European Commission

CASE STUDY

FROZEN COD FILLET IN THE EU

Maritimes Affairs and Fisheries

PRICE STRUCTURE IN THE SUPPLY CHAIN

FOCUS ON BELGIUM, FRANCE AND THE NETHERLANDS,

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Table of contents

Summary

- The volume of production of cod (*Gadus morhua, Gadus ogac, Gadus macrocephalus*) was 1,63 million tonnes at world level in 2018 (FAO). Russia was the largest world producer (29% of the volume), followed by Norway and Iceland. The three countries represented almost 70% of the volumes produced globally.
- EU-28 Member States produced 116.693 tonnes in 2018 and accounted for 7% of the world production. While world cod production is on an increase trend since 2009 (+33%), EU production in 2018 was 8% lower than in 2009.
- The EU-28 only produces Atlantic cod (which is also the main species caught at world level). The EU-28 represented 9,6% of the Atlantic cod production at world level in 2018. Main producers were the United Kingdom, Denmark, Germany and Spain (between 13.971 and 34.680 tonnes each in 2018).
- According to EUMOFA estimates on "apparent consumption"[1], cod is one of the top five species consumed in the EU (together with tuna, salmon, Alaska pollack and shrimps). In 2018, EU apparent consumption of cod was around 790.000 tonnes lwe. Main consuming countries were the United Kingdom, France and Spain (apparent consumption higher than 140.000 tonnes lwe).
- Self-sufficiency, which is the capacity of country or region to meet demand from their own production, can be calculated as the ratio of domestic production over domestic consumption. In 2018, the EU self-sufficiency for cod was at only 7%, indicating that the EU is able to maintain a high level of cod consumption mainly by sourcing it from other regions of the world through imports. EU imports of cod from third countries mainly consist of frozen products and, to a lesser extent, prepared and preserved products. The overall value was EUR 2,77 billion in 2019 mainly from Norway, Iceland and Russia.
- On intra-EU market, the Netherlands, Denmark and Sweden are the main points of entry in the EU of cod of Norwegian, Icelandic and Russian origin. The Netherlands and Sweden are the main exporters of prepared and preserved products, while Denmark is one of the main exporters of fresh cod. Portugal, France and Italy are the main importers. Portugal and Italy import mainly prepared and preserved products, while France is one of the main importers of frozen fillets of cod. Belgium ranks 9th in terms of EU-importers and 10th in terms of EU exporters.
- The study focuses on frozen fillet of cod in three Member States: The Netherlands, Belgium and France:
  - In the Netherlands, frozen fillets of cod are mainly imported from Russia and Iceland;
  - In Belgium, frozen fillets of cod are mainly imported from the Netherlands, Denmark, Germany and China;
  - In France, frozen fillets of cod are mainly imported from China, Germany and the Netherlands.
- Despite investigations, it has not been possible to get detailed information from the industry regarding costs and margins at ex-factory stage and retail stage. Nevertheless, considering the flow of frozen fillets of cod that is mainly imported in these three Member States, operators have limited costs of production as products are already frozen and cut when imported. Main costs are for the final processing stage (e.g. portion cuts), packaging and distribution.

[1] Apparent consumption derives from the following supply balance equation calculated in live weight equivalent: (catches for food use + aquaculture production + imports) – exports = apparent consumption

- Considering the very low volume of national production in comparison with the volume of imported frozen cod fillets, imported frozen fillets of cod have been considered for the price transmission along the supply chain[2].
- The main outcomes of the price structure analysis of the three Member States surveyed in 2019 are:
  - The import price of imported frozen fillets of cod ranges from 5,62 EUR/kg in the Netherlands to 7,36 EUR/kg in Belgium.
  - The retail price (excl. VAT) ranges from 8,26 EUR/kg in the Netherlands up to 15,29 EUR/kg in France.

[2] Statistics available do not allow to estimate the volumes of cod imported whole (fresh or frozen) and processed in the EU to be sold as frozen fillets. Nevertheless, a web search on products sold online by the main retailers indicates that cod sold to the final consumer as frozen fillets has generally been frozen on board, and sometimes also fileted on board. Part of the cod landed frozen whole in the EU is exported to China to be fileted and exported back to the EU market as fillets. Information available from the main processing companies in the Member States of study also indicates that the processing units in those countries are dedicated to more elaborated products (e.g. breaded fish, frozen prepared fish). Overall, the information available tends to show that frozen fillets are in most cases imported frozen and fileted or cut, and that only the final processing (e.g. portion cuts) and the packaging is done in the EU.

List of acronyms

CN	Combined Nomenclature
EU	European Union
MS	Member States
MSC	Marine Stewardship Council
FAO	Food and Agriculture Organisation of the United Nations
VAT	Value Added Tax
LWE	Live Weight Equivalent

0 Scope and content

0.1 Case study scope

Key elements on the analysis of frozen cod fillet's price structure and distribution of value in the supply chains are:

Product	Origin	Characteristics	Market and price drivers	Focus MS
Frozen cod fillet	Catches by Russia, Norway and Iceland	Most of the frozen fillets of cod are from raw material imported as frozen whole or in fillets. Processing is limited in the three EU markets analysed or conducted in third countries.	Strong dependence on international sources for seafood supply. Large part of the retail market is certified.	The Netherlands Belgium France

0.2 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 Belgium, France and the Netherlands.

1 DESCRIPTION OF THE PRODUCT AND MARKETS

1.1 Biological and commercial characteristics

EUMOFA species profile

The EUMOFA website provides a species profile on cod, available with the following link: https://www.eumofa.eu/documents/20178/137160/Atlantic+cod_31-1.pdf.

Commercial designations in all EU official languages can be found at this link: https://mare.istc.cnr.it/fisheriesv2/species?lang=en&sn=16452

Case study product

Name: Atlantic cod – *Gadus morhua* **FAO 3-alpha code:** COD **Presentation:** Frozen fillet

Other main species:

Greenland cod (*Gadus ogac*), Pacific cod (*Gadus macrocephalus*)

Related codes in the product nomenclature for EU trade data (COMEXT/EUROSTAT)

Codes have been substantially modified in 2012. The table below details the codes before and after 2012.

Table 1: Trade codes for cod (CN-8 nomenclature)

	Until 2011	Since 2012:
Whole fresh or chilled cod	03 02 50 10 "*Gadus morhua*" 03 02 50 90 "*Others*"	03 02 51 10 "*Gadus morhua*" 03 02 51 90 "*Gadus ogac*", "*Gadus macrocephalus*"
Whole frozen cod	03 02 52 10 "*Gadus morhua*" 03 02 52 30 "*Gadus ogac*" 03 02 52 90 "*Gadus macrocephalus*"	03 03 63 10 "*Gadus morhua*" 03 03 63 30 "*Gadus ogac*" 03 03 63 90 "*Gadus macrocephalus* »"
Fresh or chilled cod fillets	03 04 19 31 "*Gadus morhua*", "*Gadus ogac*", "*Gadus mcrocephalus*"	03 04 44 10 "*Gadus morhua*", "*Gadus ogac*", "*Gadus mcrocephalus*"
Frozen cod fillets	03 04 29 18 "*Gadus macrocephalus* » 03 04 29 21 "*Others (Gadus morhua, Gadus ogac)*"	03 04 71 10 "*Gadus macrocephalus* » 03 04 71 90 "*Others (Gadus morhua, Gadus ogac)*"
Fillets of cod, dried, salted or in brine	03 05 30 11 "*Gadus macrocephalus* » 03 05 30 19 "*Gadus morhua, Gadus ogac* »"	03 05 32 11 "*Gadus macrocephalus* »" 03 05 32 19 "*Gadus morhua, Gadus ogac* »"
Cod dried, unsalted, not smoked	03 05 51 10 "*Gadus morhua*", "*Gadus ogac*", "*Gadus mcrocephalus*"	03 05 51 10 "*Gadus morhua*", "*Gadus ogac*", "*Gadus macrocephalus*"
Cod dried, salted, not smoked	03 05 51 90 "*Gadus morhua*", "*Gadus ogac*", "*Gadus Macrocephalus*"	03 05 51 90 "*Gadus morhua*", "*Gadus ogac*", "*Gadus macrocephalus*"
Cod, salted or in brine	03 05 62 00 "*Gadus morhua*", "*Gadus ogac*", "*Gadus macrocephalus*"	03 05 62 00 "*Gadus morhua*", "*Gadus ogac*", "*Gadus macrocephalus*"
Cod, prepared or preserved, whole or in pieces	16 04 19 92 "*Gadus morhua*", "*Gadus ogac*", "*Gadus macrocephalus*"	16 04 19 92 "*Gadus morhua*", "*Gadus ogac*", "*Gadus macrocephalus*"

Cod stocks management[3]

All cod stocks in the EU waters have shown significant declines over the last decades due to a range of factors, including overfishing. By far, the largest cod stock in the North East Atlantic is the Arctic stock, which is found off the coast of Norway.

While cod can be taken by a wide range of means, including long lines and pots, the commercial catch comes almost entirely from mixed trawl fisheries, in which it is caught alongside other demersal species such as haddock and whiting.

North Sea cod was the first EU fish stock to be brought under long-term management. Today, there are multi-annual plans in place for the following cod stocks: Kattegat, North-Sea, Skagerrak and eastern channel, the west of Scotland, the Irish Sea and the Eastern and Western Baltic.

Biological parameters

Parameter	Characteristics
Life cycle	Cod is a batch spawner, spawning 10-20 batches during a 2-3-month period in December – June (depending on the stock). Egg size is around 1,4 mm and fecundity accordingly high. The eggs are planktonic and hatch after approximately two weeks (5 °C, 70 day-degrees). The larvae prey on various zooplankton (rotifers, calanoid copepod nauplii, etc.) at first. After a few months, the juveniles become more benthic and start schooling. Some cod stocks perform large migrations between feeding in the ocean and spawning along the coast, while other stocks are very stationary during their whole life. Growth and age/size at maturity also vary widely between different cod stocks. Coastal cod in the southern regions may reach sexual maturity when they are 2-4 years old (40 cm) while some oceanic stocks, such as North East Arctic cod may be 6-9 years and 60 cm at their first spawning.
Aquaculture production	Basically, two production systems exist: Intensive and extensive. The intensive system is now dominant, due to its higher and easier scalable production compared to extensive rearing.
Temperature	Within the area of its wide distribution (Atlantic Ocean), cod may tolerate summer temperatures over 20°C and winter temperatures around 0°C.
Diet	Juvenile and adult cod prey on a variety of prey items, both benthic and pelagic; crustaceans and fish (including cannibalism) are usually the main diet. During the on-rearing period cod are usually fed on extruded dry feeds, very similar to those used in the farming of salmonids. However, cod need a higher protein to fat ratio compared to salmon and do not utilize carbohydrates effectively.
Distribution in the wild	Atlantic cod has a wide distribution on both sides of the Atlantic Ocean.

Source: FAO

[3] Source: https://ec.europa.eu/fisheries/marine_species/wild_species/cod_en

1.2 World production

1.2.1 Overview

Cod production is on an increase trend since 2009, amounting to 1,63 million tonnes in 2018 (source: FAO): it is 7,2% lower than in 2017 but 33% higher than in 2009. Atlantic cod is the main species (75% of the volumes), followed by Pacific cod (25%). With 24 tonnes in 2018, Greenland cod represented less than 1% of the total volume of production.

Table 2: Evolution of world cod production (wild caught and farmed) between 2009 and 2018 (tonnes)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% total 2018	Evol. 2018/2009
Atlantic cod (*Gadus morhua*)	891.448	974.695	1.067.603	1.125.277	1.363.386	1.376.112	1.303.803	1.329.997	1.308.843	1.218.875	75%	37%
Pacific cod (*Gadus macrocephalus*)	333.730	394.350	437.340	474.046	467.178	474.972	458.693	458.888	451.944	414.382	25%	24%
Greenland cod (*Gadus ogac*)	171	251	164	142	62	45	22	26	25	24	0%	-86%
Total	**1.225.349**	**1.369.296**	**1.505.107**	**1.599.465**	**1.830.626**	**1.851.129**	**1.762.518**	**1.788.911**	**1.760.812**	**1.633.281**	**100%**	**33%**

Source: FAO

Cod is mainly wild caught (99,97%). In 2018, the total volume of cod farmed in the world was 524 tonnes (in Norway for 94% and Iceland for 6%) which is almost negligible in the global production.

