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European Market Observatory for Fisheries and Aquaculture Products

# MONTHLY HIGHLIGHTS

## CONTENTS

### First sales in Europe

Overview of 2016. Focus on Norway lobster, cod, sole and monk

### Global Supply

Case studies: The Polish market; Oysters in the EU

Consumption: Fresh scabbardfish

Macroeconomic context

## In this issue

Overall in 2016, the revenues of EU fisheries were higher, albeit with lower volumes of fish landed. First-sales value developed positively, increasing in Denmark, France, Lithuania, Portugal and the United Kingdom. By contrast, first-sales volume was lower in most countries, except Latvia and Sweden. In December 2016, the positive trend was maintained, with most countries reporting higher first sales.

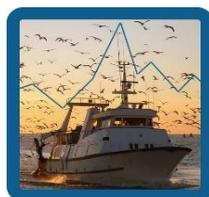
In 2016, first-sales unit prices of Norway lobster varied considerably among the countries surveyed. In France, Norway lobster experienced its highest price in December 2016, reaching 17,06 EUR/kg. In 2016, average first-sales prices of cod were highest in Denmark and lowest in Latvia. The average sole unit prices experienced high variability in Belgium, France, Italy, and Portugal, ranging from 9,24 EUR/kg (Portugal) to 11,40 EUR/kg (France). Monk first-sales prices were lowest in the UK, they converged in Denmark and France, and were highest in Belgium.

In 2016 Croatian landings of small pelagics were 62.520 tonnes, 3% less than in 2015. Anchovy, the second largest species landed, ended at 8.281 tonnes (-52%), while sardine reached 54.230 tonnes (+6%), compared with 2015.

Poland is one of Europe's largest seafood processing countries, with approximately 250 processing plants. Most of products are exported to the European market, including smoked salmon, canned herring, and prepared and ready-to-eat products of a variety of species. However, the domestic market in Poland is one of the weakest in the EU, with an annual expenditure of EUR 25 per capita (2015) and a consumption of 13 kg per capita per year (2014).

In 2015, EU oyster production amounted to nearly 110.000 tonnes. France, where more than 3.000 shellfish farmers produce oyster, is by far the largest producer. The European market is quite stable, but there is a significant export potential overseas, especially in China.

In January–November 2016, retail prices of fresh scabbardfish for household consumption in Portugal reached 6,97 EUR/kg and exhibited an increasing trend.



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# 1. First sales in Europe

## 1.1. OVERVIEW OF 2016

This section analyses first-sales data on selected fish species for 2016 as well as for December 2016. First-sales data represent the volume of fish landed and sold in a country, by both domestic and foreign fishing vessels. The first-sales data analysed from EUMOFA database concerns 10 EU Member States and Norway.

Spanish first-sales data represents the volume of fresh fish landed in 28 public ports, which are estimated to represent approximately 60% of the country's total landings of fresh fish.

Overall, first-sales value of the reporting countries at the end of 2016 was rather positive, increasing in six countries over 2015. However, first-sales volume was lower than the previous year for most of the reporting countries. This resulted in higher average first-sales prices for landings in most of the countries analysed. In December 2016, six countries reported increases in both first-sales value and volume over December 2015. By contrast, three countries experienced a negative trend from December 2015.

Table 1. YEARLY FIRST-SALES OVERVIEW OF THE REPORTING COUNTRIES (volume in tonnes and value in million EUR)

Country	Volume			Volume change from 2015	Value			Value change from 2015
	2014	2015	2016		2014	2015	2016	
Belgium	19.224	18.132	16.179	-11%	67,47	67,20	62,84	-6%
Denmark	260.575	268.819	263.635	-2%	290,80	321,22	369,82	15%
Estonia	53.660	53.402	48.965	-8%	13,73	12,81	12,07	-6%
France	207.588	199.733	195.930	-2%	633,97	664,70	668,09	1%
Italy*	84.149	91.932	85.432	-7%	300,20	323,88	317,23	-2%
Latvia	52.207	56.553	52.555	-7%	14,67	13,69	11,20	-18%
Lithuania	1.748	1.902	2.065	9%	1,17	1,46	1,51	4%
Norway	2.672.041	2.676.688	2.413.057	-10%	1.998,03	2.118,88	2.157,58	2%
Portugal	92.368	114.728	102.232	-11%	172,79	184,75	194,04	5%
Sweden	143.859	150.893	105.531	-30%	85,14	91,59	85,57	-7%
United Kingdom	475.311	409.181	439.336	7%	739,90	721,42	801,31	11%

Table 2. DECEMBER FIRST-SALES OVERVIEW OF THE REPORTING COUNTRIES (volume in tonnes and value in million EUR)

Country	December 2014		December 2015		December 2016		Change from December 2015	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Belgium	1.769	6,34	1.798	6,17	1.605	5,28	-11%	-14%
Denmark	18.123	21,94	9.251	16,05	15.975	22,25	73%	39%
Estonia	3.866	0,91	3.804	1,12	4.893	1,17	29%	5%
France	15.726	64,54	16.623	65,46	18.293	69,47	10%	6%
Italy*	5.666	23,62	9.526	32,89	7.005	27,98	-26%	-15%
Latvia	2.455	0,70	5.417	1,19	5.018	1,10	-7%	-8%
Lithuania	128	0,07	100	0,08	143	0,15	44%	74%
Norway	83.056	90,80	64.736	90,03	67.326	80,31	4%	-11%
Portugal	5.321	12,89	4.551	10,81	4.284	12,75	-6%	18%
Sweden	7.418	4,90	4.965	4,19	6.214	5,73	25%	37%
United Kingdom	19.843	48,72	15.810	41,73	21.408	50,59	35%	21%

