



CASE STUDY

TURBOT IN THE EU



PRICE STRUCTURE IN THE SUPPLY CHAIN FOR TURBOT

FOCUS ON SPAIN, FRANCE AND THE
NETHERLANDS

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Summary

Context

- In 2015, farmed turbot production reached more than 65.000 tonnes globally; EU production accounted for 16% of world production. According to FAO statistics, the largest producer countries in 2015 were China (55.000 tonnes) and the EU (10.000 tonnes).
- The world production of farmed turbot reached a peak between 2011 and 2013 (around 77.000 tonnes in 2012-2013) and the current trend since then has been a slight decrease.
- Turbot is mostly caught in the North Sea and the English Channel by EU fleets using bottom trawls and gill-nets. In 2015, world catches of turbot reached almost 6 000 tonnes, of which the EU accounted for 85%. EU turbot landings reached about 5.000 tonnes in 2015. The main MS was the Netherlands with more than 2.000 tonnes of turbot landed in 2015, accounting for 41% of total EU landings.
- The production of farmed turbot reached 10.173 tonnes in 2015. Most of this production was in Spain (73%) and Portugal (23%). Other producing MSs were France and the Netherlands.
- EU production reached a peak in 2012 with more than 11.000 tonnes produced, due to higher production in Spain and Portugal. Over the past decade, French production experienced a strong decreasing trend (–65%) whereas Dutch production has stayed relatively stable.

Balance supply

- Overall there is approximately 15.000 tonnes of turbot consumed in the EU, mainly fresh. Consumption is concentrated in Spain, France and Italy, which represent about ¾ of the EU apparent market. This market remains a niche market with consumption per capita reaching only 0,137 kg/capita in Spain, by far the main market, and 0,030 kg/capita on average in the EU.
- Trade for turbot is mainly intra-EU, reaching 11.522 t in 2015 (compared to 15.196 tonnes produced). Extra-EU trade is limited: 434 tonnes of product exported in 2015 (mainly fresh) and 201 tonnes imported (only fresh).
- Main intra-EU flows are related to the export of farmed turbot from Spain and Portugal and wild caught turbot from the Netherlands.
- There are specific market features in each MS covered by the analysis. While turbot is mainly sold through large-scale retailers and fishmongers in Spain, turbot is mainly consumed out-of-home in France and the Netherlands. In Spain, consumption mainly relies on farmed turbot (due to the large national production), while consumption in France and the Netherlands rely to a larger extent on wild catch fishery.

Price structure

A set of five price transmission analyses have been performed on a representative product and market in the MS considered: it covers the sales to HORECA in France and the Netherlands and large-scale retailers in Spain.

The main conclusions from this analysis are:

- There are several significant differences in the fresh whole turbot main supply chain in the three MS covered here, so there are differences of scope between the analyses (production method, sales channels, fish weight ranges, labels). As a consequence, the comparison of price structure must be considered with caution.
- For the **HORECA market**, costs from first sale to the distribution platform are higher for fishery products. This is due to the presence of an additional intermediary in the supply chain for fishery products (several wholesalers or wholesale market) compared to the supply chain for farmed products.

- For the analysis of the **Spanish supply chain**, the costs for the “platform stage” are particularly low. This stage covers only one stakeholder, compared to two intermediaries for wild fish products to HORECA.
- Observed differences in price at first sale stage are more significant in relation to fish size or a specific quality scheme rather than to the production method (wild-caught/farmed). Furthermore, prices for farmed products are more stable over the year than prices for wild caught products (which experience significant seasonality).

0 TASK REMINDER – Scope and content

0.1 Case study scope

Reminder

The rationale for choosing fresh turbot to analyse price transmission and distribution of value in some EU supply chains is described in the following table.

Products	Origin	Characteristics	Market and price drivers
Fresh turbot (whole)	Aquaculture and catches (EU)	<p>Fresh product, example of farmed species recently developed</p> <p>EU is by far the main producer of farmed turbot worldwide (excluding China but it is a different species)</p> <p>Both farmed and wild turbot are produced and consumed in the EU but markets are different in terms of location (Member State) and outlets</p> <p>High level of concentration of the farmed production</p>	<p>Supply/demand balance (stability of the market)</p> <p>Volumes of wild turbot landed</p> <p>Size of the fish</p> <p>Price of other products</p> <p>Differentiation strategies (e.g. French “Label Rouge”)</p>

Key elements of the analyses will concern:

Species -Products	Main Member States (focus)
Fresh turbot (whole) farmed and wild	Spain, France and the Netherlands

In the context of this study, analyses are in **current prices**.

0.2 Content of the document

The document includes:

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

1 DESCRIPTION OF THE PRODUCT

1.1 Biological and commercial characteristics

Case study product

Name: turbot (*Psetta maxima*)

FAO 3-alpha code: TUR

Presentation: Fresh whole or in fillets, small quantities of frozen fillets for export

Commercial size: mostly 1.5 – 2 kg but increasing share of 0,8 kg fish (portion size).

Related codes in the combined nomenclature:

Turbot is distinguished in the Combined Nomenclature¹ from 2012 onwards for both fresh and frozen:

CN code: 03 02 24 00: "Fresh or chilled turbot "*Psetta maxima*"

CN code: 03 03 34 00: "Frozen turbot "*Psetta maxima*".

¹ CN is a tool for designating goods and merchandise which was established to meet simultaneously the requirements both of the Common Customs Tariff and of the external trade statistics of the EU. The basic regulation is Council Regulation (EEC) n°2658/87; an updated version of the Annex I is published every year as a Commission regulation (latest version: Commission Implementing Regulation (EU) n°2016/1821).

Biological parameters

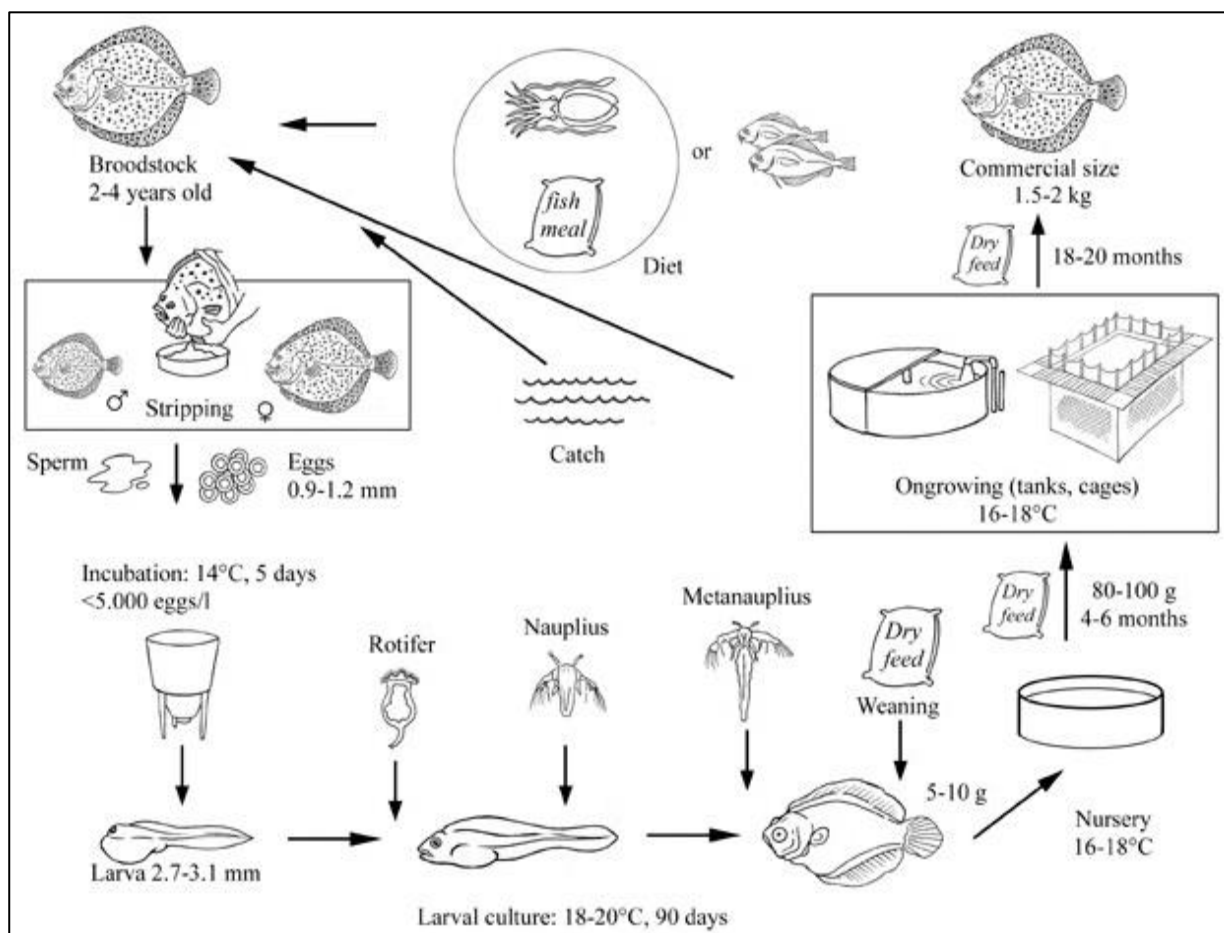
Parameter	Characteristics
Temperature	14-18°C
Habitat	Sandy and muddy bottoms, from shallow waters to 100 m.
Diseases in farming	Amoebic Gill Disease (AGD), Trichodiniasis, Scuticociliatosis, Microsporidiosis, Myxosporidiosis, Flexibacteriosis, Furunculosis, Streptococcosis, Vibriosis.
Maturation	28 months for the 1,5-2 kg commercial size
Diet in the wild	Carnivorous, juveniles feeding on molluscs and crustaceans, and adults mainly on fish and cephalopods.
Diet in farming	In hatchery, feeding is based on rotifers and small crustaceans (e.g. artemia). Phytoplankton is added to the culture medium. In nursery, juveniles are fed with dry pelleted feed. For the on-growing stage, feeding consists of extruded pellets.
Juvenile phase	4-6 months
Grow-out	18-20 months
Distribution in the wild	Northeast Atlantic, throughout the Mediterranean and along the European coasts to Arctic Circle; also found in most of the Baltic Sea. Subspecies <i>Psetta maxima maeotica</i> in the Black Sea.
Farming	China, Spain, Portugal, France, the Netherlands, Chile, Iceland, Romania, Croatia
Farming system	Onshore tanks (most common) and flat-bottomed cages

Source: FAO

1.2 Production cycle

Turbot is a gonochoric species with separate sexes. Female individuals grow faster than males, reach maturity after three years and are able then to lay eggs spontaneously in captivity. The duration of the production cycle to reach the 1,5 kg commercial size is minimum 2 years. See the production cycle details below.

Figure 1: Farmed turbot production cycle



Source: FAO

1.3 World production of Turbot

1.3.1 Evolution of aquaculture production

Aquaculture of turbot first started in Scotland in the 1970s. It was subsequently introduced to France and Spain, but from the early 1980s the largest expansion in production volume and number of farms took place in Galicia (Spain). Techno-biological improvements in the early 1990s triggered a steady but slow growth in production across numerous European countries (the Netherlands, Germany, Portugal, Romania, Croatia, etc.). Turbot has then also been introduced in other regions (notably Chile in the late 1980s) and, more recently, China.

In 2015, farmed turbot production reached more than 65.000 tonnes in the world; EU production accounted for 16% of the world production. According to FAO statistics, the main producing countries in 2015 were China (55.000 tonnes) and the EU (10.000 tonnes). A marginal small and decreasing production has also been recorded in Chile and Iceland but assumed not to be active anymore in both countries. The world production has reached a peak between 2011 and 2013 and the current trend since then has been a slight decrease.

Table 1: World production of farmed turbot (in tonnes) 2006-2015

Years	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
China	40.000	50.000	55.000	60.000	60.000	64.000	64.000	67.000	60.000	55.000
EU 28	6.808	8.115	9.127	9.088	9.856	11.089	12.676	9.795	11.755	10.173
Chile	277	335	282	319	292	252	442	107	2	3
Iceland	-	70	51	68	46	20	28	58	-	-
Totals	47.085	58.520	64.460	69.475	70.194	75.361	77.146	76.960	71.757	65.176

Source: FAO

1.3.2 Evolution of catches

Turbot is mostly caught in the North Sea and the Channel by EU fleets using bottom trawls and gill-nets. In 2015, the EU accounted for 85% of the world catch of turbot. Other important countries are Turkey (fishing turbot in the Black Sea), Morocco and Ukraine. Global catches of turbot reached 5.881 tonnes in 2015. During the past decade, turbot catches reached a peak in 2007 (almost 8.000 tonnes). Since then catches have been relatively stable, around 6.000 tonnes.

Table 2: World catches of turbot (in tonnes) 2006-2015

Years	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
EU 28	5.614	6.733	5.734	5.922	5.735	5.676	5.850	5.994	5.826	5.415
Turkey	807	769	528	383	295	166	203	209	198	239
Morocco	76	61	63	58	59	50	52	57	76	102
Ukraine	245	279	261	272	215	240	242	194	102	89
Other	66	101	75	68	52	58	97	79	62	36
Totals	6.808	7.943	6.661	6.703	6.356	6.190	6.444	6.533	6.264	5.881

Source: FAO

2 STRUCTURE OF THE EU MARKET

2.1 EU production of Turbot

2.1.1 Evolution of turbot catches by EU fleets

Concerning turbot catches, the main EU MS by far is the Netherlands, with more than 1.700 tonnes caught by the Dutch fleet in 2015, accounting for 33% of total EU catches. Other important MSs are France, the UK (both 15%) and Denmark (12%). Then come Belgium, Germany, Italy and Ireland with catches between 100 and 500 t/year. In other MS, catches of wild Turbot are below 100 t/year (Portugal, Greece, Spain, Bulgaria, Poland, Romania, Sweden, Croatia, Latvia, Lithuania and Slovenia).

Over the past decade, EU turbot catches have stayed relatively stable, with a slightly declining trend (–4%). However, catches stayed approximatively stable in the Netherlands (–4%) and Germany (–2%) but increased in France (+23%), the UK (+24%), Denmark and Belgium (both +22%). On the contrary, Italy experienced a significant decreasing trend (–70%) since 2006, ending at 239 tonnes caught in 2015.

