



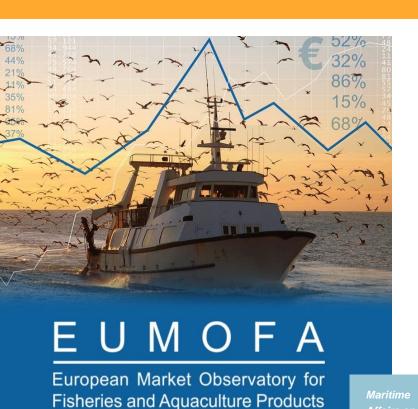
HERRING PRESERVED IN GLASS JARS IN SWEDEN

PRICE STRUCTURE IN THE SUPPLY CHAIN

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CASE STODI



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Summary

- Sweden is the fifth largest EU producer of herring with 81.000 tonnes caught in 2014.
- The catch was 80.820 tonnes in 2014 (+33% since 2010), which accounted for 84% of the national quota.
- In 2016, Sweden holds 14% of EU quotas for herring. The Swedish quota increased by 44% between 2012 and 2016 in Sweden to reach 118.000 tonnes in 2016.
- The industry processing herring in glass jars is highly concentrated with only three companies involved in this activity on an industrial scale.
- The production of herring marinated in glass jars includes a preliminary processing stage: herring barrelling (marinating, spicing, salting). Barrelled herring is supplied by national production and imports from Norway.
- The main market for herring preserved in glass jars is the domestic market (estimated at 77% of total sales). The main export markets are Finland, Denmark and Germany.
- The prices at the different stages of the supply chain are:
 - o 0,45 EUR/kg at landing stage (raw material: fresh herring),
 - o 2,20 EUR/kg after barrelling stage (semi-processed material: herring in barrels),
 - o 4,73 EUR/kg delivered to retailer (finished product: herring in glass jars),
 - o 7,96 EUR/kg at the consumer stage.

0 TASK REMINDER – Scope and content

0.1 Case study scope

Reminder

The rationale for the choice of herring in glass jars to analyse price transmission and distribution of value in the Swedish supply chain is described in the table below.

Product	Origin	Characteristics	Market and price drivers
		Bites of herring preserved in glass jars	Traditional product in Sweden
Harring (processed in	Fishery	Several recipes: • Herring marinated,	Peak of consumption: Easter, summer and Christmas
Herring (preserved in glass jars)		spiced or salted • Clear or creamy sauce	High degree of concentration of the industry with a few companies involved in the processing at industrial level
		Large range of references proposed at retail stage	Supply of fish in Sweden and Norway

Key elements of the analyses will concern:

Species – Products	Main MS (focus)	Other MS (overview)
Herring (preserved in glass jars)	Sweden	/

0.2 Content of the document

In conformity with the methodology developed within the EUMOFA project¹, this document includes:

- a description of the product;
- a description of the EU markets for herring, with a special focus on the Swedish market;
- an analysis of the price transmission along the supply chain.

 $^{1} https://www.eumofa.eu/documents/20178/0/Guidelines_Pricestructure.pdf/76af127b-7353-4526-a10d-e48a6c87a02e$

1 DESCRIPTION OF THE PRODUCT

1.1 Biological and commercial characteristics

The case study focuses on marinated herring in jars, a traditional product on the Swedish market.

Case study product

Name: Atlantic herring (Clupea harengus)

FAO 3-alpha code: HER

Presentation: Preserved in glass jars

Commercial size:

Minimum landing size (source: Council Regulation (EC) No 2046/96): North Sea: 20 cm; Skagerrak: 18 cm.

The length of most of the adult fish in the North Sea ranges between 20 and 30 cm (maximum 40 cm).

Biological parameters

Habitat: herring spawn in dense beds on the sea bed and also on vegetation in the Baltic. Adult fish are pelagic; however, the Atlanto-Scandian herring can be found over the abyssal plains during its feeding migrations between Norway, Iceland and Greenland. Juveniles live in shallower water, quite separate from the adults, and move into deeper waters after two years.

Herring form large shoals, with diurnal vertical migration patterns through the water column. During the day, herrings tend to remain close to the sea bottom or in deep water (200 m depth), and move towards the surface at dusk.

Spawning: there are different spawning periods for herring: spring or autumn. For example, the Norwegian spring spawning (NVG), the Western Baltic spring spawners (WBSS) and the North Sea autumn spawners (NSAS).

Geographical distribution: Atlantic herring is widely distributed in the Northwest and Northeast Atlantic. Within the Northeast Atlantic, herring is distributed from the northern Bay of Biscay to Greenland, and east into the Barents Sea.



Figure 1 - Atlantic herring distribution

Source: FAO

Subsitutes

There are no substitutes on the market for herring preserved in glass jars in Sweden. It is a traditional product with high seasonality in the consumption: Easter, summer and Christmas.

Related codes

Herring is distinguished in the Combined Nomenclature, the following table displays the codes.

Table 1 - CN codes for herring

CN code	Product presentation 1	Product presentation 2	Comment
03 02 41 00	Whole	Fresh	Since 2012
03 03 51 00	Whole	Frozen	Since 2007
03 04 59 50	Fillet	Fresh (flaps of herring)	Since 2012
03 04 86 00	rillet	Frozen	Since 2012
03 05 42 00		Smoked (incl. Fillet)	/
03 05 59 30	Processed	Dried	Since 2005
03 05 61 00		Salted	/
03 04 99 23	Other	Frozen meat (excl. fillet)	Since 2007
16 04 12 10	Prepared or preserved	Fillets coated with batter or breadcrumbs, frozen	/
16 04 12 91	Prepared or preserved	In airtight containers	Includes "herring in glass jar"
16 04 12 99	Prepared or preserved	Other	Includes "barrelled herring" (used for the production of herring in glass jars)

Herring in glass jars production is also identified through a PRODCOM code (see below). However, no data is displayed for the Swedish production ("confidential").

Table 2 – PRODCOM code for prepared/preserved herring

PRODCOM code	Description
10.20.25.20	Prepared or preserved herrings, whole or in pieces (excluding minced products and prepared meals and dishes)

1.2 Catches and availability of herring

Annual catches of Atlantic herring reached 1,6 million tonnes at world level in 2014 (-16,7% since 2003 and -35,2% since 2009). Norway is the chief fishing nation with 25% of the catches (400.000 tonnes) in 2014, followed by Iceland with 158.000 tonnes (10% of world catches). The EU accounts for 45% of world catches (726.000 tonnes); the main Member States are Denmark, Finland, the United Kingdom, the Netherlands, Sweden and Germany.