After the peak in 2009 and 2010 where farmed cod production exceeded 20 000 tonnes in Norway, production of farmed cod in Europe have been very limited – less than 1000 tonnes in any of the last 5 years. However, significant investments have been made in 2019 which will increase production as from 2021 and onwards – in Norway.

Table 3: Evolution of world farmed cod production and wild caught cod between 2009 and 2018 (tonnes)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% total 2018	Evol. 2018/2009
Fisheries	1.202.620	1.346.738	1.488.957	1.588.539	1.826.374	1.849.433	1.762.439	1.788.402	1.760.291	1.632.757	99,97%	36%
Aquaculture	22.729	22.558	16.150	10.926	4.252	1.696	79	509	521	524	0,03%	-98%
Total	**1.225.349**	**1.369.296**	**1.505.107**	**1.599.465**	**1.830.626**	**1.851.129**	**1.762.518**	**1.788.911**	**1.760.812**	**1.633.281**	**100%**	33%

Source: FAO

1.2.2 Development by main producing countries

The main cod producer in the world is Russia, which accounted for 29% of world production in 2018, followed by Norway and Iceland. Combined production of these 3 countries represented almost 70% of the world production in 2018.

Table 4: Evolution of wild caught cod in the main producing countries (tonnes)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% total 2018	Evol. 2018/2009
Russia	286.835	353.952	390.270	418.317	518.280	516.689	464.963	486.243	503.791	468.517	29%	63%
Norway	243.660	283.482	340.167	357.951	471.316	473.477	422.242	412.567	416.993	373.924	23%	53%
Iceland	188.976	178.599	182.034	204.645	236.051	237.756	243.871	264.154	249.995	274.958	17%	45%
USA	231.727	252.816	309.302	330.502	311.692	327.821	318.640	322.867	299.001	233.554	14%	1%
EU-28	127.190	139.981	142.197	149.657	142.082	140.504	147.158	139.809	129.158	116.693	7%	-8%
Others	124.232	137.908	124.987	127.467	146.953	153.186	165.565	162.762	161.353	165.111	10%	33%
Total	**1.202.620**	**1.346.738**	**1.488.957**	**1.588.539**	**1.826.374**	**1.849.433**	**1.762.439**	**1.788.402**	**1.760.291**	**1.632.757**	**100%**	**36%**

Source: FAO

The EU-28 ranks fifth, after Russia, Norway, Iceland and USA. The EU-28 only produces Atlantic cod; the production was 116.693 tonnes in 2018, accounting for 7% of the world production and 9,6% of the Atlantic cod production at world level.

1.3 EU production

1.3.1 Development of EU production by main producing Member States

The main EU Member States producing cod were the United Kingdom, Denmark, Germany and Spain (between 13.971 and 34.680 tonnes each in 2018), accounting for 68% of the EU cod production in the same year. Poland, France, Portugal, Sweden, Latvia and Estonia followed, covering between 2 and 9% of the EU production. Lithuania, Belgium, Ireland, the Netherlands and Finland produced less than 2% of the EU production.

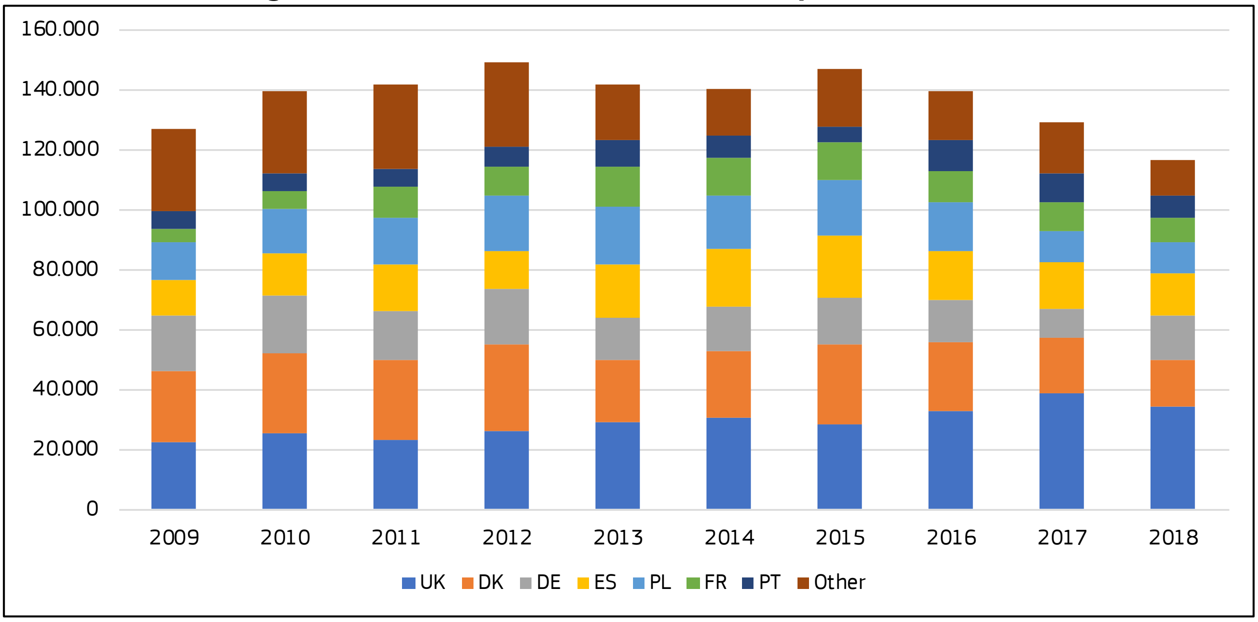
The EU production decreased by 8% over the last decade, with contrasting trends among MS. While catches decreased respectively by 35% in Denmark and 21% in Germany, the drop was offset by a 54% increase in the United Kingdom and a 18% increase in Spain. The very few aquaculture production of cod in mainly from Norway but there is no aquaculture production of cod in the EU.

Table 5: Evolution of cod catches in the main producing EU Member States (tonnes)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% total 2018	Evol. 2018/2009
UK	22.515	25.753	23.186	26.449	29.468	30.608	28.784	32.996	38.846	34.680	30%	54%
DK	23.695	26.701	26.849	28.555	20.426	22.254	26.230	23.234	18.641	15.394	13%	-35%
DE	18.629	19.477	16.383	18.882	14.537	15.221	15.573	13.961	9.486	14.721	13%	-21%
ES	11.824	14.088	15.420	12.781	17.602	18.697	20.824	15.863	15.448	13.972	12%	18%
PL	12.364	14.841	15.631	18.552	19.104	18.252	18.475	16.523	10.513	10.906	9%	-12%
FR	4.993	5.298	10.227	9.259	13.156	12.234	12.635	10.558	10.073	7.844	7%	57%
PT	5.740	6.255	6.409	7.023	9.485	7.439	5.796	10.637	9.463	7.556	6%	32%
SW	13.188	12.404	13.481	13.483	7.895	6.926	8.056	7.425	6.199	3.753	3%	-72%
LV	4.611	5.160	4.949	4.284	2.570	2.038	2.998	2.717	3.645	2.305	2%	-50%
EE	950	890	1.285	975	980	1.073	1.173	522	2.545	2.033	2%	114%
LT	2.818	3.275	3.118	2.433	1.694	1.213	1.744	1.669	1.867	1.149	1%	-59%
BE	1.087	797	868	1.214	1.343	1.480	1.434	1.241	800	876	1%	-19%
IE	1.207	1.272	1.256	2.094	1.959	1.373	1.537	941	723	861	1%	-29%
NL	2.689	2.731	2.018	2.000	1.411	1.320	1.485	1.431	713	584	1%	-78%
FI	880	1.039	1.117	1.673	452	376	414	91	196	59	0%	-93%
Total	**127.190**	**139.981**	**142.197**	**149.657**	**142.082**	**140.504**	**147.158**	**139.809**	**129.158**	**116.693**	**100%**	**-8%**

Source: FAO

Figure 1: Evolution of EU-28 cod catches per MS (tonnes)



Source: FAO

1.4 EU Import – Export

Extra-EU imports

Imports from third countries mainly consists of frozen cod products: in 2019, the EU-28 imported 167.769 tonnes of frozen fillets of cod, 141.088 tonnes of frozen whole cod, and 91.224 tonnes of prepared and preserved) cod products. Imports of fresh cod reached 87.000 tonnes (61.000 tonnes of fresh whole cod and 26.000 of fresh fillets of cod). The overall value was EUR 2,77 billion in 2019 with Norway as the main supplier (33% of the total in value), followed by Iceland and Russia (respectively 25% and 17% of the total value).

Imports have increased by 54% in value between 2012 and 2019 in real terms[4], and by 29% in volumes. The increase in volumes was mainly driven by imports of fresh and frozen whole cod (respectively +81% and +58%), and to a lesser extent from frozen and fresh fillets of cod (respectively +24% and +18%), whereas imports of prepared and preserved products have decreased (-5%).

Prices have decreased between 2012 and 2013 (from 4,44 EUR/kg to 3,60 EUR/kg in nominal value) and then continuously increased since 2013, reaching 5,69 EUR/kg in 2019.

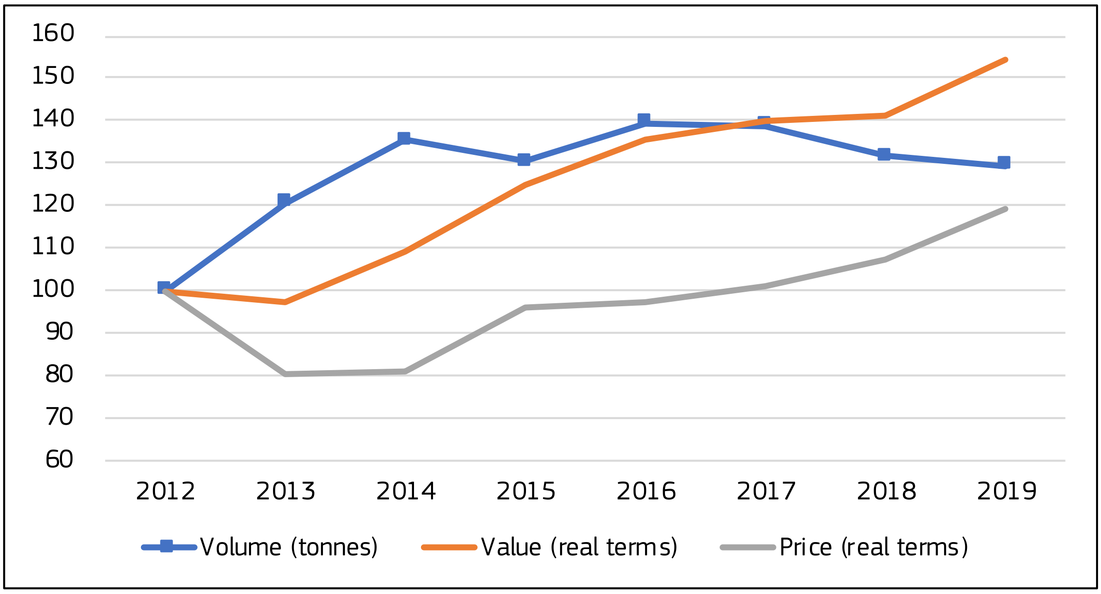
Prices have increased for all types of cod presentation between 2012 and 2019: from +24% for fresh fillets of cod to +52% for frozen whole cod in real value. Prices of frozen fillets of cod have increased by 27%.