Table 3: EU turbot catches (in tonnes) 2006-2015

Years	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Netherlands	1.839	2.279	1.751	1.704	1.478	1.517	1.741	1.764	1.597	1.761
France	654	668	457	677	768	788	799	782	770	804
United Kingdom	635	754	653	682	729	772	755	749	839	789
Denmark	522	543	700	800	676	740	711	681	643	635
Belgium	373	406	357	384	334	386	417	404	437	454
Germany	288	282	261	283	251	202	232	282	267	283
Ireland	198	194	171	132	160	161	204	173	164	160
Italy	749	1.179	916	794	848	686	601	759	753	183
Other	554	622	639	598	651	585	594	573	520	506
Totals	5.614	6.733	5.734	5.922	5.735	5.676	5.850	5.994	5.826	5.415

Source: FAO

2.1.2 Evolution of turbot landings in EU

The comparison between landings, catch and trade data show that landings from other flag states are significant in the Netherlands, in particular from German vessels².

EU turbot landings reached about 5.000 tonnes in 2015. The main MS was the Netherlands with more than 2.000 tonnes of turbot landed in 2015, accounting for 41% of total EU landings.

² The 2017 Annual Economic Report on the EU Fishing Fleet (STECF 17-12) states that “Flatfish beam trawlers flying the German flag are owned and operated mainly by Dutch fishers. They target mainly sole, plaice, and turbot. All of them are equipped with pulse gear. The catch is landed exclusively in the Netherlands.”

Table 4: EU turbot landings (in tonnes) 2006-2015

Years	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Netherlands	2.140	2.644	2.279	2.261	1.994	1.813	1.817	1.681	1.432	2.072
France	-	517	538	366	401	796	826	736	755	788
Denmark	-	609	695	812	657	723	695	622	608	584
United Kingdom	-	413	399	381	465	509	529	501	541	564
Belgium	309	323	283	315	274	309	322	299	345	363
Italy	-	1.062	825	715	849	686	601	759	753	182
Ireland	-	-	-	-	-	-	16	-	-	169
Other	147	315	300	310	420	393	368	369	287	300
Totals	2.596	5.883	5.319	5.161	5.060	5.229	5.174	4.967	4.721	5.023

Source: Eurostat

2.1.3 Evolution of production of farmed turbot in EU

The production of farmed turbot reached 10.173 tonnes in 2015. Most of this production was produced in Spain (73%) and Portugal (23%). Other producing MS were France and the Netherlands. Romania and Croatia also used to farm turbot but their production stopped recently due to technical issues. In the UK, Germany and Denmark, turbot farming activity stopped a few years ago. From the information gathered, the setback to production in several MS (e.g. Croatia) is to a large extent due to the poor results obtained from the farming of turbot in sea cages (rather than in tanks), whereas a decade ago this production method was considered to be the main development opportunity.

EU production reached a peak in 2012 with more than 11.000 tonnes produced, due to higher production levels in Spain and Portugal. Over the past decade, French production decreased strongly (–65%) whereas Dutch production has stayed relatively stable.

Table 5: Production of farmed turbot in EU (in tonnes) 2006-2015

Years	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Spain	6.419	6.838	7.932	7.188	6.882	7.337	7.758	6.900	7.767	7.464
Portugal	185	167	351	1.276	2.424	3.197	4.406	2.453	3.588	2.302
France	-	850	656	531	394	300	250	255	279	280
Netherlands	75	100	90	90	150	250	260	180	100	100
Croatia	0	0	0	0	0	0	0	0	1	7
Denmark	7	38	18	2	6	5	2	7	4	0
Germany	60	60	60	0	0	0	0	0	0	0
Romania	0	0	0	0	0	0	0	0	16	20
United Kingdom	62	62	20	1	0	0	0	0	0	0
Totals	6.808	8.115	9.127	9.088	9.856	11.089	12.676	9.795	11.755	10.173

Source: Eurostat and FAO.

2.2 Apparent market by Member State

The following table presents the apparent market in the main EU MS and in the EU 28 as a whole.

Overall there is approximately 15.000 tonnes of turbot consumed in the EU, mainly fresh. Consumption is concentrated in Spain, France and Italy, which represent about $\frac{3}{4}$ of the EU apparent market. This market remains a niche market with a consumption per capita reaching only 0,137 kg/capita in Spain, by far the main market, and 0,030 kg/capita on average in the EU.

Farmed turbot represents about $\frac{2}{3}$ of turbot produced and consumed in the EU. Spain and Portugal alone represent 96% of this production. Extra-EU trade is very limited. Extra-EU imports and exports respectively represent 1% and 3% of the apparent market.

Table 6 – Apparent market and consumption per capita per MS in 2015

MS	Aquaculture (t)	Catches (t)	Imports (t lwe)	Exports (t lwe)	Apparent market (t lwe) ³	Consumption per capita (kg)
Spain ⁴	7.464	52	4.361	5.454	6.423	0,137
Italy	0	183	2.471	171	2.483	0,042
France	280	804	1.390	386	2.088	0,032
Germany	0	283	802	307	779	0,010
United Kingdom	0	789	138	229	698	0,011
Netherlands	100	1761	631	1.850	642	0,038
Ireland	0	160	467	44	583	0,127
Belgium	0	454	219	254	418	0,037
Sweden	0	28	196	20	204	0,021
Denmark	0	635	58	615	78	0,014
Croatia	7,1	26	45	31	47	0,011
Portugal ⁵	2.302	62	621	3.300	-315	<0,001l
Other MS	20	178	254	400	51	<0,001l
EU 28 ⁶	10.173	5415	201	445	15.345	0,030

Source: FAO, Eurostat and COMEXT

³ Trade data includes both fresh and frozen turbot (with a conversion factor of 1,1). Trade of frozen turbot is marginal in extra-EU trade but represents nearly 10% of intra-EU trade. See EUMOFA's Methodology for the calculation of supply balance for full explanation.

⁴ Exports declared by Spain are significantly higher than the corresponding imports declared in a few MS (France, Germany, Italy and the Netherlands).

⁵ The negative figure for the Portuguese apparent market implies that either the production is slightly underestimated for this MS or that trade data is wrong.

⁶ The apparent market for the EU is calculated based on extra-EU trade statistics rather than on the sum of MS apparent markets.

2.3 Evolution of Intra-EU trade of fresh turbot

The overall structure of intra-EU trade is fairly stable from 2012 to 2016.

Exports from Spain, Portugal and the Netherlands account for 76% of intra-EU trade of fresh turbot in 2016 and 81% on average over the period. Portuguese production, for a large part owned by Spanish capital, is almost entirely exported to Spain. Spain is therefore by far the main provider of fresh farmed turbot for the EU market.

Table 7: Intra-EU exports by MS 2012-2016

MS	2012	2013	2014	2015	2016
Spain	5.120	3.723	5.243	5.069	4.114
Portugal	4.276	750	2.399	2.783	1.986
Netherlands	1.945	1.868	1.361	1.380	1.140
Denmark	627	634	573	599	782
Germany	269	257	286	301	352
France	501	347	367	344	337
Belgium	123	150	236	254	307
United Kingdom	243	166	241	195	186
Italy	186	121	133	158	132
Ireland	57	41	41	44	52
Others	123	85	65	395	76
EU 28	13.469	8.141	10.945	11.522	9.465

Source: COMEXT

2.4 Extra-EU trade

Trade of turbot is only identified in the Combined Nomenclature from 2012 onward.

Extra-EU exports of turbot (fresh and frozen) are marginal compared to production volumes (2% from 2012 to 2015).

The share of fresh turbot within extra-EU exports fluctuated from 43% in 2012 to 83% in 2016.

Data on extra-EU exports by MS of origin indicate that both wild and farmed turbot are exported. Spain is the first extra-EU exporter but only represents about 1/3 of extra-EU exports. Based on production data, it can be assumed that France exports include both wild and farmed turbot, while Bulgaria and the Netherlands mainly export wild turbot.

Table 8: Extra-EU exports of fresh turbot by MS (in tonnes) 2012-2016

	2012	2013	2014	2015	2016
Spain	72	89	124	134	112
France	22	20	37	37	58
Bulgaria	5	26	61	37	56
Netherlands	3	48	62	70	55
Others	92	73	48	49	46
Total EU 28	194	255	332	328	328

Source: COMEXT

The main countries of destination for fresh turbot are the United States, Switzerland and Turkey, which represent 73% of volumes exported to third countries in 2016 and between 67% and 80% over the period 2012-2016.

Table 9: Extra-EU exports of fresh turbot by country of destination (in tonnes) 2012-2016

	2012	2013	2014	2015	2016
United States	46	60	96	110	101
Switzerland	26	66	80	75	72
Turkey	58	78	91	56	66
Canada	10	4	6	20	28
Montenegro	15	11	16	14	16
Others	39	37	44	53	45
Total	194	255	332	328	328

Source: EXPORT

Turbot is only **imported** fresh from third countries. Extra-EU imports amount to 211 t/year, or 1% of the production, on average between 2012 and 2016. Only a handful of countries import from third countries.

Table 10: : Extra-EU imports of fresh turbot by MS (in tonnes) 2012-2016

MS	2012	2013	2014	2015	2016
Germany	55	25	67	37	75
Spain	22	30	40	60	72
Sweden	93	41	61	76	53
Denmark	9	54	19	26	31
Other	57	25	27	3	0
Total	235	175	214	201	231

Source: COMEXT

Spain imports turbot mainly from Morocco (wild) and Germany, Sweden and Denmark from Norway (farmed)⁷.

Table 11: Extra-EU imports of fresh turbot by country of origin (in tonnes) 2012-2016

	2012	2013	2014	2015	2016
Norway	169	89	173	141	159
Morocco	22	30	40	60	72
Other	45	57	1	0	0
Total	235	175	214	201	231

Source: COMEXT

⁷ The FAO data do not show any production of farmed turbot for Norway, but the FAO factsheet for the National Aquaculture Sector in Norway states that there is at least one large farm producing turbot (with a capacity of 250 tonnes a year) and data collected for EMODNet also shows a few active farms with production of turbot.

3 THE SPANISH MARKET

3.1 Structure of the Spanish market

3.1.1 Structure of the supply chain for turbot

Based on data from MAPAMA on aquaculture facilities⁸, there are 17 farms authorised to grow turbot in Spain in 2016, whether specialised in turbot production or not, and including some research centers. Available data from MAPAMA also indicates that some of those farms may not actually produce turbot even if they have a licence for it.

Turbot is generally farmed in land-based tanks. Only one farm uses a closed recirculation system.

There are two main players in this production: Insuiña SL (Grupo Nueva Pescanova) and Stolt Sea Farm SA.

The main producers export a significant part of their production, mainly to France, Germany and Italy. Imports mainly come from Portugal. However, as the most important farm shut down in the summer 2017, it is expected that both imports and exports will decrease⁹.

In Spain, supermarkets mostly sell farmed turbot¹⁰. Supply is more stable in quality and volumes and the product is considered as offering a better value for money. This is also related to the fact that catches of turbot are very low in this country and that it is not a traditional fish.

Specialised retailers and fishmongers may purchase turbot from fish farmers directly or from wholesalers (*mercás*) while restaurants mainly buy it from wholesalers. It is estimated (based on import data and data from a few wholesale markets) that the proportion of wild turbot in wholesale markets is about 20%.

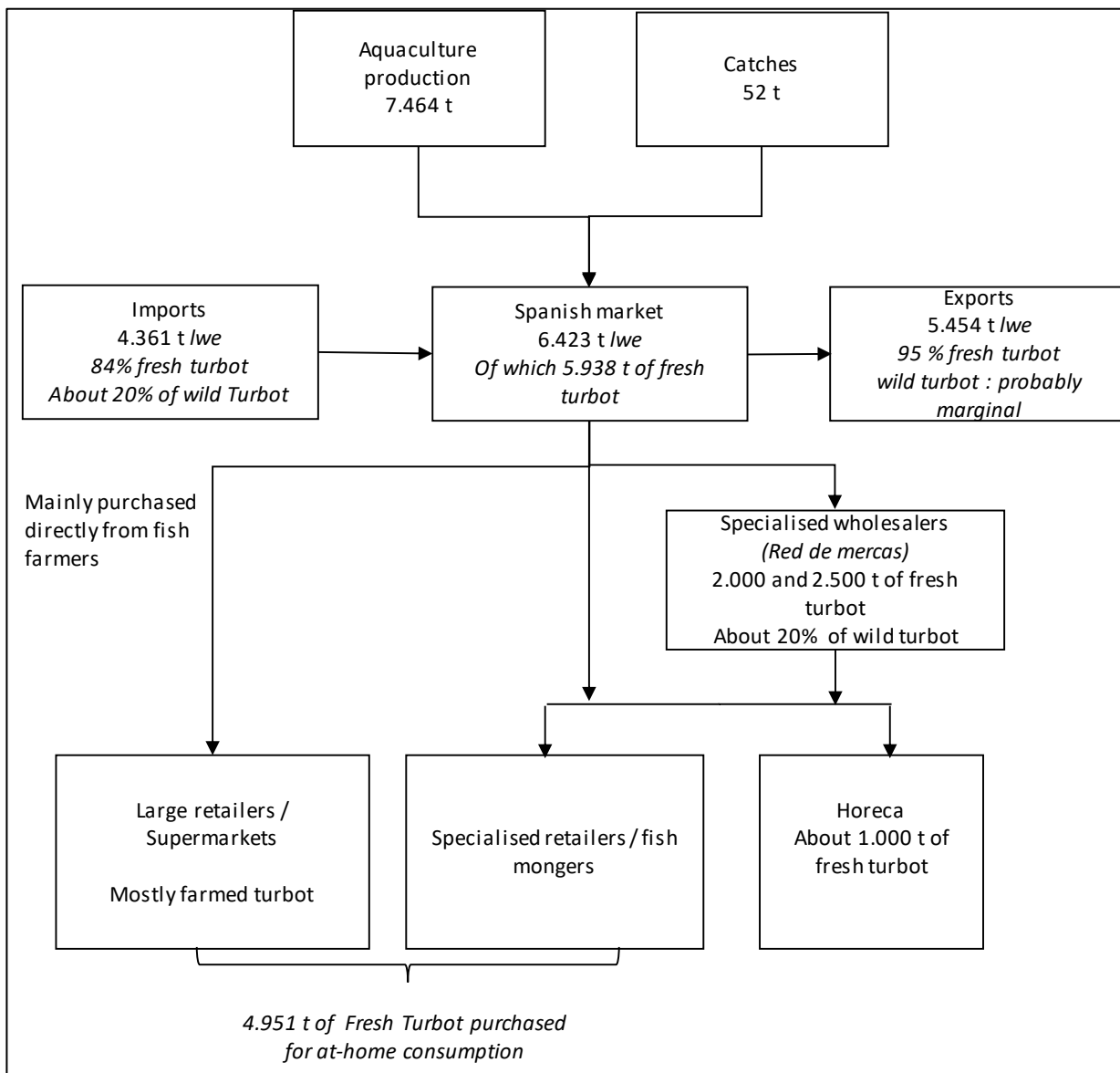
The following diagrams presents the overall structure of the supply chain. It relies on various secondary sources (COMEXT for trade data, FAO for production data, Mercamadrid, Mercaberna and Mercabilbao for wholesale data, MAPAMA for consumption data) and feedback from the main organisations representing the retail sector (ACES, ASEDAS and FEDEPESCA).

