

CASE STUDY

SEABASS IN THE EU



PRICE STRUCTURE IN THE SUPPLY CHAIN FOR SEABASS

FOCUS ON GREECE, CROATIA AND SPAIN

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Summary

- In 2016, farmed seabass production reached 191.000 tonnes globally, out of which 82.000 tonnes in the EU, 81.000 tonnes in Turkey, 24.000 tonnes in Egypt and 4.000 tonnes in the remaining countries.
In the last 10 years (2007-2016) production increased much faster in Turkey (+93%) and in the other third countries (multiplied by 14) than in the EU (+35%) where seabass farming growth took place beforehand (late 1990s-early 2000s).
Anyhow the EU aquaculture production of seabass has reached its higher level ever in 2016. Greece (43.000 tonnes) and Spain (23.000 tonnes) represent 80% of the EU total output.
- In contrast, wild seabass production decreased in the same period, by 46% globally and by 39% at EU level, mostly due to the strong decline of the resource in the Atlantic. With 5.300 tonnes in 2016, the EU represents 93% of world catches. In spite of a strong decline of its catches over the period, France is still leading the EU production.
- Overall the apparent market¹ for seabass amounts to 97.000 tonnes, which are mostly consumed fresh. The top-3 markets, Italy, Spain and France, represent more than 70% of total EU consumption. The annual consumption per capita is 190 grams on average but exceeds 500 grams in a few Mediterranean countries (Italy, Spain, Portugal, Cyprus).
- Trade for seabass is mainly intra-EU and reached 55.000 tonnes in 2016, but extra-EU imports, from Turkey, have been multiplied by 2,5 between 2012 and 2016.
- The focus on Greece, Croatia and Spain shows specific market features in each of the three MS. While seabass is mostly exported in the case of Greece and Croatia, it is mainly sold on the domestic market in Spain.
- Anyhow farmed seabass is found as whole fresh fish at retail in all countries, first and foremost in large-scale retail outlets. Wild seabass is a high-end product, interesting more fishmongers and restaurants; its price can exceed 25 EUR/kg while the farmed seabass generally remains below the 10 EUR/kg mark.
- Thanks to lower labour and operating costs, the retail price of the Croatian farmed seabass is at the same level as the Greek price, in spite of a higher ex-farm price² and a higher VAT rate.

¹ Apparent market = production + imports – exports.

² The ex-farm price is the price the fish farmer receives, regardless delivery costs usually paid by the buyer. Ex-farm price can be considered as the equivalent of first-sale price.

0 TASK REMINDER – Scope and content

0.1 Case study scope

Reminder

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

Products	Production method	Characteristics	Market and price drivers
Fresh Seabass (whole)	Aquaculture and catches (EU)	<p>Fresh product, example of a broadly farmed species in Europe</p> <p>EU is the largest producer of farmed seabass and the first producer of wild-caught seabass</p> <p>Both farmed and wild seabass are produced and consumed in the EU, but markets are different in terms of location (Member State) and outlets</p> <p>Most of wild seabass catches occur in the Atlantic whereas farmed seabass is produced in the Mediterranean sea-basin.</p>	<p>Supply/demand balance (stability of the market)</p> <p>Method of production (farmed/wild-caught, fishing gear used)</p> <p>Size of the fish</p> <p>Price of other farmed products</p> <p>Differentiation strategies (e.g. Organic)</p>

Key elements of the analyses concern:

Species -Products	Main Member States (focus)
Fresh seabass (whole) farmed and wild	Spain, Croatia and Greece

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 Greece, Croatia, and Spain.

1 DESCRIPTION OF THE PRODUCT

1.1 Biological and commercial characteristics

Case study product

Name: seabass (*Dicentrarchus labrax*)

FAO 3-alpha code: BSS

Presentation: Fresh whole or in fillets.

Commercial size:



Source: www.sardegna.se

Wild: between 25 cm and 70 cm. Minimum landing size is 36 cm for the southern Atlantic stock and 42 cm for the northern stock³, and 25 cm in the Mediterranean⁴.

Farmed: Portion-size (<400 gr.) or larger fish (between 800 gr. and 1 kg).⁵

Related codes in the combined nomenclature:

Seabass is distinguished in the Combined Nomenclature⁶ from 2012 onwards for both fresh and frozen:

- European seabass (*Dicentrarchus labrax*), fresh or chilled: 03028410
- European seabass (*Dicentrarchus labrax*), frozen: 03038410

Other seabass also distinguished, including mostly spotted seabass (*Dicentrarchus punctatus*), are not relevant for the analysis of the European market, as they are rather anecdotic in terms of volume landed:

- Other seabass (*Dicentrarchus spp.*) (excl. 0302 84 10), excluding edible fish offal of subheadings 0302 91 to 0302 99, fresh or chilled: 03028490
- Other seabass (*Dicentrarchus spp.*) (excl 0303 84 10), excluding edible fish offal of subheadings 0303 91 to 0303 99, frozen

³ Source: Commission Implementing Regulation (EU) 2015/1316 of 30 July 2015 derogating from Council Regulation (EC) No 850/98, as regards the minimum conservation reference size for sea bass (*Dicentrarchus labrax*)

⁴ Source : Council Regulation (EC) No 1967/2006

⁵ http://pdm-seafoodmag.com/guide/poissons/details/product/Bar_commun.html

⁶ CN is a tool for designating goods and merchandise which was established to meet simultaneously the requirements both of the Common Customs Tariff and of the external trade statistics of the EU. The basic regulation is Council Regulation (EEC) n°2658/87; an updated version of the Annex I is published every year as a Commission regulation (latest version: Commission Implementing Regulation (EU) n°2016/1821).

Biological parameters

The wild seabass has a demersal behavior, inhabits coastal waters down to about 100 m depth, but more common in shallow waters, on various kinds of bottoms; often entering estuaries and sometimes ascending rivers. Young fish form schools, but adults appear to be less gregarious. Reproduction in January to March in the Mediterranean and Black Sea, extending up to June for the Atlantic populations. A voracious predator, feeding on small shoaling fish and a wide range of invertebrates including shrimps, prawns, crabs, squids and molluscs.⁷

Parameter	Characteristics ⁸
Temperature	5-28°C
Habitat	Coastal waters down to about 100 m depth but also in estuaries and brackish water lagoons (seabass is euryhaline)
Diseases in farming	Virus (viral encephalo-retinopathy), bacteria (Vibriosis), bacterium (Photobacteriosis, Myxobacteriosis, Mycobacteriosis, Epitheliocystis) dinoflagellate (Amyloodiniasis), ciliates (Cryptocayoniasis), Myxosporidiosis, Microsporidiosis, monogenean trematode (Gill fluke infections), nematoda (Anisakis spp.) and crustacea (isopods).
Maturation	18 months for the 400 g commercial size
Diet in the wild	Carnivorous: small fish, prawns, crabs and cuttlefish.
Diet in farming	In nursery, juveniles are fed with dry pelleted feed. For the ongrowing stage, feeding consists of extruded pellets of fish.
Juvenile phase	75 days
Grow-out	18 months
Distribution in the wild	North Atlantic from Norway and the British Isles southward to Morocco and the Canaries, also Mediterranean and Black Sea. Elsewhere, southward to Senegal.
Farming	Turkey, Greece, Spain, Egypt, Italy, Croatia, Tunisia, France, Cyprus, Croatia and to a lesser extent several other Mediterranean countries.
Farming system	Estuarine semi-intensive, sea-cage system (most common) or tank systems

Source: FAO

⁷ <http://www.fao.org/fishery/species/2291/en>

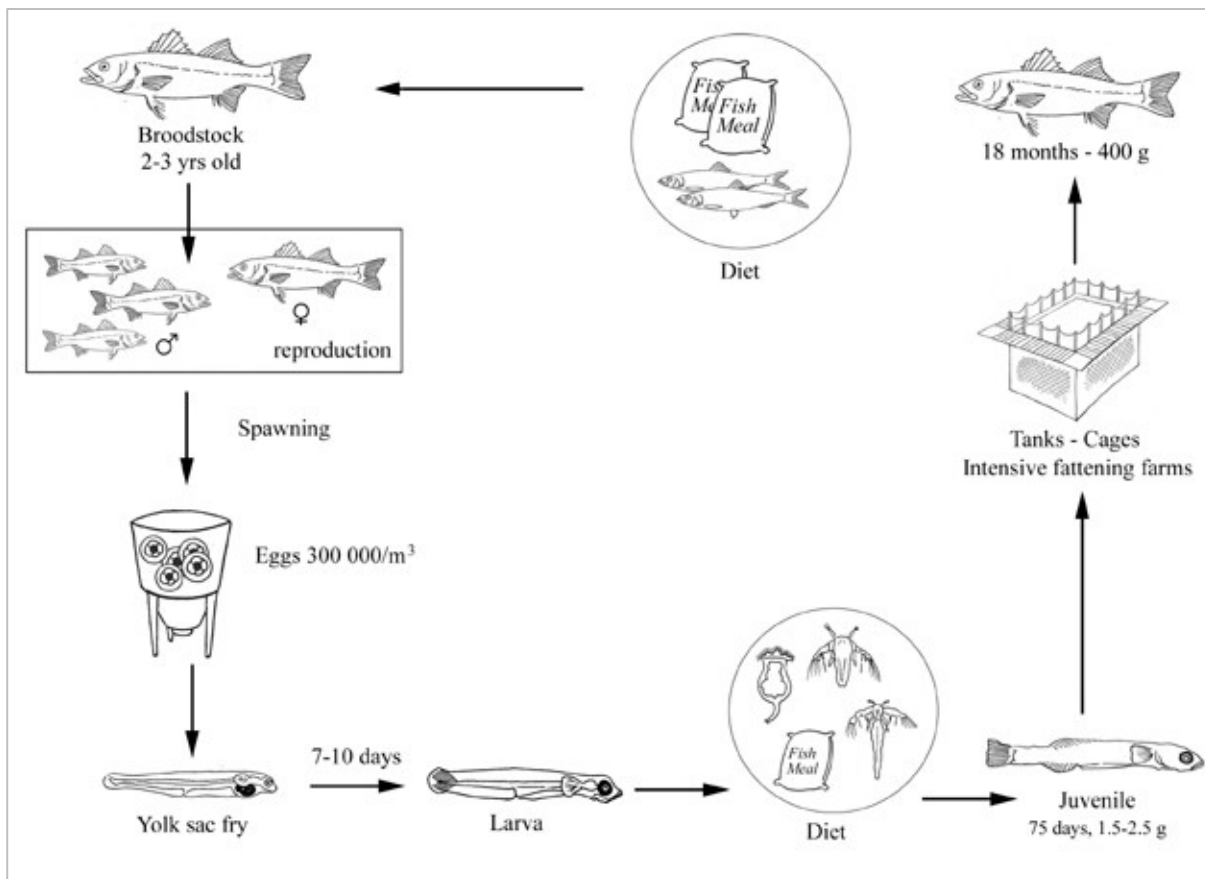
⁸ http://www.fao.org/fishery/culturedspecies/Dicentrarchus_labrax/en

1.2 Production cycle

Although seabass can be farmed in seawater ponds and lagoons, the bulk of production comes from sea cage farming. The cages are usually made of steel with areas of 4 to over 10 m², having nets suspended below the walkways up to 6-8 m deep. Some farms are anchored close to the land and can be served from a landing. Others are located in the open sea or in the middle of a protected bay and can only be served by boat.

Juveniles are produced in hatcheries and sold to farmers as on-growing stock at a size of 1,5-2,5 g. The on-growing juveniles reach 400-450 g in 18-24 months. Fattening can occur in tanks or in cages system.

Figure 1: Farmed seabass production cycle



Source: FAO

1.3 World production of seabass

1.3.1 Evolution of aquaculture production

Seabass were historically cultured in coastal lagoons and tidal reservoirs before they started to be farmed at high level of production in the late 1960s. Fish culture was initially associated with salt production in coastal evaporation pans and marshes. Schools of fish living in estuarine areas were trapped and farmed in winter and spring (low evaporation season).

During the late 1960s, France and Italy competed to develop reliable mass-production techniques for juvenile seabass and, by the late 1970s, these techniques were well enough developed in most Mediterranean countries to provide hundreds of thousands of larvae. The European seabass (*Dicentrarchus labrax*) was the first marine non-salmonid finfish species to be commercially cultured in Europe. Seabass farming is often associated with gilt-head seabream farming.

In 2016, the global production of farmed seabass reached more than 191.000 tonnes; the EU production accounted for 43% of this total. According to FAO statistics, the main producing areas in 2016 were the EU (81.852 tonnes), Turkey (80.847 tonnes) and Egypt (24.498 tonnes). Other small productions are reported in other Mediterranean non-EU countries, such as Tunisia (2.564 tonnes in 2016). The world production has kept increasing in the past decade: +83% from 2007 to 2016.

