CASE STUDY

MACKEREL IN THE EU

PRICE STRUCTURE IN THE SUPPLY CHAIN

FOCUS ON SPAIN, PORTUGAL AND THE NETHERLANDS

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Summary

- In 2021, world production of mackerel was 4,42 million tonnes, almost exclusively from wild caught fisheries (99,9%). The major world producers are China, Japan and Indonesia with over 370.000 tonnes of catches each (these three countries accounted for 30% of the world production in 2021), followed by Russia, Norway and the EU-27 (between 260.000 and 272.000 tonnes each). The catches in the EU-27 accounted for 6% of the world production.
- EU-27 production of mackerel peaked at 423.000 tonnes in 2017 and has decreased in recent years up to 261.161 tonnes in 2021. The evolution of catches is linked to the evolution of TACs (total allowable catches) and quotas. Main producers of mackerel within the EU-27 are Ireland, Spain, the Netherlands, Denmark, Portugal and Lithuania, with catches in 2021 between 25.000 and 61.000 tonnes each.
- The EU-27 apparent consumption was 272.741 tonnes live weight equivalent (lwe) in 2021, with a slightly negative trade balance (475.002 tonnes lwe of imports vs. 463.422 tonnes lwe of exports). There are important trade flows for mackerel, both intra-EU and extra-EU. Almost all catches from Ireland (the major EU producer) are exported, thus, the consumption in this MS is very limited. There are important imports from the UK, Norway, Faroe Islands and Iceland to the EU-27; part of these imports are products caught by third countries' vessels and landed in the EU-27. Main destinations for extra-EU export are the UK, Nigeria, Faroe Islands, Egypt and Norway.
- The main EU markets (in terms of apparent consumption) for mackerel are Poland and France (with 47.296 tonnes lwe and 46.490 tonnes lwe), followed by Spain (34.229 tonnes lwe), Romania (32.983 tonnes lwe), Lithuania (29.246 tonnes lwe), Italy (25.201 tonnes lwe) and the Netherlands (23.972 tonnes lwe).
- The present report focuses on three MS (Spain, Portugal and the Netherlands) where the national consumption of mackerel is mainly for processed products: canned mackerel in Spain and Portugal, smoked mackerel in the Netherlands.
- In Spain, national catches were 36.213 tonnes in 2021 and national apparent consumption was estimated at 34.229 tonnes lwe. There are high imports and exports of frozen mackerel. This may be used as raw material for the canning industry. Canned mackerel accounted for 39% of the apparent consumption in Spain. One protected geographical indication (PGI) is registered for canned mackerel in Andalucia. Two transmission analysis are detailed for canned fillets: one for canned mackerel made from frozen whole mackerel (retailed at 11,81 EUR/kg) and another one for canned mackerel in oil prepared with imported loins (retailed at 15,38 EUR/kg).
- In Portugal, national catches were 26.839 tonnes in 2021; there are also important trade flows, both for imports (frozen and fresh mackerel) and exports (frozen and canned mackerel). The apparent consumption of canned products in Portugal is estimated around 3.000 tonnes lwe. Two price transmission analyses are detailed, one for canned whole mackerels in vegetable oil (retailed at 11,72 EUR/kg) and another for canned mackerel fillets in olive oil (retailed at 21,60 EUR/kg).
- In the Netherlands, the national catches were 34.941 tonnes in 2021, with important landings of frozen mackerel from foreign vessels which are considered imports (119.683 tonnes lwe imported). There are significant exports (130.652 tonnes lwe), in particular frozen mackerel to Poland, Nigeria and Germany. The trade of frozen mackerel is generally made with "ice blocks" of fish (not gutted nor headed); these "ice blocks" are frozen on-board. The domestic market was estimated at 23.972 tonnes and mainly for smoked mackerel. Two price structure analyses are provided for smoked fillet of mackerel: one for mackerel smoked after filleting, retailed at 15,00 EUR/kg and one for mackerel filleted after smoking, the product is of higher quality and is retailed at 30,00 EUR/kg.

List of acronyms

CN	Combined nomenclature
EU	European Union (EU-27)
MS	Member States
FAO	Food and Agriculture Organisation of the United Nations
HORECA	Hotel, restaurant and café
lwe	Live weight equivalent
PGI	Protected geographical indication
TAC	Total allowable catch
VAT	Value added tax

1. SCOPE AND CONTENT

1.1 Case study scope

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

Product	Origin	Characteristics	Market and price drivers	Focus MS
Mackerel	Fishery	The product is consumed fresh, frozen and processed (canned, smoked, etc.).	Availability of resource (TAC and quotas) Origin of the products, size, quality, presentation Input costs for processed products Demand on national and export markets	Spain Portugal The Netherlands

EUMOFA provides other relevant publications on the topics covered by this study, namely country profiles:

- Spain – https://www.eumofa.eu/en/spain,
- Portugal – https://www.eumofa.eu/en/portugal,
- The Netherlands – https://www.eumofa.eu/netherlands.

1.2 Content of the document

In conformity with 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 EU level;
- An analysis of the price structure along the supply chain in Spain, Portugal, and the Netherlands.

2. DESCRIPTION OF THE PRODUCT AND MARKETS

2.1 Biological and commercial characteristics

The case study focuses on captured mackerel.

Case study product

Family: *Scombridae*

Name:

- Atlantic mackerel *(Scomber scombrus)*
  FAO 3-alpha code: MAC
- Pacific chub mackerel *(Scomber japonicus)*
  FAO 3-alpha code: MAS
- Atlantic chub mackerel *(Scomber colias)*
  FAO 3-alpha code: MAZ
- Indian mackerel *(Rastrelliger kanagurta)*
  FAO 3-alpha code: RAB
- Island mackerel *(Rastrelliger faughni)*
  FAO 3-alpha code: RAF
- Short mackerel *(Rastrelliger brachysoma)*
  FAO 3-alpha code: RAB
- Blue mackerel *(Scomber australasicus)*
  FAO 3-alpha code: MAA

Presentation: Fresh whole, frozen whole, frozen fillets, smoked or dried, prepared.

Commercial sizes:

Wild: between 20 cm and 66 cm.

Minimum landing size for Atlantic mackerel is 30 cm for the Northern stock, 18 cm in the Mediterranean Sea, and 20 cm for other stocks[1].

Minimum size of 18 cm for the Atlantic chub mackerel according to the EU regulation.

Minimum size of 25,5 cm for the Pacific chub mackerel in the eastern Pacific stocks.

[1] Council Regulation (EC) No 2019/1241

Related codes in the product nomenclature (COMEXT/EUROSTAT)

Mackerel is distinguished in the Combined Nomenclature[2] (CN) from 2012 onwards for fresh whole, frozen whole, frozen fillets, smoked or dried and prepared:

- Fresh or chilled (whole):
  - CN code 03 02 44 00 - Mackerel (*Scomber scombrus, Scomber australasicus, Scomber japonicus*),
- Frozen (whole):
  - CN code 03 03 54 10 - Mackerel (*Scomber scombrus, Scomber japonicus*),
  - CN code 03 03 54 90 - Mackerel (*Scomber australasicus)*
- Frozen fillets:
  - CN code 03 04 89 41 - Mackerel (*Scomber australasicus*),
  - CN code 03 04 89 49 – Mackerel (*Scomber scombrus, Scomber japonicus*)
- Smoked:
  - CN code 03 05 49 30 - Mackerel (Scomber scombrus, Scomber australasicus, Scomber japonicus),
- Prepared or preserved:
  - CN code 16 04 15 11 - Prepared or preserved fillets *(Scomber scombrus and Scomber japonicus)*
  - CN code 16 04 15 19 - Other preparations *(Scomber scombrus and Scomber japonicus)*
  - CN code 16 04 15 90 - Other preparations (*Scomber australasicus*)

Prepared mackerel is also included in CN code 16 04 20 50, which covers several species. In more details, it covers "other prepared or preserved fish" of sardines, bonito and mackerel (Scomber scombrus and *Scomber japonicus*) and plain bonito (*Orcynopsis unicolor*). This item is not included in the analyses.

Biological parameters

Mackerel species tend to inhabit coastal and continental shallow waters from cold to tropical temperatures depending on the species. They form schools and feed on plankton, small fish or juveniles of other pelagic fish. Reproduction occurs from April to July depending on the species and distribution; some species can spawn several times a year.

[2] 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 as a Commission regulation (latest version: Commission Implementing Regulation (EU) n°2016/1821).

Table 1: Biological parameters of the mackerel species

Parameter	Atlantic mackerel (*Scomber scombrus)*	Atlantic chub mackerel (*Scomber colias*)	Pacific chub mackerel (*Scomber japonicus)*	Island mackerel (*Rastrelliger faughni*)
Temperature	11-14°C, cold and temperate water	15-21°C	10-22°C	>17°C
Habitat	Continental waters, near the surface, down to about 1000 m depth (usually 200 m)	Continental waters, near the surface. Juveniles tend to be closer inshore.	Coastal waters within 30 miles offshore, down to about 300 m depth but also in sandy beaches, kelp beds and open bays	Shallow, coastal waters. Adults can be found in bays, harbours and deep lagoons
Diet in the wild	Plankton, juveniles of pelagic species (anchovies, sardines)	Plankton, juveniles of pelagic species (anchovies, sardines)	Plankton, juveniles of pelagic species (anchovies, sardines)	Plankton, juveniles of pelagic species (anchovies, sardines)
Distribution in the wild	North Atlantic, Mediterranean Sea	Western Atlantic and Eastern Atlantic Mediterranean Sea, Southern Black Sea	Western Pacific Eastern Pacific, from Alaska to Mexico	Indo-west Pacific, Red Sea, Western and Eastern Indian Ocean

Source: Fishbase

2.2 World production

2.2.1 Overview

Global mackerel production amounted to 4,42 million tonnes in 2021, which was 26% higher than in 2012. Mackerel production is almost exclusively from captures (99,9% of total production). Farmed mackerel production amounted to 231 tonnes in 2021 which represented a decrease of 16% over the 2012-2021 period. It was exclusively located in Korea.

Table 2: Evolution of worldwide production of mackerel between 2012 and 2021

(1.000 tonnes)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Evol 2021/ 2012
Catches	3.514	3.742	4.433	4.363	4.346	4.355	4.185	3.605	3.613	4.418	+26%
Aquaculture	0,275	0,206	0,172	0,113	0,247	0,203	0,250	0,230	0,247	0,231	-16%
Total	**3.514**	**3.742**	**4.433**	**4.363**	**4.346**	**4.355**	**4.185**	**3.605**	**3.613**	**4.418**	**+26%**

Source: FAO

Pacific chub mackerel accounted for 39% of the total produced volume in 2021 (amounting to 1,72 million tonnes). China and Japan were the biggest producers, accounting for 28% and 25% of this volume; Ecuador represented 15% of the total volume of Pacific chub mackerel.

Atlantic mackerel represented 25% of the global mackerel production in 2021 (amounting to 1,09 million tonnes), with Norway accounting for 25% of this production, followed by the UK (19%), the EU 27 and Russia (both accounting for 17% of the production) and by Iceland (12% of the total Atlantic mackerel produced volume).

Atlantic chub mackerel accounted for 13% of the mackerel production in 2021 (amounting to 586.231 tonnes). The main producing countries were Morocco (43% of the production, amounting to 254.720 tonnes), Mauritania (accounting for 21% of the production), the EU 27 and Belize (representing 12% and 9% of the production respectively).

Indian mackerel accounted for 10% of the global mackerel production in 2021 (amounting to 455.667 tonnes), mainly produced by India (47% of the production), Indonesia, Thailand and the Philippines (accounting for 14%, 13% and 11% of the volume respectively).

Table 3: World captures by species in 2021

	Volume (tonnes)	% total 2021	Main countries
Pacific chub mackerel	1.723.241	39%	China, Japan, Ecuador
Atlantic mackerel	1.094.923	25%	Norway, UK, EU 27, Russia
Atlantic chub mackerel	586.231	13%	Morocco, Mauritania, EU 27
Indian mackerel	455.667	10%	India, Indonesia, Thailand, Philippines
Island mackerel	285.111	6%	Indonesia
Mackerels nei	131.026	3%	Malaysia
Indian mackerels nei	72.935	2%	Malaysia, Thailand
Short mackerel	55.872	1%	Indonesia, Philippines
Total	**4.417.840**	**100%**	**/**

Source: FAO

2.2.2 Evolution of catches

Mackerel is mostly caught in the Western Pacific and Indo-Pacific, as well as in the Northeastern Pacific. World mackerel catches have increased by 26% between 2012 and 2021, from 3,51 million tonnes to 4,42 million tonnes in 2022. Main producing countries are China (accounting for 11% of the global mackerel production), followed by Japan and Indonesia (9.8 and 8.6% of total production respectively in 2021) and by Russia, Norway, EU 27, Ecuador, and Morocco (accounting for 6% each of the global mackerel production). Mackerel production has decreased in China and Japan over the period (-5% and -1% respectively) while it has increased by 21% in Indonesia, by 154% in Russia, by 54% in Norway and by 411% in Ecuador. The mackerel production of the EU 27 peaked in 2014 at 423.536 tonnes and has decreased by 36% until 2021 (269.070 tonnes in 2021). However, the evolution of catches at EU 27 level between 2012 and 2021 is +3%.

Table 4: World catches of mackerel (in 1.000 tonnes) 2012-2021

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Evol 2012/2021
CN	516	512	482	475	450	445	433	479	393	491	-5%
JP	438	375	482	530	503	518	542	450	390	434	-1%
ID	313	350	355	413	364	473	358	88	95	379	+21%
RU	107	157	169	204	208	290	311	301	236	272	+154%
NO	176	165	278	242	210	222	187	159	212	271	+54%
EU 27	**262**	**287**	**424**	**407**	**359**	**388**	**310**	**287**	**304**	**269**	**+3%**
EC	52	89	88	100	95	75	30	37	128	265	+411%
MA	127	163	185	170	215	127	159	211	186	255	+101%
IN	88	117	237	238	249	289	286	165	181	214	+144%
UK	169	164	288	248	218	227	191	152	206	209	+24%
MY	187	191	181	190	193	123	141	144	153	145	-23%
IS	152	154	170	168	170	166	136	128	152	131	-14%
MR	23	0	1	2	6	21	19	14	13	122	+439%
KR	129	115	133	141	156	104	142	101	77	122	-5%
PE	27	55	74	50	165	113	72	56	99	99	+269%
TH	178	195	195	117	81	74	72	87	72	89	-50%
CL	24	32	24	46	59	66	60	88	86	87	+259%
PH	128	131	120	115	104	98	89	92	83	80	-38%
TW	70	54	64	68	64	72	84	62	66	76	+8%
FO	107	145	150	107	94	104	81	63	71	60	-44%
MX	16	32	43	52	81	57	91	53	51	55	+233%
Other	226	261	289	281	300	304	390	386	362	296	+31%
Total	**3.514**	**3.742**	**4.433**	**4.363**	**4.346**	**4.355**	**4.185**	**3.605**	**3.613**	**4.418**	+26%

Source: FAO

2.2.3 Evolution of aquaculture production

Farmed mackerel accounts for an limited share of the global production (0,01% of the world production, amounting to 231 tonnes in 2021) and was exclusively produced in Republic of Korea.

Table 5: World production of farmed mackerel (in tonnes) 2012-2021

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Korea	275,0	206,0	172,0	113,0	247,0	203,0	250,0	230,0	247,0	231,1

Source: FAO

2.3 EU production

2.3.1 Evolution of mackerel catches by EU fleets

In 2021, mackerel catches reached 261.161 tonnes at EU 27 level. Ireland was the most important producer, accounting for 23% of the EU production (amounting to 60.821 tonnes in 2021). Other important MS are Spain (accounting for 14% of the production), the Netherlands (13%), Denmark (12%), Portugal (10%), and Lithuania (10%) catching between 25.000 and 36.000 tonnes in 2021.

Between 2012 and 2021, EU-27 mackerel captures have remained stable (+0,3%) at around 260.000 tonnes, even if we observe a peak in 2014 at 423.000 tonnes. The decrease since 2014 is attributable to a reduction of TACs and quotas for this species. Between 2012 and 2022, Irish, Danish, and Portuguese catches of mackerel have decreased by 4%, 11%, and 38% respectively while production of mackerel has increased in Lithuania (+375%), Spain (+32%), and in the Netherlands (+31%).

EU captures of mackerel are mainly composed of Atlantic mackerel (accounting for 71% of the EU catches in 2021) and Atlantic chub mackerel (accounting for 26% of the captures in 2021).

Table 6: EU-27 mackerel catches (in 1.000 tonnes) 2012-2021 (in bold, the three MS with focus in the present report)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Evol 2021 / 2012
IE*	63	57	103	89	77	86	67	53	61	61	-4%
ES	**27**	**47**	**75**	**74**	**67**	**101**	**73**	**47**	**50**	**36**	**+32%**
NL	**27**	**23**	**51**	**53**	**42**	**47**	**32**	**26**	**37**	**35**	**+31%**
DK	36	33	42	47	43	40	31	30	38	32	-11%
PT	**43**	**45**	**39**	**55**	**34**	**24**	**38**	**49**	**28**	**27**	**-38%**
LT	6	12	28	12	21	20	13	29	23	25	+340%
DE	19	21	31	29	25	26	20	20	31	18	-8%
FR	21	19	23	27	21	24	23	19	21	17	-20%
IT	2	2	2	3	2	2	3	2	1	1	-29%
SE	5	3	4	4	4	4	4	3	4	4	-20%
EL	2	2	2	2	2	3	2	3	2	1	-13%
HR	1	1	1	1	2	2	2	2	2	1	+66%
MT	0	0	1	1	1	0	1	1	0	1	+137%
BE	0	0	0	0	0	0	0	0	0	0	+171%
PL	4	8	6	4	9	6	5	4	5	2	-55%
CY	0	0	0	0	0	0	0	0	0	0	-80%
SI	0	0	0	0	0	0	0	0	0	0	+19%
BG	0	na	na	na	0	na	na	na	na	na	na
LV	6	12	15	7	9	na	na	na	na	na	na
EE	na	1	na	na	na	0	0	na	na	na	na
EU-27	**262**	**286**	**423**	**407**	**360**	**387**	**312**	**289**	**303**	**261**	**-0,3%**

na: not available

Source: Eurostat (*FAO from 2018 onwards)

2.3.2 Import - Export

Extra-EU imports

Mackerel imports from extra-EU countries amounted to 147.387 tonnes and an overall value of EUR 276 million in 2022, originating from the UK (accounting for 31% of the imported value), Norway (21%), Faroe Islands (17%) and Iceland (13% of imported value). These imports were mainly frozen products (80% of the sales value in 2022, amounting to 125.472 tonnes and EUR 220 million), followed by fresh mackerel (10% of total imported value, amounting to 16.194 tonnes and EUR 27 million) and prepared products (accounting for 10% of the total imported value, amounting to 5.607 tonnes and EUR 27 million). Imports of mackerel from third countries, at least to some extent, consist of mackerel caught by vessels from third countries and landed in the EU (in particular landings of UK vessels in the Netherlands), where the first sale occurred.