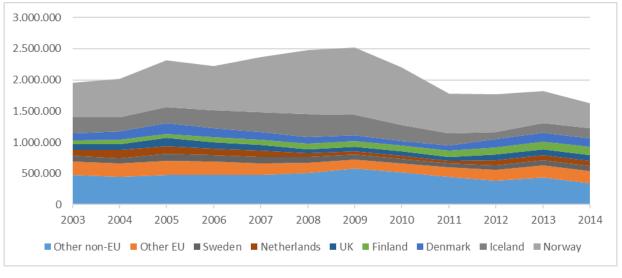


Figure 2 - World catch of Atlantic herring (tonnes)

Source: FAO

Norway catches strongly increased during the 2000s and peaked in 2008 and 2009 with more than 1 million tonnes landed. The decrease has been very strong from 2009 (-62%) and the volume of catches is 28% lower in 2014 compared to 2003.

In Sweden, catches increased between 2003 and 2005 (+22%) and then steadily decreased until 2011 (-42% between 2005 and 2011), before rising again from 2011 (+33%). In other areas, the evolution is quite similar to the one observed in Sweden: an increase of catches between 2003 and 2005, a decrease between 2005 and 2011 and a subsequent increase. This is related to the evolution of quotas, which decreased between 2005 and 2011 at EU level and increased subsequently (the lowest point for Sweden was in 2012).

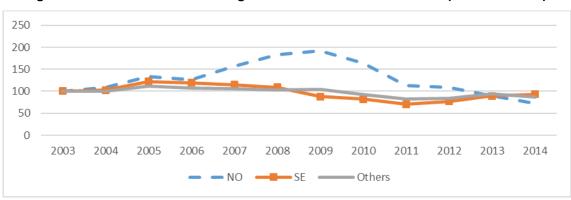


Figure 3 - Index evolution of herring catches between 2003 and 2014 (base 100=2003)

Source: FAO

The decrease of world catches between 2009 and 2014 (-35%) only concerned non-EU countries (-54%), in particular Norway, Iceland and Russia, while catches in the EU rose by 37%. This increase concerned each of the main Member States involved in herring fishery and is related to quota increase (+ 38,4% between 2011 and 2014 at EU level).

The following table displays the volume of catch for the main countries in the world.

Table 3 – Herring catches by country (tonnes)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Norway	563.049	616.221	748.220	710.591	884.593	1.027.873	1.077.250	923.741	633.103	610.713	507.119	407.424
Iceland	250.039	224.580	261.445	291.380	319.894	370.814	331.200	254.476	198.463	115.181	157.537	157.895
Denmark	114.806	136.809	167.456	139.660	120.660	105.450	92.049	77.445	85.934	125.117	141.028	135.580
Finland	64.021	71.072	66.977	79.887	89.393	83.717	90.833	92.757	98.002	117.866	122.318	131.116
Canada	200.299	183.432	163.263	160.101	167.782	140.237	155.178	149.883	134.468	113.989	126.102	114.610
UK	90.327	96.298	130.839	109.612	91.098	67.113	67.113	66.891	61.570	90.419	93.570	97.683
USA	97.200	81.528	97.398	93.934	73.330	77.912	101.133	65.138	78.507	86.415	93.967	92.402
Netherlands	95.085	129.643	128.038	95.915	103.120	56.709	56.934	55.782	45.467	85.091	88.010	85.261
Sweden	86.626	89.032	105.614	103.352	99.487	94.656	76.234	71.117	60.879	66.968	77.225	80.820
Russia	144.249	123.275	140.106	131.112	171.527	202.161	222.283	208.729	152.957	131.692	88.626	76.226
Germany	74.818	70.586	92.581	80.552	49.966	46.660	37.453	37.038	37.023	51.214	71.841	53.423
Faroe Is.	28.370	50.106	71.878	71.840	63.332	78.317	94.538	87.575	72.952	51.352	115.552	43.326
France	33.736	36.558	40.960	39.607	22.115	22.122	3.752	4.421	12.879	24.372	30.142	30.945
Poland	30.703	27.914	22.850	22.069	25.175	16.848	22.232	24.897	29.296	27.114	23.560	28.137
Ireland	28.839	26.234	29.341	30.780	30.827	28.058	26.254	26.662	24.807	28.719	23.192	24.056
Latvia	24.187	23.559	22.202	21.762	22.404	22.527	21.557	21.373	22.842	20.100	20.720	23.315
Estonia	27.359	27.358	22.098	23.192	26.108	31.843	33.168	28.866	25.325	22.047	21.941	23.130
Lithuania	2.109	1.845	748	1.172	3.592	1.793	3.807	2.042	2.796	2.276	2.381	12.624
EU	672.828	736.919	829.760	747.911	684.117	577.644	531.443	509.381	506.878	661.310	715.951	726.117
Non-EU	1.286.105	1.283.195	1.485.670	1.477.088	1.685.357	1.901.562	1.985.314	1.694.307	1.273.391	1.111.926	1.101.037	905.064
World	1.958.929	2.020.111	2.315.430	2.224.999	2.369.473	2.479.203	2.516.755	2.203.687	1.780.268	1.773.235	1.816.987	1.631.181

Source: FAO

EU quotas for herring reached 834.000 tonnes in 2016, out of which 118.000 tonnes for Sweden (14.2% of EU quotas). This is the highest quota for Sweden since 2005.

The lowest level was in 2012 (below 82.000 tonnes) and volume has increased by 44% since then.

In 2014, quota utilisation is 93% at EU level and 84% in Sweden.