Table 1: World production of farmed seabass (in tonnes) 2007-2016

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EU 28	60.494	60.443	58.656	65.180	69.052	63.929	63.875	62.825	69.763	81.852
Turkey	41.900	49.270	46.554	50.796	47.013	65.512	67.913	74.653	75.164	80.847
Egypt	598	4.383	5.381	16.306	17.714	13.798	12.328	15.167	14.343	24.498
Tunisia	793	788	1.370	1.466	2.832	1.999	1.968	1.869	2.802	2.564
Other	689	570	571	580	665	784	687	840	1.059	1.243
Totals	104.474	115.454	112.531	134.328	137.276	146.022	146.771	155.353	163.131	191.003

Source: FAO

1.3.2 Evolution of catches

European Seabass is mostly caught in the North Sea and the English Channel by EU fleets using pelagic trawls, seine and hooks and line. To a lesser extent it is also caught in the Mediterranean. In 2016, EU accounted for 93% of world catches of European seabass. Other important country in terms of European seabass catches is Egypt (5%). Global catches of European seabass reached 5.751 tonnes in 2016. During the past decade, European seabass catches followed a significant decreasing trend from almost 9.000 tonnes in 2007 to 5.300 tonnes in 2016 (–39%). This strong trend is mainly due to the situation of the stock in the Channel and the North Sea, which has continued to decline in 2015 and 2016 despite the measures introduced to restore stocks.⁹

Table 2: World catches of European seabass (in tonnes) 2007-2016

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EU 28	8.805	6.243	8.285	9.090	8.529	7.926	8.530	7.466	5.914	5.337
Egypt	1.550	1.125	1.336	1.326	969	969	967	873	426	314
Other	284	269	265	436	264	101	80	89	97	100
Totals	10.639	7.637	9.886	10.852	9.762	8.996	9.577	8.428	6.437	5.751

Source: FAO

⁹ https://ec.europa.eu/info/sites/info/files/contribution-neil-osborne-consultation-on-fishing-opportunities-2018_en.pdf

2 STRUCTURE OF THE EU MARKET

2.1 EU production of seabass

2.1.1 Evolution of seabass catches by EU fleets

In 2016, EU seabass catches reached 5.337 tonnes. France is by far the main MS in terms of catches, with 2.757 tonnes caught by the French fleet in 2016, accounting for 52% of EU total catches. Other important MS in terms of catches are Spain (11%), the UK and Portugal (both 10%). Then come Italy, Greece and the Netherlands with catches between 150 and 300 tonnes in 2016.

Over the past decade, EU seabass catches have experienced a strong declining trend (–39%). This trend is mainly attributable to the strong fall of catches in France (–48%) and, to a lesser extent, in the Netherlands (–59%) and in Greece (–57%). The main reason of this strong fall is the declining of seabass resource especially in the northern Atlantic (Channel, Celtic and Irish Seas, southern North Sea) due to an increase in the fishing pressure and a reduction the reproduction. This led to new EU Regulation in 2015, aiming to reduce seabass catches drastically in these areas¹⁰. In other MS, seabass catches experienced slighter declining trends (–23% in the UK and –10% in Spain), or even increased (+10% in Portugal and +73% in Italy).

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

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
France	5.346	3.247	5.469	6.034	5.464	4.990	5.488	4.372	3.428	2.757
Spain	632	563	638	687	815	663	758	568	559	569
United Kingdom	715	790	698	737	791	896	803	1040	682	551
Portugal	495	403	414	489	440	369	502	661	437	546
Italy	205	186	163	159	154	184	160	167	315	355
Greece	812	472	314	348	299	274	287	242	204	348
Netherlands	376	380	395	399	394	379	370	253	218	156
Other	224	202	194	237	172	171	162	163	71	55
Totals	8.805	6.243	8.285	9.090	8.529	7.926	8.530	7.466	5.914	5.337

Source: FAO

¹⁰ https://ec.europa.eu/fisheries/cfp/fishing_rules/sea-bass_en

2.1.2 Evolution of production of farmed seabass in the EU

The production of farmed seabass in the EU reached 81.852 tonnes in 2016, its highest level ever. Most of this production occurred in Greece (52%) and Spain (28%). Other main producing MS were Italy (8%), Croatia (6%), France (3%) and Cyprus (2%).

From 2007 onwards, farmed seabass production has increased to reach a peak in 2011 with 69.052 tonnes, especially due to higher production in Greece and Italy. Then, from 2011 to 2014, production slightly decreased (–9%) mostly due to lower production in Greece. In 2015, production came back to its 2011 level. Finally, in 2016, EU production experienced a strong increase to reach the highest production ever (+17% compared to 2015), mostly attributable to increases in Greece (+16%) and Spain (+23%). Unlike the Italian market, the Spanish market is indeed supplied primarily by its own aquaculture sector; increase of demand and continuing investment have entailed a rapid growth of domestic production in Spain

The main highlights of the last decade in EU farm seabass production are the falls experienced in Italy and France (respectively –20% and –32%) and the significant increase of Spanish and Croatian production (respectively +151% and +90%). Croatia’s production is boosted by the growth of Italian market, undersupplied by its domestic production; 57% of Croatia’s seabass production goes to the neighbouring market of Italy.

Table 4: Production of farmed seabass in EU (in tonnes) 2007-2016

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Greece	34.760	35.036	33.631	39.884	37.089	35.805	34.920	32.142	36.600	42.557
Spain	9.152	9.740	12.655	11.491	17.548	14.455	14.945	16.722	18.600	22.956
Italy	8.505	6.813	6.714	6.457	6.672	6.896	6.330	5.724	5.800	6.800
Croatia	2.800	2.700	2.800	2.800	2.775	2.453	2.826	3.215	4.488	5.310
France	3.240	4.163	1.253	2.337	2.452	2.321	2.428	2.244	2.156	2.200
Cyprus	740	752	703	1198	1.495	1.100	1.422	1.817	1.726	1.517
Portugal	1.192	1.070	420	397	461	531	575	455	295	403
Other	105	170	480	617	560	368	429	506	97	109
Totals	60.494	60.443	58.656	65.180	69.052	63.929	63.875	62.825	69.763	81.852

Source: Eurostat and FAO

2.2 Apparent market by Member State

The EU apparent market for seabass is slightly below 100.000 tonnes in 2016, which corresponds to an average per capita consumption close to 200 grams.

In absolute terms, the leading markets are Italy and Spain, which represent more than 60% of the EU market. In terms of per capita consumption, Portugal ranks first with 680 grams, followed by Cyprus, Italy and Spain, all above 500 grams.

Table 5 – Apparent market for seabass and consumption per capita in 2016

MS	Aquaculture (t)	Fisheries (t)	Imports (t lwe)	Exports (t lwe)	Apparent market (t lwe)	Consumption per capita (kg)
Italy	6 800	355	26 502	2 535	31 122	0,513
Spain	23 445	580	9 440	8 175	25 290	0,545
France	1 928	2 735	6 112	1 135	9 640	0,145
Greece	42 557	348	717	35 035	8 587	0,796
United Kingdom	0	538	6 914	309	7 143	0,109
Portugal	450	408	6 324	148	7 034	0,680
Germany	0	0	3 974	2 133	1 841	0,022
Croatia	5 291	8	167	3 870	1 596	0,381
Belgium	0	23	2 326	1 722	627	0,056
Cyprus	1 442	1	153	1 051	545	0,643
Other MS	39	852	7 472	4 834	3 529	0,023
EU 28	81 952	5 848	70 101	60 947	96 954	0,190

Sources and explanations:

- Production

Aquaculture: Hellenic Statistical Authority (Greece), FEAP (other countries)

Fisheries: EUROSTAT

- Imports – Exports:

Imports and exports include fresh European seabass (CN 03 02 84 10) and frozen European seabass (CN 03 03 84 10). Volume data come from COMEXT.

To obtain live weight equivalent figures, COMEXT figures have been multiplied by conversion factors (CF) (source: EUMOFA). For fresh seabass the CF used is 1,00 (as it is considered that fresh seabass is mostly traded whole uncutted). For frozen seabass the CF is 1,18 (frozen seabass is traded predominantly gutted).

- Consumption per capita: it is the total apparent consumption (apparent market) divided by the number of inhabitants (in 2016).

The source for population figures is EUROSTAT (population at 1st of January 2016).

Consultations made with Greek stakeholders suggest that the Greek apparent market is significantly overestimated with this calculation method, due to the fact that about 4.000 tonnes of seabass are

purchased by Italian wholesalers directly in Greece and not recorded in the Greek exports¹¹. The Greek apparent market for seabass and seabream is indeed estimated by Greek stakeholders at 20-21.000 tonnes, out of which 80% seabream and 20% seabass. The Greek market for seabass would thus amount to 4.000 tonnes and the per capita consumption would be in the region of 370 grams.

2.3 Evolution of Intra-EU trade of seabass

Both intra-EU trade flows are clearly dominated by one Member State:

- for export: by Greece, which represents 62% of all intra-EU exports in volume in 2016, ahead of Spain (13%), Croatia (7%) and Italy (4%);

- for import: by Italy, which absorbs 41% of all intra-EU imports, way ahead of Spain (12%), Portugal (11%) and France (11%).

But the domination of the export and import leaders has decreased in the last years. The share of Greece in intra-EU exports fell from 72% in 2012 to 62% in 2016, for the benefit of Spain, Croatia and Italy (whose combined exports rose from 5.900 tonnes in 2012 to 13.300 tonnes in 2016) as well as of Germany and Belgium (whose combined re-exports rose from 700 tonnes to 3.700 tonnes in the same period). Italy's weight in intra-EU imports also decreased, but less significantly, from 42% in 2012 to 41% in 2016, while notable increases were recorded for Spain (from 9% to 13%) and Portugal (from 9% to 12%).

Table 6: Intra-EU imports of fresh European seabass by MS 2012-2016 (tonnes)

MS	2012	2013	2014	2015	2016
Italy	18 266	18 043	18 765	19 977	20 594
Spain	4 225	5 899	6 268	5 657	6 764
Portugal	3 724	3 912	4 050	5 515	6 130
France	4 831	5 909	4 723	5 300	5 965
United Kingdom	7 931	8 624	4 952	4 981	5 053
Germany	1 148	1 348	1 176	1 362	1 500
Netherlands	967	937	716	740	911
Belgium	672	693	731	703	685
Ireland	511	568	459	419	449
Bulgaria	281	529	411	362	342
Slovenia	314	357	289	310	341
Romania	131	158	185	221	252
Others	588	575	1 000	1 199	1 156
EU-28	43 589	47 552	43 725	46 746	50 142

Source: COMEXT

¹¹ Speaking about Italy, the Federation of Greek Maricultures writes in its Annual Report 2017: « It is estimated that the Italian market is even larger due to Italian wholesalers buying (and transporting) at the farm gate in Greece. These sales are possibly recorded as local Greek sales.»

(https://www.fgm.com.gr/uploads/file/FGM17_WEB_ENG.PDF)

Table 7: Intra-EU exports of fresh European seabass by MS 2012-2016 (tonnes)

MS	2012	2013	2014	2015	2016
Greece	30 898	29 226	28 036	29 099	33 952
Spain	3 975	5 326	5 395	6 092	7 185
Croatia	1 282	1 652	1 962	3 116	3 736
Italy	614	1 436	1 620	2 085	2 392
Netherlands	2 370	3 100	1 608	3 280	2 351
Germany	620	930	1 109	1 591	1 956
Belgium	96	115	106	1 093	1 721
France	1 842	1 916	1 447	1 261	998
United Kingdom	417	344	311	215	253
Others	756	457	323	338	440
EU-28	42 870	44 502	41 917	48 170	54 984

Source: COMEXT

Intra-EU exports of European seabass consist almost exclusively of fresh seabass. Exports of frozen seabass are very limited: they represent 1% of exports of fresh seabass (544 tonnes in 2016).

2.4 Extra-EU trade

Extra-EU exports of seabass exceed 3.000 tonnes, i.e. 4% of the total production. They are mainly composed of fresh seabass, the frozen fish representing only 3% of the total.

Cyprus, Greece and Spain represent 83% of all extra-EU exports.

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

MS	2012	2013	2014	2015	2016
Cyprus	710	1 000	1 038	1 027	1 001
Greece	739	666	393	489	881
Spain	267	330	299	381	819
Italy	87	93	87	153	131
France	255	90	141	148	118
Others	348	482	217	275	304
EU-28	2 406	2 661	2 175	2 473	3 254

Source: COMEXT

Table 9: Extra-EU exports of frozen seabass by MS (in tonnes), 2012-2016

MS	2012	2013	2014	2015	2016
Greece	17	14	54	25	50
Spain	6	11	6	10	20
Portugal	14	8	9	5	7
Netherlands	2	3	13	14	6
Others	22	6	13	10	18
EU-28	61	42	95	64	101

Source: COMEXT

The main countries of destination for EU exports of fresh seabass are the United States, Israel (supplied by Cyprus), and Switzerland, which represent 65% of volumes exported to third countries in 2016. Until the 2014 import ban on a range of EU agricultural and fisheries products, Russia was the leading extra-EU destination.