⁸ <https://servicio.pesca.mapama.es/acuivisor/>

⁹ Based on interviews with the industry in Spain and in other MS, it is not clear if the shutdown is definitive or temporary.

¹⁰ Based on interviews with retailers trade organisations.

Figure 2: Supply chain in Spain (data from 2015)



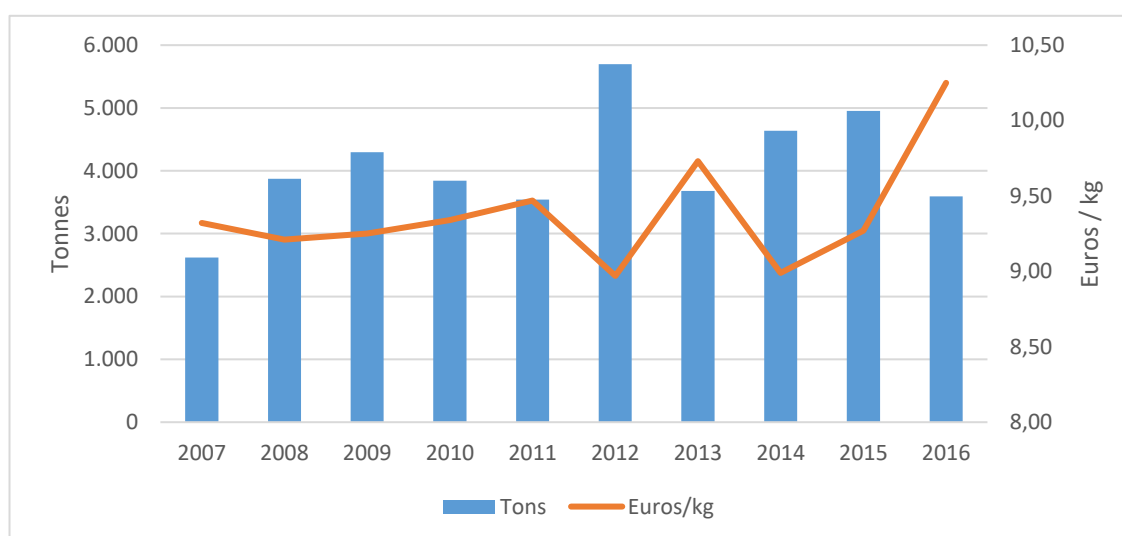
3.1.2 Characteristics of the Spanish market

Spain is one of the historical producers of farmed turbot alongside the UK (Scotland) and France. Production started in the 1970s but really developed after 1985, when new technology for the production of juveniles was introduced. The industry faced a crisis in 1992 as production had almost doubled in a year to reach 1.622 tonnes but without sufficient demand to meet it. Turbot was also mainly produced by small farms and production costs were too high to be attractive for consumers. Following this crisis, the sector restructured and production started to grow again in 1994. In 2000, production amounted to 3.378 tonnes and reached a peak in 2008 with 7.932 tonnes. Since then the production of farmed turbot has been fluctuating between 6.882 tonnes (in 2010) and 7.767 tonnes (in 2014). A report from the Spanish Ministry¹¹ in 2006 showed that farming in tanks was considered to be consolidated and that future growth was expected to come from off-shore cages, including both systems with floating cages and submerged cages. However, the current data on authorised licences in Spain show that, as in other MS, this development did not take place.

National data on consumption at home¹² show that the consumption of turbot increased by 37% between 2007 and 2016, while the total consumption of fresh fish decreased by 11%. The increase in consumption is also significantly higher than the increase in production, despite rising prices (+10%) in a context of economic crisis. However, the 2016 data and feedback from retailers indicate that the market for turbot could have reached maturity.

The next figure shows the evolution of consumption at home in tonnes and Euros/kg for turbot.

Figure 3: Consumption trends for Turbot, volumes and price 2007-2016



Source: data from MAPAMA (Annual reports on consumption at home)

In 2012, the Portuguese production went up by almost 40% before decreasing by 50% the following year. Trade data for turbot is not available before 2012, but data from 2012 and 2013 show that those fluctuations directly impacted the Spanish market (3.446 tonnes of Turbot imported from Portugal in 2012 and 876 tonnes in 2013). It can be assumed that, in 2012, prices in Spain went down and consumption in volumes increased as a result of this; the opposite occurred in 2013. The same market responses to supply changes can be observed in subsequent years, except in 2015 when consumption increases slightly despite a reduced supply and higher prices.

¹¹ <http://www.mapama.gob.es/app/jacumar/especies/Documentos/Rodaballo.pdf>

¹² <http://www.mapama.gob.es/es/estadistica/temas/estadisticas-alimentacion/consumo-alimentario/>

According to retailers, the difference in taste between farmed and wild turbot is not significant and farmed turbot benefits from the advantages of farmed fish in general, being less expensive and more stable in terms of size, price and quality.

As a matter of fact, also according to retailers, turbot tends to compete more with other aquaculture products like seabass and seabream than with other similar wild fish like sole or plaice. This could also come from the fact that turbot is not a traditional fish in Spain (level of catches is relatively low compared to other MS where turbot is abundant).

Turbot is considered a high-end product in supermarket fish counters. Consumption data also show that it ranks high in terms of price among the main fish species.

Table 12: Fresh fish prices for some of the main species consumed in Spain

Species	2016
Angler	10,93
Fresh salmon	10,38
Turbot	10,25
Fresh sole	9,66
Sea bass	8,63
Fresh cod	7,98
Seabream	7,90
Fresh hake	7,26

Source: MAPAMA (2016 report on consumption at home)

3.2 Prices along the supply chain in Spain

This section presents the secondary data used in the analysis of prices in Spain. Secondary data include both statistical series and data gathered in industry reports.

Table 13: Sources for prices in Spain at the different stages of the supply chain

Supply chain stage	Type of price	Frequency	Source
First sale	Ex-farm (before transport cost)	Yearly	APROMAR
Import / export	Import (Cost Insurance and Freight) / Export (Free On Board) prices	Monthly, yearly	COMEXT
Wholesale	Wholesale price	Daily, weekly, monthly, yearly	Mercamadrid, Mercaberna, Mercabilbao
Retail	Consumer price	Yearly	MAPAMA ¹³

The following table presents the evolution of ex-farm prices. Those prices are for fish ex-farm, whole, in boxes, before freight.

Table 14: Ex-farm prices in Spain

Price ex-farm	2013	2014	2015	2016
Volume (t)	6.900	7.767	7.464	7.396
Average price (EUR/kg)	8,42	7,50	7,36	8,58

Source: APROMAR (price), Eurostat (volume)

¹³ <http://www.mapama.gob.es/es/estadistica/temas/estadisticas-alimentacion/consumo-alimentario/>

The following table presents import volumes and prices for the three main origins.

Table 15: Import prices in Spain

	2013		2014		2015		2016	
	Tonnes	Price	Tonnes	Price	Tonnes	Price	Tonnes	Price
Portugal	876	5,08	2.637	4,12	2.791	5,63	1.863	7,30
The Netherlands	342	11,77	352	12,35	346	12,79	559	9,21
France	76	14,74	111	11,39	121	13,13	169	12,43

Source: COMEXT

Farmed turbot from Portugal is clearly cheaper than turbot imported from other MS (wild or farmed) as well as being cheaper than farmed turbot produced in Spain.

The following table presents prices available at wholesale stage.

Table 16: Prices from wholesale markets in Spain

Wholesale market	Type of production	2015		2016	
		Tonnes	EUR/kg	Tonnes	EUR/kg
Mercamadrid	Farmed	908	9,06	987	10,17
Mercamadrid	Wild	181	26,09	305	20,71
Mercaberna	Farmed	549	6,86	428	8,06
Mercaberna	Wild	112	22,07	153	18,48
Mercabilbao	Farmed	254	7,84	243	8,84
Mercabilbao	Wild	73	17,41	91	16,17

This table clearly shows the significant difference in prices between wild and farmed turbot. If compared with ex-farm prices, it also indicates that the gross margin at wholesale stage is thin.

The following table presents at-home consumption data in volumes and value. The average price calculated here is usually different from prices observed in stores as this is an average based on total spending for a panel of consumers.

Table 17: At-home consumption data in Spain for fresh turbot (volumes and value)

	2013	2014	2015	2016
Volumes (t)	3.681	4.640	4.951	3.594
Total expenditure (kEUR)	35.803	41.719	45.895	36.821
Average price (EUR/kg)	9,73	8,99	9,27	10,25

Source: MAPAMA

If compared with wholesale prices above, average prices for consumption at home confirms that fresh turbot consumed at home is primarily farmed turbot.

3.3 Price transmission in the supply chain in Spain

This section focuses on the supply chain of fresh farmed turbot produced in Spain and sold in supermarkets. There are no intermediaries between farmers and supermarkets. Ex-farm prices are for whole fish (not gutted) in boxes, before transport.

Turbot is gutted at the fish counter and can also be filleted on demand, for no additional price.

For retail prices, prices online from some of the main supermarket chains have been used (Eroski, Carrefour).

The structure of cost used comes from the study carried out by the Spanish Ministry in 2011 and 2012 for seabass and seabream¹⁴. The feedback from the industry confirmed that this cost structure was applicable to farmed turbot and indicated that the shrink represented about 10% of the weight (for gutting).

Costs per kilo for the different cost items correspond therefore (except for the shrink) to costs per kilo observed for seabass and seabream. They have been updated using national indices from the INE for the cost of petrol (for transport costs) and the price of intermediary industrial goods (for other costs). Labour costs have been updated using Eurostat series for Spain.

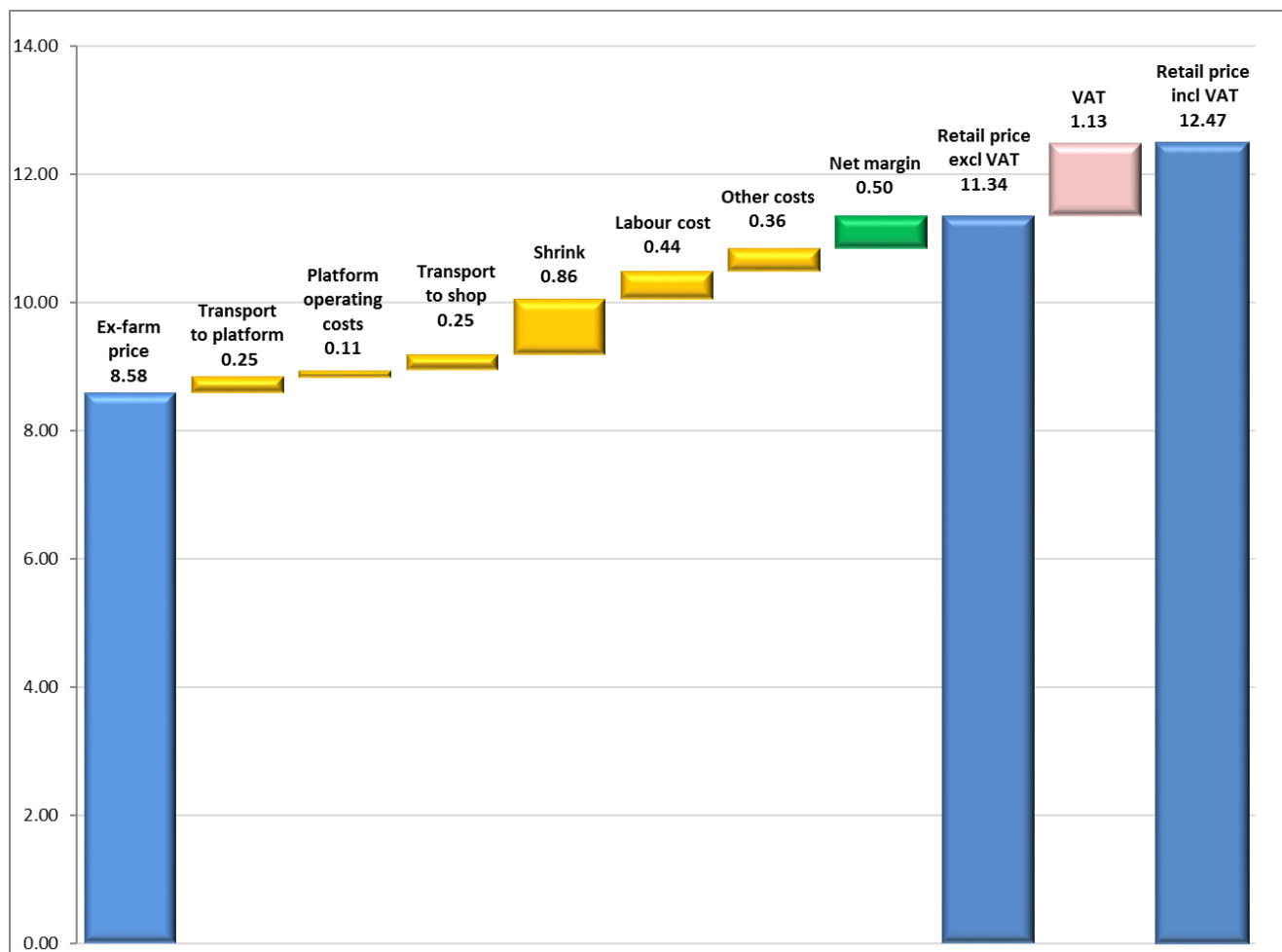
Table 18: Costs and price structure in Spain for supermarkets (2016)

	€/kg		% of retail price
	Interval	Average	
Ex-farm price		8,58	76%
Transport farm -> Platform	0,18 – 0,31	0,24	2%
Platform operating costs	0,06 – 0,15	0,11	1%
Transport platform -> shop	0,07 – 0,43	0,25	2%
Shrink		0,86	8%
Labour cost	0,35 – 0,53	0,44	4%
Other costs (fish counter)	0,22 – 0,5	0,36	3%
Net margin		0,50	4%
Average selling price, exclusive of VAT		11,34	100%
VAT (10%)		1,13	
Average selling price	10,99 – 13,95	12,47	

Source: EUMOFA survey

¹⁴http://www.mapama.gob.es/es/alimentacion/servicios/observatorio-de-precios-de-los-alimentos/Estudio_Dorada_2010_tcm7-253363.pdf

Figure 4: Costs and price structure in Spain for supermarkets (2016)



Source: EUMOFA survey

According to this analysis, intermediary costs represent 20% of the retail price, with shrink being the most important one. Transport costs are optimised by supermarkets and the product is sold whole, which contributes to keep costs low.

