tuna, Spain is the leading importer and is also responsible for further dispatches within the EU. Imports of prepared-preserved products are more diversified in terms of destinations, with Spain, Italy and France being the largest importers, together accounting for almost 95% of total imports.

NON-FOOD USE PRODUCTS

Extra-EU imports of non-food use products in 2023 totalled 780.713 tonnes worth EUR 1,32 billion, which simultaneously represented the lowest volume and the highest value of the last decade. The rise in value was mainly driven by the 49% staggering increase in the average price of fish oil, which sold at 3.797 EUR/tonne. This context of high prices was linked to the low availability of fish oil from Peru – a major supplier of fish oil at global level – due to Peru's low quotas for anchovy fishery in this country.
The products included a share of 32% for fishmeal and 22% for fish oil, while the rest concerned other products not destined for human consumption, such as fish waste and seaweed. According to available level of detail of data, however, it is not possible to identify the products included in this latter category more precisely.

FISHMEAL

In 2023, the EU's fishmeal imports continued to follow the upward trend started in 2022, increasing 1% in volume and 6% in value. This resulted in a total of 250.325 tonnes, still lower than the pre-pandemic level, valued at EUR 428 million.
Most of the top countries of origin of fishmeal experienced an increase in imports between 2022 and 2023. Imports from Morocco reached their highest level between 2014 and 2023. Norway, another important supplier to the EU, saw a remarkable 66% increase, recovering from a sharp drop in 2022. The Faroe Islands, in third place, more than doubled its fishmeal imports between 2022 and 2023, surpassing Iceland, where imports decreased by 7%, although their value increased by 11% compared to 2022.

The average price of fishmeal imports was 1.711 EUR/tonne, with Norway recording the highest price at 2.104 EUR/tonne and Morocco the lowest at 1.548 EUR/tonne.

Spain, , became the largest EU importer of fishmeal in 2023, importing 68.608 tonnes, which was 24% more than in 2022. Imports also increased in Denmark by 10% while they decreased in Germany, Greece and Italy, by 3%, 29% and 19%. Spain, together with Germany, is a major entry point to the EU market, primarily due to the logistics of its harbours that have overseas routes and trading partnerships. Germany is also a hub for the further distribution of fishmeal, primarily for the aquafeed segment.

FISH OIL

Imported quantities of fish oil to the EU hit their lowest level of the last ten year at 174.526 tonnes. Their value, on the other hand, increased to a ten-year peak of EUR 663 million. This resulted in a 11% decrease in volume but a 33% increase in value from 2022 to 2023. During this period, as mentioned before, the unit value of fish oil almost doubled, increasing 49% from 2.548 EUR/tonne to 3.797 EUR/tonne.

The largest shares of the EU supplies of fish oil originate from Norway and Chile. In 2023 they together accounted for 43% of total volume and 34% of total value of EU imports of fish oil.

Fish oil imports from Peru, which previously contributed almost 30% of the total, plummeted by 43% in 2022 and then by another 92% in 2023. Conversely, Panama experienced remarkable growth from 2022 to 2023, securing the third position in the ranking. In terms of unit price, it grew by an average of 62% from 2022 for top-5 countries of origin for extra-EU imports of fish oil, with Norway recording the lowest price at 2.298 EUR/tonne and Morocco the highest at 4.926 EUR/tonne.

In 2023, Denmark received most of the extra-EU imports of fish oil, namely 67.346 tonnes valued at EUR 256 million, followed at a distance by Belgium and France.

4.4 EXTRA-EU EXPORTS

In 2023, EU exports of fishery and aquaculture products to third countries hit a ten-year low of 2,2 million tonnes, marking a 3% decrease from 2022. Compared with 2014, the volume saw a significant decline of 14%, amounting to a loss of 363.903 tonnes. However, there was a slight 1% increase in value in 2023 reaching EUR 8,13 billion. During the past decade, EU exports saw a 13% or EUR 792 million growth in value.

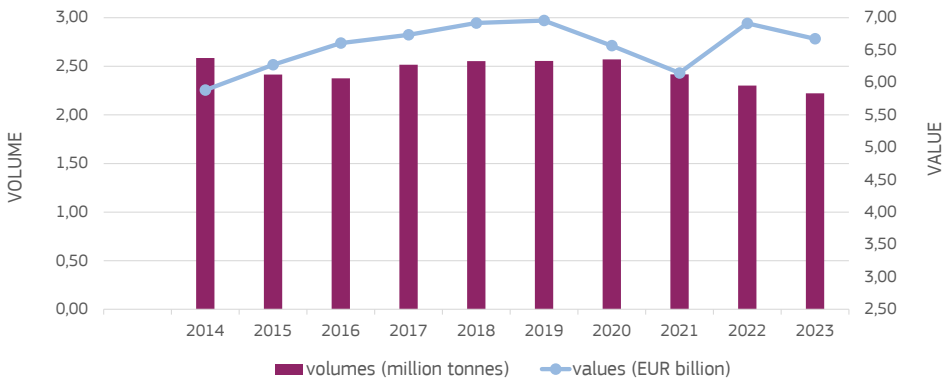
One possible explanation for this trend – of value increasing while volumes decrease – could be attributed to the recent economic and geopolitical events which substantially affected trade. This shift cannot be solely attributed to the post-COVID-19 recovery, which indeed caused sudden spikes in demand and prices. However, lower supply, due to reduced quotas for major species and intensified competition for raw materials, also drove prices up. Additionally, the Russian invasion of Ukraine significantly impacted energy and production costs, and ultimately inflation. The invasion also affected exchange rates, influencing global trade values.

It's plausible that this combination of factors contributed to both the increase in the total value of extra-EU exports and the decrease in their total volume. This trend is also illustrated in Chart 51 below, showing that until 2021, volume and value followed a similar trajectory. However, in 2022, the volume decreased while the value nearly hit its ten-year peak. In 2023, the nominal value continued to grow, while the volume decreased once again.

CHART 51

EXTRA-EU EXPORTS OF FISHERY AND AQUACULTURE PRODUCTS

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409). Values are deflated by using the GDP deflator (base=2015).



In terms of volume, the EU mainly exports blue whiting, herring, fishmeal and fish oil not destined for human consumption, mackerel, skipjack tuna and salmon. Of note, extra-EU exports of tuna partly comprise tunas caught by the Spanish and French fleets in remote places. The catch is processed where caught and then imported in the EU as prepared-preserved products or frozen loins. In both cases, these landings are also recorded as exports.

Salmon exports, by far the first in terms of value in extra-EU exports, experienced a steep decline from 2020 to 2021. The situation improved in 2022, but in 2023 they decreased again, dropping by 8%. When comparing 2023 with 2019 levels, salmon exports are 35% lower, while their value increased by 11%. This decrease is a consequence of an 86% drop in exports to the UK, that, since 2022, lost its position as the top destination of EU exports of fishery and aquaculture products. It was overtaken by the US in terms of value, and by Norway and Nigeria in terms of volume.

Furthermore, the US is the largest recipient of extra-EU salmon exports, having imported 37.107 tonnes worth EUR 616 million in 2023. Salmon accounted for slightly less than half of extra-EU exports to the US in value and for more than quarter of their volume.

Exports to Norway mainly consist of fish oil and fishmeal, which accounted for around 60% of total exports to Norway in 2023. Conversely, Nigeria received mostly blue whiting and herring, which made up over 80% of the volumes exported to the country.

CHART 52

TOP EXTRA-EU COUNTRIES OF DESTINATION IN 2023 (IN VOLUME)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)

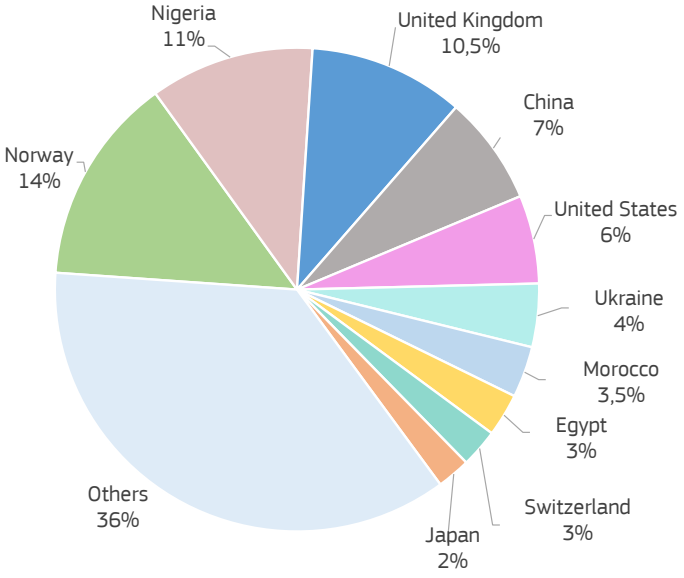


CHART 53

TOP EXTRA-EU COUNTRIES OF DESTINATION IN 2023 (IN VALUE)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)

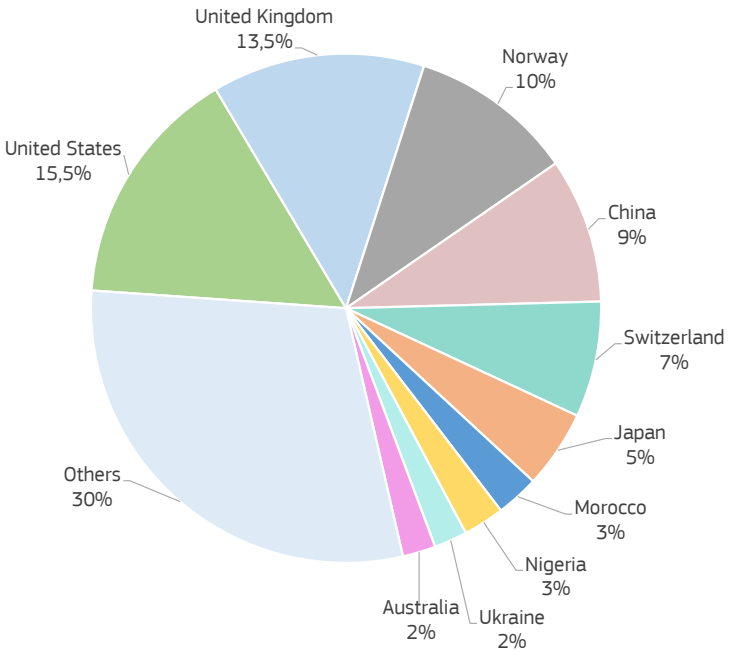


CHART 54

VALUE OF EXTRA-EU EXPORTS BY MEMBER STATE (EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409). Values are deflated by using the GDP deflator (base=2015).

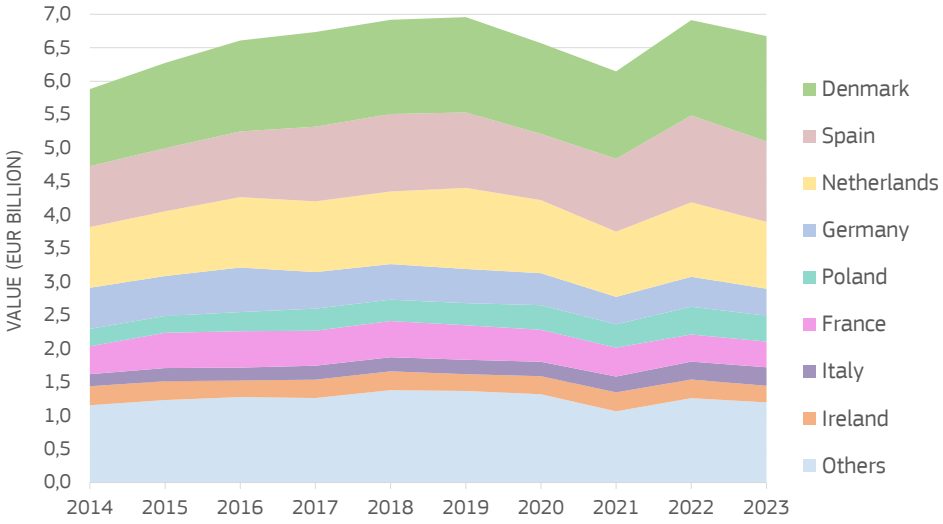


CHART 55

NOMINAL VALUE OF EXTRA-EU EXPORTS BY MEMBER STATE IN 2023 AND % VARIATION 2023/2022

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)

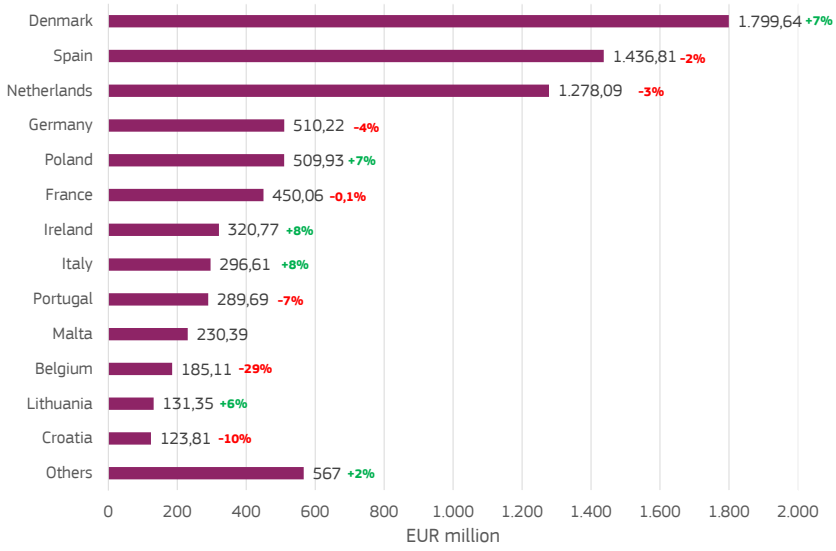
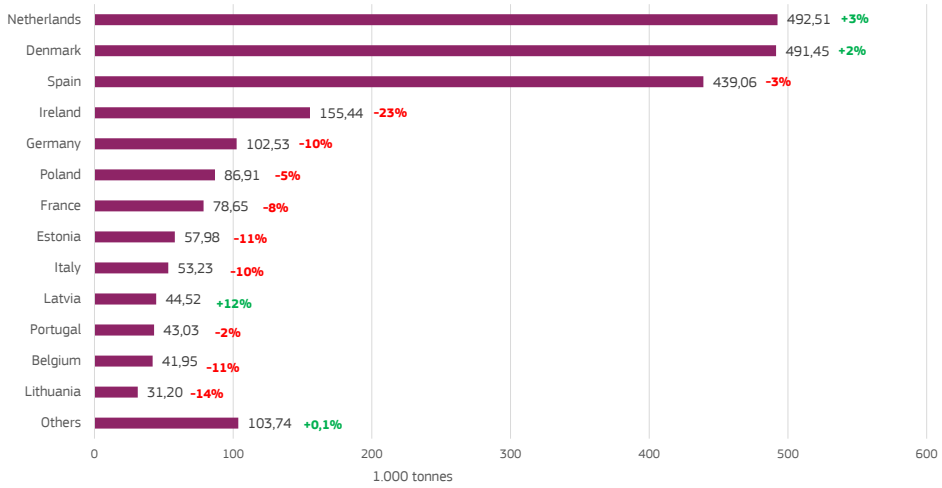


CHART 56

VOLUME OF EXTRA-EU EXPORTS BY MEMBER STATE IN 2023 AND % VARIATION 2023/2022

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)



4.4.1 ANALYSIS BY MAIN SPECIES

SALMONIDS

Salmon is by far the most valued species exported by the EU. In 2023, it represented 91% of the total volume and 93% of the total value of extra-EU exports of salmonids, a group that also includes trout and other salmonid species. Overall, they accounted for 4% of volume and 17% of value of total extra-EU exports in 2023.

SALMON

Extra-EU exports of salmon reached 87.041 tonnes and EUR 1,27 billion in 2023. On a five-year perspective, EU exports of salmon plunged by 35% in volume but increased 11% in value, while the average unit value soared by 72% in the same period, reaching 14,62 EUR/kg. The drop in volume was mainly caused by decreased exports of fresh whole or gutted salmon, which plummeted by 88% in 2021. However, from 2019 to 2023, its average unit value increased by 66%, reaching 10,86 EUR/kg.

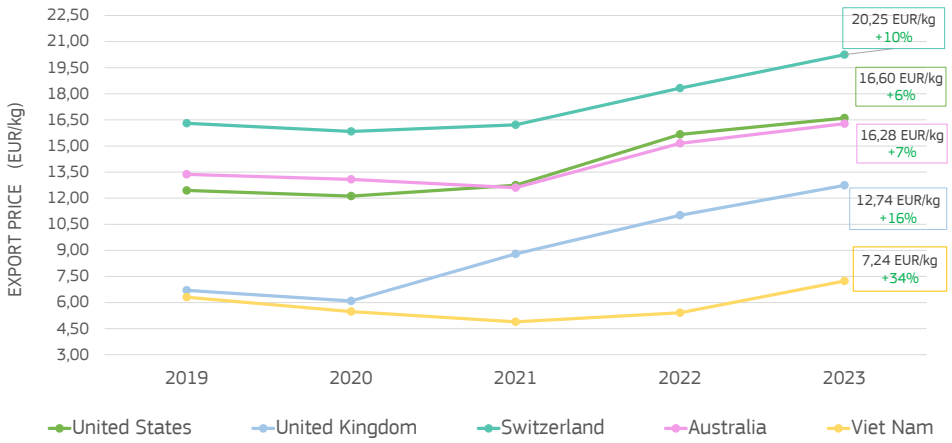
The main exporting country for salmon is the Netherlands, which primarily markets fresh fillets as well as smoked salmon. Poland and Denmark closely follow, with both mainly exporting frozen fillets and smoked salmon, while Denmark also markets fresh fillets.

Chart 57 shows the five-year trend of the average unit value of salmon exported to main extra-EU destinations. Of note, from 2022 onwards, the unit value of salmon to these destinations increased significantly, with an average growth of 18% in 2022 and 15% in 2023. The highest unit value was seen in Switzerland, where salmon is mainly exported as smoked or fresh fillets. A possible explanation could be that exports of salmon to Switzerland largely consist of special quality grade salmon such as *Label Rouge* and organic. The second highest unit value was 16,60 EUR/kg for exports to the US, which mainly imports fresh salmon products. Australia ranked third, with an average unit value of 16,28 EUR/kg, primarily importing smoked and frozen products. Exports to the UK, which mainly comprised prepared/preserved and smoked products, had an average unit value of 12,74 EUR/kg. The unit value of salmon exports to Vietnam, which mainly receives frozen fillets, ranked fifth.

CHART 57

NOMINAL EXPORT UNIT VALUES OF SALMON TO THE TOP-5 EXTRA-EU DESTINATIONS AND % VARIATIONS 2023/2022

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)



SMALL PELAGICS

In 2023, EU exports of small pelagics to third countries reached 484.729 tonnes worth EUR 857 million, making up more than 20% of the total volume and just over 10% of the total value of all fishery and aquaculture products exported by the EU. Herring and mackerel, the two main commercial species in this group, together accounted for 331.249 tonnes. This represented 8% and 7%, respectively, of the total volumes of extra-EU exports of fishery and aquaculture products.

HERRING

EU exports of herring amounted to 181.751 tonnes and EUR 204 million in 2023. This corresponded to a decrease of 7% in volume and 4% in value compared to 2022. From the longer 2014-2023 perspective, the exported quantities of herring decreased by 35% from 2014, while its value decreased by 25%. However, the trend since 2019 has been volatile. As illustrated in Chart 58, volumes and values fell significantly in 2021, recovered in 2022, only to fall again in 2023. On the other hand, unit values have been rising steadily from 2019, growing from 0,79 EUR/kg to 1,12 EUR/kg in 2023, marking a 27% increase.