Table 10: Extra-EU exports of fresh seabass by country of destination (in tonnes), 2012-2016

MS	2012	2013	2014	2015	2016
USA	594	536	429	563	887
Israel	508	696	844	793	828
Switzerland	282	199	288	313	409
Albania	0	81	123	240	297
Algeria	0	3	37	92	195
Kuwait	2	8	59	66	145
Russia	749	785	64	0	0
Others	271	353	331	406	493
EU-28	2 406	2 661	2 175	2 473	3 254

Source: COMEXT

Extra-EU imports are quite important, as they exceeded 16.700 tonnes in 2016. They developed much faster than intra-EU imports: +154% between 2012 and 2016, compared to +15% for intra-EU imports. As EU production remained relatively stable over the period while the EU demand was following an increasing trend, the demand surplus has been mainly covered by the fast growing Turkish supply.

Table 11: Extra-EU imports of fresh seabass by MS (in tonnes), 2012-2016

MS	2012	2013	2014	2015	2016
Italy	2 301	2 744	3 747	4 801	5 442
Netherlands	2 009	4 063	4 347	4 246	3 481
Germany	601	1 012	1 268	1 750	2 193
Belgium	0	0	0	960	1 633
Spain	563	2 228	2 668	1 568	1 600
United Kingdom	124	738	1 044	824	1 002
Greece	396	43	128	265	693
Others	588	250	99	291	683
EU-28	6 582	11 078	13 301	14 705	16 727

Source: COMEXT

Almost all extra-EU imports of fresh seabass come from Turkey.

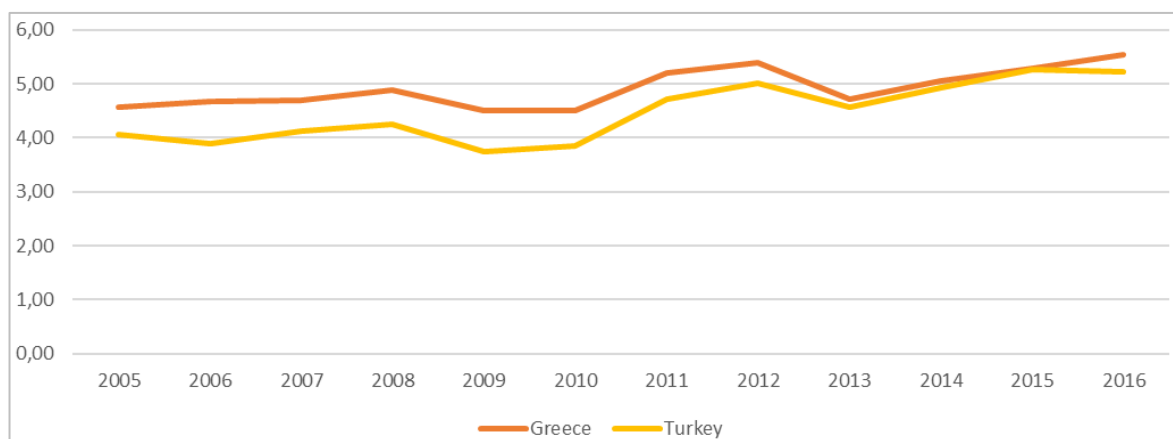
Table 12: Extra-EU imports of fresh seabass by country of origin (in tonnes), 2012-2016

Origin	2012	2013	2014	2015	2016
Turkey	6 556	10 991	13 169	14 667	16 591
Other	26	87	132	38	136

Source: COMEXT

The increasing volumes of seabass imported from Turkey in the EU, at a lower price, has affected the Greek export price to EU markets, as shown on the figure below: from 2012, EU import prices from Greece and Turkey have shown a converging trend (although a slight increase of the difference between both price observed in 2016). EU import prices from other EU producers (ES, HR) with Turkish prices are not relevant as volumes and product quality are not comparable.

Figure 2: Evolution of seabass (whole, fresh) EU import prices from Greece and Turkey (price in EUR/kg)



Source: COMEXT

Extra-EU imports of frozen seabass remain at a low level (254 tonnes in 2016, provided at 96% by Turkey) and even decreased in the last years, falling from 447 tonnes in 2014 to 254 tonnes in 2016).

3 THE SPANISH MARKET

3.1 Structure of the Spanish market

3.1.1 Structure of the supply chain for seabass

Based on data from The Ministry for Agriculture, Fisheries, Food and Environment (MAPAMA) on aquaculture facilities¹², there were 86 farms authorised to grow seabass in Spain in 2016, 50 of which were located in Andalusia. There are two main types of production methods used: sea cages (34 farms) and extensive aquaculture in estuaries (43 farms). The remaining farms are nurseries and hatcheries or research centers. Despite the smaller number of sea cages farms, it is estimated by the Association of aquaculture enterprises of Spain (APROMAR) that they produce over 90% of the Spanish farmed seabass. The production from extensive farms in estuaries is sold on local markets and is specific to Andalusia.

The production is concentrated in Mediterranean regions and in the outermost region of the Canaries (35% in the Region of Murcia, 26% in Andalusia, 23% in the Canaries and 15% in the Valencian Community¹³).

Catches of wild seabass only represent about 2% of the national production.

In 2016, imports accounted for about 40% of the supply of the Spanish market¹⁴ and it can be estimated that at least 90% of imported seabass came from aquaculture. Seabass is mostly imported fresh from Greece, Turkey and Italy (68% of total imports). Wild seabass is mainly imported fresh from France through wholesale markets. Imports of frozen seabass mainly come from the Netherlands and Germany and represent 11% of total imports in live weight equivalent.

Based on marketing data from both APROMAR and MAPAMA, it is estimated that the consumption at home, which primarily takes place through large retailers, represents between 85% and 90% of the total consumption of seabass in Spain. Large retailers and fish mongers mainly rely on farmed seabass, while wild seabass is mostly sold in restaurants.

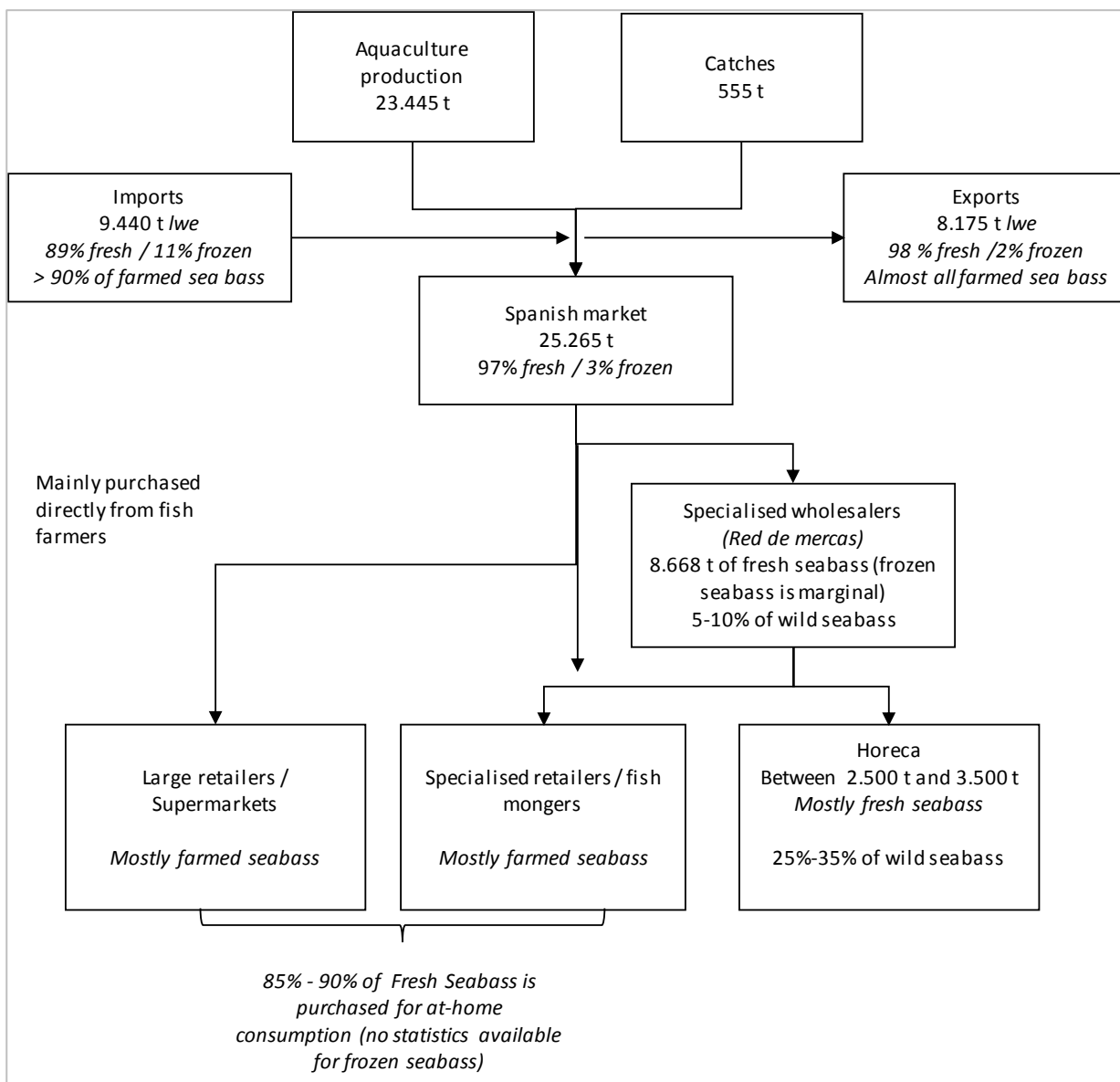
According to the feedback from wholesale markets, frozen seabass sold through wholesale markets is primarily sold to mass catering.

¹² <https://servicio.pesca.mapama.es/acuivisor/>

¹³ APROMAR 2017 annual report

¹⁴ Based on APROMAR for the aquaculture production data and COMEXT for trade data.

Figure 3: Supply chain of Seabass in Spain (data from 2016)



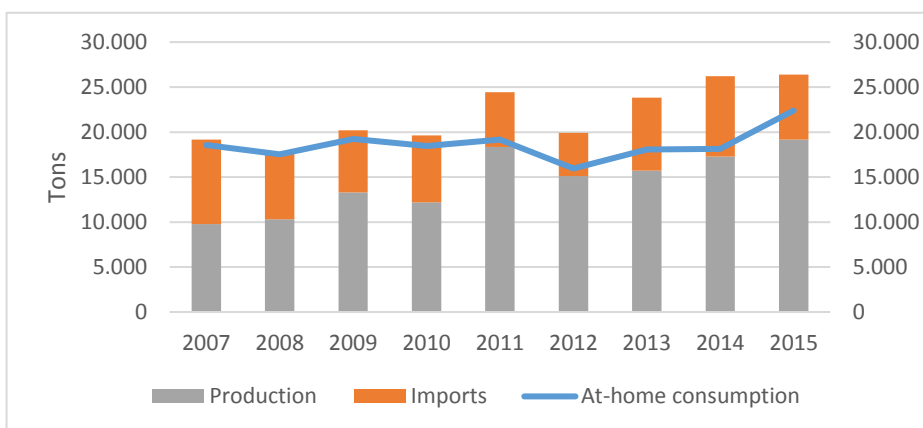
Sources: APROMAR, COMEXT, MAPAMA, Mercas

3.1.2 Characteristics of the Spanish market

With a production of over 20.000 t in 2016¹⁵, seabass has become the first finfish farmed in Spain, before rainbow trout (about 18.000 t) and gilt seabream (about 14.000 t) The production has experienced a significant growth since the early 2000’s, when it amounted to less than 2.000 t. Over the past 10 years Spain has become the second-largest producer of farmed seabass in the EU, before Italy, and increased its share of the EU production from 13% in 2006 to 27% in 2015¹⁶.

National data on consumption at home¹⁷ show that the consumption of seabass in Spain has increased by 33% between 2007 and 2016, while the total consumption of fresh fish decreased by 11%, partially as a result of the economic crisis and partially because of the evolution of consumer habits¹⁸. The increase in consumption however remains significantly lower than the increase in production (+103% between 2007 and 2015). Considering that imports have decreased by 11% between 2007 and 2016, with some fluctuations, it tends to indicate that both the share of domestic seabass consumed in Spain and exports have increased over the period, as illustrated by the following figure.

