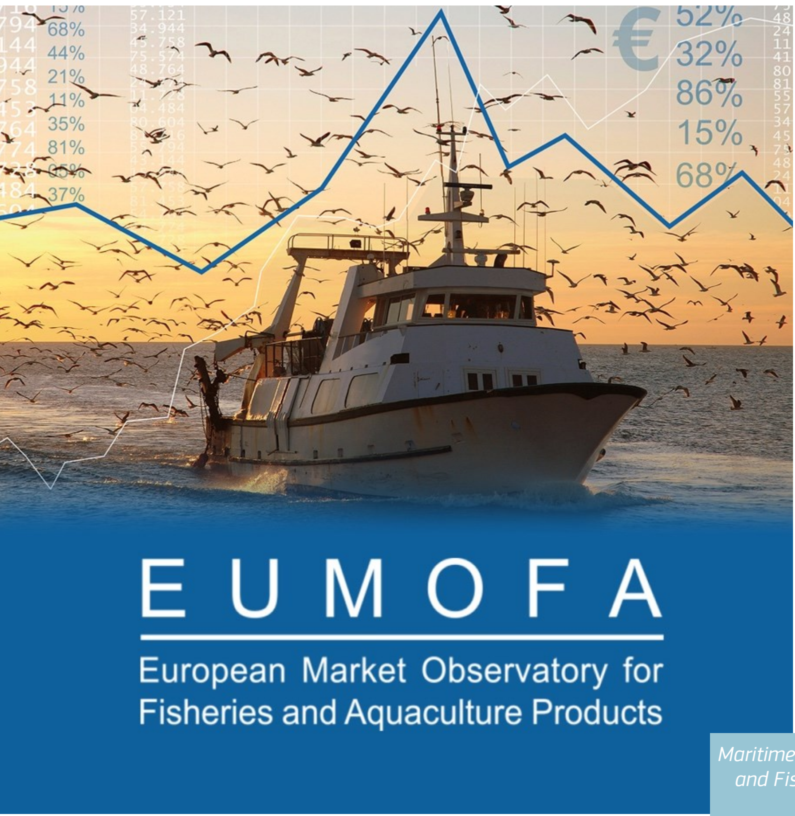
European Commission

CASE STUDY

SOLE IN THE EU



PRICE STRUCTURE IN THE SUPPLY CHAIN

FOCUS ON FRANCE, THE NETHERLANDS AND BELGIUM

APRIL 2025

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Summary

Global catches of sole species reached 20.779 tonnes in 2022[1], consisting almost entirely of the common sole. Catches decreased by 43% compared to 2013. In 2022, the EU accounted for 66% of total catches with the Netherlands, France and Belgium as the main producing countries. Main non-EU producing countries include the UK and Morocco. Global sole production also includes a small share of Senegalese sole from aquaculture, which reached 1.730 tonnes in 2022.

Catches of common sole in the EU reached 11.927 tonnes in 2023[2] (overall catches for other sole species remain under 100 tonnes). The main producing countries in 2023 were France, the Netherlands (both 27% of the total), Belgium (20%) and Italy (14%). Aquaculture production of Senegalese sole reached 1.395 tonnes; the main producing countries were Spain (53%) and Portugal (47%). Apparent consumption in the EU reached 15.275 tonnes live weight equivalent (LWE) in 2023. The main markets within the EU are France, Italy, Spain, Belgium and the Netherlands.

Sole is mainly consumed in the HORECA sector, particularly in restaurants. In retail, common sole is mainly sold fresh, whole and gutted. The common sole market is mostly segmented by size. Production of sole has significantly decreased over the past decade (-43% globally, -53% among EU producers) due to the depletion of some stocks and a decline in quotas. The reduction in supply has led to a significant rise in prices over the same period of time.

This study focuses on three Member States (MS) among the largest markets in the EU: France, the Netherlands and Belgium.

In 2023, France was the largest market for sole in the EU, with an apparent consumption of 4.124 tonnes LWE. It was also the first producing country (2nd in 2022), with catches amounting to 3.263 tonnes. The volume of catches of sole in France has decreased by 58% over the past decade, mainly due to a depletion of the resources, especially in the North Sea, and consequently a decline in total allowable catches (TAC) and quotas. Apparent consumption has decreased by 44% in volume over the past decade, as both production and exports declined more than imports. In 2023, French imports of sole reached 2.182 tonnes LWE, and consisted mainly of fresh fish. The main supplier countries are the UK, the Netherlands and Spain. Exports reached 1.270 tonnes LWE. The French consumption market for sole is dominated by the HORECA sector (70% of the volume sold in France), especially restaurants. Consumption of sole is geographically concentrated on the seaside and in the Paris area. In retail, sole is the 17th fish species purchased fresh by consumers in France. Compared to other fish species, fresh sole is characterised by a lower share of sales in large retail (50% in volume, 46% in value) and a higher share in outdoor markets, fishmongers and other sale channels. The French market for sole is mainly segmented by fish sizes. Large sizes are sold at higher prices (mainly in the HORECA, also in retail as fillets) than small sizes ("sole portion" sold mainly in retail). First sale and retail prices of sole rose significantly in France over the past years.

In 2023, the Netherlands was the fifth market for sole in the EU, with an apparent consumption estimated at 1.639 tonnes LWE. In the same year, it was also the second producing country (1st in 2022), with catches amounting to 3.202 tonnes. Dutch catches have decreased by 64% since 2014 due to the TAC reduction in the North Sea. Total imports of sole have also decreased by 25% in volume and total exports by 42%. The decline of the supply resulted in a 68% decrease in the Dutch apparent consumption of sole over the 2014-2023 period. The local market for sole is relatively small (25% of the national supply in 2023) and sole is almost exclusively consumed in restaurants despite being a popular fish. Dutch consumption consists of size 5 sole (120 to 200g), also locally called *Sliptong*. Larger soles are exported to Italy (size 4 and size 3), Belgium and France (size 1 and size 2). Exports are for both fresh and frozen sole. First sale and retail prices of sole have significantly increased in the past years in relation to the decrease in supply.

[1] 2022 is the year of last available data on global catches (FAO).
[2] For comparison with FAO data, EU catches of common sole reached 13.228 tonnes in 2022.

In 2023, Belgium was the fourth market for sole in the EU (after France, Italy and Spain), with an apparent consumption estimated at 2.072 tonnes LWE. It was the third producing country, with catches amounting to 2.405 tonnes. The volume of catches of sole in Belgium has decreased by 33% over the last decade due to the decline in quotas in the North Sea. Similarly, apparent consumption has decreased by 27%. In 2023, Belgium's imports of sole reached 1.114 tonnes, consisting mainly of fresh fish. Exports amounted to 1.476 tonnes, with the Netherlands being the main destination. Sole is a popular fish in Belgium, consumed both at home and in restaurants. The market for fresh sole in Belgium is segmented by size: Larger soles (size 1) are exported to the Netherlands to be frozen before being shipped to the U.S., while size 2 is mainly served in Belgian restaurants due to its ideal fillet size. Smaller sizes (3 to 5) are consumed at home and sold in supermarkets, typically in packs of 2 to 5. Consumption peaks in spring and summer. First sale and retail prices of sole have risen significantly in Belgium, especially since 2021.

List of acronyms

CN	Combined nomenclature
EU	European Union (EU-27)
FAO	Food and Agriculture Organisation of the United Nations
HORECA	Hotels, restaurants and cafés/catering
LWE	Live weight equivalent
MCRS	Minimum conservation reference size
MS	Member States
TAC	Total allowable catches
VAT	Value added tax

1. SCOPE AND CONTENT

1.1 Case study scope

Key elements for the analysis of sole price structure and distribution of value in the supply chains are:

Product	Origin	Characteristics	Market and price drivers	Focus MS
Sole	Fishery (Aquaculture to a lesser extent)	The product is mostly consumed fresh. Most of the consumption occurs in the HORECA sector.	Reduced supply due to the depletion of some stocks and the decline of quotas Segmentation by size Impact of Brexit on trade	France The Netherlands Belgium

EUMOFA provides other relevant publications on the topics covered by this study:

- Flatfish species in the EU - recent trends, in Monthly Highlights No. 7 / 2024 (pp 41-46)

1.2 Content of the document

Following the methodology developed within EUMOFA and available on its website (http://www.eumofa.eu/price-structure), this document includes:

- A description of the product;
- An analysis of production and market trends at the EU level;
- An analysis of the price structure along the supply chain in the Netherlands, France and Belgium.

2. DESCRIPTION OF THE PRODUCT AND MARKETS

2.1 Biological and commercial characteristics

The case study focuses mainly on common sole. The structure of the supply chain includes small volumes of Senegalese sole from aquaculture, as the nomenclature used for recording trade data does not distinguish it from common sole.

Case study product

Family: Soleidae

Name:

FAO 3-alpha code: SOL

- Common sole *(Solea solea)*
- Senegalese sole (*Solea senegalensis*)[3]

Presentation: Fresh whole and frozen whole.

Commercial sizes:

Wild: between 30 cm and 40 cm.

The Minimum conservation reference size (MCRS) for common sole is 24 cm in all fishing areas, except in the Mediterranean Sea, where MCRS is set at 20 cm.[4]

In the market, sole is sold based on the following size categories established by EU marketing standards[5]. Some selling ports use more detailed categories. The common sole market is segmented according to sizes based on the fish's weight as follows:

- Size 5: below 200 grammes,
- Size 4: 200-250 grammes,
- Size 3: 250-330 grammes,
- Size 2: 330-500 grammes,
- Size 1: over 500 grammes.

Related codes in the product nomenclature (COMEXT/EUROSTAT)

From 2023 onwards, the Combined Nomenclature[6] (CN) distinguishes between fresh and frozen sole:

- Fresh or chilled (whole):
  - CN code 03022300 - Fresh or chilled sole "*Solea* spp."
- Frozen (whole):
  - CN code 03033300- Frozen sole "*Solea* spp."

Eurostat's category for sole covers other species than common sole (*Solea solea*), including Senegalese sole (*Solea senegalensis*) and Egyptian sole (*Solea aegyptiaca*). Traded volumes of these two species are marginal, except some volumes imported from Spain, Portugal and Iceland, which are Senegalese sole

[3] *Solea senegalensis* is included in this study as data on trade do not distinguish it from *Solea solea*. While its presence on the market remains limited, its production, which comes from aquaculture is increasing.
[4] *Solea solea* (europa.eu)
[5] Council Regulation (EC) No 2406/96 of 26 November 1996 laying down common marketing standards for certain fishery products: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31996R2406
[6] CN is a tool for designating goods and merchandise which was established to meet simultaneously the requirements both of the Common Customs Tariff and of the external trade statistics of the EU. The basic regulation is Council Regulation (EEC) n°2658/87; an updated version of the Annex I is published every year (latest version: Council Regulation (EU) 2024/1652).

from aquaculture. Other species, designated in English as "sole", but that do not belong to the *Solea* genus, are not included in this study[7].

Biological parameters

Common sole (*Solea solea*) is a flatfish of the *Solea* genus, whose distribution area ranges from the northwest African coast to the North Sea. It is distinguished by its oval, flat and asymmetric body with eyes located on the right side. Its maximum length can reach 70 cm for a maximum weight of 3 kg. The average adult length for common sole varies between 30 and 40 cm[8].

Usually solitary, it lives in sandy and muddy bottoms. Common sole retreats to deeper water during the winter (around 70 metres deep, maximum 200 metres deep). Spawning takes place in shallow coastal areas in water temperatures between 6°C and 12°C, mainly during the months of February to May, although in warmer areas (such as the Mediterranean) it can occur at the beginning of winter. The incubation period lasts 5 days (at 12°C) and the larval phase takes place in warmer waters (18°C) for 35 days[9]. Juveniles are found in coastal nurseries for the first 2-3 years before migrating to deeper waters as adults. Common sole reach reproduction age at 3-5 years old, when they reach a size of 25-30 cm. It can live up to 27 years old[10].

The fish's characteristics vary significantly depending on its geographical location. Generally, common sole reaches older sexual maturity, life expectancy and larger size in the northern part of its distribution area than in the southern part.

Table 1: Biological parameters of common sole

Parameter	**Common sole *(Solea solea)***
Temperature	8°C - 24°C
Habitat	Juveniles spend the first 2 to 3 years in coastal nurseries (bays and nursery grounds). They then migrate to deeper waters (10-60m)
Diet in the wild	Adults feed on worms, molluscs and small crustaceans.
Distribution in the wild	Eastern Atlantic: from the Trondheim Fjord southwards to the Mediterranean Sea and the Cape Verde Islands.

Source: Fishbase

[7] These include yellowfin sole (*Limanda aspera*), rock sole (*Lepidopsetta bilineata*), flathead sole (*Hippoglossoides elassodon*) and lemon sole (*Microstomus kitt*).
[8] https://www.fao.org/fishery/en/culturedspecies/solea_spp/en
[9] https://fishbase.mnhn.fr/summary/solea-solea
[10] https://www.mdpi.com/2076-2615/12/23/3369

2.2 World production

In 2022, global sole catches amounted to 20.847 tonnes, representing a 43% decrease compared to 2013. Almost all catches relate to common sole, whereas the other sole species represent only a marginal share of catches.

Table 2: Evolution of worldwide captures of *Solea* species between 2013 and 2022 (tonnes)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol. 2013/22
Common sole	36281	36.300	33.463	31.949	30.536	29.706	28.812	28.450	27.053	20.779	-43%
Senegalese sole	56	53	63	45	53	55	81	58	101	67	+20%
Total	**36.337**	**36.353**	**33.526**	**31.994**	**30.590**	**29.761**	**28.893**	**28.507**	**27.155**	**20.847**	**-43%**

Source: FAO

The soles caught by European countries consist almost entirely of common sole (except less than 100 tonnes of Senegalese sole caught by the French fleet), whereas the soles produced in aquaculture are Senegalese sole. Common sole is caught in the Northeast Atlantic and the Mediterranean. The Netherlands, France and Belgium account for most of the common sole world catches, with 21%, 17% and 12% respectively of the total. EU Member States account for 66% of total catches. Major non-EU producers include the UK (10% of total catches), Morocco (9%), Egypt (7%) and Tunisia (5%).

Table 3: World catches of common sole (in tonnes) 2013-2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol. 2013/22
Netherlands	9.967	9.018	9.280	9.617	9.514	8.622	7.047	6.752	6.239	4.319	-57%
France	8.337	7.652	6.384	5.210	4.945	5.241	4.624	4.412	4.479	3.587	-57%
Belgium	2.889	3.605	3.076	2.570	2.215	2.137	2.437	2.776	2.584	2.571	-11%
UK	2.275	2.318	1.938	1.965	1.801	1.831	1.769	2.121	2.282	2.130	-6%
Morocco	2.680	2.887	3.862	3.613	3.206	3.010	4.230	4.224	3.704	1.876	-30%
Italy	1.505	2.288	2.448	2.374	2.348	2.025	1.988	1.448	1.640	1.558	+4%
Egypt	2.066	2.337	1.653	1.547	1.651	2.201	2.184	1.987	1.947	1.422	-31%
Tunisia	457	511	594	982	567	724	1.130	1.075	1.110	1.130	+147%
Others	6.105	5.684	4.228	4.070	4.289	3.916	3.403	3.654	3.069	2.187	-64%
Total	**36.281**	**36.300**	**33.463**	**31.949**	**30.536**	**29.706**	**28.812**	**28.450**	**27.053**	**20.779**	**-43%**

Source: FAO

Aquaculture production of species of the *Solea* genus consists entirely of Senegalese sole. In 2022, the total production was estimated at 1.730 tonnes. Spain, Iceland and Portugal accounted for 69%, 20% and 10% respectively of the total production. Sole production has significantly increased between 2013 and 2022, especially in Spain (+171%) and Iceland.

Table 4: World production of sole (Senegalese sole) from aquaculture (in tonnes) 2013-2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol. 2013/22
Spain	440	806	591	747	1.012	901	945	618	962	1.192	+171%
Iceland	0	0	290	360	400	391	377	271	337	352	-
Portugal	154	84	130	147	150	145	190	152	174	174	+14%
Others	13	10	9	7	6	9	10	13	13	11	-13%
Total	**607**	**900**	**1.020**	**1.261**	**1.569**	**1.438**	**1.521**	**1.141**	**1.486**	**1.730**	**-185%**

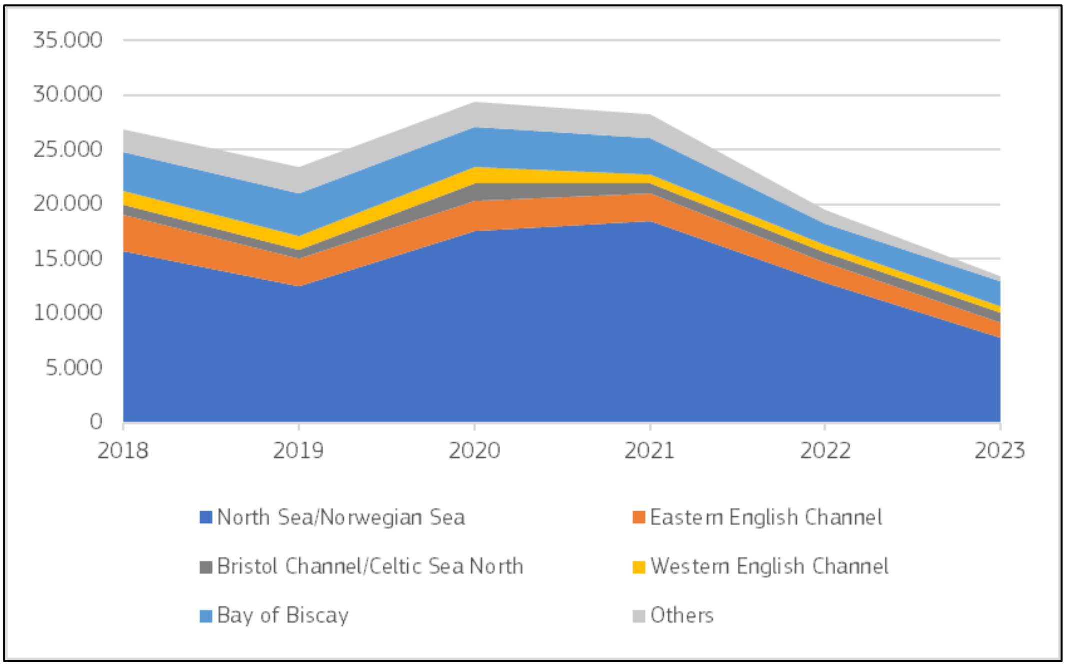
Source: FAO

2.3 EU production

Evolution of sole production

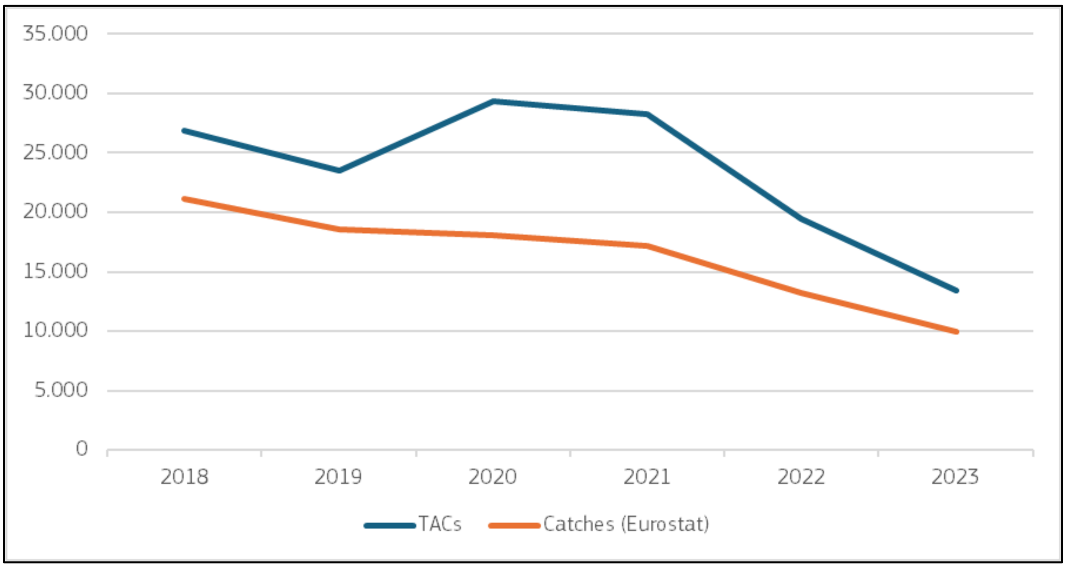
In the EU, common sole is managed through Total Allowable Catches (TACs) and quotas, distributed across seven fishing areas. The primary fishing area is the North Sea/Norwegian Sea, accounting for 58% of the 2023 TAC, followed by the Bay of Biscay (17%), the Eastern English Channel (10% of the quotas), the Bristol Channel/Celtic Sea North (7%), and the Western English Channel (4% of the quotas).