Table 4 - Quotas for herring at EU level and in Sweden between 2005 and 2015 (tonnes)

	EU	SE	% SE / EU
2005	869.025	117.530	13,5%
2006	817.386	112.778	13,8%
2007	747.121	113.139	15,1%
2008	659.786	112.552	17,1%
2009	592.683	100.254	16,9%
2010	600.720	95.449	15,9%
2011	565.626	82.533	14,6%
2012	696.129	81.751	11,7%
2013	753.982	89.911	11,9%
2014	782.778	96.370	12,3%
2015	817.611	114.385	14,0%
2016	833.770	118.025	14,2%

Source: DG MARE - TACs and quotas

2 THE EU MARKETS FOR HERRING PRESERVED IN GLASS JARS

2.1 Overview of the Swedish supply chain

The different stages of the production of herrings in glass jars are displayed below.

1. Landing of fish, gutted

2. Filleting and cutting in bites

3. Marinating / spicing / salting in barrels

4. Mix of herring bites and sauce

Producers of herring in glass jar

5. Packaging in glass jars

Figure 4 - Stages for the production of herring in glass jars

The activities of stages 2 and 3 are carried out by barrelling companies. These companies chiefly carry out the following tasks:

- Filleting;
- cutting of fillets into bites;
- storage of bites in barrels during:
 - 30 days for marinated herring;
 - o 60 to 90 days for spiced herring;
 - 30 to 90 days for salted herring.

They provide their clients with barrels weighing 120 kg including brine and herring bites (between 72 and 85 kg of herrings).

Only two of these companies remain in Sweden at industrial scale. But the needs of Swedish processors are not fully met by these two barrelling companies. Swedish producers of herrings in jars have also to rely on imports, especially from Norway.

Steps 4 and 5 are carried out by producers of herrings in glass jars. Three companies are involved in this activity at industrial scale in Sweden.

2.2 Structure of the EU market for herring and herring products

2.2.1. Imports

In 2015, EU total imports (intra EU + extra EU) of herring (fresh, frozen, prepared and preserved) reached EUR 721 million and 556.000 tonnes. The main markets are Germany, Poland and the Netherlands, accounting for 58% of the total value imported by Member States.

Sweden is the fifth largest market with 5,1 % of the value and 4,8% of the volume (EUR 37 million and 27.000 tonnes).

Table 5 – EU imports of herrings and herring products by Member State in 2015

	Volume (tonnes)	Value (1.000 EUR)	% volume	% value
DE	130.499	190.923	23,45%	26,49%
PL	89.017	140.566	16,00%	19,50%
NL	110.546	85.593	19,87%	11,88%
DK	85.393	68.113	15,35%	9,45%
SE	26.939	37.022	4,84%	5,14%
FR	10.334	22.315	1,86%	3,10%
LT	16.111	21.398	2,90%	2,97%
GB	9.186	20.092	1,65%	2,79%
CZ	8.384	15.066	1,51%	2,09%
AT	4.374	13.454	0,79%	1,87%
BE	4.611	12.940	0,83%	1,80%
RO	10.459	12.851	1,88%	1,78%
IE	2.281	10.890	0,41%	1,51%
LV	7.505	10.354	1,35%	1,44%
FI	3.387	9.326	0,61%	1,29%
ES	8.348	9.071	1,50%	1,26%
EE	6.790	8.882	1,22%	1,23%
SK	2.916	7.125	0,52%	0,99%
MT	9.283	6.220	1,67%	0,86%
IT	1.685	5.273	0,30%	0,73%
HU	1.433	3.500	0,26%	0,49%
BG	2.337	2.770	0,42%	0,38%
GR	1.105	2.728	0,20%	0,38%
HR	2.780	2.091	0,50%	0,29%
LU	134	805	0,02%	0,11%
PT	422	743	0,08%	0,10%
CY	104	414	0,02%	0,06%
SI	61	211	0,01%	0,03%
Total	556.424	720.734	100%	100%

Focus on the structure of the imports (intra + extra EU) for the main markets (2015)

Germany:

- Prepared/preserved in airtight containers: 37% of value and 23% of volume;
- Fresh whole: 18% of value and 39% of volume;
- Frozen meat: 13% of value and 14% of volume;
- Frozen fillet: 11% of value and 8% of volume.

Germany is an important market for herring preserved in airtight containers with EUR 71 million and 31.000 tonnes imported in 2015.

Poland:

- "Other" prepared/preserved herrings: 34% of value and 31% of volume.
- Frozen fillet: 31% of value and 28% of volume;
- Frozen meat: 24% of value and 27% of volume.

Poland imported 27.000 tonnes of "other" prepared/preserved herrings in 2015 (this category of products includes barrelled herrings).

The Netherlands:

- Frozen whole: 64% of value and 86% of volume;
- Frozen fillet: 17% of value and 7% of volume;
- Frozen meat: 8% of value and 4% of volume.

Denmark:

- Fresh whole: 47% of value and 75% of volume;
- "Other" prepared/preserved herrings: 17% of value and 7% of volume.

Denmark imported 6.300 tonnes of "other" prepared/preserved herrings in 2015.

Sweden:

- "Other" prepared/preserved herrings: 35% of value and 25% of volume (used to produce herring preserved in glass jars);
- Frozen meat: 19% of value and 19% of volume;
- Frozen fillet: 17% of value and 13% of volume:
- Frozen whole: 15% of value and 14% of volume;
- Prepared/preserved in airtight containers: 6% of value and 1,8% of volume;
- Fresh whole: 6% of value and 25% of volume.

Sweden imported 6.700 tonnes of "other" prepared/preserved herrings in 2015.

Germany is the largest EU market for prepared/preserved herrings in airtight containers, accounting for 58% of the volume and 50% of the value imported by Member States in 2015 (EUR 71 million and 30.500 tonnes).

The other EU markets are at least 6 times smaller: the United Kingdom (EUR 11 million), Austria (EUR 9 million), Romania (EUR 6 million), Finland (EUR 5 million) and France (EUR 4 million).