Figure 4: Evolution of supply and at-home consumption of fresh European seabass in Spain (2007-2015)



Sources: Eurostat, COMEXT and MAPAMA

¹⁵ Based on APROMAR data, which is more up-to-date than FAO data and tends to be higher than FAO data (ex: in 2015 APROMAR estimates a production of 21.324 t against a forecast of 18.600 t for the FAO).

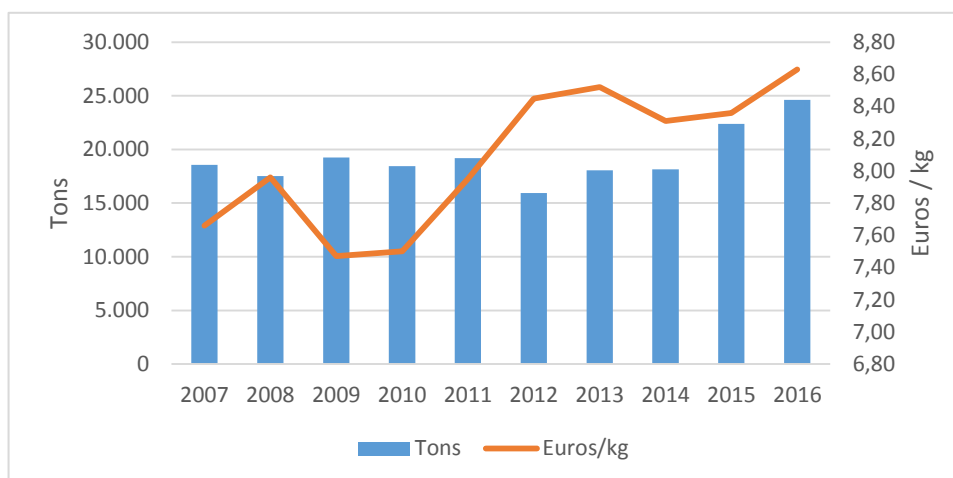
¹⁶ 2016 data at EU level is not available yet.

¹⁷ <http://www.mapama.gob.es/es/estadistica/temas/estadisticas-alimentacion/consumo-alimentario/>

¹⁸ EUMOFA study on EU Consumer habits regarding fishery and aquaculture products, 2017.

The next figure also shows that the consumption of seabass has increased since 2012 despite increasing prices.

Figure 5: Consumption trends for Seabass, volumes and price 2007-2016



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

Those trends are confirmed by data provided by wholesale markets, which show a significant increase of the volumes of seabass over the past 5 years (30% overall and up to 60% increase in Mercamadrid¹⁹).

The segmentation of the market of fresh seabass in Spain is based on two main criteria:

- The production method: catch, aquaculture in sea cages, aquaculture in estuaries;
- Size : small, also called “portion” (usually between 300 and 400 g), medium (between 400 and 600 g), large (above 600 g);

The seabass grown in sea cages represents by far the largest share of the market both for at-home consumption and in Horeca. Other production methods are marginal and represent market niche with more specific outlets. Wild seabass represents less than 5% of the supply and is mostly consumed in restaurants. Estuary seabass represents about 8% of the supply and is mostly consumed close to the production area (i.e. in Andalusia), whether it is for at-home consumption or in restaurants.

Based on Eurostat and feedback from interviews, the price difference between seabass farmed in sea cages and in estuaries is between 1 and 2,5 EUR/kg at first sale. According to stakeholders’ interviews, the characteristics differ slightly between seabass grown in estuary and seabass grown in sea cages (e.g. in terms of skin colour) but, the willingness of consumers to pay a higher price is also related to consumers’ attraction to local products.

The price difference is more significant between farmed and wild seabass. In 2016, farmed seabass was sold at 5.67 EUR/kg on average at first sale (APROMAR) while wild seabass was sold at 14.15 EUR/kg (EUMOFA).

Prices at the different stages of the supply chain also depend on fish size. The commercial size goes from 250 g to over 1,5 kg (APROMAR). There are no statistics available on prices for different sizes at first sale

¹⁹ First wholesale market for Fish in Spain

but data from Mercamadrid and large retailers reflect this differentiation as illustrated with the following examples.

Table 13: Comparison of prices for different sizes of farmed seabass at wholesale and retail stages in March 2018

Mercamadrid		Online retail prices ²⁰	
Description of the product	Most frequent price on 14/03/2018 (EUR/kg)	Description	Price on 14/03/2018 (EUR/kg)
Small whole seabass (300- 400 g)	4,4	Portion seabass 350-400 g	7,7 - 7,9
Medium whole seabass (400-600 g)	5,2	Medium seabass 400-600 g	n.a.
Large whole seabass (600 g +)	8,2	Whole seabass 800 g–1,5 kg	11,9-15,7

Data provided by Mercamadrid indicates that the segment that is increasing the most in volumes is the small seabass (or portion-size seabass).

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. All prices are expressed in real value (not adjusted for inflation).

Table 14: 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
	Prices at landing		EUMOFA
Import / export	Import CIF prices (Cost Insurance and Freight) Export FOB prices (Free On Board)	Monthly, yearly	COMEXT
Wholesale	Wholesale price	Daily, weekly, monthly, yearly	Mercamadrid, Mercabarna
Retail	Consumer price	Yearly	MAPAMA
Retail	Consumer price	Daily prices, no series	Carrefour, Eroski, Alcampo (online prices)

²⁰ Prices checked on the 14/03/2018 for Carrefour, Eroski and Alcampo

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

Table 15: Ex-farm prices in Spain

Price ex-farm	2008	2009	2010	2011	2012	2013	2014	2015	2016
Volume (t)	9.840	13.840	12.495	14.367	14.270	14.707	17.376	21.324	23.445
Average price (EUR/kg)	5,08	4,53	4,29	4,96	5,42	5,35	5,79	5,64	5,67

Source: APROMAR

Table 16: First sale prices for catches in Spain

Price ex-farm	2015	2016	2017
Average price (EUR/kg)	13,96	14,15	13,63

Source: EUMOFA (from Sales Notes)

The following table presents import volumes and prices for the two main origins of imports.

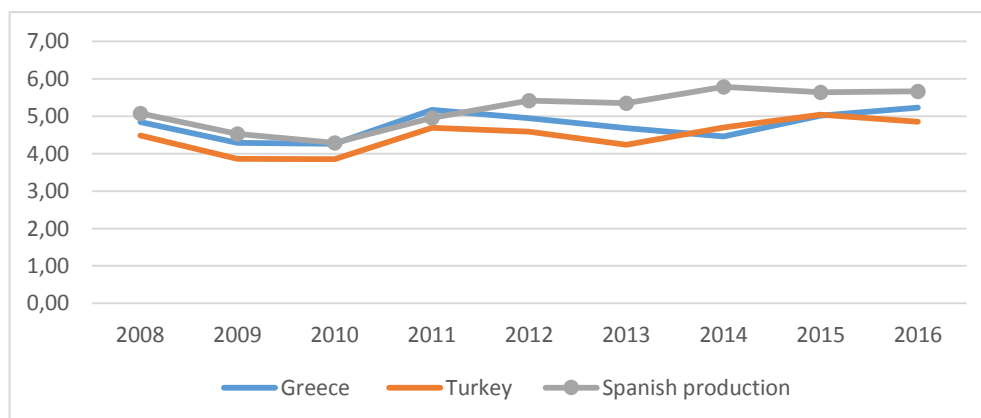
Table 17: Import prices in Spain

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Greece	4,85	4,29	4,26	5,17	4,95	4,68	4,46	5,02	5,23
Turkey	4,48	3,86	3,86	4,69	4,59	4,24	4,70	5,04	4,85

Source: COMEXT

The comparison between the first sale of fish farmed in Spain and import prices indicates that prices of Spanish seabass have increased faster than prices of Greek and Turkish seabass, which could be a result of the national campaign on marine farmed fish in Spain in 2011.

Figure 6: Comparison of prices at first sale in Spain and import prices



Sources: COMEXT, APROMAR

Table 18: Prices from wholesale markets in Spain

Wholesale market	Type of production	2015		2016	
		Tonnes	EUR/kg	Tonnes	EUR/kg
Mercamadrid	Farmed - small (300-400g)	1.536	5,4	1563	5,1
Mercamadrid	Farmed - medium (400-600g)	1.068	6,8	1368	6,3
Mercamadrid	Farmed - large (>600g)	797	9,5	781	9,5
Mercamadrid	Wild	250	32	195	27,5
Mercabarna	Farmed	1.443	5,97	873	6,19
Mercabarna	Wild	149	19,71	423	20,86

The table above clearly shows the difference in prices between wild and farmed seabass and between the different size segments. 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 volume 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 19: At-home consumption data in Spain for fresh seabass (volumes and value)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Volumes (t)	17.525	19.250	18.449	19.175	15.952	18.053	18.147	22.395	24.620
Total expenditure (1000 EUR)	139.535	143.758	138.312	152.376	134.852	153.759	150.836	187.330	212.459
Average price (EUR/kg)	7,96	7,47	7,50	7,95	8,45	8,52	8,31	8,36	8,63

Source: MAPAMA

The following prices from online stores illustrate the differences in price depending on the production method and size, as well as the presentation to the final consumer.

Table 20: Examples of retail prices for different seabass sizes, production methods and presentations

Description	Price range
Whole portion seabass (350-400g)	7,74-7,95 EUR/kg
Whole large seabass (>600 g)	11,95-15,70 EUR/kg
Portion-size seabass, gutted	11,40-12,25 EUR/kg
Portion-size seabass, filleted	21,95-25 EUR/kg
Estuary seabass* whole 400g-600g	10,90 EUR/kg
Wild seabass (1,4kg)	40,90 EUR/kg

* extensive farming

Source: Online data from Eroski, Carrefour and Alcampo

3.3 Price transmission in the supply chain in Spain

This section focuses on the supply chain of fresh farmed seabass 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.

For retail prices, average consumer prices from the Spanish Ministry have been used.

The structure of cost used comes from the study carried out by the Spanish Ministry in 2011 and 2012 for seabass and seabream²¹. The feedback from the industry confirmed that this cost structure was applicable to farmed seabass.

Costs per kilo for the different cost items correspond therefore to costs per kilo observed for seabass and seabream. They have been updated using national indices from the INE for the cost of energy (for transport costs), the price of intermediary industrial goods (for other costs) and labour.

The ex-farm price for seabass is the average price provided by APROMAR²².

Table 21: Costs and price structure in Spain for supermarkets (2016)

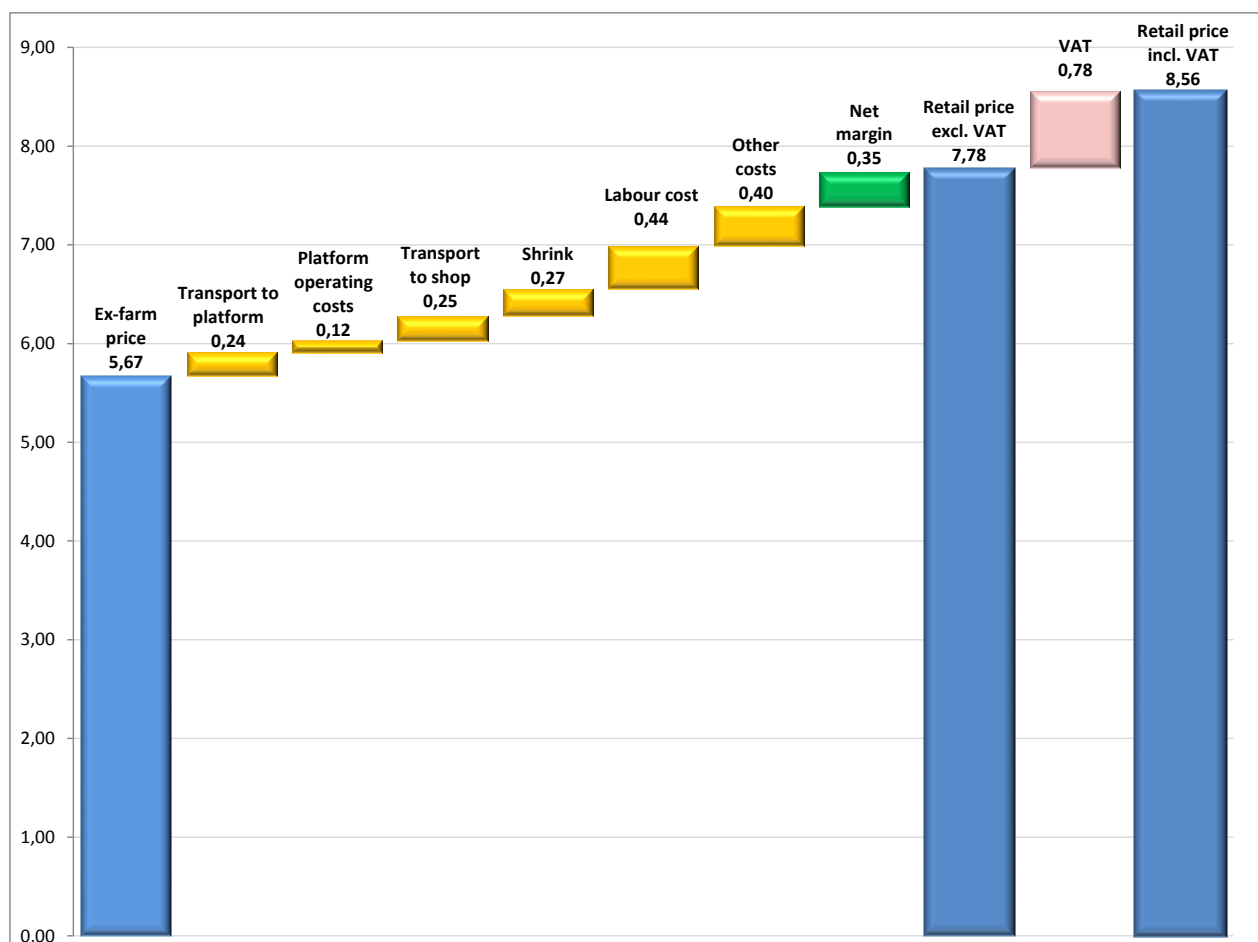
	€/kg		% of retail price
	Interval	Average	
Ex-farm price		5,67	73%
Transport farm -> Platform	0,21 - 0,36	0,28	4%
Platform operating costs	0,07 - 0,17	0,12	2%
Transport platform -> shop	0,07 - 0,43	0,25	3%
Shrink	0,18 - 0,35	0,27	4%
Labour cost	0,35 - 0,52	0,44	6%
Other costs (fish counter)	0,24 - 0,57	0,40	6%
Net margin		0,35	5%
Average selling price, exclusive of VAT		7,78	100%
VAT (10%)		0,78	
Average selling price		8,56	