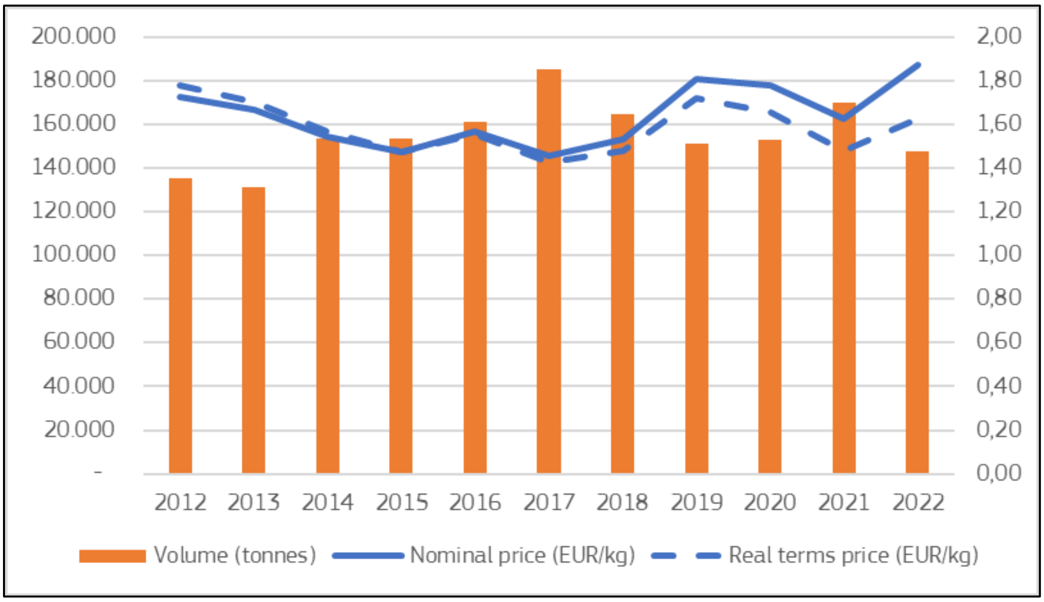
The total volume imported and the price both increased by 9% between 2012 and 2022 (-9% decrease in price in real terms)[3]. The value of imports increased by 18% in nominal value over the 2012-2022 period (-1% in real terms)

Table 7: Extra-EU imports of mackerel (2022)

	Nominal value (1.000 EUR)	Volume (tonnes)	Price (EUR/kg)	% val. 2022
Fresh	27.208	16.194	1,68	10%
Frozen	220.261	125.472	1,76	80%
Smoked	911	114	8,02	0%
Prepared or preserved	27.786	5.607	4,96	10%
Total	**276.167**	**147.387**	**1,87**	**100%**

Source: EUROSTAT-COMEXT data

Figure 1: Evolution of extra-EU imports of mackerel



Source: EUMOFA elaboration of EUROSTAT-COMEXT data

[3] In the report, values in real terms are deflated by using the GDP deflator (base=2015)

Extra-EU exports

Mackerel exports to extra-EU countries amounted to 135.335 tonnes for an overall value of EUR 286 million in 2022. Main destinations were the UK (accounting for 17% of the exported value), Nigeria (accounting for 14% of the global exported value), Faroe Islands (accounting for 13% of the exported value), Egypt and Norway (accounting both for 8% of the exported value). These exports were mainly frozen products (55% of the sales value in 2022, amounting to 87.636 tonnes and EUR 158 million), followed by prepared products (24% of total exported value, amounting to 12.085 tonnes and EUR 68 million) and fresh mackerel (accounting for 20% of the total exported value, amounting to 34.976 tonnes and EUR 56 million).

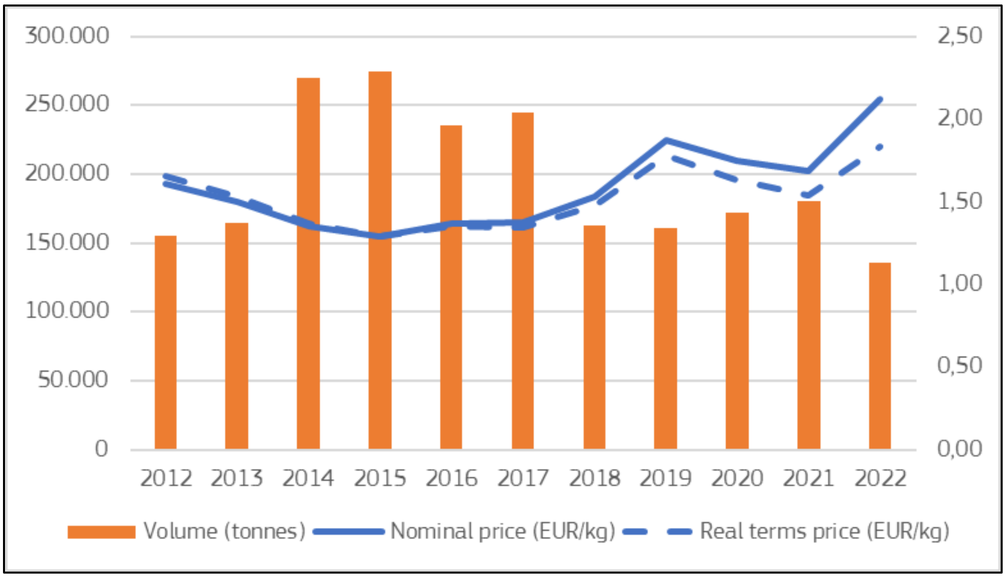
The total volume exported decreased by 13% and the price increased by 32% over the 2012-2022 period (+11% in real terms). The total value of mackerel exports increased by 15% in nominal value over the period (-4% in real terms).

Table 8: Extra-EU exports of mackerel (2022)

	Nominal value (1.000 EUR)	Volume (tonnes)	Price (EUR/kg)	% val. 2022
Fresh	56.018	34.976	1,60	20%
Frozen	158.558	87.636	1,81	55%
Smoked	3.695	637	5,80	1%
Prepared or preserved	68.488	12.085	5,67	24%
Total	**286.760**	**135.335**	**2,12**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Figure 2: Evolution of extra-EU exports of mackerel



Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Intra-EU trade flows

Intra-EU exports[4]

Mackerel exports to other MS amounted to 212.128 tonnes, for an overall value of EUR 508 million in 2022. These exports were mainly frozen products (44% of the sales value in 2022, amounting to 142.744 tonnes and EUR 223 million), followed by prepared products (32% of total exported value, amounting to 35.091 tonnes and EUR 163 million), smoked mackerel (accounting for 15% of the exported value, amounting to 13.065 tonnes and EUR 76 million), and fresh mackerel (accounting for 9% of the total exported value, amounting to 21.228 tonnes and EUR 45 million).

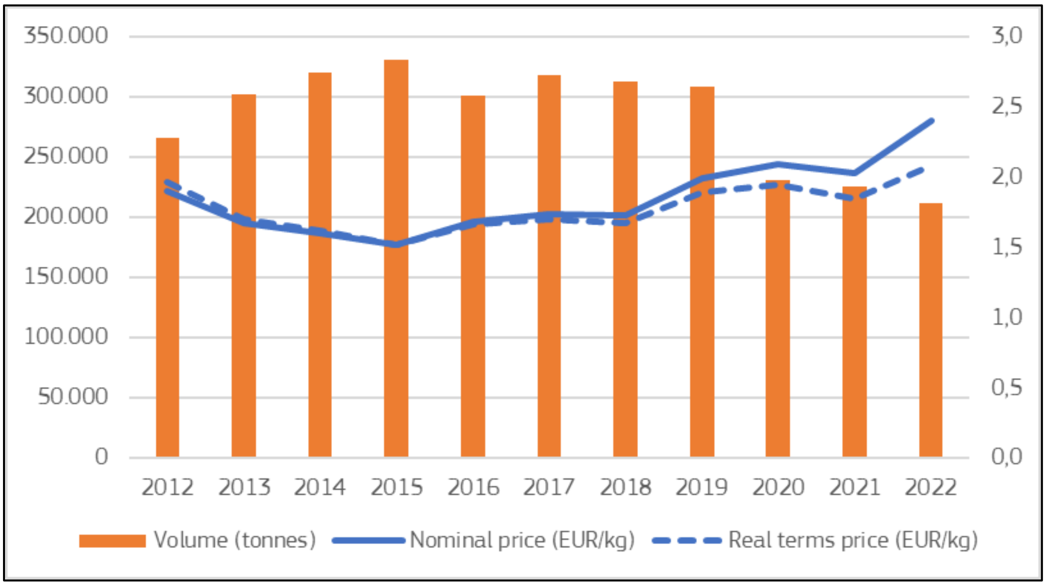
The value of intra-EU exports increased by 1% in nominal value over the 2012-2022 period (-15% in real terms). The total volume exported decreased by 20% and the price increased by 26% over the period (+6% in real terms).

Table 9: Intra-EU exports of mackerel (2022)

	Nominal value (1.000 EUR)	Volume (tonnes)	Price (EUR/kg)	% val. 2022
Fresh	45.649	21.228	2,15	9%
Frozen	222.930	142.744	1,56	44%
Smoked	76.689	13.065	5,87	15%
Prepared	163.004	35.091	4,65	32%
Total	**508.272**	**212.128**	**2,40**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Figure 3: Evolution of intra-EU exports of mackerel



Source: EUMOFA elaboration of EUROSTAT-COMEXT data

[4] In general, bilateral comparisons between Member States of intra-EU flows reveal major and persistent discrepancies. The main reason is the different declaration obligations for sellers (exporters) and buyers (importers) within international shipping agreement used in the transportation of goods. Thus, comparisons dealing with intra-EU trade statistics and related results must be considered cautiously and should consider the existence of these discrepancies.

Main destinations of intra-EU exports of mackerel are the Netherlands (accounting for 29% of the intra-EU exported value, over EUR 142 million in 2022), Poland (accounting for 16% of the intra-EU exported value, EUR 80 million) and Portugal (accounting for 12% of the intra-EU exported value, EUR 62 million). Other important destinations are Spain and Denmark (accounting respectively for 9% and 7% of the exported value).

Table 10: Value of intra-EU exports of mackerel to the main MS of destination (1.000 EUR, nominal value, 2022)

	Frozen	Fresh	Smoked	Prepared	Total	% total 2022
NL	6.438	121.698	8.976	9.580	146.692	29%
PL	1	4.095	58.693	17.942	80.731	16%
PT	3.254	10.435	3	48.723	62.415	12%
ES	14.219	16.322	118	14.236	44.895	9%
DK	8.768	9.391	105	19.720	37.983	7%
IE	425	26.831	0	70	27.326	5%
DE	293	20.814	2.293	1.294	24.694	5%
LV	2	1.030	319	20.809	22.161	4%
FR	6.614	748	173	11.427	18.962	4%
Others	5.635	11.566	6.009	19.203	42.412	8%
Total	**45.649**	**222.930**	**76.689**	**163.004**	**508.272**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

2.3.3 Apparent consumption by Member State

In 2021, the total supply of mackerel in the EU-27 (production + imports) is estimated at 763.163 tonnes live weight equivalent (lwe). Almost two thirds of the total supply were imports (65%, accounting for 475.002 tonnes lwe) and the remaining 35% were EU captures (accounting for 261.161 tonnes lwe). Exports represented 463.422 tonnes lwe. Therefore, apparent consumption at EU-27 level (production + imports – exports) was estimated at 272.741 tonnes lwe.

The main MS in terms of apparent consumption in 2021 were Poland (47.296 tonnes lwe) and France (46.490 tonnes lwe). Other important MS were Spain (34.229 tonnes lwe), Romania (32.983 tonnes lwe), Lithuania (29.246 tonnes lwe), Italy (25.210 tonnes lwe) and the Netherlands (23.972 tonnes lwe).

Table 11: Apparent consumption of mackerel in the main MS (2021, in tonnes of live weight equivalent) (in bold, the three MS with focus in the present report)

	Captures	**Total IMPORTS (lwe)**	**Total supply** (captures + imports)	**Total EXPORTS (lwe)**	**Apparent consumption** (supply - exports)
Poland	1.643	66.001	67.644	20.349	47.296
France	17.009	36.575	53.584	7.094	46.490
Spain	**36.213**	**36.208**	**72.421**	**38.192**	**34.229**
Romania	0	33.706	33.706	723	32.983
Lithuania	25.025	10.594	35.619	6.373	29.246
Italy	1.324	25.199	26.523	1.322	25.201
Netherlands	**34.941**	**119.683**	**154.624**	**130.652**	**23.972**
Germany	17.911	18.117	36.028	18.612	17.416
Malta	590	12.849	13.439	547	12.892
Sweden	3.672	19.693	23.365	11.750	11.615
Bulgaria	0	10.786	10.786	2.036	8.751
Czechia	0	6.253	6.253	839	5.414
Croatia	1.169	3.228	4.397	859	3.538
Greece	1.493	1.794	3.287	91	3.196
Austria	0	2.845	2.845	168	2.677
Slovakia	0	2.287	2.287	106	2.181
Estonia	0	1.538	1.538	702	837
Hungary	0	729	729	2	727
Portugal	**26.839**	**13.853**	**40.692**	**40.116**	**575**
Finland	0	392	392	1	391
Cyprus	4	262	266	0	266
Ireland*	60.821	4.764	65.585	72.602	Few hundreds of tonnes
EU-27	**261.161**	**475.002**	**736.163**	**463.422**	**272.741**

Source: EUMOFA elaboration of EUROSTAT and EUROSTAT-COMEXT data

* the calculation of the apparent consumption in Ireland provides a result below 0; this result may be due to inaccuracies in the statistics or to the margin of error in the calculation of live weight equivalents (which are based on standard coefficients for each CN code). In this context, we estimate that mackerel consumption in Ireland is limited, about a few hundreds of tonnes.

3. THE SPANISH MARKET

3.1 Structure of the supply chain

3.1.1 Production

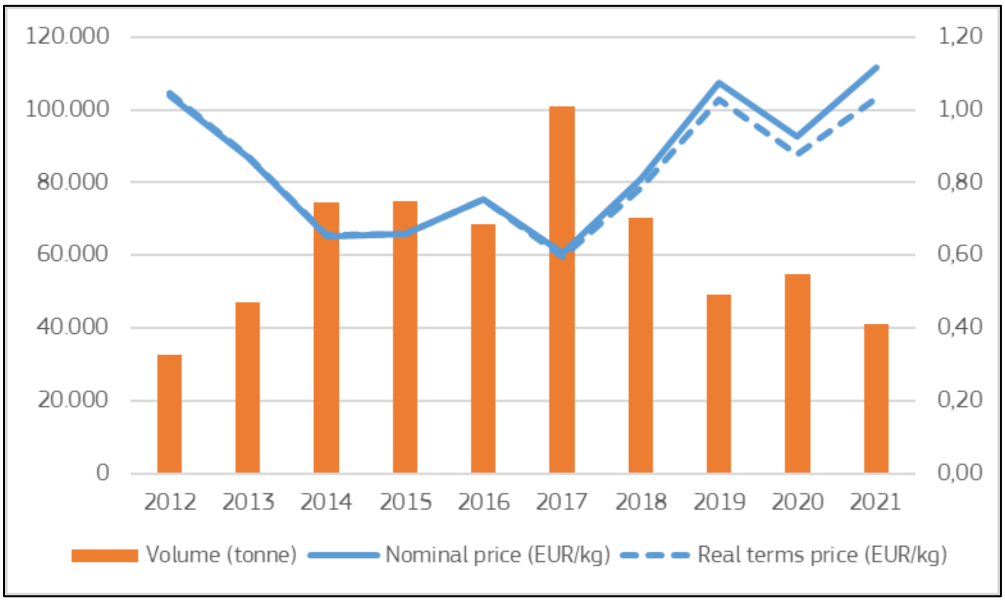
The volume of mackerel production was 39.363 tonnes in 2022, of which 29.787 tonnes of Atlantic mackerel (76%) and 9.541 tonnes of Atlantic chub mackerel (24%). The volume of mackerel catches has fluctuated over the period 2013-2022 between 17.920 tonnes in 2013 up to 100.885 tonnes in 2017 (peak for Atlantic chub mackerel catches). This volume decreased by 60% between 2017 and 2022.

Table 12: Captured mackerel in Spain between 2013 and 2022 (tonnes)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	% total 2022
Atlantic mackerel	17.920	37.312	33.139	28.813	34.217	30.759	22.036	34.878	28.210	29.787	76%
Atlantic chub mackerel	27.124	36.734	40.818	38.097	65.652	6.275	1.994	14.470	7.745	9.541	24%
Mackerels nei	1.662	349	221	118	242	152	38	74	28	26	0%
***Scomber* mackerels nei**	304	340	277	118	774	35.703	22.937	288	231	10	0%
Total	**47.010**	**74.735**	**74.455**	**67.145**	**100.885**	**72.889**	**47.005**	**49.710**	**36.213**	**39.363**	100%

Source: Eurostat

Figure 4: Evolution of mackerel landings in Spain between 2012 and 2021 (kg; EUR/kg)



Source: EUMOFA elaboration of EUROSTAT-COMEXT data

3.1.2 Imports - Exports

Imports

Total imports of mackerel to Spain reached 23.336 tonnes and EUR 43 million in 2022. The main product imported was prepared or preserved mackerel with EUR 22 million (49% of total imported value), followed by frozen mackerel and fresh mackerel (32% and 17% of the total imported value respectively). Main suppliers were Portugal (accounting for 74% of the total imported volume of fresh mackerel, 11% of the imported volume of frozen mackerel and 20% of the imported volume of prepared mackerel), the Netherlands (accounting for 45% of the imported volume of frozen mackerel) and Cabo Verde (accounting for 54% of the imported volume of prepared mackerel).

Table 13: Imports of mackerel to Spain in 2022

	Nominal value (1.000 EUR)	Volume (tonnes)	Price (EUR/kg)	% val. 2022
Fresh	7.639	5.834	1,31	17%
Frozen	13.982	12.876	1,09	32%
Smoked	476	83	5,76	1%
Prepared or preserved	21.567	4.543	4,75	49%
Total	**43.664**	**23.336**	**1,87**	**100%**

Source: EUROSTAT-COMEXT

Imports of fresh mackerel to Spain have decreased by 52% in volume and by 11% in value since 2012 (-21% in real terms). Fresh mackerel imports have peaked in 2015 at 9.594 tonnes and decreased to 7.639 tonnes in 2022. The price has increased by 88% over the period (+65% in real terms); it reached its peak in 2022 at 1,31 EUR/kg.

Table 14: Evolution of imports of fresh mackerel to Spain between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022/ 2012
Nominal value (1.000 EUR)	8.549	9.157	8.656	9.594	7.728	7.039	7.709	9.267	5.783	7.210	7.639	**-11%**
Volume (tonnes)	12.271	11.314	11.188	17.349	9.338	6.071	9.594	8.031	5.912	7.029	5.834	**-52%**
Price (EUR/kg)	0,70	0,81	0,77	0,55	0,83	1,16	0,80	1,15	0,98	1,03	1,31	**+88%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Imports of frozen mackerel to Spain have increased by 4% in volume and by 85% in value (+62% in real terms) between 2012 and 2022. Frozen mackerel imports peaked in 2021 at 21.133 tonnes and decreased to 12.876 tonnes in 2022. The price has increased by 77% between 2012 and 2022 (+59% in real terms), it peaked in 2022 at 1,09 EUR/kg.

Table 15: Evolution of imports of frozen mackerel to Spain between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022/ 2012
Nominal value (1.000 EUR)	7.571	6.316	6.673	9.037	9.992	13.150	7.147	5.387	10.550	18.164	13.982	**+85%**
Volume (tonnes)	12.369	11.547	11.785	16.190	15.226	18.302	8.496	5.331	13.172	21.133	12.876	**+4%**
Price (EUR/kg)	0,61	0,55	0,57	0,56	0,66	0,72	0,84	1,01	0,80	0,86	1,09	**+77%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Import of prepared mackerel has decreased by 29% in volume and by 19% in value (-28% in real terms) over the period. Imports of prepared mackerel peaked in 2014 at 8.753 tonnes and decreased to 4.543 tonnes in 2022. The price has increased by 14% (+0,5% in real terms); it peaked in 2021 (5,31 EUR/kg), and was 4,75 EUR/kg in 2022.