Table 6: Extra-EU imports of cod (2019)

	Volume (tonnes)	Nominal value (1.000 EUR)	Price (EUR/kg)	% val. 2019
Fresh whole	60.788	245.446	4,04	9%
Fresh fillet	26.004	284.856	10,95	10%
Frozen whole	141.088	538.776	3,82	19%
Frozen fillet	167.769	1.017.583	6,07	37%
Prepared/Preserved	91.224	685.281	7,51	25%
Total	**486.872**	**2.771.943**	**5,69**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Figure 2: Index evolution of extra-EU imports of cod (base 100 = 2012)



Source: EUMOFA elaboration of EUROSTAT-COMEXT data

[4] In the report, values are deflated by using the GDP deflator (base=2015)

Table 7: Nominal value of extra-EU imports of cod by main country of origin (1.000 EUR, 2019)

	Norway	Iceland	Russian Fed.	Other extra-EU countries	Total extra-EU imports
Fresh whole	192.156	38.192	85	15.013	245.446
Fresh fillet	44.157	238.493	199	2.008	284.856
Frozen whole	188.527	1.339	234.749	114.162	538.776
Frozen fillet	87.121	242.565	221.358	466.538	1.017.583
Prepared/Preserved	399.706	168.345	12.928	104.302	685.281
Total	**911.666**	**688.934**	**469.320**	**702.023**	**2.771.943**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Extra-EU exports

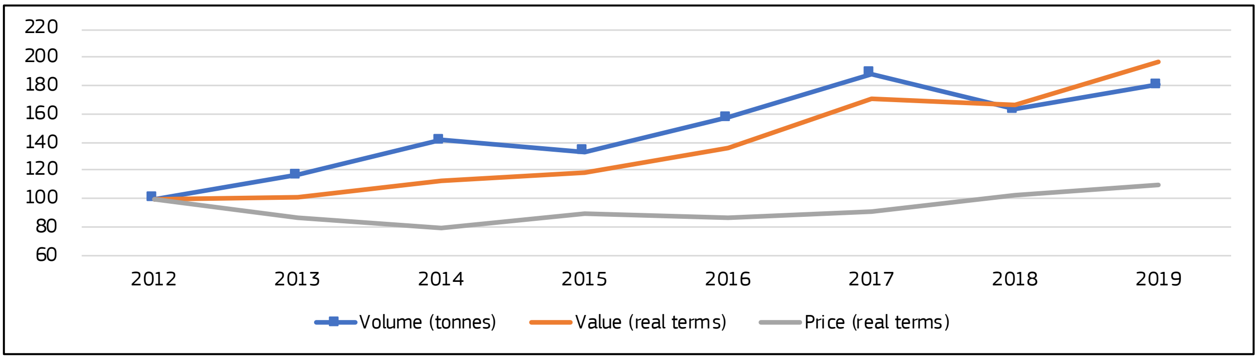
Extra-EU exports of cod, including processed and preserved cod, amounted to 57.253 tonnes for EUR 284 million in 2019. Cod is mainly exported frozen whole to China (81%) and Brazil (7%). From 2012 to 2019, the value of extra-EU exports of cod has grown by 97% in real terms.

Table 8: Extra-EU exports of cod (2019)

	Volume (tonnes)	Nominal value (1.000 EUR)	Price (EUR/kg)	% val. 2019
Fresh whole	2.060	8.914	4,33	3%
Fresh fillet	491	5.469	11,14	2%
Frozen whole	41.754	179.898	4,31	63%
Frozen fillet	6.558	44.608	6,80	16%
Prepared/Preserved	6.390	45.254	7,08	16%
Total	**57.253**	**284.144**	**4,96**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Figure 3: Index evolution of extra-EU exports of cod (base 100 = 2012)



Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Trade flows between MS: intra-EU exports

They encompass all transactions declared by Member States of the European Union (EU) with one another. For the analysis of intra-EU trade, only export flows have been considered. Actually, intra-EU trade flows as reported by EUROSTAT cover both arrivals (i.e. imports) and dispatches (i.e. exports).

Because of different valuation principle (CIF > FOB)[5], arrivals should be slightly higher valued than dispatches. This is one of the main reasons explaining asymmetries between import and export figures. In general, bilateral comparisons between MS of intra-EU flows have revealed major and persistent discrepancies. Therefore, comparisons dealing with intra-EU trade statistics and related results must be taken into account cautiously and should consider the existence of these discrepancies.

Most active MS in the intra-EU trade of cod are the Netherlands (31% of total intra-EU exports in 2019), Denmark (20%), Sweden (16%), Germany (12%) and Portugal (3%). These five Member States exported over EUR 1,8 million in 2019 on intra-EU market.

Prepared and preserved products accounted for 35% of intra-EU exports of cod in 2019. Sweden and the Netherlands are the main exporters of prepared and preserved products (EUR 240 million and EUR 239 million respectively in 2019), followed by Denmark (EUR 108 million).

Fresh cod (whole and fillets) accounted for 31% of intra-EU exports in 2019. Denmark and the Netherlands are the main exporters of fresh cod on the intra-EU market (EUR 300 million and EUR 164 million respectively in 2019), followed by Sweden (EUR 73 million).

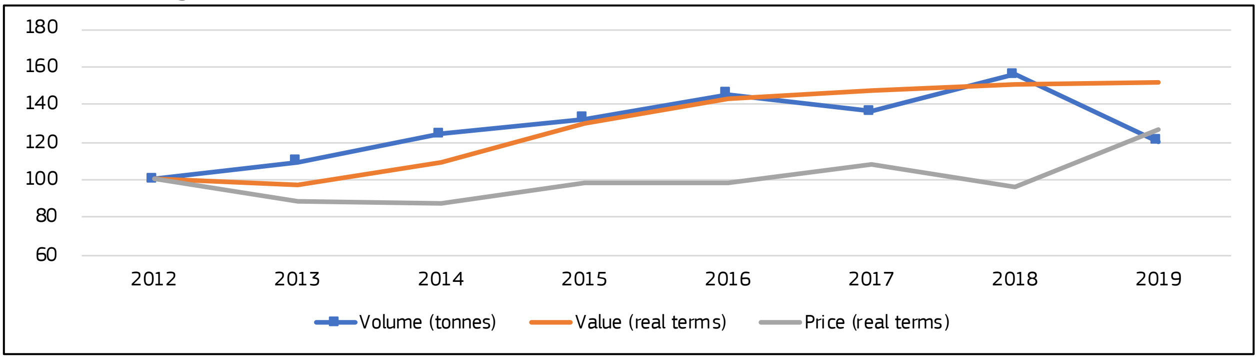
Frozen fillets of cod accounted for 27% of exports on intra-EU market in 2019. The Netherlands and Germany are the main exporters of frozen fillets of cod on intra-EU market (EUR 217 million and EUR 152 million in 2019), followed by Denmark (EUR 108 million).

Table 9: Intra-EU exports of cod (2019)

	Volume (tonnes)	Nominal value (1.000 EUR)	Price (EUR/kg)	% val. 2019
Fresh whole	63.220	306.911	4,85	14%
Fresh fillet	40.095	389.492	9,71	17%
Frozen whole	42.028	168.071	4,00	7%
Frozen fillet	101.349	601.016	5,93	27%
Prepared/Preserved	111.924	786.531	7,03	35%
Total	**358.615**	**2.252.020**	**6,28**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Figure 4: Index evolution of intra-EU exports of cod (base 100 = 2012)



Source: EUMOFA elaboration of EUROSTAT-COMEXT data

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

Table 10: Value of intra-EU exports of cod by main MS of origin (1.000 EUR, nominal value, 2019)

	NL	DK	SE	DE	PT	Other	Total intra-EU exports
Fresh whole	23.688	183.562	69.271	5.147	4.851	20.391	306.911
Fresh fillet	140.041	116.768	4.114	4.803	601	123.164	389.492
Frozen whole	76.845	13.728	29.028	6.362	20.520	21.588	168.071
Frozen fillet	217.160	37.759	17.457	151.673	5.950	171.016	601.016
Prepared/Preserved	238.555	108.119	239.966	94.153	36.277	69.461	786.531
Total	**696.290**	**459.937**	**359.836**	**262.138**	**68.199**	**405.621**	**2.252.020**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Despite discrepancies in statistical data of intra-EU trade between imports and exports; when looking at intra-EU imports, it must be highlighted that most active MS in the intra-EU exports are different from the most active MS in the intra-EU imports. Main importers of cod from other EU MS are Portugal (21% of total intra-EU imports in 2019), France (19%) and Italy (11%).

Table 11: Value of intra-EU imports by main MS of destination (1.000 EUR, nominal value, 2019)

	PT	FR	IT	DE	PL	Other intra-EU MS	Total intra-EU imports
Fresh whole	32.629	60.246	6.781	16.337	30.758	109.753	256.505
Fresh fillet	412	186.247	38.773	33.213	38.128	85.354	344.721
Frozen whole	68.075	8.794	2.450	3.000	722	95.170	215.616
Frozen fillet	2.869	95.403	32.335	66.730	36.828	270.836	505.003
Prepared/Preserved	329.813	41.196	153.150	10.043	459	205.718	740.379
Total	**433.798**	**391.887**	**233.489**	**129.324**	**106.895**	**766.831**	**2.062.224**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

1.5 EU apparent consumption by Member State

In 2018, the total supply of cod in the EU-28 (production + imports) was estimated at 1,8 million tonnes lwe. It is mainly composed of imports (1,7 million tonnes lwe) as catches were limited (116.693 tonnes lwe). With total exports estimated to 1 million tonnes lwe, apparent consumption at EU-28 level (production + import – export) was estimated around 790.000 tonnes lwe.

Main MS in terms of apparent consumption in 2018 were the United Kingdom[6], France and Spain (apparent consumption higher than 140.000 tonnes lwe). Apparent consumption in each other MS was under 45.000 tonnes lwe.

[6] As the UK is the most important European consumer, it has to be noted that the Brexit may significantly impact the global balance of the European apparent consumption of cod.

Table 12: Apparent consumption of cod in the main consuming MS (2018, in tonnes of live weight equivalent)

	Catches	Import (intra + extra)	Total supply (catches + import)	Export (intra + extra)	Apparent consumption (total supply – export)
UK	34.680	258.840	293.520	32.766	260.754
FR	7.844	181.543	189.387	10.234	179.153
ES	13.972	178.834	192.806	48.959	143.847
PL	10.906	90.104	101.010	57.550	43.460
SE	3.753	185.282	189.035	147.151	41.885
DE	14.721	132.994	147.715	105.877	41.838
PT	7.556	90.104	97.660	57.550	40.110
BE	876	35.515	36.391	9.726	26.666
IE	861	11.528	12.389	474	11.915
DK	15.394	176.038	191.432	185.778	5.654
FI	59	1.878	1.937	40	1.897
EE	2.033	430	2.463	1.623	839
LV	2.305	10.419	12.724	12.195	529
LT[7]	1.149	20.973	22.122	25.356	*Few hundreds or thousands*
NL[8]	584	321.258	321.842	325.112	*Few hundreds or thousands*
EU28	**116.693**	**1.695.740**	**1.812.433**	**1.020.392**	**Around 790.000**

Source: EUMOFA elaboration of EUROSTAT-COMEXT and FAO data

[7] The calculation of the apparent consumption for LT and NL was a bit negative. This result may be due to the estimate of live weight equivalent based on level of precision of the coefficient for live weight equivalent calculation for each type of product.
[8] *Ibidem*

2 The French market

2.1 Structure of the supply chain

2.1.1 Production

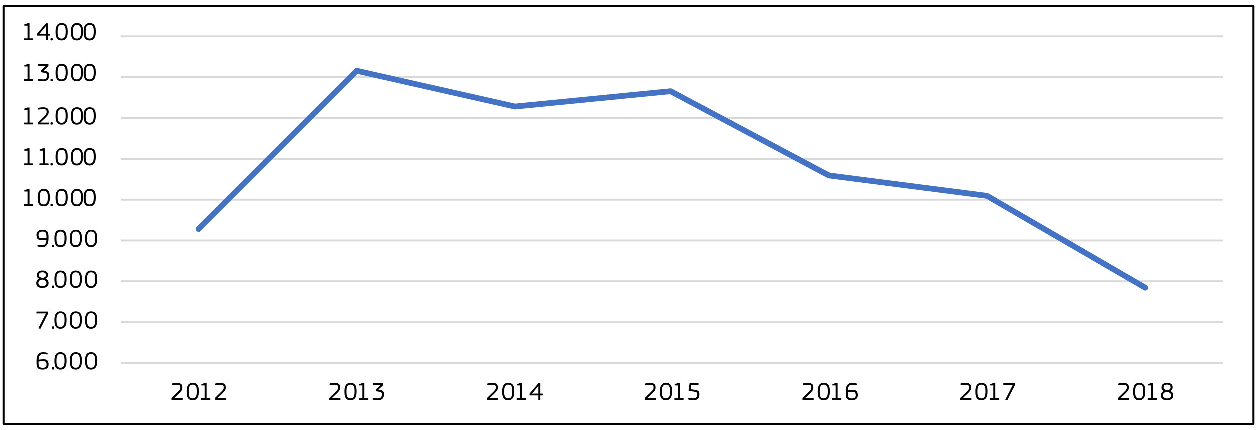
There is no production of farmed cod in France. Catches of cod by French vessels take place in the Atlantic North-East. Between 2012 and 2018, they fluctuated between 7.844 tonnes in 2018 and 13.156 tonnes in 2013 at their highest level. Between 2012 and 2018, they decreased by 15%, despite a sharp increase in 2013. After 2013, data show a steady and almost continuous decrease (-40% between 2013 and 2018), partially explained by a decrease in French quotas for cod (-26% over the period from 13.977 tonnes in 2012 to 10.365 tonnes in 2018). French catches represent about 8% of total EU catches of cod on average over the period analysed.