Figure 1: European Union common sole quotas from 2018 to 2023 in different fishing areas (tonnes)



Source: own elaboration based on DG MARE TACs, quotas regulation and Eurostat data

Figure 2: EU TACs and catches of common sole from 2018 to 2023 (tonnes)



Source: own elaboration based on EU TACs, quotas regulation and Eurostat data

In 2023, the EU TACs for common sole amounted to 13.463 tonnes, marking a 50% decrease since 2018, while catches reached 9.981 tonnes. Dutch quotas decreased by 47%, French quotas fell by 33%, and Belgian quotas declined by 23%, reaching 2.249 tonnes in 2023.

In 2023, EU common sole catches totalled 11.927 tonnes. France and the Netherlands were the leading producers, each contributing to 27% of the EU production. Other important Member States were Belgium and Italy, contributing to 20% and 14% of the EU production respectively.

Between 2014 and 2023, EU common sole catches decreased by 53%, driven by reduced catches in almost all major producing countries. Over the decade, catches decreased the most in Germany (-69%), the Netherlands (-64%) and Denmark (-63%).

Table 5: EU-27 common sole catches (in tonnes LWE) 2014-2023

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol. 2014/23
France	7.688	6.381	5.264	4.976	5.347	4.558	4.255	4.366	3.532	3.263	-58%
Netherlands	9.018	9.280	9.617	9.514	8.622	7.047	6.804	6.271	4.330	3.202	-64%
Belgium	3.605	3.077	2.570	2.215	2.137	2.437	2.776	2.646	2.590	2.405	-33%
Italy	2.288	2.369	2.375	2.348	2.025	1.988	1.448	1.640	1.558	1.656	-28%
Greece	465	480	587	527	517	524	478	318	299	291	-37%
Spain	349	376	353	354	317	330	301	290	289	276	-21%
Denmark	597	468	649	860	722	403	437	463	316	220	-63%
Germany	645	771	879	782	737	634	943	668	160	203	-69%
Croatia	195	277	191	224	217	198	215	159	141	111	-43%
Others	749	678	229	668	457	435	420	385	13	302	-60%
EU-27	**25.597**	**24.158**	**22.715**	**22.467**	**21.098**	**18.554**	**18.077**	**17.206**	**13.228**	**11.927**	**-53%**

Source: Eurostat

Import - Export

Extra-EU imports

In 2023, sole[11] imports from third countries accounted for 2.847 tonnes with an overall value of EUR 41 million. Imports consist mainly of fresh sole (83% of imports value in 2023) and frozen sole (17%).

In 2023, the main exporters to the EU are the United Kingdom (66% of the EU imports value), Iceland (17%) and Mauritania (11%). The same year, the main importing Member States were France (50% of the import value), the Netherlands (24%) and Spain (13%).

Between 2014 and 2023, imports volume decreased by 45%, while prices increased by 123% (+129% increase in real terms)[12].

[11] Comext data on the trade of sole include Solea species (*Solea* spp.): common sole, Senegalese sole and Egyptian sole. It doesn't include the numerous other fish species whose common English designation identify as "sole" (for example yellowfin sole (*Limanda aspera*), lemon sole (*Microstomus kitt*), rock sole (*Lepidopsetta bilineata*), flathead sole (*Hippoglossoides elassodon*)

[12] Values in real terms are deflated by using the GDP deflator (base=2016)

Table 6: Extra-EU imports of sole (2023)

	Nominal Value (1.000 EUR)	Volume (tonnes)	Price (EUR/kg)	Evol. value 2022/23
Fresh or chilled	38.165	2.365	16,14	-7%
Frozen	2.625	482	5,44	+2%
Total	**40.789**	**2.847**	**14,33**	**-7%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Extra-EU exports

In 2023, Sole exports to third countries amounted to 968 tonnes for an overall value of EUR 21,6 million. Sole is exported fresh and frozen, accounting for 38% and 62% of the export value, respectively.

The United States was the main destination market for EU sole exports, representing 81% of the export value in 2023. The Netherlands and Spain were the leading exports, representing 64% and 26% of the export value, respectively.

Between 2014 and 2023, export volume has increased by 4%, while prices have increased by 68% (+37% in real terms). As a result, the overall export value increased by 75% (53% in real terms) over the same period.

Table 7: Extra-EU exports of sole (2023)

	Nominal Value (1.000 EUR)	Volume (tonnes)	Price (EUR/kg)	Evol. value 2022/23
Fresh or chilled	8.124	390	20,81	+12%
Frozen	13.463	578	23,29	-6%
Total	**21.587**	**968**	**22,29**	**+/-0%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Intra-EU exports

Intra-EU exchanges concern mainly fresh sole, which accounted for 8.086 tonnes and 83% of the EU exchanges in value terms. Trade within the EU decreased by 14% between 2014 and 2023, while prices rose by 56% (+30% in real terms). As a result, the overall value of EU trade fell by 15% in real terms over the period.

Table 8: Intra-EU exports of sole (2023)

	Nominal Value (1000 EUR)	Volume (tonnes)	Price (EUR/kg)	Evol. value 2022/23
Fresh or chilled	132.867	8.086	16,43	-8%
Frozen	27.410	2.030	13,50	-11%
Total	**160.278**	**10.116**	**15,84**	**-8%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

In 2023, the Netherlands was the main exporter to other EU Member States, accounting for 39% of intra-EU export value. Spain, Belgium and France followed, contributing together to 42% of the intra-EU exports value. While the Netherlands and Spain exported fresh and frozen sole, Belgium and France exclusively exported fresh sole.

The main destinations for intra-EU trade were the Netherlands, accounting for 23% of the intra-EU exports value, followed by Spain (21%), Italy (20%) and Belgium (10%). While some countries imported mainly fresh sole, such as the Netherlands (99% of imports from EU), Belgium (94%) and Spain (82%), others imported primarily frozen sole, such as Germany (32% of imports), Italy (30%) and France (24%).

Table 9: Value of intra-EU exports of sole to the main MS of destination (1.000 EUR, nominal value, 2023)

Destination	Fresh or chilled	Frozen	Total	Share
Netherlands	37.125	158	37.282	23%
Spain	28.118	6.085	34.203	21%
Italy	22.826	9.973	32.799	20%
Belgium	14.879	1.029	15.908	10%
Germany	10.071	4.828	14.899	9%
France	11.043	3.438	14.481	9%
Others	8.806	1.899	10.705	7%
Total	**132.867**	**27.410**	**160.278**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Apparent consumption by Member State

In 2023, the total supply of sole in the EU (production + imports) was estimated at 14.893 tonnes live weight equivalent (LWE). The supply originated mainly from catches (80%, accounting for 11.927 tonnes LWE). Exports accounted for 1.013 tonnes LWE. Consequently, the apparent consumption at the EU-27 level (production + imports - exports) was estimated at 13.880 tonnes LWE.

The main Member States in terms of apparent consumption in 2023 were France (4.124 tonnes LWE), Italy (3.609 tonnes LWE), Spain (2.314 tonnes LWE), Belgium (2.072 tonnes LWE) and the Netherlands (1.639 tonnes LWE).

Table 10: Apparent consumption of sole in the EU (2023, in tonnes of live weight equivalent) (in bold, the three MS with focus in the present report)

	Production	**Total imports**	**Total Supply** (production +imports)	**Total exports**	**Apparent consumption** (supply-exports)
France	**3.311**	**2.182**	**5.493**	**1.321**	**4.172**
Italy	1.655	2.072	3.727	118	3.609
Spain**	989	3.699	4.688	2.375	2.314
Belgium	**2.405**	**1.144**	**3.548**	**1.476**	**2.072**
Netherlands	**3.202**	**2.705**	**5.907**	**4.268**	**1.639**
Germany	203	904	1107	215	891
Greece	291	232	523	12	511
Portugal**	925	415	1340	933	407
Bulgaria	0	172	172	0	172
Luxembourg	0	56	56	3	53
Austria	0	43	43	0	43
Sweden	5	36	41	4	37
Croatia	111	8	119	83	36
Romania	0	20	20	1	19
Poland	0	13	13	2	11
Slovenia	5	6	11	0	11
Cyprus	0	10	10	0	10
Denmark	220	107	327	319	7
Czechia	0	7	7	2	5
Finland	0	4	4	0	4
Lithuania	0	2	2	0	2
Malta	1	1	1	0	1
Hungary	0	1	1	0	1
Slovakia	0	1	1	0	1
Latvia	0	1	1	0	1
Estonia	0	0	0	0	0
Ireland*	nc	158	158	418	-
EU-27	**13.322**	**2.966**	**16.288**	**1.013**	**15.275**

Source: EUMOFA elaboration of EUROSTAT and EUROSTAT-COMEXT data

* The calculation of the apparent consumption in Ireland provides negative values due to the lack of data for catches in Ireland

** In these countries, the total sole production includes a share of Senegalese sole from aquaculture (72% of the production with 713 tonnes in Spain, 69% of the production with 634 tonnes in Portugal)

3. THE FRENCH MARKET

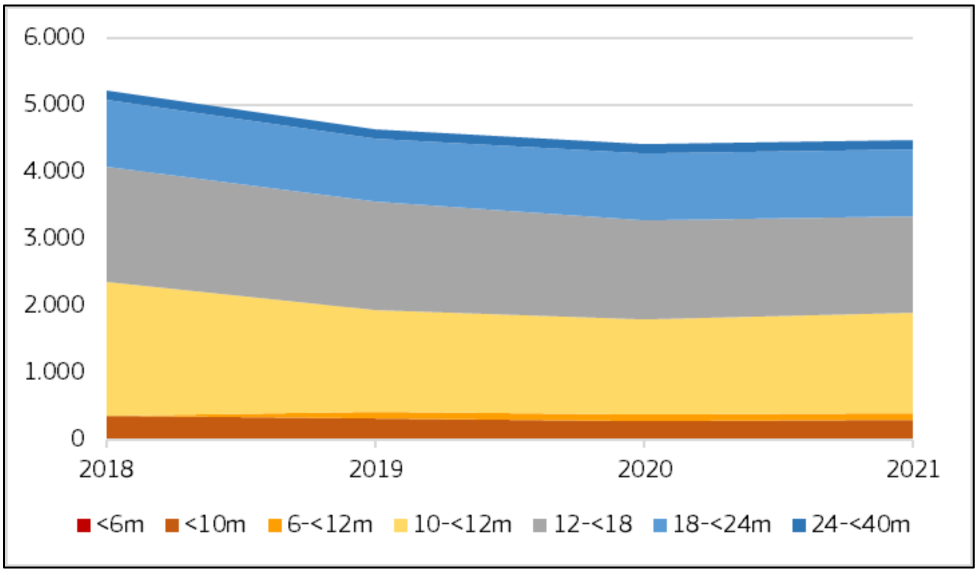
3.1 Structure of the supply chain

Production

Characteristics of the fleet

In 2021, common sole was landed in France mainly by 10 to 12 metres vessels (33% of the volumes landed), 12 to 18 metres vessels (32%) and 18 to 24 metres vessels (22%). Landings by vessels smaller than 10 meters accounted for 6% of the volume and those from larger vessels (between 24 and 40 meters) represented 3% of the volume.

Figure 3: Evolution of French landings of common sole by vessel length (tonnes)



Source: STECF

Almost two-thirds of French landings of common sole were caught using drift and/or fixed netters and almost one-=quarter by demersal trawlers and/or demersal seiners. According to stakeholders, types of fishing gears vary significantly between regions. Fleets in Vendée and in the Eastern part of the Channel use almost exclusively gillnet, while in other regions active gears are more common.

Management measures

French quotas for common sole decreased significantly over the past decade due a decrease in the European TAC and the depletion of stocks, leading to a strong decline in catches (see below).

Management measures for common sole fishing have also been taken at the national level. In January 2015, a specific fisheries management regime was created for the East Channel (ICES VIId)[13]. According to stakeholders, this decision as well as the stock decrease resulted in a strong decline in the number of vessels fishing common sole in the French fleet since 2015.

To prevent accidental catches of cetaceans, a temporary ban on fishing was implemented in the Bay of Biscay in 2024 and 2025 (from 22 January to 20 February). The timing of this ban coincided with the beginning of the sole fishing season. It resulted in a significant decline in catches for some ports, disturbed the supply chain and lead to a seasonal imbalance.

[13] https://www.legifrance.gouv.fr/jorf/id/JORFSCTA000030171955

The minimum fishing size for common sole and the mesh minimal size for sole fishing also differ between regions. Minimal fishing size is 25 cm in the Gulf of Biscay, the Channel and North Sea, and 24 cm in the Mediterranean; this is stricter than in the EU, where Minimal conservation reference size (MCRS) is 20 cm in the Mediterranean and 24 cm in all other regions. Gillnets mesh minimal size is 100 mm, except for some ports where it is 90 mm.

Catches

French catches of sole species reached 3.311 tonnes in 2023, made almost exclusively of common sole. Common sole catches decreased by 8% between 2022 and 2023 and by 58% over a decade (2014-2023).

Table 11: Evolution of French captures of sole species (tonnes, 2014-2023)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol. 2022/23	Evol. 2014/23
Common sole	7.688	6.381	5.264	4.976	5.347	4.558	4.255	4.366	3.532	3.263	-8%	-58%
Senegalese sole	51	54	40	45	46	52	51	59	61	48	-21%	-6%
Total	**7.739**	**6.435**	**5.304**	**5.021**	**5.393**	**4.611**	**4.306**	**4.425**	**3.593**	**3.311**	**-8%**	**-57%**

Source: Eurostat

First sale volumes

First sales of common sole in France reached 2.797 tonnes in 2023 (3.942 tonnes of all sole species). According to stakeholders, the significant volume of direct sales could partly explain the fact that first sale volumes are lower than catches.

In 2023, 74% of common sole first sales took place in the ports of the Bay of Biscay. Over the last decade, first sale volumes of common sole in France have more than halved (-54%). This decline varied between regions, with volumes decreasing by 41% in the Bay of Biscay, 34% in the Channel and the Celtic Sea and by 97% in the North Sea (mainly the port of Dunkerque). In the Mediterranean, where catches were historically low, volumes decreased by 14%. Catches of common sole now surpass the sales volume in the North Sea coast. According to stakeholders, the main factor behind this decrease is the state of the fish stocks and the national management measures implemented since 2015 supplementary to the EU management measures. In the East part of the Channel and especially the North Sea, fish stocks have collapsed and, according to stakeholders, show no sign of recovery despite the strong decline of the fishing fleet.

Table 12: First sales of common sole in France by seaboard (tonnes product weight, 2014 - 2023)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol. 2014/23
Bay of Biscay	3.525	3.257	2.866	2.848	2.958	2.877	2.790	2.751	2.056	2.072	-41%
Celtic/Channel	919	668	602	522	660	579	608	668	745	604	-34%
Mediterranean	86	72	81	81	92	102	104	91	83	74	-14%
North Sea	1.524	1.149	850	799	695	249	99	196	82	47	-97%
Total	**6.054**	**5.146**	**4.398**	**4.250**	**4.405**	**3.807**	**3.601**	**3.707**	**2.966**	**2.797**	**-54%**

Source: EUMOFA, based on FranceAgriMer

In 2023, almost 60% of the first sale volume took place in six ports. Les Sables-d'Olonne is the main port, accounting for almost 30% of total first sales, followed by La Cotinière (11%), Royan (6%) and Arcachon (5%). Over the past decade, first sales decreased unevenly between these main ports, ranging from a 2% decrease in Les Sables-d'Olonne to a 71% decrease in Arcachon.

Table 13: First sales of common sole in France by ports (tonnes product weight, 2014-2023)

Seaboard	Port	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol. 2014/23
Biscay	Les Sables-d'Olonne	804	753	731	712	772	1.052	1.054	989	749	785	-2%
	La Cotinière	415	328	273	344	359	328	308	298	206	297	-28%
	Royan	274	259	203	233	247	246	220	232	162	164	-40%
Celtic/ Channel	Fécamp	199	129	105	119	156	119	156	162	218	153	-23%
Biscay	Arcachon	486	461	388	374	377	385	357	326	236	142	-71%
	Lorient	227	225	197	175	178	180	146	172	131	119	-47%
Celtic/ Channel	Port-en-Bessin	164	154	107	87	136	150	157	143	160	106	-35%
All	Others	3.486	2.838	2.396	2.207	2.180	1.347	1.202	1.385	1.103	1.030	-70%
Total		**6.054**	**5.146**	**4.398**	**4.250**	**4.405**	**3.807**	**3.601**	**3.707**	**2.966**	**2.797**	**-54%**

Source: EUMOFA, based on FranceAgriMer

Imports

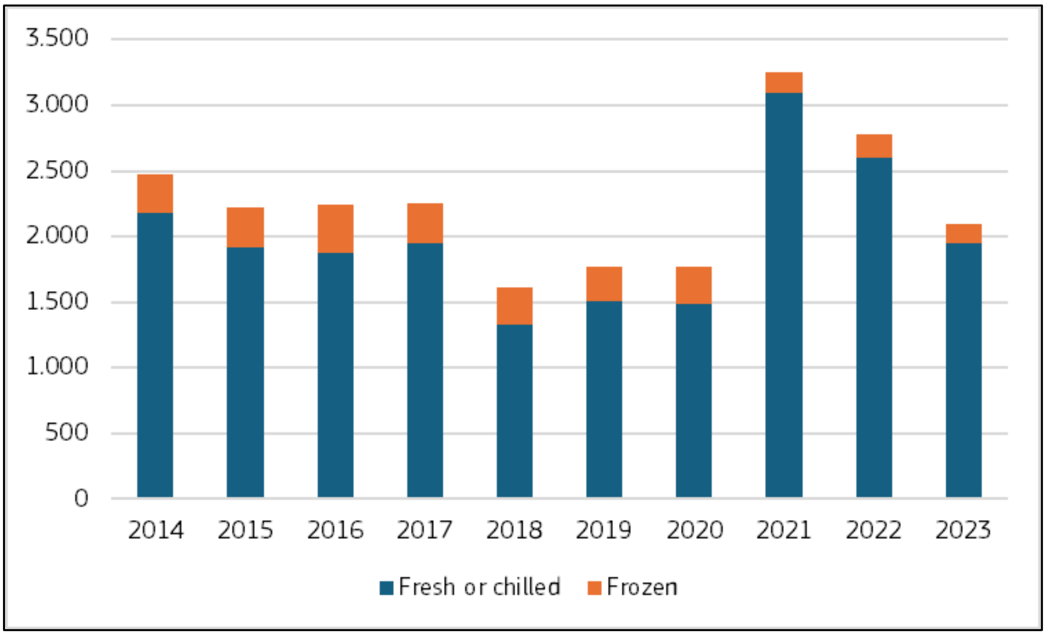
Total imports of sole to France amounted to 2.097 tonnes in 2023, valued at over EUR 35 million. Between 2014 and 2023, French imports of sole decreased by 15%, despite peaking at 32.515 tonnes in 2021. Fresh sole dominated imports in 2023, accounting for 93% of the total value. The main suppliers of fresh sole were the United Kingdom (53% of fresh imports volume) and the Netherlands (27%). Frozen sole originated mainly from the Netherlands (57% of the frozen imported volume) and Spain (40%). The significant decrease in frozen sole imports over the past four years is due to a decline in imports from the Netherlands.