Table 16: Evolution of imports of prepared or preserved mackerel to Spain between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022 / 2012
Nominal value (1.000 EUR)	26.530	24.851	29.869	23.611	28.806	25.612	27.260	18.510	20.804	21.726	21.567	**-19%**
Volume (tonnes)	6.376	7.901	8.753	6.328	7.859	6.223	6.081	4.539	4.641	4.094	4.543	**-29%**
Price (EUR/kg)	4,16	3,15	3,41	3,73	3,67	4,12	4,48	4,08	4,48	5,31	4,75	**+14%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports

Exports of mackerel from Spain reached 33.418 tonnes and EUR 69 million in 2022. Exports were mainly composed of frozen mackerel (56% of total exported value, EUR 39 million), prepared or preserved mackerel (23% of exported value, EUR 15 million), and fresh mackerel (21% of exported value, EUR 14 million). Main destinations were Italy, accounting for 25% of the total exported value (45% of fresh mackerel exported volume and 47% of exported volume of prepared mackerel), Canada, accounting for 13% of the exported value (24% of exported volume of frozen mackerel), and Portugal, accounting for 12% of the total exported value (14% of exported volume of fresh mackerel and 14% of exported volume of frozen mackerel). Other destinations were Romania and Jamaica, accounting respectively for 7% and 6% of the total exported value from Spain in 2022.

Table 17: Exports of mackerel from Spain in 2022

	Nominal value (1.000 EUR)	Volume (tonnes)	Price (EUR/kg)	% val. 2022
Fresh	14.580	6.387	2,28	21%
Frozen	39.161	24.361	10	56%
Smoked	148	48	3,11	0,2%
Prepared or preserved	15.779	2.622	18	23%
Total	**69.667**	**33.418**	**2,08**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports of fresh mackerel have decreased by 37% in volume and have increased by 3% in value (-9,5% in real terms) between 2012 and 2022. Exports peaked in 2015 at 12.726 tonnes and gradually decreased to reach 6.387 tonnes in 2022. The price has increased by 64% (+44% in real terms) to reach its peak in 2022 (2,28 EUR/kg).

Table 18: Evolution of exports of fresh mackerel from Spain between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022 / 12
Nominal value (1.000 EUR)	14.169	13.572	16.607	17.495	19.233	16.010	14.434	12.444	11.050	12.256	14.580	**+3%**
Volume (tonnes)	10.198	9.994	12.385	12.726	11.904	10.073	9.113	6.575	6.817	6.338	6.387	**-37%**
Price (EUR/kg)	1,39	1,36	1,34	1,37	1,62	1,59	1,58	1,89	1,62	1,93	2,28	**+64%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports of frozen mackerel from Spain have decreased by 53% in volume and by 32% in value (-40% in real terms) between 2012 and 2022. They peaked in 2015 at 59.635 tonnes before gradually decreasing to 24.361 tonnes in 2022. The price has increased by 43% over the period (+25% in real terms), and reached its peak in 2022 at 1,61 EUR/kg.

Table 19: Evolution of exports of frozen mackerel from Spain between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022/ 2012
Nominal value (1.000 EUR)	57.737	42.238	47.517	48.892	31.159	42.697	37.252	26.897	52.931	32.826	39.161	**-32%**
Volume (tonnes)	51.292	40.786	52.883	59.635	31.960	50.499	36.032	18.048	45.237	26.501	24.361	**-53%**
Price (EUR/kg)	1,13	1,04	0,90	0,82	0,97	0,85	1,03	1,49	1,17	1,24	1,61	**+43%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports of prepared mackerel have increased by 29% in volume and by 38% in value (+21% in real terms) between 2012 and 2022. The price has increased by 7% over the period (-6% in real terms); it reached its highest price in 2022, namely 6,02 EUR/kg.

Table 20: Evolution of exports of prepared mackerel from Spain between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022 / 2012
Nominal value (1.000 EUR)	11.460	10.754	11.671	11.720	12.170	10.655	11.798	12.458	12.640	13.891	15.779	**+38%**
Volume (tonnes)	2.035	3.863	3.015	2.706	2.687	2.223	2.297	2.507	2.495	2.600	2.622	**+29%**
Price (EUR/kg)	5,63	2,78	3,87	4,33	4,53	4,79	5,14	4,97	5,07	5,34	6,02	**+7%**

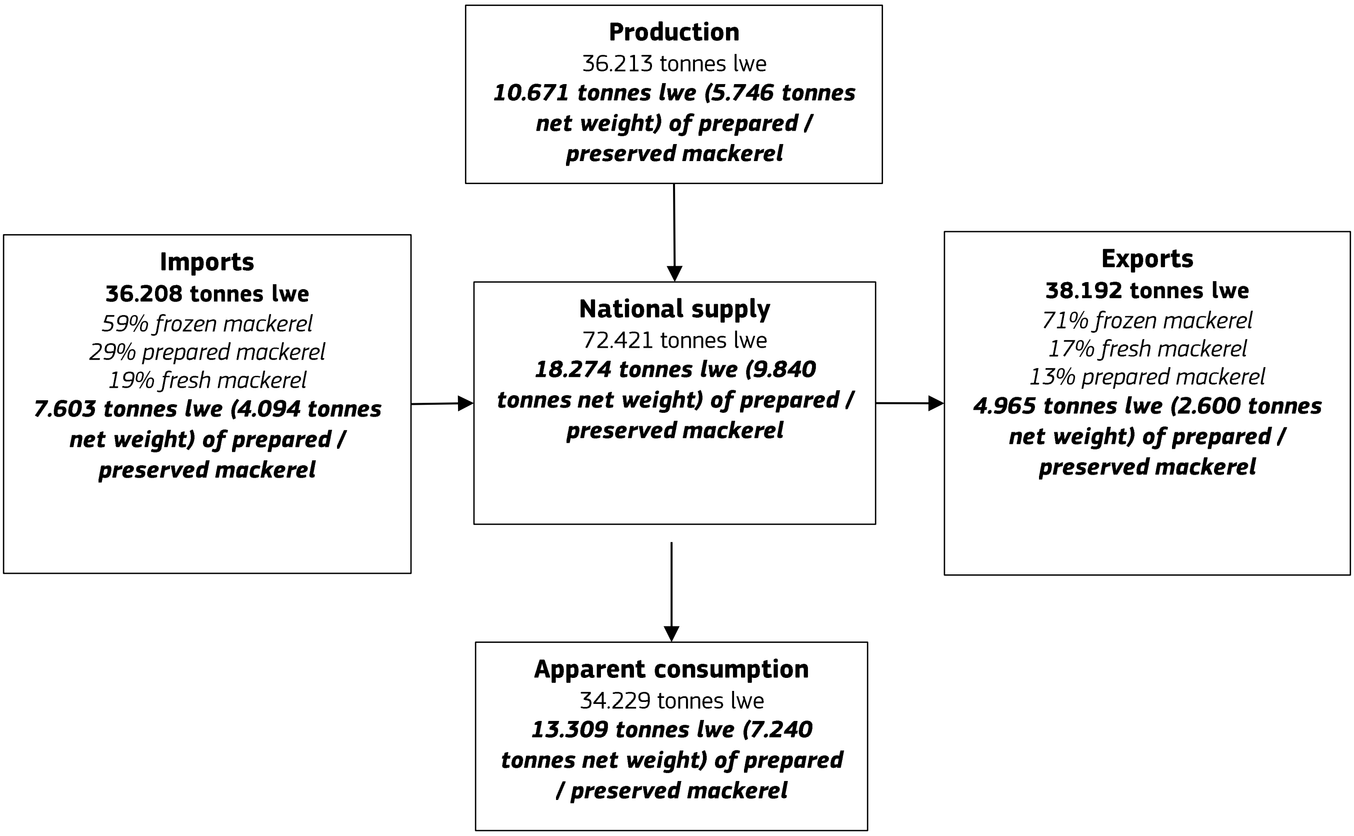
Source: EUMOFA elaboration of EUROSTAT-COMEXT data

3.1.3 Apparent consumption

In 2021, the total supply of mackerel in Spain amounted to 72.421 tonnes in live weight equivalent, 50% from national catches and 50% from imports (fisheries). Frozen mackerel represented almost two thirds of the imports (59% of the imported volume in lwe tonnes) while prepared mackerel and fresh mackerel accounted respectively for 21% and 19% of the imported volume (lwe tonnes). More than half (53%) of this supply was exported (71% of the volume lwe tonnes was exported as frozen products, 17% as fresh mackerel, and 13% as preserved or prepared mackerel), thus 47% can be estimated as "apparent" consumption, namely 34.229 tonnes lwe.

"Prepared or preserved mackerel" includes canned mackerel as well as prepared cooked loins that can be used as raw material for the production of canned mackerel. The share of canned mackerel in this category of products is unknown and operators interviewed were also unable to estimate this breakdown.

Figure 5: Supply balance for mackerel in Spain (2021, tonnes of live weight equivalent)



Note: percentages provided in the figure are in lwe

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

3.2 Characteristics of the Spanish market and consumption

3.2.1 Characteristics of the market

Almost all mackerel consumed in Spain is sold fresh or canned (in “live weight equivalent” canned mackerel represents 39% of the consumption of mackerel[5]). According to the information collected during field visits, the consumption trend favors canned products, as consumption habits are increasingly oriented towards ready-to-eat products. Therefore, the analysis will focus on canned mackerel.

The segmentation of the market for canned mackerel in Spain is mainly based on three criteria:

- The size of the fillets (3 to 6 whole mackerel per kg);
- The quality of the cleaning of the fish;
- The origin: the quality of the meat (tenderness, fat ratio) can differ significantly if the fish comes from national catches or imports.

On average, there are 2 to 3 whole mackerels per kg of fresh mackerel. If size remains the main quality criteria, skin is also carefully analysed (like for all bluefish, a fine and delicate skin is required).

The market of canned fish products is highly competitive in terms of quality-price ratio. This has increased since 2022 and the inflation crisis, with a rise of prices of input factors such as energy, cardboard, aluminium, oils.

According to the National Institute of Statistics[6], in 2021 the seafood processing reached a total of 1.013.794 tonnes, with prepared or canned fish being the largest share of the total, (representing 43%), followed by frozen fish (18%) and frozen molluscs and other aquatic invertebrates, even dried or in brine (13%).

The canned fish market is dominated by tuna, which accounts for almost 68% of volumes. According to the National Association of Fish and Seafood Canning Manufacturers (ANFACO[7]), mackerel is in third place after tuna and sardines, accounting for 4% of the canned fish market (12.650 tonnes and EUR 63,50 million in 2022).

[5] See paragraph 313 on apparent consumption

[6] Instituto Nacional de Estadísticas: https://www.ine.es/

[7] ANFACO is the National Association of Fish and Seafood Canning Manufacturers: https://anfaco.es/wp-content/uploads/2023/06/Presentacion-datos-2022-VF-28.06.2023.pdf

Table 21 – Production of canned fishery and aquaculture products in Spain

	Volume (tonnes)			Value (1.000 EUR)		
	2021	2022	Evol. 21/22	2021	2022	Evol. 21/22
Bluefin tuna	213.048	198.134	-7,0%	838.988	922.476	10,0%
Sardine	20.597	19.903	-3,4%	91.030	101.180	11,2%
Mackerel	**12.152**	**12.650**	**4,1%**	**56.393**	**63.499**	**12,6%**
White tuna	12.501	12.176	-2,6%	124.920	129.168	3,4%
Mussels	14.778	11.009	-25,5%	124.294	130.881	5,3%
Squids	5.032	4.665	-7,3%	35.948	35.735	-0,6%
Cockles	4.694	3.549	-24,4%	96.226	85.063	-11,6%
Clams	1.444	1.461	1,2%	15.830	16.353	3,3%
Other canned fish and shellfish	30.203	29.602	-2,0%	155.902	151.778	-2,6%
TOTAL	**314.449**	**293.149**	**-6,8%**	**1.539.531**	**1.636.133**	**6,3%**

Source: ANFACO-CECOPESCA

NB: ANFACO data of the production of canned mackerel are different from other sources like Ministry of Agriculture (MAPA) and EUROSTAT – PRODCOM which gives consumption data (sold production). Differences are mostly due to stored volumes between production and sale.

Canned mackerel is mainly produced in Galicia and Andalusia. A protected geographical indication (PGI) "*Caballa de Andalucia*" (Andalusian Mackerel) is registered and requires that the canning process is conducted in the Andalusian region. The product under PGI is obtained with the following basic ingredients: fish fillets of the species *Scomber japonicus* and *Scomber colias*, olive oil or sunflower oil (if using oil as covering liquid) and salt. Andalusian canning industries are mostly family-owned businesses, and the production process is traditional and small-scale. According to MAPA statistical data[8], the PGI sales for 2022 reached 1.713 tonnes and EUR 15 million. This accounted for 13,5% of the national production of canned mackerel.

Generally, mackerel is largely used by the processing industry to produce cans with different types of coating such as vegetable oil, olive oil, olive, pickled, tomato, etc. It has also been used recently to produce smoked and semi-preserved mackerel.

At retail stage, mackerel (all types of products combined) is mainly sold in supermarkets and large stores. According to the Food Consumption Panel of the Ministry of Agriculture, fisheries and food at home consumption[9], in 2022, large retail outlets (supermarkets, hypermarkets, discounters) represented 89% of sales value and 88% of sales volume of mackerel (all types of products combines).

[8] https://www.mapa.gob.es/es/alimentacion/temas/calidad-diferenciada/informedopigp2022_tcm30-660757.pdf

[9] https://www.mapa.gob.es/es/alimentacion/temas/consumo-tendencias/panel-de-consumo-alimentario/series-anuales/default.aspx

Figure 6: Sales channels breakdown (in volume, 2022)

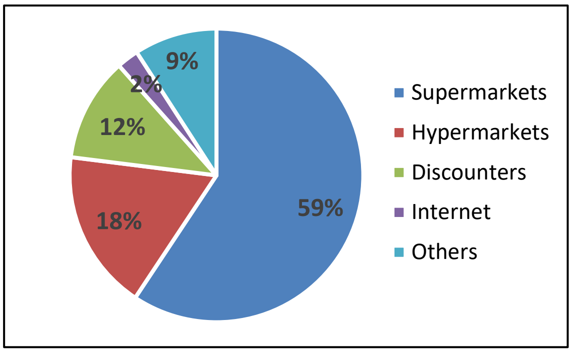
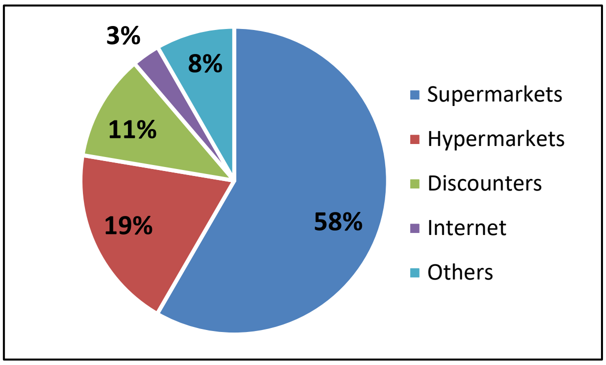


Figure 7: Sales channels breakdown (in value, 2022)



Source: MAPA, Food Consumption Panel

3.2.2 Consumption

In 2022, inflation strongly impacted the Spanish canned and seafood sector, with a new rise in industrial costs and a significant reduction of the consumption, especially domestically, where demand was already below 2017 levels.

According to the MAPA, household consumption fell by 7,9% in one year and prices grew by an average of 7% over this period. IRI data[10] also pointed out that retailers' labels recorded the biggest increase of prices. Nevertheless, retail is still the channel that contributes most to the sales. Large retailers have raised their market share in volume by one point, reaching a market share of around 80%.

The impact of inflation on canned food consumption is not limited to the Spanish market, but has also impacted the rest of the EU market which is the main client of the Spanish canning industry. This led to a 3% cut in sales abroad in the first ten months of 2022; however, exports continue to represent the industry's main source of business[11].

According to interviews with producers, wholesalers and ANFACO, input prices increased by 30% with the 2022 inflation crisis.

As a general trend, in 2022, Spanish household consumption of fishing products decreased by 15% in volume and 9,5% in value. However, the global value and spending per capita for canned fish products remained similar to 2021[12].

[10] https://www.iriworldwide.com/fr-fr
[11] Alimarket – Informe 2023 del sector dee conservas y semiconservas de pescado y marisco en España.
[12] Source: ANFACO-CECOPESCA

Table 22 – Consumption of fishery and aquaculture canned products in Spanish houselholds

	November 2021		November 2022	
	Tonnes	**1.000 EUR**	**Tonnes**	**1.000 EUR**
Tuna	101.647	827.733	93.970	868.770
Mussels	14.052	120.222	11.996	120.587
Sardines	10.265	83.708	9.650	88.237
Anchovy	4.237	92.111	3.829	87.639
Cockles	3.975	77.447	2.983	69.447
Mackerel	**5.932**	**52.163**	**5.663**	**54.646**
Squid	5.104	40.845	4.630	39.925
Clams	1.316	15.376	1.323	15.001
Octopus	366	4.406	371	4.119
Other canned fish	39.106	435.726	35.841	418.917
TOTAL	186.000	1.749.737	170.256	1.767.288

Source: ANFACO-CECOPESCA

3.3 Price transmission in the supply chain

3.3.1 Raw material prices

The raw material price is the price paid by the processor when he purchases directly from wholesalers or suppliers of frozen fish.

Processors of canned mackerel can use three types of raw material, according to the market demand and availability in the offer:

- Fresh mackerel, whole or in fillets: this raw material is mainly available during the mackerel season of captures (spring) to make high-quality canned products (PGI Andalusian Mackerel; products often exported to third countries like Canada).
- Frozen mackerel, whole or in fillets: these are the largest volumes used in the canning industries.
- Prepared fillets of mackerel: this kind of raw material, mostly imported, is used to make low-cost canned mackerel. The use of loins of mackerel as raw material saves time-consuming and costly manual work to prepare fillets.

The price of raw material for canned mackerel also differs according to the origin of mackerel. Based on interviews with producers and wholesalers, in 2022 average prices of frozen fillets of mackerel can range from 1,80 EUR/kg for imported mackerel to 3,70 EUR/kg for Spanish fresh fillets of high quality (for PGI canned mackerel).

Based on data from interviews, the most common type of raw material is imported frozen mackerel. According to EUROSTAT-COMEXT data, the average price for frozen mackerel ranged from 0,72 to 1,09 EUR/kg between 2017 and 2022. Nevertheless, based on interviews conducted with processors and wholesalers, EUROSTAT-COMEXT data may underestimate the import prices, raw material prices reported by stakeholders ranged between 1,50 and 2,00 EUR/kg.

Table 23: Raw material price in Spain: imported frozen mackerel (2017-2022)

	2017	2018	2019	2020	2021	2022	Evol. 2022/2017
Price (EUR/kg)	0,72	0,84	1,01	0,80	0,86	1,09	51,3%

Source: EUROSTAT-COMEXT

3.3.2 Import and export prices

Imports of prepared and preserved mackerel decreased by 29% over the 2012-2022 period, while exports increased by 29%. “Prepared and preserved” products include canned mackerel as well as prepared fillets that could be used as raw material for canned products. Import prices of prepared and preserved mackerel peaked in 2021 up to 5,31 EUR/kg and decreased by 10,5% between 2021 and 2022 (4,75 EUR/kg in 2022). Main import countries are Cape Verde (54% of 2022 import volume); Portugal (28%) and China (10%). Export prices of prepared and preserved mackerel increased by 7% over the period 2012-2022 and reached 6,02 EUR/kg in 2022. Main export countries were Italy (38% of 2022 export volume), the Netherlands (17%) and Belgium (12%).