Table 13: Catches of Atlantic cod by French vessels between 2012 and 2018 (tonnes)

	2012	2013	2014	2015	2016	2017	2018	Evol. 2018/12
FR catches	9.259	13.156	12.234	12.635	10.558	10.073	7.844	-15%
% EU-28	6,2%	9,3%	8,7%	8,6%	7,6%	7,8%	6,7%	

Source: FAO

Figure 5: Evolution of cod catches by France between 2012 and 2018 (tonnes)



Source: FAO

Eurostat landings data show that on average around 75% of French catches are landed in France[9], fresh, whole or gutted. French vessels also land marginal volumes of fresh cod in Belgium, the Netherlands, the UK, Ireland, Norway and Spain, where they are registered as exports. Remaining catches are landed frozen and filleted in France but due to confidentiality issues, those landings do not appear in Eurostat statistics.

[9] Calculated using FAO conversion factor of 1,2 for cod gutted, head-on and 1,69 for cod gutted and headed.

2.1.2 Import – Export

Imports

Imports of cod, including processed and preserved cod, reached 66.944 tonnes and EUR 477,82 million in 2019. Cod is mainly imported as fresh fillets (41% of the imported value and 28% of the imported volumes) and frozen fillets (32% of the imported value and 35% of the imported volumes). Imports of fresh whole cod come next, with 13% of the total value in 2019 and 15% of the volumes. Imports of prepared and preserved cod and of frozen whole cod respectively represent 9% and 5% of the total value, for 13% and 9% of the volumes.

The origin of products depends on the presentation and preservation stage. While China is the primary origin for frozen fillets (31% of the imported value), before Germany (16%) and the Netherlands (15%), imports of for fresh fillets mainly come from the Netherlands (41% of the imported value) and Denmark (33%). Fresh whole cod is mainly imported from Denmark (42% of the imported value) and to a lesser extent from the UK (18%), Poland (14%) and the Netherlands (12%). Finally, Spain and Portugal are the first exporters of prepared and preserved cod to France (respectively 29% and 27%), mainly dried fillets, salted or in brine.

Table 14: Imports of cod in France (2019)

	Volume (tonnes)	Nominal value (1.000 EUR)	Price (EUR/kg)	% val. 2019
Fresh whole	10.295	60.282	5,86	13%
Fresh fillet	18.793	195.320	10,39	41%
Frozen whole	5.995	24.151	4,03	5%
Frozen fillet	23.109	155.252	6,72	32%
Prepared/Preserved	8.752	42.816	4,89	9%
Total	**66.944**	**477.820**	**7,14**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Between 2012 and 2019, imports of frozen fillets of cod increased by 9% in volumes, but the price increased by 27% (20% in real terms) to reach 6,72 EUR/kg in 2019 (6,51 EUR/kg in real terms. Prices of imported frozen fillets from China and Germany increased by 42% while prices from the Netherlands increased by 10% over the period with a tendency to converge, even if prices from China and Germany (respectively 6,44 EUR/kg and 5,98 EUR/kg on average in 2019) remain lower than prices from the Netherlands (7,03 EUR/kg in 2019).

Table 15: Evolution of imports of frozen fillets of cod to France between 2012 and 2019

	2012	2013	2014	2015	2016	2017	2018	2019	Evol. 2019 / 2012
Volume (tonnes)	21.242	22.340	23.074	23.198	26.076	24.715	23.735	23.109	9%
Nominal value (1.000 EUR)	112.340	103.921	104.202	121.061	145.193	144.082	138.096	155.252	38%
Price (EUR/kg)	5,29	4,65	4,52	5,22	5,57	5,83	5,82	6,72	27%

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports

Exports of cod, including processed and preserved cod, reached 4.612 tonnes in 2019 for a total value of EUR 33,7 million. Prepared and preserved cod represents 41% of the total value, frozen and fresh fillets represent respectively 25% and 24% of the total value. Exports of other cod products are negligible.

Table 16: Exports of cod from France (2019)

	Volume (tonne)	Nominal value (1.000 EUR)	Price (EUR/kg)	% val. 2019
Fresh whole	366	2.833	7,74	8%
Fresh fillet	642	8.014	12,49	24%
Frozen whole	84	598	7,16	2%
Frozen fillet	1.224	8.411	6,87	25%
Prepared/Preserved	2.297	13.908	6,05	41%
Total	**4.612**	**33.763**	**7,32**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports of frozen cod fillets from France are limited: between 2012 and 2019, exports peaked at 1.552 tonnes in 2016 and ranged from 575 and 1.262 tonnes in other years. The export price was 6,87 EUR/kg in 2019. Frozen fillets of cod are almost exclusively exported to other EU countries (97% of the total value), mainly to Poland (27%), the Netherlands (21%), Belgium (18%) and Germany (16%).

Table 17: Evolution of exports of frozen fillets of cod from France between 2012 and 2019

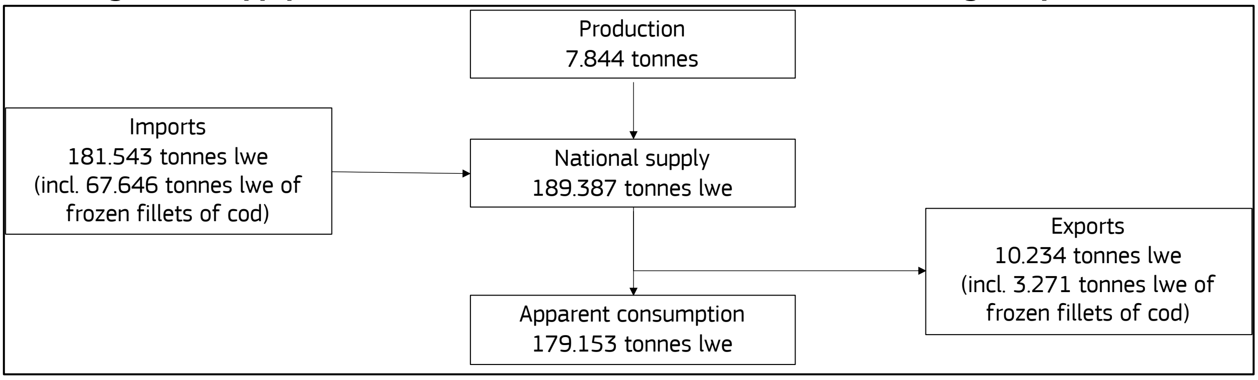
	2012	2013	2014	2015	2016	2017	2018	2019	Evol. 2019 / 2012
Volume (tonnes)	615	575	800	1.262	1.552	1.200	1.148	1.224	99%
Nominal value (1.000 EUR)	3.584	2.797	3.913	7.535	9.467	6.813	6.870	8.411	135%
Price (EUR/kg)	5,83	4,87	4,89	5,97	6,10	5,68	5,99	6,87	18%

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

2.1.3 Apparent consumption

In 2018, the total supply of cod amounted to 189.387 tonnes in live weight equivalent, 4% from national production (fishery) and 96% from imports. Only a small share (5%) of this supply was exported. The apparent consumption represented 95% of the total supply and amounted to 179.153 tonnes.

Figure 6: Supply balance for cod in France (2018, tonnes, live weight equivalent)



Source: EUMOFA elaboration of EUROSTAT-COMEXT and FAO data

2.2 Characteristics of the French market and consumption

2.2.1 Characteristics of the market

Catches of cod by French vessels only represent 4% of the apparent consumption of cod in France. Cod landed fresh mainly goes to the fresh market and La Compagnie des Pêches-Saint Malo is the only French vessel producing frozen cod. The vessel replaced its freezer vessel in 2018 by a new freezer trawler with a total capacity of 3.000 tonnes[10]. This vessel mainly targets MSC certified cod in the Norwegian sea and is equipped with a fully automated fileting line. It is specialized in bones free fillets[11].

According to Prodcom data, around 15.000 tonnes of frozen fillets of cod were produced post-landing in France in 2019. Based on the information gathered, most of those are made of cod imported in bulk, frozen and already fileted or cut in pieces. Those products are then further processed (e.g. cut in smaller portions or to obtain a specific weight per portion) and packaged. Based on import data, the total supply of frozen fillets of cod can be estimated around 25.000 tonnes of products[12], including landings of La Compagnie des Pêches-Saint Malo.

A study published by FranceAgrimer[13] in2019, showed that only a handful of operators market plain frozen fish fillets in France (mainly Escal, Greenland Seafood and Pescanova France). Frozen fish fillets (including mainly cod, Alaska pollock, saithe, etc.) can be used to produce breaded fish products (around 55.000 tonnes in France with fish representing between 50% and 75% of the final product weight) or other types of prepared fish products. They are also sold to the HORECA channel.

Based on available consumption data presented in the next section, roughly 40% of the supply of frozen fillets of cod is purchased by households, mainly in supermarkets. A web search on main retail chains showed that most frozen cod fillets sold in supermarkets are MSC certified, and it is explicitly mentioned

[10] Rayon surgelé - La Compagnie des Pêches Saint-Malo (compagniedespeches.com).
[11] Pêche. Le chalutier l'Émeraude de retour à Saint-Malo (ouest-france.fr)
[12] The 15,000 t of French production is not included as the raw material is already counted in the imported products.
[13] *Consommation des produits de la pêche et de l'aquaculture 2019*, Consumption of aquaculture and fishery products in 2019, FranceAgriMer, 2019, page 13

in the supply policy of some of the main supermarket or specialised retail chains for all frozen cod products (e.g. Carrefour, Lidle, Picard).

2.2.2 Consumption

According to FranceAgriMer[14], volumes of seafood and seafood products purchased by French households (excluding out-of-home catering) have decreased by 5% between 2015 and 2019 (630.688 tonnes in 2019), but their value has increased by 4% (EUR 7,4 billion in 2019). Purchases of frozen seafood products show the greatest decline, as households consumption dropped by 18% in volumes reaching 111.522 tonnes in 2019, and by 12% in value to reach EUR 1,2 billion in 2019, which partly reflects a tendency to buy less frozen food in general.

Together with salmon, cod is the most popular fresh fish purchased by households in France. Consumption of fresh cod (either whole, cut in piece or fillets) amounted to 18.518 tonnes for an average price of 16,7 EUR/kg in 2019; it was mainly purchased in supermarkets and hypermarkets (Source: FranceAgriMer).

The household consumption of frozen cod (either whole, cut in piece or fillets, including breaded fish) reached 9.619 tonnes in 2019 (vs. 11.419 tonnes in 2016). On average, plain cod, cut in pieces or fillets, represents 65% of the consumption of frozen cod and they are mainly purchased in supermarkets and hypermarkets (Source: FranceAgriMer).

Table 18: Volume, value and price for frozen cod, cut in pieces or fillets (not breaded), purchased by households in France

	2016	2017	2018	2019	Evol. 2019/2016
Volume (tonnes)	7.476	7.817	7.410	5.842	-22%
Nominal value (1.000 EUR)	108.597	114.810	112.258	94.208	-13%
Price (EUR/kg)	14,44	14,69	15,15	16,13	12%

Source: FranceAgriMer data[15]

[14] *Consommation des produits de la pêche et de l'aquaculture 2019,* Consumption of aquaculture and fishery products in 2019, FranceAgriMer, 2019, page 13

[15] Detailed Kantar data provided by FranceAgrimer from 2016 to 2019: figures can differ from the publications as final updates occur after the publication of annual reports.

2.3 Price transmission in the supply chain

Considering the very low volume of national production in comparison with the volume of imported frozen cod fillets, imported frozen fillets of Atlantic cod are considered for the price transmission along the supply chain. The analysis for the price transmission focuses on Atlantic cod (*Gadus morhua*), the main species used for frozen fillets sold in retail.

2.3.1 Import and export prices

In 2019, the volume of imported frozen fillets of Atlantic cod by France reached 17.538 tonnes, a 2% increase from 2012 to 2019. The export volume was 1.193 tonnes, an important increase from 2012 (+104%). The import price was 6,94 EUR/kg in 2019 for frozen filets of *Gadus morhua* (6,72 EUR/kg in real terms) and the export price was 6,88 EUR/kg (6,66 EUR/kg in real terms).