Table 6 – EU imports of herrings prepared/preserved in airtight containers by Member State in 2015

	Volume (tonnes)	Value (1.000 EUR)	% volume	% value
DE	30.544	70.773	58,23%	50,40%
UK	3.222	10.850	6,14%	7,73%
AT	2.566	8.958	4,89%	6,38%
RO	1.968	5.558	3,75%	3,96%
FI	1.719	5.284	3,28%	3,76%
FR	1.247	4.402	2,38%	3,13%
EE	1.550	4.118	2,95%	2,93%
SK	1.469	4.108	2,80%	2,93%
DK	1.031	3.831	1,97%	2,73%
CZ	1.126	3.371	2,15%	2,40%
HU	1.081	2.671	2,06%	1,90%
ES	617	2.323	1,18%	1,65%
NL	592	2.289	1,13%	1,63%
SE	479	2.227	0,91%	1,59%
BE	721	2.149	1,38%	1,53%
PL	750	1.925	1,43%	1,37%
LV	544	1.406	1,04%	1,00%
IE	295	1.146	0,56%	0,82%
IT	275	1.004	0,52%	0,71%
Other	656	2.035	1,25%	1,45%
Total	52.451	140.427	100%	100%

2.2.2. Exports

In 2015 EU total exports (intra EU + extra EU) of herrings and herring products reached EUR 761 million and 715.000 tonnes. The main exporters are Denmark, Poland, the Netherlands and Germany, who represent 74% of the value exported by EU Member States.

Sweden is the fifth largest exporter exceeding 7% of the value and 9% of the volume exported (EUR 56 million and 68.000 tonnes).

Table 7 – Exports of herrings and herring products by Member State in 2015

	Volume (tonnes)	Value (1.000 EUR)	% volume	% value
DK	141.776	157.635	19,84%	20,71%
PL	62.867	153.891	8,80%	20,21%
NL	173.827	152.131	24,32%	19,98%
DE	77.889	100.347	10,90%	13,18%
SE	67.771	55.768	9,48%	7,33%
GB	62.911	47.453	8,80%	6,23%
LT	12.157	25.195	1,70%	3,31%
IE	20.687	20.991	2,89%	2,76%
EE	35.067	14.220	4,91%	1,87%
LV	15.293	12.527	2,14%	1,65%
FI	38.038	8.615	5,32%	1,13%
CZ	1.069	2.946	0,15%	0,39%
ES	1.731	1.940	0,24%	0,25%
FR	1.380	1.922	0,19%	0,25%
BE	350	1.411	0,05%	0,19%
IT	353	1.147	0,05%	0,15%
GR	201	1.128	0,03%	0,15%
MT	879	665	0,12%	0,09%
RO	172	376	0,02%	0,05%
AT	85	360	0,01%	0,05%
BG	154	319	0,02%	0,04%
Others	118	314	0,02%	0,04%
Total	714.775	761.301	100%	100%

Focus on the structure of exports for the main exporters (2015):

Poland:

- Prepared/preserved herrings in airtight containers: 50% of value and 53% of volume;
- "Other" prepared/preserved herrings: 40% of value and 31% of volume;
- Frozen whole: 3% of value and 10% of volume.

The Netherlands:

• Frozen whole: 86% of value and 94% of volume.

Denmark:

- "Other" prepared/preserved herrings: 35% of value and 20% of volume;
- Fresh whole: 32% of value and 59% of volume;
- Frozen whole: 11% of value and 8% of volume.

Germany:

- Herrings prepared/preserved in airtight containers: 49% of value and 22% of volume;
- Frozen whole: 17% of value and 47% of volume;
- "Other" prepared/preserved herrings: 17% of value and 12% of volume.

Sweden:

- Fresh whole: 25% of value and 60% of volume;
- Prepared/preserved in airtight containers: 21% of value and 6% of volume;
- Frozen whole: 17% of value and 15% of volume;
- Frozen meat: 12% of value and 7% of volume.

Poland and Germany are the two largest EU exporters of prepared/preserved herrings in airtight containers, accounting for 74% of the value and 78% of the volume exported by EU Member States in 2015 (respectively EUR 77 million and EUR 49 million). The following Member States are Lithuania (EUR 17 million) and Sweden (EUR 12 million). These two Member States account for 17% of the value of EU exports in 2015.

Table 8 - EU exports of herrings prepared/preserved in airtight containers by Member State in 2015

	Volume (tonnes)	Value (1.000 EUR)	% volume	% value
PL	33.161	76.977	51,67%	44,99%
DE	16.865	49.488	26,28%	28,92%
LT	5.238	17.377	8,16%	10,16%
SE	3.962	11.555	6,17%	6,75%
DK	1.025	4.414	1,60%	2,58%
LV	1.690	4.101	2,63%	2,40%
IE	303	1.954	0,47%	1,14%
EE	1.055	1.222	1,64%	0,71%
CZ	226	810	0,35%	0,47%
NL	144	742	0,22%	0,43%
BE	169	627	0,26%	0,37%
GB	67	431	0,10%	0,25%
IT	43	329	0,07%	0,19%
AT	81	321	0,13%	0,19%
ES	12	152	0,02%	0,09%
BG	37	126	0,06%	0,07%
FI	17	112	0,03%	0,07%
Other	80	356	0,12%	0,21%
Total	64.174	171.094	100%	100%

2.3 Market segmentation

2.3.1. Segmentation by brand

Each of the three companies involved in the production of herring in glass jars developed its own brand. In addition, each large retailer has products under private labels. These products are produced by the same three companies.

2.3.2. Segmentation by recipe

The main segmentation of herring preserved in glass jars is based on the recipe, there are dozens of types of products on the Swedish market.

The differences may be based on:

- the preparation of the herring:
 - o spiced;
 - o marinated;
 - o salted;
- the sauce:
 - clear sauce (for instance with onions);
 - creamy sauce (for instance with mustard);
- the ingredients added: onions, carrots...

The marinade is made of vinegar, salt and sugar. Herring preserved in glass jars is popular in several Member States: Sweden, Germany, the Netherlands (maatje). The recipes are different among these Member States, if we compare Swedish and German products for instance, there is more sugar in products sold on the Swedish market and more vinegar in products destined for the German market.

This leads to products with different organoleptic profiles, the herring in Sweden being sweeter than the one in Germany.

2.3.1. Segmentation by packaging

The segmentation of marinated herring bites is based on the type of packaging. The present case study focuses on the preservation in glass jars, which remains the most common type of product in the retail sector (especially in 250 g jars), however other types of packages may be sold most popularly metal cans and plastic packaging.

Furthermore, products for foodservice are packed in plastic containers of 1 to 15 kg.

2.3.2. Segmentation by size of the bites

The market of herrings preserved in glass jars is also segmented by size of herring bites. For instance:

- on the Swedish market, the size ranges between 24 and 30 mm, with bites for clear sauce larger than for creamy sauce;
- on the Finnish market, the size is 24 mm;
- on the Danish market, the size ranges between 36 and 45 mm.