Table 14: French imports of sole in 2023, by preservation type

	Volume (tonnes product weight)	Nominal value (1.000 EUR)	Price (EUR/kg)	% val. 2023
Fresh or chilled	1.949	33.052	16,96	93%
Frozen	148	2.300	15,51	7%
Total	**2.097**	**35.351**	**16,86**	**100%**

Source: EUROSTAT-COMEXT

Figure 4: Evolution of French imports of sole by preservation type (in tonnes net weight)



Source: EUROSTAT-COMEXT

The United Kingdom became France's first supplier of sole in 2021, with a 66% increase in the volume imported between 2014 and 2023. According to stakeholders, the significant rise of imports from the UK between 2020 and 2021 (+339%) is explained by the implementation of the EU-UK Trade and Cooperation Agreement (TCA). A concentration of UK exports to the EU on France has been observed (with a redirection of former exports to the Netherlands and Belgium towards France). Between 2014 and 2023, imports from the Netherlands fell to 616 tonnes in 2023, a decline of 54% since 2014. Three other countries, accounting for fewer volumes, saw growth in their exports to France: Spain (from 96 to 261 tonnes), Ireland (from 9 to 79 tonnes) and Denmark (from 14 to 45 tonnes). The rise in imports from Spain could be partly explained by the increase in its aquaculture production of sole (*Solea senegalensis*). Meanwhile, France reduced its imports of sole from Belgium by 95%, a decrease from 358 to 19 tonnes.

Table 15: Evolution of French imports of sole by supplier (tonnes product weight, 2014-2023)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol. 2014/23
United Kingdom	627	434	420	429	376	349	337	1.479	1.353	1.041	+66%
Netherlands	1.344	1.370	1.448	1.465	977	1.203	1.267	1.270	758	616	-54%
Spain	96	83	88	76	103	95	64	185	223	261	+171%
Ireland	9	5	7	6	9	1	2	111	203	79	+743%
Denmark	14	13	14	30	19	10	27	73	167	45	+212%
Belgium	358	273	235	225	107	74	47	49	20	19	-95%
Others	30	42	31	28	19	34	23	86	53	36	+19%
Total	**2.479**	**2.219**	**2.242**	**2.259**	**1.610**	**1.766**	**1.769**	**3.252**	**2.777**	**2.097**	**-15%**

Source : EUROSTAT-COMEXT

Exports

French exports of sole account for 1.270 tonnes in 2023, for a total value of EUR 20,7 million, made almost exclusively of fresh sole (98% of exports 'value).

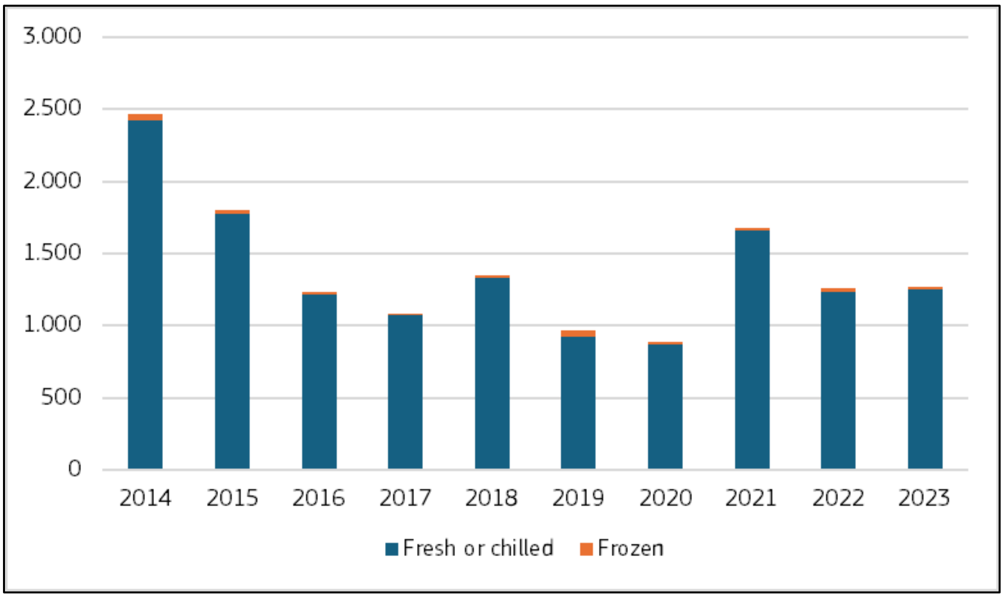
Table 16: French exports of sole in 2023

	Volume (tonnes product weight)	Nominal value (EUR 1.000)	Nominal price (EUR/kg)	% val 2023
Fresh or chilled	1.248	20.257	16,23	98%
Frozen	22	474	21,23	2%
Total	**1.270**	**20.731**	**16,32**	**100%**

Source: EUROSTAT-COMEXT

French exports of sole followed a declining trend over the past decade. From 2.472 tonnes in 2014, volumes fell below 1.000 tonnes in 2019 (970 tonnes). They recovered partly in 2021 due to the consequences of Brexit, before declining again in 2022 and stabilizing since.

Figure 5: Evolution of French exports of sole by preservation state (tonnes product weight)



Source: EUROSTAT-COMEXT

French exports of sole decreased by 49% over the past decade. Exports to the Netherlands experienced the highest growth since 2014, increasing by +92% to reach 551 tonnes in 2023. Exports to Belgium rose by 5% over the same period of time. Exports to both destinations increased significantly between 2020 and 2021, by +290% and +907%, respectively. This sharp increase is linked to the implementation of the post-Brexit trade agreement, with France playing the role of a hub for UK exports ultimately destined to these countries.

In contrast, French exports to Spain and Italy have decreased the most between 2014 and 2023, by 76% (248 tonnes) and 73% (240 tonnes), respectively. The Netherlands took over Italy and Spain as the first destination for French exports of sole in 2021 and has maintained this position since.

Table 17: Evolution of French exports of sole by destination (tonnes product weight, 2014-2023)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol. 2014/23
Netherlands	287	194	71	63	203	158	126	490	418	551	+92%
Spain	1.013	753	491	452	416	350	332	351	244	248	-76%
Italy	888	611	477	382	436	278	250	322	212	240	-73%
Belgium	104	61	59	59	160	44	37	369	242	110	+5%
Germany	49	45	37	29	40	39	32	39	34	30	-39%

United Kingdom	18	31	11	14	10	9	8	3	19	22	+18%
Luxembourg	25	24	18	15	23	20	32	19	18	16	-37%
Switzerland	53	41	37	28	24	31	34	45	30	16	-70%
Others	34	40	34	40	36	41	37	42	46	39	+16%
Total	**2.472**	**1.800**	**1.234**	**1.084**	**1.348**	**970**	**888**	**1.681**	**1.263**	**1.270**	**-49%**

Source: EUROSTAT-COMEXT

Apparent consumption

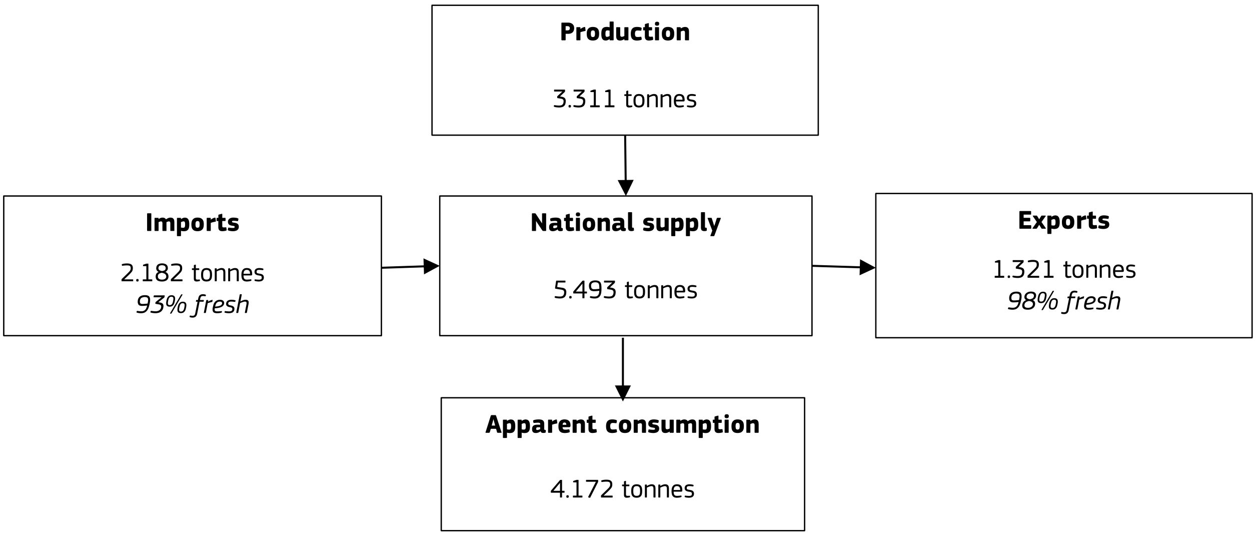
The French market for sole was estimated at 4.172 tonnes LWE. French apparent consumption of sole declined by 19% between 2022 and 2023, and by 44% between 2014 and 2023. Between 2014 and 2023, French catches and imports decreased by 57% and 15%, respectively. Over the same periodof time, exports fell by 54%.

Table 18: Apparent consumption for sole in 2023 (tonnes LWE)

	Volume	Evol. 22/23	Evol. 2014/23
Production	3.311	-8%	-57%
Import	2.182	-24%	-15%
Supply	5.493	-15%	-47%
Export	1.321	0%	-54%
Apparent consumption	4.172	-19%	-44%

Source: EUMOFA elaboration of Eurostat, EUROSTAT-COMEXT data

Figure 6: Supply figure for sole in France (tonnes LWE, 2023)



Source: EUMOFA, based on EUROSTAT-COMEXT, FranceAgriMer, interviews

3.2 Characteristics of the French market and consumption

Structure of the supply chain in France

According to stakeholders, the structure of the supply chain for sole in France includes in most cases 4 intermediaries:

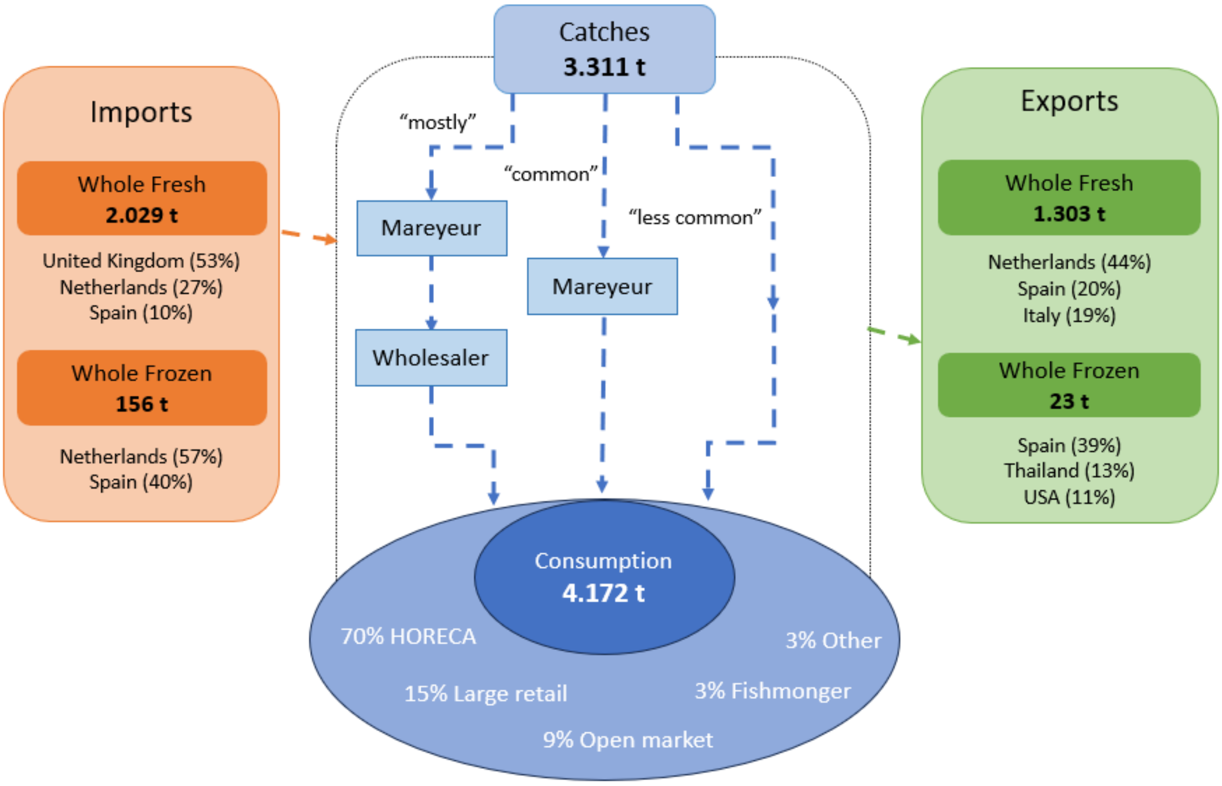
- The auction, where most of the fish is placed on the market,
- The specialised fish wholesaler, or “*mareyeur*”, who buys the fish directly from the auction,

- The second wholesaler, who buys the fish from the *mareyeur* to sell it to retailers,
- The retailers (50% of whose are large retailers).

In some cases, the supply chain is shorter, involving only the "*mareyeur*" wholesaler; less commonly, retailers, such as fishmongers or supermarkets, buy the fish directly from the auction.

According to stakeholders and based on data available, catches of sole by the French fleet are mostly landed in France, and sole landings in France are almost entirely provided by the French fleet. The national supply of sole is sourced by wholesalers and retailers from national landings and imports. Imports of sole include a small share of Senegalese sole from aquaculture, coming mainly from Spain. According to stakeholders, sole is sold through different sale channels, including restaurants.

Figure 7: Structure of the supply chain for sole in France (tonnes LWE, 2023)



Source: EUMOFA

Characteristics of the market

Sole is the 17th fish species purchased fresh by consumers for household consumption in France with 1.106 tonnes, accounting for 1% of the volume of the total volume of fresh fish purchases in France. Over the past decade, the volume of fresh sole purchased by French consumers declined at a faster rate than the total volume of fresh fish.

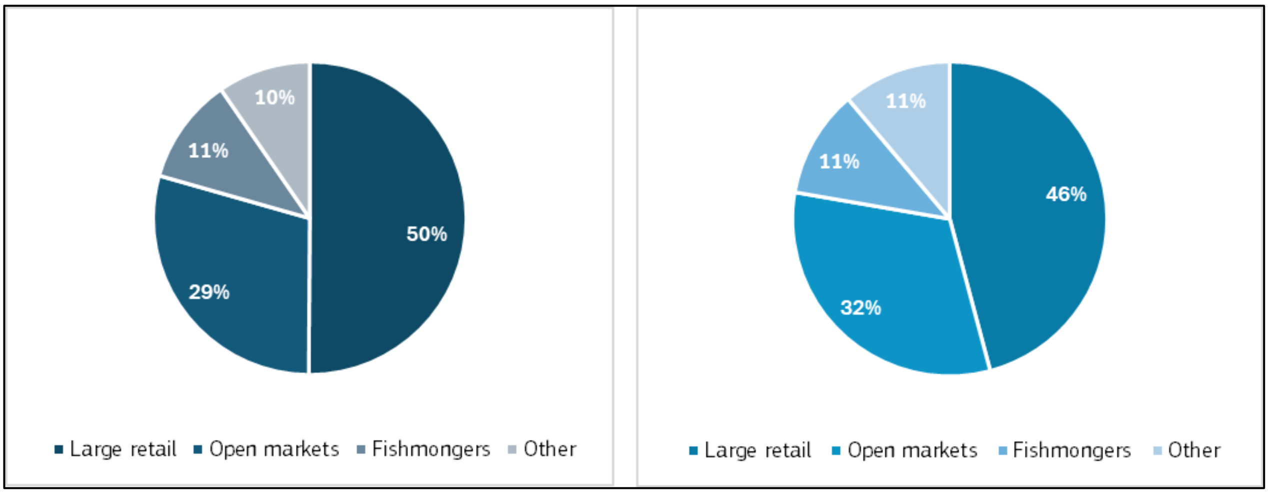
According to EUMOFA estimates on apparent consumption and FranceAgriMer data on retail, approximately 70% of the volume of sole sales occur in the HORECA sector, and approximately 30% in other different distribution channels. In the HORECA sector, sole is mostly sold in restaurants.

A FranceAgriMer study published in 2024[14] provides more detail on sole purchase for household consumption in retail. Among the different retail distribution channels, large retail accounts for 50% of the volume (the share is 78% for fresh fish from all species) and 46% of the value of sole for household consumption. Outdoor markets come as second marketing channel (29% in volume, 32% in value),

[14] https://www.franceagrimer.fr/fam/content/download/74286/document/STA_MER_CONSO_2023.pdf?version=3

followed by fishmongers (11% in volume and value). According to stakeholders, the remaining 11% mainly consists of direct sales, which are especially common in the North of France and the Mediterranean region.

Figure 8: Breakdown of French household consumption of fresh sole by main marketing channels in volume (left) and value (right) in 2023



Source: FranceAgriMer

Consumption

Sole in HORECA is mostly sold in restaurant as "*sole meunière*", a traditional French dish. Sole is included on the menu of most restaurants serving traditional French cuisine. The product is especially popular in the Paris region and on the seaside, particularly in touristic areas.

In retail, sole is mostly sold fresh. It is typically sold either at fish counters in large retail stores or by fishmongers in fish shops or outdoor markets. Two main size categories are available: the large sizes are sold whole or in fillets, and the small sizes are sold whole (called *sole portion*). Most volumes of "*sole portion*" are sold at size 4 (200-250 g) and size 3 (250-300 g), while the smallest size (size 5, 120-150 g) is less popular. "Sole fillet" mainly consists of the biggest sole size (size 1, over 500 g). Sole is mainly presented head on gutted. Fishmonger or counter staff can fillet the fish or remove the skin.

Frozen sole can be found in large retail. Frozen products labelled as "sole" often consist of species other than the *Solea* genus. Frozen products labelled as "*sole tropicale*", typically sold as fillets, belong to the *Cynoglossus* genus. In large retailer shops specialised in frozen products, *Solea* is more commonly available frozen, where it is sold as a premium product.

According to stakeholders, the typical sole consumer is older and with higher purchasing power than the average seafood consumer. This is mainly due to the position of sole as a premium product and to the prominence of the HORECA sector in its sales. Sole consumption habits have considerably shifted over the past decade, driven by resource scarcity and rising prices. As a result, sole is increasingly regarded as a premium product; with a growing share of sales occurring in restaurants, while direct sales have become less frequent. This shift has helped to maintain the overall value of sole sales, despite a substantial decrease in the volume sold.

3.3 Price transmission in the supply chain

First sale prices

First sale prices of sole increased by 22% over the past 5 years (+6% in real terms), to reach 17,87 EUR/kg in 2023. Despite this rise in price, the first sale value decreased by 11% over the same period of time (-22% in real terms), due to a strong decline in first sale volumes (-27%).

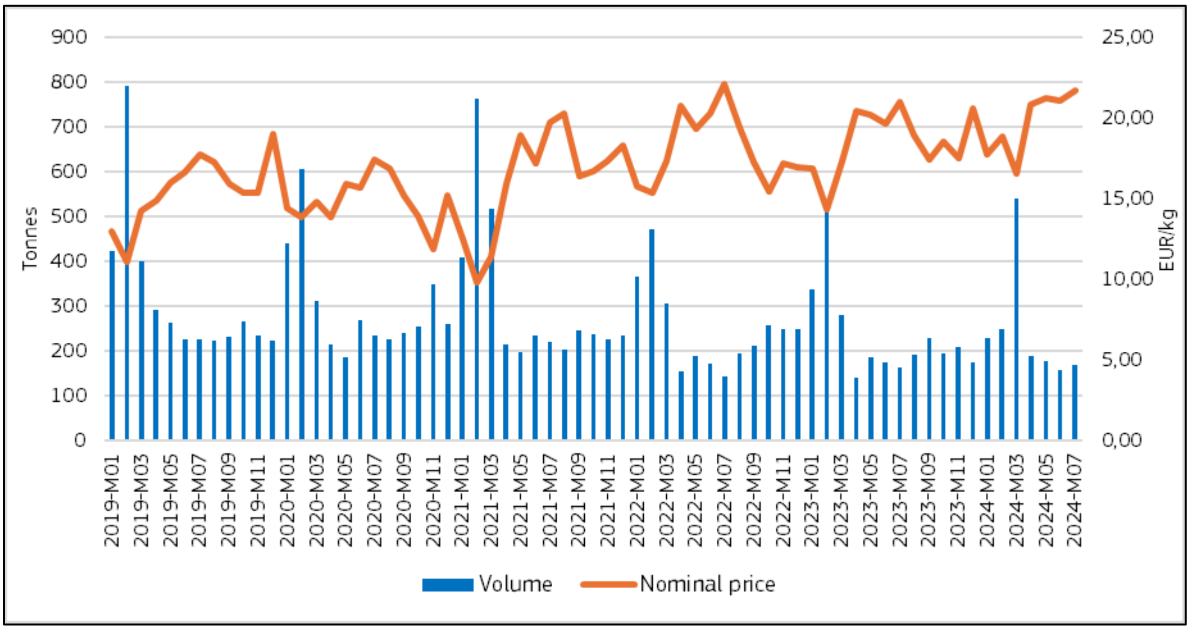
Table 19: Common sole first sale value, volume and prices (2019 - 2023)

	2019	2020	2021	2022	2023	Evol. 2019/23
Nominal value (EUR 1.000)	55.896	52.855	54.478	51.787	49.975	-11%
Volume (tonnes)	3.807	3.601	3.707	2.966	2.797	-27%
Nominal price (EUR/kg)	14,68	14,68	14,70	17,46	17,87	+22%

Source: EUMOFA, based on FranceAgriMer

As illustrated in the figure below, first sales of sole are seasonal, with the highest volumes landed and sold during winter (between December and March). This trend is based on the significant activity of netters during this period. There is also a significant elasticity between first sale volumes and prices, with prices typically reaching the lowest levels when volumes peak.