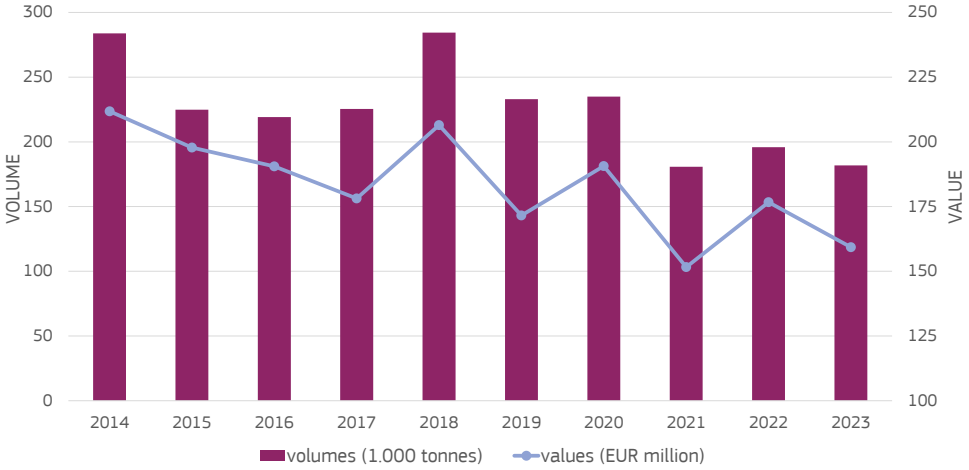
This was mainly driven by decreased exports from the Netherlands, by far the major EU supplier of herring to third countries, but it was also related to reduced quotas from 2020 to 2021. Dutch exports dropped 33% from 2020 to 2023.

Overall, most EU exports of herring are destined for Nigeria which imported 35.452 tonnes in 2023, 48% less than in 2022. It was followed at a distance by Egypt with 32,187 tonnes which was 34% higher than in 2022, and by Ukraine with around 30.000 tonnes, which was 3% higher than 2022.

CHART 58

HERRING EXPORTED FROM THE EU TO THIRD COUNTRIES

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409). Values are deflated by using the GDP deflator (base=2015).



MACKEREL

During the 2014–2023 decade, extra-EU exports of mackerel have shown a fluctuating pattern. From 2017 to 2018, they experienced a sharp decline, which mirrored the decline in EU catches. A slight but steady increase in volume was recorded from 2019 to 2021, only to drop again in 2022. In 2023, volume increased again, by 11%, although it was still 43% less than in 2014.

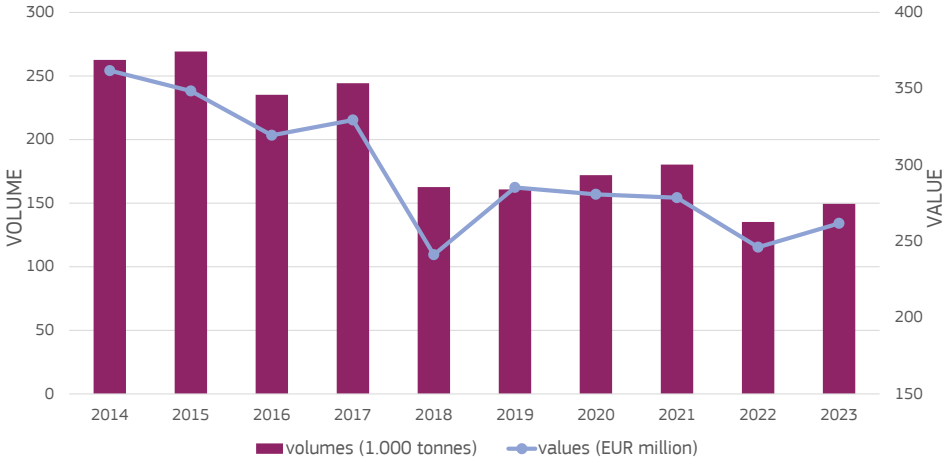
As for value, mackerel exported by the EU amounted to EUR 313 million in 2023, which was 9% more than in 2022. The average unit value decreased a slight 1%, reaching 2,09 EUR/kg.

Extra-EU exports of mackerel are primarily destined for the Faroe Islands and Nigeria, which together account for slightly less than 45% of the total volume. In 2023, they recorded volume increases of 51% and 42%, respectively.

CHART 59

MACKEREL EXPORTED FROM THE EU TO THIRD COUNTRIES

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409). Values are deflated by using the GDP deflator (base=2015)



GROUNDFISH

In 2023, extra-EU exports of groundfish species increased for the first time since 2019, reaching a total of 350.015 tonnes, which was a 6% increase from 2022. Their value, on the other hand, decreased by 4%, dropping to EUR 698 million. Cod accounted for 50% of the total value but only 14% of the total volume. In volume terms, blue whiting prevailed in the export of this group of species, accounting for 65% of the total volumes, but was second to cod in value, with a share of 20% of the total.

COD

Exports of cod continued to follow the downturn trend that began in 2020. In 2023, they reached a decade low of 48.879 tonnes, namely 9% less than 2022. This drop was mainly linked to decreased exports of frozen cod fillets from the Netherlands, its main exporter, to China, the Republic of Korea and the UK.

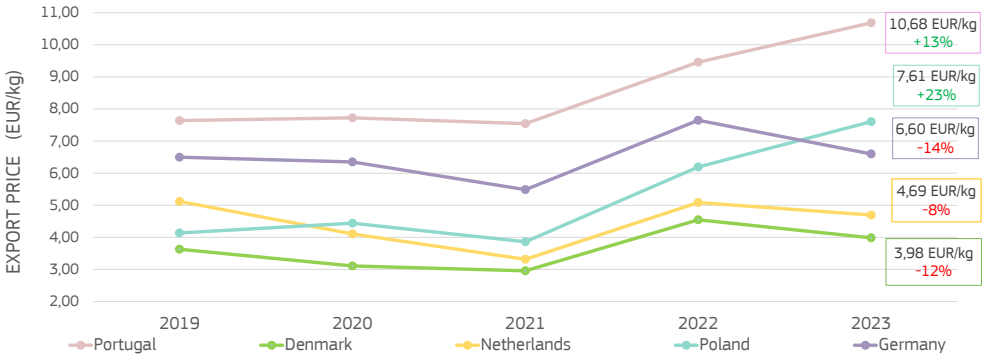
From 2022 to 2023, their value decreased by 2% reaching EUR 349 million. At the same time, their average unit value rose by 8%, reaching 7,14 EUR/kg, the highest recorded in the 2019–2023 period.

As shown in Chart 60, cod exported by Portugal and Poland in 2023 had the highest unit values and reached a five-year peak. This was due to the value addition created by the higher number of processing steps needed before selling it, as Portugal and Poland mainly export processed products, while the others mainly export fresh cod.

CHART 60

NOMINAL EXPORT UNIT VALUES OF COD FROM MAIN EU EXPORTERS AND % VARIATIONS 2023/2022

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)



BLUE WHITING

Extra-EU exports of blue whiting increased by 14% from 2022 to 2023, reaching 226.514 tonnes in 2023. In value terms, however, they decreased by 5% to EUR 138 million. Blue whiting is almost entirely exported frozen, whole or gutted.

Nigeria is by far the largest importer, while the Netherlands is the leading EU exporter. In 2023, Dutch exports amounted to 196.098 tonnes, accounting for around 90% of total blue whiting exports. Of note, the increase in volume between 2022 and 2023 was mainly linked to the significant 33% increase in Dutch exports to Nigeria.

In 2023, the average EU export unit price to third countries was 0,61 EUR/kg.

NON-FOOD USE PRODUCTS

Of all fishery and aquaculture products exported by the EU, those not destined for human consumption accounted for 21% of the volume and 13% of the value in 2023. These amounted to 464.579 tonnes worth EUR 1,04 billion, which corresponded to a 1% decrease in volume but a 19% increase in value. It was the highest value recorded over the 2014–2023 decade, in both nominal and real terms. The average unit price increased for the third year in a row, reaching 2.243 EUR/tonne, which was 21% higher than in 2022.

FISHMEAL

Extra-EU exports of fishmeal in 2023 reached a decade low of 152.628 tonnes, a decrease of 5% compared to 2022. In terms of value, they remained stable, decreasing a slight 0,4% to a total of 297 million EUR. The average price, on the other hand, reached its highest level of the last five years, peaking at 1.943 EUR/tonne, which was 5% higher than 2022.

More than half of extra-EU fishmeal exports are destined for Norway.

Denmark is responsible for most of these exports. Between 2021 and 2022, Danish exports decreased by 28% in volume and 16% in value. However, they started to grow again in 2023, increasing 8% in volume and 11% in value but still remaining below pre-pandemic levels.

Germany, the second largest exporter after Denmark, recorded 2.009 EUR/tonne, the highest price for fishmeal in 2023. Its exports increased from less than 10.000 tonnes in 2021 to 30.315 tonnes in 2022, but then dropped by 44% to 16.921 tonnes in volume and 41% to EUR 34 million in value in 2023.

FISH OIL

Continuing the trend from 2022, EU fish oil exports in 2023 saw a rise in value and a fall in volume. Since 2021, their value has surged by 80%, while their volume has dropped by 18%, driving the average price to more than double in two years, reaching 4.409 EUR/tonne in 2023.

Overall, EU exports of fish oil totalled 130.957 tonnes worth EUR 530 million in 2023. Denmark, the largest EU exporter, accounted for over 65% of the total volume. Its 2023 fish oil exports saw a 15% decrease in volume but a 28% increase in value, mainly affecting exports to Norway, the major destination.

Of note, Belgium and the Netherlands, which rank second and third as main EU exporters of fish oil, both recorded volume increases, with Belgium increasing 59% and the Netherlands increasing 39% from 2022 to 2023. In addition, the value of fish oil exported by Belgium grew 62% to 4.187 EUR/tonne, while the one exported by Netherlands grew 68% to 5.681 EUR/tonne.

4.5 INTRA-EU TRADE

In 2023, intra-EU trade[102] of fishery and aquaculture products amounted to 5,8 million tonnes worth EUR 31,8 billion.

Intra-EU trade decreased by 4% from 2022. However, in terms of relative value, it saw a slight 1% increase, reaching its highest value since 2019.

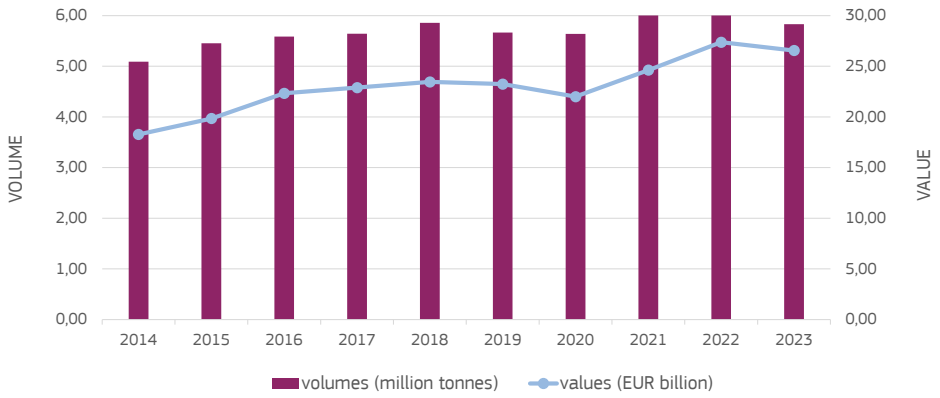
To be noted, exchanges within the EU largely consist of re-exports of products originally imported from third countries[103]. After entering the EU market, these products may also be traded and processed several times in different Member States. The creation of added value along the often complex supply chains and multiplication of cross-border flows contribute to inflating the value of intra-EU exports.

The 15 flows with the highest value at country and main commercial species levels in 2023 are shown in Chart 62. Of note, in 2023, the combined value of intra-EU exchanges of salmon and cod accounted for almost 40% of the total value of intra-EU trade flows of fishery and aquaculture products. Moreover, in 2023, Sweden overtook the Netherlands as the EU Member State with the highest value of intra-EU trade, reaching EUR 5,6 billion.

CHART 61

INTRA-EU TRADE OF FISHERY AND AQUACULTURE PRODUCTS

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409). Values are deflated by using the GDP deflator (base=2015).



[102] Intra-EU trade analysis is based on intra-EU exports only, due to the fact that intra-EU imports and intra-EU exports should coincide. For more details, please refer to the Methodological background.

[103] It has to be underlined that despite "exports" are reported as such by Eurostat-COMEXT according to flows recorded by national customs, in most cases the northern EU Member States are not the actual exporters but rather countries through which products are transported.

CHART 62

TOP 15 FLOWS OF FISHERY AND AQUACULTURE PRODUCTS WITHIN THE EU IN 2023 (IN NOMINAL VALUE)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409).

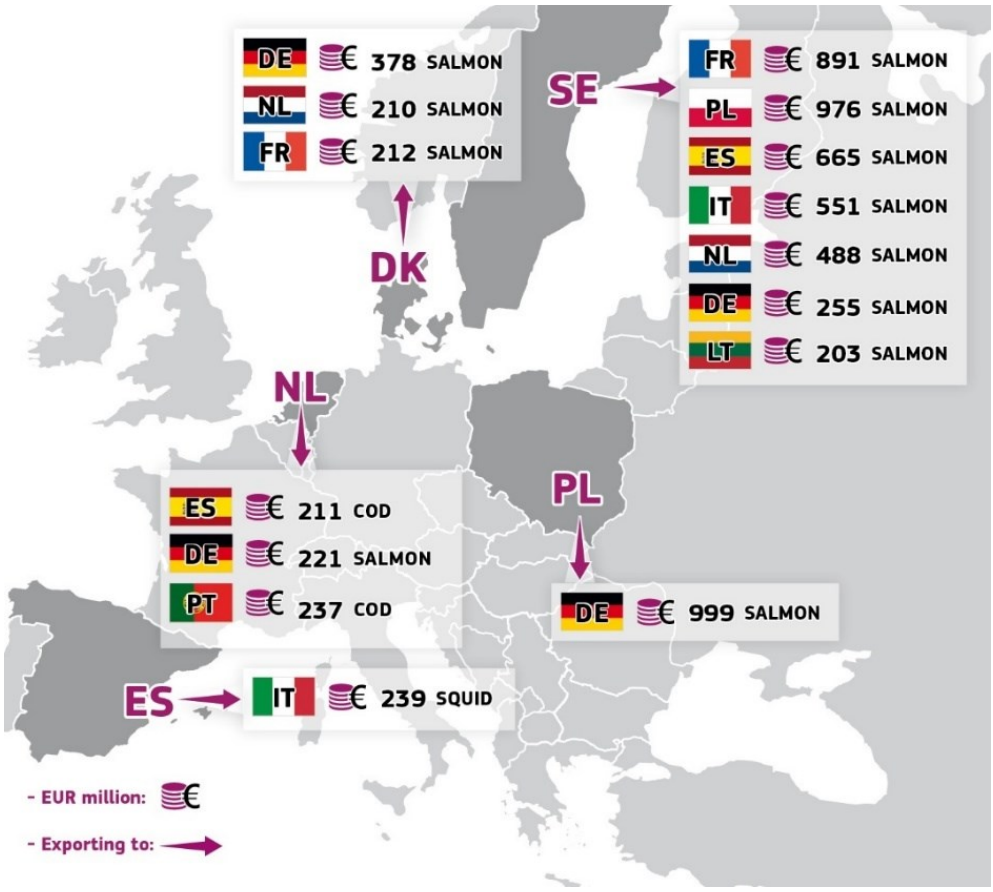


CHART 63

VALUE OF INTRA-EU EXPORTS PER MEMBER STATE (EUR BILLION)

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409). Values are deflated by using the GDP deflator (base=2015).

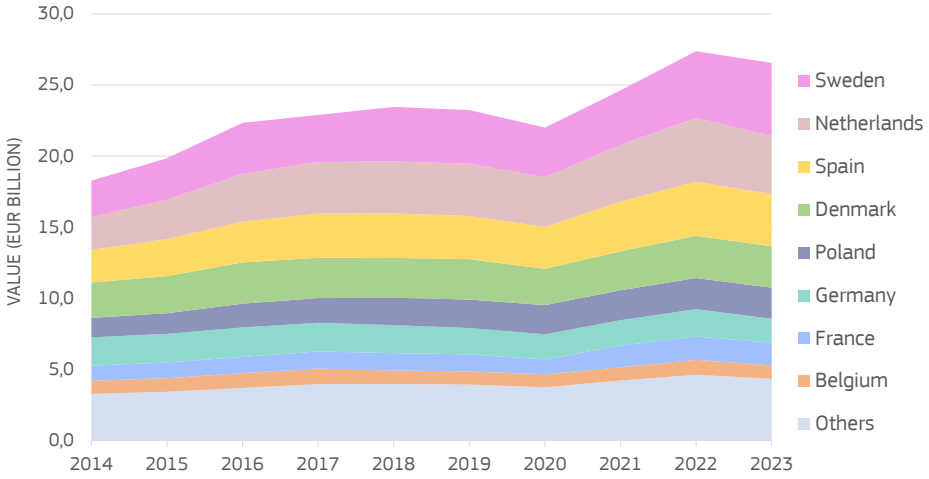


CHART 64

NOMINAL VALUE OF INTRA-EU EXPORTS BY MEMBER STATE IN 2023 AND % VARIATION 2023/2022

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)

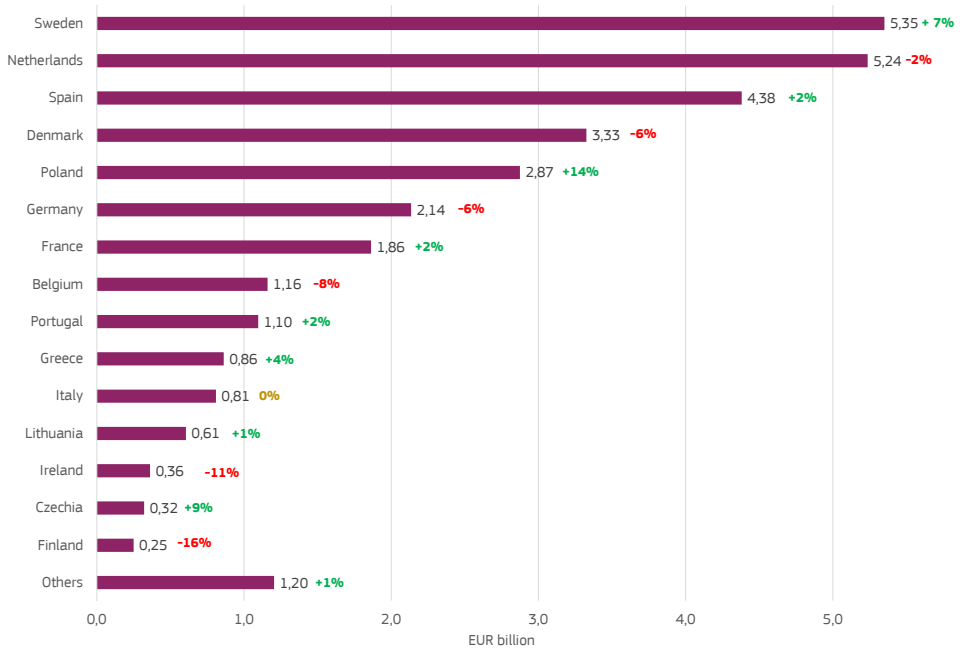
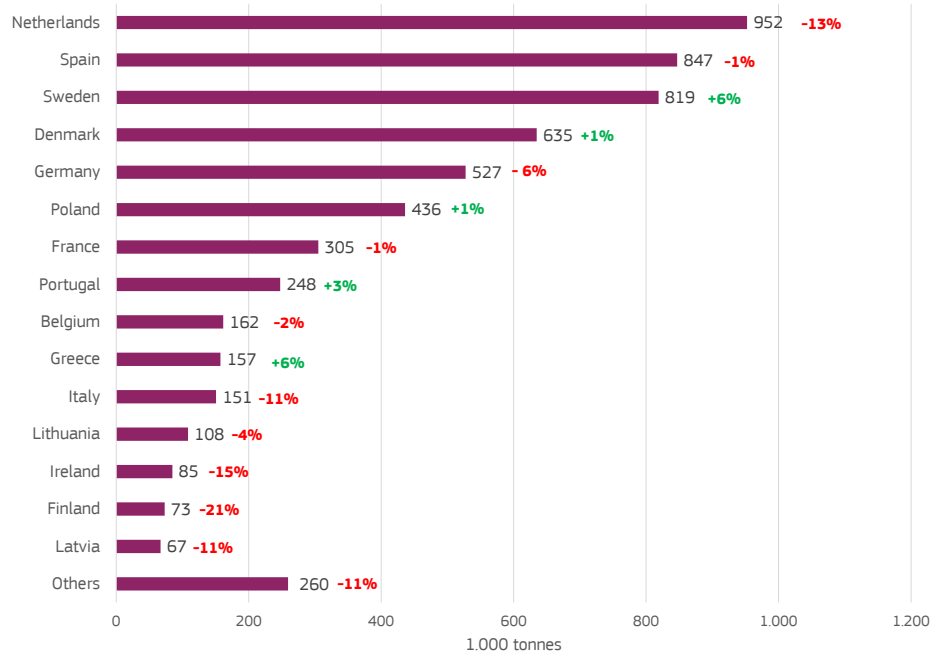


CHART 65

VOLUME OF INTRA-EU EXPORTS BY MEMBER STATE IN 2023 AND % VARIATION 2023/2022

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)



4.5.1 ANALYSIS BY MAIN SPECIES

SALMONIDS

Exports of salmon prevail in the intra-EU trade of fishery and aquaculture products[104]. In 2023, intra-EU exchanges of salmon amounted to 1,02 million tonnes worth EUR 10,4 billion. This represented 33% of the total intra-EU trade in value and 18% of the total in volume.