In Sweden, there is also a niche market for whole fillets rolled by hand in glass jars. This kind of products is also present on German and Danish markets.

2.3.3. Segmentation by certification

Ecolabelling is growing on the Swedish market, particularly since the beginning of the 2010s. Based on interviews, this is mainly due to environmental non-governmental organisations who led awareness campaigns in Sweden. At present MSC is a prerequisite in negotiations with large retailers.

The Norway spring spawning herring has been MSC-certified since 2009 and the Skagerrak/Kattegat herring fishery is currently under assessment.

According to interviews conducted, there is a 10% price premium at first sale for the herring under MSC compared to non-MSC fish.

2.4 The Swedish market

2.2.3. Supply balance

The annual production of bites of herring preserved in airtight containers (including glass jars, which are the most common container with metal cans and plastic containers) in Sweden is estimated at 17.000 tonnes. This weight includes the weight of brine and cream, which account for an average of 50% of the final product (between 40 and 60%). Thus, the final net volume of fish is estimated at 8.500 tonnes. For barrelled herrings, the weight indicated includes the brine weight, fish accounting for 60 to 70% of the gross weight.

This production is mainly sold on the Swedish market (77% of total supply).

Figure 5 - Swedish supply balance of herring barrelled and bites of herring preserved in airtight containers (2015)

Herring barrelled

(Gross weight, including brine)

Imports:

6.723 tonnes

Production:

9.300 tonnes*

Supply (imports + production):

16.023 tonnes

National market:

12.866 tonnes

Exports:

3.157 tonnes

Bites of herring preserved in airtight containers

(Gross weight, including brine in glass jars/other containers)

Imports:

479 tonnes

Production:

17.000 tonnes*

Supply (imports + production):

17.479 tonnes

National market:

13.517 tonnes

Exports:

3.962 tonnes

Source: EUMOFA, interviews and estimates*

As already mentioned the herring processing industry is highly concentrated:

- only two companies are involved in the production of barrelled herring at industrial scale,
- only three companies are involved in the production of herring in glass jars at industrial scale.

In this context, some companies are reluctant in providing economic information and some data are covered by the confidentiality rules². This concentration of the industry is also the reason of unavailability of data in PRODCOM for the code 10.20.25.20³.

2.2.4. Imports

General figures

Imports of herring and herring products in Sweden reach 27.000 tonnes and EUR 37 million in 2015:

- Prepared / preserved other: 6.723 tonnes and EUR 13,0 million in 2015 (25% of volume and 35% of value imported). This covers the barrels of marinated / spiced / salted bites of herring, which constitute the base for the industry of herrings in glass jars. The price of imported products peaked in 2012 (2,79 EUR/kg) and has decreased since then to reach 1,93 EUR/kg in 2016 (-31%).
- Frozen meat: 5.072 tonnes and EUR 7,2 million (19% of both volume and value of import)
- Frozen fillets: 3.518 tonnes and EUR 6,2 million (13% of volume and 17% of value imported)
- Frozen whole: 3.810 tonnes and EUR 5,4 million (14% of volume and 15% of value imported).
- **Prepared / preserved in airtight containers:** 479 tonnes and EUR 2,2 million (2% of volume and 6% of value imported). The import volume of herrings in glass jars remains limited in Sweden; however, due to its high price (compared to other herring products with low level of processing), it accounts for a significant share of the import value.
- Fresh whole: 6.718 tonnes and EUR 2,1 million (25% of volume and 6% of value imported).

data composed of the information from less than three companies,

• one company accounts for more than 85% of the data.

² Confidentiality rules for a data:

³ Prepared or preserved herrings, whole or in pieces (excluding minced products and prepared meals and dishes)

Barrelled herrings (category "prepared/preserved – other") imported in Sweden mainly come from Norway, whose share has been growing since 2003 and reached 99,5% of the volume in 2015 (see figure below). This is due to the level of herring landings and size of herring processing industry in Norway. A share of the supply of each company involved in the production of herrings in glass jars originates in Norway.

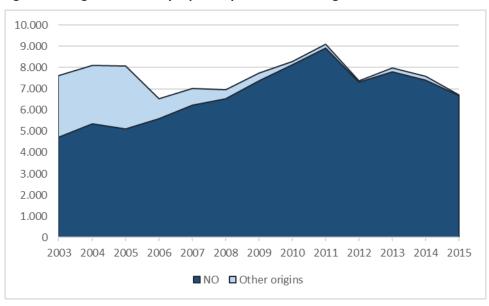


Figure 6 - Origin of "other" prepared/preserved herring between 2003 and 2015

Table 9 – Imports of herrings and herring products in Sweden between 2012 and 2015

	Volume (tonnes)			% vol.	Value (1.000 EUR)			% val.		Price (E	UR/kg)			
	2012	2013	2014	2015	2015	2012	2013	2014	2015	2015	2012	2013	2014	2015
Fresh whole	3.037	5.737	5.900	6.718	24,9%	2.546	2.878	2.283	2.073	5,6%	0,84	0,50	0,39	0,31
Frozen whole	2.508	3.514	2.613	3.810	14,1%	3.038	5.093	2.957	5.371	14,5%	1,21	1,45	1,13	1,41
Fresh fillet	1.296	1.428	256	553	2,1%	2.594	2.200	429	904	2,4%	2,00	1,54	1,68	1,64
Frozen fillet	1.302	1.677	2.131	3.518	13,1%	2.918	3.363	3.648	6.117	16,5%	2,24	2,00	1,71	1,74
Frozen meat	2.596	2.931	4.423	5.072	18,8%	4.961	4.867	5.981	7.192	19,4%	1,91	1,66	1,35	1,42
Smoked	17	13	4	0	0,0%	89	53	19	0	0,0%	5,29	4,23	5,30	1
Dried	0	0	0	0	0,0%	0	0	0	0	0,0%	/	/	/	1
Salted	213	137	53	39	0,1%	507	408	97	87	0,2%	2,38	2,97	1,86	2,23
Prepared / preserved coated	24	5	12	27	0,1%	111	33	24	55	0,1%	4,62	6,03	2,01	2,01
Prepared / preserved in airtight container	1.946	496	328	479	1,8%	6.713	2.221	1.242	2.227	6,0%	3,45	4,48	3,78	4,65
Prepared / preserved - other	7.380	7.983	7.605	6.723	25,0%	20.594	20.940	15.396	12.995	35,1%	2,79	2,62	2,02	1,93
Total	20.319	23.921	23.324	26.939	100%	44.071	42.056	32.075	37.022	100%	2,17	1,76	1,38	1,37

Fish quality depends on origin and season

Herring processing in Sweden relies on the supply of raw materials from several origins. The herring from the Norwegian spring spawning (NVG) has a size larger than herrings from other origins (more than 250 mm for NVG and 80 to 150 mm for Skagerrak-Kattegat).