The net margin for supermarkets is also relatively low for this product, which is coherent with the feedback from retailers that the market for this product could have reached maturity.

4 THE FRENCH MARKET

4.1 Structure of the French market

4.1.1 Structure of the supply chain for Turbot

Aquaculture

Two companies are involved in turbot production and there are three production sites in France¹⁵:

- “France Turbot” has two production sites in Brittany (Tredarzec) and Noirmoutier island (Pays de la Loire);
- “La Ferme Marine de Noirmoutier” has one production site on Noirmoutier island (Pays de la Loire).

These companies are involved in the French public quality scheme “Label Rouge”, which guarantees higher quality for the final product. Specifications have been defined for the “Label Rouge” and the implementation by companies is checked by control bodies. Specifications are, in particular, related to:

- Farming duration (17 months minimum);
- Feed: 60% of marine feed, use of vegetal feed, vitamins and minerals (no use vegetal oils), at least 55% of protein and at least 12% of lipids from marine origin;
- Slaughtering method limiting stress;
- Guarantee of freshness:
 - o Fishing in pools when the product is ordered (for instance: order at 8:00 in the morning and product delivered at midnight at Rungis international wholesale market (Paris area)).
 - o Rapid cooling of the fish after slaughter: less than 4 hours (impact on the quality of flesh)
 - o Sell-by date: 9 days for fresh whole turbot and 7 days for cuts;
- Traceability on the whole supply chain.

Label Rouge specifications cover several presentations for the product: fresh whole not gutted, fresh whole and gutted, fresh cuts and frozen cuts.

¹⁵ Source : www.turbotlabelrouge.fr

Fishery

Turbot is sold in many auctions in France (Channel and Atlantic areas and, to a lesser extent, in the Mediterranean area). Main auctions are in Brittany: Roscoff and Le Guilvinec. The volume sold in each auction remains low compared to other species, sales not exceeding 100 t in each port in 2016.

Table 19: Volume of turbot sold in the main auctions in France (2016)

	Volume sold (t)
Roscoff	99,3
Le Guilvinec	91,1
Port-en-Bessin	39,3
Boulogne-sur-Mer	38,7
Brest	31,7
Dunkerque	29,0
Fécamp	28,3
Erquy	22,6
Saint-Quay-Portrieux	20,6
Cherbourg	20,1
Saint-Guénolé (Penmarch)	18,8
FR - Les Sables-d'Olonne	16,6
Arcachon	15,6
Audierne	14,4
Grandcamp (Grandcamp-Maisy)	13,4
Dieppe	12,9
Lorient	12,4
Noirmoutier-en-l'Île	12,1
La Cotinière (Saint-Pierre-d'Oléron)	11,7

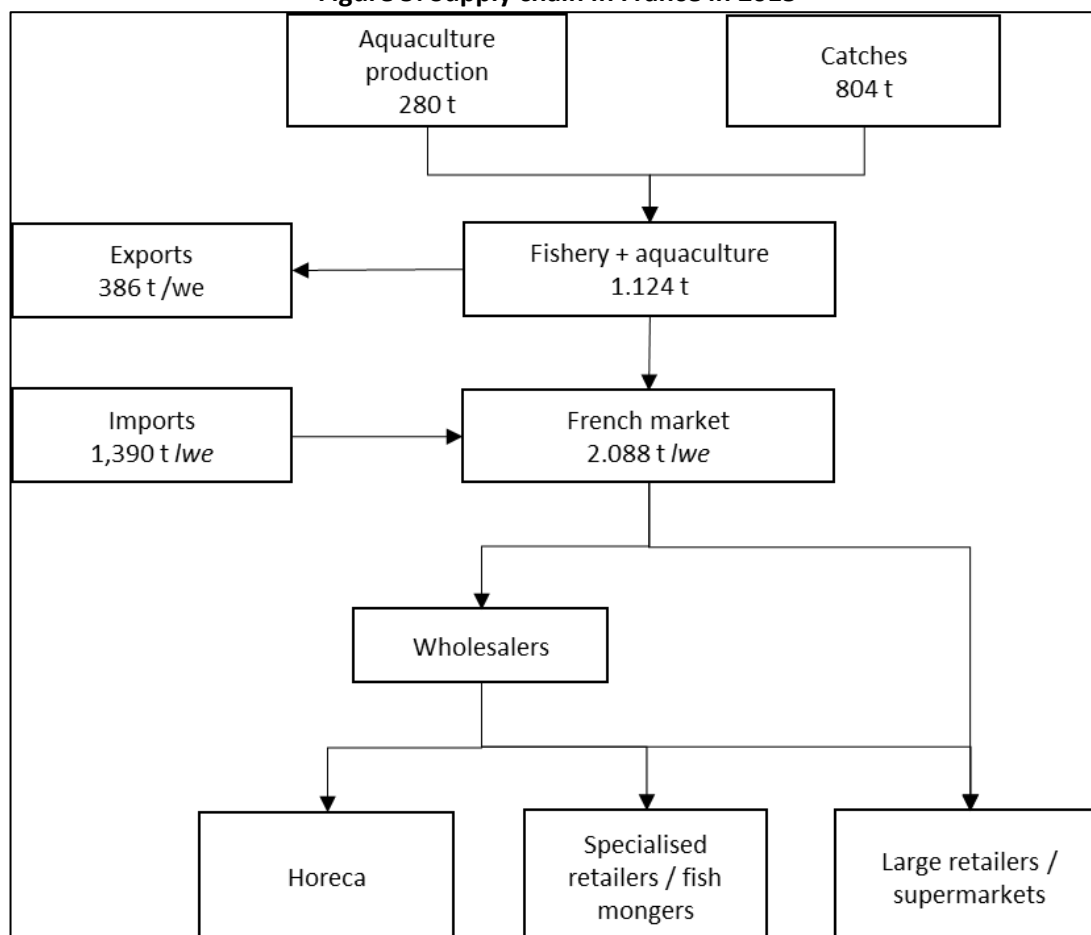
Source: EUMOFA

Overview of the supply chain

The following figure presents the supply chain for the turbot in France in 2015. The national production is 1.124 tonnes, 72% of which is wild production and 28% is farmed products.

One third of the production is exported (34%). Apparent consumption is 2.088 tonnes, one third (33%) is based on national production and two thirds (67%) are based on imports (1.390 tonnes imported).

Figure 5: Supply chain in France in 2015



Based on interviews and available data (COMEXT, EUROSTAT):

- Exports: based on interviews, this is composed of about 75% of fishery products and 25% of farmed products;
- Imports: based on statistics and interviews, this mainly composed of:
 - o captured fish from the Netherlands (261 t imported from the Netherlands);
 - o farmed fish from Spain (877 t imported from Spain);
- Sales by channel: no detailed information is available on sales by channel. Based on qualitative interviews, the HORECA sector has a great importance. We estimate that about 75% of the French production is sold in the HORECA sector and that 50% to 75% of the imported turbot is sold in this sector.

The importance of foodservice gives a particular importance to wholesalers and cash-and-carry in the supply chain. For large-scale retailers, turbot may not be on sale all year round but only during specific period such as Christmas.

4.1.2 Characteristics of the French market

Turbot, being a captured or farmed product, is considered as a premium species on the French market. It is mainly sold in the foodservice, in particular high-end restaurants. No information is available on the share of production sold under whole fish (gutted or not) or under fillet. However, qualitative information from interviews indicates that a significant share of the production is sold as whole fish to restaurants (gutted or not); fish is then prepared in the restaurant.

Segmentation of turbot consumption in France is as follows:

- Super premium:
 - o wild turbot landed in France;
- Premium range ++:
 - o farmed turbot from France under “Label Rouge” scheme;
 - o imported wild turbot (the Netherlands);
- Premium range +:
 - o imported farmed turbot, in particular from Spain.

This segmentation shows that French production is mainly oriented on high quality range products. Imported products target a lower price point compared to national production (French wild turbot when compared with imported wild turbot or French farmed turbot vs imported farmed turbot).

4.2 Prices along the supply chain in France

Prices are available at three stages of the supply chain in France (see table below): first sale price from EUMOFA and auction organisation, import/export prices from EUMOFA and wholesale stage from “Réseau des Nouvelles des Marchés – FranceAgriMer” (RNM).

Table 20: Sources for prices in France at the different stages of the supply chain

Supply chain stage	Type of price	Frequency	Source
First sale (wild turbot)	First-sale (auction) prices by category	Weekly, monthly, yearly	Data from auction
First sale (wild turbot)	First-sale (auction) prices	Weekly, monthly, yearly	EUMOFA
Import / export	Import (Cost Insurance and Freight) / Export (Free On Board) prices	Monthly, yearly	EUMOFA
Wholesale	Wholesale price	Daily, weekly, monthly, yearly	“Réseau des Nouvelles des Marchés – FranceAgriMer” (RNM)

First sale price

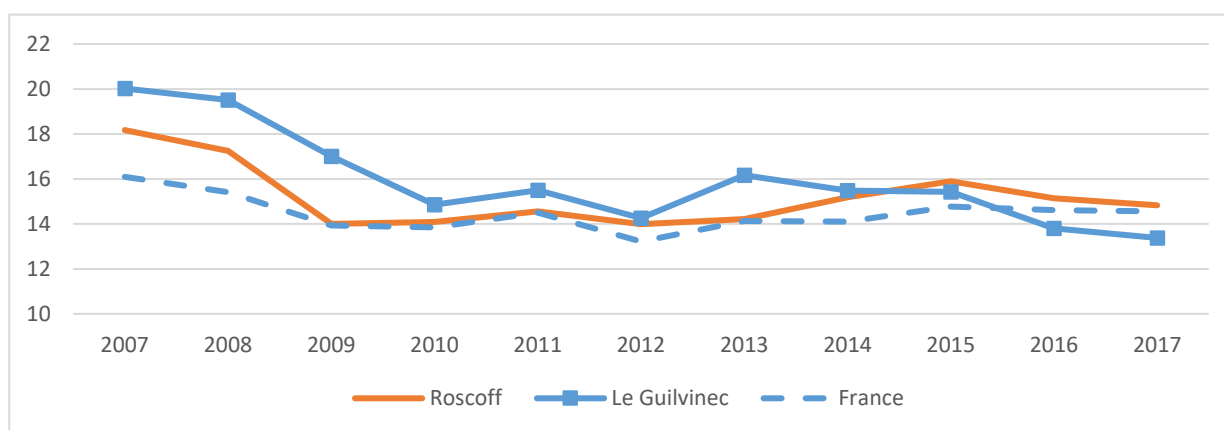
First sale prices at national level and in the two main ports for turbot are displayed in the next figure between 2007 and 2017.

At national level, the average price ranges between 13,22 and 16,09 EUR/kg between 2007 and 2017. The price was at its highest point at the beginning of the period (16.09 EUR/kg), before dropping to 13.93 EUR/kg in 2009 and then remaining stable between 13,22 EUR/kg and 14,77 EUR/kg until 2017.

Almost each year between 2007 and 2017, prices in the two main ports remain higher than the national average, in particular in Le Guilvinec with prices higher by 1 EUR/kg compared to the annual average each year between 2007 and 2015 (between 14,25 EUR/kg and 20,02 EUR/kg). However, prices dropped in 2016 and 2017 in Le Guilvinec and were under the national average (13,80 in 2016 and 13,38 EUR/kg in 2017).

In Roscoff, prices range between 18.17 EUR/kg in 2007 to 13.99 EUR/kg in 2012. Each year between 2007 and 2017, prices are higher in Roscoff than at the national level.

Figure 6: First sale price for turbot in Roscoff, Le Guilvinec and France (2007-2017)



Source: EUMOFA

Prices of fish landed rely on several factors (based on detailed data from Le Guilvinec auction):

- Weight of fish landed: price is higher when weight is higher (higher price for fish weight over 4 kg);
- Type of fishery: prices for coastal fishery (less than 24 hours at sea) are higher than non-coastal fishery, the freshness of fish being higher for coastal fishery.
- State of the fish landed: prices decrease for damaged/injured fish (apparent injury, blood);
- Volume landed: prices tend to decrease when the volume landed increases.

Main features of the turbot landing in Le Guilvinec (2017):

- Landing from coastal vessels only accounts for 2% of the total volume of turbot landed, the price tends to be higher for products from these vessels: 16,89 EUR/kg compared to 14,79 EUR/kg for non-coastal vessels;
- Largest fish tends to get the highest prices: 17.59 EUR/kg for fish over 4 kg (compared to 13,12 EUR/kg for 2-4 kg fish) and even 20,93 EUR/kg for fish over 4 kg from coastal fishery;
- The category 2-4 kg from non-coastal vessels accounts for 34% of total volume landed, the price is 13,87 EUR/kg;
- Lowest prices are for:
 - damaged fish with size under 2 kg (between 4,98 and 7,13 EUR/kg depending on the size)
 - smallest fish (0,5-1kg) from non-coastal fishery (7,8 EUR/kg).

Details are provided in the three following figures (based on data from Le Guilvinec auction).