Among salmonids, which also include trout and other salmonid species, salmon represented 92% of total volume and 94% of total value.

SALMON

According to Eurostat-COMEXT, Sweden alone contributed more than half of the intra-EU exports volume of salmon in 2023, and accounted for 44% of their total value[105]. Denmark and Poland followed, representing 15% and 11% of the volume and 14% and 17% of the

[104] *Ibidem.*
[105] *Ibidem.*

value, respectively. Since Poland has a thriving smoking industry, which is mainly for salmon from Norway, its exports mainly include smoked products and, to a lesser extent, fresh products. On the other hand, exports from Denmark and Sweden consist almost entirely of fresh products.

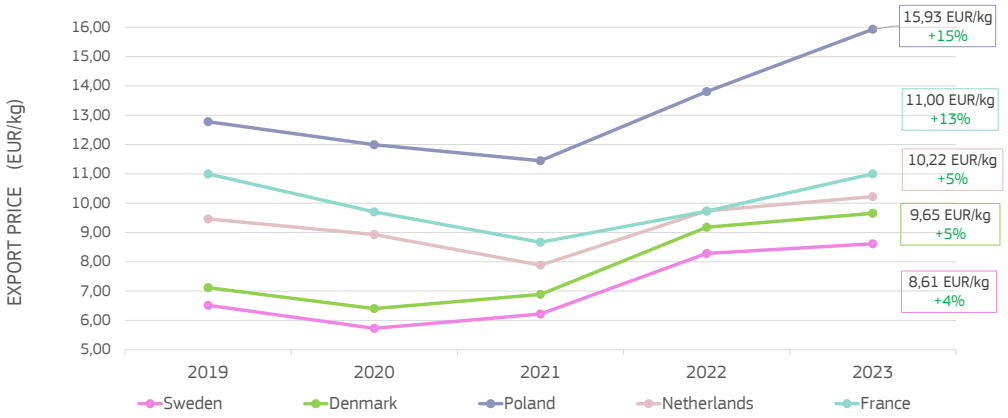
In 2023, intra-EU salmon exchanges experienced a 3% decrease in volume from 2022. Among the three major players in the internal market, only Sweden saw growth in exports, increasing by 4% to a total of 529.095 tonnes. Meanwhile, exports from Denmark and Poland decreased by 13% and 2% which amounted to 153.379 tonnes and 108.916 tonnes, respectively. In contrast, the Netherlands, which followed at a distance, recorded an 11% rise in intra-EU exchanges, reaching a 10-year peak of more than 77.000 tonnes.

In terms of value, the intra-EU trade of salmon achieved a 10-year peak, both in nominal and real terms, at EUR 10,4 billion, increasing 3% or EUR 319 million from 2022. This was linked to a 7% increase in the average export unit value, which had grown from 9,53 EUR/kg to 10,15 EUR/kg. As shown in Chart 66, all the Member States that were included recorded a peak in salmon unit value in 2023. Poland and France recorded the highest percentage increases, reaching 15% and 13%, respectively. Poland also had the highest price, because as mentioned, Polish mainly exports smoked salmon products.

CHART 66

NOMINAL UNIT VALUE OF SALMON IN THE INTRA-EU TRADE BY THE TOP EXPORTERS IN 2023 AND % VARIATIONS 2023/2022

Source: EUMOFA elaboration of Eurostat-COMEXT data (online data code: ds-045409)



GROUNDFISH

In 2023, intra-EU trade of groundfish totalled 769.381tonnes worth EUR 4 billion, a decrease of 1% in volume and 2% in value compared with 2022. The main contributor to this category was cod, which accounted for a significant portion of the groundfish traded in the EU and drove the overall trend.

COD

Cod is the second most valued species among all fishery and aquaculture products traded in the EU[106].

In 2023, the quantity of cod exported by EU countries to other Member States was at a decade low of 296.497 tonnes with a total value of EUR 2,2 billion. This corresponded to a 14% decrease in volume and a 9% decrease in value, the lowest recorded since 2015.

The Netherlands[107] accounted for over one-third of the total cod exports. Its volume of 112.032 tonnes was a 13% decrease from 2022, while the EUR 852 million value was only a 1% decrease .

The majority of these exports went to Spain and Portugal. In Spain, frozen fillets were the primary product, selling at 6,48 EUR/kg, an 8% increase from 2022. Meanwhile, Dutch exports to Portugal mainly consisted of salted whole or gutted cod, dried other cuts and frozen fillets. From 2022 to 2023, the average prices of these products rose significantly. In 2023, salted cod sold at 9,45 EUR/kg which was a 72% increase, dried cod – excluding fillets – reached 10,19 EUR/kg which was a 54% increase, while frozen fillets were priced at 5,47 EUR/kg for a 7% increase. The variation in product types explains why, in terms of

[106] *Ibidem.*
[107] *Ibidem.*

value, exports to Portugal are higher than those to Spain, while in terms of volume, exports to Spain outweigh those to Portugal.

Other major cod exporters within the EU are Denmark and Sweden, which together accounted for 37% of the total volume and 34% of the total value. Their exports in 2023 followed the overall decreasing trend, with a decrease of 1% in volume and 5% in value for Denmark and 13% in volume and 15% in value for Sweden.

Danish cod exports, which totalled 65.300 tonnes worth EUR 441 million in 2023, consisted mainly of fresh whole/gutted cod to the Netherlands and fresh fillets to France. From 2022 to 2023, the price of fresh whole/gutted cod to the Netherlands remained stable at 5,43 EUR/kg, a decrease of only 0,4%, while the price of fresh fillets to France increased by 3% to reach 13,11 EUR/kg. The price difference is due to the different production steps required for each type of product.

Swedish exports of cod amounted to 44.614 tonnes and EUR 316 million in 2023, mainly to Portugal, where cod is sold as dried and salted products. In 2023, average export prices for dried cod increased by 5% to 11,47 EUR/kg and for salted cod by 10% to 8,01 EUR/kg.

OTHER SPECIES

The other major species that dominate intra-EU trade flows are primarily imported species that get re-exported within the EU market. This phenomenon, known as the "Rotterdam effect" occurs when significant volumes of imports are first registered at key entry points such as Rotterdam and then re-exported to other EU Member States.

In 2023, the most traded products in the EU, after cod and salmon, were shrimps – particularly miscellaneous and warmwater shrimps – and skipjack tuna. The EU relies heavily on imports for these species. From 2022 to 2023, the value of warmwater and miscellaneous shrimps decreased by 8%, while their volume decreased by only 1%, reflecting a general global trend. They reached EUR 1,9 billion for a volume of 214.445 tonnes. In contrast, skipjack tuna saw a 2% increase in value but a 7% decrease in volume, leading to a 10% rise in its unit price, from 5,12 EUR/kg to 5,64 EUR/kg. Total intra-EU trade of skipjack tuna amounted to 190.396 tonnes and EUR 1,1 billion.

Trout, meanwhile, recorded a 13% increase in value and a 5% increase in volume, totalling 87.920 tonnes worth EUR 665 million. Its unit price peaked at 7,57 EUR/kg, which was 8% higher than 2022 and the highest price since 2019. The EU, over time, has maintained a good record of self-sufficiency for trout, which, along with mussels, is one of the most farmed species throughout the EU.

5/ LANDINGS IN THE EU

5.1 OVERVIEW

TOTAL EU

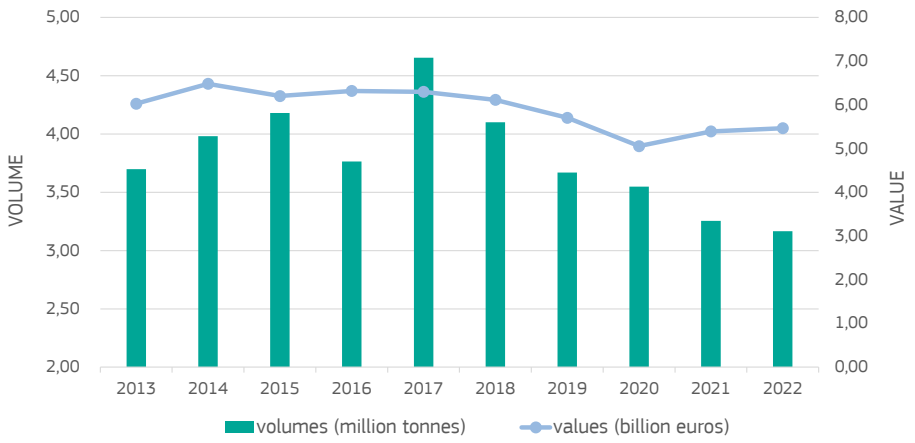
Despite a continued drop in volume since 2018, the value of EU landings climbed for the second year in 2022..

Data on landings in the EU[108] analysed in this report cover the initial unloading of any fishery products, including algae and seaweed, from fishing vessels in each EU Member State[109]. In addition to landings of species destined for human consumption, it includes those destined for industrial use.

In 2022, the EU recorded landings of 3,17 million tonnes, valued at EUR 6,21 billion. Of note, the volume of landings in 2022 was the lowest of the past decade (2013–2022), and continued a downward trend observed since 2018. In the three years from 2020 to 2022, landings decreased by 11% in volume while increasing 16% in value. Over the longer decade perspective, 2022 landings were 14% or 532.571 tonnes lower in volume and 9% or EUR 561 million lower in value than in 2013[110].

From 2021 to 2022, the volume of landings dropped by 3% to 88.741 tonnes. However, their total value increased for the second consecutive year, growing by 6% or EUR 358 million. In 2022, 79% of EU landings of aquatic animals were for human consumption, 17% for industrial purposes, 2% for algae which was also mostly for human consumption, 1% for animal feed and the remaining 1% for unknown purposes.

CHART 67
TOTAL LANDINGS IN THE EU
Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data.
More details on the sources used can be found in the Methodological background.
Values are deflated by using the GDP deflator (base=2015).



In terms of volume, as shown in Chart 68, landings of several main commercial species decreased in the EU from 2021 to 2022.

The most significant decrease was in landings of fresh herring, which fell by 7% compared with 2021. The main driver of this decrease was the reduced volume of herring landings in Germany, where they dropped 88%, from around 28.000 tonnes to

[108] In line with Eurostat's guidelines on the production and dissemination of statistical data by Commission services after the UK withdrawal from the EU, since the most recent reference period is year 2021, UK is excluded from the EU aggregations of each year. In addition, EU data include Croatia since 2013, date of the EU's enlargement to this country.
[109] Data regarding landings do not refer to landlocked countries (Czechia, Luxembourg, Hungary, Austria and Slovakia). The data analysed in this report cover products landed in EU by vessels of: EU Member States, Canada, Faroe Islands, Greenland, Kosovo, Iceland, Norway and the UK.
[110] In this report, value and price variations for periods longer than five years are analysed by deflating values using the GDP deflator (base=2015); for shorter periods, nominal value and price variations are analysed.

just under 3.500 tonnes. Herring landings also decreased in Finland and Denmark, by 23% and 9% respectively.

From 2021 to 2022, landings of blue whiting decreased by 4%, mainly due to lower landings in the Netherlands and Denmark. Similarly, sardines recorded an overall decrease of 2% due to lower landings in the Netherlands and Italy. Decreased landings in Spain resulted in skipjack tuna, anchovies and hake having overall decreases in landings of 4%, 4% and 5%, respectively, from 2021.

Although sandeel is not listed as a "main commercial species", the trend related to sandeel[111] landings is highlighted here due to its impact on the overall volume of EU landings. Nearly all sandeel caught in the EU is landed in Denmark, where it is primarily used for industrial purposes. Over the past decade, sandeel landings have been highly variable, largely driven by fluctuating industry demand. In 2016, they dropped to 40.362 tonnes then surged to 391.930 tonnes in 2017. This sharp increase was mainly due to a boost in fishing quotas for Denmark in 2017, coupled with an increase in the reproductive biomass of sandeel, which supported the full reproductive capacity of its stock in the North Sea. Additionally, reduced fishing mortality rates contributed to the higher catch levels[112]. From 2021 to 2022, Danish landings of sandeel decreased 14%. In a bigger picture, however, they decreased by 65% in the 2013–2022 decade.

Not all the main species recorded a decrease in 2022. Indeed, landings of sprat, which reached a decade low in 2021, saw a slight 5% increase in 2022 largely driven by higher landings in Denmark. Similarly, mackerel, after hitting one of its lowest levels of the decade in 2021, also recorded a 7% increase in 2022, primarily due to increased landings in the Netherlands.

As shown in Chart 69, the value of key species generally increased from 2021 to 2022, with the exception of hake and mackerel. This is mainly linked to a decrease in supply, meaning that the lower volumes led to higher prices. Moreover, 2022 was marked by high inflation that was primarily caused by the economic recovery after the COVID-19 crisis that had led to an increase in demand. At the same time, the inflation was coupled with the Russian military aggression against Ukraine and its consequences, especially on energy costs.

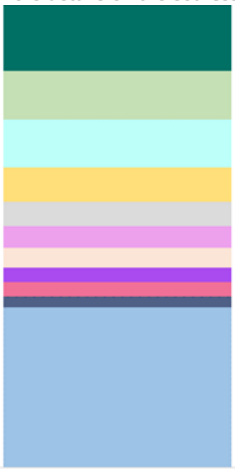
In terms of value, the largest increases were observed for squid, yellowfin tuna, and shrimp *Crangon* spp., which grew by 62%, 72% and 52%, respectively, from 2021.

[111] Sandeel does not constitute a "main commercial species" because of its limited market for human consumption. It thus falls under the aggregation "other groundfish".
[112] The EU Fish Market, 2019 edition: https://eumofa.eu/documents/20124/48460/EN_The+EU+fish+market_2019.pdf/6d17b377-282d-d37c-7d0c-9393add41357?t=1593074325939

CHART 68

MOST IMPORTANT MAIN COMMERCIAL SPECIES LANDED IN THE EU VOLUME IN 2022, % OF TOTAL AND % VARIATIONS 2022 / 2021

Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data.
More details on the sources used can be found in the Methodological background.



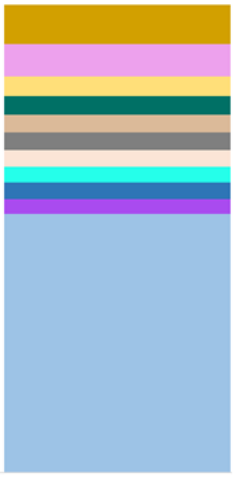
	1.000 tonnes	% of total	% variation 2022/2021
Herring	456	14,5%	-7%
Sprat (=Brisling)	336	11%	5%
Blue whiting	324	10%	-4%
Mackerel	237	7,5%	7%
Sardine	167	5%	-2%
Skipjack tuna	146	5%	-4%
Hake	135	4%	-5%
Anchovy	100	3%	-4%
Atlantic horse mackerel	95	3%	23%
Clam	76	2%	3%
Others*	1.095	35%	-6%
Total: 3,17 million tonnes			

*Others largely include the EUMOFA aggregation "other groundfish" – mainly comprising sandeels that covered alone 3% of total volumes landed.

CHART 69

MOST IMPORTANT MAIN COMMERCIAL SPECIES LANDED IN THE EU NOMINAL VALUE IN 2022, % OF TOTAL AND % VARIATIONS 2022 / 2021

Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data.
More details on the sources used can be found in the Methodological background.



	million euros	% of total	% variation 2022/2021
Shrimps*	515	8%	16%
Hake	435	7%	-1%
Skipjack tuna	255	4%	16%
Mackerel	251	4%	-8%
Squid	235	4%	62%
Common sole	228	4%	6%
Norway lobster	227	4%	15%
Octopus	213	3%	16%
Anchovy	211	3%	4%
Yellowfin tuna	196	3%	15%
Others**	3.440	55%	2%
Total: EUR 6,21 billion			

* "Shrimps" includes *Crangon* spp., coldwater shrimps, deep-water rose shrimps, warmwater shrimps and miscellaneous shrimps.
**Among other main commercial species, the ones with the highest landing value in 2022 were herring, clam, monk and sardine, each covering 3% of the total.

TABLE 18
AVERAGE NOMINAL PRICES AT LANDING STAGE OF TOP MAIN COMMERCIAL SPECIES IN THE EU (EUR/KG)
Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data.
More details on the sources used can be found in the Methodological background.
Possible discrepancies in % changes are due to rounding.

Main commercial species	2018	2019	2020	2021	2022	2022/2021	2022/2018
Anchovy	1,51	1,75	1,46	1,93	2,11	+9%	+40%
Atlantic horse mackerel	0,96	0,90	1,04	1,31	1,02	-22%	+6%
Blue whiting	0,27	0,31	0,41	0,57	0,35	-39%	+27%
Clam	3,08	2,82	2,38	2,34	2,42	+4%	-21%
Cod	3,19	3,21	3,95	4,14	5,49	+33%	+72%
Crab	2,40	2,59	2,22	2,41	3,22	+34%	+34%
European plaice	2,52	2,44	2,62	2,37	3,09	+31%	+23%
Haddock	2,13	2,08	1,79	1,83	1,92	+4%	-10%
Hake	3,18	3,05	3,01	3,07	3,22	+5%	+1%
Herring	0,35	0,33	0,41	0,51	0,40	-21%	+16%
Mackerel	0,90	1,13	1,08	1,23	1,06	-14%	+17%
Monk	5,28	5,34	4,93	5,41	5,52	+2%	+5%
Mussel *Mytilus* spp.	0,23	0,25	0,29	0,31	0,28	-10%	+22%
Norway lobster	9,72	9,27	9,37	9,98	11,79	+18%	+21%
Sardine	0,96	0,98	0,86	0,99	0,98	-1%	+2%
Scallop	2,65	2,69	2,81	2,61	2,77	+6%	+4%
Seaweed and other algae	0,09	0,07	0,07	0,06	0,07	+7%	-23%
Shrimp *Crangon* spp.	3,81	2,89	3,60	4,11	5,94	+44%	+56%
Skipjack tuna	1,08	1,18	1,22	1,44	1,75	+21%	+61%
Sprat (=Brisling)	0,22	0,24	0,23	0,25	0,28	+12%	+27%
Yellowfin tuna	1,93	2,12	1,82	2,48	3,09	+25%	+60%

BY MEMBER STATE

In 2022, Spain retained the lead it had acquired in 2021, with the highest volume and value of landings, remaining stable in volume while growing 15% in value. Indeed, its value, which far exceeded that of other EU Member States, was mainly due to landings of hake, skipjack and yellowfin tuna, and swordfish. Of note, Spain accounts for almost all EU landings of skipjack.

In 2022, Denmark reported its landed volume totalled 605.818 tonnes, the lowest of the decade and 6% less than in 2021. Despite maintaining its position as the second largest EU Member State in terms of landings, this decrease followed a 30% drop recorded from 2020 to 2021. In 2022, Denmark's landings were primarily comprised of sprat, which increased 15% from 2021, followed by herring and sandeel, which decreased by 7% and 14%, respectively. These declines, along with a 49% decrease in Norway pout landings that were 20.553 tonnes less than in 2021, were major contributors to the overall decrease in Danish landings in 2022.