Herring size is important for processing and marketing. Larger herrings allow for large fillets for foodservice and retail (including for glass jars). Furthermore, the fat content of large herrings is higher, which is positive for the taste of the fish but reduces the shelf life. For NVG, the fat rate decreases during the fishing period:

August: 25% fat;October: 20% fat;January: 14% fat;April: 6-7% fat.

Furthermore, the filleting yield is 2 points higher in autumn compared to spring. This yield is also 2 points higher for the large herring compared to the small one.

According to interviews, the fat rate of most of the herrings purchased is about 15%.

Specific agreements for herring imports in the EU

Specific rules for imports of herring are stated in the autonomous tariff quotas (ATQ) Regulation and the additional protocol to the agreement between the European Economic Community and the Kingdom of Norway.

 Autonomous tariff quotas (ATQ) Regulation (Council Regulation (EU) No 2015/2265 of 7 December 2015)

The objective of this Regulation is for the EU processing industry to have access to affordable raw material in order to process it in the EU. Hence, duties are reduced or suspended. The regulation covers the 2016-2018 period.

Two quotas (different presentation) are foreseen for herring. Norway is the only supplier under this framework; Sweden and Denmark are the main users.

 Additional protocol to the agreement between the European Economic Community and the Kingdom of Norway

This additional protocol covers the 2014-2021 period and has been published in the Official Journal of the EU on the 28th of May 2016. Four types of products imported from Norway are covered by this protocol.

ATQ Regulation stated that ATQ volumes would automatically decrease in case of entry into force or provisional application of this additional protocol.

The following table details the ATQs for herring and the volumes covered by the additional protocol to the agreement between the European Economic Community and the Kingdom of Norway. Further details are provided in the annexes.

Table 10 - ATQ and agreement between the European Economic Community and the Kingdom of Norway for herring imports

Products	ATQ reg (Council Regulation	Additional protocol to the agreement between the European Economic Community and the Kingdom of Norway		
	Annual amount of quota (t)	Annual amount of quota after reduction (t)	Annual tariff quota volume in net weight unless otherwise specified (t)	
Flaps (0% quota duty)	17.500	12.000	/	
Barrelled herring (5% quota duty)	15.000	7.500	/	
Whole frozen (0% duty)	/	/	26.500	
Frozen fillet and flaps (0% duty)	/	1	55.600	
Fresh fillet and flaps (0% duty)	/	/	9.000	
Herring in glass jars + barreled herring (0% duty)	/	/	11.400 (net drained weight)	

Sources: Council Regulation (EU) No 2015/2265 and additional protocol to the agreement between the European Economic Community and the Kingdom of Norway

2.2.5. Exports

Exports of herring and herring products by Sweden approached 68.000 tonnes and EUR 56 million in 2015.

Fresh whole herring is the main product, followed by prepared/preserved herrings in airtight containers and frozen whole herring. These three products account for 82% of the volume and 63% of the value exported for herrings and herring products in 2015:

- Fresh whole herrings: EUR 14,0 million and 40.878 tonnes (25% of value and 60% of volume);
- **Prepared/preserved herrings in airtight containers:** EUR 11,6 million and 3.962 tonnes (8% of value and 6% of volume).
- Frozen whole herrings: EUR 9,3 million and 10.413 tonnes (17% of value and 15% of volume).

Table 11 – Swedish exports of herrings and herring products between 2012 and 2015

		Volume	(tonnes)		% vol.		Value (1.0	000 EUR)		% val.	Price (EUR/kg)			
	2012	2013	2014	2015	2015	2012	2013	2014	2015	2015	2012	2013	2014	2015
Fresh whole	32.938	38.740	34.963	40.878	60,3%	20.630	17.402	13.069	14.021	25,1%	0,63	0,45	0,37	0,34
Frozen whole	21.250	13.756	10.299	10.413	15,4%	11.298	12.140	7.402	9.318	16,7%	0,53	0,88	0,72	0,89
Fresh fillet	1.338	1.739	916	647	1,0%	2.520	2.370	1.020	988	1,8%	1,88	1,36	1,11	1,53
Frozen fillet	1.559	1.518	1.908	3.718	5,5%	3.362	2.995	3.369	6.426	11,5%	2,16	1,97	1,77	1,73
Frozen meat	2.521	2.678	4.269	4.887	7,2%	4.775	4.411	5.691	6.883	12,3%	1,89	1,65	1,33	1,41
Smoked	12	5	5	2	0,0%	78	33	28	13	0,0%	6,59	6,38	5,23	6,59
Dried	0	0	0	0	0,0%	0	0	0	0	0,0%	/	/	/	1
Salted	105	54	15	30	0,0%	161	104	30	52	0,1%	1,54	1,94	1,93	1,78
Prepared / preserved coated	70	514	110	76	0,1%	278	1.755	490	299	0,5%	3,96	3,41	4,46	3,94
Prepared / preserved in airtight container	4.587	4.227	4.845	3.962	5,8%	15.884	14.325	14.283	11.555	20,7%	3,46	3,39	2,95	2,92
Prepared / preserved - other	2.729	3.443	2.973	3.157	4,7%	6.163	6.436	5.992	6.212	11,1%	2,26	1,87	2,02	1,97
Total	67.109	66.674	60.303	67.771	100%	65.150	61.973	51.373	55.768	100%	0,97	0,93	0,85	0,82

Focus on exports of prepared/preserved herrings in airtight containers

This category covers herrings preserved in glass jars.