Source: EUMOFA survey

²¹http://www.mapama.gob.es/es/alimentacion/servicios/observatorio-de-precios-de-los-alimentos/Estudio%20Dorada%202010_tcm30-128452.pdf

²² The price range is estimated to be included between the wholesale price (x) and 20% below the wholesale price itself (x – 20%), based on historical data at first sale and wholesale from MAPAMA's observatory of prices, APROMAR and wholesale markets. This gives a range between 3,70 €/kg and 4,40 €/kg in March 2018. The average is used in this table.

Figure 7: Costs and price structure in Spain for supermarkets (2016)



Source: EUMOFA survey

According to this analysis, intermediary costs represent 23% of the retail price, with labour cost being the most important one. Transport costs are optimised by supermarkets and the product is generally sold whole, which contributes to keep costs low.

4 THE GREEK MARKET

4.1 Structure of the Greek market

4.1.1 Greek production

Aquaculture

According to the data of the Hellenic Statistical Authority (ELSTAT), the seabass farming production has exceeded the 40.000 tonnes mark for the first time and reached a historic high in 2016²³.

Table 22: Aquaculture production of European seabass in Greece

	Quantity (tonnes)	Value (1000 EUR)	Unit value (EUR/kg)
2010	39 885	174 823	4,38
2011	37 089	189 844	5,12
2012	35 805	195 445	5,46
2013	34 920	179 352	5,14
2014	32 142	172 921	5,38
2015	36 600	199 871	5,46
2016	42 557	235 046	5,52

Source: ELSTAT

The on-growing activity is supported by several hatcheries with an annual production capacity of 400-450 million seabass and seabream juveniles. According to FGM, 180 million seabass juveniles were produced in 2016, for a value of EUR 36 million and production increased by 2.8% compared to 2015. Out of these, 16,5 million seabass juveniles were exported, i.e. a 10% increase compared to the previous year.

Table 23: Production of seabass juveniles in Greece

	Quantity (1000)
2010	142 905
2011	161 231
2012	159 301
2013	165 266
2014	173 346
2015	154 915
2016	163 316

Source: ELSTAT

²³ The data of FEAP, supplied by FGM (Federation of Greek Maricultures), are significantly different: they are always above 40.000 tonnes in the period 2012-2016 and peak at 48.000 tons in 2014 (the figure for 2016 is 46.000 tonnes).

Fishery

The Greek fleet catches annually less than 400 tonnes of seabass, i.e. less than 1% of the aquaculture production.

Table 24: Seabass catches in Greece (tonnes)

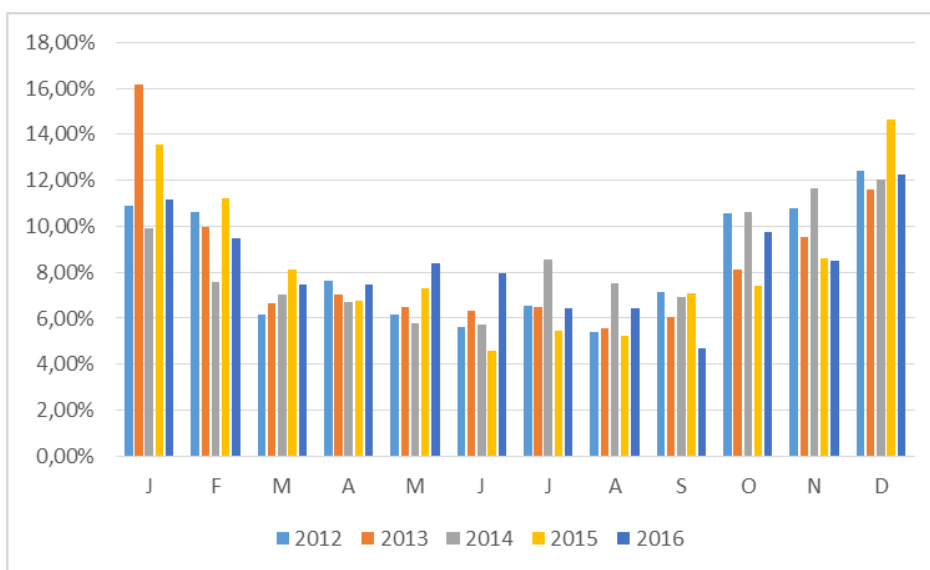
	Total	of which caught by vessels > 20 HP
2010	n.a.	348,5
2011	n.a.	299,1
2012	n.a.	274,0
2013	n.a.	287,0
2014	n.a.	242,3
2015	n.a.	204,4
2016	348,4	149,4

Source: ELSTAT

Until the reference year 2015, the catch statistics issued by the Hellenic Statistical Authority (ELSTAT) covered the professional motor-propelled fishing vessels of 20 HP and over. From 2016 onwards the data cover all motor-propelled professional fishing vessels irrespective of their horsepower²⁴.

The biggest monthly catches take place from October to February.

Figure 8: Seasonality of seabass catches in Greece (% volume)



Source: ELSTAT

²⁴ But they still ignore the inshore fishing by rowing boats (without motor), which represents about 10% of Greek total catches – all species included.

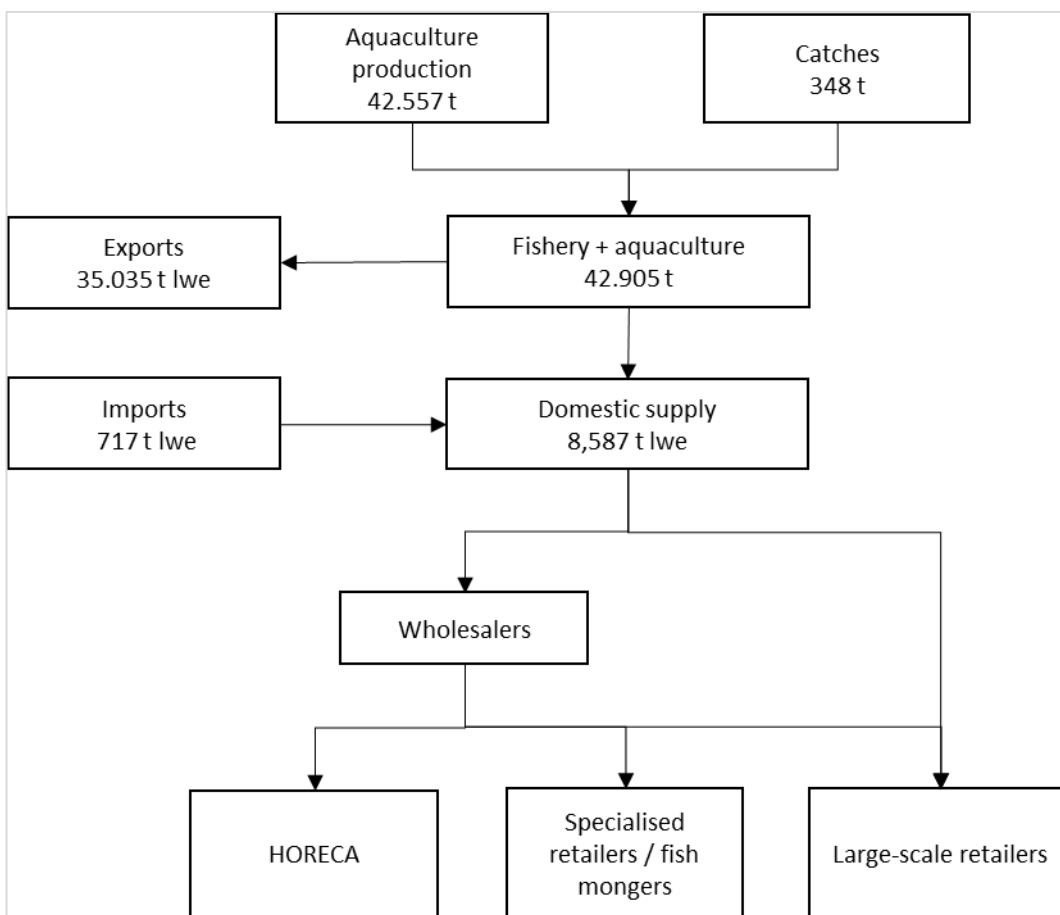
4.1.2 Structure of the supply chain for seabass

Overview of the supply chain

The following figure presents the supply chain for seabass in Greece in 2016. The national production is 42.905 tonnes, of which more than 99% is provided by the aquaculture industry and less than 1% by the fisheries.

The Greek aquaculture industry is highly export-oriented. More than 80% of the production is exported, and, as already stated, if we add to the exports recorded by Comext another 10% of the production directly bought in Greece by Italian wholesalers, the domestic supply is about 4.000 tonnes.

Figure 9: Seabass supply chain in Greece in 2016



On the Greek market, seabass is mostly sold through large-scale retailers, but specialized retailers, in particular in markets such as Varvakios Central Market in Athens, play also a role, even if more limited. Although seabass is less prized than seabream by the Greek consumer, there exists some demand in the food service and cash-&-carry chains such as Metro, The Mart and Masoutis.

4.2 Prices along the supply chain in Greece

The table below shows the price data available at the different stages of the supply chain. All prices are expressed in real value (not adjusted for inflation).

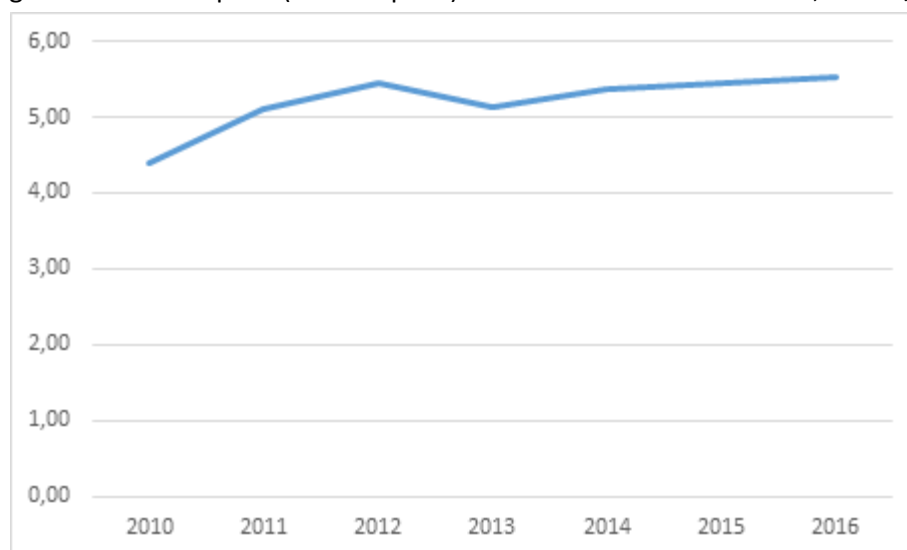
Table 25: Sources for prices in Greece at the different stages of the supply chain

Supply chain stage	Type of price	Frequency	Source
First sale (wild seabass)	First-sale price (auction)	Yearly	ELSTAT
First sale (farmed seabass)	Ex-farm price	Yearly	ELSTAT
Import / export	CIF prices (import)	Monthly	COMEXT
	FOB prices (export)	Yearly	EUMOFA
Wholesale (wild seabass)	Wholesale price	Monthly	EUMOFA (Piraeus Market)
		Yearly	OKAA
Wholesale (farmed seabass)	Wholesale price	Monthly	OKAA
		Yearly	
Wholesale (farmed seabass)	Wholesale price to HORECA	Bi-monthly	The Mart
	Wholesale price to retailers		
Retail (wild seabass)	Retail price	Weekly	EUROPANEL
Retail (farmed seabass)	Retail price	Weekly	EUROPANEL

4.2.1 First sale prices

Ex-farm prices of farmed seabass show an upward trend in the period 2010-2016, with an average yearly price increase close to 4%.