Figure 7: Turbot price and volume sold in Le Guilvinec auction by category (whole gutted, January-November 2017)

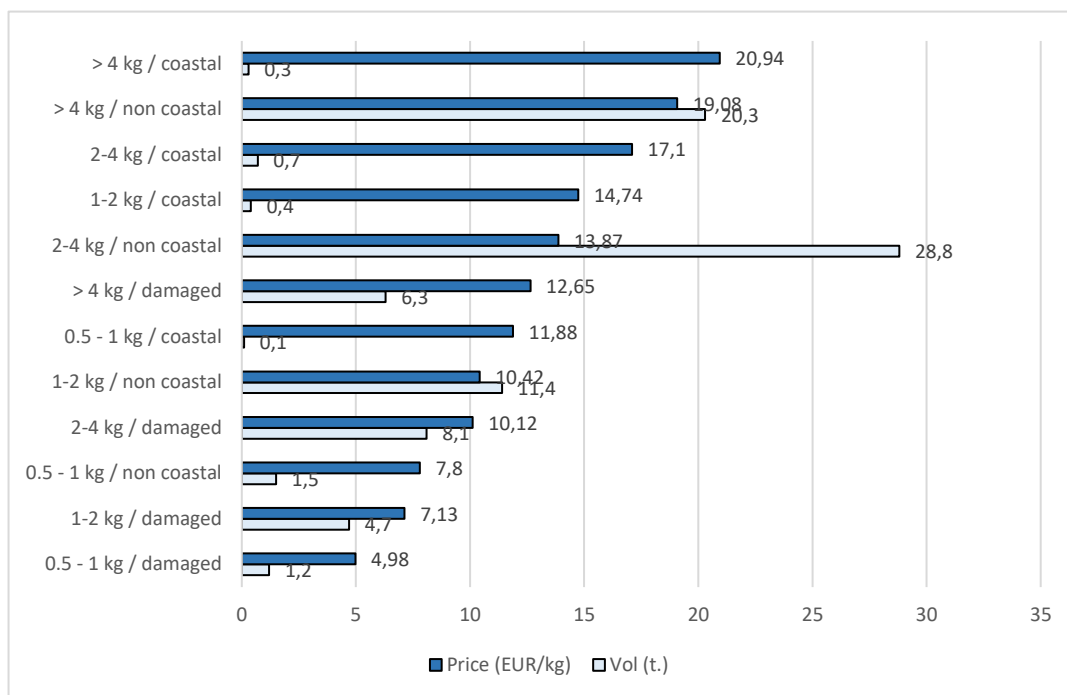


Figure 8: Turbot price and volume sold in Le Guilvinec auction by category of weight (whole gutted, January-November 2017)

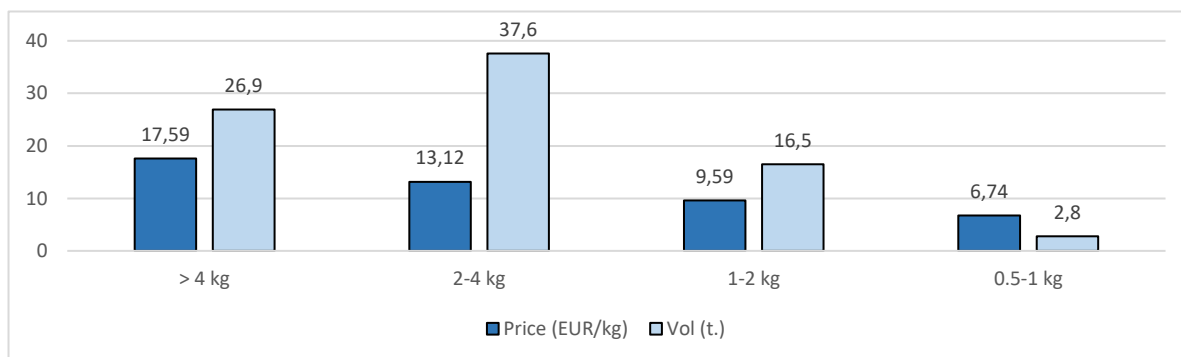
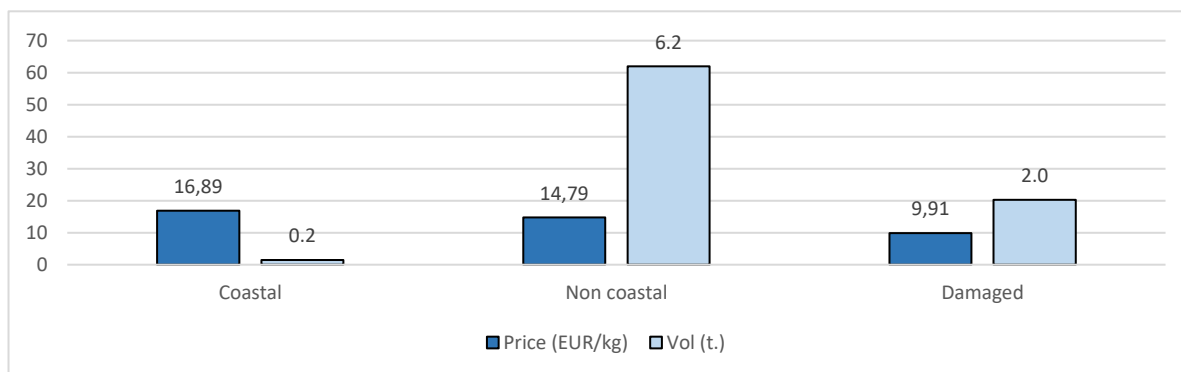


Figure 9: Turbot price and volume sold in Le Guilvinec auction by category of vessel and “damaged fish” (whole gutted, January-November 2017)



Wholesale market

Data from “Réseau des Nouvelles des Marchés – FranceAgriMer” (RNM) provides prices at wholesale stage in international wholesale market in Rungis (Paris area).

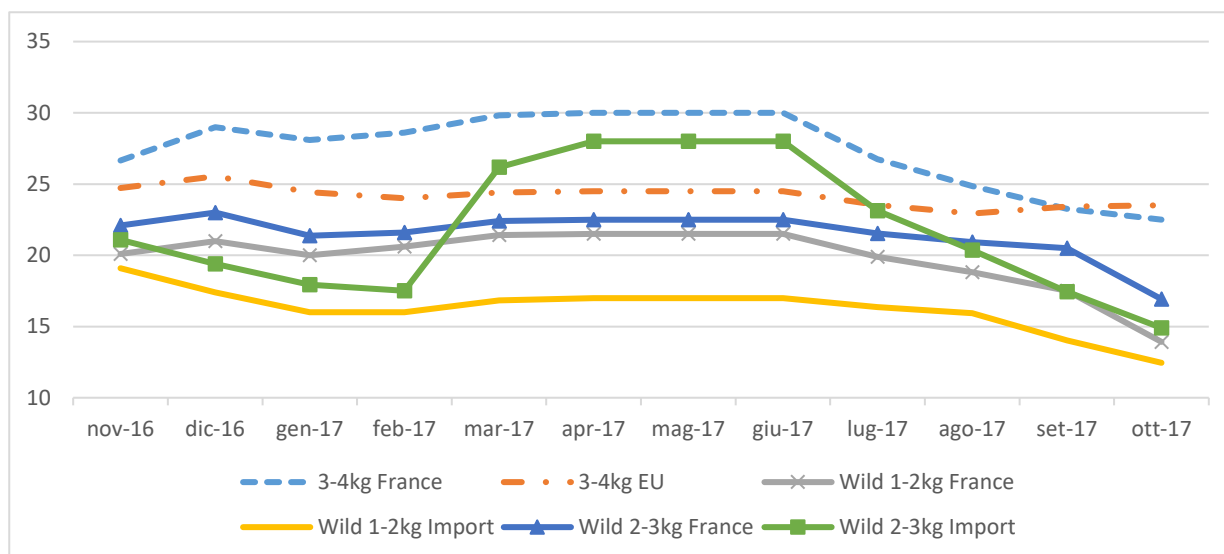
The prices are available for different categories of products:

- Wild 1-2 kg France;
- Wild 2-3 kg France;
- Wild 1-2 kg import;
- Wild 2-3 kg import;
- 3-4 kg France (the method of production wild/farmed is not mentioned, this may cover wild caught fish mainly);
- 3-4 kg EU (the method of production wild/farmed is not mentioned, this may cover wild caught fish mainly).

The next figure displays the evolution of price for the different categories above mentioned between November 2016 and October 2017. We can observe that:

- Prices tend to be higher:
 - for fish with higher weight;
 - for French products compared to imported products;
- Prices for imported products 2-3 kg show important evolution over the period.

Figure 10: Evolution of the price of turbot at wholesale stage (Rungis market)



Source: RNM

4.3 Price transmission in the supply chain in France

Two price transmissions are analysed:

- Farmed turbot under “Label Rouge” quality scheme for HORECA;
- Wild caught turbot for HORECA.

HORECA being the main market for French turbot, both price transmissions focus on this market.

4.3.1 Farmed turbot under the “Label Rouge” quality scheme for HORECA

Farmed turbot under “Label Rouge” is both sold through wholesaler and cash-and-carry companies to restaurants. This price transmission analysis proposes and aggregates both channels.

The product covered by the analysis is the fresh whole turbot (not gutted) 1-2 kg. This is considered as representative of the French market for farmed turbot under “Label Rouge”.

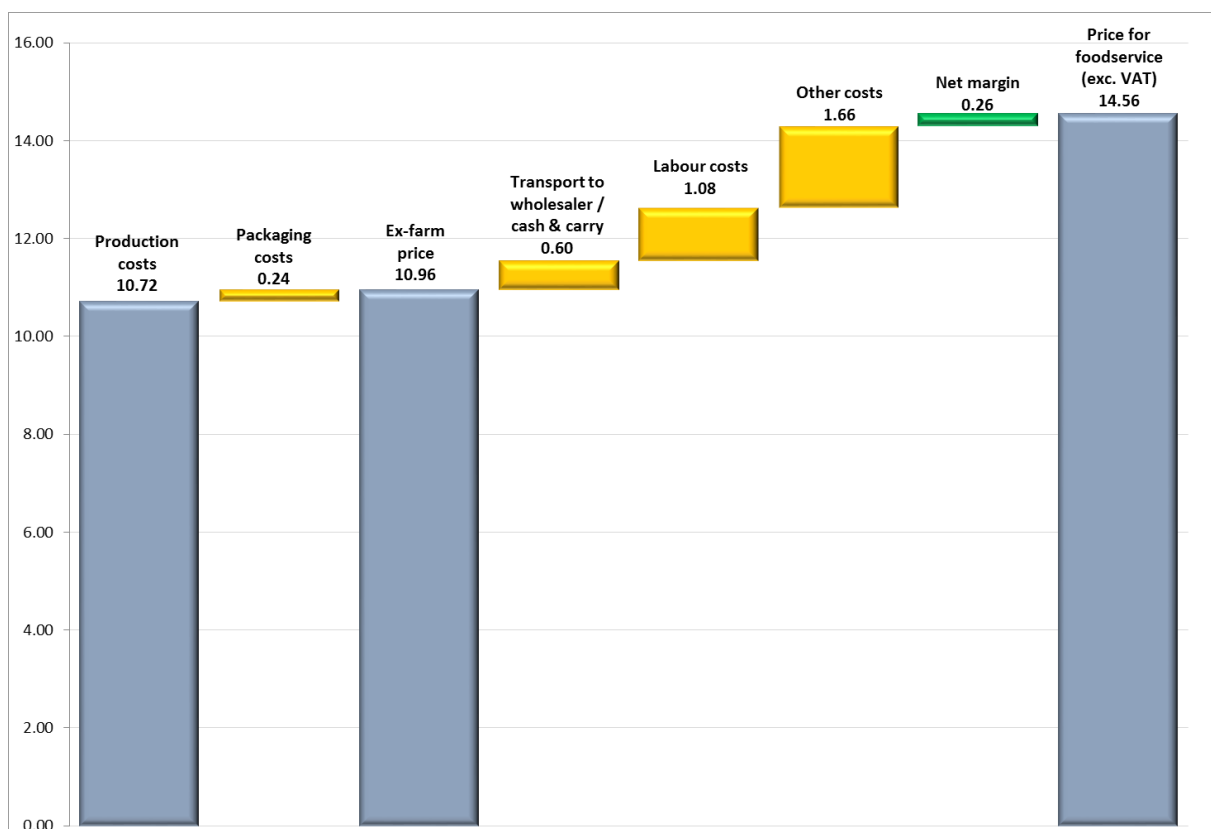
The analysis is based on qualitative interviews with stakeholders in the supply chain and the financial accounts from wholesalers and cash-and-carry companies (publicly available) in order to propose a breakdown between labour costs, other costs and net margin.

Table 21: Costs and price structure in France for farmed turbot for HORECA (2017)

	Interval	Average	% final price
Production costs	9,00 – 12,00	10,72	74%
Packaging costs	0,24	0,24	2%
Ex-farm price	9,24 – 12,24	10,96	75%
Transport to wholesaler/ cash & carry	0,20 – 0,70	0,60	4%
Labour costs for wholesaler	2,40 – 3,60	1,08	7%
Other costs for wholesaler		1,66	11%
Net margin for wholesaler		0,26	2%
Price for foodservice (exc. VAT)	13,00 – 16,00	14,56	100%

Source: EUMOFA survey

Figure 11: Costs and price structure in France for farmed turbot for HORECA (2017)



Source: EUMOFA survey

4.3.2 Wild caught turbot for HORECA

This analysis focus on the price transmission for wild fish turbot 2-4 kg, landed in Le Guilvinec port (Brittany), sold in auction, purchased by a local fish merchant (“*mareyeur*”) and then sent to a wholesale market (for instance Rungis) where restaurants procure their supply.

The analysis is based on qualitative interviews with stakeholders of the supply chain and financial accounts from wholesalers (publicly available) in order to propose a breakdown between labour costs, other costs and net margin.