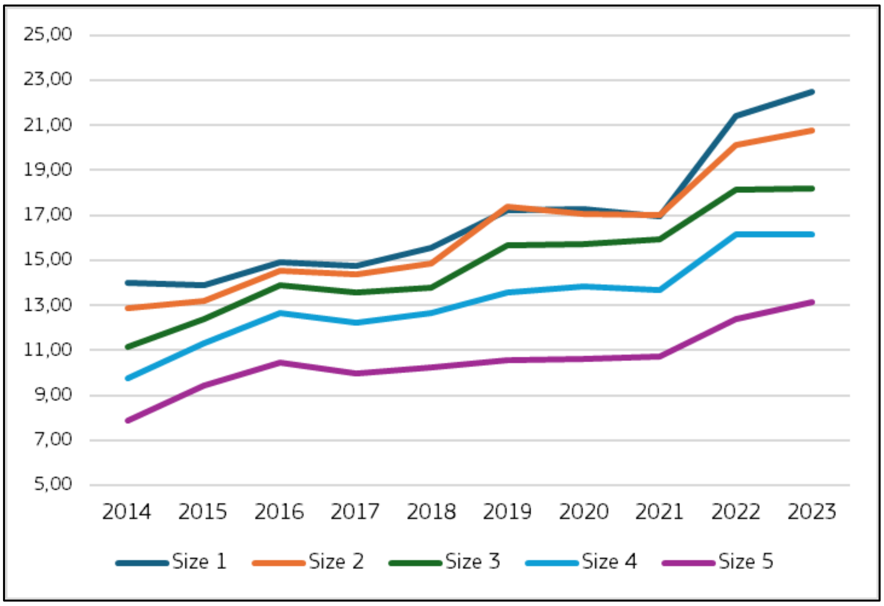
Figure 9 : Common sole monthly first sale volumes and prices in France (2019-2024)



Source: EUMOFA, based on FranceAgriMer

Prices of common sole vary significantly based on fish size, with large sole sold at a higher price than small sole. This disparity is explained by the different markets targeted, as larger fish are primarily sold to restaurants, with a price gap reaching more than 6 EUR/kg between the largest and the smallest fish. Due to a stronger demand dynamic in restaurants than in retail, first sale price of size 1 sole (+30%) increased two times more than price of size 3 sole (+16%). The price of the smallest sole increased more than sole size 3, due to a larger decrease in the supply.

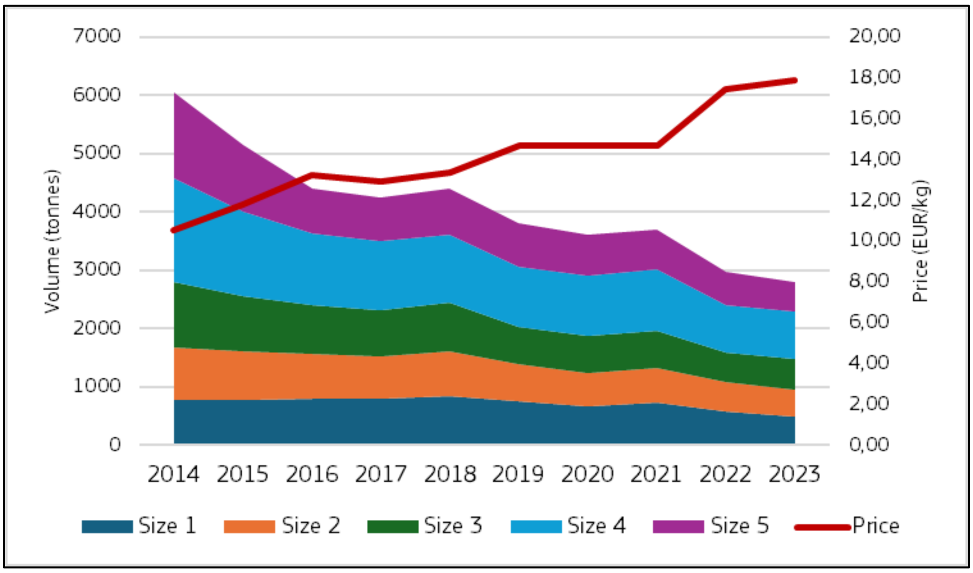
Figure 10 : Average yearly first sale prices of common sole in France depending on the size (EUR/kg)



Source: EUMOFA

There is an overall increase in prices for all the sizes, with a significant increase since 2021. This trend is explained by the decrease in first sale volumes. Due to a stronger demand dynamic in restaurants than in retail, the decline in first sale volumes has been stronger for small sizes than for large sizes (from -36% to size 1 to -65% for size 5). Both the overall decrease in first sale volumes and the strongest decrease for small sizes, which are sold at the cheapest price, led the average price for common sole to increase significantly, and to partly compensate the decrease in volumes.

Figure 11 : Common sole first sale volumes by size and average price of common sole in France (tonnes net weight, nominal price in EUR/kg)



Source: EUMOFA

Import prices

Import price for sole reached on average 16,86 EUR/kg in 2023; it is 16,96 EUR/kg for fresh sole and 15,51 EUR/kg for frozen sole.

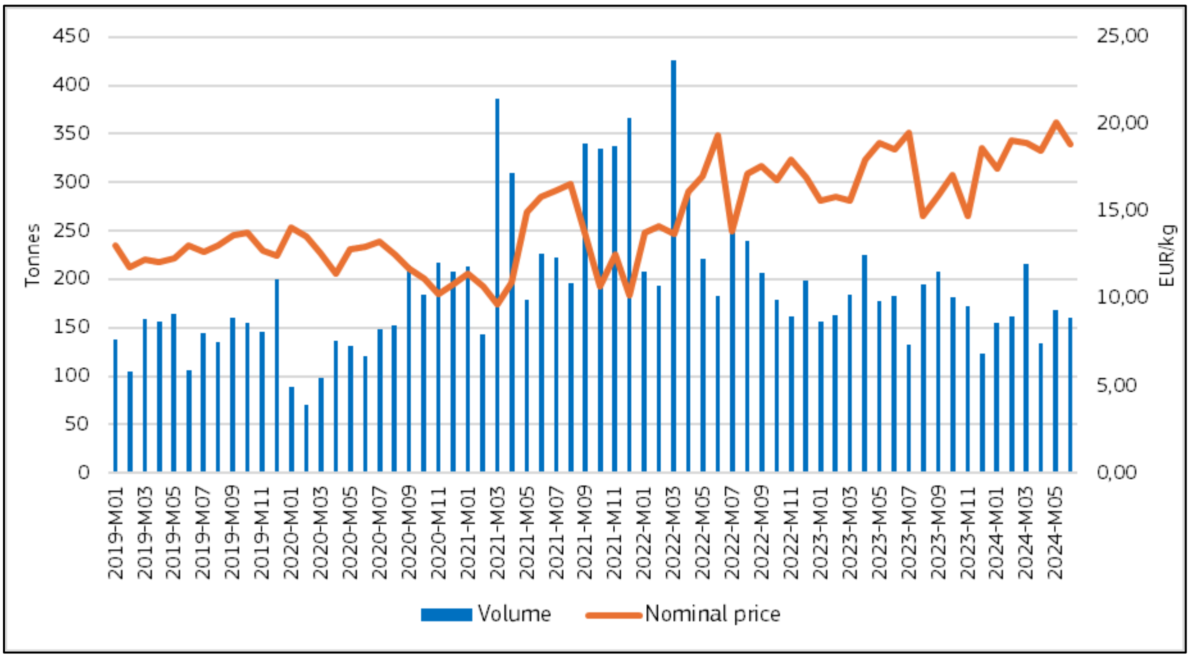
Table 20: Sole import prices, fresh and frozen products (EUR/kg, 2019-2023)

	2019	2020	2021	2022	2023	Evol. 2019/23
Fresh	12,78	11,89	12,40	15,89	16,96	+33%
Frozen	12,53	12,38	12,32	16,38	15,51	+24%
Average	12,74	11,97	12,39	15,92	16,86	+32%

Source: EUROSTAT-COMEXT

The evolution of volumes and prices of imports followed a slight increasing trend over the past four years for both fresh and sole products. Prices followed an upward trend, with significant monthly variation, particularly in 2021 and 2022 (from 10,19 EUR/kg in December 2021 to 19,37 EUR/kg in June 2022). The absence of seasonality in imports indicates a relatively good synchronisation between domestic landings and consumption. However, according to stakeholders, the recent ban on fishing activities from 22 January to 20 February implemented in 2024 and 2025 in the Bay of Biscay temporarily drove imports up in some segments of the market (notably for restaurants).

Figure 12: Sole monthly import volumes and prices in France (2019-2024)



Source : EUROSTAT-COMEXT

Retail prices

There is a strong disparity in sole prices at the retail stage, based on the sale location and sale channels. A survey of retail prices (see table below) revealed that for fresh whole fish:

- Prices are lower in large retail than in outdoor markets (+3,00 EUR/kg approximately) and fishmonger shops (+4,00 EUR/kg).
- Prices in outdoor markets are lower in the fishing port than in the coastal region (+4,00 EUR/kg) and Paris (up to +20,00 EUR/kg). Price differences between these geographical locations are much less significant for large retail.

Frozen products could only be found thanks to the online survey. The two products identified are sold in retailer shops specialized in frozen products. Frozen fishes sold at these retail places are premium products, with prices significantly higher than the average prices for fresh sole.

Table 21: Price survey for sole sold in France in large retail and fishmonger stores, outdoor markets and restaurants (2024)

Location	Sale channel	Presentation	Weight (kg)	Price (EUR/kg)
Fishing port (Les Sables-d'Olonne)	Large retail	Fresh, whole & gutted	0,290	24,93
Paris area	Large retail	Fresh, whole & gutted	0,200	26,99
Fishing port (Les Sables-d'Olonne)	Outdoor market	Fresh, whole & gutted	0,290	27,90
Online	Large retail	Fresh, whole & gutted	0,250	28,90
Medium city in coastal region (Bruz)	Outdoor market	Fresh, whole & gutted	0,260	32,00
Medium city in coastal region (Bruz)	Outdoor market	Fresh, whole & gutted	0,250	34,00
Online	Large retail	Fresh, whole & gutted	0,300	35,49
Paris	Outdoor market	Fresh, whole & gutted	2 x 0,200	40,00
Online	Specialized retail (frozen products)	Frozen, whole, gutted & peeled	0,600	49,98
Paris	Outdoor market	Fresh, whole & gutted	0,250	48,80
Paris	Outdoor market	Fresh fillet	0,350	51,43
Paris	Fishmonger	Fresh, whole & gutted	0,250	49,80
Online	Specialized retail (frozen products)	Fillets (5-8 pieces)	0,500	71,90
Paris	Fishmonger	Fresh fillet	0,400	69,80

Source: On-field survey and online survey

Price transmission in retail

The following price structure is based on one of the most common supply chains for sole in France. The fish (250-330 g) is gutted on the fishing vessel and landed in a port of the Bay of Biscay. It is bought by a *mareyeur* at the auction place, packaged and sold to a wholesaler. The transport from the auction place to the wholesale platform is covered by the *mareyeur*. The fish is sold by the wholesaler to the fishmonger. The transport from the wholesale platform to the retail place is covered by the wholesaler. The place of retail considered is located in France and is not close to the landing place.

Table 22: Costs and margin for common sole of size 3 landed in France, sold fresh, whole and gutted in a fishmonger store (2024)

Stage	Price (EUR/kg)	% of the final price	Source
First sale price (1)	**20,26**	**49%**	**Calculated**
Auction fee	1,01	2%	Based on interviews
Packaging costs	0,50	1%	Based on interviews
Workforce	0,60	1%	Based on interviews
Transport	0,60	1%	Based on interviews
Other costs and margin	1,40	3%	Based on interviews
"Mareyeur" price (2)	**24,37**	**59%**	**Calculated**
Transport	0,60	1%	Based on interviews
Other costs and margin	3,20	8%	Calculated/interviews
Wholesale price (3)	**28,17**	**67%**	**Calculated**
Retail costs and margin	11,83	28%	Based on interviews
Retail excl. VAT	40,00	94%	Calculated
VAT	2,33	6%	VAT at 5,5%
Retail incl. VAT (4)	**42,33**	**100%**	**Based on interviews/surveys**

Sources: EUMOFA elaboration

Notes and sources:

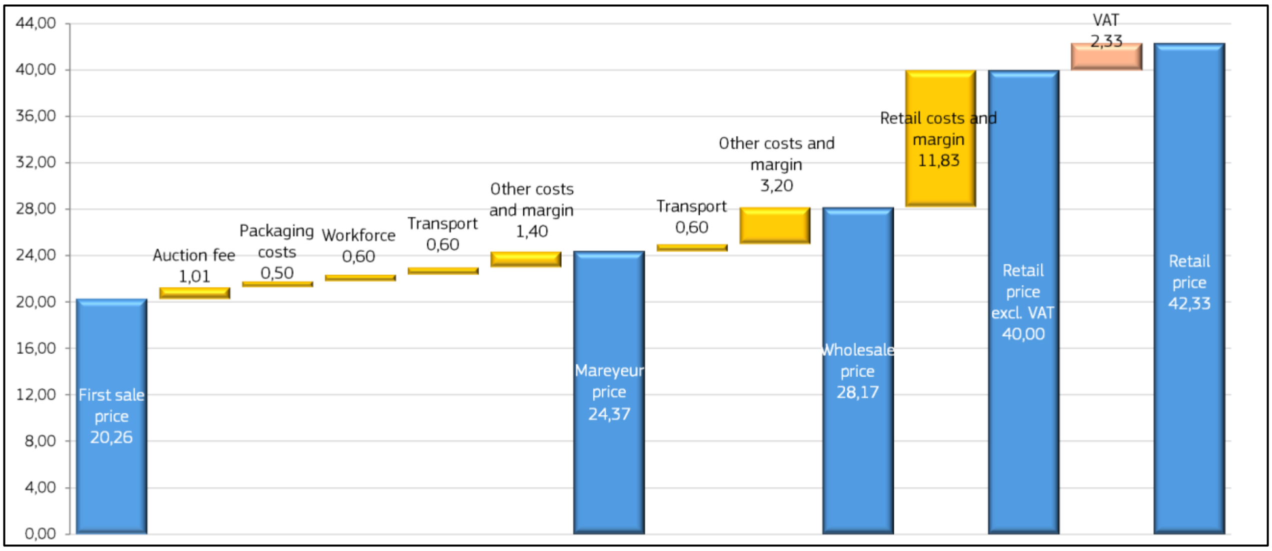
(1) The first sale price is the average price from January to October 2024 in the Bay of Biscay for size 3 (250-330 g) common sole landed by French vessels. In this price structure analysis, the fish is gutted on the fishing vessel, as it is done in the Bay of Biscay (in the Channel and the North Sea, the fish is sold gutted later).

(2) The *mareyeur* pays an auction fee which accounts for 3-8% of the first sale price, depending on the port of landing. The average rate is estimated by stakeholders at 5% in the Bay of Biscay. According to stakeholders, the *mareyeur* costs and margin - excluding transport - reach 10% of the *mareyeur* price, or approximately 2,50 EUR/kg. The cost of packaging is 0,50 EUR/kg according to a stakeholder in the Bay of Biscay; it is slightly lower according to others. Workforce costs are calculated; according to stakeholders, they account for 20-25% of the *mareyeur* costs and margin. Transport costs from the auction place to the wholesale platform are in most cases on the *mareyeur*: they vary depending on the destination (from 0,40 EUR/kg to over 1,00 EUR/kg for the most distant places in France). We choose one of the most common cases for France, which is the cost of transport from the Bay of Biscay to Rungis wholesale market (south of Paris). The *mareyeur* price of 24,37 EUR/kg is deemed realistic by stakeholders.

(3) According to stakeholders, wholesale costs and margin - excluding transport – vary between 10 and 20% of the wholesale price. We choose a rate of 13%, which is the most consistent with estimates of costs and margin in large retail and with the price of fish observed at the wholesale stage. The cost of transport from the wholesale platform to the retail place is estimated at 0,60-0,70 EUR/kg. The wholesale price of 28,67 EUR/kg is deemed realistic by stakeholders.

(4) According to stakeholders, retail costs and margin vary between 30 and 40% of the retail price before tax. We choose a rate of 30%, which is the most consistent with the average prices observed in retail and information from stakeholders. Costs and margins are lower for large retail (25-30% according to stakeholders, under 25% according to the prices observed). The VAT accounts for 5,5% of the final price in food retail, accounting for 2,33 EUR/kg. The final price reaches 42,33 EUR/kg, which is higher than the prices observed outside of Paris, and lower than the prices observed in Paris. It is deemed realistic by stakeholders.

Figure 13: Price transmission for common sole of size 3 landed in France, sold fresh, whole head on gutted in a fishmonger store (2024, prices in EUR/kg)



Sources: EUMOFA elaboration

Sole can reach high prices when sold in restaurants. "*Sole meunière*" dishes are sold at prices from 35 EUR on the seaside in non-touristic areas and up to 50-60 EUR (over 100 EUR/kg) in Paris.

Price transmission in restaurants

The following price structure focuses on the same supply chain type as the previous one, but with a different origin of the fish. The fish is bought by the *mareyeur* at the auction place. It is sold by the *mareyeur* to the wholesaler and sold by the wholesaler to the restaurant. According to stakeholders, this type of supply chain, which involves both a *mareyeur* and a wholesaler, is particularly common for restaurants. Indeed, in the HORECA sector, stability of supply is particularly important.