Export value has fluctuated around EUR 14 million during the period 2003-2014, reaching its lowest point in 2008 (EUR 12,2 million) and peaking in 2011 (EUR 15,9 million). A decrease has been recorded from 2012, particularly significant in 2015 (-18%). The total decrease between 2003 and 2015 is -20%.

A similar trend is observed for export volumes, which dropped by 25% between 2003 and 2015, with a strong decrease in 2015 (-18%).

Prices remained relatively stable over the period 2003-2010 (between 2,51 EUR/kg and 2,86 EUR/kg), then they experienced a sharp increase to peak at 3,46 EUR/kg in 2012. From then on they decreased by 16% to reach 2,92 EUR/kg in 2015. Along the period 2003-2015 the average price increased by 7% (+0,19 EUR/kg).

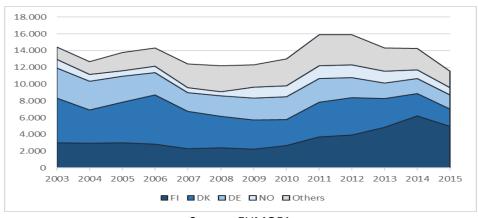
Figure 7 - Index evolution of Swedish exports of prepared/preserved herrings in airtight containers (base 100=2003)



Source: EUMOFA

The main markets for Swedish exports are in the Northern EU. The share of the two main destinations, Finland and Denmark, ranges between 44% and 62% of the value of total Swedish exports (43% for Finland and 18% for Denmark in 2015). The following destinations are Germany (14% of export value in 2015) and Norway (8%).

Figure 8 - Swedish export value of prepared / preserved herring in airtight containers by destination between 2003 and 2015 (1.000 EUR)



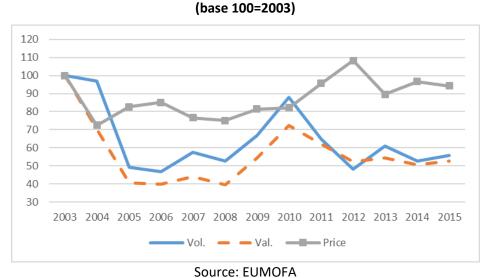
Focus on the exports of "other" prepared/preserved herrings

This category covers barrelled herrings.

Exports largely decreased between 2003 and 2015: -44% in volume and -47% in value. This decrease has not been steady, we can observe an increasing trend between 2008 and 2010.

Over the same period, the price has slightly decreased (-6%), from 2,09 EUR/kg in 2003 compared to 1,97 EUR/kg in 2015. If we limit the observation period to 2004-2015, the trend is increasing.

Figure 9 - Index evolution of Swedish exports of "other" prepared/preserved herrings

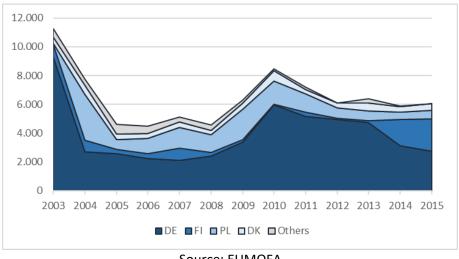


The main destination of Swedish exports is Germany, which accounts for up to 81% of export value (2012). The drop of Swedish exports between 2003 and 2007 is largely due to a decrease on this market (EUR 7.1).

The drop of Swedish exports between 2003 and 2007 is largely due to a decrease on this market (EUR 7,1 million less exported to Germany during this period). The second largest export market is Finland with EUR 2,2 million in 2015.

Germany, Finland, Poland and Denmark account for 97% of total export value.

Figure 10 - Swedish export value of of "other" prepared/preserved herrings by destination between 2003 and 2015 (1.000 EUR)



3 PRICES ALONG THE SUPPLY CHAIN

3.1 Prices at first sale

The landing price for whole herring is 0,44 EUR/kg in March 2016 in Sweden. The average price has tended to decrease since 2012, in line with increasing fishing quotas. The price was above 0,60 EUR/kg almost each week in 2012 (except during 7 weeks,) while it was under 0,50 EUR/kg almost all weeks in 2015 (only 8 weeks with price above 0,50 EUR/kg in 2015).

We can observe a peak in the price each year in May and June, when prices may exceed 1,00 EUR/kg. This is due to the lower availability of herring in some areas, because of spawning.

Figure 11 – Weekly landing price (EUR/kg) for whole Atlantic Herring in Sweden between 2012 and 2016 (three-weeks average)

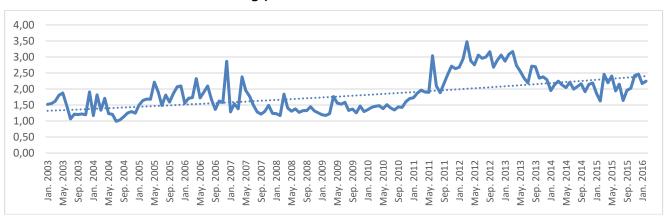


Source: EUMOFA

3.2 Import prices

The price of imported barrelled herrings increased between 2003 (average: 1,51 EUR/kg) and 2016 (average: 1,93 EUR/kg). It peaked at 3,48 EUR/kg in March 2012 (average in 2012: 2,79 EUR/kg). The lowest point was 0,99 EUR/kg in July 2004.

Figure 12 – Monthly price (EUR/kg) for "other" herring prepared/preserved herrings (= barrelled herrings) between 2003 and 2016



3.3 Retail prices

Based on a store check at a large scale retailer in Sweden (Coop supermarket, October 2016), the retail price for herring preserved in glass jars ranges between 5,44 EUR/kg and 9,16 EUR/kg. We can identify three market segments as detailed below:

- <u>Segment 1:</u> 210-240 gr / consumer sales unit, under national brand: 8,01-9,16 EUR/kg
- Segment 2: 250 gr / consumer sales unit under retailer brand: 7,07 EUR/kg
- <u>Segment 3:</u> 500-550 gr / consumer sales unit under national brand or retailer brand: 5,44-6,75 EUR/kg

The following table provides details on the price of the different products.