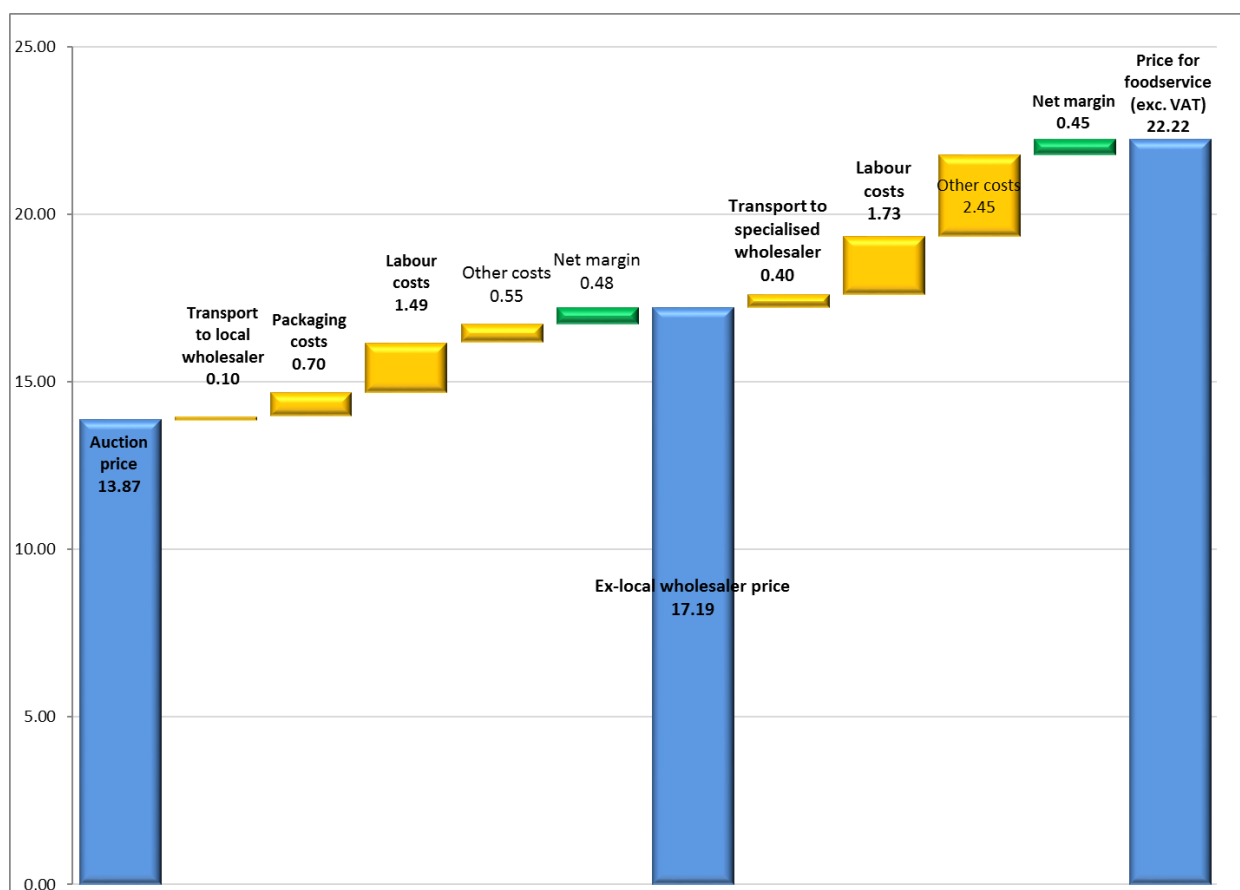
Costs for transport show large variations, this is due to both distance to travel and the optimisation of the transport chain (degree of filling of the truck). For instance: the costs for transportation of turbot within the Brittany area are 0,10 EUR/kg and may reach 0,70 EUR/kg if the product travels from another region (between auction and “*mareyeur*”). The costs for transport from “*mareyeur*” to wholesaler range between 0,20 EUR/kg (for largest “*mareyeurs*” able to fill in a truck travelling to Rungis) to 0,60 for export.

Table 22: Costs and price structure in France for wild turbot for HORECA (2017)

	Interval	Average	% final price
Auction price	5,00 – 25,00	13,87	62%
Transport to local wholesaler	0,10 – 0,80	0,10	0%
Packaging costs	0,60 – 0,86	0,70	3%
Labour costs	1,80 – 2,90	1,49	7%
Other costs		0,55	2%
Net margin		0,48	2%
Ex-local wholesaler price	7,50 – 30,00	17,19	77%
Transport to specialised wholesaler (Rungis)	0,20 – 0,60	0,40	2%
Labour costs	3,30 – 6,00	1,73	8%
Other costs		2,45	11%
Net margin		0,45	2%
Price for foodservice (exc. VAT)	9,00 – 12,11	22,22	100%

Source: EUMOFA survey

Figure 12: Costs and price structure in France for wild turbot for HORECA (2017)



Source: EUMOFA survey

5 THE DUTCH MARKET

5.1 Structure of the Dutch market

5.1.1 Structure of the supply chain for turbot

Wild turbot

The Netherlands is by far the main EU producer for wild turbot, with 2.072 tonnes landed in 2015 (of which 1.761 tonnes were caught by Dutch vessels). Turbot is often a bycatch in fisheries targeting other flatfish such as plaice and sole. The fishing gears used are mostly bottom trawl, twin rig trawl and pulse trawl.

The main fish auction for turbot in the Netherlands is located in Urk. In 2016, more than 1.100 tonnes of turbot were sold in Urk auction.

The main commercial outlet for Dutch wild turbot is export to EU wholesalers targeting the foodservice sector. Turbot is mostly sold fresh and whole, but small quantities are also processed into fresh fillets (skin-on, skin-off, portion, etc.) to be sold in Dutch large-scale retailers, and to some specific export markets (e.g. Switzerland, Italy). Thus turbot is available in the Dutch retail sector (whole or in fillets) but in small quantities, often used to show the quality and the diversity of the retailer's offer. Frozen products represent very limited quantities.

As turbot is a high value species traditionally dedicated to the foodservice sector, whereas consumption in restaurants is limited (except in big towns).

Farmed turbot

Dutch turbot farming activity is relatively long-established, but production levels have remained very modest and are solely located in the South West coast (with its source of salt water). There is only one company left involved in turbot farming, Seafarm BV, located in Zeeland, with an annual production capacity of 250 tonnes. However, annual production averages 100 tonnes.

All such production is sold to the foodservice sector, either directly to restaurants or through specialized Dutch wholesalers. Farmed turbot is sold whole, dead or live (to supply Asian restaurants). Exports are very limited and most production goes to the domestic market.

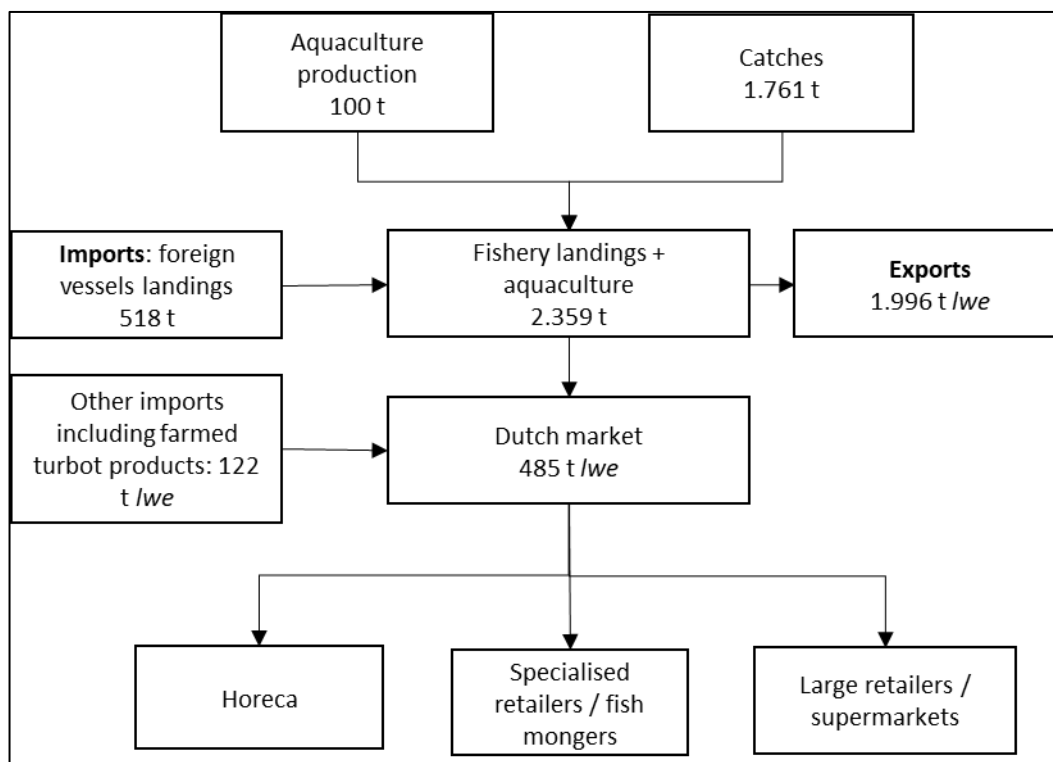
Trade

In 2016, Dutch exports of whole turbot reached 1.472 tonnes, of which 76% was fresh fish and 24% frozen fish. The main destinations were Spain (41%) and Italy (22%), and, to a lesser extent, Germany (13%) and France (9%). According to stakeholders interviewed, exports of turbot fillets are not negligible and may amount to several hundred tonnes live-weight equivalent. Unfortunately, one cannot distinguish turbot fillets in trade data as they are aggregated with other flat fish.

In 2016, Dutch imports of whole turbot reached 527 tonnes (98% fresh). The main originating Member States were Belgium (29%), Germany (20%), the United Kingdom (18%) and Denmark (13%). These imports correspond to foreign vessel landings in Dutch ports and explain the gap between landings in the Netherlands (more than 2.100 tonnes in 2015) and Dutch catches (less than 1.800 tonnes). In 2016, other Dutch market suppliers were Spain (6% of imports volume) and France (4%) and included farmed turbot products.

The following diagram presents the overall structure of the supply chain. The Dutch wholesale stage is not organized in open wholesale markets as in France or in Spain. That is why the wholesale stage is not mentioned in the figure below, although wholesalers operate in the Dutch supply chain (e.g. in trade or Horeca). It relies on various secondary sources (EUMOFA for trade data, FAO and EUROSTAT for production data, and interviews with Dutch stakeholders).

Figure 13: Supply chain in Dutch (data from 2015)



5.1.2 Characteristics of the Dutch market

Farmed turbot

Dutch turbot aquaculture is relatively old, but production has remained at a low level. According to Eurostat, the Dutch production of farmed turbot peaked at 260 tonnes in 2011 and then declined in 2012 and 2013 and has stayed stable at around 100 tonnes since 2013.

The only farm left is Seafarm BV, since the other farm, Grovisco, has stopped its production a couple of years ago. Seafarm together with Grovisco started a fish hatchery. By a cooperation between these two companies, they achieved a hatchery for turbot. The hatchery is completely self-supporting, including own natural feed which ensures a high quality juvenile turbot.

Seafarm BV is aiming to improve its production cycle efficiency (in energy and labour) and its product quality rather than to increase its production volumes. Seafarm targets the Dutch market and supplies restaurants and wholesalers with different turbot products:

- Live turbot (mostly around 0,8 kg), to supply mostly Chinese restaurants (through specialized wholesalers);
- Killed turbot on ice (0,5-1kg or 1-1,5 kg), to supply Dutch wholesalers specialized in foodservice sector;
- Fillets (skin-on or off) from larger turbots, minor quantities.

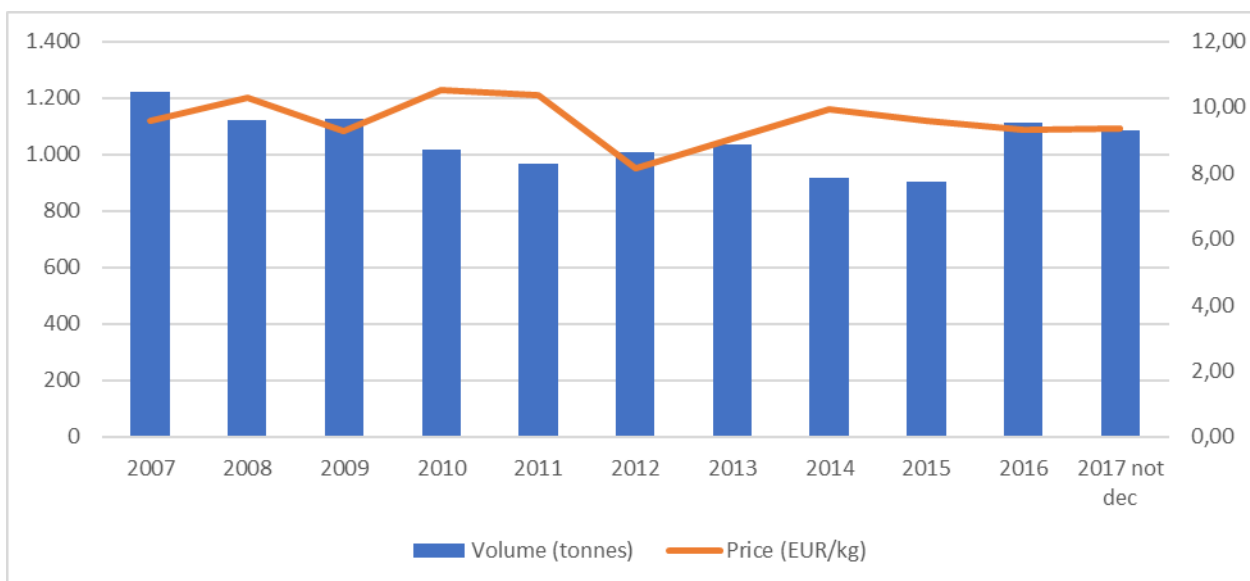
Wild caught turbot

Over the past decade, turbot landings in the Netherlands have generally followed a decreasing trend: from 2.438 tonnes in 2005 to 1.432 tonnes in 2014 (Source: Eurostat). But in 2015, turbot landings went up to 2.072 tonnes (+45%) and according to first sales reports, 2016 and 2017 are following this increasing trend.

Indeed, in Urk fish auction, first-sale volumes have increased in 2016 and the first 11 months of 2017 show that the increasing trend is continuing. In the meantime, first-sale average price stayed relatively

stable (–3%) from 2015 to 2016 (ending at 9,32 EUR/kg) and the 11 first months of 2017 confirm this stable trend.

Figure 14: Evolution of turbot first sale volume (in tonnes) and price (in EUR/kg) in Urk fish auction



However, turbot fist-sale prices show significant differences between size categories. In the Netherlands, most of the turbot is sold graded in fish auctions. There are seven categories of size used in grading wild turbot catches at the Urk fish auction.