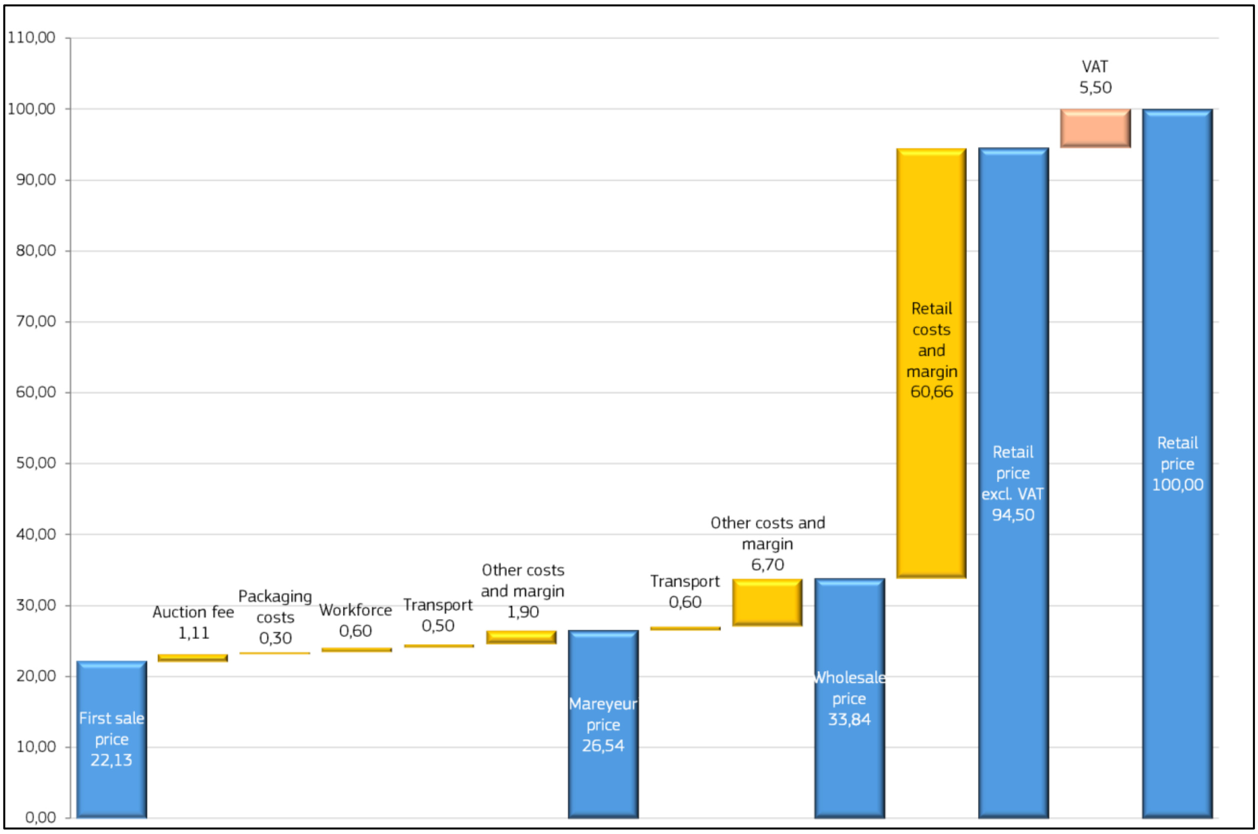
The first sale price is the average price from January to October 2024 in the ports of Celtic seas, the Channel and North Sea, for size 1 common sole (over 500 g). Transport prices are lower than those of the previous price structure, mainly due to the geographical location of the landing place. The wholesale price of this structure is an average, indistinctive of the final seller. According to stakeholders, wholesale costs and margin are likely to be the highest when the fish is sold to a restaurant. The upper range of 20% of the wholesale price was chosen for this structure. The final price paid by the consumer is based on a survey of a few restaurants in Paris.

Table 23: Costs and margin for common sole of size 1 landed in France, sold prepared as "*sole meunière*" in a restaurant in Paris (2024)

Stage	Price (EUR/kg)	% of the final price	Source
First sale price	**22,13**	**22%**	**Calculated**
Auction fee	1,11	1%	Based on interviews
Packaging costs	0,30	0%	Based on interviews
Workforce	0,60	1%	Based on interviews
Transport	0,50	1%	Based on interviews
Other costs and margin	1,90	2%	Based on interviews
"*Mareyeur*" price	**26,54**	**27%**	**Calculated**
Transport	0,60	1%	Based on interviews
Other costs and margin	6,70	7%	Calculated/interviews
Wholesale price	**33,84**	**34%**	**Calculated**
Restaurant costs and margin	60,66	61%	Calculated
Restaurant price excl. VAT	94,50	95%	Calculated
VAT	5,50	6%	VAT at 5,5%
Restaurant price incl.VAT	**100,00**	**100%**	**Based on interviews/surveys**

Sources: EUMOFA elaboration

Figure 14: Price transmission for common sole of size 1 landed in France, sold prepared as "*sole meunière*" in a restaurant in Paris (2024, prices in EUR/kg)



Sources: EUMOFA elaboration

4. THE DUTCH MARKET

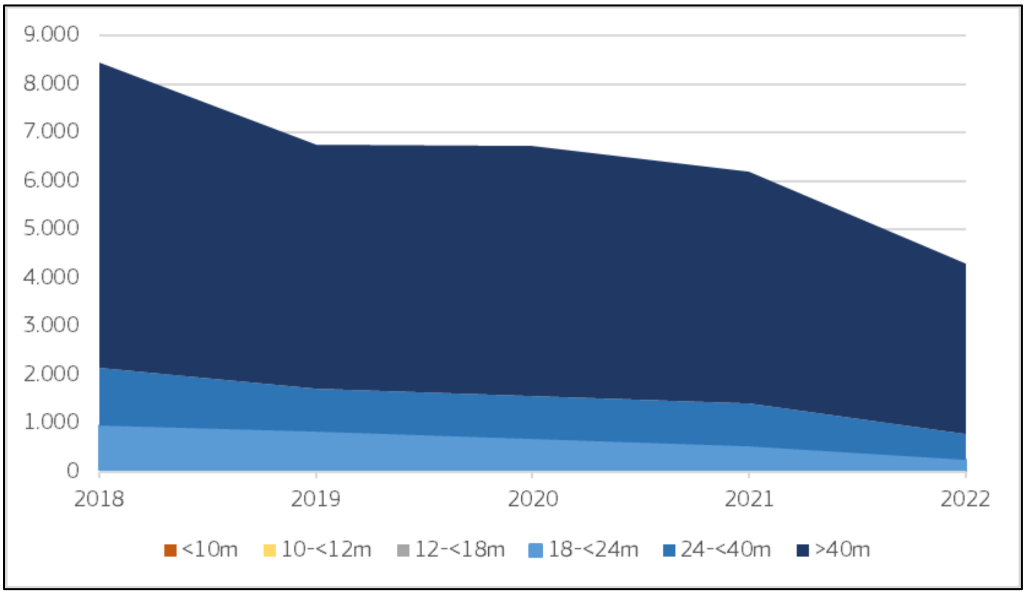
4.1 Structure of the supply chain

Production

Characteristics of the fleet

Common sole catches by the Dutch fleet are essentially made by large vessels over 40 metres long (accounting for 82% of Dutch landings of common sole in volume in 2022) and to a lesser extent by vessels between 24 and 40 metres (12%) and vessels between 18 and 24 meters (5%). Since 2018, landings of common sole have decreased by 49% in the Netherlands (all fishing segments are concerned but the decrease was more important for vessels between 24 and 40 meters than for larger vessels). Since 2022, the Dutch fishing fleet of sole has halved due to the permanent withdrawal of 51 vessels after the TAC decrease as well as the Regulation on the Brexit Adjustment Reserve[15], and the fish stock situation in the North Sea which represents 90% of the Dutch TACs. The Dutch fishing fleet for sole now holds between 40 and 50 vessels.

Figure 15: Evolution of Dutch landings of common sole by vessel length (tonnes)



Source: STECF

Since the ban of pulse fishing, the sole fishing technique used is almost exclusively beam trawlers (99% of the volumes landed in 2022). However, by-catches are greater with the latter technique, thus making the sole fishing activity less profitable. Using beam trawlers, sole catches represent 50 to 60% of the volume caught while it represented up to 75% with pulse fishing, based on the expert scientist interviewed.

Management measures

The Dutch fleet caught 3.202 tonnes of common sole in 2023. Overall, common sole catches have been relatively stable between 2014 and 2017 before gradually decreasing. Common sole catches have decreased by 49% compared to 2021 and by 64% compared to 2014. The decrease in catches is proportional to the reduction of Dutch sole quotas, especially in the North Sea and the Norwegian Sea.

[15] Regulation (EU) 2021/1755 of the European Parliament and of the Council of 6 October 2021 establishing the Brexit Adjustment Reserve

However, new research has been conducted by ICES during the second half of 2024 and could allow for TAC increase for common sole in 2025, based on the experts interviewed.

Table 24: Evolution of Dutch catches of sole species (tonnes product weight, 2013-2022)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol. 2014/23
Common sole	9.018	9.280	9.617	9.514	8.622	7.047	6.804	6.271	4.330	3.202	-64%

Source: Eurostat data

Landings in Dutch fishing ports consist mostly of catches from Dutch vessels (around 80-90% of the volume according to the experts) and to a lesser extent, catches from foreign vessels (United Kingdom, Belgium, and Germany) operated by Dutch crews. Experts interviewed estimate that twenty foreign fishing vessels land sole in the Netherlands, most of which are Belgian.

First sale

First sales of common sole decreased by 39% in value in the Netherlands between 2014 and 2023, driven by a decrease in volume, from EUR 73 million in 2014 to EUR 44 million in nominal value in 2023. IJmuiden/Velsen remained the main place of first sales over the period and accounted for 46% of the first sales nominal value in 2023 (EUR 20 million). Scheveningen is also a significant fishing port for sole, followed by Urk, which despite being inland, plays a key role in first sales as landed volumes are transported there by lorry. Den Helder, which was one of the most important ports for sole, was closed in 2023 due to reduced TACs and the vessels' decommissioning scheme. In the Netherlands, sole first sales take place exclusively through auctions, which help fishermen guarantee better prices. For sole, auctions act as intermediaries between fishermen and buyers, though contracts can be established to set a fixed price based on auction first sales prices. However, direct sales that bypass auctions are not allowed. Those weekly/monthly contracts are typically signed in the autumn to be effective during winter, which is the high season for sole. First sales consist of fresh sole, of which the majority is gutted onboard. Buyers include mostly processors and wholesalers, and to a lesser extent fishmongers and restaurants (mainly in Scheveningen, where there is a high density of restaurants).

Table 25: Common sole first sale by place in the Netherlands (nominal value in 1.000 EUR)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol. 2014/23
IJmuiden/Velsen	19.068	19.549	25.021	25.366	26.270	20.533	19.142	20.268	24.643	20.368	+7%
Vlissingen	10.637	15.229	15.434	13.014	12.467	10.005	3.881	5.792	8.127	6.833	-36%
Scheveningen	7.190	9.792	12.650	15.338	14.817	11.894	10.451	9.745	9.694	6.528	-9%
Stellendam	12.091	14.615	15.082	14.049	11.774	12.539	7.941	6.698	9.853	5.936	-51%
Urk	12.671	14.393	16.739	11.772	15.327	9.933	13.551	12.988	7.289	4.687	-63%
Lauwersoog	347	352	184	148	160	110	213	93	31	66	-81%
Wieringen/Den Oever	215	169	164	108	61	143	66	94	55	55	-74%
Den Helder	10.048	9.196	9.571	7.735	9.092	8.568	6.067	7.942	6.689	-	-100%
Breskens	554	252	150	72	108	89	65	14	-	-	-100%
Total	**72.822**	**83.548**	**94.996**	**87.603**	**90.076**	**73.813**	**61.376**	**63.634**	**66.381**	**44.473**	-39%

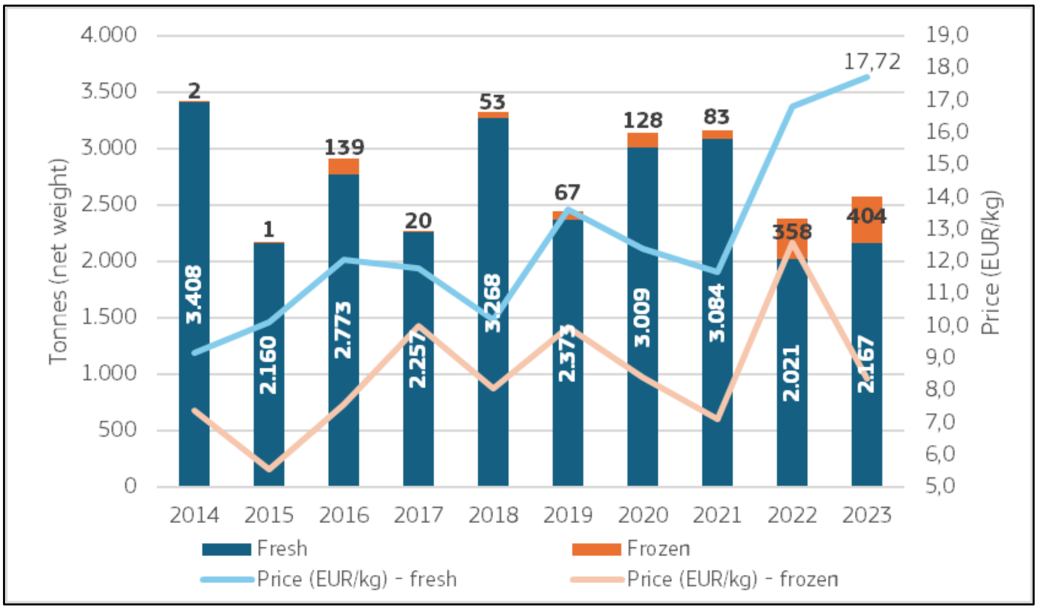
Source: EUMOFA

Imports

Total imports of sole to the Netherlands reached 2.571 tonnes in 2023, amounting to EUR 42 million. Between 2014 and 2023, Dutch imports of sole decreased by 25% in relation to the sole TACs reduction.

Dutch imports of sole are mainly composed of fresh sole which represented 92% of the imports value. The main suppliers of fresh sole were Belgium (accounting for 48% of the fresh imports, EUR 18 million), Iceland (17%, EUR 6,5 million), and the United Kingdom (9%, EUR 3,3 million). These imports were most likely landings of foreign vessels in the Netherlands. Frozen sole, which represented 8% of the imports value in 2023, originated mainly from Poland (57% of the frozen sole imported value) and Italy (18% of the frozen imports in value). The volumes of frozen sole imported from Spain consist mainly of *Solea senegalensis* from aquaculture.

Figure 16: Evolution of Dutch imports of sole by preservation state (in tonnes net weight, EUR/kg)



Source: EUROSTAT-COMEXT data

The imports of fresh sole in the Netherlands varied between 2.000 and 3.000 tonnes during the past ten years, with an overall decrease of 36% since 2014. Over the same period, the nominal value has increased by 23% and the nominal price has increased by 94%, from 9,15 EUR/kg to 17,72 EUR/kg in 2023.

Dutch imports of frozen sole were almost null in 2014 and have strongly increased in volume and value since over the period, reaching 404 tonnes and EUR 3,4 million in 2023. Over the period, the nominal price fluctuated around 8 EUR/kg, reaching 8,38 EUR/kg in 2023.

Since 2014, Belgium has remained the first supplier of sole to the Netherlands, despite a 34% decrease in the volume imported between 2014 and 2023. During the same period, Dutch imports of sole from Iceland increased significantly from unsignificant volumes in 2014 to almost 400 tonnes in 2023, making Iceland the second-largest supplier. This increase, along with the rise of imports from Spain, is due to the growth of aquaculture production of Senegalese sole in both countries. On the contrary, imports from the United Kingdom, previously the second-largest supplier of sole for the Netherlands, decreased by 73% over the same period. In 2023, it accounted for only 8% of the Dutch imports in volume. Similarly, Dutch imports from Germany, France and Denmark decreased by 60%, 63% and 83% respectively. These trends suggest a shift in Dutch imports, with the replacement of part of the common sole from fishery with Senegalese sole from aquaculture.

Table 26: Evolution of Dutch sole imports by main suppliers (tonnes product weight, 2014-2023)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol. 2014/23
Belgium	1.620	749	1.132	807	868	1.206	1.329	1.792	1.131	1.054	-35%
Iceland	1	12	24	14	114	74	56	52	132	377	+40.925%

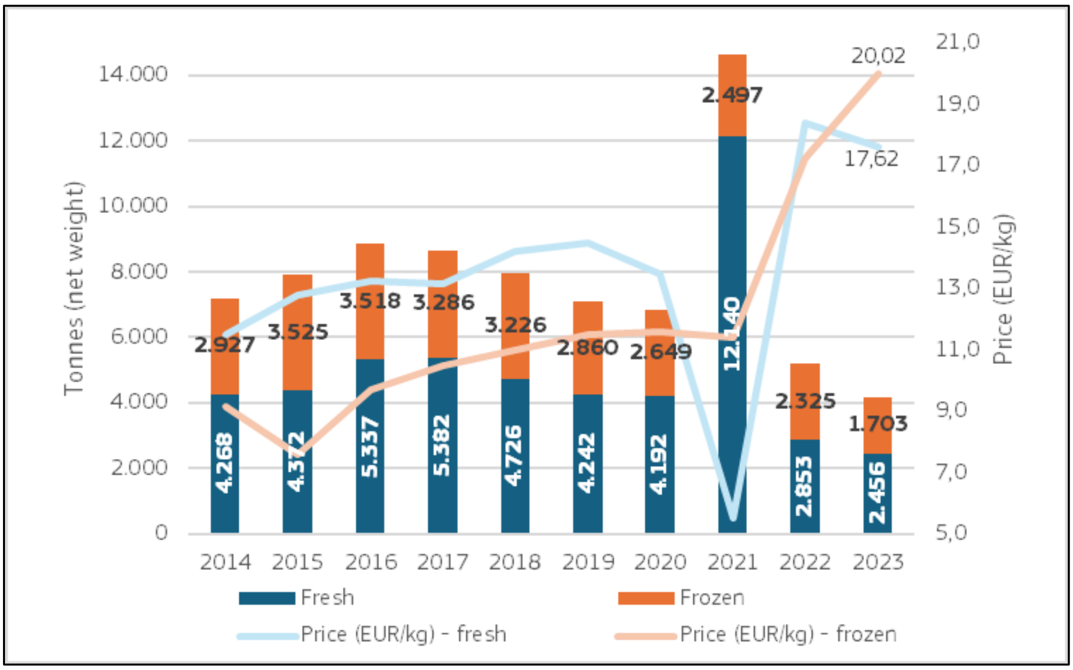
Poland	0	0	1	1	1	1	1	2	121	295	na
Germany	490	542	724	617	608	400	657	463	167	207	-58%
United Kingdom	733	530	612	466	1.246	470	718	386	232	197	-73%
Spain	1	1	2	5	4	44	60	51	208	187	+18.307%
France	324	168	92	128	211	117	93	71	172	118	-64%
Italy	0	0	9	3	5	32	109	50	17	56	na
Denmark	238	159	227	221	246	91	94	250	141	45	-81%
Others	3	0	87	13	19	7	18	51	59	35	+1.241%
Total	**3.411**	**2.162**	**2.912**	**2.276**	**3.321**	**2.441**	**3.136**	**3.167**	**2.378**	**2.571**	-25%

Source: EUROSTAT-COMEXT

Exports

Total sole exports from the Netherlands reached 4.160 tonnes in 2023, amounting to EUR 77 million. Between 2014 and 2023, exports remained relatively stable in value. Exports included both fresh and frozen sole, accounting for 56% and 44% of the imports value respectively in 2023. Fresh sole was mainly exported to Italy (28% of the fresh exports in value), Belgium (21%), Spain (18%) and Germany (16%), while frozen sole was mainly exported to the United States (36% of the exports value of frozen sole), Italy (18%), Spain (17%), and Germany (14%). Exports to Italy consist mostly of small sole of size 5 and 4 while exports to Belgium, Germany and France consist of larger sole (size 1 to 3).

Figure 17: Evolution of Dutch sole exports by preservation type (in tonnes product weight, EUR/kg)



Source: EUROSTAT-COMEXT data

Note: fresh volumes for 2021 are largely overestimated according to stakeholders, therefore the price for that year is most likely to be incorrect

Exports of fresh sole from the Netherlands decreased by 42% in volume between 2014 and 2023 and by 12% in value. The nominal price increased by 22% between 2019 and 2023, from 14,49 EUR/kg in 2014 to 17,62 EUR/kg in 2023.

Dutch exports of frozen sole have decreased by 42% in volume since 2014. Between 2019 and 2023, the nominal price increased by 74%, from 11,51 EUR/kg in 2019 to 20,02 EUR/kg in 2023. The reduction in frozen exports is correlated to the decline in landings. As volumes are decreasing, there is fewer need to preserve the fish by freezing. Notably, the average export price of frozen sole (20,02 EUR/kg) is higher than that of fresh sole (17,62 EUR/kg). This could be explained by larger, premium sole, particularly for export to the United States.

Spain was the first destination of the Dutch exports in 2023 despite a 39% decrease. Italy, which was the first destination of the Dutch exports of sole in 2014, experienced a 69% decrease in its imports from the Netherlands, making it the second largest destination in 2023. Exports to Belgium and France decreased by 24% and 25% respectively over the 2014-2023 period. By contrast, Germany and the United States were the only markets to experience growth, with exports to Germany rising by 2% and to the US by 8%.