Figure 7: Import and export price (nominal price) of frozen fillets of Atlantic cod in France (2012-2019)

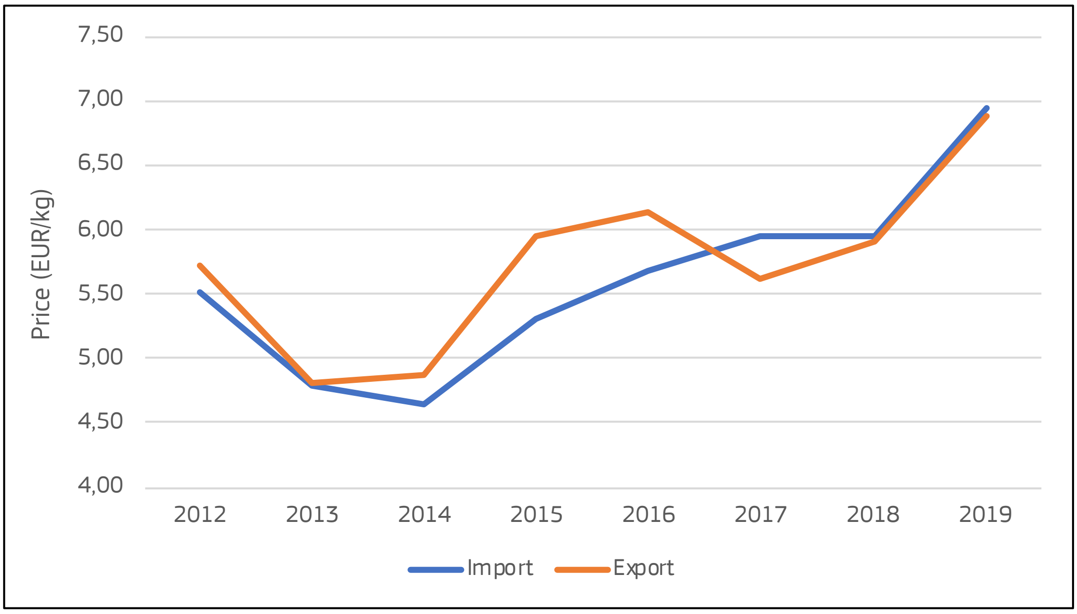


Table 19: Import and export price (nominal price) and volume for frozen fillets of Atlantic cod in France

		2012	2013	2014	2015	2016	2017	2018	2019	Evol. 2019/2012
Price (EUR/kg)	**Import**	5,51	4,79	4,64	5,32	5,68	5,95	5,94	6,94	26%
	Export	5,71	4,82	4,87	5,95	6,13	5,62	5,90	6,88	20%
Volume (tonnes)	**Import**	17.171	19.152	19.850	20.015	22.057	20.433	18.548	17.538	2%
	Export	585	565	774	1.247	1.512	1.174	1.104	1.193	104%

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

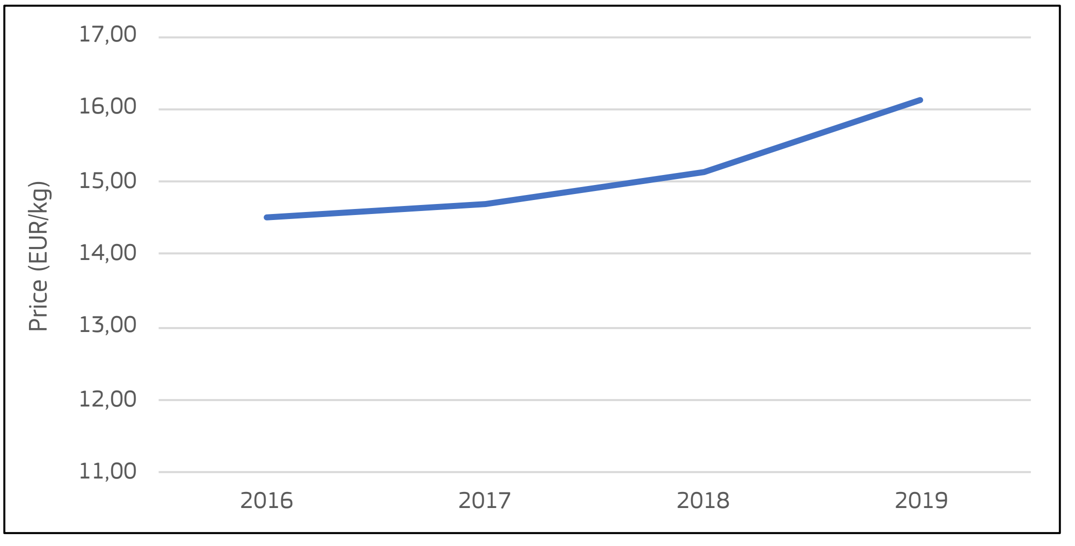
2.3.2 Processing stage

It has not been possible to collect any detailed data on costs or ex-factory prices.

2.3.3 Retail prices

In France, frozen fillets of cod are generally purchased by portion. Based on online survey on mass retailers' websites carried out in November 2020, retail prices range from 12,25 EUR/kg to 23,68 EUR/kg. The majority of plain frozen fillets of cod are made of Atlantic cod (*Gadus Morhua)* but the price can be lower for Pacific cod (*Gadus macrocephalus*). Beyond the species, prices mainly vary depending on the type of cuts (slices, filets, loins, with or without bones). According to FranceAgriMer[16], the average price for frozen cod, cut in pieces or fillets, was 16,13 EUR/kg in France in 2019, a 20% increase from 2016 average price.

Figure 8: Evolution of prices for frozen cod, cut in pieces or fillets, purchased by French households



Source: EUMOFA elaboration of FranceAgriMer data

2.3.4 Price transmission

The detailed price transmission of frozen cod fillets retailed by supermarkets is based on desk research, online findings and Comext data. In 2019, the price of imported products in France is 6,94 EUR/kg for frozen Atlantic cod, in fillets or pieces and the retail price is around 15,29 EUR/kg.

It has not been possible to obtain quantitative data on costs and margins at ex-factory stage and retail stage. However, the feedback gathered indicates that costs come from traders fees, losses (at least 3% at the processing stage), labour costs, packaging (which tend to be of a higher quality as cod is considered as a more high-end fish product) and transport costs.

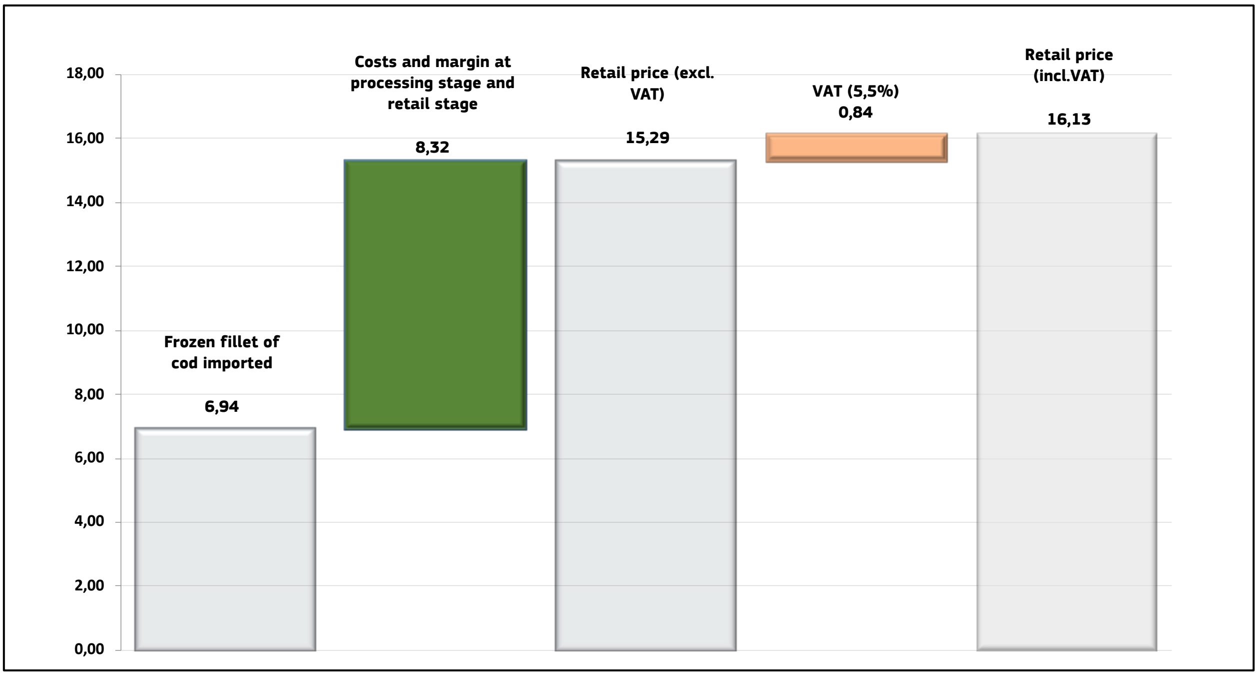
[16] Detailed Kantar data provided by FranceAgriMer: average price = total amount spend by households/quantities purchased

Table 20 - Costs and margins for frozen fillets of Atlantic cod retailed by supermarkets in France (2019)

	Average price (EUR/kg)	% of final price	Comment / source
Import price	6,94	43%	Source: Eurostat-Comext
Costs and margin at processing stage and retail stage	6,36	52%	*Calculated*
Retail price excluding VAT	**15,29**	95%	Source: FranceAgriMer
VAT (5,5%)	0,84	5%	5,5% VAT
Retail price (incl. VAT)	**16,13**	**100%**	**Source: FranceAgriMer**

Source: EUMOFA

Figure 9: Costs and margins for frozen fillets of Atlantic cod retailed by supermarkets in France (EUR/kg, 2019)



Source: EUMOFA

3 The Belgian market

3.1 Structure of the supply chain

3.1.1 Production

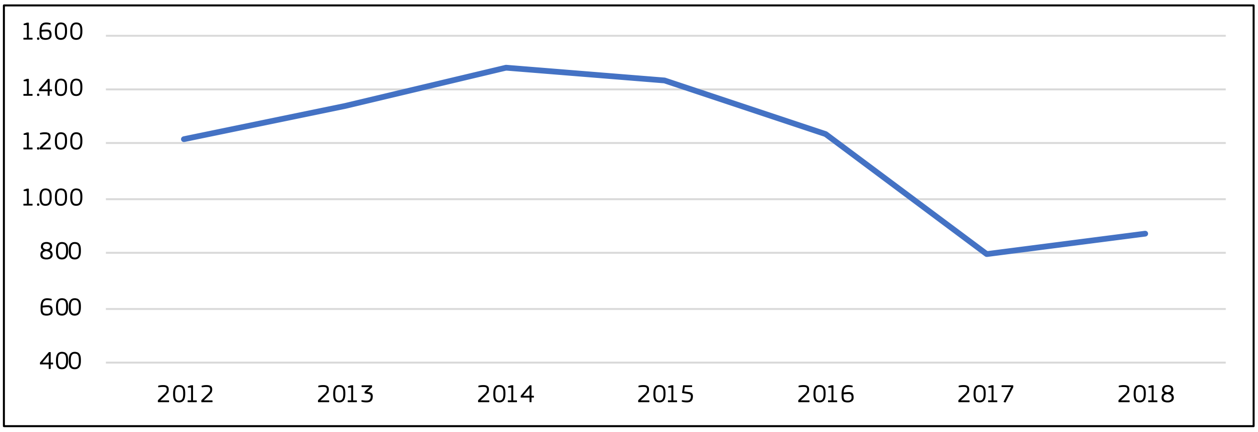
Cod production in Belgium amounted to 876 tonnes in 2018, only from fishery. It represented 0,8% of the EU-28 production. The Belgian production decreased by 28% between 2012 and 2018, with a strong decrease between 2014 and 2017 and an increase of 10% between 2017 and 2018.

Table 21: Cod production in Belgium between 2012 and 2018 (tonnes)

	2012	2013	2014	2015	2016	2017	2018	Evol. 2018/2012
Fishery	1.214	1.343	1.480	1.434	1.241	800	876	-28%
% EU28	0,8%	0,9%	1,1%	1,0%	0,9%	0,6%	0,8%	

Source: FAO

Figure 10: Development of catches of cod by Belgium between 2012 and 2018 (tonnes)



Source: FAO

3.1.2 Import - Export

In 2019, Belgium imported EUR 109 million worth of cod including processed and preserved cod (for 11.700 tonnes) and exported for EUR 39,7 million (for 4.280 tonnes). The Belgium trade balance is positive and reached EUR 69,3 million in 2019 (7.420 tonnes), mainly due to fresh and frozen fillets for respectively EUR 43 million (3.900 tonnes) and EUR 16 million (2.100 tonnes).