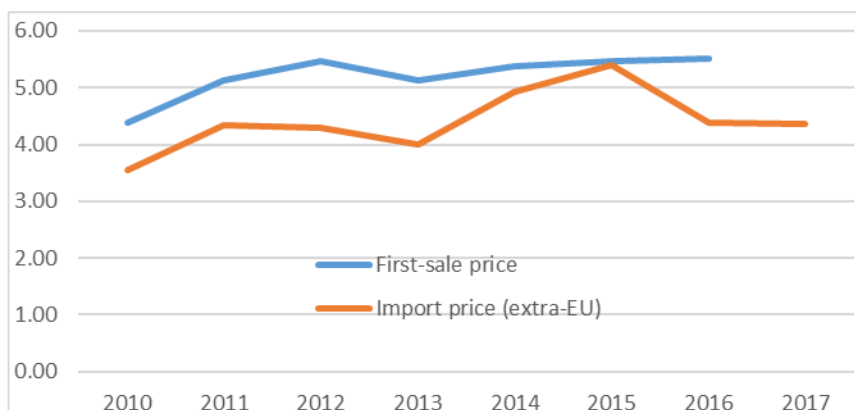
Figure 10. First sale price (ex-farm price) for farmed seabass in Greece, in EUR/kg



Source: ELStat

4.2.2 Import prices

Figure 11. Import prices of fresh seabass in Greece (extra-EU origin), in EUR/kg



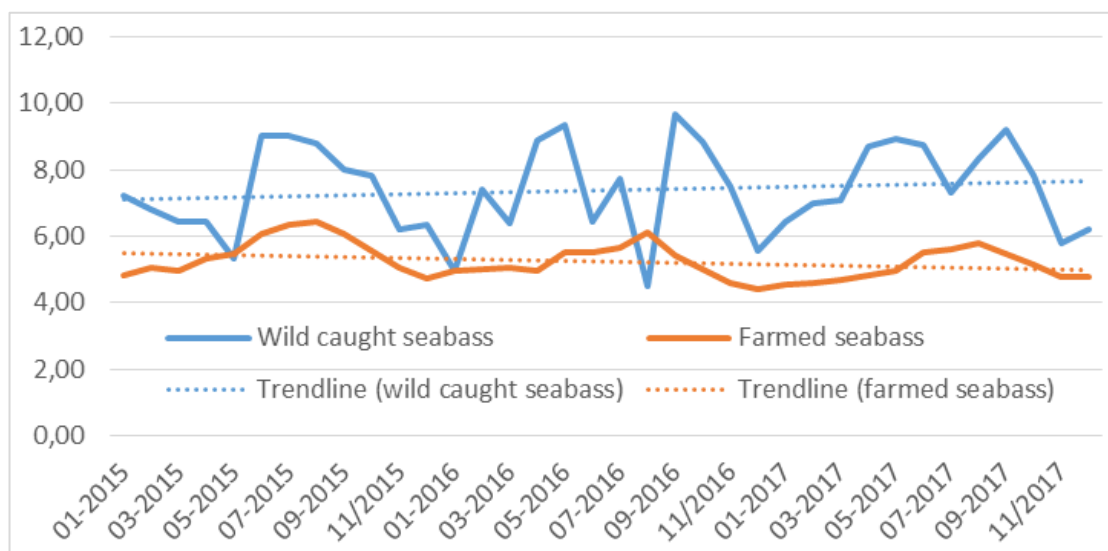
Sources: COMEXT (import price), ELStat (first-sale price)

In the first years of the period surveyed, import prices and first-sale prices of fresh seabass followed the same trend. From 2013 to 2015 import prices increased much stronger so as to converge with first-sale prices in 2015. From 2015 onwards the import price strongly decreased, as Turkish exporters, who provide the totality of Greek imports of extra-EU origin (1.941 tonnes in 2017), could combine the advantages of a growth of the output and of an increasingly favourable exchange rate (-27% between 2015 and 2017 against the Euro).

4.2.3 Wholesale prices

The data available on the Piraeus Auction Market allow the comparison of prices for wild-caught seabass and farmed seabass.

Figure 12: Evolution of the price of European seabass at Piraeus Auction Market (EUR/kg)



Source: OKAA

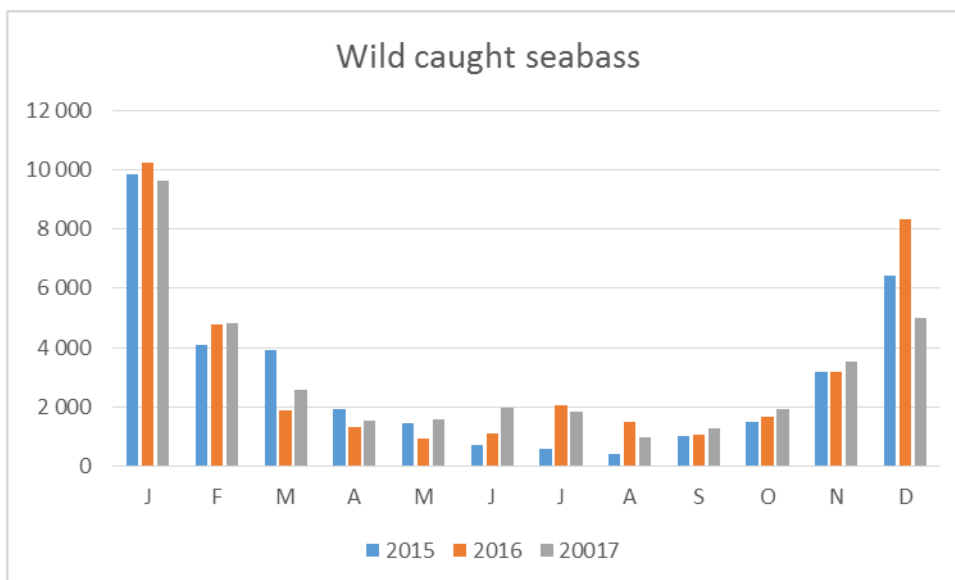
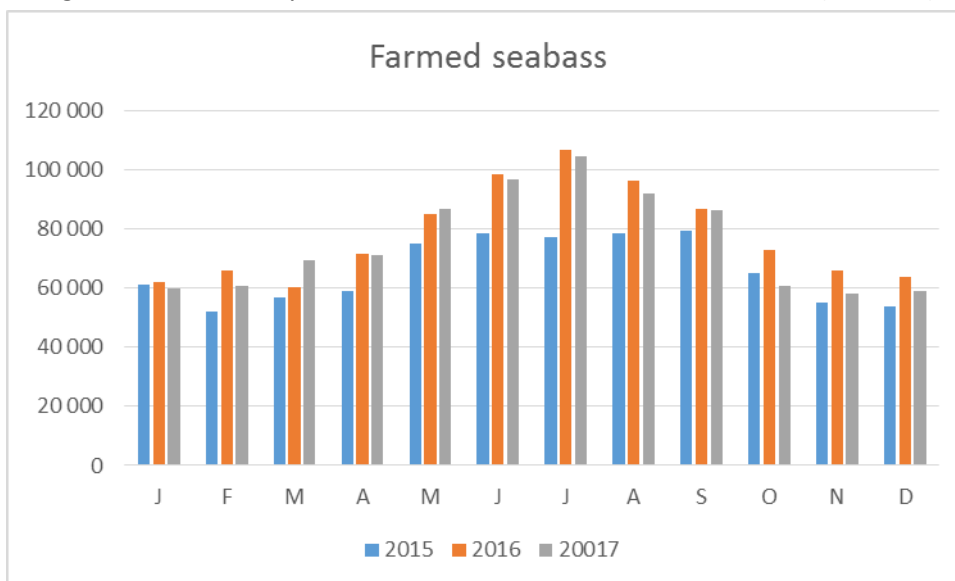
It is not a surprise to see that the price of wild seabass is higher and more volatile than the price of farmed seabass. Not too much surprising either: an upward trend can be noticed for wild seabass and a downward trend for farmed seabass.

We can also notice that the price of farmed seabass peaks every year in August. This is the consequence of two phenomena:

- the stock of new production starts from September, thus big sizes are limited;
- this is the vacation season and there is an increased demand for bigger sizes.

In consequence, limited stock + rise of demand lead to higher prices.

Figure 13: Seasonality of seabass sales in Piraeus Auction Market (volumes)



Source: OKAA

One of the major cash-and-carry chains, The Mart, previously known as Makro, issues catalogues twice a month. Unlike large-scale retailers and fishmongers, who generally offer 400-600 gr or 300-400 gr, cash-and-carry stores propose larger sizes, 600-800 and 800-1000 gr.

Table 26: Prices of farmed seabass at wholesale stage (cash-and-carry chain The Mart) (EUR/kg)

Period	Product	HORECA	Retailers
17/1-30/1/2018	Seabass 800-1000 g	9,25	9,25
31/1-13/2/2018	Seabass 600-800 g	7,50	7,50
14/2-27/2/2018	Seabass 800-1000 g	9,25	9,25
28/2-13/3/2018	Seabass 800-1000 g	7,65	7,65
14/3-27/3/2018	Seabass 800-1000 g	9,25	9,25

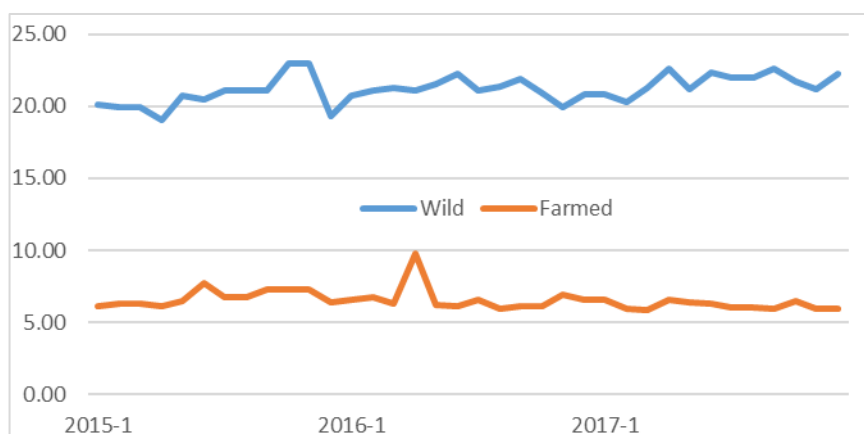
Source: The Mart

4.2.4 Retail prices

Retail prices are collected by EUMOFA on a weekly basis.

The table below shows that retail prices for wild-caught seabass are around 20-22 EUR/kg, with a slight upward trend, while prices for farmed seabass are around 6-7 EUR/kg and follow a slight downward trend.

Table 27: Prices at the retail level for European seabass in Greece in the period 2015-2017



Source: EUMOFA

During the field mission in February 2018, farmed seabass was very easy to find at retail level, especially in supermarkets, while wild-caught seabass could not be seen in supermarkets, but only in fishmonger's stores and market stands. For instance, wild seabass was proposed by two fishmongers in the Varvakios Central Market in Athens, at prices of 15,98 and 22,80 EUR/kg respectively. This shows that wild seabass and farmed seabass are not distributed in the same retail channels. At retail level, wild seabass is distributed in fishmongers' stores and on market stands, very rarely in supermarkets.

On the same Varvakios market, farmed seabass was proposed at prices ranging from 3,98 to 8,60 EUR/kg according to size and quality (e.g. freshness). On several stalls the prices were the following, according to the size:

200/300 grams	4,98 EUR/kg
300/400 grams	6,98 EUR/kg
400/600 grams	7,98 EUR/kg.

In the supermarkets fresh farmed seabass was sold either in fresh fish counters (with service) or prepacked in chilled cabinets (self-service).