In contrast, France recorded an increase in both volume and value in 2022, by 10% and 19%, respectively, compared with 2021, totalling 312.728 tonnes worth EUR 973 million. Scallops, which increased by 25% in value and 19% in volume compared with 2021, were the main driver of this increase. The Netherlands recorded a 20% decrease in value over the same period, mainly due to a decrease in the unit value of mackerel and herring, while total volume increased by 3%. Landings in Italy, on the other hand, remained almost stable in value, only declining by 0,5%, while the volume decreased by 9% between 2021 and 2022. Lower landings of European plaice, yellowfin tuna, clams and sardines were the main factors behind this decline.

CHART 70

VOLUMES OF LANDED PRODUCTS IN MAIN EU COUNTRIES IN 2022 AND % VARIATIONS 2022 / 2021

Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data.
More details on the sources used can be found in the Methodological background.

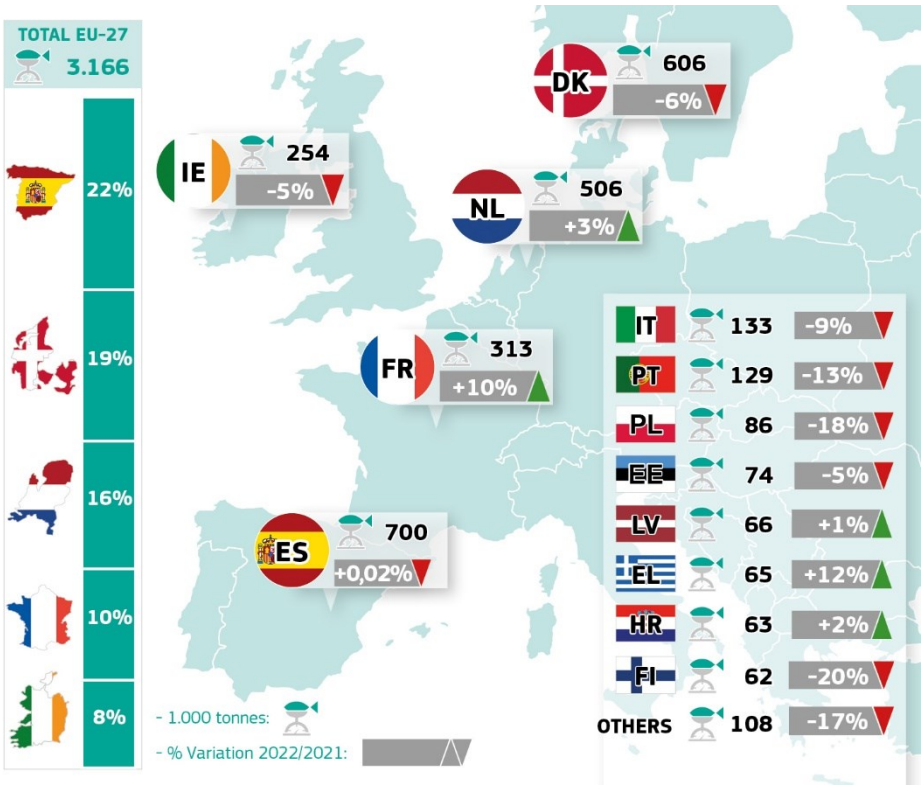
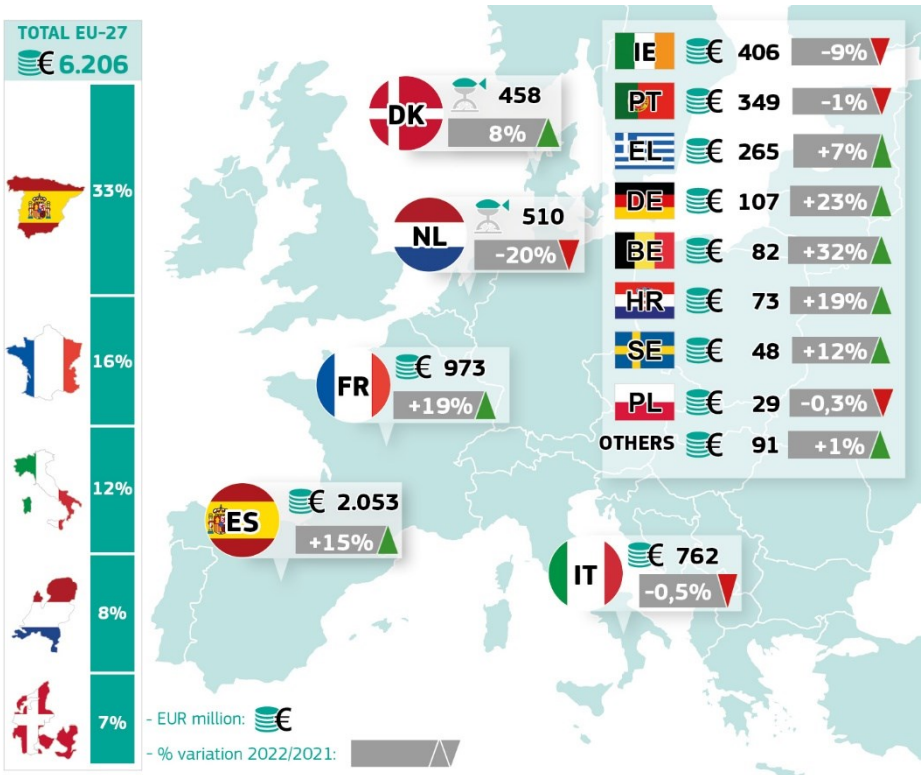


CHART 71

NOMINAL VALUES OF LANDED PRODUCTS IN MAIN EU COUNTRIES IN 2022 AND % VARIATIONS 2022 / 2021

Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data.
More details on the sources used can be found in the Methodological background.



5.2 ANALYSIS BY MAIN SPECIES

SMALL PELAGICS

Landings of small pelagics in the EU reached 1,42 million tonnes for a total value of EUR 1,02 billion in 2022, which was their lowest level of the decade. Their volume decreased 2% from 2021, following a downward trend that had begun in 2018, while their value dropped 10% from 2021.

The 2022 drop in value was linked to the overall decrease in unit value for all the main species, with the exceptions of anchovy and sprat.

This 2021 value increase was primarily driven by an overall rise in unit value for all species of the "small pelagics" aggregation. However, when compared with the figures from 10 years before, there was a notable decrease in both volume and value, of 9% and 15% respectively. Of note, five of the small pelagics' main commercial species – herring, sprat, mackerel, sardine and anchovy – accounted together for more than 41% of landed volumes for all commercial species in 2022, while only accounting for 14% of the total value of EU landings.

HERRING

In 2022, herring, the most landed main commercial species, dropped to 455.568 tonnes, accounting for 14% of the total volume of fish landed in the EU. This was 36.723 tonnes or 7% less than in 2021, representing a 10-year low and continuing the downward trend that had begun in 2018.

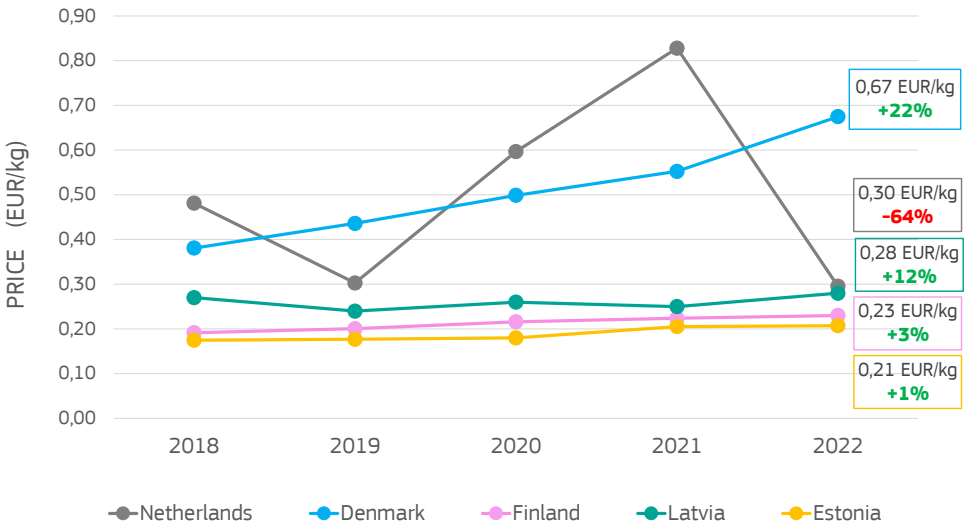
In terms of value, herring landings in 2022 were worth EUR 183 million, a decrease of EUR 72 million or 27% from 2021, and the lowest level of the 2013–2022 decade. The decrease in value was due to a 64% decrease from 0,83 EUR/kg to 0,30 EUR/kg in the average unit price of herring landed in the Netherlands, which resulted in a loss of EUR 63 million. The decrease in volume was mainly linked to a significant reduction in herring landings in Germany, which saw a staggering 88% or 24.410-tonne drop from 2021 to 2022.

More than 60% of the total volume of herring was landed in the Netherlands and Denmark, which accounted for 34% and 29% of the total, respectively. Finland followed, accounting for 11% of the landings, while the rest was mainly landed in other northern EU Member States.

Of note, most of the herring landed in EU countries is intended to be sold fresh, with only landings in the Netherlands being processed and sold as frozen products. From 2021 to 2022, the Netherlands recorded a staggering 58% decrease in the value of its herring landings, while its 17%, volume increase resulted in a 64% drop in unit value which reached 0,30 EUR/kg, as shown in Chart 72. On the other hand, Denmark recorded the highest unit price at 0,67 EUR/kg, up 22% from 2021, while its volume decreased 7% and its value grew 14%.

It should be recognized that landings of herring originate from different stocks, including North Sea stock, Atlantic spring spawning stock and Baltic stock. Each of these has unique characteristics that cater to specific market preferences. Thus, they bring different prices on the market. Also of note, and especially relevant for Denmark and Sweden, is that the share of landings destined for industrial use and those destined for human consumption vary from year to year, resulting in significant price differences.

CHART 72
AVERAGE NOMINAL PRICES OF HERRING LANDED IN MAIN EU MEMBER STATES (EUR/KG)
Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data. More details on the sources used can be found in the Methodological background.



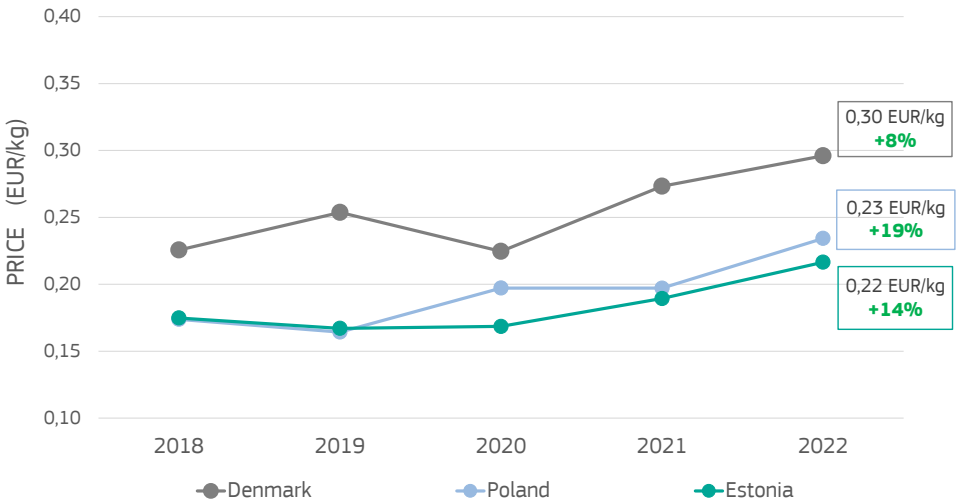
SPRAT

In 2022, EU landings of sprat reached 336.200 tonnes worth EUR 94 million. Compared with 2021, both volume and value increased by 5% and 18%, respectively. This was the first time both had increased since 2019. However, on a longer decade perspective, comparing 2022 to 2013, volumes remained stable while values decreased by 18%.

Denmark, Poland, Estonia and Latvia accounted for 92% of the total EU sprat landings, both in terms of volume and value. All of these countries experienced growth, both in volume and value, between 2021 and 2022. In particular, Danish landings, which account for more than half of the total EU sprat landings and are mainly destined for the fishmeal industry[113], increased by 15% in volume and 25% in value, leading to an 8% growth in unit price and reaching 0,30 EUR/kg.

Landings of sprat in Poland, Estonia and Latvia followed far behind, each recording a slight 4% average increase in volume over 2021. However, the value of their landings grew significantly, averaging a 20% increase. This resulted in a general rise in unit value for sprat across all these countries, with Latvia recording the highest unit value at 0,34 EUR/kg, which was 13% higher than in 2021.

CHART 73
AVERAGE NOMINAL PRICES OF SPRAT LANDED IN MAIN EU MEMBER STATES (EUR/KG)
Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data. More details on the sources used can be found in the Methodological background.



[113] More information on this can be found in the EUMOFA study on EU fishmeal and fish oil production available at the link https://www.eumofa.eu/market-analysis#thematic.

MACKEREL

In 2022, landings of mackerel in the EU totalled 236.598 tonnes, worth EUR 256 million, up 7% in volume but down 8% in value from 2021.

Mackerel landings have shown a fluctuating trend in recent years. Volumes declined in 2018 and 2019, rose in 2020, dropped again in 2021, and increased once more in 2022. Fishing opportunities have contributed to this volatility. A significant fishing opportunity reduction occurred in 2019 due to a decline in mackerel biomass stock and, although partially revised during the year, this reduction had a substantial impact on 2019's mackerel landings. In 2021, however, Brexit's consequences led to a general decline in mackerel quotas, particularly affecting Ireland, which saw a 30% or 23.534-tonne drop in mackerel landings. In 2022, Irish landings of mackerel decreased again by 8% or 4.292 tonnes.

In 2022, the three largest mackerel-landing countries in the EU – the Netherlands, Ireland and Spain – accounted for 74% of the total volume and 71% of the total value. The Netherlands contributed just over a third of the total mackerel landings, with the volume increasing by 12% to 71.798 tonnes, the highest level since 2015. However, the total value of Dutch mackerel landings plummeted 56% from 2021, falling to EUR 42 million, which significantly affected the overall decrease in value. This resulted in a 60% decrease in unit value, from 1,30 EUR/kg to 0,52 EUR/kg. However, due to the vertical integration recorded in the Dutch supply chain[114], where multiple stages of production and distribution are controlled by the same company, it should be noted that the unit value may be underestimated because internal pricing between different stages may not reflect true market prices. Ireland, on the other hand, recorded an 8% decrease in volume but a 2% increase in value, totalling 51.428 tonnes and EUR 77 million. The unit value of mackerel landed in Ireland grew 11%, ending at 1,50 EUR/kg. In Spain, mackerel landings reached 42.881 tonnes worth EUR 60 million, rising 5% in volume and 32% in value compared with 2021. Their unit value also increased, growing by 26% and reaching 1,40 EUR/kg.

SARDINE

From 2021 to 2022, EU sardine landings decreased by 2% in volume and 3% in value, dropping to 166.746 tonnes worth EUR 163 million. This decline continued a trend that has been constant since 2019, except for a temporary increase in 2020.

However, different trends can be observed among EU Member States. Croatia and Spain, which account for 24% and 20% of the total sardine volume respectively, recorded slight decreases in volume while their values increased. Croatia landed 39.535 tonnes of sardine, down 2% from 2021, but the total value rose by 15% to EUR 22 million. Spanish landings dropped to 33.667 tonnes, a 4% decrease, but their value increased by 7% to EUR 42 million.

France, which makes up 15% of the total volume, saw increases in both volume and value, rising by 20% and 17%, respectively, from 2021. French sardine landings reached 24.977 tonnes worth EUR 21 million.

Conversely, Portugal and the Netherlands, which account for 15% and 10% of the total respectively, experienced declines in both volume and value. Portugal's sardine landings totalled 24.711 tonnes worth EUR 28 million, down 6% and 8% from the previous year. Dutch landings declined by 18% in volume to 17.386 tonnes, and also had a 43% drop in value, ending at EUR 15 million.

The unit value of sardines varies significantly across EU countries. Spain, historically first in the ranking for recording the highest unit value, saw its price increase by 11% between 2021 and 2022, reaching 1,24 EUR/kg. In contrast, Croatia had the lowest unit value, at 0,55 EUR/kg in 2022, which was its highest level of the past five years but still the lowest among major sardine-landing countries. France and the Netherlands experienced slight decreases in their unit values. In France, the unit value decreased by 6% to 0,86 EUR/kg, the lowest level since 2018. In the Netherlands, it fell by 31% to 0,85 EUR/kg. Meanwhile,

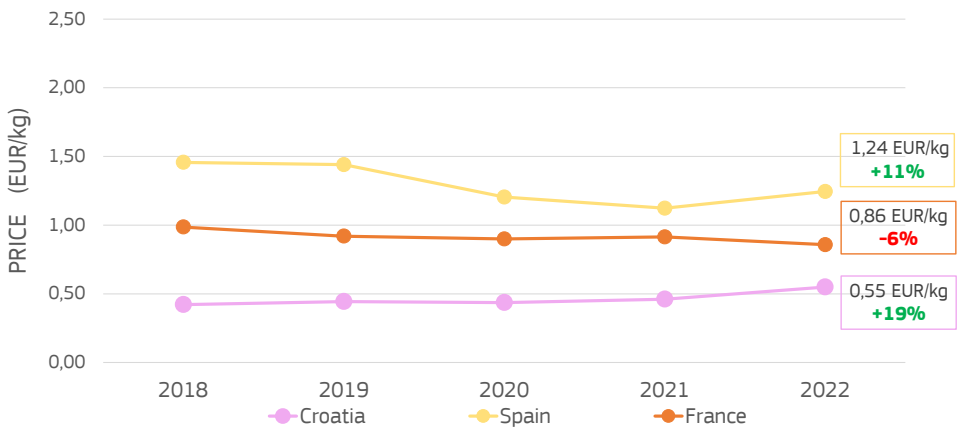
[114] Mackerel in the EU, EUMOFA, 2024: https://eumofa.eu/documents/20124/90048/PTAT+mackerel+in+ES+PT+NL.pdf/b7c12eb7-c7cb-a65b-6b0d-35c13fb53f9d?t=1707750223695

Portugal saw a slight 2% increase in 2022, bringing its unit value to 1,15 EUR/kg, after a consistent decline since 2019.

CHART 74

AVERAGE NOMINAL PRICES OF SARDINE LANDED IN MAIN EU MEMBER STATES (EUR/KG)

Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data. More details on the sources used can be found in the Methodological background.



ANCHOVY

In 2022, EU anchovy landings decreased by 4% or 4.694 tonnes, after two consecutive years of growth. Despite this decrease, their total value increased by 4% or EUR 8 million, reaching 100.082 tonnes worth EUR 211 million.

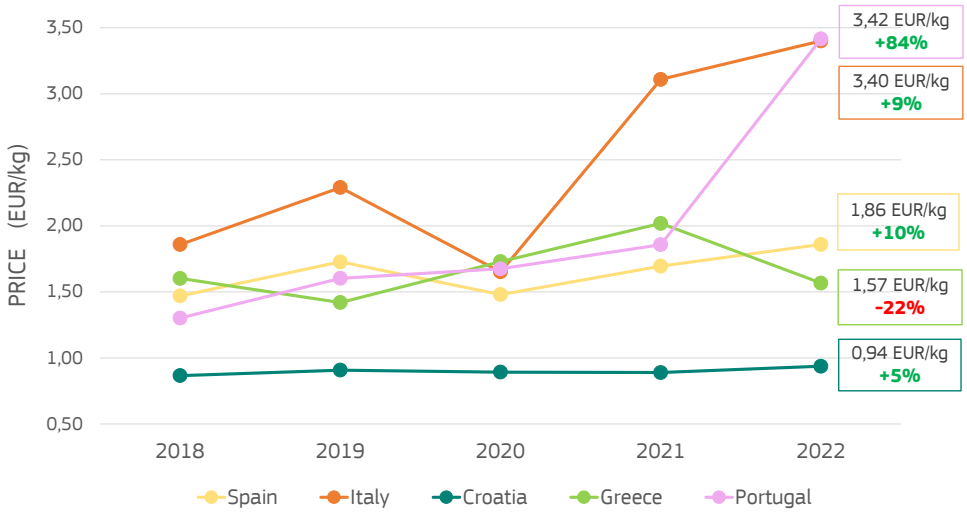
Spain, the leading country for EU anchovy landings, accounted for 44% of the total volume and recorded around a 6.000-tonne decrease in landings of this species. In 2023, Spain saw an 11% drop in volume and a 3% decline in value, leaving the landings at 43.952 tonnes worth EUR 82 million. Also Portugal, which only accounts for 4% of the EU total, recorded a similar decrease, thus together with Spain, drove the overall trend.