Table 24: Import and export price (nominal price) and volume for prepared and preserved mackerel in Spain

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022 / 2012
Price (EUR/kg)	**Import**	4,16	3,15	3,41	3,73	3,67	4,12	4,48	4,08	4,48	5,31	4,75	+14%
	Export	5,63	2,78	3,87	4,33	4,53	4,79	5,14	4,97	5,07	5,34	6,02	+7%
Volume (tonnes)	**Import**	6.376	7.901	8.753	6.328	7.859	6.223	6.081	4.539	4.641	4.094	4.543	-29%
	Export	2.035	3.863	3.015	2.706	2.687	2.223	2.297	2.507	2.495	2.600	2.622	+29%

Source: EUROSTAT-COMEXT

3.3.3 Ex-factory price

Data published by MAPA, the Spanish Ministry of Agriculture, in the framework of the annual reports on fisheries' statistics, gives separate data on the industry of canned fish. The following table presents the average ex-factory prices for canned mackerel.

Table 25: Spanish sold production of canned mackerels by category

	2018		2019		2020		2021	
	Volume (tonne)	**Value (1.000 EUR)**	**Volume (tonne)**	**Value (1.000 EUR)**	**Volume (tonne)**	**Value (1.000 EUR)**	**Volume (tonne)**	**Value (1.000 EUR)**
In vinegar or pickled	442	3.176	698	4.085	899	3.719	850	3.226
Other canned mackerel	5.086	31.862	5.363	33.378	5.239	32.606	4.896	31.969
Total	5.528	35.038	6.061	37.463	6.138	36.325	5.746	35.195
Price (EUR/kg)	**6,34**		**6,18**		**5,92**		**6,13**	

Source: MAPA

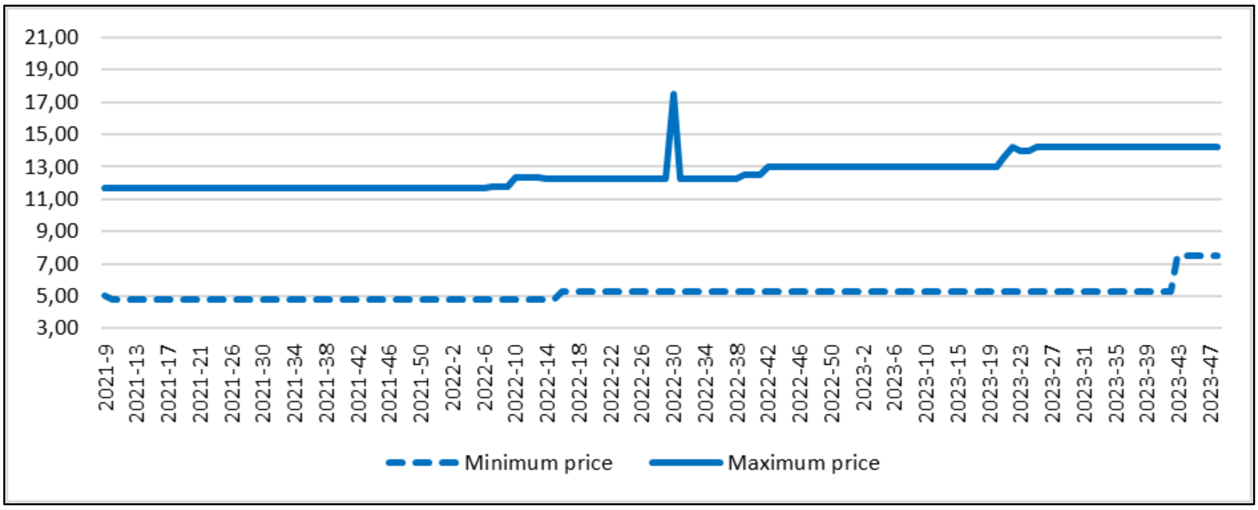
These data are coherent with data collected through interviews for canned mackerel produced with frozen whole mackerel. They include all categories of canned mackerel (in olive oil, other vegetable oils, in brine or in tomato sauce) which can differ significantly in price (the price of canned mackerel in olive oil is higher than canned mackerel in brine or in tomato sauce).

3.3.4 Retail prices

According to people interviewed, the average retail price ranged between 11,80 EUR/kg and 15,40 EUR/kg in 2023 for canned mackerel in oil.

EUMOFA data based on online shop retail prices[13] gives average retail prices of canned mackerel fillets in tomato sauce. The prices for canned fillets of mackerel in tomato sauce in Spain have ranged between 8,30 EUR/kg and 11,20 EUR/kg between 2021 and 2023. Seven products have been monitored each week over this period. These retail prices are lower than prices given by producers and wholesalers interviewed due to the type of canned product considered: canned mackerel in tomato sauce is cheaper than canned mackerel in vegetable or olive oil.

Figure 8: Retail price (average, in EUR/kg) for mackerel fillets in tomato sauce, 80-200 gr, in Spain from 2021 and 2023



Source: Online shop retail prices - EUMOFA - https://www.eumofa.eu/fr/online-shop-retail-prices

The following table presents at-home consumption data in volume and value. The average price calculated here is 9,74 EUR/kg in 2022. This price is usually different from prices observed in stores as this is an average based on total spending for a panel of consumers. Moreover, these data include canned mackerel in vegetable oils as well as canned mackerel in tomato sauce, which have different prices. Based on producers and wholesalers' interviews, these data generally underestimate the average price.

Table 26: Canned mackerel consumption, expenditure, and average price in Spain over the 2018-2022 period

	2018	2019	2020	2021	2022	Evol 22/18
Volumes (tonne)	6.857	6.257	6.496	5.909	5.637	-18%
Total expenditure (1000 EUR)	58.226	55.825	58.468	51.913	54.880	-6%
Average price (EUR/kg)	8,49	8,92	9,00	8,79	9,74	15%

Source: MAPA, Food Consumption Panel

[13] https://www.eumofa.eu/fr/online-shop-retail-prices

A survey of two online shops of large-scale retailers has been conducted in November 2023. It provides more details on the products retailed and their prices.

We observe three main types of products:

- Canned mackerel in vegetable oil or tomato sauce: around 13,00 to 16,00 EUR/kg,
- Canned mackerel in olive oil: around 15,00 to 30,00 EUR/kg depending on the product brand,
- Canned mackerel in olive oil with an additional attribute (extra virgin olive oil, low salted, etc.): around 30,00 to 40,00 EUR/kg.

Table 27: Monitoring of prices on online shops in Spain (November 2023)

Detail on the product	Price (EUR/kg)
Mackerel fillets in tomato sauce (Carrefour)	12,69
Mackerel fillets in vegetable oil (Carrefour)	13,77
Mackerel fillets in olive oil (Carrefour)	15,77
Mackerel fillets in vegetable oil (Mari Marinera)	16,35
Mackerel fillets in vegetable oil (Ubago)	23,85
Mackerel fillets in olive oil (Tejero)	28,63
Mackerel fillets in olive oil, low in salt (Calvo)	29,15
Mackerel fillets in extra-virgin olive oil (Albo)	38,24

Source: Online shop retail prices - EUMOFA

3.3.5 Price transmission

Two price transmission analyses have been conducted:

- Canned mackerel in oil – prepared with frozen whole mackerel,
- Canned mackerel in oil – prepared with loins.

The main differences relate to the raw material price and the share of the labour cost. Canned mackerel made with loins requires less workforce than canned mackerel made with frozen whole fish.

Canned mackerel in oil – prepared with frozen whole mackerel

The raw material price for frozen whole mackerel (imported or not) is 1,50 EUR/kg. Retail price for canned mackerel made with frozen whole fish as raw material is estimated at 11,81 EUR/kg. These prices are based on interviews with stakeholders and have been crosschecked with online data from online shops. They correspond to October 2023 price references.

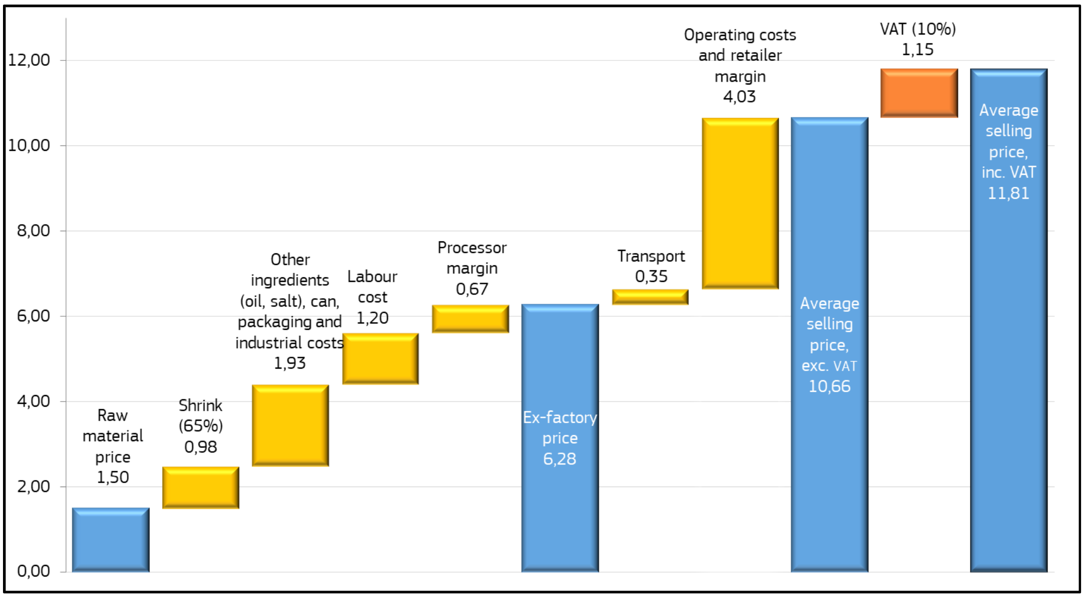
The shrink rate (related to the filleting) is quite high for this kind of raw material (around 65%). The production cost is mainly shared between the raw material (24%), other ingredients (oil, salt, can/packaging), other industrial costs (-31%), and the labour cost (20%).

Table 28: Costs and margins for canned mackerel in oil from frozen whole mackerel and retailed by supermarkets in Spain (EUR/kg, 2023)

	Price (EUR/kg)	% of the final price	Sources
Raw material price	**1,50**	**13%**	Interview
Shrink (65%)	0,98	8%	Interview
Other ingredients (oil, salt), can, packaging and industrial costs	1,93	16%	Interview
Labour cost	1,20	10%	Interview
Processor margin	0,67	6%	Interview/calculation
Ex-factory price	**6,28**	**53%**	Calculation
Transport	0,35	3%	Interview
Operating costs and retailer margin	4,03	34%	Interview
Average selling price, excl. VAT	**10,66**	**90%**	Calculation
VAT (10%)	1,15	10%	Calculation
Average selling price, incl. VAT	**11,81**	**100%**	Calculation/online data/interviews

Source: EUMOFA survey

Figure 9: Costs and margins for canned mackerel from frozen whole mackerel and retailed by supermarkets in Spain (EUR/kg, 2023)



Source: EUMOFA survey

Canned mackerel in oil – prepared with loins

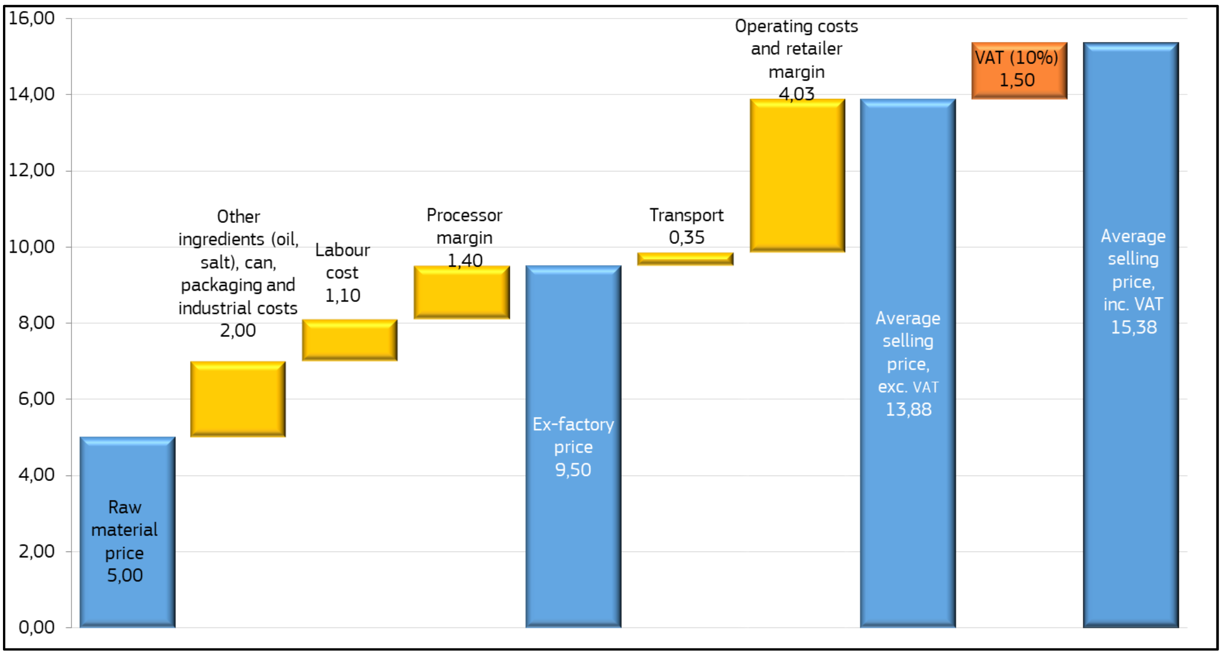
For the comparison, the transmission analysis for canned mackerel with imported frozen cooked loins as raw material that is sold by supermarkets is provided below. In this case, there is no loss of raw material as the product has already been processed (preparation of loins). The raw material price is higher compared to the previous price transmission analysis (5,00 EUR/kg which represents 32% of the final retail price and 53% of the production cost), but labour costs are lower (12% of the production cost).

Table 29: Costs and margins for canned mackerel in oil from imported frozen cooked loins and retailed by supermarkets in Spain (EUR/kg, 2023)

	Price (EUR/kg)	% of the final price	Sources
Raw material price	**5,00**	**32%**	Interview
Other ingredients (oil, salt), can, packaging and industrial costs	2,00	13%	Interview
Labour cost	1,10	7%	Interview
Processor margin	1,40	9%	Interview/calculation
Ex-factory price	**9,50**	**62%**	Calculation
Transport	0,35	2%	Interview
Operating costs and retailer margin	4,03	26%	Interview
Average selling price, excl. VAT	**13,88**	**90%**	Calculation
VAT (10%)	1,50	10%	Calculation
Average selling price, incl. VAT	**15,38**	**100%**	Calculation/online data/interviews

Source: EUMOFA survey

Figure 10: Costs and margins for canned mackerel from imported frozen cooked loins and retailed by supermarkets in Spain (EUR/kg, 2023)



Source: EUMOFA survey

4. THE PORTUGUESE MARKET

4.1 Structure of the supply chain

4.1.1 Production

The volume of mackerel production was 24.291 tonnes in 2022, of which 20.671 tonnes of Atlantic chub mackerel (85%) and 3.589 tonnes of Atlantic mackerel (15%). The volume of mackerel catches peaked first in 2015 at 54.560 tonnes and in 2019 at 48.771 before decreasing in the recent years. Mackerel captures have experienced a decrease of 47% over the 2013-2022 period.

Table 30: Mackerel captures in Portugal between 2013 and 2022 (tonnes)

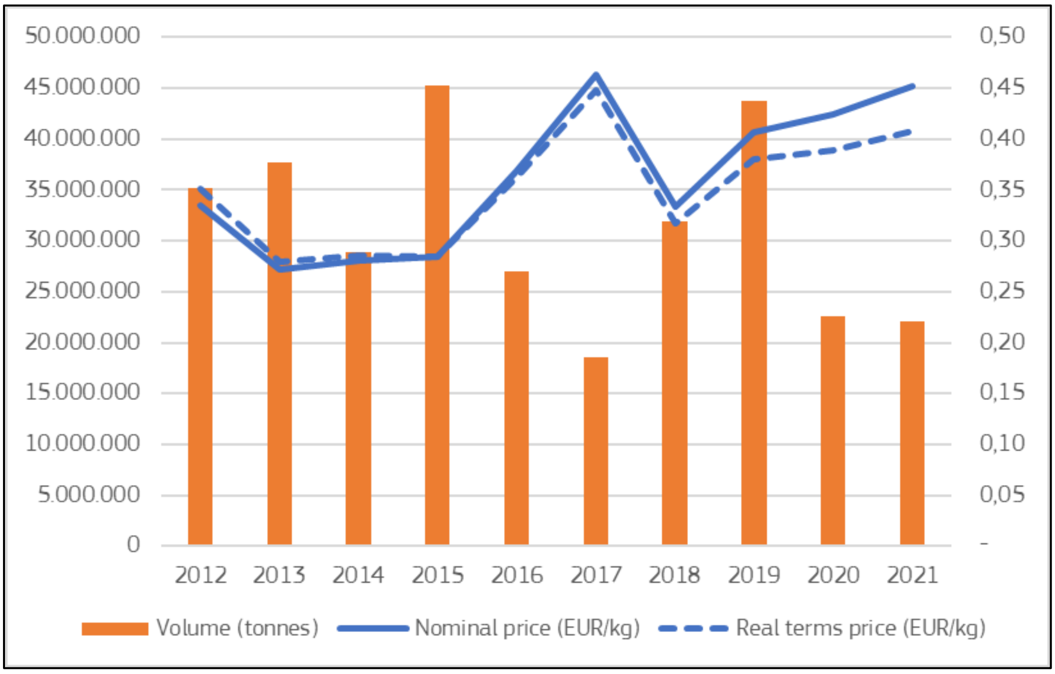
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	% total 2022
Atlantic chub mackerel[14]	40.476	30.263	46.101	27.272	19.248	32.712	44.712	22.828	22.078	20.671	85%
Atlantic mackerel	4.171	8.452	8.460	6.824	4.592	4.925	4.058	4.876	4.750	3.589	15%
Island mackerel	0	0	0	0	0	0	0	0	11	0	0%
***Scomber* mackerels nei**	795	293	0	17	0	26	1	0	0	30	0%
Total	**45.442**	**39.007**	**54.560**	**34.112**	**23.839**	**37.663**	**48.771**	**27.704**	**26.839**	**24.291**	**100%**

Source: Eurostat

The captures of mackerel in Portugal peaked in 2015 at 45.216 tonnes and in 2019 at 43.770 tonnes. However, it decreased to 22.123 tonnes in 2021.

[14] Eurostat reported 20.588 tonnes of catches of Pacific chub mackerel and 83 tonnes of Atlantic chub mackerel in 2022 in Portugal. We consider this is a mistake in the reporting and that all catches are Atlantic chub mackerel.

Figure 11: Evolution of mackerel landings in Portugal between 2012 and 2021 (kg; EUR/kg)



Source: EUMOFA elaboration of EUROSTAT data

4.1.2 Imports - Exports

Imports

Total imports of mackerel to Portugal reached 12.604 tonnes and EUR 21,52 million in 2022. In value terms, the main product imported was frozen mackerel, with EUR 14,31 million (66% of total imported value), followed by prepared mackerel (accounting for 22% of the imported value, EUR 4,81 million) and fresh mackerel (11% of the total imported value, EUR 2,36 million). The main suppliers were Spain, accounting for 46% of the total imported value (44% of the imported value of frozen mackerel, 99% of the imported value of fresh mackerel, and 43% of the imported volume of prepared mackerel) and Iceland, accounting for 31% of the total imported value (46% of the imported value of frozen mackerel). Other important suppliers were the Netherlands (accounting for 53% of the imported volume of prepared mackerel, 6% of the value of smoked mackerel, and 2% of the imported value of frozen mackerel).