Imports

In2019, fresh fillets were mainly imported from Iceland and the Netherlands and reached EUR 68,7 million, while frozen fillets were mainly imported from the Netherlands, Denmark, Germany and China (double-frozen fillets) and reached EUR 21,2 million in 2019. Both products (fresh and frozen fillets of cod) represented 82% of the total value of cod imported in 2019.

Table 22: Imports of cod to Belgium (2019)

	Volume (tonnes)	Nominal value (1.000 EUR)	Price (EUR/kg)	% val. 2019
Fresh whole	1.681	13.745	8,18	13%
Fresh fillet	5.842	68.660	11,75	63%
Frozen whole	289	1.972	6,83	2%
Frozen fillet	2.888	21.248	7,36	19%
Prepared/Preserved	997	3.775	3,79	3%
Total	**11.696**	**109.400**	**9,35**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Frozen cod fillets represented 19% of the total value of cod products imported by Belgium in 2019. Imports of frozen fillets of cod have almost halved between 2012 and 2019 and reached 2.888 tonnes in 2019 for EUR 21,2 million. The major suppliers were the Netherlands (36,4% of the value), Denmark (16,1%), Germany (14,4%) and China (12,5%). The value decreased by 31% in real terms between 2012 and 2019.

Table 23: Evolution of imports of frozen cod fillets to Belgium between 2012 and 2019

	2012	2013	2014	2015	2016	2017	2018	2019	Evol. 2019 / 2012
Volume (tonnes)	5.456	6.017	5.173	5.763	5.025	3.985	3.626	2.888	-47%
Nominal value (1.000 EUR)	27.985	27.926	23.353	29.184	30.266	25.521	24.523	21.248	-24%
Price (EUR/kg)	5,13	4,64	4,51	5,06	6,02	6,40	6,76	7,36	43%

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports

Main products exported are fresh products (whole and fillets of cod) which represented almost 80% of the total value of cod exported by Belgium in 2019. Their main destinations are the Netherlands, France and Germany: these three Member States represented 90% of the value of fresh cod products exported by Belgium in 2019.

Table 24: Exports of cod from Belgium (2019)

	Volume (tonnes)	Nominal value (1.000 EUR)	Price (EUR/kg)	% Val. 2019
Fresh whole	1.123	6.279	5,59	16%
Fresh fillet	1.942	25.222	12,99	63%
Frozen whole	99	750	7,59	2%
Frozen fillet	789	5.483	6,95	14%
Prepared/Preserved	326	2.010	6,16	5%
Total	**4.279**	**39.743**	**9,29**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

The Belgian exports of frozen fillets of cod decreased by 42% in volume between 2012 and 2019 (789 tonnes in 2019) and decreased by 37% in value in real terms to reach EUR 5,5 million in 2019.

In 2019, export price was 6,95 EUR/kg which is 9% more than in 2012 in real terms.

Table 25: Evolution of exports of frozen fillets of cod to Belgium between 2012 and 2019

	2012	2013	2014	2015	2016	2017	2018	2019	Evol. 2019 / 2012
Volume (tonnes)	1.366	2.029	1.544	1.243	1.231	697	554	789	-42%
Nominal value (1.000 EUR)	7.851	10.005	7.734	7.100	8.408	4.646	4.298	5.483	-30%
Price (EUR/kg)	5,75	4,93	5,01	5,71	6,83	6,66	7,76	6,95	21%

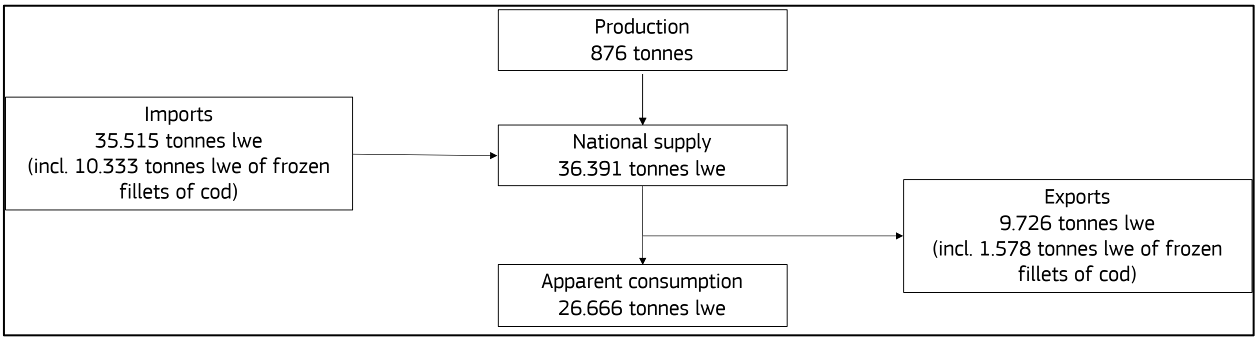
Source: EUMOFA elaboration of EUROSTAT-COMEXT data

3.1.3 Consumption

In 2018, the national supply of cod was 36.391 tonnes lwe, 98% of which from imports (35.515 tonnes lwe, including 10.333 tonnes lwe of frozen fillets of cod) and 2% from national production (876 tonnes). 26% of this supply, that is 9.726 tonnes lwe, was exported (including 1.578 tonnes lwe of frozen cod fillets). Therefore, apparent consumption of cod in Belgium can be estimated to 26.665 tonnes lwe in 2018, which is 73% of the total supply.

There is no detailed data on the production of frozen cod fillets, thus no detailed apparent consumption can be estimated.

Figure 11: Supply balance for cod in Belgium (data for the year 2018, tonnes of live weight equivalent)



Source: EUMOFA elaboration of EUROSTAT-COMEXT and FAO data

3.2 Characteristics of the Belgian market and consumption

3.2.1 Characteristics of the market

Based on VLAM[17], there are actually 271 fish processing companies in Belgium that work with, amongst others, North Sea fish. Companies that use or process fish and are specialised in specific fish species focus mainly on salmon (86% of these companies) and cod (77%).

Given its central location and its ports, Belgium is considered as a transit Member State for fish products. Processing of cod depends heavily on imports, while exports mainly consist of fresh products. Moreover, one third of the volumes of cod imported are already frozen fillets (in live weight equivalent), and half of the volume of cod imported are fresh fillets (in live weight equivalent). It means that processing of frozen fillets of cod in Belgium is limited, as most of the frozen fillets of cod consumed are from imports.

3.2.2 Consumption

Cod is one of the most popular fish species in Belgium. According to a consumer survey conducted in 2019, 45% of consumers surveyed expressed their preference for cod (and 55% for salmon)[18]. According to EUMOFA, apparent consumption of fishery and aquaculture products in Belgium was estimated at 23 kg per capita in 2018[19].

No specific data on the consumption of frozen cod fillets are available. Nevertheless, according to our desk research, frozen cod fillets in Belgium are mainly sold in supermarkets, and to a lesser extent by fishmongers.

[17] Flanders' Agricultural Marketing Board

[18] https://www.statista.com/statistics/1031058/most-popular-types-of-fish-in-belgium/

[19] EUMOFA, The EU fish market – 2020 Edition (https://www.eumofa.eu/it/market-analysis#yearly)

3.3 Price transmission in the supply chain

Considering the very low volume of national production, import prices are considered as the first sale price for the price transmission of frozen fillets of cod in the supply chain. The analysis for the price transmission focuses on Atlantic cod (*Gadus morhua*), the main species used for frozen fillets sold in retail.

3.3.1 Import and export prices

Trade flows of frozen filets of *Gadus morhua* decreased by almost 40% between 2012 and 2019: Imports decreased by 39% (2.519 tonnes in 2019) and exports decreased by 38% (704 tonnes in 2019). Import price was 7,20 EUR/kg in 2019 and export price was 6,94 EUR/kg.

Figure 12: Import and export price (nominal price) for frozen fillets of Atlantic cod in Belgium (2012-2019)

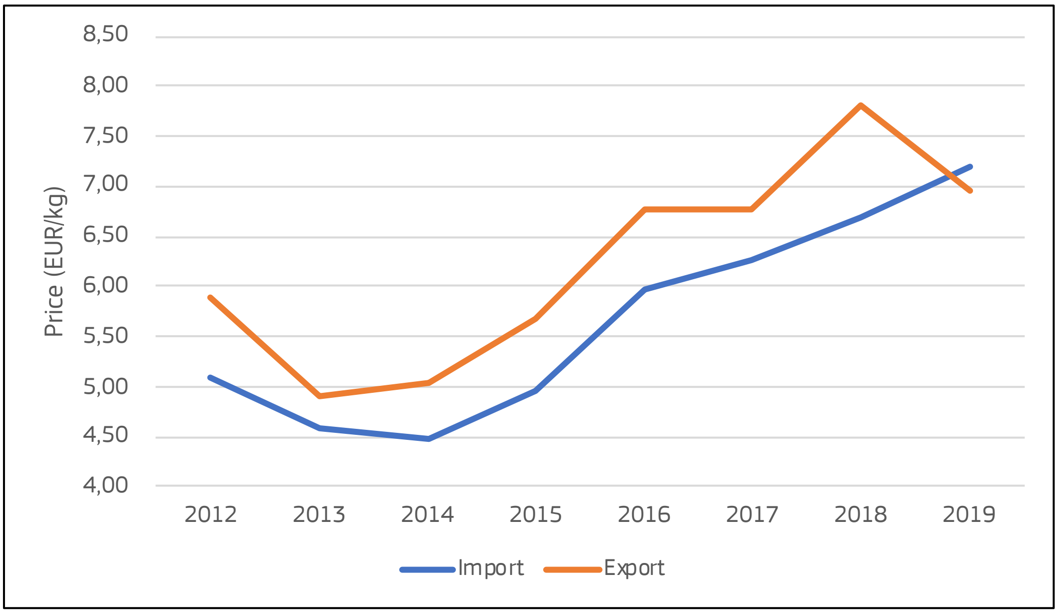


Table 26: Import and export price (nominal price) and volume for frozen fillets of Atlantic cod in Belgium (2012-2019)

		2012	2013	2014	2015	2016	2017	2018	2019	Evol. 2019/12
Price (EUR/kg)	**Import**	5,09	4,58	4,49	4,97	5,98	6,26	6,68	7,20	41%
	Export	5,88	4,90	5,04	5,68	6,78	6,77	7,81	6,94	18%
Volume (tonnes)	**Import**	4.113	5.044	4.392	4.618	4.276	3.400	3.295	2.519	-39%
	Export	1.134	1.925	1.410	1.094	1.000	582	474	704	-38%

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

3.3.2 Processing stage

It has not been possible to collect any data on costs and prices regarding the processing stage.

3.3.3 Retail prices

Frozen fillets of cod are generally sold by portion. Based on desk research and online surveys carried out in November 2020, the retail price generally ranges from 8,54 EUR/kg to 24,98 EUR/kg: this difference is due to the type of retailer (supermarket or hard discount), type of cuts (e.g. with or without bones), market positioning and the origin of the fish.

3.3.4 Price transmission

The analysis covers frozen fillets of Atlantic cod retailed by supermarkets, and relies on data collected through desk research, online checks and Comext data. The price of frozen fillets of Atlantic cod imported is 7,20 EUR/kg and the retail price is around 13,99 EUR/kg.