The decreases in Spanish and Portuguese landings were partially offset by increases in Italy, Croatia and Greece, which accounted for 24%, 14% and 13% of total volumes, respectively. From 2021 to 2022, Italy recorded a slight growth of 2% in volume and an 11% increase in value, reaching 24.157 tonnes worth EUR 82 million. Croatia saw a 20% increase in volume totaling 13.912 tonnes and a EUR 13 million or 26% increase in value. Greek landings surged by 75% in volume and 36% in value, amounting to 12.818 tonnes worth EUR 20 million.

The value of anchovy landings varies considerably among EU Member States, even when similar volumes are landed. This discrepancy is mainly due to countries' differing unit values. An example of this can be seen in Italy and Spain where, in spite of significant differences in volume, their total values are comparable because of the higher unit value recorded in Italy. In 2022, the unit value of anchovy in Italy reached 3,40 EUR/kg, up 9% from 2021, while in Spain it was 1,86 EUR/kg, up 10% from 2021.

The unit value for anchovies in Croatia, generally lower than in other countries, increased by 5% and amounted to 0,94 EUR/kg. On the other hand, Portugal showed a remarkable 84% rise, to reach 3,42 EUR/kg. Nevertheless, all these countries, with the exception of Greece, recorded their highest unit values of the last 5 years in 2022.

CHART 75
AVERAGE NOMINAL PRICES OF ANCHOVY LANDED IN MAIN EU MEMBER STATES (EUR/KG)
Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data. More details on the sources used can be found in the Methodological background.



GROUNDFISH

In 2022, EU groundfish landings continued the downward trend that began in 2018, despite a brief recovery in 2020. Compared to 2021, both volume and value dropped by 6%, arriving at 644.701 tonnes worth EUR 867 million. The main commercial species in this grouping are blue whiting, hake, cod, haddock, redfish, saithe, whiting, pouting, ling, pollack, grenadier and toothfish, with the remaining species, including sandeel, aggregated under "other groundfish".

Historically, the volume of groundfish landings in the EU has been closely tied to sandeel catches. Since 2016, sandeel landings have fluctuated dramatically, with volumes ranging from less than 50.000 tonnes to over 400.000 tonnes from year to year. This variability is due to sandeel landings being driven by industry demand, with only a few vessels targeting them at specific times of the year for a specialized market. Additionally, Denmark has been responsible for 98% of total sandeel landings over the past decade. For instance, from 2020 to 2021, landings of the species plummeted by 59%, from 240.104 tonnes to 99.256 tonnes. This drop was partly due to a reduction in Denmark's sandeel fishing quota, influenced by Brexit[115]. In 2022, the landed volume of sandeel decreased by 14%, or 13.618 tonnes. However, this was not the sole driver of the overall decline in groundfish volumes. A general trend of decreasing landings was observed across all main species, including blue whiting and hake.

BLUE WHITING

Among groundfish, blue whiting is the most landed main commercial species in the EU. In 2022, it accounted for half of total volumes of this commodity group, followed by hake at 21%, sandeel at 13% and cod at 3%.

It is worth noting that most of the blue whiting landings in the EU are not destined for human consumption, with the exception of Mediterranean catches and a small share of Atlantic catches destined for the export markets involved in production of surimi. Indeed, the majority of landings of this species is destined for the production of fishmeal and fish oil[116].

In 2022, EU landings of blue whiting totalled 323.816 tonnes, a 4% decrease from their peak in 2021. The total value, however, fell by 42% to EUR 112 million. This significant drop in value was primarily driven by the drops in value recorded both in the Netherlands and Ireland, which together account for over two-thirds of the EU's blue whiting landings by volume and value.

The Netherlands saw declines of 11% in volume and 50% in value, as it landed 120.931 tonnes worth EUR 34 million. In Ireland, landings increased by 11% in volume but

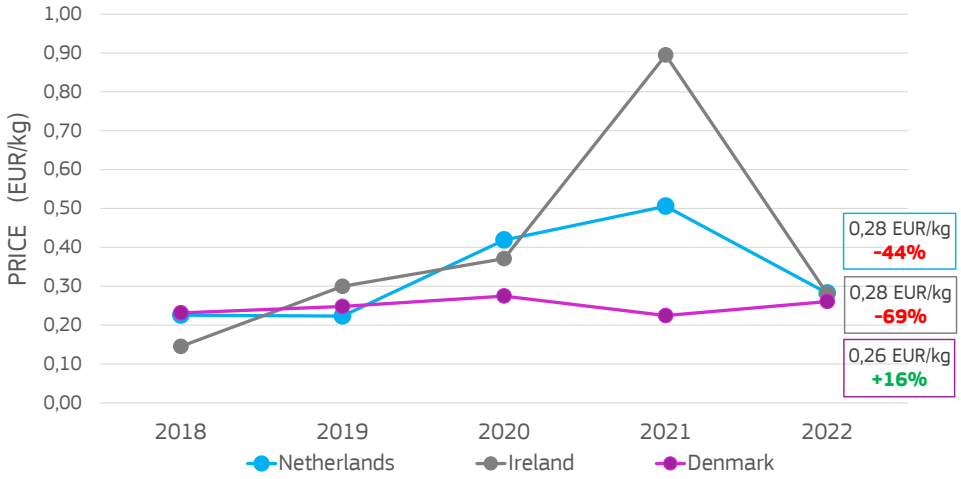
[115] In addition, the difficulty of reaching an agreement on these quotas delayed the start of the sandeel fishing season by two weeks – especially impactful as the season only lasts from 1 April to the end of July.
[116] More information on this can be found in the EUMOFA study on EU fishmeal and fish oil production available at the link https://www.eumofa.eu/market-analysis#thematic.

saw a 65% drop in value with landings totalling 97.012 tonnes worth EUR 27 million. This contrasts with 2021, when the value of blue whiting rose sharply in both countries. From 2020 to 2021 in Ireland, the value surged by 141% despite stable volumes, while in the Netherlands, the value increased by 41% on a 17% rise in volume. This resulted in a sharp decline in their unit values, as shown in Chart 76. In 2022, blue whiting landed in the Netherlands was sold at 0,28 EUR/kg, a significant 44% decrease from the 0,51 EUR/kg registered in 2021. Blue whiting landings in Ireland, on the other hand, dropped 65% in value, while their volume grew 11% over 2021, to reach 97.013 worth EUR 27 million. In 2022, it was sold at 0,89 EUR/kg. Denmark, ranking third, experienced a 12% decline in landed volumes, amounting to 9.611 tonnes. However, the total value increased a slight 2% or EUR 0,4 million, totalling 70.279 tonnes worth EUR 18 million. Danish landings of blue whiting sold at 0,26 EUR/kg, up 16% from 2021.

CHART 76

AVERAGE NOMINAL PRICES OF BLUE WHITING LANDED IN MAIN EU MEMBER STATES (EUR/KG)

Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data. More details on the sources used can be found in the Methodological background.



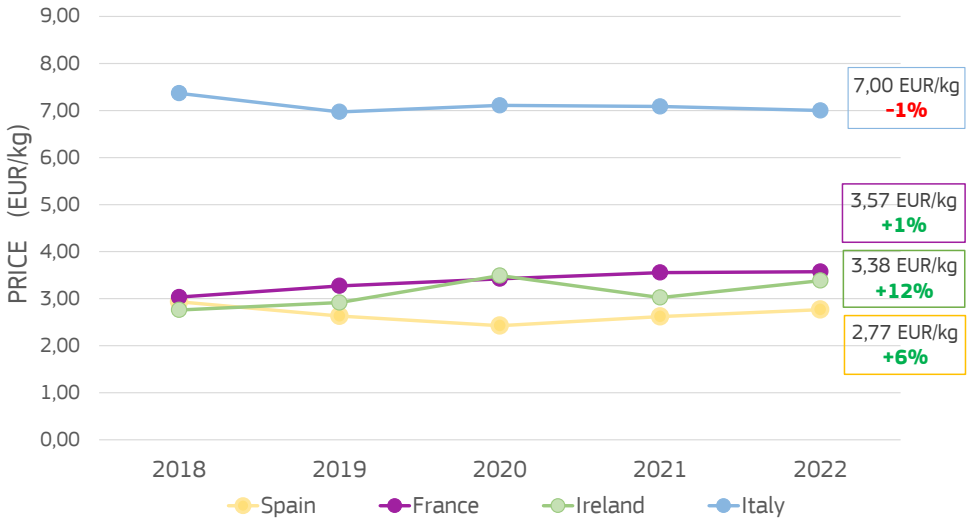
HAKE

Landings of hake in the EU in 2022 amounted to 135.270 tonnes worth EUR 435 million, which represented decreases of 1% in volume and 5% in value from 2021. Further, this resulted in a 5% increase in the unit value of hake, which rose from 3,07 EUR/kg to 3.22 EUR/kg. The main species landed – European hake (*Merluccius merluccius*) – accounted for half of the total, while Argentine hake (*Merluccius hubbsi*), which was exclusively landed in Spain by a long-distance fleet, made up 43% of the total. The remainder were silver hake which accounted for 4% of the total, and Benguela and Senegal hake which accounted for 1% each.

In 2022, Spain accounted for more than two-thirds of total EU hake landings, with a higher share of Argentine hake than European hake. Overall, the volume of hake landings in Spain decreased by 4%, amounting to 95.933 tonnes. In terms of value, Spanish hake landings in 2022 were worth EUR 265 million, a slight 1% increase from 2021. France, ranking second among hake-landing countries, was far behind Spain. In 2022, French landings of hake rose by 12% in both volume and value from 2021, totalling 11.592 tonnes of entirely European hake for a total value of EUR 41 million.

As seen in Chart 77, Ireland ranks thirds followed by Italy. Historically, Italy has had, the highest unit value for hake landings. In 2022, this value reached 7,00 EUR/kg. Conversely, Spain had the lowest unit value, at 2,77 EUR/kg, because of the lower price of frozen whole Argentine hake, which in 2022 amounted to 1,92 EUR/kg.

CHART 77
AVERAGE NOMINAL PRICES OF HAKE LANDED IN MAIN EU MEMBER STATES (EUR/KG)
Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data. More details on the sources used can be found in the Methodological background.



COD

In 2022, cod landings in the EU grew by 1% in volume, reaching 16.680 tonnes, with a total value of EUR 92 million, a 34% increase from 2021. These figures represent a positive signal after the significant drop recorded in 2021, which saw a 33% decrease in volume and a 30% decrease in value, and reached the lowest levels of the past decade. Of note, 2022 marks the first growth in volume of cod landings since 2015. The Member States with highest landings of cod in the EU – Denmark, Germany and Spain – contributed 37%, 22% and 20% of the total volume, respectively. They were followed by Portugal, the Netherlands and France, which accounted for 10%, 8% and 7% of the total, respectively. The largest contributors to this volume increase were France, Spain and the Netherlands. However, Denmark and Germany, historically major cod fishing nations, continued to see declines in volume, with Denmark down by 8% and Germany by 5%. In terms of value, nearly all countries saw substantial increases. The average unit value of cod reached 5,49 EUR/kg in 2022, marking a robust 32% increase from 2021.

CRUSTACEANS

In 2022, landings of crustaceans in the EU increased for the second year in a row, by 1% in volume and an impressive 17% in value over 2021, reaching 109.276 tonnes with a value of EUR 919 million.

SHRIMPS

Shrimps, presented here as all shrimp species combined, are the highest valued product landed in the EU[117]. Of note, 2022 marked the first year since 2018 that shrimps recorded a growth in volume, reaching 58.426 tonnes and returning to pre-pandemic levels. In terms of value, growth had already been recorded in 2021, 6% over 2020, and then, in 2022, it increased by 16% compared with 2021 and reached EUR 515 million.

Crangon shrimp is by far the most landed shrimp. In 2022, its landings accounted for 44% of the total volume of shrimps landed in the EU. In terms of value, from 2021 to 2022, *Crangon* shrimp increased its share from 22% to 29% of the total. This was possible because of its remarkable 52% surge in value, marking the highest level since 2018, and its 5% increase in volume.

The Netherlands landed a total of 13.910 tonnes of *Crangon* shrimp in 2022, worth EUR 83 million. Compared with 2021, the volume decreased a slight 2%, while the value increased 52% to EUR 29 million. Germany, in second place, saw volume increase 11% to 8.832 tonnes and value increase 51% to EUR 49 million.

[117] The aggregation "Shrimps" includes the species: Shrimp *Crangon* spp.,coldwater shrimps (mainly Nothern prawn "*Pandalus borealis*"), deepwater-rose shrimps ("*Parapenaeus longirostris*"), warmwater shrimps (mainly Camarote prawns "*Penaeus kerathurus*") and miscellaneous shrimps (mainly giant red shrimps "*Aristaeomorpha foliacea*", blue and red shrimps "*Aristeus antennatus*" and striped red shrimps "*Aristeus varidens*").

The unit value of *Crangon* shrimp also increased significantly from 2021 to 2022, with the Netherlands increasing 57% and reaching 5,96 EUR/kg, Germany increasing 36% to 5,53 EUR/kg, and Denmark increasing 28% to 6,65 EUR/kg .

Other types of coldwater shrimps besides *Crangon* were mainly landed in Denmark and Sweden. In both EU Member States, the volume of these landings increased by more than 350.000 tonnes from 2021 to 2022. In terms of value, however, Swedish landings of coldwater shrimps showed a larger increase, mainly linked to higher unit values.

Denmark recorded a growth of 18% in volume and 3% in value, totalling 2.353 tonnes, worth EUR 9 million. Sweden, on the other hand, totalled 1.312 tonnes and EUR 12 million, increasing 40% in volume and 11% in value over 2021.

Italy, Spain and Greece, the top three countries for landing of deep-water rose shrimps (*Parapenaeus longirostris*), accounted for over 91% of the total landed volumes in 2022. Overall, landings of these shrimps increased by 3% in both volume and value compared with 2021.

Italy led the ranking despite a 12% decrease in volume and a 2% decrease in value, totalling 6.186 tonnes valued at EUR 36 million. The decline in Italian landings was offset by increases in Spain and Greece. Spanish landings rose by 16% from 2021, reaching 6.160 tonnes, nearly matching Italy's volume and hitting their highest level of the past decade. However, their value saw a slight 2% decrease, dropping to EUR 53 million. In Spain, deep-water rose shrimps are sold at a higher unit value than in Italy and Greece, even though it decreased by 15% from 2021 to 2022, reaching 8,59 EUR/kg. For comparison, the unit value in Italy was 5,90 EUR/kg and in Greece 4,73 EUR/kg in 2022.

Greek landings peaked at 3.934 tonnes and EUR 19 million, with increases of 14% in volume and 15% in value over 2021. This marked the highest levels recorded in the past decade.

The group “miscellaneous shrimps” mainly includes giant red shrimp (*Aristaeomorpha foliacea*), blue and red shrimp (*Aristeus antennatus*), and striped red shrimp (*Aristeus varidens*). Italy and Spain together accounted for around 90% of all these shrimps’ landings recorded in the EU in 2022, both in volume and value. While landings in Italy mainly included giant red shrimp, those in Spain mainly comprised striped red shrimps, blue and red shrimps and striped soldier shrimp.

In Spain, landings of “miscellaneous shrimps” totalled 3.024 tonnes and EUR 75 million, representing a decrease of 7% in volume and 3% in value from 2021. In contrast, Italy's landings decreased by 12% in volume but saw an 8% increase in total value, amounting to 2.805 tonnes and EUR 76 million.

TABLE 19

AVERAGE NOMINAL PRICES OF SHRIMPS IN THE EU COUNTRIES WHERE MOST LANDINGS WERE RECORDED IN 2022 (EUR/KG)

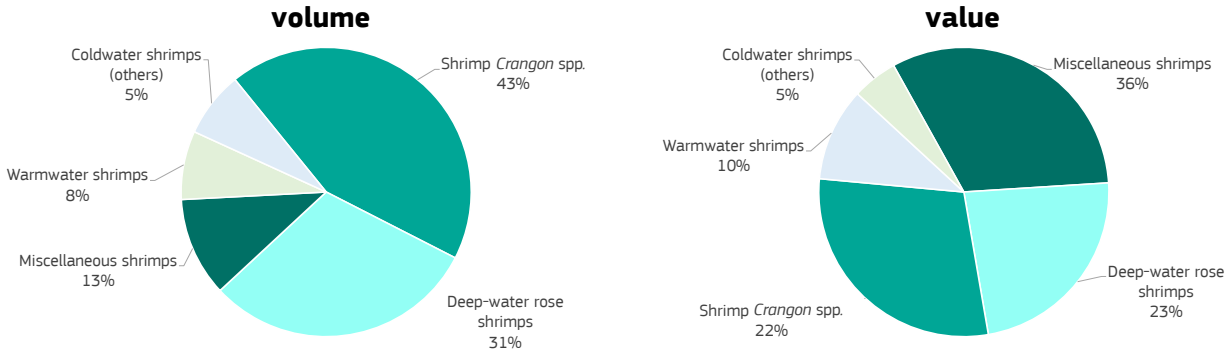
Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data.
More details on the sources used can be found in the Methodological background.

Main commercial species	Member State	2018	2019	2020	2021	2022	2022/2021	2022/2018
Shrimp *Crangon* spp.	Netherlands	3,34	2,77	3,25	3,79	5,96	+57%	+78%
	Germany	3,92	2,72	3,70	4,06	5,53	+36%	+41%
Other coldwater shrimps mainly Northern prawn (*Pandalus borealis*)	Denmark	5,41	4,97	3,55	4,51	3,93	-13%	-27%
	Sweden	10,37	11,92	10,97	11,90	9,41	-21%	-9%
Deep-water rose shrimps (*Parapenaeus longirostris*)	Italy	5,77	6,84	6,56	5,12	5,90	+15%	+2%
	Spain	8,40	8,95	9,64	10,11	8,59	-15%	+2%
	Greece	4,58	4,36	4,11	4,70	4,73	+1%	+3%
Warmwater shrimps mainly caramote prawn (*Penaeus kerathurus*)	Spain	18,52	20,35	11,23	15,91	10,09	-37%	-45%
Miscellaneous shrimps mainly giant red shrimp (*Aristaeomorpha foliacea*), blue and red shrimp (*Aristeus antennatus*), and striped red shrimp (*Aristeus varidens*)	Spain	23,93	21,38	20,97	23,61	24,66	+4%	+3%
	Italy	20,25	21,73	27,15	22,32	27,24	+22%	+35%

CHART 78

LANDINGS OF SHRIMPS IN THE EU IN 2022

Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data.
More details on the sources used can be found in the Methodological background.



TUNA AND TUNA-LIKE SPECIES

In 2022, EU landings of tuna and tuna-like species totalled 312.554 tonnes, equivalent to a value of EUR 965 million. Over the last five years, landings of this group of species have generally decreased, except for a temporary increase in 2021. In 2022, however, the volume resumed its downward trend and decreased by 2% or 5.143 tonnes compared to the previous year. Despite the decrease in volume, the value of these landings reached a five-year high, increasing by 20% or EUR 166 million compared to 2021.

Spain is the leading country for tuna landings in the EU, accounting for 88% of the total. In terms of species, skipjack tuna represents 47% of the total volume of tuna and tuna-like species landed in the EU in 2022, followed by yellowfin tuna, which accounts for 20%, and by bigeye and albacore tuna, each making up around 10% of the total. Of note, three of these species, except albacore, are classified as tropical tunas.

SKIPJACK TUNA

In 2022, landings of skipjack tuna totalled 145.691 tonnes, worth EUR 255 million. This marked a 4% decrease in volume but a 16% increase in value compared with 2021. The volume of skipjack tuna landings decreased significantly during the COVID-19 outbreak and has struggled to return to its pre-pandemic levels. However, this decrease in volume has positively impacted the value, which has increased for the second consecutive year,

reaching one of the highest levels in the past decade. This also resulted in unit values peaking at 1,75 EUR/kg or 21% higher than in 2021.