Table 12 - Retail price (October 2016)

Brand	Product	Weight (gr)	Price EUR/unit	Price EUR/kg
National brand	Sill Ramslök/Citron	210	1,92	9,16
National brand	Skärgårds-Sill	220	1,92	8,74
National brand	Sill Senap	230	1,92	8,36
National brand	Inlagd sill	240	1,92	8,01
National brand	Fransk Löksill	240	1,92	8,01
Retailer brand	Inlagd sill	250	1,77	7,07
Retailer brand	Löksill	250	1,77	7,07
Retailer brand	Dillsill	250	1,77	7,07
Retailer brand	Senaps-Sill	250	1,77	7,07
Retailer brand	Skärgards-Sill	250	1,77	7,07
National brand	Inlagd Sill Stor	500	3,37	6,75
National brand	Löksill Stor	500	3,37	6,75
Retailer brand	Inlagd Sill Stor	550	2,99	5,44

Conversion rate: 0,103905 SEK = 1 EURO

Source: survey by EUMOFA

4 PRICE TRANSMISSION IN THE SUPPLY CHAIN

The price transmission analysis is carried out for the herring preserved in glass jars sold on the Swedish market (large-scale retailer).

It focuses on the example of herring with onion (clear sauce) in 250 g jars.

Table 13 - Costs and margins in the supply chain for the herring preserved in glass jars in the largescale retail in Sweden (January 2016)

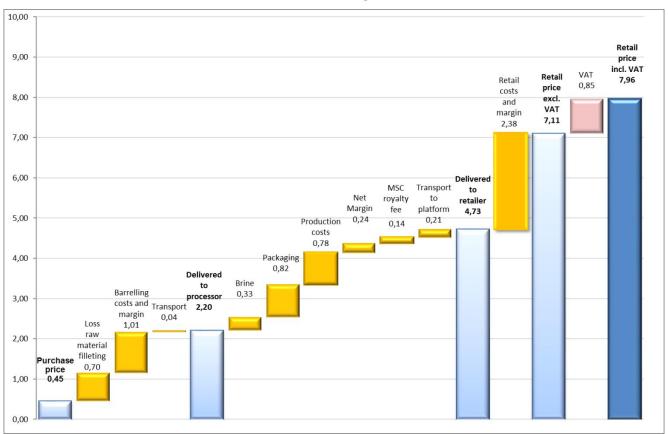
Costs and margins	
0,45 EUR/kg (landing price in January 2016 in Sweden, source: EUMOFA)	
Yield: 39% Yield: between 36% (fillet for small herring) and 50% (flap	Barrelling company
1,01 EUR/kg	
0,04 EUR/kg	
0,22-0,45 EUR/kg	
0,75-0,89 EUR/kg	
0,42-1,07 EUR/kg	Processor (producer of herrings in glass jars)
5%-8%	
0,5%	
0,72 EUR/kg	
2,38 EUR/kg	
12%	Retailer
7,96 EUR/kg	
	0,45 EUR/kg (landing price in January 2016 in Sweden, source: EUMOFA) Yield: 39% Yield: between 36% (fillet for small herring) and 50% (flap for large herring) 1,01 EUR/kg 0,04 EUR/kg 0,75-0,89 EUR/kg 0,75-0,89 EUR/kg 0,42-1,07 EUR/kg 5%-8% 0,5% 0,72 EUR/kg 2,38 EUR/kg

Exchange rate: 1 Swedish Krona = 0,1071197 EUR

The following figure illustrates the price transmission in the supply chain for herrings preserved in glass jars on the Swedish retail market. This figure has been drawn up from interviews with stakeholders led in January 2016.

Based on this analysis, the price of barrelled herring delivered to processor is 2,20 EUR/kg. According to EUMOFA statistics, the import price of prepared and preserved herring in Sweden (which includes barrelled herring) was 2,17 EUR/kg in January 2016 (ranging between 1,43 and 2,79 EUR/kg between 2010 and 2015).

Figure 13 - Price transmission for herring in glass jars (with MSC certification) on the Swedish market in 2016 (in EUR/kg)



Source: EUMOFA survey

4.1 ANNEXES

4.2 Sources used

- Council Regulation (EU) No 2015/2265
- EUMOFA
- EUROSTAT, COMEXT
- FAO
- ICES
- MSC

4.3 Interviews

- Klädesholmen
- MARENOR
- MP Produkter
- Orkla Foods
- Paul Mattsson AB
- Swedish Pelagic Federation PO

4.4 Details on ATQ and agreement between the European Economic Community and the Kingdom of Norway

Table 14 - ATQs for herring for the 2016-2018 period

Quota reference	Product	Description	Annual amount of quota (t)	Quota duty	Possible reduction (tonnes) ¹	Annual quota after reduction
Quota 09.2788	Herring flaps	Herrings (Clupea harengus, Clupea pallasii) of a weight exceeding 100 g per piece or flaps of a weight exceeding 80 g per piece, excluding livers and roes, for processing	17.500	0%	5.500	12.000
Quota 09.2792	Barrelled herring	Herrings, spiced and/or vinegar cured, in brine, preserved in barrels of at least 70 kg net drained weight, for processing	15.000	5%	7.500	7.500

^{1:} Automatically reduction starting two months after the additional protocol to the agreement between the European Economic Community and the Kingdom of Norway that was negotiated in parallel to the EEA Financial Mechanism 2014-2021 enters into force or is applied provisionally, whichever occurs first.

Source: Council Regulation (EU) No 2015/2265

Table 15 - Additional protocol to the Agreement between the European Economic Community and the Kingdom of Norway

Product	Description	Annual tariff quota volume in net weight unless otherwise specified (t)
Whole frozen	Herrings of the species <i>Clupea harengus</i> and <i>Clupea pallasii</i> , frozen, excluding livers and roes	26.500
Frozen fillet and flaps	Frozen fillets of herring of the species <i>Clupea harengus</i> and <i>Clupea pallasii</i> Frozen flaps of herring of the species <i>Clupea harengus</i> and <i>Clupea pallasii</i> (butterflies)	55.600
Fresh fillet and flaps	Fresh fillets of herring of the species <i>Clupea harengus</i> and <i>Clupea pallasii</i> Fresh flaps of herring of the species <i>Clupea harengus</i> and <i>Clupea pallasii</i> (butterflies)	9.000
Herring in glass jars + barreled herring	Herring, spiced and/or vinegar-cured, in brine	11.400 (net drained weight)

Source: Additional protocol to the Agreement between the European Economic Community and the Kingdom of Norway - Official Journal of the European Union - 28 May 2016

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