Table 31: Imports of mackerel to Portugal in 2022

	Nominal value (1.000 EUR)	Volume (tonnes)	Price (EUR/kg)	% val. 2022
Fresh	2.360	1.322	1,79	11%
Frozen	14.307	10.136	1,41	66%
Smoked	43	7	6,05	0,2%
Prepared or preserved	4.807	1.140	4,22	22%
Total	**21.517**	**12.604**	**1,71**	**100%**

Source: EUROSTAT-COMEXT

Imports of fresh mackerel to Portugal have experienced a decrease of 19% in volume and an increase of 25% in value between 2012-2022 (+3% in real terms). The price of fresh mackerel imports has increased by 53% over the period (+26% in real terms). It reached its highest in 2022 at 1,79 EUR/kg.

Table 32: Evolution of imports of fresh mackerel to Portugal between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022/ 2012
Nominal value (1.000 EUR)	1.892	1.749	3.778	2.004	2.793	4.082	6.708	4.033	8.129	6.394	2.360	**+25%**
Volume (tonnes)	1.622	1.662	4.218	1.919	2.209	4.408	7.587	3.286	7.112	5.562	1.322	**-19%**
Price (EUR/kg)	1,17	1,05	0,90	1,04	1,26	0,93	0,88	1,23	1,14	1,15	1,79	**+53%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Imports of frozen mackerel have decreased by 8% in volume and by 13% in value between 2012 and 2022 (-28% in real terms). The price reached its lowest value in 2016 (1,04 EUR/kg) but has increased in recent years to reach 1,41 EUR/kg in 2022. The main suppliers were Spain and Iceland.

Table 33: Evolution of imports of frozen mackerel to Portugal between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022/ 2012
Nominal value (million EUR)	16,4	12,1	11,2	12,4	10,1	14,8	12,7	5,6	8,5	9,1	14,3	**-13%**
Volume (1.000 tonnes)	11,0	10,6	9,8	11,5	9.688	12,3	11,1	3,9	5,6	6,3	10,1	**-8%**
Price (EUR/kg)	1,48	1,14	1,14	1,07	1,04	1,21	1,14	1,45	1,53	1,45	1,41	**-5%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Imports of prepared mackerel have doubled in volume, reaching 1.140 tonnes in 2022. They have increased by 441% in value between 2012 and 2022 (+345% in real terms). The price of prepared mackerel has increased by 158% over the period (+112% in real terms). It reached its highest price in 2020 (8,22 EUR/kg) before decreasing in recent years; it was 4,22 EUR/kg in 2022.

Table 34: Evolution of imports of prepared mackerel to Portugal between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022/2 012
Nominal value (1.000 EUR)	888	1.219	2.659	2.399	3.040	2.175	2.209	3.837	6.893	5.362	4.807	**+441%**
Volume (tonnes)	543	784	1.163	1.095	1.626	666	656	601	838	957	1.140	**+110%**
Price (EUR/kg)	1,64	1,55	2,29	2,19	1,87	3,26	3,37	6,38	8,22	5,60	4,22	**+158%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports

Exports of mackerel from Portugal reached 26.815 tonnes and EUR 67,18 million in 2022. Exports were mainly composed of prepared mackerel, accounting for 78% of the exported value (EUR 52,09 million for 9.191 tonnes), and frozen mackerel, accounting for 17% of the exported value (EUR 11,09 million for 14.358 tonnes). Fresh mackerel represented 6% of the exported value (EUR 4,00 million for 3.261 tonnes). The main destination was France accounting for 47% of the total exported value, and amounting to EUR 31 million. Other important destinations were Italy, accounting for 23% of the exported value and Spain, accounting for 17% of the total exported value in 2022.

Table 35: Exports of mackerel from Portugal in 2022

	Nominal value (1.000 EUR)	Volume (tonnes)	Price (EUR/kg)	% val. 2022
Fresh	4.002	3.261	1,23	6%
Frozen	11.091	14.358	0,77	17%
Smoked	3	4	0,93	0,01%
Prepared or preserved	52.087	9.191	5,67	78%
Total	**67.183**	**26.815**	**2,505**	**100%**

Source: EUROSTAT-COMEXT

Exports of prepared mackerel from Portugal have experienced an increase of 13% in volume and 28% in value between 2012 and 2022 (+5% in real terms). The price of prepared mackerel exported has increased by 14% over the period (-6% in real terms). It has reached its highest price in 2022 at 5,67 EUR/kg.

Table 36: Evolution of Portuguese exports of prepared mackerel between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022/ 2012
Nominal value (1.000 EUR)	40.615	37.320	41.749	44.576	44.518	46.125	48.400	47.098	49.501	47.927	52.087	**+28%**
Volume (tonnes)	8.163	8.186	9.441	9.464	9.658	9.150	9.105	8.606	9.571	8.904	9.191	**+13%**
Price (EUR/kg)	4,98	4,56	4,42	4,71	4,61	5,04	5,32	5,47	5,17	5,38	5,67	**+14%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports of frozen mackerel from Portugal have experienced a decrease of 25% in volume and 35% in value over the last decade (-46% in real terms). Exports of frozen mackerel peaked in 2019 at 33.182 tonnes and decreased over the recent years to 14.358 tonnes in 2022. The price has experienced a decrease of 13% between 2012 and 2022 (-29% in real terms) and was 0,77 EUR/kg in 2022.

Table 37: Evolution of Portuguese exports of frozen mackerel between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022/ 2012
Nominal value (1.000 EUR)	16.984	19.955	19.132	20.378	16.109	15.506	11.263	19.647	12.054	13.845	11.091	**-35%**
Volume (tonnes)	19.109	23.937	22.229	29.119	13.629	13.093	19.744	33.182	19.237	19.398	14.358	**-25%**
Price (EUR/kg)	0,89	0,83	0,86	0,70	1,18	1,18	0,57	0,59	0,63	0,71	0,77	**-13%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports of fresh mackerel from Portugal have experienced a decrease of 78% in volume and 62% in value between 2012 and 2022 (-68% in real terms). The price has increased by 72% over the period (+43% in real terms) and reached its highest value in 2022 at 1,23 EUR/kg.

Table 38: Evolution of Portuguese exports of fresh mackerel between 2012 and 2022

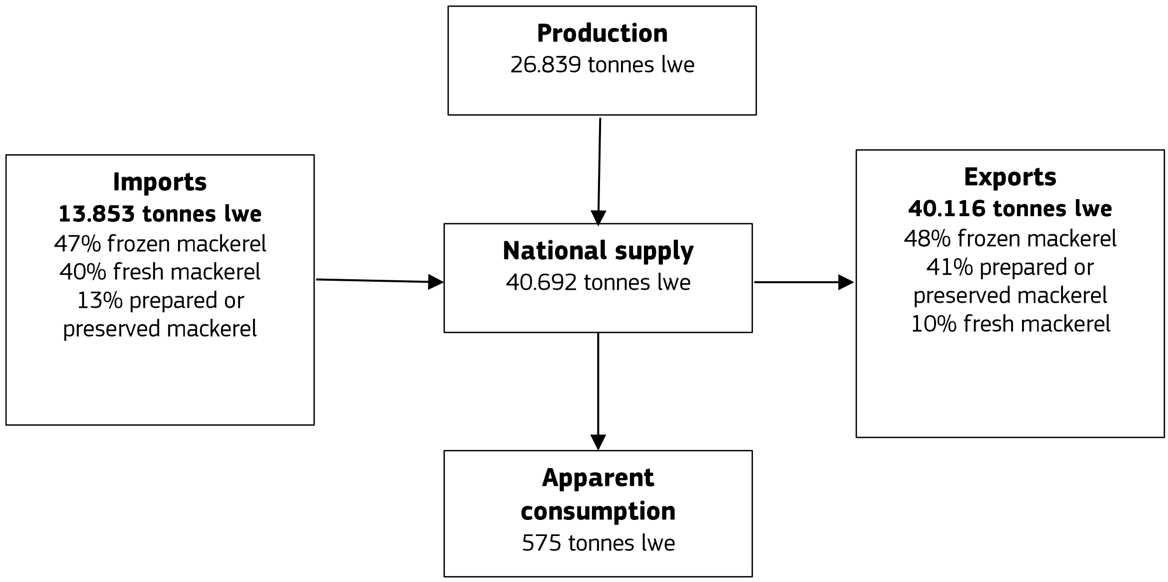
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022 / 12
Nominal value (1.000 EUR)	10.432	7.886	8.667	7.796	7.215	4.600	7.235	6.029	4.178	3.767	4.002	**-62%**
Volume (tonnes)	14.648	12.509	11.378	13.788	9.303	5.157	10.608	7.161	4.658	4.147	3.261	**-78%**
Price (EUR/kg)	0,71	0,63	0,76	0,57	0,78	0,89	0,68	0,84	0,90	0,91	1,23	**72%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

4.1.3 Apparent consumption

In 2021, the total supply of mackerel in Portugal amounted to 40.692 tonnes in live weight equivalent (lwe), 66% from national production and 34% from imports. Frozen mackerel represented 47% of the volume imported (lwe tonnes), fresh mackerel accounted for 40% of the volume imported, and prepared or preserved mackerel accounted for 13% of these imports (lwe tonnes). The national supply was almost entirely exported (99%), thus 1% can be estimated at apparent consumption, namely 575 tonnes lwe. Exports in volume (lwe tonnes) were composed at 48% by frozen mackerel, 41% by prepared mackerel and 10% by fresh mackerel. The calculation of the apparent consumption detailed here seems to underestimate the apparent consumption of mackerel in Portugal (this may be due to standard conversion coefficients per CN code used to calculate the live weight equivalents).

Figure 12: Supply balance for mackerel in Portugal (2021, tonnes of live weight equivalent)



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

Another approach of apparent consumption of canned products estimates the apparent consumption of canned products at 1.698 tonnes of products in Portugal (about 3.000 tonnes in lwe). This approach is based on data for canned products only: production (EUROSTAT-PRODCOM) and trade (EUROSTAT-COMEXT)

Table 39: Evolution of the Portuguese market for prepared or preserved mackerel between 2018 and 2022 (tonnes)

	2018	2019	2020	2021	2022
Production	8.972	8.760	9.748	9.532	9.749
Import	656	601	838	957	1.140
Export	9.105	8.606	9.571	8.904	9.191
Apparent market	523	755	1.015	1.585	1.698

Source: EUMOFA elaboration of EUROSTAT-COMEXT/PRODCOM data

Based on this calculation of apparent consumption at national level, we estimate that per capita consumption of canned mackerel in Portugal was at 164 gr in 2022.

4.2 Characteristics of the Portuguese market and consumption

4.2.1 Structure of the supply chain for canned mackerel

The Portuguese fish canning industry primarily focuses on tuna, which represents 2/3 of the total sold production in 2020. Sardine and mackerel follow.

In 2023, according to interviews with stakeholders, the major mackerel canners were (descending order):

- ESIP (Peniche), leading processor for canned fish in Portugal, also leader for both mackerel and sardine, belongs to THAI UNION,
- GENCOAL (Vila do Conde), subsidiary of the Italian group GENERALE CONSERVE,
- CONSERVAS PORTUGAL NORTE (Matosinhos),
- CONSERVEIRA DO SUL (Olhão),
- CONSERVAS A POVEIRA (Povoa do Varzim),
- COFISA (Figueira da Foz),
- VICTOR GUEDES (Abrantes).

The Portuguese canning industry uses fresh mackerel (*Scomber colias*) supplied by Portugal and Spain and frozen fish coming from Portugal, Spain and Morocco (*Scomber colias*), Ecuador, Chile and Peru (*Scomber japonicus*), Greenland, Faroe Islands, Iceland, Ireland, UK and the Netherlands (*Scomber scombrus*).

4.2.2 Segmentation of the market

The main segmentation of the market for canned mackerel is the segmentation by product. Four categories of products share the market:

- canned mackerels in vegetable oil,
- canned mackerels in olive oil,
- canned mackerels in tomato sauce,
- canned mackerels in brine.

There is no segmentation by size. Almost all whole mackerels and mackerel fillets are in cans of 120 gr on the retail market, except for some hard discounters which offer products in packs of two cans (80 gr each). Fillets may also be offered in smaller cans (90 gr).

Most of the products offered in retail are manufactured in Portugal. Some of the products sold in large-scale retail are manufactured in Morocco.

Canned mackerels are not consumed as commonly as sardines. They are more upscale and are considered a niche product. They are not only distributed in classic retail, but also in specialty stores (wine shops, gourmet markets, delicatessen shops…).

For example, a delicatessen shop specialized in canned fish products in Porto offered different mackerel fillet products at prices between 33,00-42,00 EUR/kg.

Table 40: Offer of canned mackerels in a delicatessen shop in Porto, Bolhão Market (September 2023)

Product	Net weight (gr)	Unit price (EUR/can)	Price per kg (EUR/kg)
Mackerel fillets in olive oil	120	4,00	33,33
Mackerel fillets in Vilão sauce	120	5,00	41,67
Mackerel fillets in tomato sauce	85	3,50	41,18
Mackerel fillets in organic olive oil	106	3,50	33,02

Source: EUMOFA survey

4.2.3 Consumption

The Portuguese mackerel market is mainly composed of fresh and canned mackerels.

In relation with the evolution of catches by the Portuguese fleet, the consumption of fresh mackerel has been steadily declining in the last years (-24% between 2018 and 2022), coupled with a price increase (+48% over the same period).

Table 41: Evolution of the household consumption of fresh mackerels in Portugal between 2018 and 2022

	Volume (tonnes)	Value (1.000 €)	Price (EUR/kg)
2018	7.026	19.082	2,72
2019	6.984	20.018	2,87
2020	7.066	22.768	3,22
2021	5.931	20.559	3,47
2022	5.357	21.516	4,02

Source: EUROPANEL

In a study of IPAM (Instituto Português de Administração de Marketing) based on 2015 data, mackerel was quoted by only 11% of consumers in the fresh fish species usually consumed, far behind sardine (65%), seabream (61%), seabass (59%) or salmon (55%).

The consumption of frozen mackerels by households is very limited.

4.3 Price transmission in the supply chain

4.3.1 Price of raw material

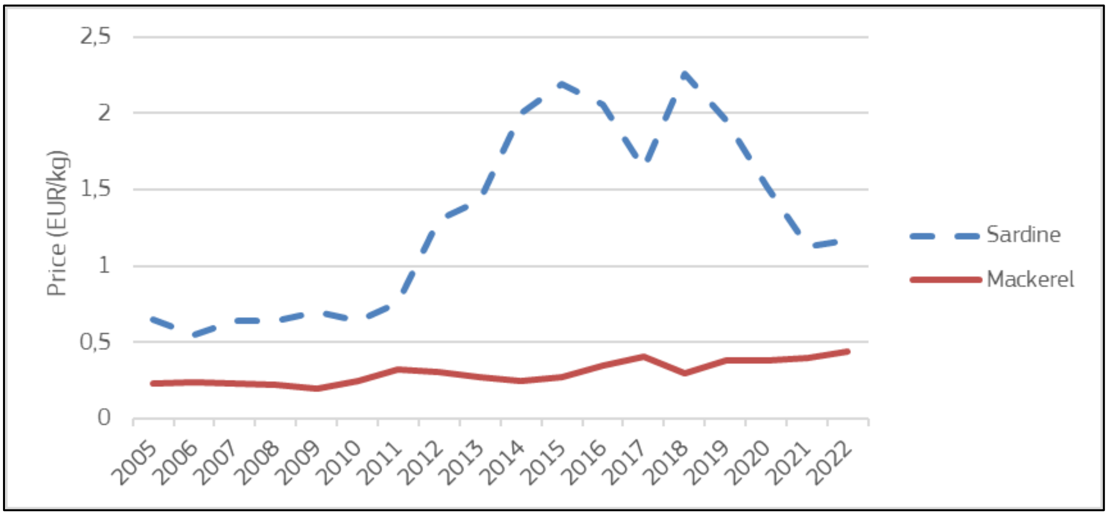
The first-sale price of mackerel follows an increasing trend throughout the last decade (+42% between 2012 and 2022, +17% in real terms) and shows a steadier growth trend than sardine.

Table 42: Average annual price of mackerels landed in Portugal (2012-2022)

	EUR/kg
2012	0,31
2013	0,27
2014	0,25
2015	0,27
2016	0,35
2017	0,41
2018	0,30
2019	0,38
2020	0,38
2021	0,40
2022	0,44

Source: Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos

Figure 13: Average annual price of mackerels and sardine landed in Portugal (2005-2022)

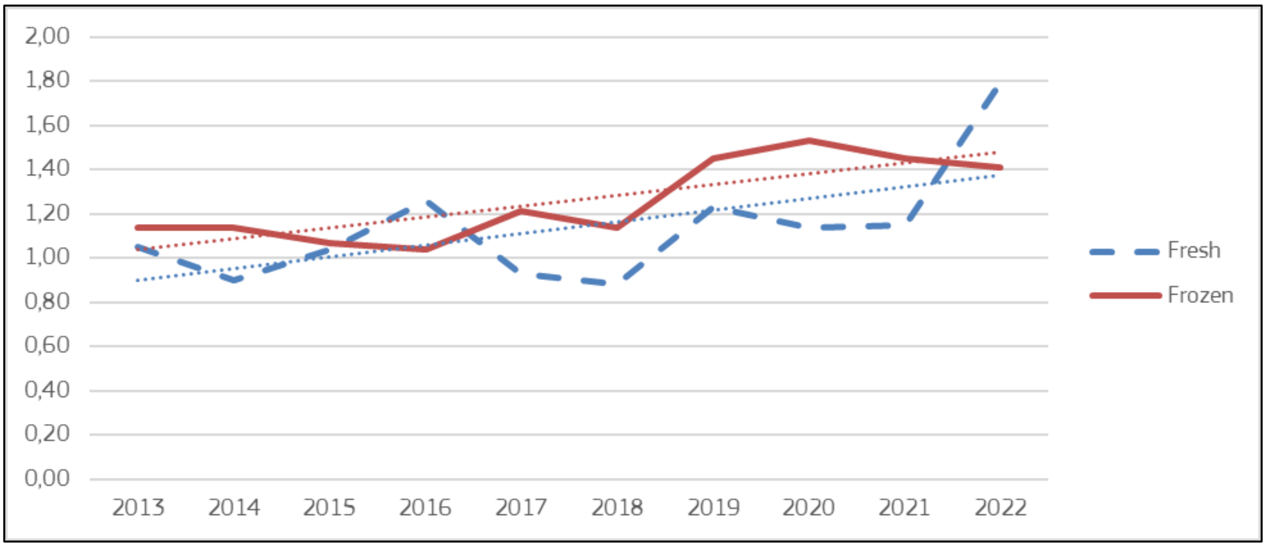


Source: Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos

4.3.2 Import prices

Import prices of fresh and frozen mackerel have followed different yearly patterns over the last decade, but the 10-year-trends are the same.

Figure 14: Import prices (nominal prices) for fresh and frozen mackerel in Portugal (2013-2022, EUR/kg)



Source: EUMOFA elaboration of EUROSTAT-COMEXT data

4.3.3 Ex-factory prices

Average ex-factory prices for canned mackerels can be obtained from two sources on a yearly basis:

- PRODCOM statistics (code 10202550 "Prepared or preserved mackerels, whole or in pieces (excluding minced products and prepared meals and dishes)"), which provides data on the whole canned mackerel production.