Table 27: Evolution of Dutch sole exports by destination (tonnes product weight, 2014-2023)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol. 2014/23
Spain	1.655	1.951	1.923	1.949	1.737	1.649	1.561	1.743	1.075	1.014	-39%
Italy	2.943	3.170	3.242	2.998	2.628	2.213	2.210	2.247	1.468	1.004	-66%
Germany	535	662	812	702	755	660	614	671	644	548	+2%
Belgium	677	698	1.084	1.225	1.289	1.217	994	995	413	515	-24%
United Stated	455	401	421	377	555	373	229	340	504	490	+8%
France	541	692	1.036	1.086	659	695	881	880	699	404	-25%
Others	389	322	336	331	329	295	352	357	374	184	-53%
Total	**7.195**	**7.897**	**8.855**	**8.668**	**7.952**	**7.102**	**6.841**	**7.233**	**5.178**	**4.160**	**-42%**

Source: EUROSTAT-COMEXT

Apparent consumption

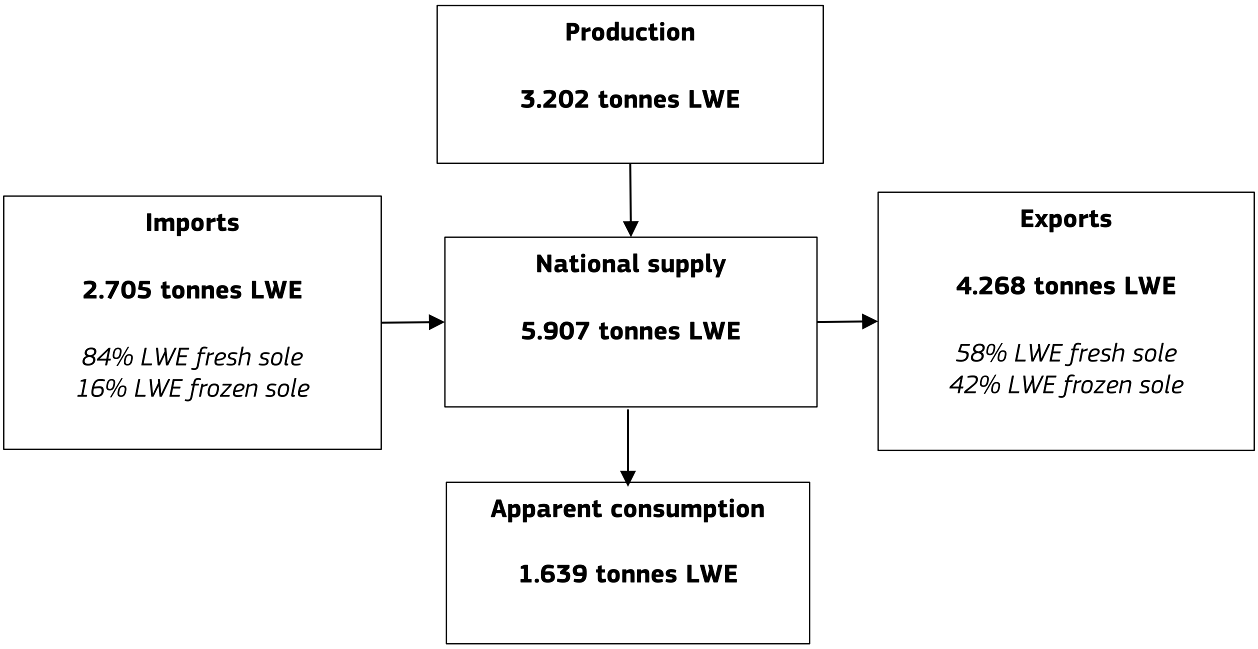
The Dutch market for sole was estimated at 1.639 tonnes LWE. Dutch apparent consumption of sole increased by 22% between 2022 and 2023 despite an overall decrease of 68% between 2014 and 2023. Over the same period, Dutch catches and imports decreased by 64% and 24%, respectively, while exports fell by 43%.

Table 28: Dutch apparent consumption of sole in 2023 (tonnes of live weight equivalent)

	Volume (LWE)	Evol. 2022/23	Evol. 2014/23
Production	3.202	-26%	-64%
Import	2.705	3%	-24%
Supply	5.907	-15%	-53%
Export	4.268	-24%	-43%
Apparent Consumption	**1.639**	**22%**	**-68%**

Source: EUMOFA data

Figure 18: Supply balance for sole in the Netherlands (2023, tonnes of live weight equivalent)



Source: EUMOFA estimates based on EUROSTAT and EUROSTAT-COMEXT data

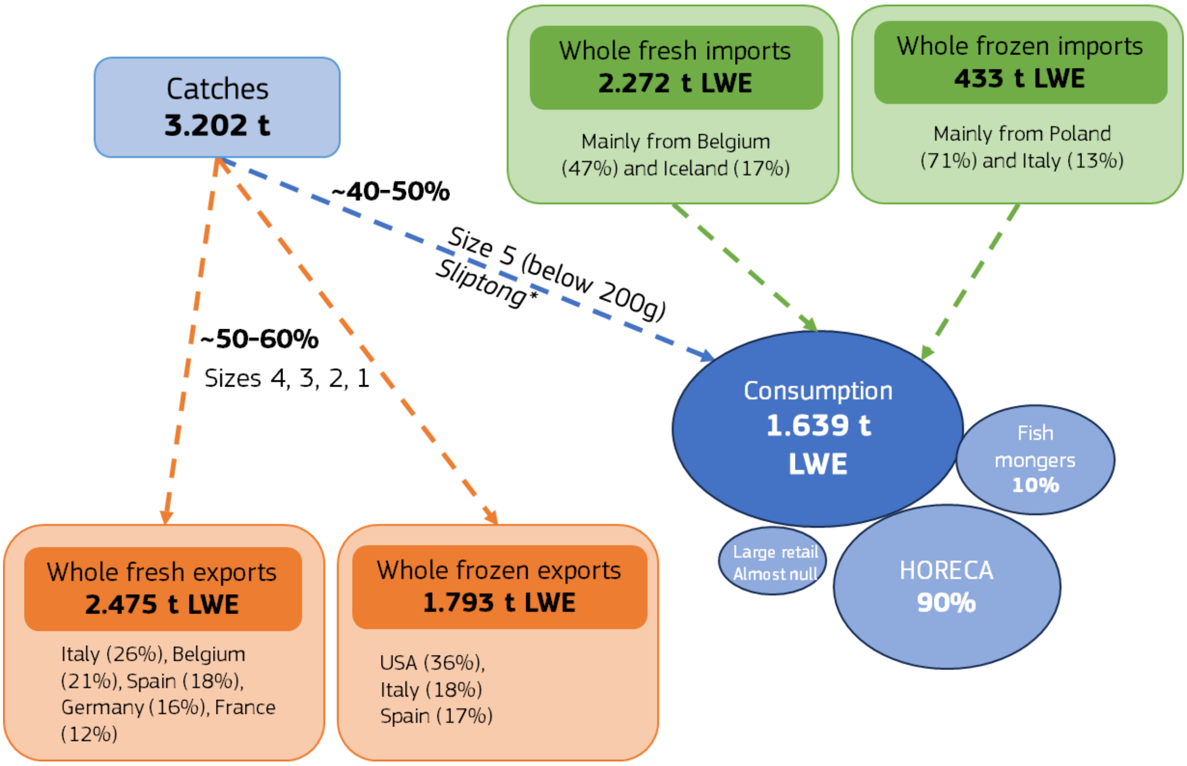
4.2 Characteristics of the Dutch market and consumption

Structure of the supply chain in the Netherlands

According to stakeholders, the structure of the supply chain for sole in the Netherlands includes 4 stakeholders in most cases:

- Auctions, where all the volume is first sold,
- Restaurants, which buy the fish directly from the auctions (accounting for 90% of the Dutch consumption of sole),
- Fishmongers, who buy directly from the auctions as well but represent a lower share of the local consumption,
- Processors and exporters, exporting up to two-thirds of the national supply.

Figure 19: Supply chain for sole in the Netherlands (tonnes LWE, 2023)



Source: EUMOFA

**sliptong*: local denomination of small soles (size 5)

Consumption

Sole is a popular and premium fish in the Netherlands. Soles are not widely available in supermarkets or other retail outlets in the Netherlands but rather consumed in restaurants or available to a lesser extent with fishmongers.

In the Netherlands, the most consumed soles are the small ones from the size 5 category (120 to 200g), locally known as *Sliptong*. Sole from this category is usually sold fresh to restaurants and HORECA channels, where they are served in portions of 2 to 3 soles per person. Soles of size 4 (200 to 250g) and size 3 (250-350g) are mostly exported to Italy, while the largest soles (size 2: 350-500g, and size 1: 500g and more) are exported to Belgium and France at higher prices. Sole can be consumed all year long. However, it is best between June and March when the sole is the fattest.

Based on qualitative feedback from stakeholders, the Dutch market is about 40 to 50% of the landed volumes of sole (51% in 2023), while 50 to 60% of the landings go to the French, Belgian, and Italian markets.

The estimated breakdown in volume by sales channel in the Netherlands is as follows (based on stakeholders' interviews): 90% in HORECA and10% in fishmongers.

4.3 Price transmission in the supply chain

First sale prices[16]

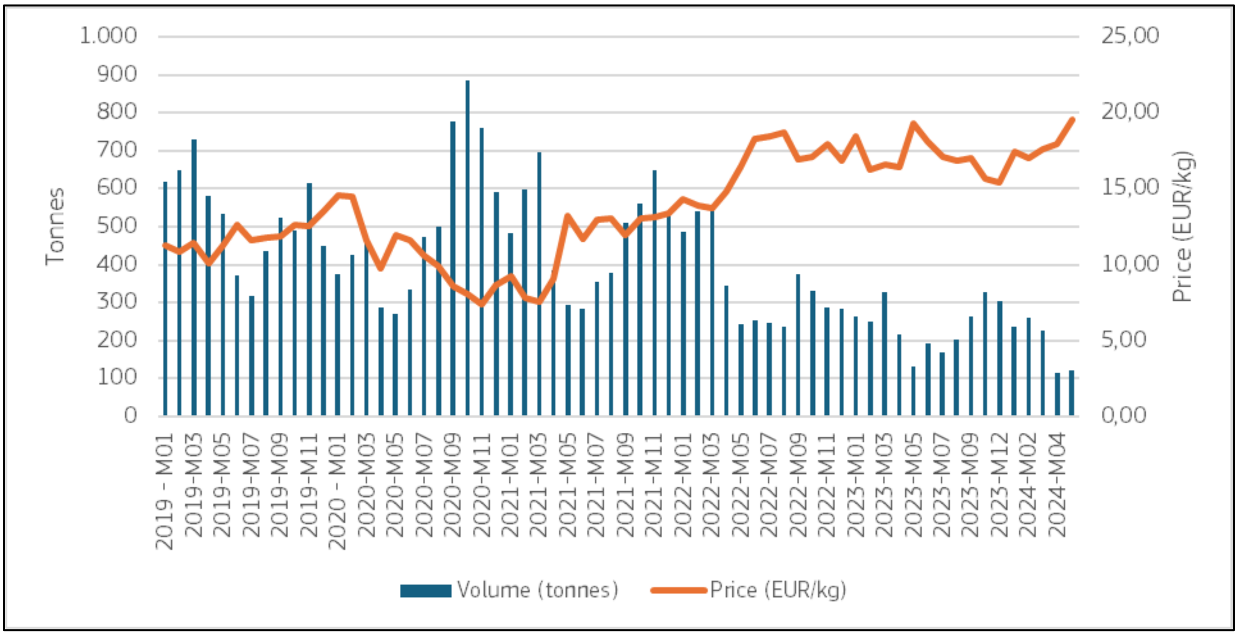
First sales of common sole in the Netherlands decreased by 59% in volume between 2019 and 2023 (-37% in one year between 2022 and 2023), reaching 2.706 tonnes in 2023 in relation to the quotas decrease. The value of first sales decreased by 40% over the same period (-33% over the last year) and amounted to EUR 45 million in 2023. By contrast, the first sale price of common sole followed an upward trend, increasing by 46% since 2019, from 11,30 EUR/kg in 2019 to 16,53 EUR/kg in 2023. Over the last year, the price has increased by 6%.

Table 29: Evolution of sole first sales in the Netherlands between 2019 and 2023

	2019	2020	2021	2022	2023	Evol. 2019/23
Volume (tonnes)	6.313	6.142	5.719	4.162	2.646	-59%
Nominal value (1.000 EUR)	74.854	62.063	64.971	67.093	44.737	-40%
Nominal price (EUR/kg)	11,30	9,66	10,69	15,54	16,53	+46%

Source: EUMOFA

Figure 20: Common sole monthly first sale volumes and first sale prices in Dutch ports between 2019 and 2023 (in tonnes net weight and EUR/kg)



Source: EUMOFA data

Based on the EUMOFA monthly first sale data, there is no clear evidence of price elasticity as prices do not always decrease when supply increases. Stakeholders interviewed mentioned that common sole prices are stable all year-long, despite the variation in volumes. Fisheries targeting common sole have a continuous activity throughout the year, with most fishing activity occurring from September to March.

[16] First sales may differ from landings since the former do not cover fish that is landed by vessels owned by processing companies or direct sales to processors.

In 2023, reported first sale in Dutch ports reached 2.646 tonnes, of which 65% occurred between January and March, and September and December.

Data analysis highlighted a price variation between fishing ports, regardless of landed volumes, as well as price variation based on fish size.

In 2023, IJmuiden/Velsen accounted for 43% of the Dutch first sale volumes of common sole, amounting to 1.174 tonnes. Vlissingen was the second most important fishing port for common sole is, accounting for 17% of the volume, followed by Scheveningen with 15%. IJmuiden/Velsen recorded the highest first sale prices in 2023, reaching 17,39 EUR/kg, marking a 45%-increase since 2019. On the contrary, Vlissingen recorded the second lowest first sale prices, reaching 14,91 EUR/kg, despite a 50%-increase over the period. Meanwhile, first sales in Scheveningen increased by 47% since 2019, reaching 16,34 EUR/kg.

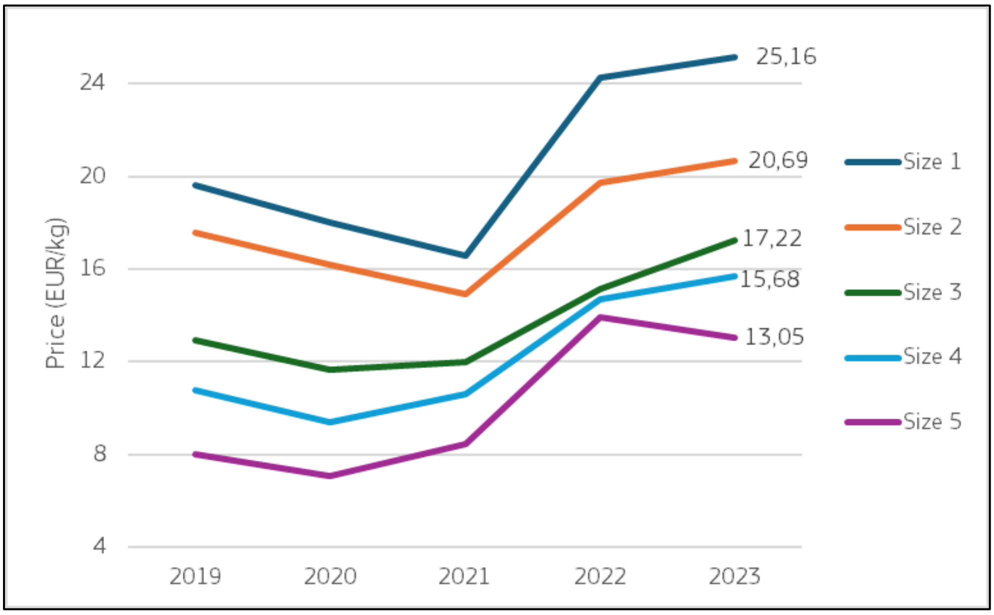
Table 30: First sale prices of common sole in the main fishing ports in the Netherlands between 2019 and 2023 (EUR/kg)

	2019	2020	2021	2022	2023	Evol. 2019/23
IJmuiden/Velsen	11,98	10,14	11,49	16,35	17,39	+45%
Vlissingen	9,913	8,958	9,406	14,02	14,91	+50%
Scheveningen	11,14	9,683	10,55	15,35	16,34	+47%
Stellendam	11,72	10,51	11,34	15,93	16,48	+41%
Urk	10,75	8,827	9,803	14,45	16,02	+49%
Stellendam	11,72	10,51	11,34	15,93	16,48	+41%
Den Helder	12,11	9,788	11,33	15,92	-	-
Average	**11,30**	**9,66**	**10,69**	**15,54**	**16,53**	**+46%**

Source: EUMOFA

Sole prices vary depending on size category. In 2023, size 5 soles accounted for 30% of the first sale volumes in 2023 (814 tonnes), followed by size 4 soles (645 tonnes; 24%) and size 3 soles (615 tonnes; 13%). The highest average annual first sale prices were recorded for size 1 and size 2 soles, usually exported to Belgium and France, reaching 25,16 EUR/kg and 20,69 EUR/kg respectively in 2023. By contrast, size 5 soles sold to restaurants for the local market, had the lowest first sale prices in 2023, at13,05 EUR/kg.

Figure 21: Average yearly first sale prices of sole in the Netherlands depending on the size (EUR/kg)



Source: EUMOFA data

Import/export prices

Between 2019 and 2023, trade volumes declined due to reduction in sole TACs. Exports were particularly impacted, coinciding with the reduction in supply as both landings and imports declined over the past years. Exports of both fresh and frozen sole declined by 40% and 42% respectively, while prices increased especially for frozen sole (+74% between 2019 and 2023). Imports followed a similar pattern, with a small reduction in volume (-9%), accompanied by a notable price increase (+30%).

Table 31: Import and export price (nominal price) and volume for fresh and frozen sole in the Netherlands

		2019	2020	2021	2022	2023	Evol. 2019/23
Price (EUR/kg)	Import – fresh	13,62	12,39	11,68	16,80	**17,72**	+30%
	Export – fresh	14,49	13,46	5,49	18,40	**17,62**	+22%
	Export – frozen	11,51	11,57	11,40	17,26	**20,02**	+74%
Volumes (tonnes)	Import – fresh	2.373	3.009	3.084	2.021	**2.167**	-9%
	Export – fresh	4.242	4.192	12.140	2.853	**2.456**	-42%
	Export - frozen	2.860	2.649	2.497	2.325	**1.703**	-40%

Source: EUROSTAT-COMEXT

Retail prices

According to the stakeholders interviewed, sole consumption in the Netherlands consists almost exclusively of size 5 sole or *sliptong* (below 200g), consumed mainly in restaurants and available at prices around 65 EUR/kg.

Price transmission

Three price transmission analyses have been conducted:

- Size 5 sole – served in restaurants in the Netherlands,
- Size 1 sole – exported fresh to France,
- Size 3 sole – exported fresh to Italy.

The main difference relates to the raw material price, with smaller soles being cheaper.

Size 5 soles - served in restaurants in the Netherlands

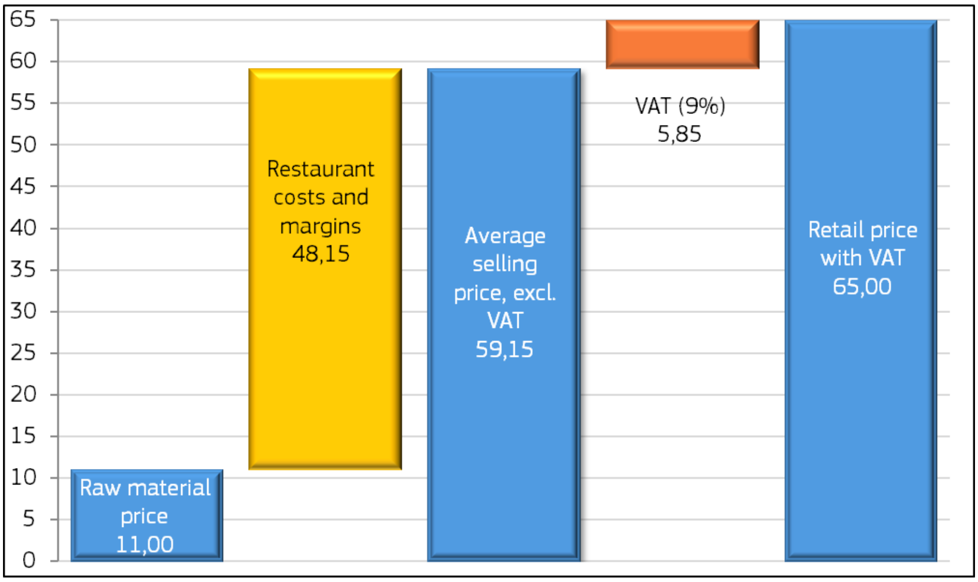
Sole sold in Dutch restaurants is small soles of size 5, also called *sliptong*. Restaurants can purchase soles via processors or wholesalers, but the ones located on the coastline (e.g. In Scheveningen) purchase soles directly from the auction, avoiding further intermediaries. The raw material price is 11 EUR/kg. The retail price in restaurants for two to three pieces of sole with vegetables is around 29-32 EUR per meal. Thus, prices of sole in restaurant can be estimated around 60 to 70 EUR/kg.