Table 28: Offer of fresh farmed seabass in supermarkets in Athens – 22nd February 2018

Product	Presentation	LSR	Price
Farmed seabass 400-600 grams	bulk	AB	9,55 EUR/kg*
Farmed saebass 350 grams	packed	Lidl	3,99 EUR/piece, i.e. 11,40 EUR/kg

* on that week there was a special 20% discount, the real price was 7,64 EUR/kg.

Source: EUMOFA

4.3 Price transmission in the supply chain in Greece

This section focuses on the supply chain for farmed seabass produced in Greece and sold in supermarkets. There are no intermediaries between farmers and supermarkets. Purchase prices (ex-farm prices) are for whole ungutted fish in boxes sold at the fresh fish counter of the supermarket (unpacked).

The sources for the table and the figure below are a leading aquaculture company and a leading large-scale retailer (AB) in the upper segment of the retail market.

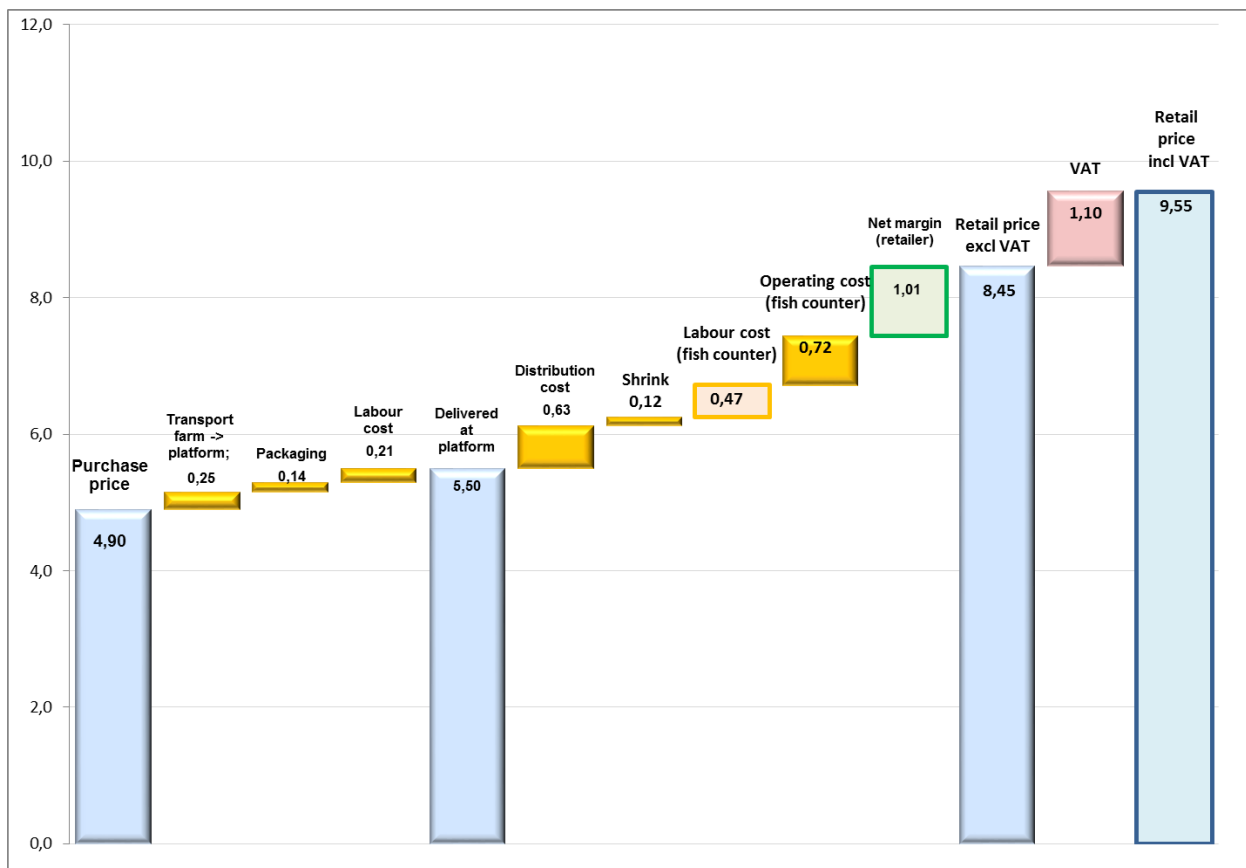
Table 29: Costs and margins for fresh farmed seabass 400-600 g for large-scale retail (February 2018) in Greece

	EUR/kg
Purchase price (to the producer)	4,90
Transport farm -> Platform	0,25
Packaging	0,14
Labour cost	0,21
Delivered at platform	5,50
Distribution cost	0,63
Shrink	0,12
Labour cost (fish counter)	0,47
Operating cost (fish counter)	0,72
Net margin (retailer)	1,01
Average selling price, exclusive of VAT	8,45
VAT	1,10
Average selling price	9,55

Source: EUMOFA survey

It has to be specified that special offers with 20-25% price discounts are proposed 3 months out of 12. At the time of the study, the seabass 400-600 g was sold at 7,64 instead of 9,55 EUR/kg.

Figure 14: Price transmission for fresh farmed seabass 400-600 grams sold in large-scale retail in Greece (February 2018)



Source: EUMOFA survey

Since the end of 2014, fresh gutted seabass is also proposed in the Greek market in packs. The discounter LIDL has developed a range “FRESH FISH TODAY” including seabass and seabream. The gutted seabass (weighing 350 grams) is sold 3,99 EUR/piece, i.e. 11,40 EUR/kg in February 2018 (the seabream is sold at 9,14 EUR/kg). The large-scale retailer sells gutted packaged seabream at 13,20 EUR/kg.

5 THE CROATIAN MARKET

5.1 Structure of the Croatian market

5.1.1 Structure of the supply chain for seabass

Wild seabass

Croatian catches of wild seabass are very limited. Abundance of seabass in the Adriatic is relatively low and the species is not specifically targeted by any fleet segment. However, it is still a valuable bycatch for coastal multi-species fisheries using trawls, nets or lines. In 2016, Croatian catches of seabass amounted only to 8 tonnes. Moreover, seabass is targeted by recreational fisheries (angling, spearfishing), Croatia being an important EU destination for summer tourism.

Farmed seabass

Croatia pioneered commercial marine aquaculture with one of the first and largest hatcheries for European seabass in the early 1980s. The largest number of farms for white fish and tuna fish are in Zadar region (central Adriatic).

In 2016, seabass has become the first species farmed in Croatia in terms of volume, reaching 5.310 tonnes. Other important farmed species are gilthead seabream and Atlantic bluefin tuna (fattening). Croatian marine aquaculture production has experienced a significant increasing trend in recent years (+36% in volume compared to 2012). Among the main species, seabass has experienced the highest increase (+116% over the same period).

Table 29: Marine aquaculture production in Croatia by main species from 2012 to 2016 (in tonnes)

Years	2012	2013	2014	2015	2016
Seabass	2.453	2.826	3.215	4.075	5.310
Gilthead seabream	2.173	2.978	3.655	4.488	4.101
Atlantic bluefin tuna	1.907	2.616	2.224	2.603	2.934
Mediterranean mussel	3.000	1.950	714	746	699
Meagre	24	44	60	67	125
European flat oyster	150	50	32	52	64
Common dentex	0	6	40	4	1
Turbot	0	0	1	7	1
Trout	0	4	13	0	0
Pargo breams	0	0	40	0	0
Total	9.707	10.474	9.960	12.043	13.235

Source: Croatian Ministry of Fisheries

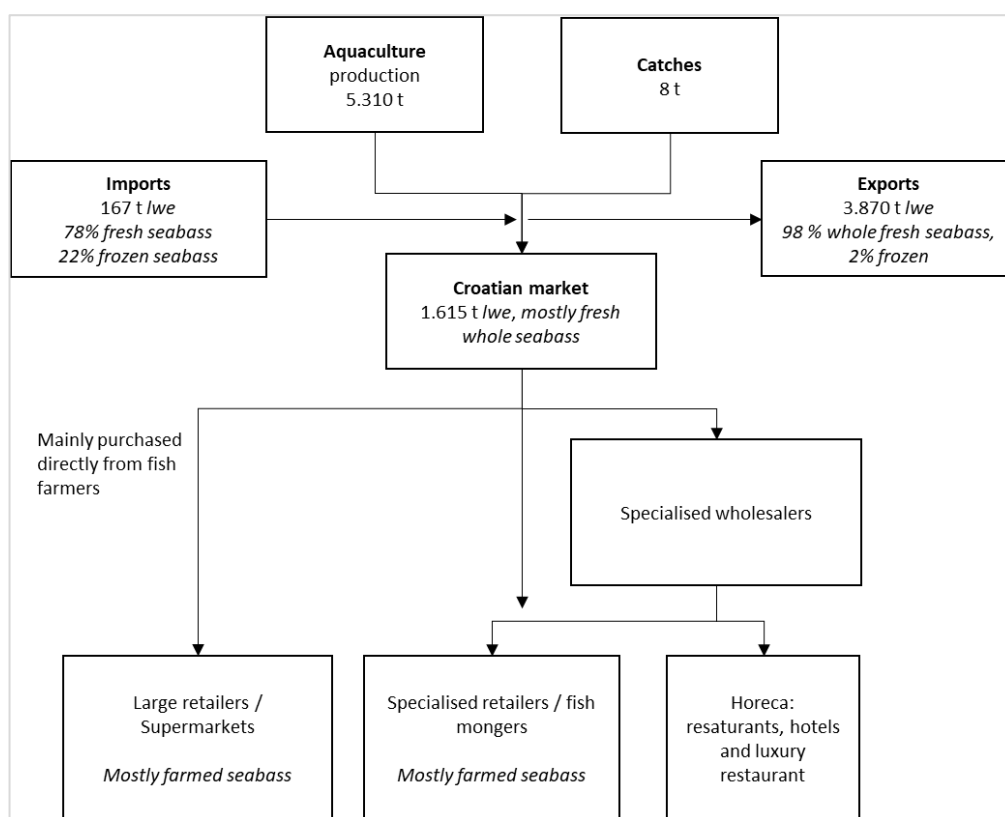
Trade

In 2016, Croatian exports of seabass reached 3.861 tonnes, of which 98% of fresh fish and 2% of frozen fish. These exports reached a value of EUR 21,7 million. The main destination was by far Italy (64% in value), and to a lesser extent, Slovenia (9%), France (8%) and Germany (6%). According to COMEXT data, all Croatian trade flows of seabass concern whole fish. Considering the low level of catches in Croatia, wild-caught seabass exports are considered to be none or negligible.

In 2016, Croatian imports of whole seabass reached 161 tonnes (80% fresh, 20% frozen). The main origin was Italy (29% in value), and to lesser extent, Greece (19%) and Turkey (8%).

The following diagram presents the overall structure of the supply chain. The Croatian wholesale stage is not organized in open wholesale markets as in France or in Spain. However, wholesalers operate in the Croatian supply chain (especially in trade or Horeca).

Figure 15: Seabass supply chain in Croatian market (data from 2016)



Sources: Aquaculture production: Croatian Ministry of Fisheries -2016; Catches: Eurostat, 2016; Conversion factor for fresh sea bass =1; Conversion factor for frozen sea bass =1,18 (EUMOFA); Trade data: COMEXT – 2016

5.1.2 Characteristics of the Croatian market

Farmed seabass

Four fish farming companies are involved in seabass farming. Cromaris is the main one, with four farms and hatcheries producing 60% of the national culture of seabream and seabass and 90 % of total fish fry produced in Croatia: about 7.500 tonnes of fish produced (2017 estimates) of which 2.000 tonnes of seabass. Cromaris fish is grown in 7 farms located in northern and central Adriatic. The company also has a small activity of fish processing (filleting, packing, marinating and smoking) and its own fishmonger shops (5); 75% of Cromaris production is exported, mostly to Italy. Moreover, Cromaris produces small volumes of organic fish (seabass and seabream), estimated to reach 300 tonnes on a yearly basis and mostly exported. Most of seabass are sold at 200-400 g portion-size for exports, but the 400-600 g size can be commonly found in the domestic market. Usually, smaller farms sell bigger fish (600-800 g) to get more value of their production.

Wild caught seabass

Over the last decade, seabass landings in Croatia have stayed at low level, fluctuating between 5 and 20 tonnes on a yearly basis. As already mentioned above, wild seabass is not a major targeted species for Croatian fisheries. But they are still a valuable bycatch for coastal fisheries and sport fisheries. Most of caught seabass average 0,8 to 1 kg and retail price varies from 25 EUR/kg at low season to 30-35 EUR/kg at touristic season. The average first-sale price provided by Eurostat landing data was 11,07 EUR/kg in 2016 (for 8 tonnes landed). The main channels for Croatian seabass on the domestic market are:

- Retailers (the main ones being Konzum, SPAR, Lidl, Kaufland): Fresh seabass (only in big retailers) mostly sold as vacuum packed whole gutted fish.
- Specialized wholesalers: e.g. METRO for restaurants.
- Hotels: portion size for their restaurants
- Luxury restaurants: usually purchasing bigger fish and wild seabass when available.