Table 43: Portuguese sold production of canned mackerels

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Volume (tonnes)	8.112	7.598	9.102	9.203	10.612	8.972	8.760	9.748	9.532	9.749
Value (1000 EUR)	43.329	40.004	45.396	46.460	56.824	47.128	48.934	52.671	51.816	54.832

Source: EUROSTAT – PRODCOM

- Data published by INE, the National Institute of Statistics, in the framework of the Annual Survey on Industrial Production, which gives separate data on two major segments of the industry.

Table 44: Portuguese sold production of canned mackerels by category

		Mackerels in olive oil	Mackerels in other vegetable oils	Total
2013	tonne	1.557	673	2.230
	1.000 EUR	11.979	2.592	14.571
2014	Tonnes	1.549	705	2.254
	1.000 EUR	11.166	2.566	13.732
2015	Tonne	1.943	1.053	2.996
	1.000 EUR	13.111	3.644	16.755
2016	Tonne	2.281	745	3.026
	1.000 EUR	15.667	2.776	18.443
2017	Tonne	2.225	621	2.846
	1.000 EUR	16.659	2.501	19.160
2018	Tonne	1.728	431	2.159
	1.000 EUR	13.666	1.792	15.458
2019	Tonne	2.036	452	2.488
	1.000 EUR	16.665	1.767	18.432
2020	Tonne	2.644	425	3.069
	1.000 EUR	18.509	1.822	20.331
2021	Tonne	2.601	626	3.227
	1.000 EUR	18.876	2.801	21.677

Source: INE

The average ex-factory prices differ significantly in the two sources and are significantly higher (12-24% according to the years) in INE data. PRODCOM includes all categories of canned mackerels, while INE data only include mackerels in olive oil and mackerels in other vegetable oils, and not mackerels in brine and mackerels in tomato sauce, which are lower priced products.

Table 45: Ex-factory prices of canned mackerels in Portugal (EUR/kg)

Source	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
PRODCOM	5,34	5,27	4,99	5,05	5,35	5,25	5,59	5,40	5,44	5,62
INE	6,53	6,09	5,59	6,09	6,73	7,16	7,41	6,62	6,72	n.a.

Source: PRODCOM and INE

The analysis of ex-factory prices by segment shows that, over the period 2013-2021, prices of mackerels in vegetable oil increased by +16% (+2% in real terms), while prices of mackerels in olive oil decreased (-6% in nominal terms, -17% in real terms). This situation may have changed recently, due to the high increase in the cost of olive oil in 2022-2023.

Table 46: Ex-factory prices of canned mackerels in Portugal by product category (EUR/kg)

	2013	2014	2015	2016	2017	2018	2019	2020	2021
Mackerels in olive oil	7,69	7,21	6,75	6,87	7,49	7,91	8,19	7,00	7,26
Mackerels in other vegetable oils	3,85	3,64	3,46	3,73	4,03	4,16	3,91	4,29	4,47
Total	6,53	6,09	5,59	6,09	6,73	7,16	7,41	6,62	6,72

Source: INE

If we relate these ex-factory prices to the standard can on the market (120 gr), the theoretical ex-factory prices per can are as follows in 2021:

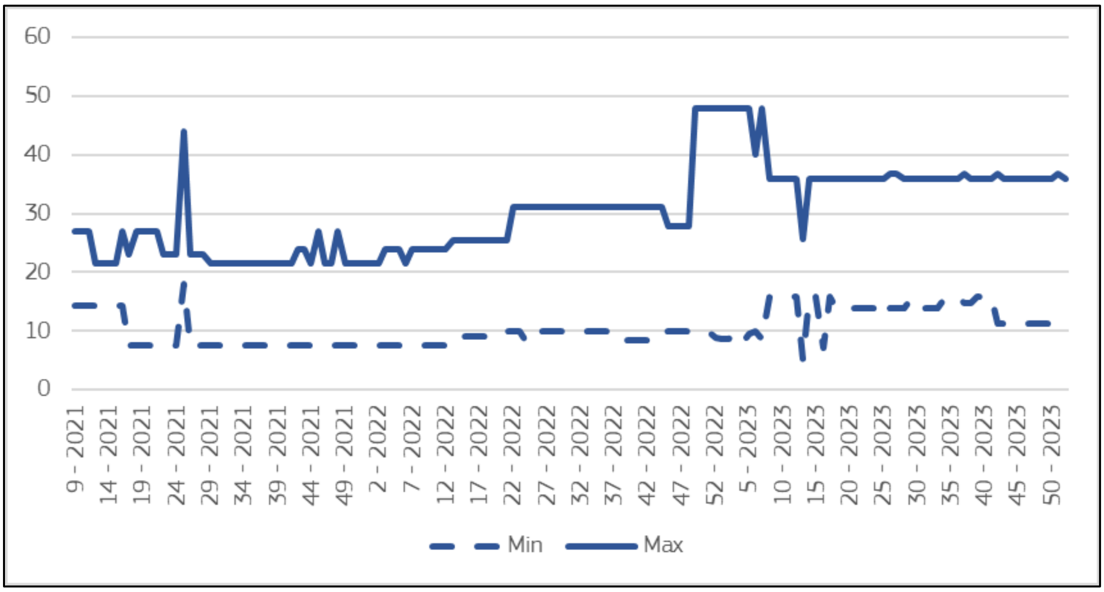
- mackerels in olive oil: 0,87 EUR/can,
- mackerels in vegetable oil: 0,54 EUR/can.

4.3.4 Retail prices

There is no consumer survey for canned mackerel in Portugal, but retail prices of canned mackerel can be approached by the monitoring of online price by EUMOFA and store surveys.

Based on the automatic monitoring of online prices from EUMOFA[15], the price for preserved mackerel in fillet in oil ranged from 11,00 EUR/kg to 37,00 during the second semester of 2023. Prices have increased over the last years, in 2021 the minimum price was below 8,00 EUR/kg and the maximum price ranged between 22,00 and 27,00 EUR/kg during most weeks. We also observe a peak in the maximum price in late 2022 and early 2023 (maximum at 47,92 EUR/kg).

Figure 15: Retail price (minimum and maximum, in EUR/kg) for preserved mackerel fillet in oil in Portugal from 2021 to 2023



[15] https://www.eumofa.eu/fr/online-shop-retail-prices

Price observations made in September 2023 in major large-scale retailers provide inputs on the market segmentation of canned mackerel in Portugal. There are limited price variations for whole mackerels but we observe a wide price range for the mackerel fillets in vegetable oil (from 7,96 to 22,42 EUR/kg) and mackerel fillets in olive oil (from 8,54 to 29,08 EUR/kg).

Table 47: Canned mackerels in the Portuguese large-scale retail (September 2023)

Product	Net weight (gr)	Unit price (EUR/can)	Price per kg (EUR/kg)
Mackerels in vegetable oil	120	1,49	12,42
Mackerels in vegetable oil	120	1,49	12,42
Mackerels in tomato sauce	120	1,04	8,67
Mackerels in tomato sauce	120	0,94	7,83
Mackerels in tomato sauce	2x120	1,95	8,13
Mackerel fillets in brine	120	1,64	13,67
Mackerel fillets in vegetable oil	120	2,69	22,42
Mackerel fillets in vegetable oil	2x125	1,99	7,96
Mackerel fillets in sunflower oil	2x80	1,99	12,44
Mackerel fillets in vegetable oil	120	2,19	18,25
Mackerel fillets in vegetable oil	120	1,49	12,42
Mackerel fillets in olive oil	120	3,49	29,08
Mackerel fillets in olive oil	120	1,99	16,58
Mackerel fillets in olive oil	120	2,59	21,58
Mackerel fillets in olive oil	120	1,79	14,92
Mackerel fillets in olive oil	120	1,49	12,42
Mackerel fillets in olive oil	2x120	2,05	8,54
Mackerel fillets in olive oil	120	3,44	28,67
Mackerel fillets in olive oil	120	1,49	12,42
Mackerel fillets in olive oil	115	1,49	12,96
Mackerel fillets in escabeche	90	1,19	13,22
Mackerel fillets in tomato sauce	90	1,19	13,22
Mackerel fillets in organic olive oil	120	2,99	24,92

Source: price observations in six large-scale retailers

4.3.5 Price transmission

Two cases of price transmission are proposed in the Portuguese canning industry:

- for canned whole mackerels in vegetable oil,
- for canned mackerel fillets in olive oil.

The analyses cover canned mackerel landed in Portugal. The first sale price from national statistics aggregates all fish sizes in all seaports and is not representative of the mackerel price for the processing industry. In this context, data from interviews with processors have been taken into account in the present analyses. The prices considered are the raw material prices for processors:

- fish gutted and headed at 1,53 EUR/kg (for canned whole mackerels in vegetable oil),
- filleted at 3,38 EUR/kg (for canned mackerel fillets in olive).

The price analysis shows that:

- mackerel, as raw material, is the largest cost item for whole mackerels in vegetable oil (30%), while labour is the major cost for mackerel fillets in olive oil (29%), due to the filleting operations;
- due to the high increase of its cost in 2023, olive oil weighs heavily (19% of the processing cost);
- the share of the final price between processor and large-scale retailer is different for the two products compared:
    - for whole mackerels in vegetable oil (retailed at 11,72 EUR/kg):
        - ex-factory price accounts for 44,1% of the final price,
        - retailer costs and margin account for 49,8% of the final price,
    - mackerel fillets in olive oil (retailed at 21,60 EUR/kg):
        - ex-factory price accounts for 57,7% of final price,
        - retailer costs and margin account for 36,3% of the final price.

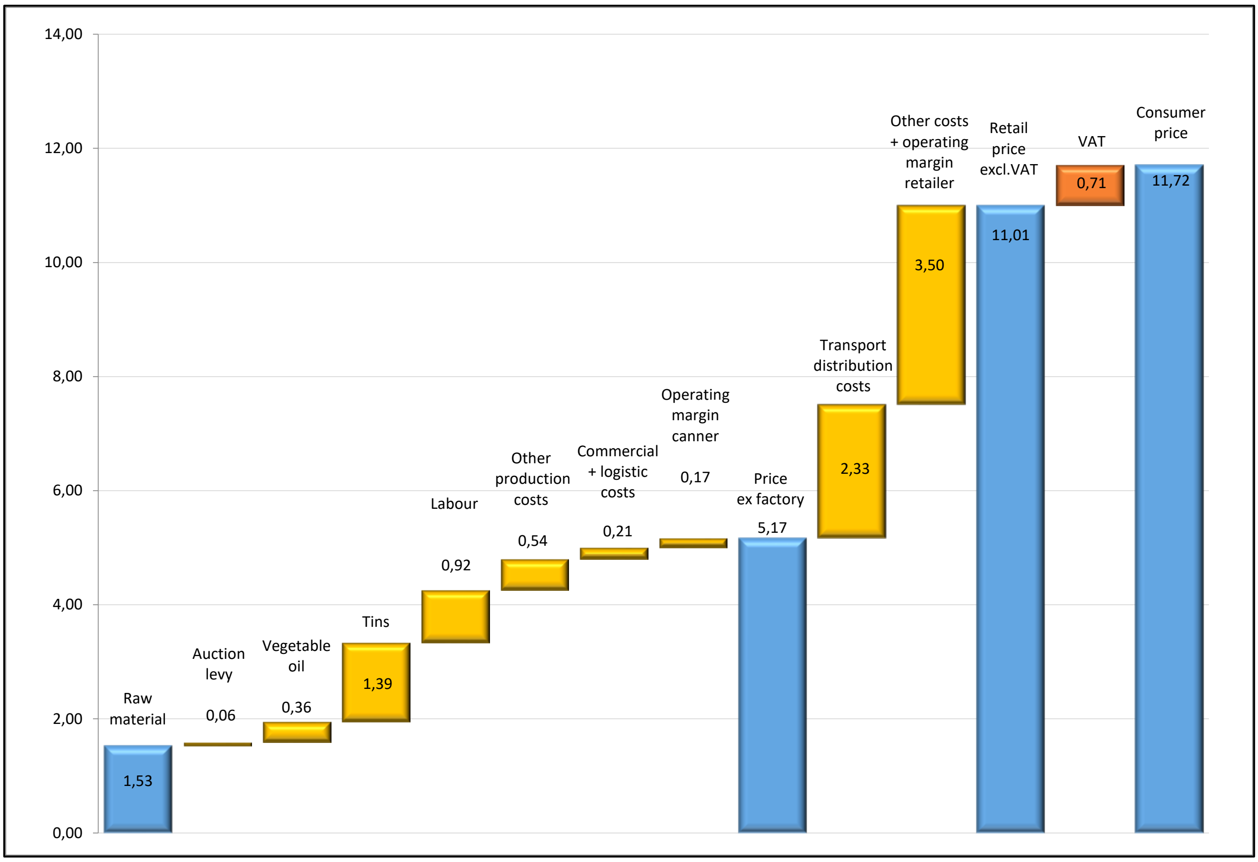
Canned whole mackerel in vegetable oil

Table 48: Costs and margins for canned whole mackerels in vegetable oil in large-scale retail in Portugal (EUR/kg, September 2023)

	EUR/kg	%	Source
Raw material - Mackerels	**1,53**	**13,1%**	**Interview**
Auction levy	0,06	0,5%	Interview
Vegetable oil	0,36	3,1%	Interview
Tins	1,39	11,9%	Interview
Labour	0,92	7,8%	Interview
Other production costs	0.54	4,6%	Interview
Commercial + logistic costs	0,21	1,8%	Interview
Operating margin	0,17	1,5%	Interview
Price ex-factory	**5,17**	**44,1%**	Interview
Transport/distribution cost	2,33	19,9%	Interview/calculation
Other costs + operating margin retailer	3,50	29,9%	Interview/calculation
Retail price, exclusive of VAT	**11,01**	**93,9%**	Calculation
VAT	0,71	6,1%	Calculation
Consumer price	**11,72**	**100%**	EUMOFA

Source: EUMOFA survey

Figure 16: Costs and margins for canned whole mackerel in vegetable oil (EUR/kg, September 2023)



Source: EUMOFA survey

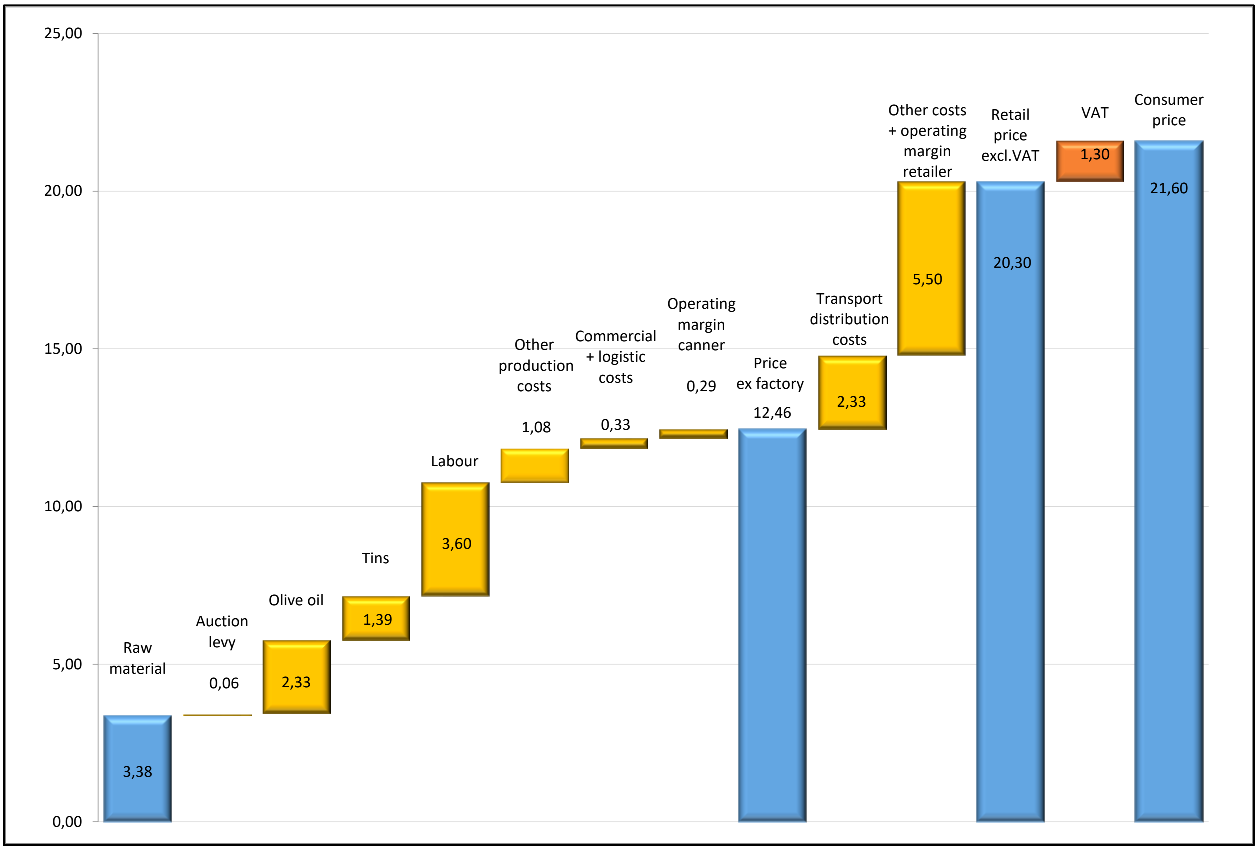
Canned mackerel fillets in olive oil

Table 49: Costs and margins for canned mackerel fillets in olive oil large-scale retail in Portugal (EUR/kg, September 2023)

September 2023	EUR/kg	%	Source
Raw material – Mackerels (fillet)	**3,38**	**15,6%**	**Interview**
Auction levy	0,06	0,3%	Interview
Olive oil	2,33	10,8%	Interview
Tins	1,39	6,4%	Interview
Labour	3,60	16,7%	Interview
Other production costs	1,08	5,0%	Interview
Commercial + logistic costs	0,33	1,5%	Interview
Operating margin	0,29	1,3%	Interview
Price ex-factory	**12,46**	57,7%	Interview
Transport/distribution cost	2,33	10,8%	Interview/calculation
Operating margin retailer	5,50	25,5%	Interview/calculation
Retail price, exclusive of VAT	20,30	94,0%	Calculation
VAT	1,30	6,0%	Calculation
Consumer price	**21,60**	100%	EUMOFA

Source: EUMOFA survey

Figure 17: Costs and margins for canned mackerel fillets in olive oil (EUR/kg, September 2023)



Source: EUMOFA survey

5. THE DUTCH MARKET

5.1 Structure of the supply chain

5.1.1 Production

There are significant differences between catches (from Dutch fleet) and landings in the Netherlands due to landings from foreign vessels. The volume of mackerel catches were 34.928 tonnes in 2022 compared to 80.061 tonnes landed. Thus, 44% of the Dutch landings were from Dutch vessels.

A few large-scale companies are involved in the mackerel fishery in the Netherlands. They operate with Dutch vessels and vessels from other countries (EU 27 and third countries) owned by Dutch companies. The UK is the second country concerned in terms of volume landed in the Netherlands, followed by Germany (16%) and France (12%). When fish is landed in the Netherlands by a non-Dutch vessel and if the first sale occurs in the Netherlands, this is considered as an export to the Netherlands.

Mackerel is fished by the pelagic freezer trawler fleet (large-scale vessels, over 40 m length). This fleet segment also targets Atlantic herring, blue whiting and Atlantic horse mackerel. The fish is frozen on-board and landed in ice blocks of 20-24 kg/box. The fish in ice blocks is whole; generally, it is neither gutted nor headed.