Of the total volume, 95% was landed in Spain and mainly included frozen products. Spain thus determined the overall EU trend, recording a 2% decrease in volume and reaching 137.983 tonnes, while value grew by 21% and reached EUR 245 million.

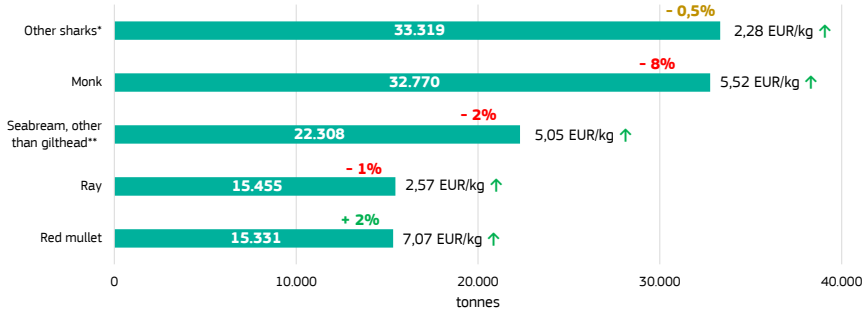
OTHER MARINE FISH

In 2022, the landings of the group "Other marine fish" in the EU reached 228.409 tonnes, the lowest volume recorded in the past 10 years, for a total value of EUR 884 million. Chart 79 provides an overview of the landings of main commercial species belonging to this group.

CHART 79

MAIN SPECIES OF "OTHER MARINE FISH": VOLUME LANDED IN 2021, % VARIATIONS 2022/2021 AND NOMINAL PRICES AT LANDING STAGE

Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main). More details on the sources used can be found in the Methodological background.



*The grouping "Other sharks" mainly includes blue shark (62% of the total), small-spotted catshark (16%), smooth-hounds (10%), shortfin mako and nursehound (4% each), tope shark (1,5%), catsharks nei and catsharks and smooth-hound (1% each), and blackmouth catshark (0,5%).

**The grouping "Seabream, other than gilthead" mainly includes bogue (37% of the total), black seabream (12%), common pandora (11%), white seabream (7%), red porgy and axillary seabream (6% each), blackspot seabream (4%), saddled seabream (3%), sand steenbras, common dentex, common two-banded seabream and sargo breams nei (2% each), large-eye dentex, annular seabream, pink dentex and pandoras nei (1% each).

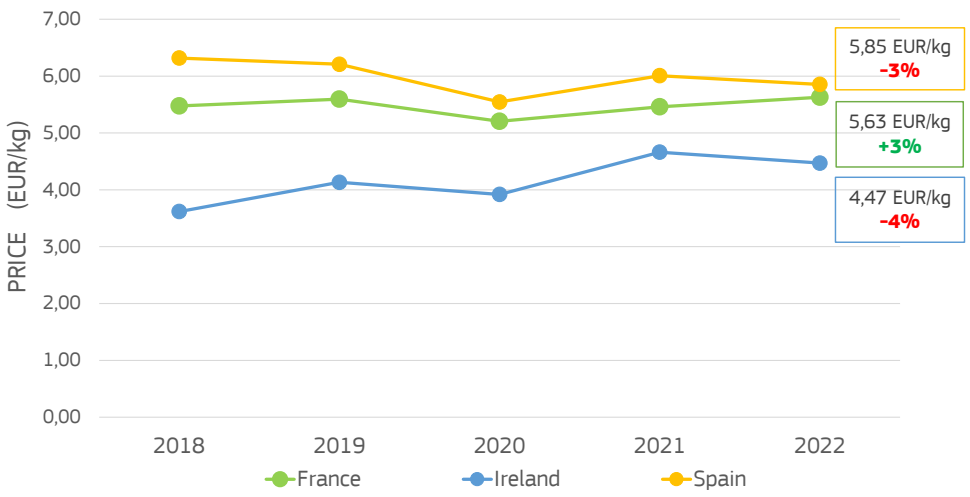
MONK

In 2022, landings of monk in the EU dropped to a decade low of 32.770 tonnes and EUR 181 million, following the downward trend started in 2018. Compared with 2021, volume decreased by 8% or 2.692 tonnes, and value by 6%, dropping to EUR 11 million. Of the total volume, 59,5% was reported under "monkfishes" and "anglerfishes nei[118]" (*Lophius spp and Lophiidae*), 26% under "angler" (*Lophius piscatorius*), and 14,5% under "blackbellied angler" (*Lophius budegassa*). Less than 1% was reported under "American angler" (*Lophius americanus*).

Although from 2021 to 2022, landings of monk in France and Spain increased in volume, and together accounted for slightly less than 60% of the total landings. The overall trend was driven by a significant decrease recorded in Ireland. Irish landings dropped by 28% in volume, which amounted to a 3.217 tonnes decrease, and by 31% in value, for a EUR 17 million loss. In terms of unit value, as shown in Chart 80, average unit values in the three countries followed a similar trend from 2018 to 2021. In 2022, however, France recorded a slight increase from 2021, from 5,46 EUR/kg to 5,63 EUR/kg, while Ireland and Spain recorded a lower average price, dropping to 4,47 EUR/kg and 5,85 EUR/kg, respectively.

[118] Not elsewhere included.

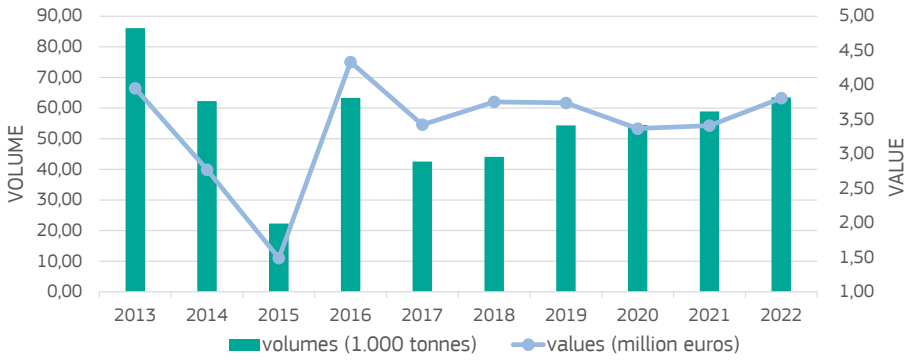
CHART 80
AVERAGE NOMINAL PRICES OF MONK LANDED IN MAIN EU MEMBER STATES (EUR/KG)
Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data. More details on the sources used can be found in the Methodological background.



SEAWEED AND OTHER ALGAE

Seaweeds and other algae account for minor shares of total landings of fishery products in the EU.
In 2022, their landings settled at 63.445 tonnes and EUR 4,26 million, most of which was landed in France, with Spain following far behind.

CHART 81
TOTAL LANDINGS OF SEAWEED AND OTHER ALGAE IN THE EU
Source: EUMOFA, based on EUROSTAT (online data code: fish_ld_main) and national sources' data. More details on the sources used can be found in the Methodological background



From 2021 to 2022, seaweed landings in the EU had an 8% increase in volume and a 16% rise in value. This growth was driven by increases in France and Spain, with each country contributing differently. France primarily impacted the volume increase due to its substantial landings of tangle (*Laminaria digitata*), which is harvested offshore in large quantities for industrial uses such as manufacturing alginic acid for cosmetics. In contrast, Spain had a greater influence on the value increase due to the higher prices fetched by its seaweed, which is also generally used for industrial purposes. In 2022, the average price of seaweed in France stood at 0,04 EUR/kg, stable from the previous year, while in Spain it reached 0,54 EUR/kg, reflecting a 3% increase over 2021. The significant price difference highlights Spain's contribution to the overall rise in value, mainly thanks to the harvesting of more costly species of algae, such as wakame (*Undaria pinnatifida*) which, in 2022, sold at 0,86 EUR/kg.

6/ AQUACULTURE[119]

6.1 OVERVIEW

TOTAL EU

In 2022, EU[120] aquaculture production reached 1,09 million tonnes with a total value of EUR 4,87 billion. This represented a 4% or 40.486 tonne drop in volume from 2021, but a notable 16% or EUR 668 million increase in value. It also was the second consecutive year of growth in production value. Mussels remained the top species by volume, while trout led in value, though they saw declines of 9% and 7%, respectively, which significantly impacted total production volume.

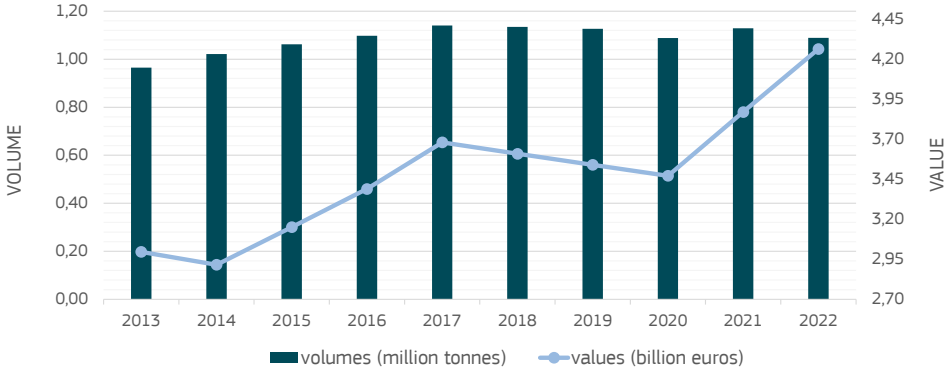
In 2022, EU aquaculture production reached the highest value of the past decade.

Taken from the longer decade perspective[121], EU aquaculture production grew by 123.879 tonnes or 13%, from 2013 to 2022, while its value surged an impressive EUR 1,27 billion or 42% in real terms. Most of this value growth occurred between 2015 and 2017, but then saw declines in both volume and value until 2021. However, the strongest growth of the decade was seen in the upward trends from 2020 to 2021, as illustrated in Chart 82. This was largely driven by increased production tied to recovery from the COVID-19 market downturn. It's worth noting that Chart 82 and other charts covering periods longer than five years display deflated values.

In 2022, the positive trend in value continued, reaching its highest point in a decade, even as production volumes began to decline again. The overall increase in value was primarily driven by significant price hikes across most major species, including trout, European seabass, gilthead seabream, oyster, clam and bluefin tuna. At the same time, production dropped for most of these species, with the exception of gilthead seabream and tuna.

CHART 82
AQUACULTURE PRODUCTION IN THE EU

Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a), FAO, national administrations and FEAP data. Details on the sources used can be found in the Methodological background. Values are deflated by using the GDP deflator (base=2015).



The most important groups of species farmed in the EU are shown in Charts 83 and 84. As illustrated, bivalves and other molluscs and aquatic invertebrates make up just under half of the EU's aquaculture production volume, primarily driven by mussel farming in Spain and oyster farming in France. The categories of "other marine fish",

[119] The main source of data for EU aquaculture production is EUROSTAT. The data cover the aquaculture sector from the point of view of farm-gate production available for human consumption. It is important to note that the production is accounted for at first sale. Thus, production for own consumption is not reported, nor eggs and hatchlings produced for on-growing on the same farm without selling. An exception from the "for human consumption" criteria is being made since the reference year 2016 for aquatic plants, which are included regardless of their final use.
Data were integrated using FAO, FEAP and national sources for several Member States: more details on the integrations made and on data collected for each country can be found in the Methodological background.

[120] In line with Eurostat's guidelines on the production and dissemination of statistical data by Commission services after the UK withdrawal from the EU, since the most recent reference period is year 2021, UK is excluded from the EU aggregations of each year. In addition, EU data include Croatia since 2013, date of the EU's enlargement to this country.

[121] In this report, value and price variations for periods longer than 5 years are analysed by deflating values using the GDP deflator (base=2015); for shorter periods, nominal value and price variations are analysed.

including gilthead seabream and European seabass, and of "salmonids", which include trout and salmon, accounted for 22% and 18% of the total farmed volumes in 2022, respectively. Greece remains the main producer of gilthead seabream, responsible for over two-thirds of EU production, plus it produces more than half of the EU's European seabass. In 2022, France led EU trout production, followed closely by Italy and Denmark, while 90% of the EU's farmed salmon came from Ireland. Freshwater species, particularly carp, also contribute to EU aquaculture, accounting for 10% of total volume, with Poland, Czechia and Hungary being the main producers.

The remaining portion of EU aquaculture, which is distributed among other species groups, recorded an average annual production of around 38.000 tonnes between 2018 and 2022. In terms of volume, all major species groupings saw slight declines from 2021 to 2022, as shown in Chart 83, except for "other marine fish". However, each of these groups experienced an increase in value during this period. The "other marine fish" category, driven by growth in gilthead seabream production in France and Greece, recorded a 4% rise in volume and an impressive 29% increase in value, with unit prices for gilthead seabream jumping by 22%, from 4,88 EUR/kg to 5,95 EUR/kg. A contributing factor to this growth in EU production value for other marine species was the marginal increase in imports from non-EU countries, which rose by less than 2% from 2021 to 2022, compared with its 10% increase between 2020 and 2021. Imports, mainly from Turkey, account for half of the EU market supply for this category. Overall, most aquaculture products saw value increases without a matching rise in volume, primarily due to higher unit prices. Rising production costs, driven by the energy crisis and inflation, and further intensified by the war in Ukraine, significantly increased expenses for inputs such as feed and transportation.

CHART 83

VOLUMES OF MOST PRODUCED COMMODITY GROUPS FARMED IN THE EU AND % VARIATIONS 2022/2021

Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a) and FAO data. More details on the sources used can be found in the Methodological background.

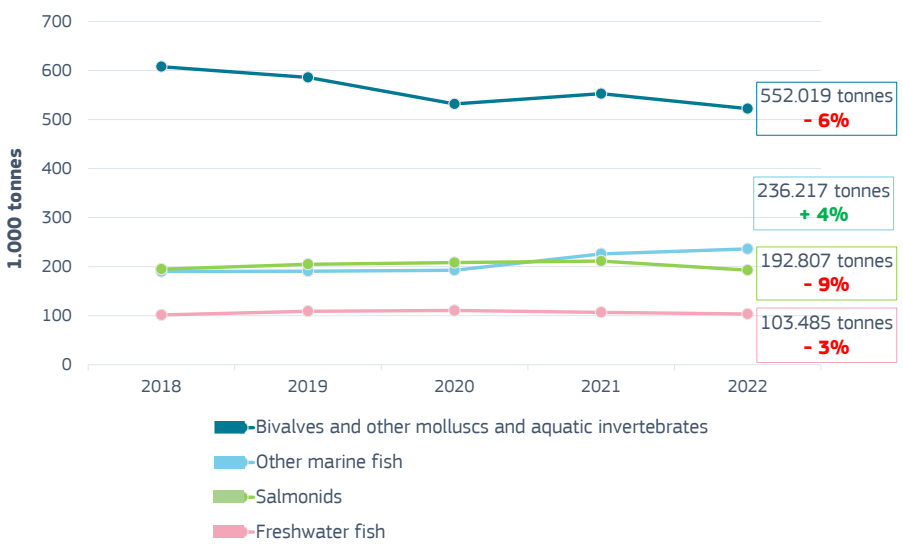


CHART 84

NOMINAL VALUES OF MOST VALUED COMMODITY GROUPS FARMED IN THE EU AND % VARIATIONS 2022/2021

Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a) and FAO data. More details on the sources used can be found in the Methodological background.

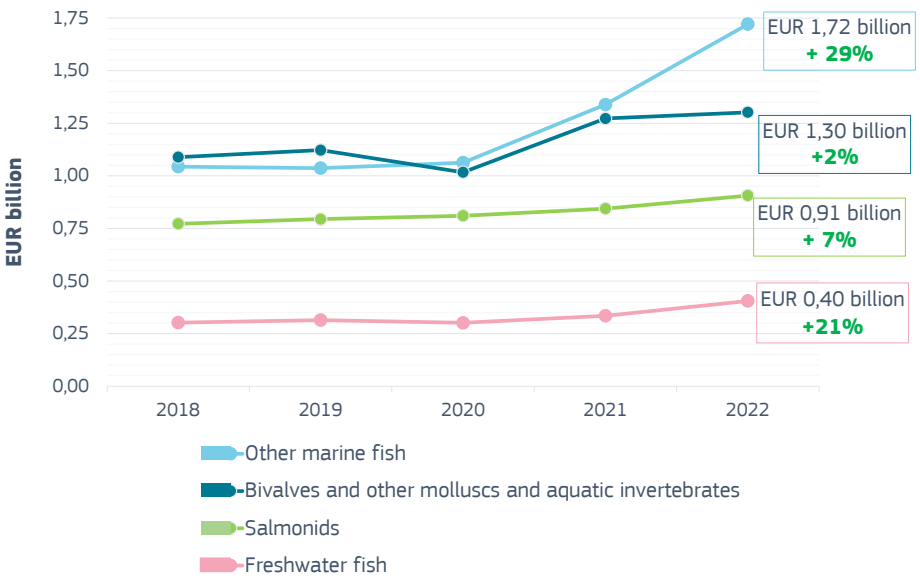
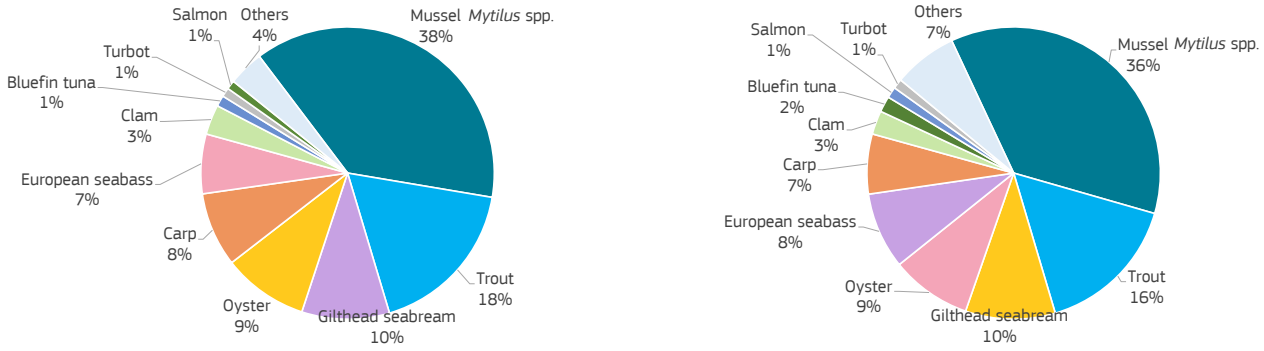


CHART 85

COMPOSITION OF EU AQUACULTURE PRODUCTION BY MAIN COMMERCIAL SPECIES (IN VOLUME): 2013 VS. 2022

Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a), FAO and FEAP data.
More details on the sources used can be found in the Methodological background.



2013
0,96 million tonnes

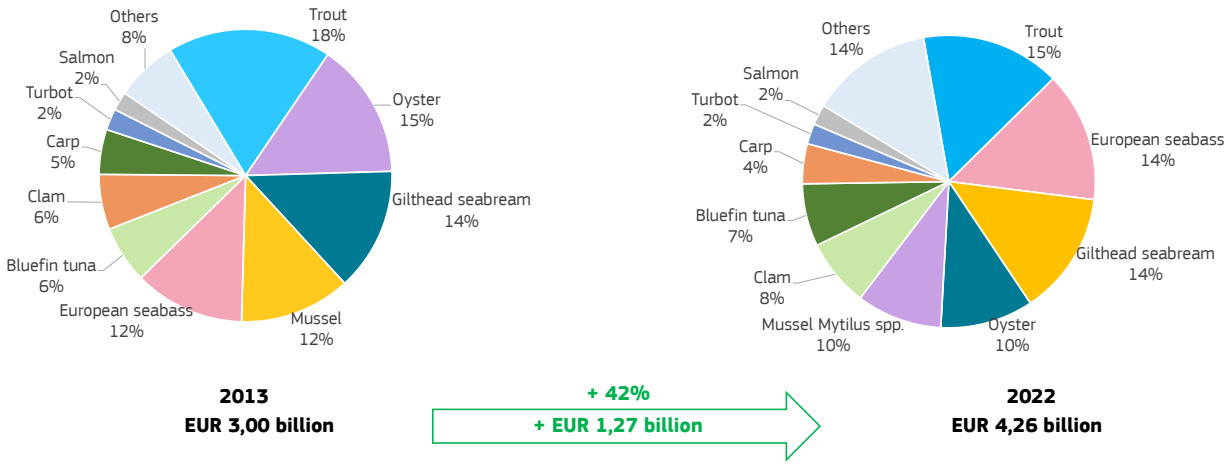
+ 13%
+ 123.879 tonnes

2022
1,09 million tonnes

CHART 86

COMPOSITION OF EU AQUACULTURE PRODUCTION BY MAIN COMMERCIAL SPECIES – IN REAL VALUE (BASE=2015) 2013 VS. 2022

Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a), FAO and FEAP data.
More details on the sources used can be found in the Methodological background. Values are deflated by using the GDP deflator.