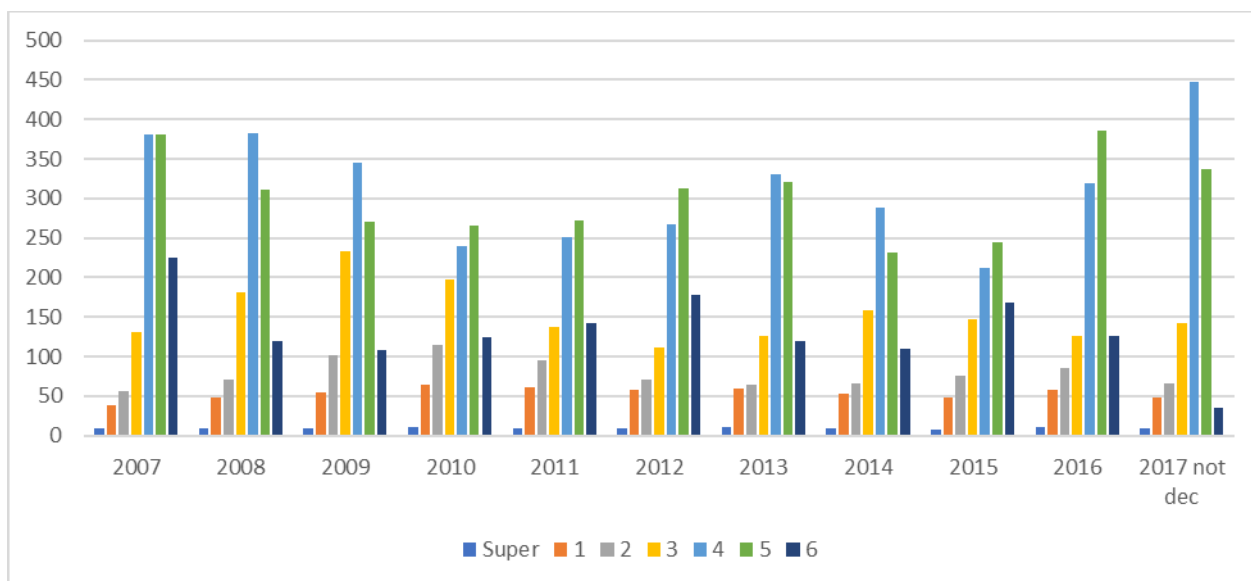
Table 23: Turbot grading in the Netherlands

Size	turbot 1 + (super)	turbot 1	turbot 2	turbot 3	turbot 4	turbot 5	turbot 6
Weight	6 kg >	4 kg - 6 kg	3 kg - 4 kg	2 kg - 3 kg	1 kg - 2 kg	0,5kg - 1 kg	< 0,5 kg

Source: Urk fish auction

However, the most common categories are 4 and 5. In 2016, at the Urk fish auction, categories 4 and 5 accounted for 63% of total volume of turbot sold, and the first 11 months of 2017 show an even larger proportion. On the contrary, since 2007, the share of the categories 2 and 3 seems to have decreased. The following figure show these evolutions.

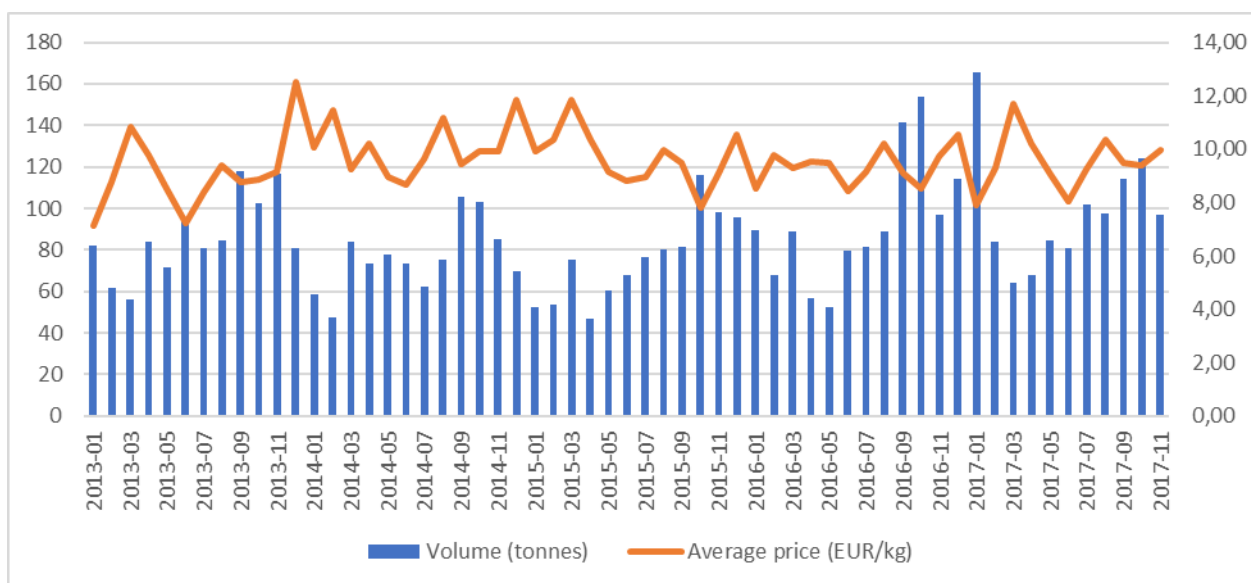
Figure 15: Evolution of turbot first sale volumes (in tonnes) in Urk fish auction, by category of size



Source: Urk fish auction

The main season for turbot is from September to November. During this period, first-sale volumes reach their peaks and prices fall to their lowest levels at the beginning of autumn but can strongly increase in December when demand is high (the Christmas season). The following figure shows this seasonality for average monthly prices (all categories of size combined).

Figure 16: Monthly seasonality of first-sale volumes and prices in Urk fish auction (2013-2017)



Source: Urk fish auction

5.2 Prices along the supply chain in the Netherlands

This section presents the secondary data used in the analysis of prices in the Netherlands. Secondary data include both statistical series and data gathered in industry reports.

Table 24: Sources for prices in the Netherlands at the different stages of the supply chain

Supply chain stage	Type of price	Frequency	Source
First sale (aquaculture)	Ex-farm (before transport cost)	Yearly	Interviews
First sale (wild turbot)	First-sale in auction prices (after grading)	Monthly, yearly	Urk fish auction
Import / export	Import (Cost Insurance and Freight) / Export (Free On Board) prices	Monthly, yearly	EUMOFA
Wholesale	Wholesale price	Daily, weekly, monthly, yearly	Schmidt Zeevis (NL) RNM (FR)
Retail	Retail price	Daily	Ahold website

As there is only one company involved in turbot farming in the Netherlands, no precise ex-farm price has been provided but only an average **ex-farm price of 10,00 EUR/kg** for fresh whole turbot of 1,2 kg delivered on ice in boxes (source: interviews with stakeholders). The following table presents yearly first-sale prices by category of size at the Urk fish auction from 2010 to 2017.

Table 25: First-sale prices (in EUR/kg) by category of size at the Urk fish auction (2010-2017)

Grading	2010	2011	2012	2013	2014	2015	2016	2017 ¹⁶
Super	19,65	20,45	19,31	18,98	17,59	20,13	20,56	20,80
1	16,88	17,70	17,02	17,37	17,08	19,10	18,11	18,17
2	14,18	15,55	14,75	15,61	15,15	16,34	15,92	15,45
3	11,87	13,68	11,73	12,09	11,36	12,78	12,92	11,43
4	10,92	10,65	8,53	8,76	9,53	10,65	9,42	8,44
5	8,10	7,84	5,90	6,46	7,73	6,45	6,45	7,24
6	5,47	4,27	3,13	4,78	6,45	3,65	4,56	6,02
Total	10,53	10,38	8,14	9,03	9,95	9,57	9,32	9,36

Source: Urk fish auction

¹⁶ 11 first months only.

The following table presents export prices of whole fresh turbot and the breakdown by main destinations.

Table 26: Dutch export prices (in EUR/kg) of whole fresh turbot by main destination

PARTNER COUNTRY	2012	2013	2014	2015	2016	2017
France	8,84	10,61	12,07	11,76	10,79	10,82
Germany	11,39	14,27	15,79	13,91	13,32	11,85
Italy	8,61	9,48	10,96	9,78	10,26	10,40
Spain	11,66	12,77	13,55	13,55	12,56	12,58
Switzerland		17,21	16,67	17,91	17,62	15,56
Totals	9,55	11,18	12,98	12,40	12,25	11,66

Source: COMEXT

The following table presents prices available at wholesale and retail stage for processed turbot products.

Table 27: Wholesale and retail prices in the Netherlands

Product	Supply chain stage	Quantity (kg)	Price (EUR)	Unit price (EUR/kg)	Source
Clean, without head and skin	wholesale	0,45	11,25	25,00	Schmidt Zeevis
Turbot III 2-3 kg, portion (skin and bone)	wholesale	0,2	7,40	37,00	Schmidt Zeevis
Fillet without skin	retail	0,225	11,25	50,00	Albert Heijn

Source: Schmidt Zeevis and Ahold website (November 2017)

The following table presents prices available at wholesale stage in France, one of the main export markets for Dutch wild-caught turbot. Significant variations are noticeable over the year.

Table 28: Monthly wholesale prices of imported wild turbot in France (EUR/kg) in 2017

Product	jan-17	feb-17	mar-17	avr-17	may-17	jun-17	jul-17	aug-17	sep-17	oct-17
TURBOT wild 1-2kg Import	16,00	16,00	16,83	17,00	17,00	17,00	16,35	15,93	14,02	12,45
TURBOT wild 2-3kg Import	17,93	17,50	26,17	28,00	28,00	28,00	23,12	20,36	17,43	14,99

Source: RNM

5.3 Price transmission in the supply chain in the Netherlands

This section focuses on the supply chain of fresh farmed and wild turbot in the Netherlands.

5.3.1 Wild turbot from the Netherlands sold to HORECA in France

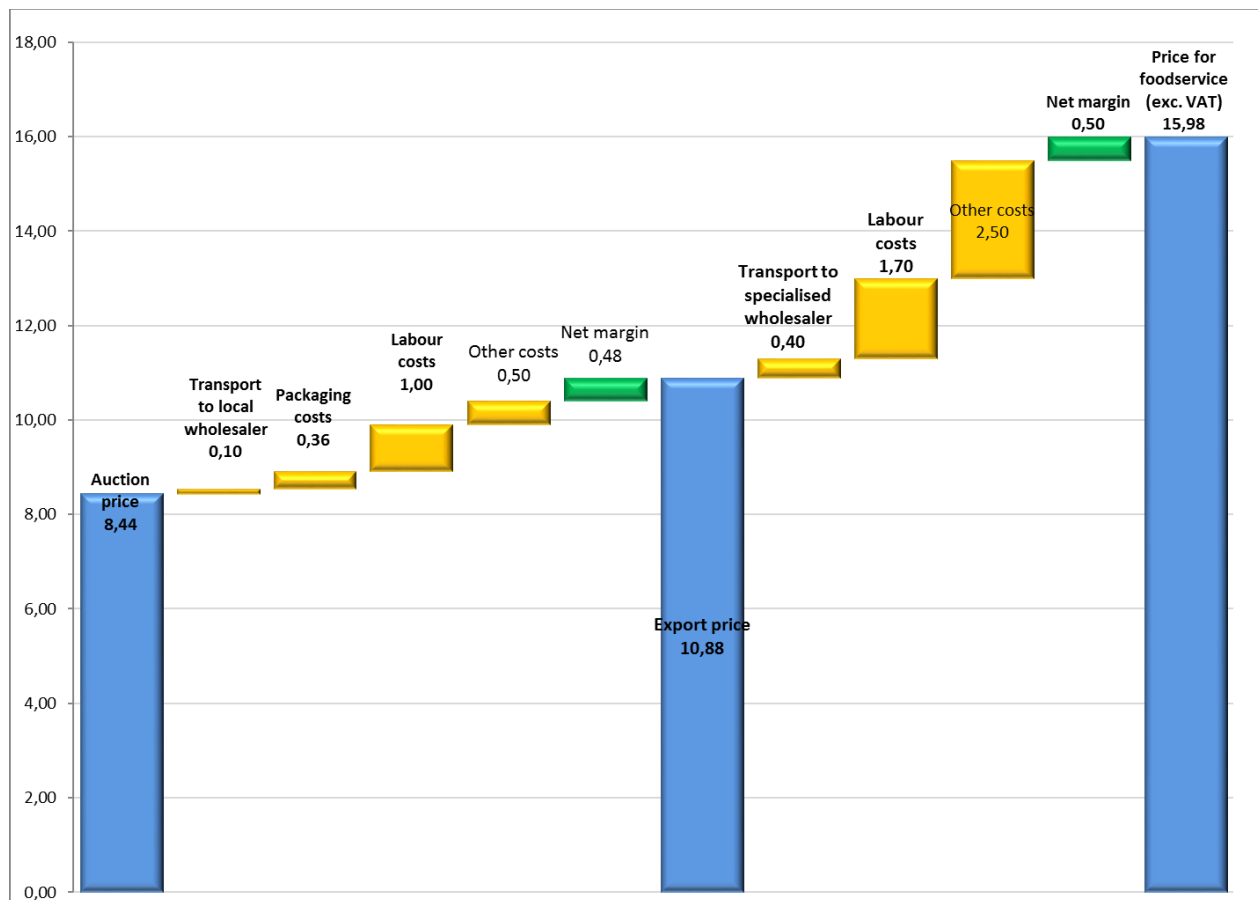
First-sale prices in fish auctions are for whole and gutted fish after grading and before transport. The example given of price transmission is a category 4 turbot bought at the fish auction and exported in France to be sold on the foodservice sector.