Table 50: Mackerel landings in the Netherlands in 2022, by origin of the vessel

	Atlantic mackerel	Chub Mackerel	Total
NL	**25.964**	**8.906**	**34.870**
DE	10.815	na	**10.815**
FR	8.176	na	**8.176**
BE	137	na	**137**
PL	101	1.870	**1.971**
LT	na	2.092	**2.092**
EU27	**45.193**	**12.868**	**58.061**
UK	22.000	na	**22.000**
Total	**67.193**	**12.868**	**80.061**
% NL	***39%***	***69%***	***44%***
% DE	*16%*	*0%*	***14%***
% FR	*12%*	*0%*	***10%***
% BE	*0%*	*0%*	***0%***
% PL	*0%*	*15%*	***2%***
% LT	*0%*	*16%*	***3%***
% EU27	***67%***	***100%***	***73%***
% UK	*33%*	*0%*	***27%***

na: not available
Source: Eurostat

The volume of mackerel catches has fluctuated over the period 2013-2022. It reached a peak in 2015 with 53.786 tonnes caught and decreased over the following years. The volume was 34.928 tonnes in 2022.

Table 51: Evolution of catches of mackerel in the Netherlands between 2013 and 2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	% 2022
Atlantic mackerel	21.602	46.830	48.782	37.455	43.574	30.132	22.370	29.970	24.322	25.954	74%
Atlantic chub mackerel	1.271	3.956	4.432	5.031	3.541	1.446	3.809	6.312	10.618	8.975	26%
Pacific chub mackerel	0	0	0	0	0	0	0	286	0	59	0%
Total	**22.873**	**50.786**	**53.214**	**42.486**	**47.115**	**31.578**	**26.178**	**36.282**	**34.941**	**34.928**	**100%**

Source: Eurostat

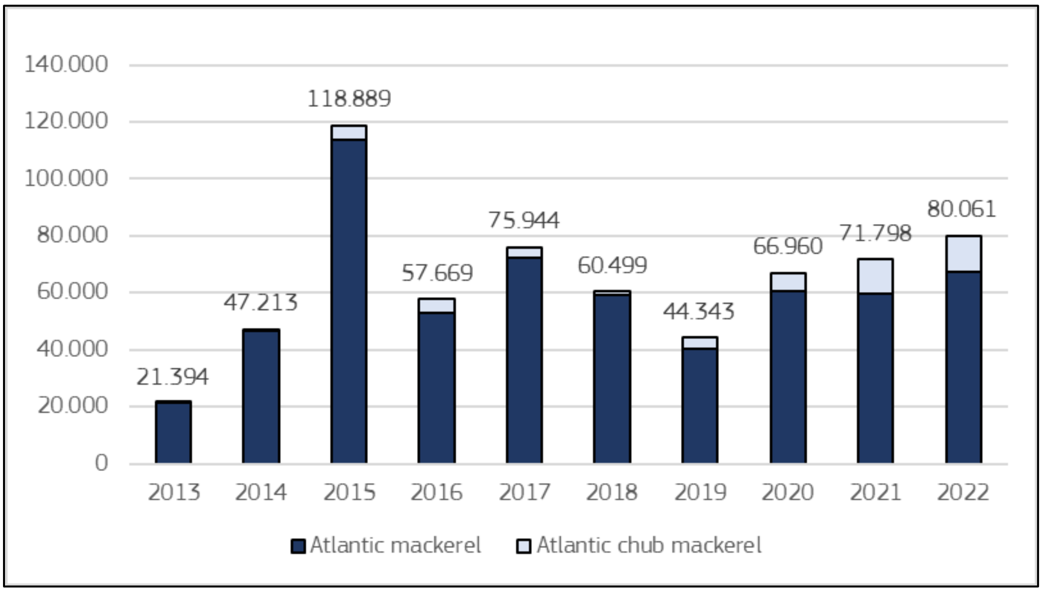
Landings mostly include Atlantic mackerel (83% to 98% over the last years). Landings peaked in 2015 at 118.889 tonnes and has ranged between 67.000 tonnes and 80.000 tonnes over the last years. They reached 80.061 tonnes in 2022.

Table 52: Evolution of landings of mackerel in the Netherlands between 2013 and 2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Atlantic mackerel	21.372	46.685	113.679	53.052	72.124	59.118	40.429	60.389	59.672	67.193
Atlantic chub mackerel	22	528	5.210	4.617	3.820	1.381	3.913	6.571	12.126	12.868
Total	**21.394**	**47.213**	**118.889**	**57.669**	**75.944**	**60.499**	**44.343**	**66.960**	**71.798**	**80.061**

Source: Eurostat

Figure 18: Evolution of landings of mackerel in the Netherlands between 2013 and 2022 (tonnes)



Source: Eurostat

5.1.2 Imports - Exports

Imports

Total imports of mackerel to the Netherlands reached 108.519 tonnes and EUR 152 million in 2022. Most of the imports (in particular frozen mackerel and possibly fresh mackerel) are related to fish caught by foreign vessels (frozen on-board) and landed in the Netherlands where the first sale occurs. Most of these foreign vessels are owned by Dutch companies.

Thus, the main product imported to the Netherlands in 2022 was frozen mackerel, with EUR 131 million (86% of total imported value) and 103.726 tonnes. Prepared mackerel accounted for 11% of the total imported value imported (EUR 16 million and 2.635 tonnes) while fresh mackerel accounted for 3% of the imported value (EUR 5 million and 2.148 tonnes).

Main suppliers are countries involved in mackerel fisheries and landings in the Netherlands. The first exporter is the UK, accounting for 25% of the total imported value in 2022 (amounting to EUR 45 million, accounting for 29% of the imported value of frozen mackerel and 41% of the imported value of fresh mackerel). Other important suppliers were the Faroe Islands (accounting for 16% of the total imported value and 20% of the frozen mackerel imported value), Norway (14% of the total imported value), and Lithuania (13% of the imported value). Denmark was the main supplier of prepared mackerel (accounting for 65% of the imported value of prepared mackerel in 2022).

Table 53: Imports of mackerel to the Netherlands in 2022

	Nominal value (1.000 EUR)	Volume (tonnes)	Price (EUR/kg)	% val. 2022
Fresh	5.027	2.148	2,34	3%
Frozen	131.450	103.726	1,27	86%
Smoked	173	21	8,38	0,11%
Prepared or preserved	16.334	2.625	6,22	11%
Total	**152.985**	**108.519**	**1,41**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Imports of frozen mackerel have increased by 23% in volume and have increased by 43% in value since 2012 (+18% in real terms). Imports peaked in 2021 at 108.139 tonnes and were 103.726 tonnes in 2022. The price has ranged from 0,81 to 1,27 EUR/kg between 2012 and 2022 (this maximum price being reached in 2022); the evolution is +16% in nominal terms and -4% in real terms.

Table 54: Evolution of imports of frozen mackerel in the Netherlands (2012-2022)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022/ 2012
Nominal value (million EUR)	91,8	65,6	85,2	82,8	82,3	93,4	78,5	72,8	97,6	116,8	131,4	**+43%**
Volume (1.000 tonnes)	84,2	76,2	105,7	93,4	87,0	104,9	86,2	68,2	90,6	108,1	103,7	**+23%**
Price (EUR/kg)	1,09	0,86	0,81	0,89	0,95	0,89	0,91	1,07	1,08	1,08	1,27	**+16%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Imports of fresh mackerel have increased by 6% in volume and by 58% in value between 2012 and 2022 (+30% in real terms). The price has increased by 49% over the period (+23% in real terms). It reached its peak in 2022 at 2,34 EUR/kg (+49% in nominal terms since 2012, +23% in real terms).

Table 55: Evolution of imports of fresh mackerel in the Netherlands (2012-2022)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022/ 2012
Nominal value (1.000 EUR)	3.186	2.392	2.758	2.970	4.243	3.908	4.602	5.115	3.793	3.843	5.027	**+58%**
Volume (tonnes)	2.030	1.449	1.818	2.132	2.000	2.088	2.485	2.572	1.936	1.766	2.148	**+6%**
Price (EUR/kg)	1,57	1,65	1,52	1,39	2,12	1,87	1,85	1,99	1,96	2,18	2,34	**+49%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Imports of prepared mackerel have increased by 218% in volume and by 262% in value since 2012 (+199% in real terms). Imports of prepared mackerel reached their highest level in 2021 at 4.629 tonnes and decreased to 2.625 tonnes in 2022. Over the period, the price has increased by 14% (-6% in real terms) to reach 6,22 EUR/kg in 2022.

Table 56: Evolution of imports of prepared mackerel in the Netherlands (2012-2022)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022 /2012
Nominal value (million EUR)	4,5	4,1	4,3	2,4	2,8	3,1	4,4	27,5	20,7	29,5	16,3	**+262%**
Volume (tonnes)	0,8	0,8	1,0	0,5	0,5	0,7	0,9	4,4	3,3	4,6	2,6	**+218%**
Price (EUR/kg)	5,47	4,82	4,28	4,68	5,39	4,39	4,64	6,19	6,33	6,36	6,22	**+14%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports

Dutch exports amounted to 118.539 tonnes and EUR 218 million in 2022. The main exported product was frozen mackerel amounting to EUR 181 million in 2022 (83% of total exported value) and 110.068 tonnes. Prepared mackerel accounted for 9% of the total exported value (EUR 19 million) while fresh and smoked mackerel accounted for 4% of the exported value each, amounting respectively to EUR 8 million and EUR 9 million.

In 2022, main destinations were:

- Poland (with almost exclusively frozen mackerel exported) accounting for:
    - 17% of the total exported value (EUR 37,96 million and 24.213 tonnes),
    - 23% of the exported value of the frozen mackerel (EUR 37,85 million and 24.182 tonnes),
- Nigeria (with almost exclusively frozen mackerel exported) accounting for 10% of the total exported value and 14% of the frozen mackerel exported value (EUR 22,91 million and 12.550 tonnes),
- Germany (with 75% of frozen mackerel, 13% of smoked mackerel and 10% of prepared and preserved mackerel, in value) accounting for:
    - 9% of the total exported value (EUR 20,13 million and 8.927 tonnes),
    - 9% of the frozen exported value (EUR 14,79 million and 7.864 tonnes),
    - 33% of the smoked exported value (EUR 2,67 million and 593 tonnes,
    - 11% of the prepared exported value (EUR 2,00 million and 301 tonnes).

Other important destinations were Romania (6% of the exported value in 2022), Egypt, the UK and Belgium (accounting each for 5% of the exported value in 2022).

Table 57: Exports of mackerel from the Netherlands in 2022

	Nominal value (1.000 EUR)	Volume (tonnes)	Price (EUR/kg)	% val. 2022
Fresh	8.265	3.309	2,50	4%
Frozen	181.608	110.068	1,65	83%
Smoked	9.250	1.906	4,85	4%
Prepared or preserved	19.199	3.257	5,90	9%
Total	**218.323**	**118.539**	**1,84**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports of frozen mackerel have increased by 17% in volume and by 32% in value between 2012 and 2022 (+9% in real terms). They peaked in 2015 at 161.519 tonnes and decreased to 110.068 tonnes in 2022. The price has increased by 12% over the period (-7% in real terms) and reached its peak in 2022 (1,65 EUR/kg).

Three African countries accounted for 22% of the exports of frozen mackerel: Nigeria, Egypt and Gabon (2022), for a total 21.844 tonnes. This export flow peaked between 2014 and 2017 with volumes up to 71.137 tonnes. The exported volume has decreased since 2017 due to the reduction of volume available, in relation with TACs and quotas for mackerel. The fish is landed in the Netherlands, it is frozen on-board in "ice blocks" of fish. These "ice blocks" are exported from the Netherlands to African countries.

Table 58: Evolution of the Dutch exports of frozen mackerel between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022/2012
Nominal value (million EUR)	138,0	115,9	164,2	196,1	188,5	188,8	150,2	197,7	145,0	163,4	181,6	**+32%**
Volume (1.000 tonnes)	94,1	98,0	140,4	161,5	158,7	150,4	117,8	134,4	96,3	117,6	110,1	**+17%**
Price (EUR/kg)	1,47	1,18	1,17	1,21	1,19	1,26	1,28	1,47	1,51	1,39	1,65	**+12%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports of smoked mackerel from the Netherlands have experienced an increase of 88% in volume and 85% in value between 2012 and 2022 (+53% in real terms). Smoked mackerel exports reached their highest volume in 2022 amounting to 1.905 tonnes. The price of smoked mackerel peaked in 2019 (5,59 EUR/kg) and decreased to 4,85 EUR/kg in 2022 (below the 2012 price). Smoked mackerel may cover several types of products (whole mackerel or fillets, see following section), with different prices.

Table 59: Evolution of the Dutch exports of smoked mackerel between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022/ 2012
Nominal value (1.000 EUR)	4.996	4.693	4.126	4.069	5.165	4.913	5.032	5.330	6.027	7.285	9.250	**+85%**
Volume (tonnes)	1.014	957	769	757	949	941	954	954	1.267	1.532	1.906	**+88%**
Price (EUR/kg)	4,93	4,90	5,37	5,38	5,44	5,22	5,27	5,59	4,76	4,76	4,85	**-2%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Dutch exports of fresh mackerel have increased by 112% in volume and by 232% in value over the decade (+174% in real terms). They reached their highest volume in 2022 (3.309 tonnes). The price reached its highest level in 2021 (3,05 EUR/kg) and decreased to 2,50 EUR/kg in 2022.

Table 60: Evolution of the Dutch exports of fresh mackerel between 2012 and 2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Evol 2022 / 2012
Nominal value (1.000 EUR)	2.493	1.809	1.793	2.279	4.012	6.592	6.067	6.618	6.692	8.629	8.265	**+232%**
Volume (tonnes)	1.564	961	916	1.223	1.550	2.347	2.368	2.402	2.515	2.829	3.309	**+112%**
Price (EUR/kg)	1,59	1,88	1,96	1,86	2,59	2,81	2,56	2,76	2,66	3,05	2,50	**+57%**

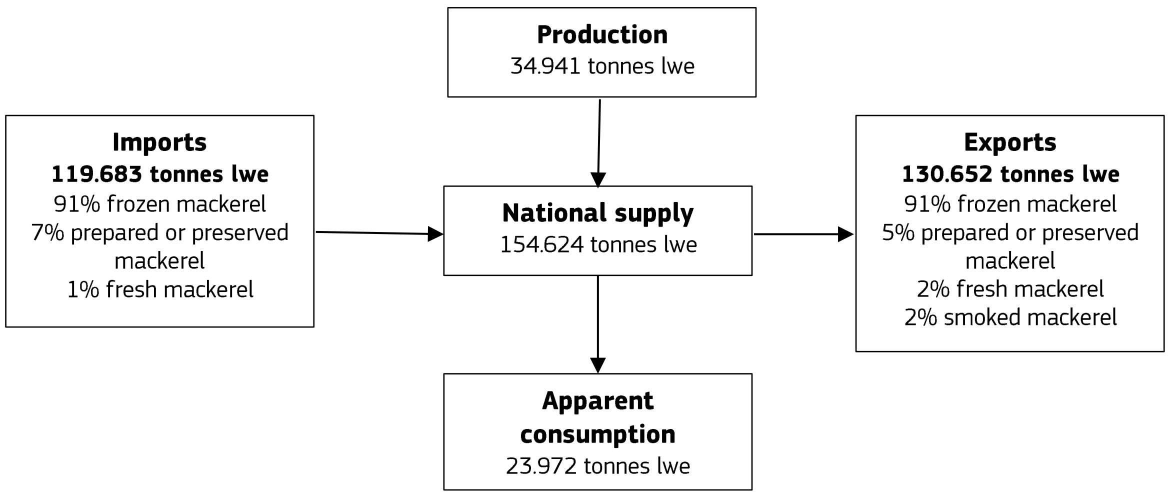
Source: EUMOFA elaboration of EUROSTAT-COMEXT data

5.1.3 Apparent consumption

In 2021, the total supply of mackerel in the Netherlands amounted to 154.624 tonnes in live weight equivalent (lwe), of which 23% from national production (fisheries) and 77% from imports. Frozen mackerel represented 91% of the imported volume (lwe tonnes) while prepared or preserved mackerel and fresh mackerel accounted for 7% and 1% of the imported volume. As mentioned previously, the imports of frozen mackerel are notably from foreign vessels landing in the Netherlands (this is considered as an import when first sale occurs in the Netherlands).

A major share of the national supply was exported (84%), thus 16% can be estimated as apparent consumption at national level, namely 23.972 tonnes lwe. Exports were mainly composed of frozen mackerel (91% of the exported volume, lwe tonnes). Prepared and preserved mackerel accounted for 5% of the exported volume, fresh mackerel and smoked mackerel represented 2% of the exported volume each.

Figure 19: Supply balance for mackerel in the Netherlands (2021, tonnes of live weight equivalent)



Source: EUMOFA elaboration of EUROSTAT and EUROSTAT-COMEXT data

5.2 Characteristics of the Dutch market and consumption

The Dutch market for mackerel mainly includes smoked mackerel processed in the Netherlands. The raw material is frozen or fresh mackerel, from national catches or imported. Based on interviews, there are six main companies involved in mackerel smoking in the Netherlands, three large-scale and three small-scale (in addition to a few very small companies involved in fish smoking).

The mackerel used by the smoking industry must have a specific fat content (about 21% fat), thus the fish used in the smoking industry is caught between October/November up to January/February.

Smoked mackerel is generally filleted, but some smoked mackerel may be sold whole. There are two types of smoked mackerel fillets (with two levels of quality and price):

- mackerel firstly filleted and then smoked,
- mackerel firstly smoked and then filleted.

The mackerel firstly smoked and then filleted is a premium product. The smoking of the whole fish limits drying of the flesh, resulting in softer fish, with more fat. However, the filleting of the smoked product is more complex than the filleting of fresh product, thus, costs are higher.

Based on qualitative feedback from stakeholders, the market is about half for each of these two types of smoked fillets. The Dutch and Belgian markets ask for fillets made with small fish (about 350 gr each). The German market asks for fillets from larger fish, 400 gr each and higher.

Based on Dutch Fish Marketing Board/GfK data, the consumption of smoked mackerel in the Netherlands is about 17.000 tonnes lwe (this is 74% of the 23.020 tonnes lwe calculated for apparent consumption in the Netherlands for mackerel), which confirms that smoked mackerel is the main type of mackerel products consumed in the Netherlands.

The breakdown in volume by sales channel is as follows (based on Dutch Fish Marketing Board/GfK data):

- 34% in supermarkets,
- 27% in outdoor fish counters (mobile fishmongers, outdoor markets),
- 24% in fish shops,
- 4% in HORECA,
- 11% in other channels.

In the context of home consumption, smoked mackerel is mainly consumed with bread (56%), and to a lesser extent as a meal (14%) and 10% as a snack. In case of out-of-home consumption, it is more frequently consumed as a meal (18%) and as a snack (18%).

Smoked mackerel is mainly consumed at lunch (for 57% of the people), to some extent at diner (29%) and both at lunch and dinner for 7% of the people.

In case of home consumption, about one third of the population consumes smoked mackerel (34% of men and 35% of women). However, this is mainly consumed by people over 50 years old (44%). In case of out-of-home consumption, the share of the population is lower (10% of men and 8% of women). The consumption is higher for people between 30 and 39 years old (11%).

The mackerel used to be certified with the Marine Stewardship Council (MSC) up to 2019. Environmental certification is highly requested in the Dutch retail sector. Even if the stock is in a good state (based on ICES), the absence of cooperation between coastal States is a barrier to a good management of the fishery. As highlighted by ICES, there is no long-term management strategy for Northeast Atlantic mackerel agreed by all parties involved in the mackerel fishery[16].