Table 32: Costs and margins for *sliptong* served in Dutch restaurants (EUR/kg, 2024)

	Stage	Price (EUR/kg)	% of the final price	Sources
Auction price	**Raw material price**	**11,00**	**17%**	Interview
Restaurant	Costs and margins	48,15	68%	Calculation
Average selling price, excl. VAT		**59,15**	**91%**	Calculation
VAT (9%)		5,85	9%	Calculation
Average selling price, incl. VAT		**65,00**	**100%**	Interview

Source: elaboration based on interviews and EUMOFA data

Figure 22: Costs and margins for *sliptong* (sole size 5) sold in restaurants in the Netherlands (EUR/kg, 2024)



Source: elaboration based on interviews and EUMOFA data

Size 1 fresh sole - exported from the Netherlands to France

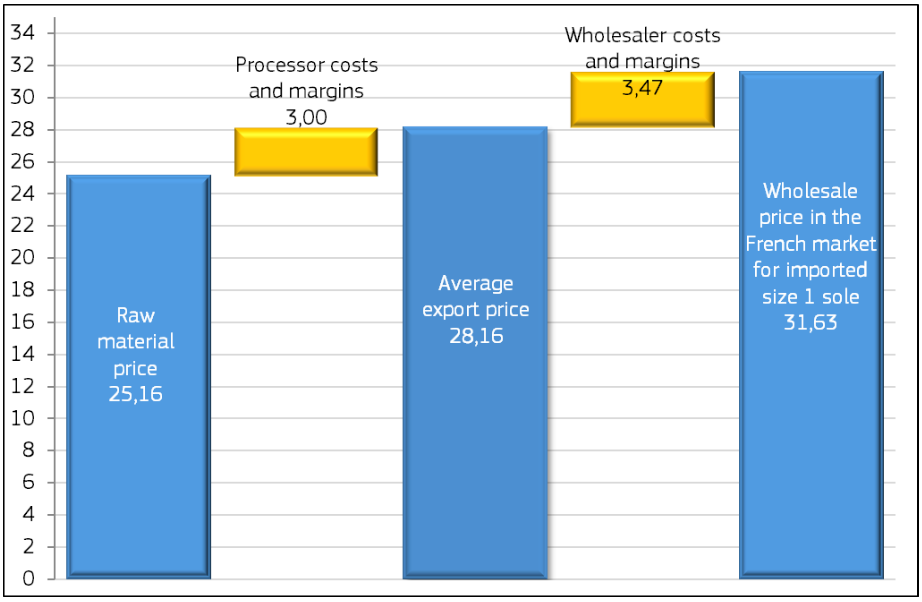
Large soles (size 1) are exported to western and southern EU Member States. Processors purchase soles from the auctions before proceeding to sorting by size, removing skin, packaging and exporting. The raw material price of size 1 sole (500 g and more) amounted to 25,16 EUR/kg. Wholesale price in the French market was extracted from the Rungis database[17] and is for size 1 fresh sole originating from EU countries ("*SOLE (entière) taille 1 U.E.*"). In 2023, 60% of the French sole intra EU imports originated from the Netherlands. Therefore, it is estimated that the French import price of sole is for Dutch exports. The wholesale price at Rungis for fresh sole from EU origin amounted to 31,63 EUR/kg in 2023.

Table 33: Costs and margins for size 1 fresh sole exported to France from the Netherlands (EUR/kg, 2023)

Stage		Price (EUR/kg)	% of the final price	Sources
Auction price	**Raw material price**	**25,16**	**80%**	EUMOFA data
Processor	Shrink Packaging and industrial costs Labour costs Processor other costs and margin	3,00	9%	Based on interviews
Average export price		**28,16**	**89%**	Calculation
Wholesaler costs and margins		3,47	11%	Calculation
Wholesale price in the French market for imported size 1 sole		**31,63**	**100%**	RNM data

Source: elaboration based on interviews, EUMOFA data and RNM data

Figure 23: Costs and margins for Dutch exports of fresh sole (size 1) exported to France (EUR/kg, 2023)



Source: elaboration based on interviews, EUMOFA data and RNM data

[17] https://rnm.franceagrimer.fr/prix?SOLE

Size 3 fresh sole - exported from the Netherlands to Italy

The price structure analysis of size 3 soles exported to Italy has been done with 2022 data because it was the latest year available on BMTI[18] report.

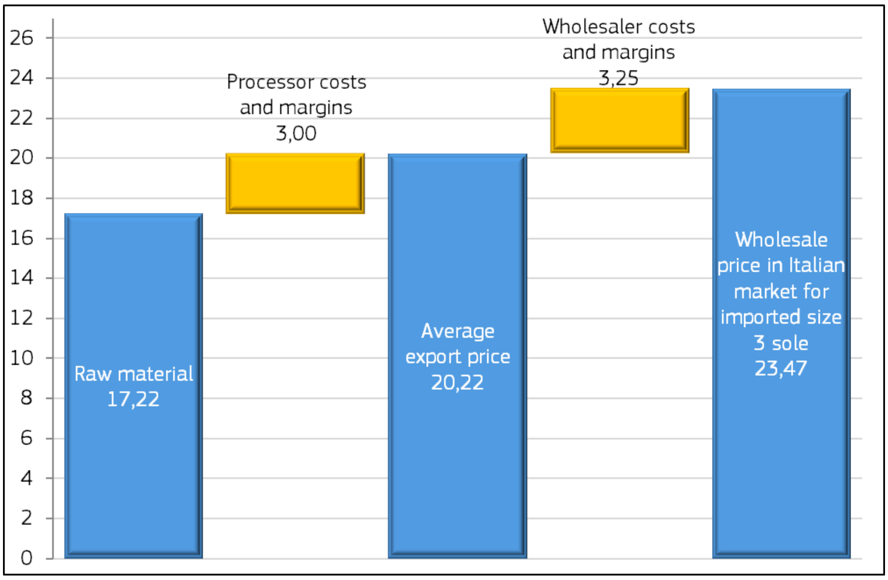
Size 3 soles are exported to southern EU Member States, including Italy. Processors purchase soles from the auctions before proceeding to sorting by size, removing skin, packaging and exporting. The raw material price for size 3 sole (250-350 g) amounted to 15,14 EUR/kg in 2022[19].The wholesale price in the Italian market was extracted from the BMTI database and refers to size 3 sole from Eastern Atlantic ("*Soglia fresca 0,250-0,350 Atlantico Nord-Orientale*"). As the Italian fleet does not have quotas in this area, the sole referred to Italian imports. In 2022, 72% of the Italian sole intra EU imports originated from the Netherlands. Therefore, it is estimated that the import prices of sole in Italy is for the Dutch exports. Wholesale price in Rome for size 3 sole amounted to 23,47 EUR/kg in 2022.

Table 34: Costs and margins for size 3 fresh sole exported to Italy from the Netherlands (EUR/kg, 2022[20])

Stage		Price (EUR/kg)	% of the final price	Sources
Auction price	**Raw material price**	**17,22**	**73%**	EUMOFA data
Processor	Shrink	3,00	13%	Based on interviews
	Packaging and industrial costs			
	Labour costs			
	Processor other costs and margin			
Average export price		**20,22**	**86%**	Calculation
Wholesaler costs and margins		3,25	14%	Calculation
Wholesale price in the Italian market for imported size 3 sole		**23,47**	**100%**	BMTI data[21]

Source: elaboration based on interviews, EUMOFA data and BMTI data

Figure 24: Costs and margins for fresh sole (size 3) exported from the Netherlands to Italy (EUR/kg, 2022)



Source: elaboration based on interviews, EUMOFA data and BMTI data

[18] Borsa Merci Telematica Italiana
[19] Last data available on BMTI report
[20] *Ibidem*
[21] https://ittico.bmti.it/Prezzi/pages/DownloadDoc?id=2943

5. THE BELGIAN MARKET

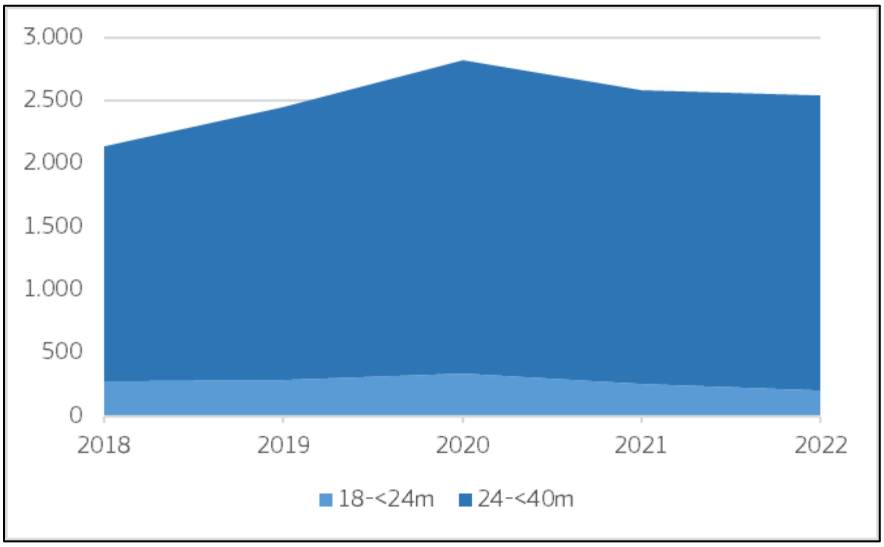
5.1 Structure of the supply chain

Production

Characteristics of the fleet

Common sole catches by the Belgian fleet were almost exclusively made by large vessels 24 to 40 metres long (accounting for 92% of Belgian landings of common sole in volume in 2022) and to a lesser extent by vessels between 18 and 24 metres (8% of the landings in volume). Since 2018, common sole landings have increased by 19% in volume in Belgium.

Figure 25: Evolution of Belgian landings of common sole by vessel length (tonnes)



Source: STECF

In 2022, 92% of the Belgian landings of common sole were caught using beam trawlers. Other fishing techniques included demersal trawlers and/or demersal seiners (8% of the landings volumes) and more occasionally other active and passive gears.

Management measures

Belgian catches of sole reached 2.405 tonnes in 2023. Common sole catches decreased during the last decade by 33%. Data on landings show that about 500 tonnes of Belgian sole catches are landed in other Member States, mainly in France and in the Netherlands. According to stakeholders, catches in 2024 could be significantly lower. Early in 2024, ICES recommended closing sole fishing in the Irish Sea (ICES division VIIa). Belgian fishermen were given only six months to reach their usual quota.

Table 35: Evolution of Belgium catches of sole species (tonnes product weight, 2014-2023)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol. 2022/23	Evol. 2014/23
Common sole	3.605	3.077	2.570	2.215	2.137	2.437	2.776	2.646	2.590	2.405	-7%	-33%

Source: Eurostat

Imports

Imports:

Total imports of sole to Belgium reached 1.099 tonnes in 2023, for a value of EUR 20 million. From 2014 to 2023, Belgian sole imports have decreased by 36%, though they peaked in 2016. Fresh sole dominated imports, accounting for 99% of the total value in 2023. The Netherlands remained the main supplier of fresh sole to Belgium in 2023, accounting for 37% of total imports despite a significant 65% decrease in volume since 2014. Ireland emerged as the second-largest supplier, with imports rising to 268 tonnes, an increase of 226 tonnes since 2014 and representing 25% of the total volume. The United Kingdom ranked third, supplying 19% of the imported fresh sole though its exports to Belgium declined by 12% compared to 2014. Imports from France also saw a decrease of 22% over the same period.

Table 36: Belgium imports of sole in 2023, by preservation type (product weight)

	Volume (tonnes)	Nominal value (1.000)	Price (EUR/kg)	% val. 2023
Fresh or chilled	1.059	20.040	18,92	99%
Frozen	40	254	6,33	1%
Total	**1.099**	**20.295**	**18,46**	**100%**

Source: EUROSTAT-COMEXT

Table 37: Evolution of Belgian imports of sole by supplier (tonnes product weight, 2014-2023)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol 2014/23
Netherlands	1.143	1.113	1.274	1.220	1.005	951	626	644	506	401	-65%
Ireland	42	88	116	132	153	297	228	305	260	268	+539%
United Kingdom	231	248	203	236	340	308	392	220	253	205	-12%
France	178	85	123	110	83	64	30	146	164	139	-22%
Denmark	16	5	17	30	14	9	23	34	31	37	+134%
Iceland	5	8	13	18	48	82	219	277	184	35	+569%
Other	91	132	131	94	58	55	15	27	38	15	-84%
Total	**1.707**	**1.678**	**1.876**	**1.840**	**1.701**	**1.768**	**1.534**	**1.654**	**1.436**	**1.099**	**-36%**

Source: EUROSTAT-COMEXT

Exports

Total exports of sole from Belgium reached 1.419 tonnes in 2023, for a value of EUR 24 million. Belgian exports of sole have decreased by 42% in volume between 2014 and 2023. Fresh sole dominated exports in 2023, while frozen exports have drastically decreased from 213 tonnes in 2014 to 1 tonne in 2023. The Netherlands is the main market for Belgian exports, although the volume imported has decreased by 20% between 2014 and 2023 (89% of the exported volume). The most significant decrease in exports was to Italy and France. In 2013, these countries received several hundred tons of sole from Belgium. By 2023, exports had fallen to just 19 tonnes for France and a single tonne for Italy.

Table 38: Belgium exports of sole in 2023, by preservation type (product weight)

	Volume (tonnes)	Nominal value (1.000)	Price (EUR/kg)	% val. 2023
Fresh or chilled	1.418	24.209	17,07	100%
Frozen	1	10	9,25	0%
Total	**1.419**	**24.219**	**17,07**	**100%**

Source: EUROSTAT-COMEXT

Table 39: Evolution of Belgian exports of common sole by destination (tonnes product weight, 2014-2023)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evol. 2014/23
Netherlands	1.579	1.201	1.034	718	943	1.271	1.434	1.173	1.199	1.257	-20%
Spain	137	131	147	63	62	75	169	229	342	103	-25%
Luxembourg	35	34	29	26	30	33	14	55	39	31	-11%
France	467	327	297	305	118	98	42	52	24	19	-96%
Italy	185	127	73	95	111	66	3	7	5	1	-99%
Other	38	105	31	32	10	13	23	22	7	7	-82%
Total	**2.442**	**1.926**	**1.612**	**1.239**	**1.274**	**1.556**	**1.684**	**1.538**	**1.616**	**1.419**	**-42%**

Source: EUROSTAT-COMEXT

Apparent consumption

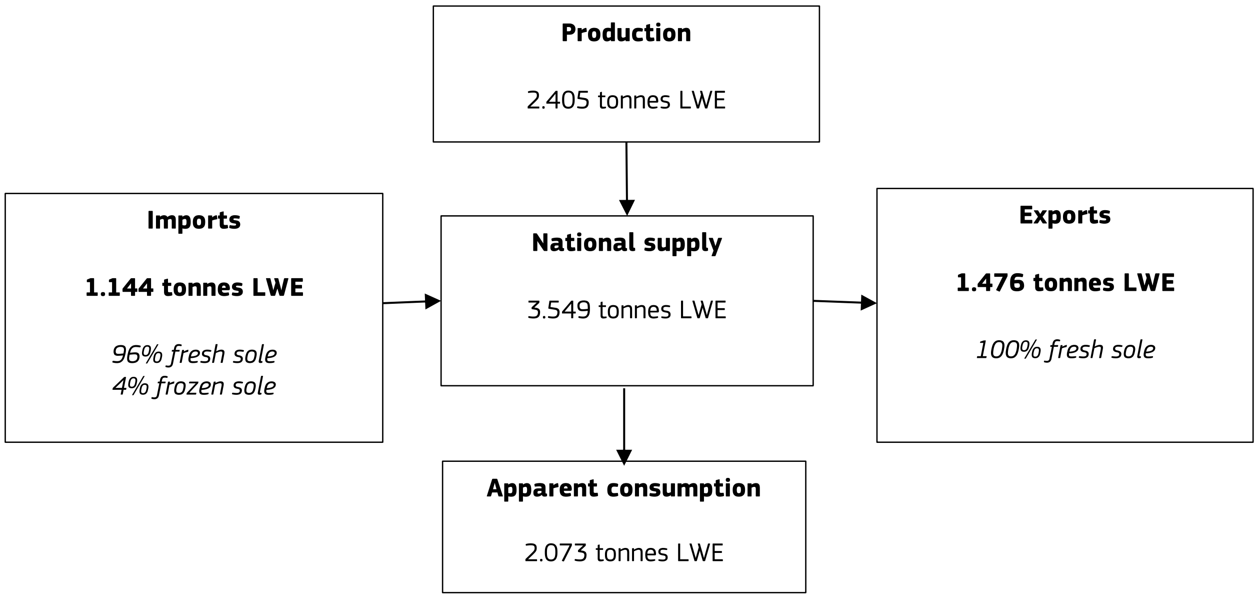
The Belgian market for sole was estimated at 2.072 tonnes LWE in 2023. Apparent consumption decreased by 14% between 2022 and 2023 and by 27% between 2014 and 2023. Over this 10-year period, Belgian catches decreased by 33% and imports and exports decreased by 36% and 42%, respectively.

Table 40: Apparent consumption of sole in Belgium in 2023 (tonnes, live weight equivalent)

	2023	Evol. 2022/23	Evol. 2014/23
Production	2.405	-7%	-33%
Imports	1.144	-23%	-36%
Supply	3.549	-13%	-34%
Exports	1.476	-12%	-42%
Apparent consumption	**2.073**	**-14%**	**-27%**

Source: EUROSTAT, EUROSTAT-COMEXT

Figure 26: Supply balance for sole in Belgium (2023, tonnes of LWE)



Note: percentages provided in the figure are in volume

Source: EUMOFA estimates based on EUROSTAT and EUROSTAT-COMEXT data

5.2 Characteristics of the Belgian market and consumption

Sole is a popular fish in Belgium, mostly consumed at home and in restaurants. The Belgian market for sole mainly includes whole fresh sole caught by the Belgian fleet. The size of the sole determines its destination.

The largest soles (size 1) are destined for the American market. These are exported to the Netherlands to be frozen and then shipped to their final destination. Size 2 soles are consumed locally, mainly in restaurants, as the size of the fillets is highly appreciated by consumers. The smaller sizes, from 3 to 5, are sometimes served in restaurants but are primarily eaten at home. Belgians can find these sizes in supermarkets, usually sold in packs of 2 to 5, depending on the size. Size 5 soles are occasionally sold directly by fishermen after being auctioned, but this remains a marginal practice.

In Belgium, sole is mainly consumed during spring and summer.

The estimated breakdown of sales volume by marketing channel in Belgium, based on stakeholder interviews, is as follows: 30% in HORECA and 70% in fishmongers and large retail stores.

5.3 Price transmission in the supply chain

First sale prices

Common sole first sales in Belgium have increased by 22% in volume between 2019 and 2023, reaching 2.524 tonnes in 2023. Over the same period, the value of first sales increased by 69% and amounted to EUR 44 million in 2023. Additionally, the price of common sole first sales also increased by 38% between 2019 and 2023, reaching 17,54 EUR/kg in 2023.