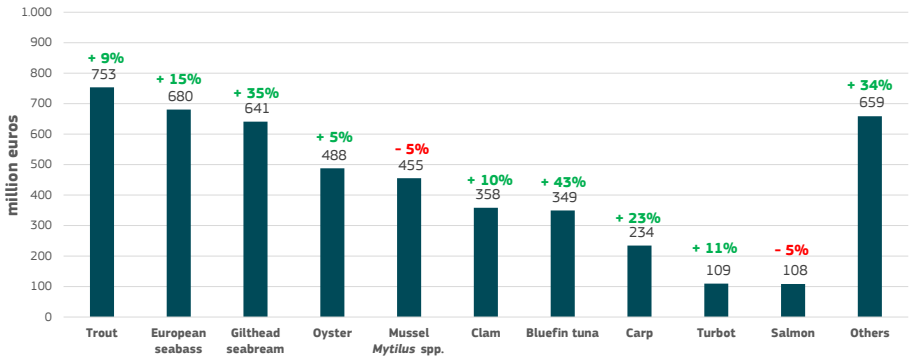


The species composition of EU aquaculture production remained similar to that of the previous 10 years in terms of both volume and value, with mussels being the most farmed species and trout the most valuable. However, some minor changes in the structure of EU aquaculture production can still be observed. In both 2013 and 2022, for example, mussels dominated production, holding the largest share in terms of volume, by 38% in 2013 and 36% in 2022. While mussel production increased by roughly 30.300 tonnes over this period, its share of total aquaculture output declined slightly, reflecting the faster growth of other species. The share of trout production also decreased for volume and value in the decade under analysis, dropping from 18% both in volume and value in 2013 to 16% in volume and 15% in value in 2022. European seabass increased from 7% to 8% in volume and from 12% to 14% in value, making it the species with the second highest value in 2022 after trout. Production of gilthead seabream, on the other hand, remained stable over the years.

The growth of bluefin tuna's share of the total was mainly linked to an exceptional trend in Maltese production from 2013 to 2022[122], when it soared 158% in volume and 165% in value, an increase of slightly less than 10.000 tonnes and EUR 163 million, even after adjusting for inflation. In 2022, Malta's bluefin tuna production increased by 17% in volume and an impressive 56% in value compared to 2021, reaching 15.816 tonnes worth EUR 310 million. It is also worth mentioning the significant increase recorded by freshwater catfish, which is included as the "others" in both charts, as it is not among the top-10 species. In the 2013–2022 decade, its production grew 35% in volume and 51% in value, reaching 11 million tonnes worth EUR 25 million.

[122]The increase seen in Maltese bluefin tuna production could also be related to illegal and unreported farming of the species in Malta. In 2020, both the EU and the Maltese Fisheries Department has filed a criminal case against tuna farmers previously accused of having bought bluefin tuna quotas in excess of what was granted to them. See: How the illegal Bluefin tuna market made over EUR 12 million a year selling fish in Spain | Europol (europa.eu)

CHART 87
NOMINAL VALUES OF MAIN SPECIES FARMED IN THE EU IN 2022 AND % VARIATION 2022/2021
Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a) and FAO data. More details on the sources used can be found in the Methodological background.



BY MEMBER STATE

Aquaculture in the EU is characterised by the production specialisations of a few Member States: Greece for gilthead seabream and European seabass, Spain for mussel, France for oyster, mussel and trout, Italy for clam and trout, Poland for carp, Denmark for trout, Ireland for salmon and Malta for bluefin tuna.

The five largest producers in 2022 by volume were Spain, France, Greece, Italy and Poland, while Greece, Spain, France, Italy and Malta recorded the highest production in value terms. Together, these seven countries accounted for about 70% of the EU's total aquaculture production, both by volume and value, with Spain, France and Greece alone contributing to more than half.

The year 2022 saw a general increase in production values despite a decrease in volumes. This trend is evident in Tables 20 and 21, which show that all major producers experienced declines in volume but increases in value.

TABLE 20
VOLUME OF AQUACULTURE PRODUCTION IN THE EU TOP-5 PRODUCING COUNTRIES (1.000 TONNES)
Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a), and FAO data. More details on the sources used can be found in the Methodological background. Discrepancies in % changes are due to rounding.

Member State	2018	2019	2020	2021	2022	2022/2021
Spain	319	307	277	277	273	-1%
France	188	194	191	193	184	-5%
Greece	132	129	131	144	141	-2%
Italy	143	132	123	146	130	-11%
Poland	37	43	46	45	42	-6%

TABLE 21
NOMINAL VALUE OF AQUACULTURE PRODUCTION IN THE EU TOP-5 PRODUCING COUNTRIES (MILLION EUROS)
Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a), and FAO data. More details on the sources used can be found in the Methodological background.

Member State	2018	2019	2020	2021	2022	2022/2021
Greece	536	508	552	641	852	+33%
Spain	648	633	582	649	809	+25%
France	689	759	723	781	792	+1%
Italy	439	446	392	547	553	+1%
Malta	243	162	215	210	320	+52%

Spain, the EU's leading aquaculture producer, continued its trend of decreasing volumes that began in 2019. However, its production value increased by 25% from 2021 to 2022, reaching a ten-year high in both nominal and real terms. Greece showed a similar pattern, surpassing both France and Spain in total production value with a 33% increase, growing from EUR 641 million in 2022 to EUR 852 million in 2022. This growth was driven by higher prices for gilthead seabream and European seabass, despite a 2% decrease in volume.

In contrast, Malta recorded increases in both volume and value in 2022. Known primarily for farming bluefin tuna, Malta's production saw a 17% rise in volume and a remarkable 56% increase in value, following a slight dip in 2021. This resulted in a 34% increase in the unit price, from 14,66 EUR/kg in 2021 to 19,61 EUR/kg in 2022, and reaching the highest value of the past decade.

Important developments were also recorded by the other main producers. France and Italy saw production reductions of 5% and 11%, respectively, while both their production values increased a slight 1%. In France, mussel production led the decline, falling by 11% from 2021. In Italy, trout production decreased by 29%, contributing to the overall drop in volume.

Poland's aquaculture production recorded a decade value peak in 2022, at EUR 161 million, while its volume decreased by 6% for the second year in a row.

CHART 88
VOLUME OF AQUACULTURE PRODUCTION IN THE MAIN EU PRODUCING COUNTRIES IN 2022 AND % VARIATION 2022/2021

Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a) and FAO data. More details on the sources used can be found in the Methodological background.

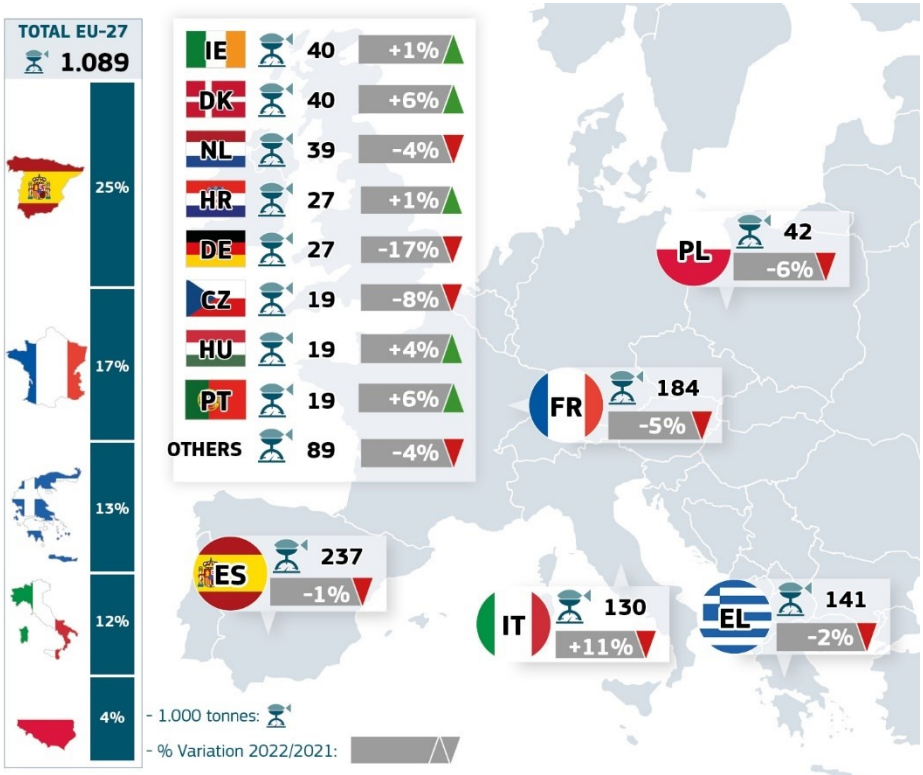
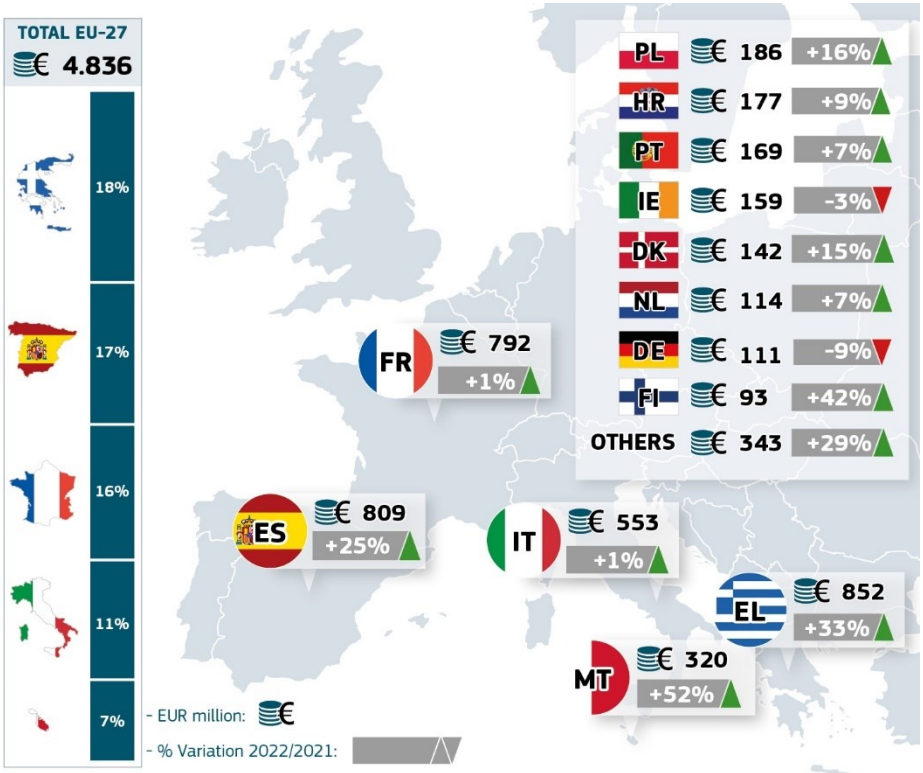


CHART 89
VALUE OF AQUACULTURE PRODUCTION IN THE MAIN EU PRODUCING COUNTRIES IN 2022 AND % VARIATION 2022/2021
Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a) and FAO data. More details on the sources used can be found in the Methodological background.



6.2 ANALYSIS BY MAIN SPECIES

BIVALVES AND OTHER MOLLUSCS AND AQUATIC INVERTEBRATES

In 2022, EU Member States farmed 522.019 tonnes of bivalves and other molluscs and aquatic invertebrates, marking a 6% decrease in volume from 2021. However, their value reached EUR 1,30 billion, reflecting a 2% increase from 2021 and hitting a 5-year peak. Oysters, mussels and clams made up over 99% of the total volume and value of EU aquaculture production within this category.

MUSSEL

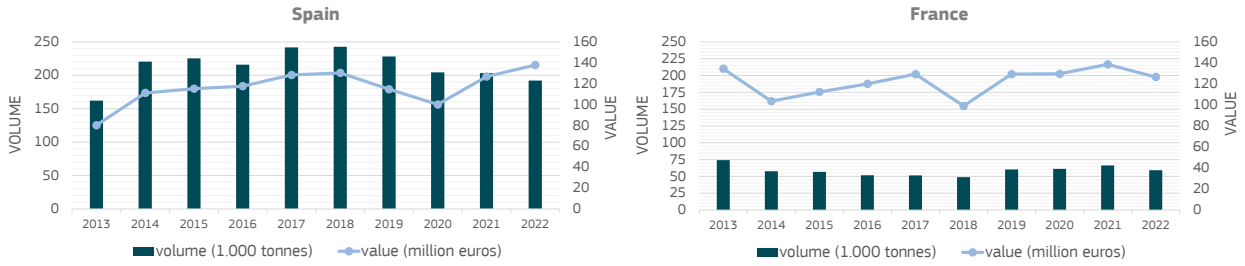
Mussel covers more than one third of the total volume of aquaculture production.
In 2022, the EU produced 396.390 tonnes of mussel worth EUR 455 million. This marked a 7% or 28.852 tonne decline in volume, and an 8% or EUR 23 million drop in value from 2021. EU mussel production has been on a downward trend since 2018, with the exception of a slight 5% increase in 2021, while global production has continued to grow. Despite fluctuating production values, the unit price of mussel has steadily increased over the last five years, growing from 0,87 EUR/kg in 2018 to 1,15 EUR/kg in 2022.
Spain, the EU's largest mussel producer, continued its decline, which began in 2019. After a small recovery in 2021, when production dropped by just 0,6%, 2022 saw a further 5% drop, bringing total production to 192.195 tonnes. This decline could be attributed to factors such as disease, lack of mussel seed (spat), and low profitability. However, the value of Spain's mussel production increased by 13% in 2022, reaching EUR 156 million – the highest of the past decade in both nominal and real terms.
Spain mainly uses the off-bottom raft technique, which is also used in Italy and the French Mediterranean. Bottom culture is mostly used in the northern EU countries of the Netherlands, Germany and Ireland.
To be noted, Spain and Italy mainly produce Mediterranean mussel (*Mytilus galloprovincialis*), which in 2022, sold at average prices of 0,81 EUR/kg and 1,02 EUR/kg, respectively. Both countries used a large share of these volumes as raw material for processing. France, on the other hand, mostly produces the more valuable

blue mussel (*Mytilus edulis*), of which a high share goes for direct consumption and which was sold at an average price of 2,37 EUR/kg in 2022.

CHART 90

PRODUCTION OF FARMED MUSSEL IN MAIN EU PRODUCING COUNTRIES

Source: EUMOFA, based on EUROSTAT data (online data code: fish_aq2a). Values are deflated by using the GDP deflator (base=2015).



CLAM

In 2022, EU clam production reached 28.571 tonnes and EUR 358 million, marking the lowest production volume of the 2013-2022 decade, yet achieving its highest value, both in real and nominal terms.

Also in 2022, Italy dominated EU clam production, accounting for around 75% of the total, with 21.000 tonnes worth EUR 252 million, largely consisting of Japanese carpet shell clams. As shown in Chart 91, this represented a 9% or 2.082 tonne decrease in volume, but a EUR 40 million or 19% increase in value compared to 2021. Italy also saw the ex-farm price of clams rise by over 31% between 2021 and 2022, growing from 9,20 EUR/kg to EUR 12,00 EUR/kg.

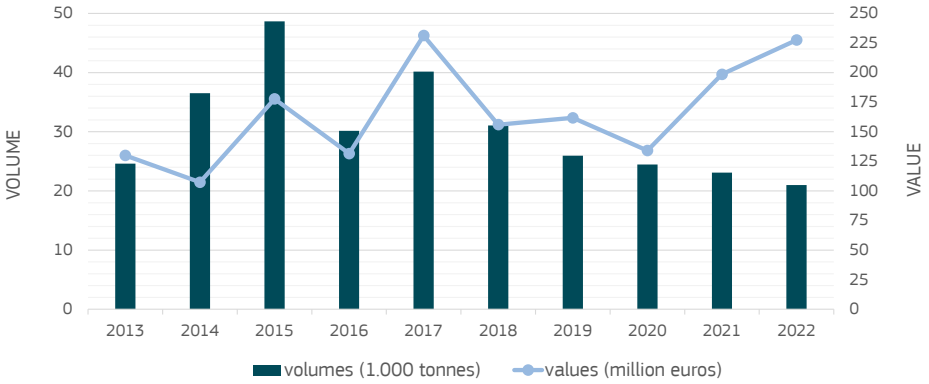
Portugal and France also contribute to EU clam production, but at significantly different price points. In Portugal, the average price in 2022 reached 18,76 EUR/kg, 20% higher than in 2021, while in France, clams sold for 5,83 EUR/kg, a modest 2% increase from the previous year. This price variation may be due to the different species farmed: grooved carpet shell in Portugal, and common edible cockle and Japanese carpet shell in France.

With regard to the methods used, clams of all species are generally bottom farmed in the EU. The Mediterranean coastal environment is particularly suitable for clam farming, thanks to its brackish waters, low tidal movements, the presence of a rather shallow mixed-texture (sand-mud) seabed and, above all, an abundance of nutrients in the form of phytoplankton.

CHART 91

PRODUCTION OF FARMED CLAM IN ITALY

Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a) and FAO data. More details on the sources used can be found in the Methodological background. Values are deflated by using the GDP deflator (base=2015).



OYSTER

In 2022, the EU farmed 97.019 tonnes of oysters, with a total value of EUR 488 million. This marked a 2% increase in volume and a 5% increase in value from 2021, and continued a growth trend that had resumed in 2021, reversing a decline in production that had begun in 2018.

The drops in total EU production of oyster recorded in 2019 and 2020 could be explained by the norovirus *(gastroenteritis virus)* found in some production areas of France since December 2019. The outbreaks led to temporary closures and several sales bans in the Nouvelle-Aquitaine region during 2020. However, the slight increases in production during 2021 and 2022 were driven by higher output in the Netherlands, Portugal and Ireland, while the rise in value was primarily due to growth in French production.

France remains the EU's leading oyster producer, accounting for more than 80% of total production, concentrated on its Atlantic coast. As a major consumer market, most of France's oyster production is consumed domestically. In 2022, French oysters sold for an average ex-farm price of 5,14 EUR/kg, a 3% increase from 2021.

In contrast, smaller but export-oriented oyster industries have emerged in Ireland, Portugal and the Netherlands. Ireland's 2022 production amounted to 8.246 tonnes, valued at EUR 42 million, with increases of 3% in volume and 9% in value. The average price of Irish oysters grew by 6%, from 4,84 EUR/kg to 5,14 EUR/kg.

Portugal saw its oyster production reach a 10-year high of 2.465 tonnes worth EUR 10 million in 2022, which represented increases of 18% in volume and 11% in value from 2021. However, the average price slightly decreased from 4,52 EUR/kg in 2021 to 4,27 EUR/kg in 2022.

The Pacific cupped oyster (*Crassostrea gigas*) remains the dominant species farmed in France, Ireland, Portugal and across the EU.