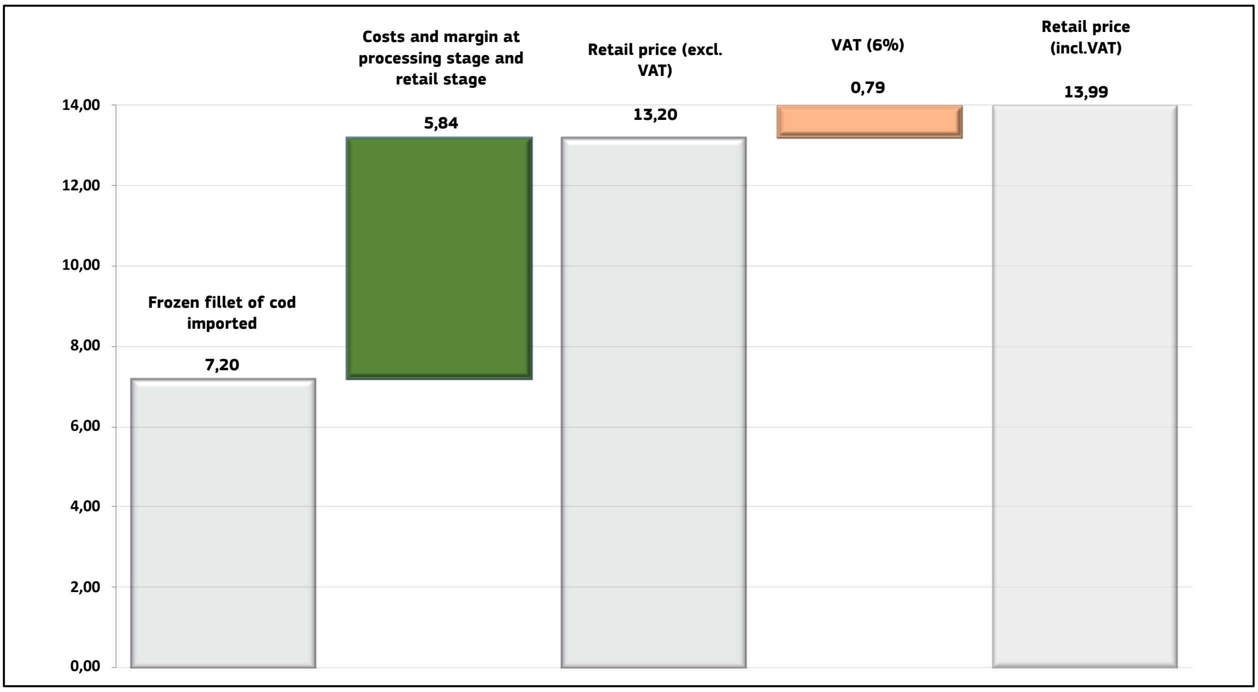
Despite investigations, it has not been possible to get any interviews with operators to detail additional costs and margins at ex-factory stage and retail stage. However, considering the supply chain of frozen fillets of cod in Belgium, there are few added costs as the raw material is mostly only repacked before the retail stage.

Table 27: Costs and margins for frozen fillets of Atlantic cod retailed by supermarkets in Belgium (2019)

	Average price (EUR/kg)	**% of final price**	**Comment / source**
Imports	7,2	51%	Source: Eurostat-Comext
Costs and margin at processing stage and retail stage	5,84	42%	*Calculated*
Retail price excluding VAT	**13,20**	94%	Retailers' website
VAT (6%)	0,79	6%	6% VAT
Retail price (incl. VAT)	**13,99**	**100%**	-

Source: EUMOFA

Figure 13: Costs and margins for frozen fillets of Atlantic cod retailed by supermarkets in Belgium (EUR/kg, 2019)



Source: EUMOFA

4 The Dutch market

4.1 Structure of the supply chain

4.1.1 Production

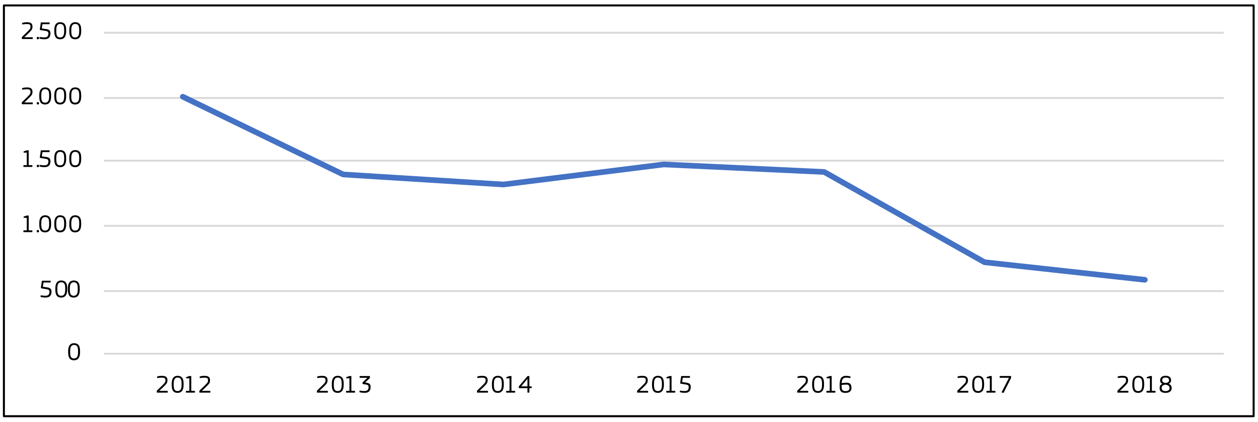
The volume of cod production in the Netherlands was 584 tonnes in 2018. It represented 0,5% of the EU-28 production. The Dutch production decreased by 71%[20] between 2012 and 2018, with a strong drop between 2012 and 2013 and between 2016 and 2017.

Table 28: Catches of cod in the Netherlands between 2012 and 2018 (tonnes)

	2012	2013	2014	2015	2016	2017	2018	Evol. 2018/2012
Fishery	2.000	1.411	1.320	1.485	1.431	713	584	-71%
% EU28	1,3%	1,0%	0,9%	1,0%	1,0%	0,6%	0,5%	-

Source: FAO

Figure 14: Development of catches of cod by the Netherlands between 2012 and 2018 (tonnes)



Source: FAO

[20] According to interviews, despite the increase of TAC, the utilization of cod in the Netherlands has been decreasing over the last decade.

4.1.2 Import - Export

Imports

Total imports of cod, including processed and preserved cod, to the Netherlands reached 143.409 tonnes and EUR 794 million in 2019. Main products imported were frozen products (whole cod and fillets of cod), EUR 412 million in 2019 (51% of total value imported) and, to a lesser extent, prepared and preserved products (EUR 219 million in 2019, 28% of total value imported). Main suppliers were Iceland, Russia and Norway (82% of total): Russia and Norway were the main suppliers for frozen products; and Iceland was the main supplier for prepared and preserved products.

Table 29: Imports of cod to the Netherlands (2019)

	Volume (tonnes)	Nominal value (1.000 EUR)	Price (EUR/kg)	% val. 2019
Fresh whole	13.286	55.656	4,19	7%
Fresh fillet	10.050	107.424	10,69	14%
Frozen whole	43.832	170.339	3,89	21%
Frozen fillet	43.031	241.871	5,62	30%
Prepared/Preserved	33.211	219.038	6,60	28%
Total	**143.409**	**794.328**	**5,54**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Imports of frozen fillets of cod reached 43.043 tonnes in 2019 and EUR 242 million (EUR 226 million in real terms). After a strong increase between 2012 and 2013, this volume has been almost stable between 2013 and 2019, fluctuating from 40.000 to 49.000 tonnes. The value increased by 136% over the period 2021-2019 (+115% in real terms).

Frozen fillets of cod are mainly imported from Russia and Iceland (43% and 34% in value, respectively); China is the third country of origin with 5% of the value of frozen fillets of cod imported by the Netherlands.

Table 30: Evolution of imports of frozen fillets of cod to the Netherlands between 2012 and 2019

	2012	2013	2014	2015	2016	2017	2018	2019	Evol. 2019/2012
Volume (tonnes)	22.497	39.980	48.914	41.790	46.441	46.094	40.530	43.031	91%
Nominal value (1.000 EUR)	102.619	146.415	195.677	197.017	229.190	231.940	209.104	241.871	136%
Price (EUR/kg)	4,56	3,66	4,00	4,71	4,94	5,03	5,16	5,62	23%

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports

Exports of cod, including processed and preserved cod, from the Netherlands reached 141.572 tonnes and EUR 805 million in 2019. This was mainly composed of prepared and preserved products (30% of value of cod exported, EUR 240 million), followed by frozen fillets of cod (27% of value exported, EUR 219 million) and frozen whole cod (22% of value exported, EUR 178 million). Main destinations were Spain (23% of total value of exports of cod in 2019), Portugal (19%) and France (17% of value exported). China ranks fourth with 12,5%[21].

Table 31: Exports of cod from the Netherlands (2019)

	Volume (tonnes)	Nominal value (1.000 EUR)	Price (EUR/kg)	% val. 2019
Fresh whole	5.568	27.539	4,95	3%
Fresh fillet	13.985	141.000	10,08	18%
Frozen whole	43.168	177.787	4,12	22%
Frozen fillet	42.410	219.373	5,17	27%
Prepared/Preserved	36.442	239.623	6,58	30%
Total	**141.572**	**805.323**	**5,69**	**100%**

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

Exports of frozen fillets of cod were 42.410 tonnes and EUR 219 million in 2019, it has increased by 139% in volume and 150% in value since 2012 (+128% in real terms). The price has increased by 5% in the recent years and was 5,17 EUR/kg in 2019 (4,83 EUR/kg in real terms). Main destinations of frozen fillets of cod were the United-Kingdom and Spain (56% of value exported).

Table 32: Evolution of exports of frozen fillets of cod from the Netherlands between 2012 and 2019

	2012	2013	2014	2015	2016	2017	2018	2019	Evol. 2019/2012
Volume (tonnes)	17.732	27.458	39.610	42.024	66.475	44.988	56.522	42.410	139%
Value (1.000 EUR)	87.676	110.078	170.074	180.797	194.842	199.487	189.437	219.373	150%
Price (EUR/kg)	4,94	4,01	4,29	4,30	2,93	4,43	3,35	5,17	5%

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

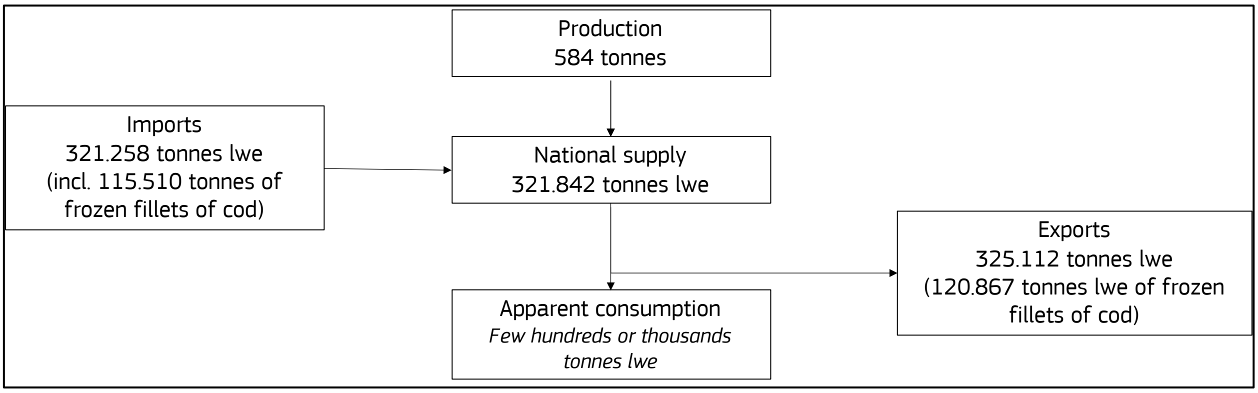
[21] Considering the exportation of frozen whole cod exclusively, China is the first country of destination with 56% in value, followed by Spain and Portugal.

4.1.3 Consumption

In 2018, the total national supply of cod in the Netherlands was 321.842 tonnes of live weight equivalent, mainly from imports, as the national production only represented 584 tonnes. Exports were estimated to reach 325.112 tonnes in live weight equivalent (including 120.867 tonnes of frozen fillets of cod in live weight equivalent). Export data might be overestimated as this volume cannot be higher than the volume of national supply. This discrepancy is probably due to the level of precision of the coefficient for live weight equivalent calculation for each type of product. According to the experts interviewed from the Dutch fish federation and Wageningen university, as the Netherlands is mainly a platform for reexport of cod fillets, the Dutch apparent consumption is very low (few hundreds or few thousand tonnes of live weight equivalent).

There is no detailed data on the processing of frozen fillets of cod by Dutch operators, but based on interviews, most of this production is imported.

Figure 15: Supply balance for cod in the Netherlands (2018, tonnes of live weight equivalent)



Source: EUMOFA elaboration of EUROSTAT-COMEXT and FAO data (*Nota Bene*: the apparent consumption cannot be calculated due to missing data and data discrepancies)

4.2 Characteristics of the Dutch market and consumption

4.2.1 Characteristics of the market

The Netherlands is increasingly becoming one of EU's leading importers and exporters of seafood products.