Table 29: Costs and price structure of wild turbot from the Netherlands sold to HORECA in France (2017)

	Interval	Average	% final price
Auction price	7,19-11,79	8,44	53%
Transport to local wholesaler	0.10 - 0.80	0,10	1%
Packaging costs	0,31-0,40	0,36	2%
Labour costs	1.98 - 3.98	1,00	6%
Other costs		0,50	3%
Net margin		0,48	3%
Export price	8,84 -12,07	10,88	68%
Transport to specialised wholesaler	0,30 - 0,80	0,40	3%
Labour costs	4,70 - 7,70	1,70	11%
Other costs		2,50	16%
Net margin		0,50	3%
Price for foodservice (exc. VAT)	12,45- 17,00	15,98	100%

Source: EUMOFA survey

Figure 17: Price transmission for Dutch wild-caught fresh whole turbot (category 4) exported to France



Source: EUMOFA survey

5.3.1 Farmed turbot sold to HORECA in the Netherlands

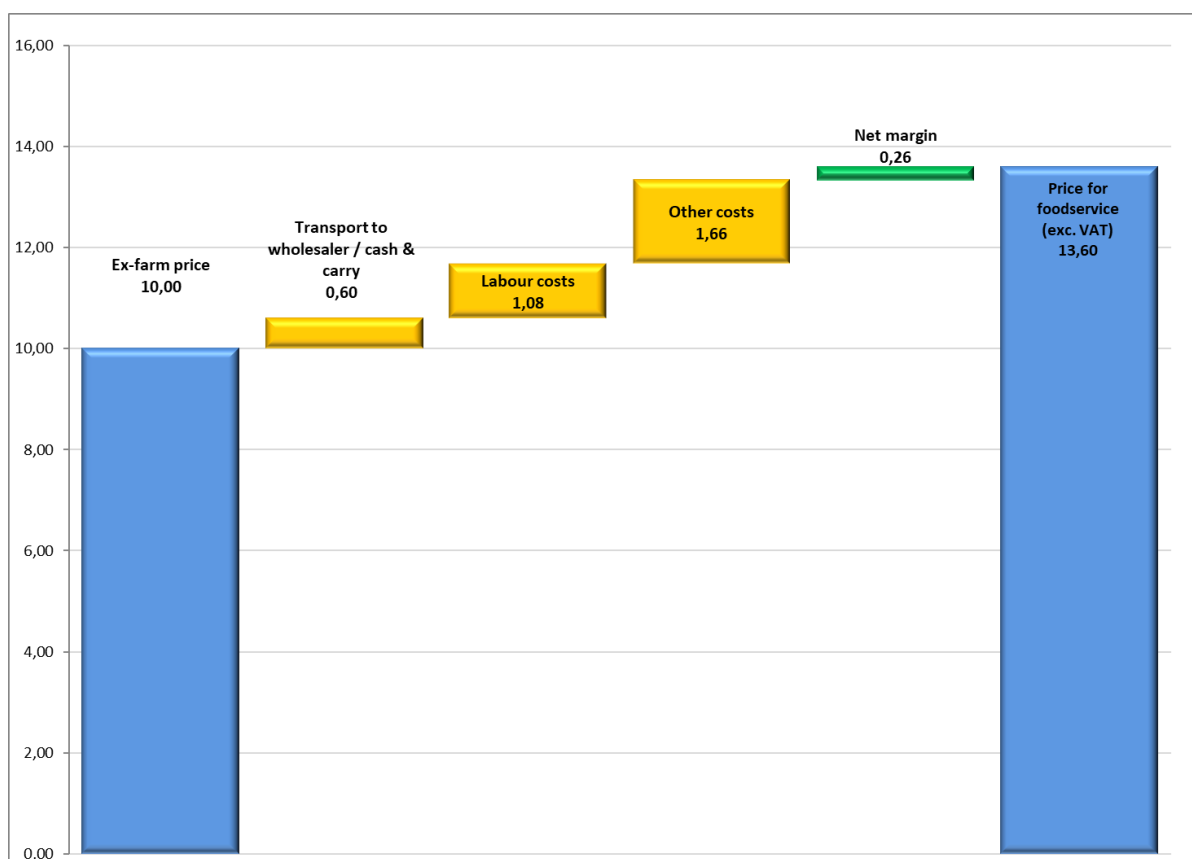
Ex-farm prices are for whole fish (not gutted) in boxes, before transport.

Table 30: Costs and price structure of farmed turbot in the Netherlands for foodservice (2017)

	Interval	Average	% final price
Ex-farm price	7,50 - 14,00	10,00	74%
Transport to wholesaler / cash & carry	0.20 - 0.70	0,60	4%
Labour costs	2.40 - 3.60	1,08	8%
Other costs		1,66	12%
Net margin		0,26	2%
Price for foodservice (exc. VAT)	13.00 - 16.00	13,60	100%

Source: EUMOFA survey

Figure 18: Price transmission for Dutch farmed fresh whole turbot (1,2 kg) to foodservice sector



Source: EUMOFA survey

6 CONCLUSION

Production

Turbot production is growing in the EU, in particular due to aquaculture which accounted for 67% of the total production in 2015 (10.173 tonnes in 2015, 3.365 tonnes more than in 2006). Fishery also shows positive trend with 93% growth between 2006 and 2015 (5.023 tonnes in 2015).

The main producers are the Netherlands, France, the United Kingdom and Denmark for fishery and Spain and Portugal for aquaculture.

Table 31: Volume of production of turbot at EU level (tonnes)

	2006	2015	Evol. 2015/2006	% total 2015
Aquaculture	6.808	10.173	+49%	67%
Fishery	2.596	5.023	+93%	33%
Total	9.404	15.196	+62%	100%

Source: FAO, Eurostat

Trade

The trade for turbot is mainly intra-EU, it reached 11.522 tonnes in 2015 (compared to 15.196 tonnes produced). Extra-EU trade is limited: 434 tonnes of product exported in 2015 (mainly fresh) and 201 tonnes imported (only fresh).

The main intra-EU flows are related to the export of farmed turbot from Spain and Portugal and wild caught turbot from the Netherlands.

Markets

Apparent consumption of turbot is 15.345 tonnes in the EU, the three main MS are: Spain (6.423 tonnes), Italy (2.483 tonnes) and France (2.088 tonnes). Apparent consumption of turbot is under 1.000 tonnes in each other MS.

There are specific market features in each MS covered by the analysis. While turbot is mainly sold through large scale retailers and fishmongers in Spain, turbot is mainly consumed out-of-home in France and the Netherlands. In Spain, consumption mainly relies on farmed turbot (due to the importance of the national production), while consumption in France and the Netherlands rely to a larger extent on fishery.

In terms of price positioning, among the different cases studied in the context of this report, wild caught turbot appears to be a premium product with prices at first sell which may range between 11 and 14 EUR / kg for 2-4 kg fish (price may be higher than 25 EUR/kg for largest fish); the price for the smallest fish (1-2 kg) ranging between 8 and 15 EUR/kg. The ex-farm price for farmed product ranges between 8 and 12 EUR/kg (for 1-2 kg fish), the highest price being for the French “Label Rouge” products (production must follow controlled specifications in order to guarantee higher quality for the consumer).

Price transmission

A set of five price transmission analyses have been performed: farmed turbot in Spain (wild caught turbot is very limited in Spain and has not been covered); farmed and wild caught turbot in France; farmed and wild caught turbot in the Netherlands. Each of these analyses focuses on a representative product and market in the MS considered: it covers the sales to HORECA in France and the Netherlands and large-scale retailers in Spain.

A comparison of these five price transmission analyses is displayed on the figure 20. The price at “first sale”, “platform” and to “final consumer” (when covered) is detailed for each supply chain covered (see

the definition of these stages for each analysis in the table below). When the price transmission analysis covers HORECA (in France and in the Netherlands), the analysis covers the first sale (ex-farm or auction) to the ex-wholesaler stage. In Spain, the analysis covers the sales through the large-scale retailers and encompass the supply chain from first sale (ex-farm) to the final consumer stage (large-scale retailer).

Table 32: Main features for each price transmission analysis

	Farmed ES	Farmed FR	Wild FR	Farmed NL	Wild NL
Product	1,5-2 kg fish Whole fresh	1-2 kg fish Whole fresh “Label Rouge”	2-4 kg Whole fresh	1,2 kg Whole fresh	1-2 kg Whole fresh
Sales channel	Large scale retailer	HORECA	HORECA	HORECA	HORECA
First sale	Ex-farm	Ex-farm	Auction	Ex-farm	Auction
Platform	Large-scale retailer platform	Wholesale / cash & carry	Wholesale	Wholesale	Wholesale
Final consumer	Large scale retailer	Not covered	Not covered	Not covered	Not covered

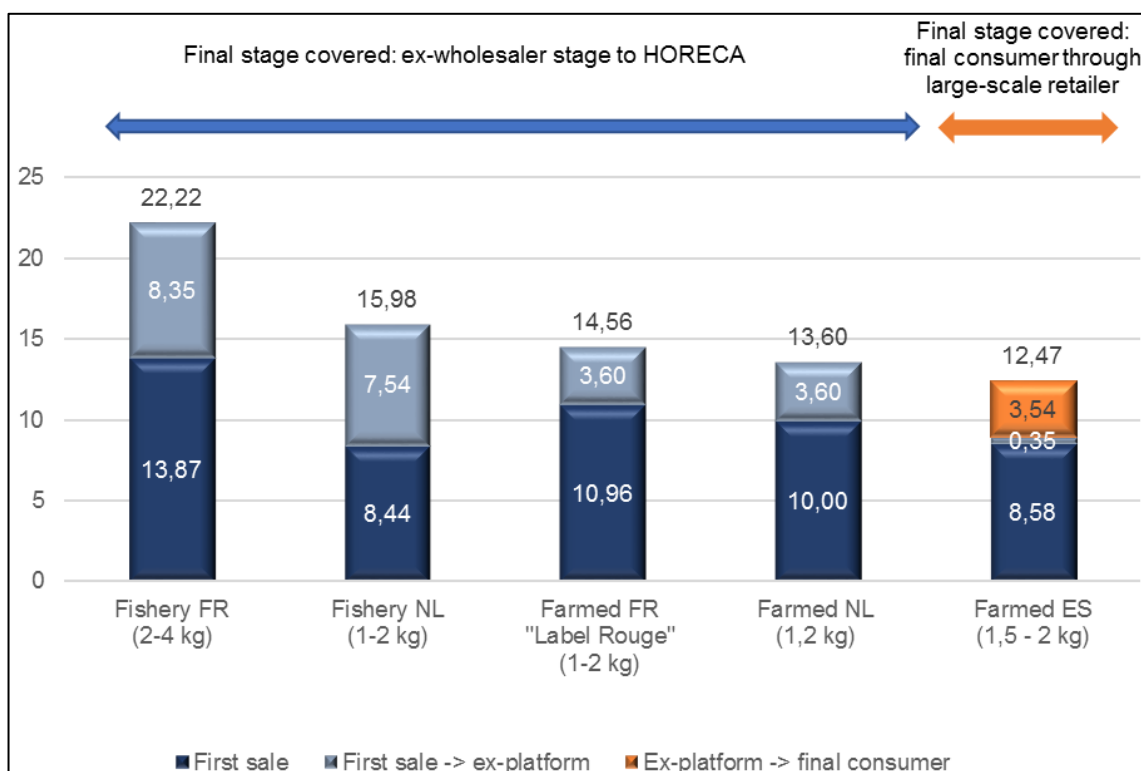
Key points of the comparison of the price structures are listed below:

- there are high differences in the price structure of the supply chains observed. Each analysis covers fresh whole fish, however, there are important **differences of scope** between the analysis in terms of¹⁷:
 - **Sales channels:** four analyses cover the HORECA market (final stage covered being ex-wholesaler price) and one analysis covers sales in large-scale retailer (final stage covered being the final consumer stage). This means different organisations of the supply chain (number of intermediaries).
 - **Products covered:**
 - The analyses cover three farmed products and two fished;
 - Fish weight ranges between 1,2 kg/fish and 2-4 kg/fish (fish weight being an important criterium for fish cost);
 - In addition, in France, the farmed fish is produced under “Label Rouge” quality scheme.
- For the **HORECA market**, costs between first sale and platform are higher for fishery products, this is due to the presence of an additional intermediary in the supply chain for fishery products compared to the supply chain for farmed products:
 - For fishery products, the fish is sold at auction to a first wholesaler in the coastal area (“*mareyeur*” in France). When the product is sold to HORECA, it is generally sold to another wholesaler specialised in HORECA or located close to the consumption areas in wholesale markets (for instance Rungis International Market in Paris area). Thus, for fishery products, two wholesalers are involved;
 - For farmed fish, the products are sold by the farm directly to the wholesaler located on the wholesaler market.

¹⁷ The scope of each analysis has been defined to focus on a representative product of each supply chain.

- For the analysis of the **Spanish supply chain**, the costs for the “platform stage” are particularly low. This stage covers only one stakeholder, compared to two intermediaries for wild fish products to HORECA, see point above. In addition:
 - Flows are optimised between farms and retailer platforms (this allow to reduce transport costs);
 - The activity of the platform focuses on logistical operations. This limits the costs at this stage (higher costs are observed at retail stage in Spain). In the other supply chains, this stage may cover processing (filleting) and packaging (different packages for each wholesaler).
- We don’t observe clear **differences of prices at first sale** between farmed and wild products. Based on data collected, differences at first sale are in particular related to fish size and a specific quality scheme (e.g. French “Label Rouge”). Furthermore, prices for farmed products show more stability over the year than prices for wild caught products. Production costs for farmed fish were not investigated in this study and the differences among MS may come from a variety of factors: different production methods (“Label Rouge” certification in France), farm sizes, maturity of the industry (impact of learning curves, depreciation of investments, etc.);
- As a conclusion:
 - The **highest price** stands for **French fishery products**, this covers large fish (2-4 kg) sold in HORECA with involvement of two retailers: “mareyeur” in the coastal area and wholesaler in the consumption area;
 - The **lowest price** stands for **Spanish farmed product**. Retail price for final consumer in Spain is even lower than the price at wholesale stage for HORECA in the other MS. This is related to:
 - Low ex-factory price: due to medium size of fish (1,5 - 2kg) and low production costs;
 - Low costs related to transport, platform and retail (optimisation of flows between farms and large-scale retailers).

Figure 19: Synthesis of the price transmission analyses for turbot (EUR/kg)



Source: EUMOFA survey

7 Annexes 1: list of contacts

The following stakeholders have been consulted in the context of the survey:

- Spain:
 - ACES
 - ADESA
 - FEDEPESCA
- France:
 - Aqualabel
 - French stakeholders involved in turbot
 - Wholesalers
 - Cash & Carry company
- The Netherlands :
 - Visveiling Urk (Urk Fish Auction)
 - Neerlandia
 - Seafarm BV

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