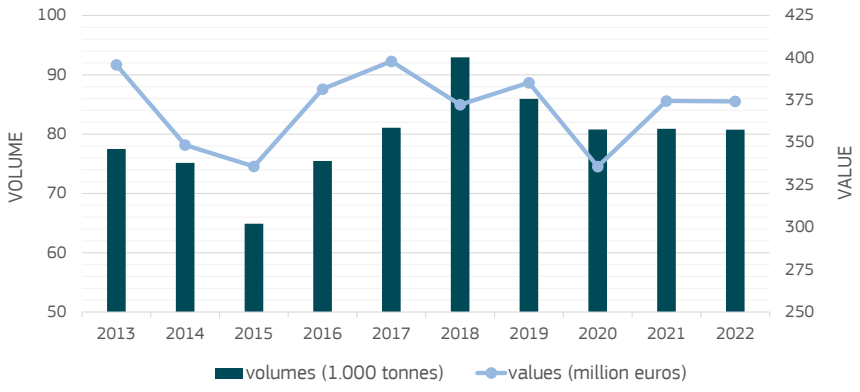
Meanwhile in 2022, the Netherlands experienced its own 10-year peak in overall oyster production, producing 3.467 tonnes. This represented a 68% volume increase from 2021 and, in turn, generated EUR 9 million in value which was a 50% increase from 2021. The price of cupped oysters in the Netherlands saw a modest rise from 2,26 EUR/kg to 2,37 EUR/kg, with this species accounting for 89% of the country's total oyster production.

Although oyster production traditionally takes place in intertidal zones with bottom culture, cases of rack-and-bag production are not uncommon.

CHART 92

PRODUCTION OF FARMED OYSTER IN FRANCE

Source: EUMOFA, based on EUROSTAT data (online data code: fish_aq2a). Values are deflated by using the GDP deflator (base=2015).



SALMONIDS

Salmonids accounted for 19% of the value and 18% of the volume of EU farmed production in 2022.

TROUT

Trout alone accounted for 16% of total volume and value of EU aquaculture production.

In 2022, the EU produced 173.718 tonnes of trout – mostly rainbow trout (*Oncorhynchus mykiss*) – which had a total value of EUR 753 million. This marked a ten-year peak in value, despite the lowest production volume since 2015. Compared with 2021, 2022 production volume decreased by 9%, while value increased by 9%.

There are two main reasons behind this contrasting trend of declining volume and rising value. First, Italy and France, the two largest EU producers, experienced significant production declines. Italy produced 29.850 tonnes in 2022 for a total value of EUR 99 million, a decrease of 29% in volume and 30% in value compared with 2021. In addition, its unit price decreased a slight 2%, from 3,40 EUR/kg in 2021 to 3,32 EUR/kg in 2022. France also recorded a 7% reduction in production, reaching 31.964 tonnes in 2022, valued at EUR 139 million. Although total value decreased by a minimal 0,3%, the unit price rose by 7%, from 4,04 EUR/kg in 2021 to 4,34 EUR/kg in 2022.

The second factor was an increase in unit prices among other producers. Denmark produced 26.279 tonnes of trout, a 1% decline from 2021, but its total value surged by 19%, reaching EUR 110 million. This increase raised the unit price by 15%, from 3,47 EUR/kg in 2021 to 4,17 EUR/kg in 2022.

Poland and Finland, on the other hand, recorded increases in both production volume and value. Poland's trout production grew by 9% in volume and 15% in value from 2021 to 2022, reaching 20.940 tonnes with a total value of EUR 90 million. The average price increased by 6%, from 4,00 EUR/kg to 4,25 EUR/kg. Finland saw its trout production reach 15.253 tonnes which had a total value of EUR 83 million, and represented increases of 13% in volume and an impressive 42% in value from 2021 to 2022. The unit price in Finland increased by 27%, from 4,32 EUR/kg in 2021 to 5,46 EUR/kg in 2022.

Rainbow trout farming systems across the EU share similarities, primarily using freshwater flow-through systems such as raceways, and earthen and concrete ponds. While some production occurs in sea or brackish waters with cage systems, most raceways use fresh water from rivers.

TABLE 22
PRODUCTION OF FARMED TROUT IN MAIN EU PRODUCING COUNTRIES
Source: EUMOFA, based on EUROSTAT data (online data code: fish_aq2a). More details on the sources used can be found in the Methodological background

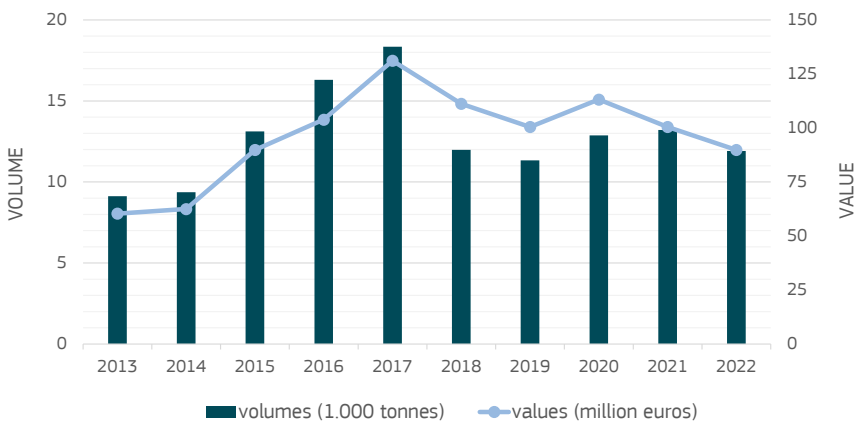
	2022			% variations 2022/2021		
Member State	Volume (tonnes)	Price (EUR/kg)	Value (million euros)	Volume	Price	Value
France	31.964	4,34	139	-7%	+7%	0,0%
Italy	29.850	3,32	99	-29%	-2%	-30%
Denmark	29.479	4,17	110	-1%	+20%	+20%

SALMON

EU production of salmon reached 13.300 tonnes in 2022, an 11% decrease from 2021. Overall, its total value amounted to EUR 108 million, 5% less than 2021. This marked the second year of decrease in salmon production, both in volume and value, which was mainly related to adverse environmental events happened in 2021, such as a toxic algal bloom that caused huge losses at the salmon-farming facilities in Mowi, Ireland. Meanwhile in Denmark, a large recirculating salmon farm burned, resulting in significant losses. The average ex-farm price of salmon rose a slight 6%, reaching 8,15 EUR/kg in 2022.

Salmon is largely farmed in Ireland, which produced 11.916 tonnes or 90% of the EU total in 2022. As for value, it accounted for EUR 101 million or 93% of the EU total. Its average price dropped 13% from 2020 to 2021, but then increased 6% in 2022, growing from 8,03 EUR/kg to 8,49 EUR/kg. Ireland's prices are higher than those of other producing countries, such as Denmark and Poland, mostly because Ireland's salmon production is exclusively organic.

CHART 93
PRODUCTION OF FARMED SALMON IN IRELAND
Source: EUMOFA, based on EUROSTAT data (online data code: fish_aq2a). Values are deflated by using the GDP deflator (base=2015).



FRESHWATER FISH

Freshwater species farmed in the EU largely comprise carps and eels.

CARP

Carp accounted for 7% of the EU's aquaculture production volume and 5% of its total value in 2022. Its total production amounted to 72.167 tonnes, marking a 7% decline from 2021 and continuing a three-year trend of decreasing volumes. In terms of value, however, it reached EUR 234 million, representing a 10-year high in both nominal and real terms, with a 23% increase from 2021.

Most of the EU's carp production is concentrated in Poland, Czechia and Hungary, which together make up two-thirds of the total production, with shares of 25%, 24% and 17%, respectively. All three countries saw a drop in production but experienced significant increases in value. Other countries with smaller production volumes – including Romania, Germany, Lithuania, Bulgaria and Croatia – together accounted for 30% of EU carp production and followed the same trend of decreasing volume but increasing value[123].

Poland and Czechia were the main contributors to the overall decline in volume and rise in value. Polish carp production dropped to 18.003 tonnes in 2022 which was 5% lower than in 2021, while its value surged by 42%, reaching EUR 81 million. Czechia recorded 17.194 tonnes for an 8% drop in production, while its value rose by 15%, reaching EUR 42 million. Hungarian production of carp decreased a slight 1%, reaching 12.606 tonnes, but its value increased a significant 42%, amounting to EUR 38 million. From 2021 to 2022, all of EU ex-farm prices increased. The average price of carp in Poland was 4,48 EUR/kg, in Czechia it was 2,43 EUR/kg, and in Hungary it reached 3,05 EUR/kg, which represented increases of 49%, 26% and 43% respectively.

EEL

In 2022, EU eel production reached a ten-year low, dropping to 4.910 tonnes, marking a 4% decrease from 2021, while at the same time, production value increased by 14%, reaching EUR 60 million.

Eel farming in the EU is highly concentrated in three countries. The Netherlands, which produced 2.000 tonnes of eel valued at EUR 25 million in 2022, saw a 3% increase in volume and a significant 35% increase in value. Germany produced 1.158 tonnes of eel, worth EUR 17 million EUR, with production volume remaining stable but with a 15% rise in value. In contrast, Denmark experienced a sharp decline, with a 61% reduction in eel production, both in volume and value, down to around 450 tonnes worth EUR 4 million. This significant loss contributed to the overall downward trend in EU eel production volume.

The increase in value across the EU was largely driven by rising prices, particularly in the Netherlands, where the price jumped by 32% to 12,50 EUR/kg, and in Germany, where it increased by 15%, reaching 15,04 EUR/kg.

[123] Romania is the only country which did not record an increase in production, which decreased 3% from 2021 to 2022.

OTHER MARINE FISH

Two species of this commodity group, namely gilthead seabream and European seabass, account for significant portions of EU aquaculture production. In 2022, gilthead seabream covered over 13% of the total EU value and 10% of its total volume, while European seabass contributed 14% of the value and 8% of the volume. They are usually farmed in the same sites in the Mediterranean, prevalently in Greece, Italy and Spain.

GILTHEAD SEABREAM

In 2022, the EU production of gilthead seabream reached a 10-year peak in both volume and value, totalling 107.742 tonnes and EUR 581 million, which represented an increase of 11% in volume and 27% in value.

Greece, by far the leading producer in the EU, has shown a trend of continuous growth in recent years. It accounted for 70.256 tonnes or 65% of the EU total in volume and EUR 403 million or 63% of EU value in 2022. This represented a 5% increase in volume and a staggering 35% increase in value from 2021, while its ex-farm price jumped by 31%, from 4,39 EUR/kg to 5,74 EUR/kg.

Italy accounted for 7% in volume and 9% in value of the EU total, totalling 7.928 tonnes worth EUR 59 million. This represented a 1% dip in volume but a 15% growth in value. After four years of declining production, Italian production of gilthead seabream showed a turnaround from 2020 to 2021, with its production growing by 30%. In 2022, this growth remained almost stable, while its value continued to grow.

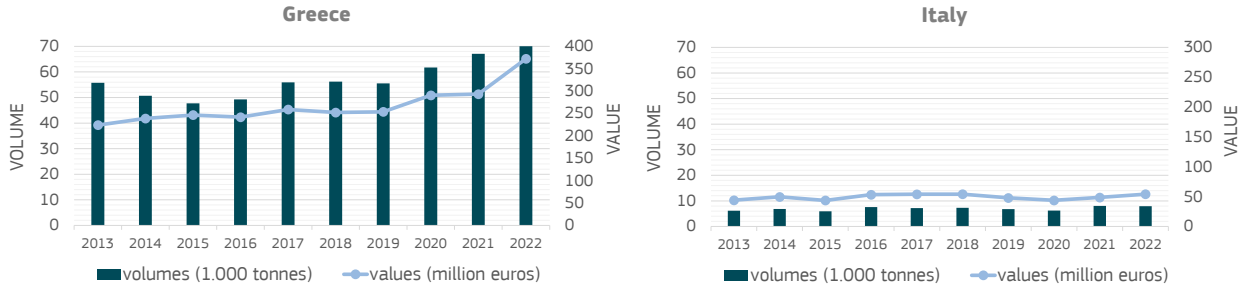
Spain, another major farming country covering 8% both in volume and value of the EU total, reprised its gilthead seabream production from 2021 to 2022, from around 1.500 tonnes to 9.038 tonnes, a 496% increase. Also, its total value spiked, from EUR 11 million to EUR 49 million, increasing 325%. Spain had been the second largest producer of seabream after Greece until 2019, but its production plummeted in 2020 and again in 2021, reaching its lowest level of the decade. This was likely due to the Spanish seabream sector experiencing heavy losses due to damages caused by Storm Gloria in 2020 and a red algae bloom in 2021. The bloom, caused by the proliferation of harmful algae severely depleted oxygen levels in the water and released toxins that affected marine life. This environmental event led to massive fish mortalities, particularly for species such as gilthead seabream that are sensitive to changes in water quality.

Almost all production in the EU is raised in offshore farming facilities with cages and open net pens.

CHART 94

PRODUCTION OF FARMED GILTHEAD SEABREAM IN MAIN EU PRODUCING COUNTRIES

Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a) and FAO data. More details on the sources used can be found in the Methodological background. Values are deflated by using the GDP deflator (base=2015).



EUROPEAN SEABASS

The EU seabass aquaculture industry grew strongly during the last decade. By 2022, it had reached 92.081 tonnes for a total value of EUR 680 million, a 10-year peak both in nominal and real terms. Compared with 2021, it represented a 5% decrease in volume but a 15% increase in value.

Greece and Spain, the two largest producers, in 2022 accounted for 51% and 26% of the total seabass volume, respectively. Other key producers included Croatia, Italy and France. Greece, the largest producer, was responsible for driving the overall trend in

2022. It saw its seabass production reach 47.068 tonnes, which was a 4.164 tonne or 8% drop from 2021, but its value reached EUR 342 million, for a 24% or EUR 67 million increase.

Spain and Croatia both saw growth in volume and value. Spanish production reached 24.121 tonnes, a 5% increase, while its value rose by 19% to EUR 182 million. Croatia's production grew by 11% to 10.034 tonnes, with a 26% increase in value, reaching EUR 68 million.

Italy, which had recorded a 55% spike in production in 2021, saw a sharp decline in 2022, with production and value both dropping by 32%, resulting in 4.972 tonnes worth EUR 40 million.

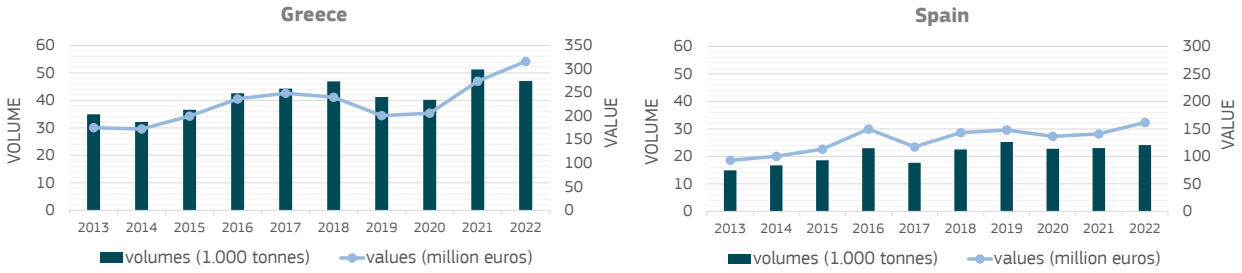
The average seabass price increased across Greece, Spain and Croatia. In Greece, the price rose by 35% to 7,27 EUR/kg, while in Spain it increased by 14%, reaching 7,56 EUR/kg. In Croatia, the price grew by 13%, ending at 6,76 EUR/kg. In contrast, Italy saw a slight 1% decline in price, but it remained the highest among the major producers, ending at 8,06 EUR/kg.

Seabass is cultured intensively, predominantly in cages or open-net pens in the coastal waters of southern EU. The market for seabass production in the EU is dominated by *Dicentrarchus labrax*. Only a negligible percentage is accounted for by other marine fish belonging to the Moronidae family.

CHART 95

PRODUCTION OF FARMED EUROPEAN SEABASS IN MAIN EU PRODUCING COUNTRIES

Source: EUMOFA, based on EUROSTAT (online data code: fish_aq2a) and FAO data. More details on the sources used can be found in the Methodological background. Values are deflated by using the GDP deflator (base=2015).



MISCELLANEOUS AQUATIC PRODUCTS

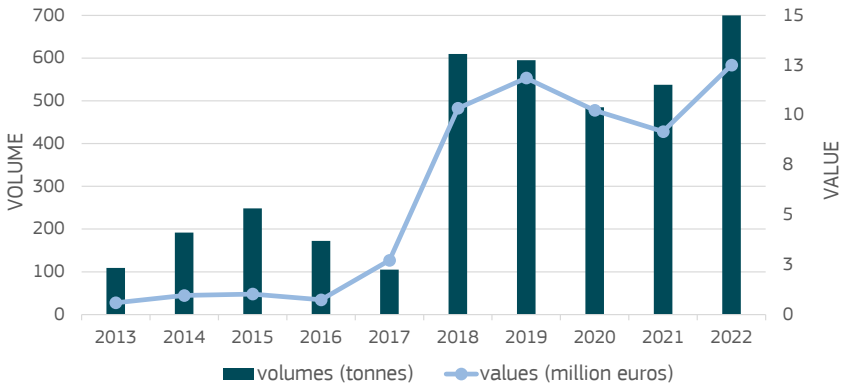
In 2022, the EU production of miscellaneous aquatic products reached a 10-year peak, with volume totalling 1.122 tonnes worth EUR 14 million.

Miscellaneous aquatic products encompass several different products which are not ascribable to specific species, but only to macro groups of products characterized by different preservation states and gradings. EUMOFA monitoring of the species covered under this group included seaweed, sponges, sea urchins, terrapins, turtles and frogs.

SEAWEED AND OTHER ALGAE

Aquaculture production of seaweed and other algae is presently reported in seven EU countries – France, Ireland, Greece, Spain, Denmark, Bulgaria and Portugal. It is now at an early stage of development in Europe in terms of production volume and number of production units. Algae production in the EU remains limited, accounting for only 0,10% of the total aquaculture volume and 0,26% of the value. However, between 2013 and 2022, algae aquaculture in the EU experienced remarkable growth. Its production volume increased by 930%, and its value surged by 2036% in real terms, indicating the sector's potential for future expansion.

CHART 96
PRODUCTION OF SEAWEED AND OTHER ALGAE IN EU
Source: EUMOFA, based on EUROSTAT data (online data code: fish_aq2a). Values are deflated by using the GDP deflator (base=2015).



PRODUCTION OF FISH EGGS FOR HUMAN CONSUMPTION

In 2022, the EU produced 1.451 tonnes of fish eggs for human consumption, valued at EUR 102 million[124]. This represented a 1% decrease in both volume and value from 2021. The main producers are Denmark, Finland, Italy, France, Spain and Poland. Denmark leads in production volume, while Italy dominates in value, as the species farmed heavily influence the price.

Denmark, the largest producer by volume, produced 652 tonnes worth EUR 16 million in 2022. This marked a 2% drop in volume but an 18% increase in value from the previous year. Eggs in Denmark, which come primarily from farming of rainbow trout (*Oncorhynchus mykiss*), sold at 25,06 EUR/kg, up 20% from 2021.

Italy, the highest-value producer, harvested 106 tonnes of fish eggs valued at EUR 35 million, a 9% increase in volume, with value remaining stable. Italy's production includes high-priced sturgeon (*Acipenseridae*) eggs, which sold for 530,00 EUR/kg, as well as rainbow trout eggs at 34,00 EUR/kg and mullet (*Mugilidae*) eggs at 150,00 EUR/kg.

In France, fish egg production in 2022 reached 120 tonnes, valued at EUR 31 million. This represented a 16% decrease in volume but an 8% increase in value compared with 2021. France primarily produces trout (*Salmo spp*) eggs, which sold for 25,20 EUR/kg, 13% higher than in 2021, and Siberian sturgeon (*Acipenser baerii*) eggs, which were priced at 580,36 EUR/kg, or 3% less than 2021.

Finland and Spain are also significant producers of rainbow trout eggs. In 2022, Finland produced 443 tonnes, valued at EUR 8,3 million, reflecting increases of 14% in volume and 16% in value compared with 2021. Spain, on the other hand, produced 76 tonnes of rainbow trout eggs, valued at EUR 2,3 million, representing decreases of 8% in volume and 16% in value from the previous year. The ex-farm price for Finnish trout eggs increased 2% to 18,82 EUR/kg, while in Spain they dropped to 29,79 EUR/kg, which was 9% less than 2021.

In 2022, Poland harvested 42 tonnes of sturgeon eggs, the only species farmed in the country, for a total value of EUR 5,9 million. This represented a 16% decrease in volume and a 24% decrease in value from 2021. The average price also declined a slightly 3%, from 175,23 EUR/kg in 2021 to 170,74 EUR/kg in 2022.

[124] Source: Eurostat

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