Based on the 2019 Dutch Seafood Industry Report (USDA Foreign Agricultural Service), there are about 300 Dutch companies that process fish[22]. In the last decade, several processing plants have diversified their fish species and products. Based on interviews, frozen fillets of cod are mainly imported to be repacked and quality checked in the Netherlands before export. The processing industry is mainly dealing with fresh raw material. However, according to the people interviewed from the Dutch Fish federation and a University, the frozen market of cod is much bigger than the fresh one.

Main sales channels for frozen fillets of cod are supermarkets and fishmongers. MSC certification is largely used on the Dutch market for frozen fillets of cod.

4.2.2 Consumption

Currently, seafood consumption in the Netherlands is slowly growing (+49% in volume over the last 8 years for fresh seafood products, according to EUMOFA) due to a larger range of products in supermarkets and product innovation by seafood companies.

There are no exact consumption figures of seafood products for the Netherlands. Based on interviews, Dutch per capita consumption is around 20 kg per year (mostly canned tuna, herring, fish fingers and salmon).

In the past, cod was the key ingredient of the popular dish of "kibbeling" (fried battered chunks of fish). However, more and more low valued fish species (like Alaska Pollack) are used by fish mongers for this typical Dutch dish. Nowadays, cod is mainly consumed at home, mostly frozen and bought in supermarkets.

4.3 Price transmission in the supply chain

Considering the very low volume of national fisheries production, import prices are considered as the first sale price for the price transmission of frozen fillets of cod in the supply chain. The analysis for the price transmission focuses on Atlantic cod (*Gadus morhua*), the main species used for frozen fillets sold in retail.

4.3.1 Import and export prices

The volume of frozen fillets of cod of the species *Gadus morhua* imported in 2019 was 41.693 tonnes in 2019, for an average price of 5,62 EUR/kg. Exports were similar with 41.536 tonnes and a price of 5,16 EUR/kg[23].

Between 2012 and 2019, import prices fluctuated between 3,66 EUR/kg in 2013 and 5,62 EUR/kg in 2019.

[22] Here, "processing" covers the change of a seafood raw material and the repackaging process. Among these 300 Dutch seafood companies, some are specialized importers and exporters which are specialized in sourcing, while processing is outsourced.

[23] Export prices of frozen fillet of cod are lower than import prices all along this series: this kind of discrepancy is often due to the definition for export prices (FOB) that is different from the definition for import prices (CIF).

Figure 16: Import and export price (nominal price) and volume for frozen fillets of Atlantic cod in the Netherlands

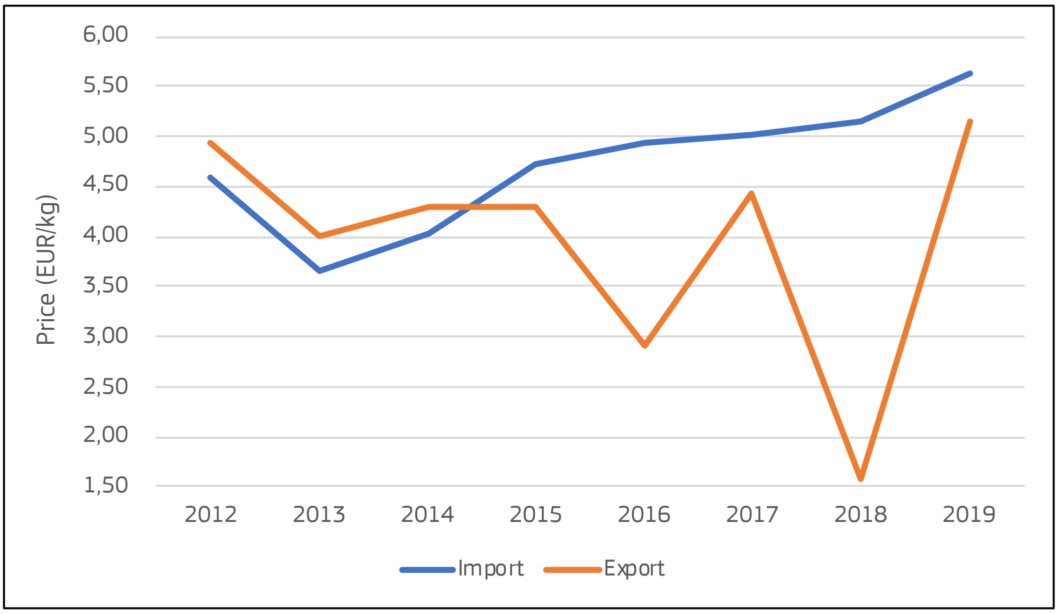


Table 33: Import and export price (nominal price) and volume for frozen fillets of Atlantic cod in the Netherlands

		2012	2013	2014	2015	2016	2017	2018	2019	Evol. 2019/12
Price (EUR/kg)	**Import**	4,58	3,66	4,02	4,72	4,93	5,02	5,16	5,62	23%
	Export	4,94	4,00	4,29	4,29	2,91	4,42	1,58[24]	5,16	4%
Volume (tonnes)	**Import**	21.652	38.836	47.201	39.923	44.610	44.302	39.005	41.693	93%
	Export	17.426	27.153	39.165	41.478	65.576	44.429	115.381	41.536	138%

Source: EUMOFA elaboration of EUROSTAT-COMEXT data

4.3.2 Processing stage

Based on interviews, the ex-factory price ranges from 6,00 to 6,66 EUR/kg for frozen fillets of cod (the main product sold).

4.3.3 Retail prices

Frozen fillets of cod are generally sold by portion. Based on interviews and online checks conducted in October 2020, the retail price generally ranges from 8,80 EUR/kg to 10,50 EUR/kg.

[24] COMEXT data shows a peak in volumes exported in 2018, in particular to France and Spain, that is not reflected in the value of exports and could correspond to erroneous reporting.

4.3.4 Price transmission

The analysis covers frozen fillets of cod retailed by supermarkets, and data are based on interviews and COMEXT. The price of imported frozen fillets of cod was 5,62 EUR/kg in 2019 and the retail price was around 9,00 EUR/kg. The ex-factory price was 6,34 EUR/kg, accounting for 70% of the final price.

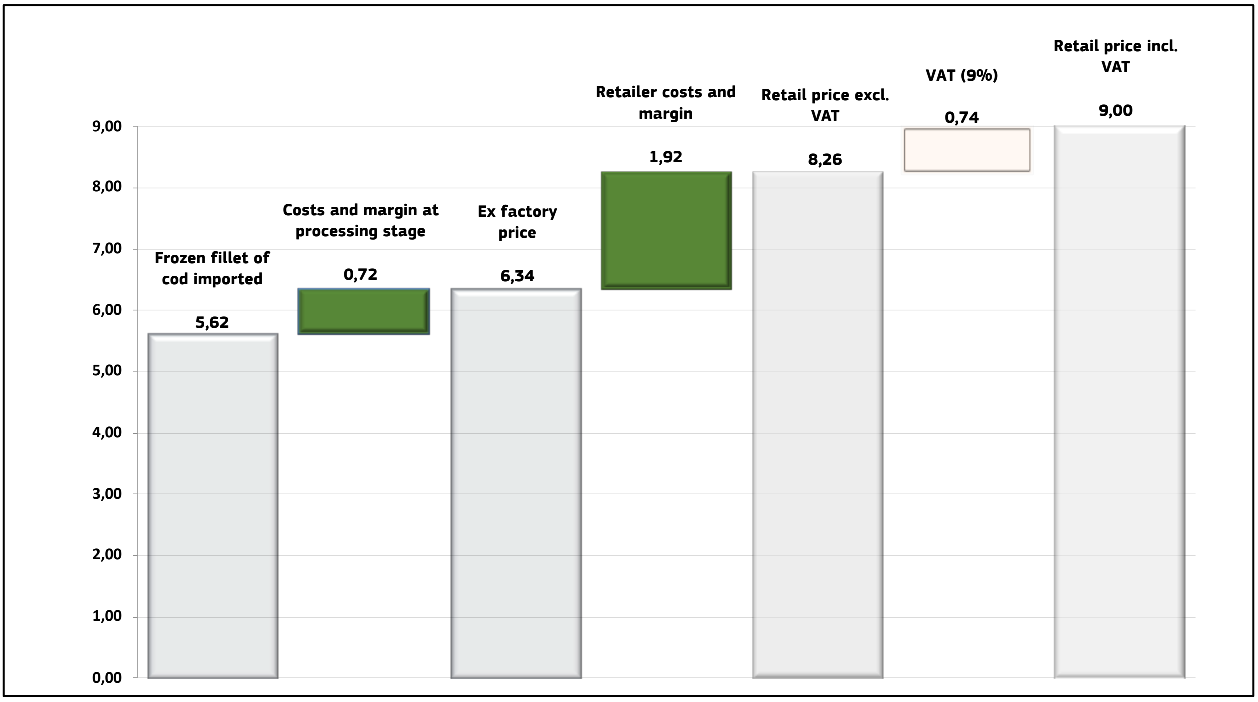
As shown below, there are few added costs as the raw material is mostly only repacked before the retail stage.

Table 34: Costs and margins for frozen fillets of cod retailed by supermarkets in the Netherlands (2019)

	Average price (EUR/kg)	% of final price	Comment / source
Imports	5,62	62%	Source: Eurostat-Comext
Costs and margin at processing stage	0,72	8%	Interviews
Ex-factory price	**6,34**	**70%**	**6,00 to 6,66 EUR/kg**
Retailer costs and margin	1,92	32%	Interviews
Retail price excluding VAT	**8,26**	92%	Retailers' website
VAT (9%)	0,74	8%	9% VAT
Retail price (incl. VAT)	**9,00**	**100%**	**8,80 to 10,50 EUR/kg**

Source: EUMOFA

Figure 17: Costs and margins for frozen fillets of cod retailed by supermarkets in the Netherlands (EUR/kg, 2019)



Source: EUMOFA

5 Conclusions

The market of frozen fillets of cod in France, Belgium and the Netherlands, is highly dependent on imports, The Netherlands being one of the main suppliers to the Belgian and French markets.

French imports are mainly from China, Germany and the Netherlands, Belgian imports mainly come from the Netherlands, Denmark and Germany and Dutch imports mainly come from Russia and Iceland.

Considering that the raw material is generally imported frozen and already fileted or cut in pieces, costs for operators mainly come from traders fees, final processing steps (e.g. portion cuts), packaging and distribution. Significant volumes of fresh fillets are also imported but these volumes are sold on the fresh market or further processed. Cod sold as plain frozen cod is generally frozen on board.

As volumes of frozen cod fillets imported by Belgium and France are from the Netherlands, it may explain the difference observed on import prices between the Netherlands (5,62 EUR/kg) on one hand and France and Belgium on the other (respectively 6,94 EUR/kg and 7,20 EUR/kg). The French and Belgian prices may include, additional transport cost, and possibly the Dutch packaging costs and margin. In France and Belgium, frozen filets of cod prices may integrate additional costs as it is marketed as a high-end product within the frozen fish segment (portion cuts, packaging, marketing and advertising, etc.). Considering the limited domestic market (see point 4.2.2), the Dutch operators may focus more on price competitiveness.

The analysis covers sales of Atlantic cod by large retailers with retail prices (excl. VAT) ranging from 8,26 EUR/kg in the Netherlands to 15,29 EUR/kg in France.

Table 35: Synthesis of the price structure analysis of frozen cod fillets in the Netherlands, Belgium and France (EUR/kg, nominal value, 2019, sale channel: supermarkets)

Member State	Netherlands	Belgium	France
Import prices	5,62	7,20	6,94
Ex-factory price	6,34	Unknown	Unknown
Retail price excl. VAT	8,26	13,20	15,29
Retail price incl. VAT	9,00	13,99	16,13

Source: EUMOFA

Annex: Stakeholders interviewed

- France:
  - Association of food processing industries (ADEPALE)
  - Several stakeholders have been contacted but they were not willing to answer regarding the price structure because of lack of information and/or confidentiality reasons, only one operator agreed to provide qualitative information on the value chain.

- Belgium:
  - All members of the Belgian federation of fish industries have been contacted but they were not willing to answer (lack of interest and/or lack of information to provide).

- Netherlands
  - Economic researcher fisheries & aquaculture, seafood markets and value chains – WAGENINGEN University and Research
  - Dutch Fish Federation

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