[16] Mackerel (*Scomber scombrus*) in subareas 1–8 and 14, and in Division 9.a (Northeast Atlantic and adjacent waters) (figshare.com)

5.3 Price transmission in the supply chain

5.3.1 First-sale prices

The first sale price ranged from 0,46 EUR/kg to 1,02 EUR/kg between 2017 and 2023 (it was higher before 2017, up to 1,51 EUR/kg in 2014). However, due the vertical integration of the value chain in the Netherlands, this first-sale price may underestimate the actual price of the fish. As highlighted in the last Annual Economic Report from the STECF[17] in the section related to the Netherlands: "*The prices of pelagic fish used to calculate the fishing revenue of the pelagic trawler fleet are not actual prices. They are internal prices used within the fishing companies to calculate the wage of the fishing crew. The integrated companies cover the whole production chain from fishing to the consumer and there are no real ex-vessel prices available. Those prices probably underestimate the value of landings of pelagic fish.*"

One processor interviewed in the context of this study indicated that he purchased frozen mackerel from UK vessels at 1,80 – 1,90 EUR/kg in 2023 (fish around 400 gr each). This price had increased over the last years, it was about 1,40 EUR/kg five years ago.

Table 61: Price first sale mackerel (EUR/kg)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Nominal price (EUR/kg)	1,45	1,23	1,51	1,50	1,22	1,02	1,02	1,02	0,96	0,98	0,46	0,95

Note: as detailed above, the prices displayed in the table may underestimate the actual price of the fish

Source: EUMOFA

5.3.2 Wholesale prices

Due the vertical integration of the mackerel value chain in the Netherlands, there are no prices available at wholesale stage.

5.3.3 Import and export prices

The main product imported or exported is frozen mackerel (about 100.000 imported and 110.000 exported). Imports mainly include fish landed in the Netherlands by vessels with foreign flags but owned by Dutch companies. As for first sale price, these import prices must be considered with caution (the price may underestimate its actual value). In 2022, the import price was 1,27 EUR/kg for frozen fish and 2,34 EUR/kg for fresh fish.

Other flows are less important, amounting to a few thousand tonnes each (2.148 tonnes imported fresh, 3.309 tonnes exported fresh and 1.906 tonnes exported smoked).

The export price for frozen mackerel has been increasing since 2014 (+41% in nominal terms and +18% in real terms). It reached 1,65 EUR/kg in 2022 while its lowest point was in 2014 at 1,17 EUR/kg. The export price for smoked mackerel was 4,85 EUR/kg in 2022, 13% below the highest price reached in 2019 (5,59 EUR/kg). "Smoked mackerel" encompasses different types of products (whole fish or fillet) with different levels of prices. Thus, the evolution of the average export price is directly related to the share of each type of products in the exports (however, the detailed information is not available).

[17] https://stecf.jrc.ec.europa.eu/reports/economic/-/asset_publisher/d7Ie/document/id/74588237?inheritRedirect=false&redirect=https%3A%2F%2Fstecf.jrc.ec.europa.eu%2Freports%2Feconomic%3Fp_p_id%3D101_INSTANCE_d7Ie%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-2%26p_p_col_pos%3D1%26p_p_col_count%3D2

Table 62: Import and export prices for mackerel products between 2012 and 2022 (EUR/kg, nominal price)

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Import	Frozen mackerel	1,09	0,86	0,81	0,89	0,95	0,89	0,91	1,07	1,08	1,08	1,27
	Fresh mackerel	1,57	1,65	1,52	1,39	2,12	1,87	1,85	1,99	1,96	2,18	2,34
Export	Frozen mackerel	1,47	1,18	1,17	1,21	1,19	1,26	1,28	1,47	1,51	1,39	1,65
	Smoked mackerel	4,93	4,90	5,37	5,38	5,44	5,22	5,27	5,59	4,76	4,76	4,85

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

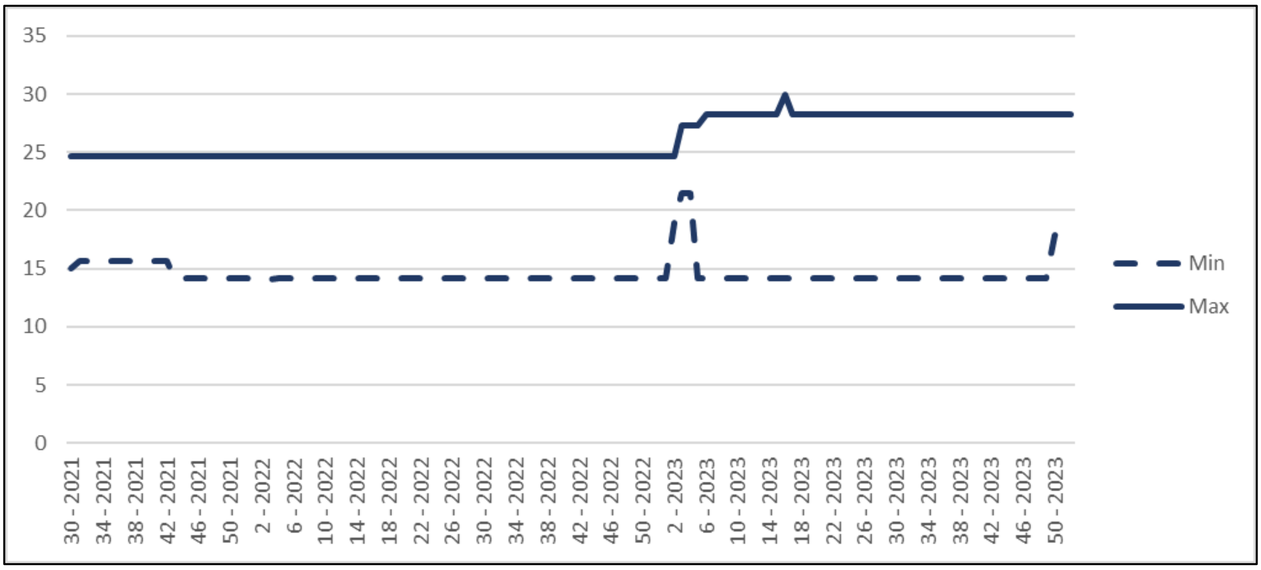
5.3.4 Retail prices

Smoked mackerel are retailed whole or in fillets. There are two types of fillets with different levels of price (based on interview and store checks):

- products which are firstly filleted and then smoked are sold around 15,00 EUR/kg,
- products which are firstly smoked and then filleted (the quality is higher, fish is less dry and the filleting step is more complex), are sold around 30,00 EUR/kg.

This range of price is confirmed by the automatic monitoring of online prices from EUMOFA[18]. The prices for smoked mackerel in the Netherlands have ranged from 14,05 EUR/kg to 29,93 EUR/kg between 2021 and 2023. We observe an increase of the maximum price in early 2023, from 24,70 EUR/kg in December 2022 to 28,30 EUR/kg in February 2023.

Figure 20: Retail price (minimum and maximum, in EUR/kg) for smoked fillet of mackerel in the Netherlands from 2021 and 2023



Source: Online shop retail prices - EUMOFA - https://www.eumofa.eu/fr/online-shop-retail-prices

18 https://www.eumofa.eu/fr/online-shop-retail-prices

A survey of three online shops (large-scale retailers and the online shop of a small-scale producer) in November 2023 provides more details on the products retailed and their prices. We observe three types of products with specific prices:

- Whole smoked mackerel, with a price at 10,50 EUR/kg and even lower in case of discount (7,97 EUR/kg),
- Several products (fillets) are retailed between 13,40 EUR/kg and 18,88 EUR/kg, which may refer to products filleted and thus smoked (this detail is not provided on the shop websites),
- A few products are retailed between 25,00 and 35,00 EUR/kg; for one of these, it is indicated that the fish is smoked before being filleted (premium product).

Table 63: Monitoring of prices on online shops in the Netherlands (November 2023)

Detail on the product	Price (EUR/kg)	Source
Whole - 25% discount	7,87	Large-scale retailer
whole	10,50	Large-scale retailer
Fillet - 25% discount	13,40	Large-scale retailer
Fillet - 25% discount	16,85	Large-scale retailer
Fillet	17,88	Large-scale retailer
Fillet, with pepper	18,88	Large-scale retailer
Fillet	25,00	small-scale producer
Flakes (pieces of fillets)	31,19	Large-scale retailer
Fillet (indication that firstly smoked and then filleted)	34,31	Large-scale retailer

Source: Online shop retail prices – EUMOFA survey

5.3.5 Price transmission

The price transmission focuses on smoked mackerel retailed in Netherlands in large-scale retail:

- mackerel filleted and then smoked, retailed at 15,0 EUR/kg,
- mackerel smoked and then filleted (premium product) at 30,0 EUR/kg.

The main difference in the price transmission between those two products is the costs and margin for processor, about three times higher for premium products.

Smoked fillet of mackerel, firstly filleted and then smoked

The final price is 15,00 EUR/kg while the raw material price is 1,85 EUR/kg (12% of the final price). Distribution costs and margin account for 42% of the final price, and processing costs and margin account for 30% of the final price.

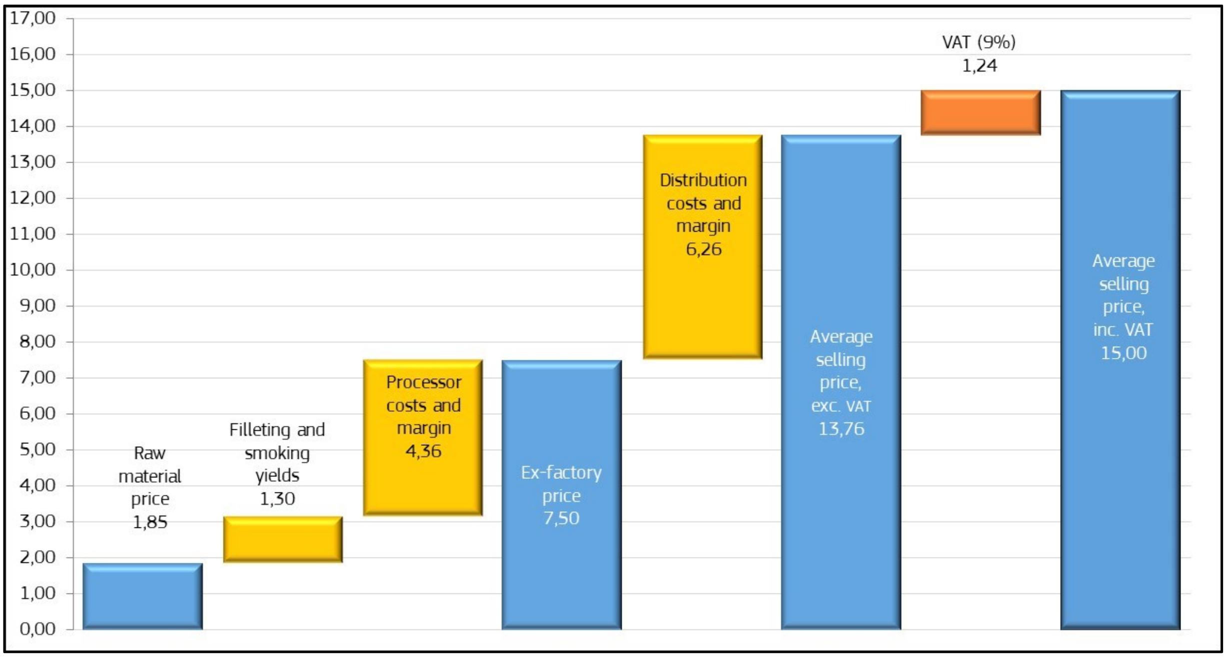
The filleting yield is 50% and the smoking yield is 70%. Thus, the total yield between fresh whole and smoked fillet is 35%.

Table 64: Price transmission for smoked fillet in the Netherlands (firstly filleted and then smoked) – sold in large-scale retail in 2023

	Price (EUR/kg)	% of the final price	Source
Raw material price	**1,85**	**12%**	Interview
Filleting and smoking yields (35%)	1,20	8%	Interview and calculation
Processor costs and margin	4,45	30%	Calculation
Ex-factory price	**7,50**	**50%**	Interview
Distribution costs and margin	6,26	42%	Calculation
Average selling price, excl. VAT	**13,76**	**92%**	Interview
VAT (9%)	1,24	8%	Calculation
Average selling price, incl. VAT	**15,00**	**100%**	Interview and price monitoring

Source: EUMOFA survey

Figure 21: Price transmission for smoked fillet in the Netherlands (firstly filleted and then smoked) – sold in large-scale retail in 2023



Source: EUMOFA survey

Smoked fillet of mackerel, firstly smoked and then filleted

The final price is 30,00 EUR/kg, while the raw material price is 1,85 EUR/kg (6% of the final price). Processing costs and margin account for 56% of the final price, and distribution costs and margin account for 25% of the final price.

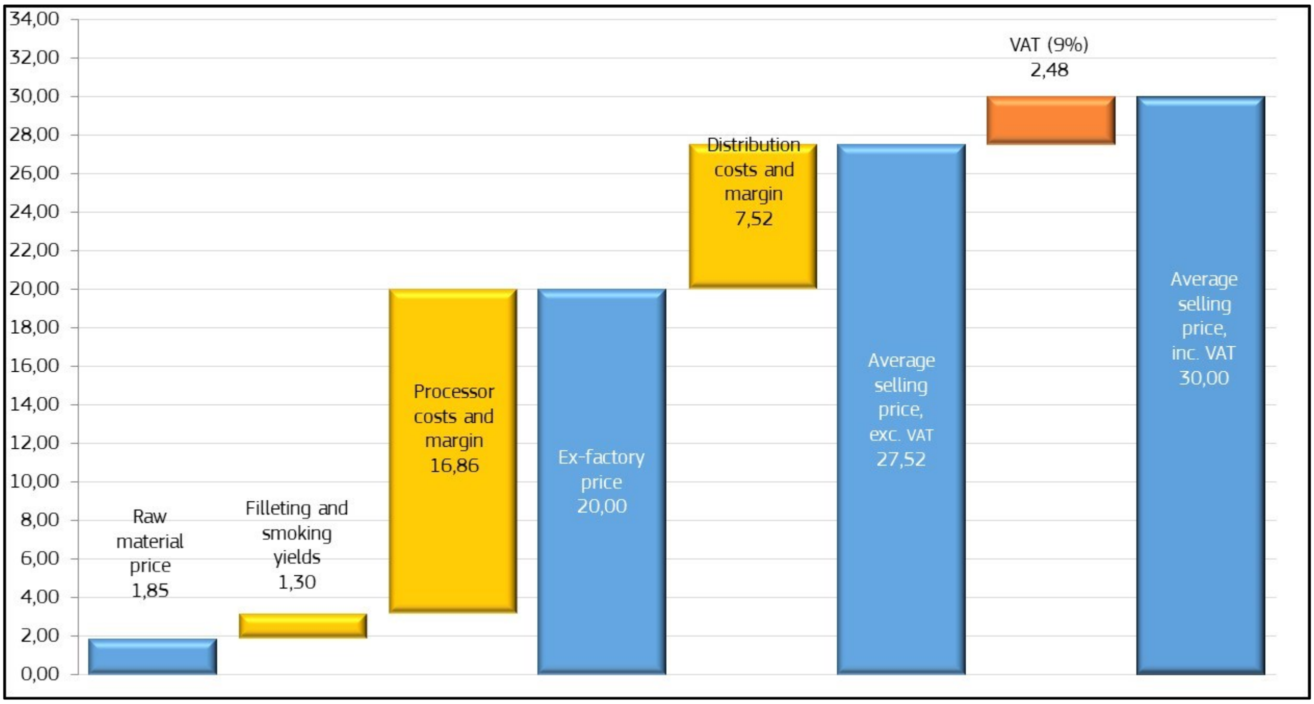
The filleting yield is 50% and the smoking yield is 70%. Thus, the total yield between fresh whole and smoked fillet is 35%.

Table 65: Price transmission for smoked fillet in the Netherlands (firstly smoked and then fillted) – sold in large-scale retail in 2023

	Price (EUR/kg)	% of the final price	Source
Raw material price	**1,85**	**6%**	Interview
Filleting and smoking yields (35%)	1,20	4%	Interview and calculation
Processor costs and margin	16,95	56%	Calculation
Ex-factory price	**20,00**	**67%**	Interview
Distribution costs and margin	7,52	25%	Calculation
Average selling price, excl. VAT	**27,52**	**92%**	Interview
VAT (9%)	2,48	8%	Calculation
Average selling price, incl. VAT	**30,00**	**100%**	Interview and price monitoring

Source: EUMOFA survey

Figure 22: Price transmission for smoked fillet in the Netherlands (firstly smoked and then filleted) – sold in large-scale retail in 2023



Source: EUMOFA survey

6. CONCLUSIONS

The present document proposes six price transmission analyses, in three EU countries. Each of these price transmissions covers a processed product: canned mackerel in Spain and Portugal, and smoked mackerel in the Netherlands. Key points from the comparison of price transmission are:

- Raw material price differs based on the type of product used. Prices range:
  - from 1,50 EUR/kg to 1,85 EUR/kg when whole mackerel is used (a lower price has even been reported in Portugal by processors: 0,82 EUR/kg),
  - from 3,38 EUR/kg to 5,00 EUR/kg when processed products are used (fillets or loins).
- Processing costs and margin range from 3,64 to 18,15 EUR/kg and differ highly depending on:
  - the type of raw material used (a filleting may be needed when raw material is whole fish),
  - shrinks during the processing steps (filleting, smoking),
  - other ingredients used (for instance olive oil),
  - labour costs: some processing methods are more labour intensive than others. For instance, one smoking method is specifically demanding in terms of labor in the Netherlands (filleting the fish after smoking).
- Retail costs and margin are more homogeneous (these costs and margin are estimated thanks to interviews or calculated with ex-factory price and the consumer price), between 4,38 EUR/kg up to 7,83 EUR/kg. The costs and margin depend on retailer strategies and prices of products retailed (retailers generally use a coefficient which is based on their purchasing price; thus, the retailer margin tends to be higher when the purchase price is higher).
- The final price for these processed products ranges from 11,81 to 21,60 EUR/kg for canned products and 15,00 to 30,00 EUR/kg for smoked products. These differences in prices highlight the important market segmentation for mackerel products, based on the type of processing, the raw material used, the addition of other ingredients and the branding strategies.

Table 66: Synthesis of the price structure analysis of mackerel in Spain, Portugal and the Netherlands (EUR/kg, nominal value 2023)

MS	Spain		Portugal		The Netherlands	
Type of processing	Canned	Canned	Canned	Canned	Smoked	Smoked
Product	Fillet	Fillet	Whole	Fillet	Fillet	Fillet
Other information	Made with frozen whole mackerel	Made with frozen loins	In vegetable oil	In olive oil	Filleted and smoked	Smoked and filleted
Sales channel	Large-scale retail					
Raw material price	1,50 (frozen whole)	5,00 (frozen loin)	1,53 (headed and gutted fish)	3,38 (fillet)	1,85 (whole fish)	1,85 (whole fish)
Processing costs	4,78	4,50	3,64	9,08	5,65	18,15
Ex-factory price	**6,28**	**9,50**	**5,17**	**12,46**	**7,50**	**20,00**
Retail costs and margin	4,38	4,38	5,83	7,83	6,26	7,52
Retail price excl VAT	**10,66**	**13,88**	**11,01**	**20,30**	**13,76**	**27,52**
Retail price incl. VAT	**11,81**	**15,38**	**11,72**	**21,60**	**15,00**	**30,00**

Source: EUMOFA

7. STAKEHOLDERS INTERVIEWED

- Spain
  - FEDEPESCA
  - AEMPM (Asociación de Empresarios Mayoristas de Pescado de Madrid)
  - ANFACO-CECOPESCA
  - Two wholesale companies
  - One processing company (canning)
- The Netherlands
  - Visfederatie
  - Processor
- Portugal
  - ANICP (Associação Nacional dos Industriais de Conservas de Peixe)
  - Canning companies
  - Retailer

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