5.2 Prices along the supply chain in Croatia

This section presents the secondary data used in the analysis of prices in Croatia for farmed seabass. Wild-caught seabass is not considered in the price transmission analysis, because its market is not significant (as explained before) in terms of volumes and supply chain stages involved. Secondary data include both statistical series and data gathered in industry reports. All prices are expressed in real value (not adjusted for inflation).

Table 30: Sources for seabass prices in Croatia 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
Import / export	Import CIF prices (Cost Insurance and Freight) Export FOB prices (Free On Board)	Monthly, yearly	COMEXT
Wholesale	Wholesale price	Daily, weekly, monthly	METRO Croatia website
Retail	Retail price	Daily, weekly, monthly	SPAR, LIDL, Konzum, Cromaris (direct sales), Interviews

There is no available open source of data for ex-farm price in Croatia. However, according to interviews with stakeholders, ex-farm prices of Croatian farmed seabass average between **6,00 and 6,50 EUR/kg** for fresh whole seabass (between 400 and 600 grams). The following table presents export prices of whole fresh seabass by main destinations. As most of Croatian farmed seabass is exported to Italy (directly by fish farming companies most of the time), export prices can be a good proxy of ex-farm prices.

Table 301: Croatian export prices (in EUR/kg) of whole fresh seabass by main destination

Partner Country	2013	2014	2015	2016	2017
Italy	5,59	5,61	5,99	6,32	5,96
Slovenia	5,82	6,05	6,99	7,33	6,93
France	n.a.	6,26	6,38	5,67	5,95
Germany	n.a.	7,30	7,17	7,27	5,96
Austria	7,59	6,92	7,52	8,38	8,53
Totals	5,69	5,87	6,26	6,50	6,28

Source: COMEXT

The following table presents seabass prices available at wholesale and retail stage in Croatia. To be noted that seabass is often sold in Croatian large-scale retailers with discounts (–15% to –25%), indicating a loss-leader strategy operated by retailers, which is relatively common for high-volume fish products.

Table 312: Seabass wholesale and retail prices in Croatia²⁵

Product	Supply chain stage	Size (kg)	Unit price (EUR/kg)	Source
Whole fresh fish (gutted)	wholesale	0,6-0,8	9,22	METRO
Whole fresh fish (gutted)	wholesale	0,3-0,4	7,20	METRO
Whole fresh fish (gutted)	retail	0,3-0,4	9,39	SPAR
Whole fresh fish (gutted)	retail	0,2-0,3	9,21	KONZUM
Whole fresh fish (gutted) (pre-packed)	retail	n.a.	9,72	LIDL
Whole fresh fish (gutted) (pre-packed)	retail	0,5	9,28	KONZUM
Smoked Fillet (pre-packed)	retail	0,1	40,36	Cromaris
Marinated Fillet (pre-packed)	retail	0,1	30,26	Cromaris

Source: Retailers and wholesalers' websites (March-April 2018).

²⁵ The exchange rate used to convert Croatian Kuna to Euro is 1 EUR = 7,4315 HRK (source: ECB)

5.3 Price transmission in the supply chain in Croatia

This section focuses on the supply chain of fresh whole seabass farmed in Croatia and sold in the domestic market by large-scale retailers. Ex-farm prices are for whole fish (300-400 g., gutted) in boxes, before transport.

Table 33: Costs and price structure of farmed seabass in Croatia sold in LSR²⁶

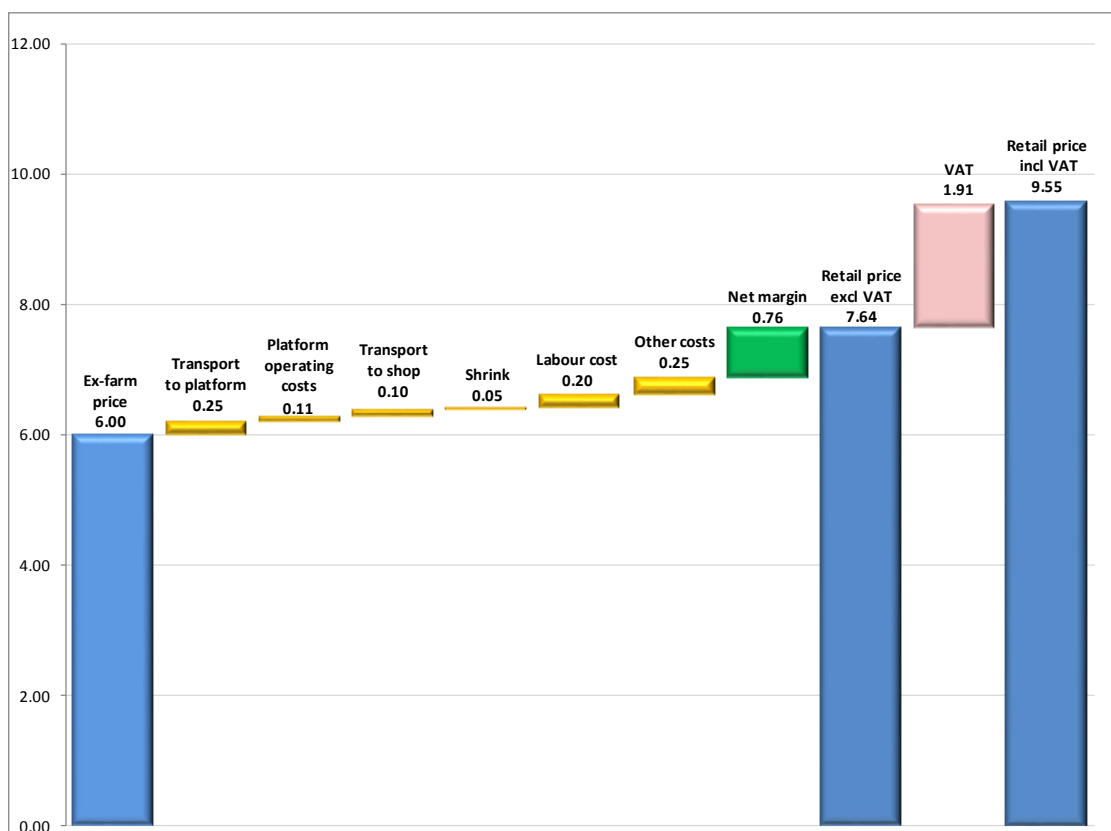
	Average	% final price
Ex-farm price	6,00	79%
Transport farm -> Platform	0,25	3%
Platform operating costs	0,11	1%
Transport platform -> shop	0,10	1%
Shrink	0,05	1%
Labour cost	0,20	3%
Other costs (fish counter)	0,25	3%
Net margin	0,76	10%
Average selling price, exclusive of VAT²⁷	7,64	100%
VAT	1.91	
Average selling price	9,55	

Source: EUMOFA survey

²⁶ Large Scale Retailers.

²⁷ For fish products, in Croatia, VAT is at 25%. Source: https://www.porezna-uprava.hr/HR_porezni_sustav/layouts/in2.vuk.sp.propisi.intranet/propisi.aspx?id=pog23005 (The Value Added Tax Law (Official Gazette of RC Narodne novine No. 73/13, 148/13, 143/14, 115/16; Decision CCRC 99/13, 153/13).

Figure 16: Price transmission for Croatian farmed fresh whole seabass (300-400 g) sold in LSR



Source: EUMOFA survey

6 CONCLUSION

Production

Seabass production has been growing in the EU, especially due to aquaculture which accounted in 2016 for 96% of the total production. Farmed seabass production has experienced a 35% increase over the past decade. On the contrary, wild seabass catches have been declining over the 2007-2016 period (-39%), accounting in 2016 for only 6% of the EU total seabass production.

Main producers of seabass at EU level are Greece, Spain, Italy and Croatia for aquaculture, and France for fishery.

Table 32: Volume of production of seabass at EU level (tonnes)

	2007	2016	Evol. 2007-2016	% total 2016
Aquaculture	60.494	81.852	35%	94%
Fishery	8.805	5.337	-39%	6%
Total	69.299	87.189	26%	100%

Source: FAO

Trade

Most of seabass products trade concerns intra-EU trade.

Both intra-EU trade flows are clearly dominated by one Member State:

- for export: by Greece, which represents 62% of all intra-EU exports in volume in 2016, ahead of Spain (13%), Croatia (7%) and Italy (4%);

- for import: by Italy, which absorbs 41% of all intra-EU imports, way ahead of Spain (12%), Portugal (11%) and France (11%).

Markets

In 2016, the EU apparent market for seabass is slightly below 100.000 tonnes, which corresponds to an average per capita consumption close to 200 grams.

In absolute terms, the leading markets are by far Italy and Spain, which represent more than 60% of the EU market. In terms of per capita consumption, Portugal ranks first with 680 grams, followed by Cyprus, Italy and Spain, all above 500 grams.

There are specific market features in each MS covered by the analysis. While seabass is mostly exported in the case of Greece and Croatia, it is mostly sold on the domestic market in Spain, through large scale retailers and fishmongers. However, in all MS, farmed seabass is found as whole fresh fish (gutted) at retail stage (especially for smaller size fish/portion fish).

Price transmission

A set of 3 price transmission analyses have been performed: farmed seabass in Spain, Greece and Croatia. Wild caught seabass is very limited in these MS and has not been covered.

A comparison of these five price transmission analyses is displayed on the figure 34. The price at “first sale”, “platform” and to “final consumer” is detailed for each supply chain covered (see the definition of these stages for each analysis in the table below).

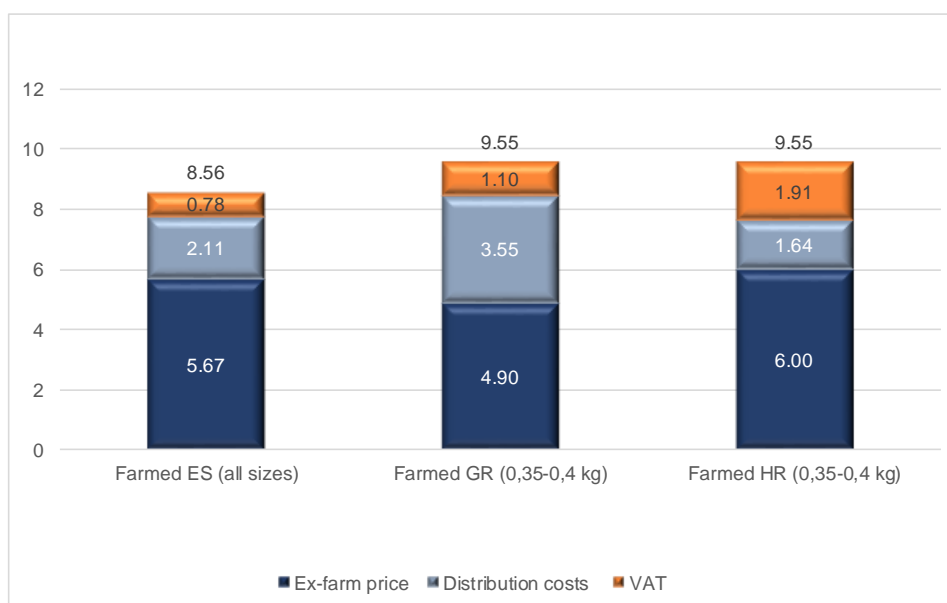
Table 33: Main features for each price transmission analysis

	Farmed - Spain	Farmed - Greece	Farmed - Croatia
Product	All sizes	400-600 g (not gutted)	400-600 g (guttet)
Sales channel	Large scale retailer	Large scale retailer	Large scale retailer
First sale	Ex-farm	Ex-farm	Ex-farm
Final consumer	Large scale retailer	Large scale retailer	Large scale retailer

Main elements from the analysis are:

- Highest ex-farm prices in Croatia. Ex-farm prices in Croatia and Spain are close while prices in Greece are lower.
- Lower labour costs and operating costs in Croatia
- Higher VAT in Croatia
- Comparable retail prices in Greece and Croatia.

Figure 17: Synthesis of the price transmission analyses for seabass (EUR/kg)



Source: EUMOFA survey

7 Annex: list of contacts

The following contacts have been made in the context of the survey:

- Spain:
 - ACES
 - ADESA
 - FEDEPESCA
 - APROMAR.
- Greece:
 - Ministry of Rural Development and Food – Directorate General for Fisheries
 - Hellenic Statistical Authority (ELSTAT) – Primary Sector Statistics Division
 - Seabass farming companies
 - OKAA (Central Markets & Fishery Organisation)/Piraeus Auction Market
 - Cash & carry company.
- Croatia:
 - Aquaculture national experts
 - Cash & carry company
 - Seabass farming company.

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