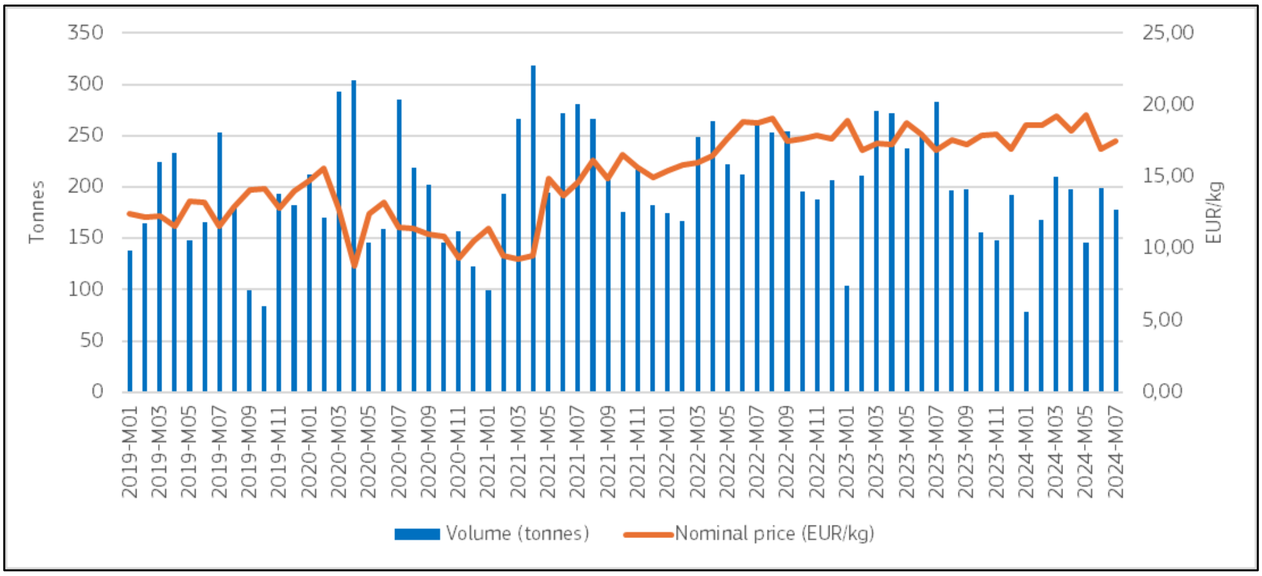
Table 41: Common sole first sale value, volume and prices (2019-2023)[22]

	2019	2020	2021	2022	2023	Evol. 2019/23
Nominal Value (EUR 1.000)	26.211	28.504	35.722	46.274	44.257	+69%
Volume (tonnes)	2.066	2.417	2.679	2.651	2.524	+22%
Price (€/kg)	**12,69**	**11,79**	**13,33**	**17,45**	**17,54**	+38%

Source: EUMOFA data

Monthly variations in first sale volumes and prices over the past five years reveal a strong seasonal pattern in volumes landed at Belgian ports, with significantly higher quantities sold from spring to summer, particularly from March to July.

Figure 27: Common sole monthly first sale volumes and first sale prices in Belgium ports between 2019 and 2023 (in tonnes net weight and EUR/kg)



Source: EUMOFA data

First sale prices for sole varied based on the first sale location and product size, which determines the marketing channels, as outlined earlier.

Zeebrugge accounted for 56% of Belgian first sale volumes of common sole in 2023, amounting to 1.411 tonnes. Oostende is the second most important first sale place for common sole, accounting for 43% of the volumes. Nieuwpoort, which accounted for only 1% of sole first sales in 2023, recorded the highest first sale prices in 2023, reaching 18,38 EUR/kg. Higher prices recorded in Nieuwpoort could be explained by the fact that only small buyers, such as restaurants, purchase at this auction. Oostende

[22] There is a difference between catches and first sale volume due to the use of two different sources: catches are from Eurostat, whereas first sale volume is from EUMOFA. Additionally, the landings of Belgian sole in ports outside Belgium and the landings of Irish sole in the Belgian market may also explain these differences.

recorded the lowest first sale prices in 2023, reaching 17,31 EUR/kg, marking a 37% increase in comparison to 2019. The first sale of common sole in Zeebrugge averaged 17,70 EUR/kg, marking a increase of 39% since 2019.

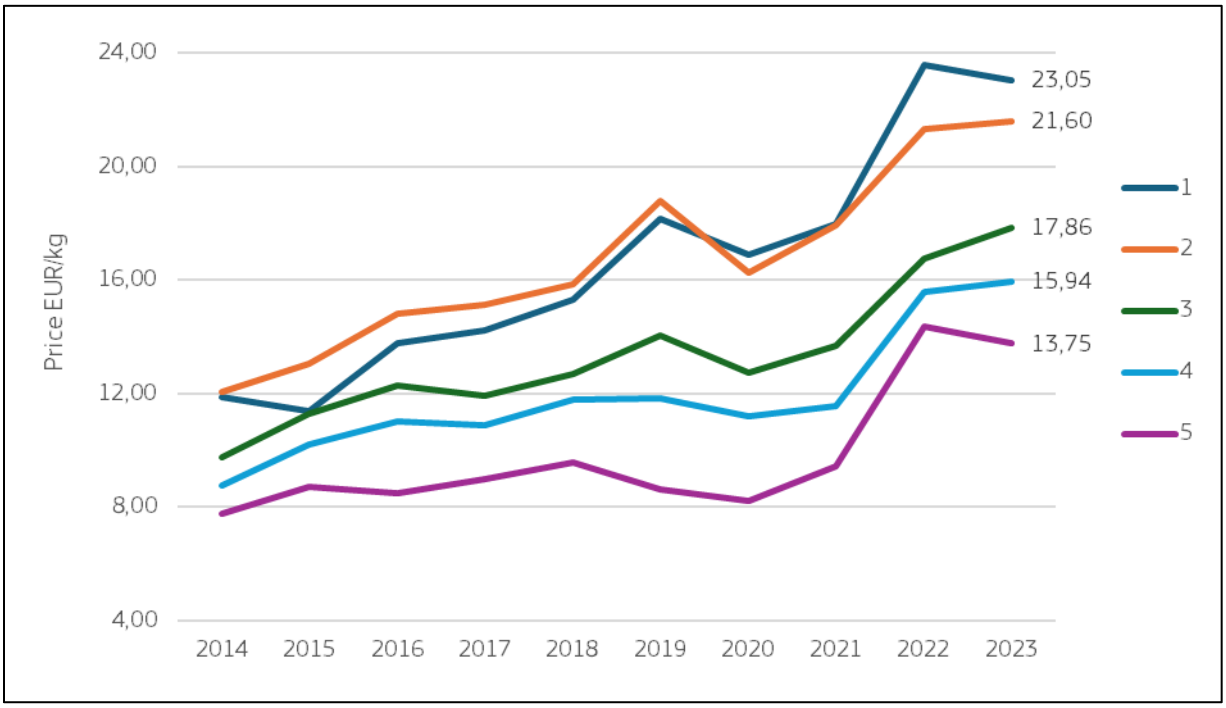
Table 42: Sole first sales by first sale places in Belgium between 2019 and 2023 (EUR/kg)

	2019	2020	2021	2022	2023	Evol. 2019/23
Nieuwpoort	12,01	10,34	10,71	16,37	18,38	+53%
Oostende	12,59	11,67	13,39	17,22	17,31	+37%
Zeebrugge	12,77	11,95	13,36	17,66	17,70	+39%
Total	**12,69**	**11,79**	**13,33**	**17,45**	**17,54**	**+38%**

Source: EUMOFA data

In 2023, size 5 sole accounted for 33% of first sale volumes (830 tonnes), followed by size 3 sole at 20% (497 tonnes). Sizes 2 and 4 each accounted for approximately 17% (around 420 tonnes each). First sale prices varied by size, with the highest average prices recorded for size 1 and 2 reaching 23,05 EUR/kg and 21,60 EUR/kg, respectively. In contrast, size 5 sole presented the lowest first sale prices in 2023, at 13,75 EUR/kg.

Figure 28: Average yearly first sale prices of sole in Belgium depending on the size (EUR/kg)



Source: EUMOFA

Import/export prices

Import prices of fresh sole in Belgium reached 18,92 EUR/kg in 2023, marking a 39% increase between 2019 and 2023. Over the same period, the volume of Belgian imports of fresh sole decreased by 34%. Export prices of fresh sole increased by 33% over the same period and reached 17,07 EUR/kg in 2023, while volumes decreased significantly.

Table 43: Import and export prices (nominal price) and volume for fresh and frozen sole in Belgium

		2019	2020	2021	2022	2023	Evol. 2019/23
Price (EUR/kg)	Import - fresh	13,59	13,64	14,64	17,84	**18,92**	+39%
	Import - frozen	7,55	5,33	5,10	7,82	**6,33**	-16%
	Export - fresh	12,82	11,90	13,98	16,54	**17,07**	+33%
	Export - frozen	8,16	3,38	5,48	26,80	**9,25**	+13%
Volumes (tonnes)	Import - fresh	1.610	1.483	1.594	1.387	**1.059**	-34%
	Import - frozen	158	51	60	49	**40**	-75%
	Export - fresh	1.401	1.682	1.523	1.611	**1.418**	+1%
	Export - frozen	155	2	15	5	**1**	-99%

Source: EUROSTAT-COMEXT

Retail prices

According to stakeholders, sole is primarily purchased for home consumption through large retailers and fishmongers and is also widely consumed in restaurants. The size 2 sole (350 - 400g) is locally consumed, mainly in restaurants, at around 70,00 EUR/kg. Size 3, 4 and 5 are exported and locally consumed through supermarkets. In 2023, a mix of sizes 3 and 4 was sold at Delhaize for 36,50 EUR/kg.

Price transmission

The two following price transmission analyses are provided below:

- Size 1 sole - exported fresh to the Netherlands, frozen in the Netherlands and then exported to the United States of America.
- Size 2 sole - served in restaurants in Belgium.

Size 1 sole – exported fresh to the Netherlands, frozen in the Netherlands and then exported to the United States of America

According to interviewers, size 1 sole is primarily destined to the United States. However, there is no direct trade of soles from Belgium to the USA. Instead, fresh soles are exported to the Netherlands where they are frozen and exported to the US.

Table 44: Costs and margins for size 1 sole, exported to the Netherlands to be frozen and then exported to the USA (EUR/kg, 2023)

	Stage	Price (EUR/kg)	% of the final price	Sources
Auction price	**Raw material price (1)**	**23,05**	**91%**	First sale prices
Retail cost and margin		0,55	2%	Calculation
Export price of fresh sole to the Netherlands (2)		**23,60**	**93%**	Calculation
Processor (3)	Shrink	1,69	7%	Calculation
	Packaging and industrial costs			
	Labour cost			
	Processor margin			
Export price of frozen sole to the USA (4)		**25,90**	**100%**	EUMOFA

Source: own elaboration based on interviews and EUMOFA data

Notes and sources:

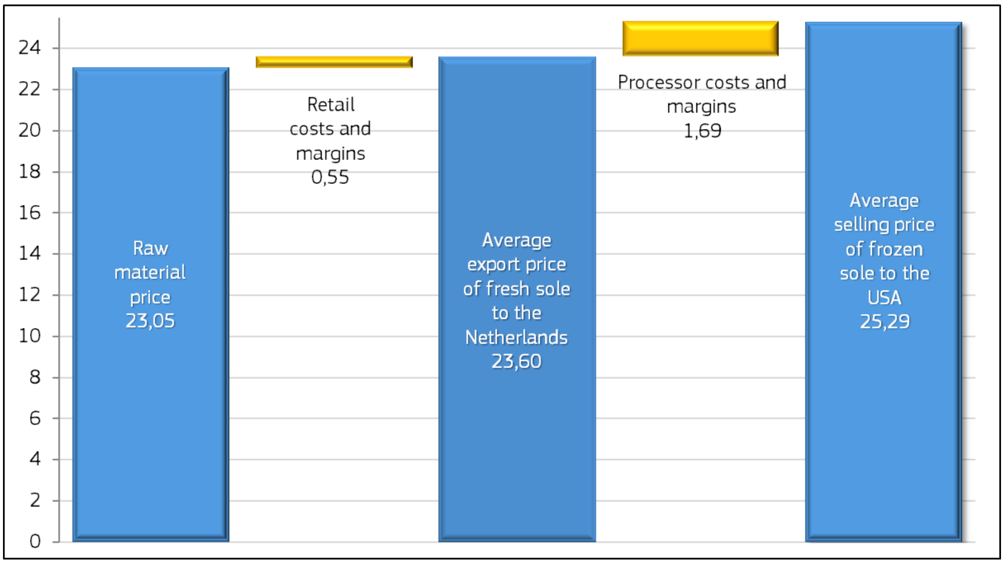
(1) The first sale price is the average price from January to December 2023 in Belgium for size 1 (500 g) common sole landed by Belgian vessels.

(2) The price of soles (size 1) exported to the Netherlands in 2023 was estimated using a proxy, based on the average price of first sales of soles of all sizes combined, the average export price of common sole from Belgium to the Netherlands, and the average price of size 1 soles in first sale in Belgium.

(3) The cost of the freezing process (which represents 7% of the final price) was estimated by the price difference between the imported price of soles and the exported price to the United States from the Netherlands.

(4) The price of sole of frozen sole exported from the Netherlands to the United States of America is extracted from EUMOFA DATA from January to December 2023.

Figure 29: Costs and margins for size 1 sole, exported to the Netherlands to be frozen and then exported to the USA (EUR/kg, 2023)



Source: own elaboration based on interviews and EUMOFA data

Size 2 soles - served in restaurants in Belgium

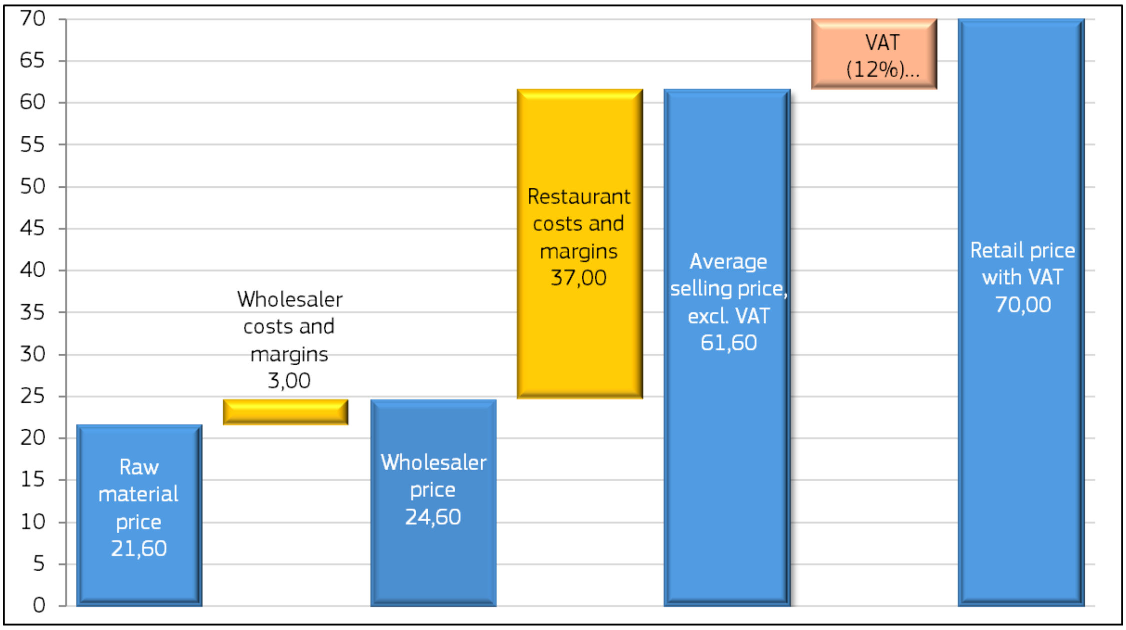
Sole sold in Belgian restaurants are the second largest size of soles (size 2). The raw material price for sole of size 2 was 21,60 EUR/kg in 2023. The soles are packaged by wholesalers, who are also responsible for delivery to the restaurant. Some restaurants source their supplies directly from the fish auction in Nieuwpoort, however, this exchange is anecdotal. The retail price in restaurants for one piece of sole of around 400 g with vegetables is around 30 EUR. Thus, prices of sole in restaurant can be estimated around 70 EUR/kg. These prices are based on interviews with stakeholders.

Table 45: Costs and margins for sole size 2 served in Belgian restaurants (EUR/kg, 2023)

Stage		Price (EUR/kg)	% of the final price	Sources
Auction price	**Raw material price**	**21,60**	**31%**	First sale prices
Wholesaler	Shrink	3,00	4%	Based on interviews
	Packaging and industrial costs			
	Labour cost			
	Other costs and margin			
Wholesaler price		**24,60**	**35%**	Interviews
Restaurant	Costs and margins	37,00	53%	Calculation
Average selling price, excl. VAT		**61,60**	**88%**	Calculation
VAT (12%)		8,40	12%	Calculation
Average selling price, incl. VAT		**70,00**	**100%**	Interview

Source: own elaboration based on interviews and EUMOFA data

Figure 30: Costs and margins for sole size 2 sold in restaurants in Belgium (EUR/kg, 2023)



Source: own elaboration based on interviews and EUMOFA data

6. CONCLUSIONS

This study provides price transmission analysis for sole in France, the Netherlands and Belgium. Significant differences between the markets in terms of marketing channels and preferences of fish size make it difficult to give a comparison of price structures for similar products.

The price structure in retail was estimated for the French market, for size 3 sole in a fishmonger store.

Table 46: Price structure analysis in a fishmonger store for size 3 sole (EUR/kg, 2024)

Country	France
First sale price	20,26
***Mareyeur* price**	24,37
Wholesale price	28,17
Retail price	42,33

Source: EUMOFA

Price structure analyses for sole sold in restaurants were carried out for the three countries. First sale prices vary significantly depending on the fish size. Large fish is sold at a higher per kilo price than small fish. Retail prices in restaurants were provided for restaurants located on the seaside in the Netherlands and Belgium, while in France, a retail price was given for a representative restaurant located in Paris as this area accounts for a significant share of the national consumption. This leads to significant differences in retail prices between the three price structures studied. Seaside restaurants in the Netherlands purchase fish directly at auction, while restaurants in Paris buy fish from wholesalers to ensure a constant supply. The price difference also reflects the difference in raw material used by restaurants. Restaurants in France offer mainly large sizes, while in the Netherlands restaurants sell mostly small sizes (large sizes are mostly exported to France and Belgium).

Table 47: Price structure analysis in restaurants (EUR/kg, 2023/2024)

Country	France (2024)	The Netherlands (2024)	Belgium (2023)
Sole size	**1**	**5**	**2**
First sale price	22,13	11,00	21,60
Wholesale price	33,84	n.a.	24,60
Retail price	100,00	65,00	70,00

Source: EUMOFA

The Dutch and Belgian markets are mainly export-focused. By contrast, France has a larger domestic market both in HORECA and in retail. One specificity of the Netherlands is also to act as a hub where the fish is imported to be frozen and then exported. Comparison of price structures highlights a difference between exports from the Netherlands to France and Italy. Exports to France primarily consist of larger fish, while exports to Italy involve smaller sizes, resulting in a significant price difference between the two. For similar sizes, the price of sole exported fresh from Belgium to the Netherlands (which will then be frozen and re-exported to the USA) is higher than those of exports from the Netherlands to Italy and France.

Table 48: Price structure analysis in export (EUR/kg, 2022/2023)

Country	The Netherlands to France (2023)	The Netherlands to Italy (2022)	Belgium to the Netherlands, re-export to the USA (2023)
Size	**1**	**3**	**1**
First sale price	25,16	17,22	23,05
Export price - fresh	28,16	20,22	23,60
Re-export price - frozen	No re-export	No re-export	25,90
Wholesale price in the country of destination	31,63	23,47	na

Source: EUMOFA

In recent years, the common sole supply has significantly declined due to reduced TACs. The decline in catches was not offset by imports. National supply of sole markets decreased by 44% in France, 68% in the Netherlands, and 27% in Belgium over the past decade. The reduced supply has driven up both first sale and import prices, a trend that has been passed through the supply chain ultimately impacting consumer prices. In France, this evolution was characterized by a change in distribution between sale channels with purchases occurring less frequently in retail and more frequently in restaurants.

In this context, imports of Senegalese sole from aquaculture have developed. This production based in Iceland and Spain has increased significantly over the past 10 years.. The rise in price of common sole in the EU markets probably enabled the development of this new supply source. While volumes remain limited for now, this evolution could continue as the two fishes are easily substitutable including in the HORECA sector. A significant redirection of extra-EU imports from the UK has also been observed, with a significant decrease in imports to the Netherlands and Belgium, and a significant progression of imports to France.

7. STAKEHOLDERS INTERVIEWED

- France
    - Regional fisheries committee
    - Producer organisations
    - Wholesalers
    - Wholesale association
- Netherlands
    - Dutch Fishermen's Association
    - Wageningen University Research
- Belgium
    - Belgium auction
    - Producer organisation

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