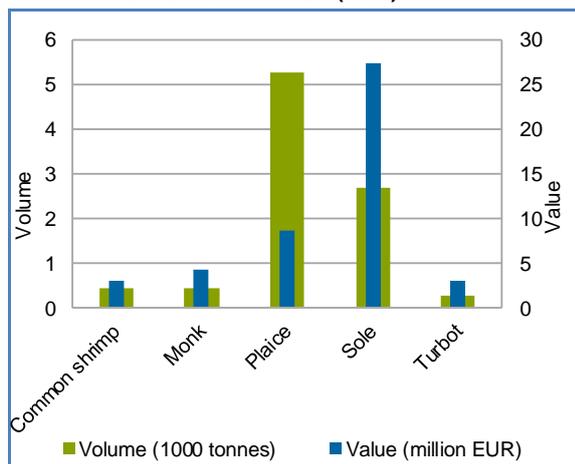
Source: EUMOFA (updated 10.02.2017); volume data is reported in net weight.

\*Partial data. First-sales data for Italy covers 229 ports (approximately 50% of the total landings).

### BELGIUM

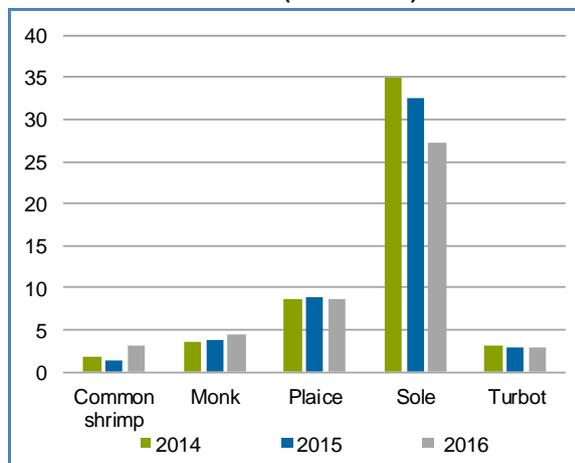
Sole, plaice, monk, common shrimp, and turbot, were the main species sold in 2016 by value. Plaice and sole were also the largest in volume, followed by gurnard, ray and cuttlefish. Three ports reported first sales, of which Zeebrugge accounted for 64% of first-sales value (EUR 40,3 million), followed by Oostende (EUR 21,5 million) and Nieuwpoort (EUR 1 million). First sales decreased in 2016, in both value and volume. Sole and plaice were the main contributors to the decrease. In addition, cod witnessed a significant decrease (-53% in value and -59% in volume). Except for turbot and monk, all major species experienced higher average prices than in 2015: common shrimp (+44%), cod (+16%), plaice (+7%), and sole (+8%). In **December 2016**, the decreasing trend remained unchanged, mainly because of sole, plaice, and cod. The average price increased for cod (+34%) and decreased for sole and plaice (both -14%) compared with December 2015. Higher first-sales value of cuttlefish, monk, and turbot did not offset the overall decrease.

Figure 1. FIRST SALES IN BELGIUM BY MAIN SPECIES BY VALUE (2016)



Source: EUMOFA (updated 10.02.2017).

Figure 2. FIRST SALES IN BELGIUM (2014-2016) BY MAIN SPECIES (million EUR)

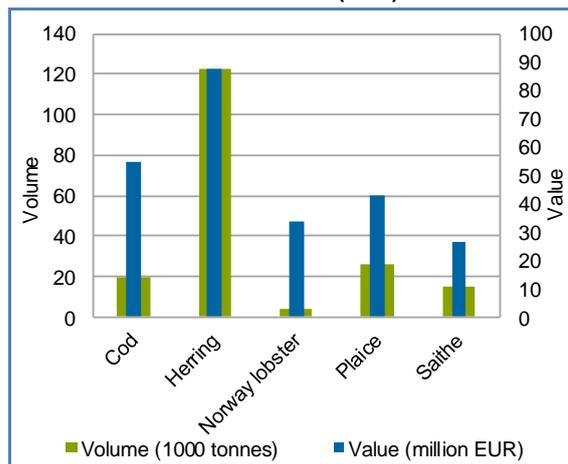


Source: EUMOFA (updated 10.02.2017).

### DENMARK

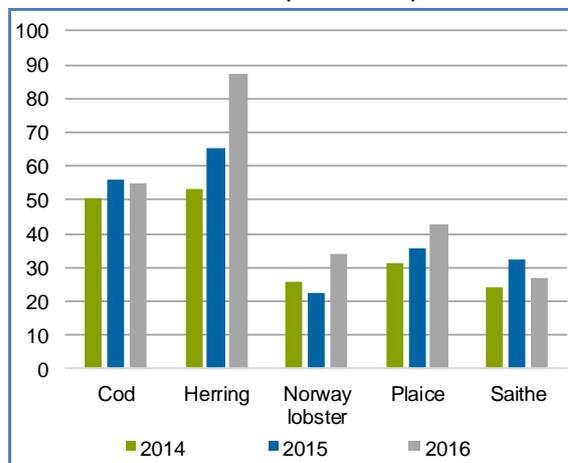
In 2016, herring, cod, plaice, Norway lobster and saithe achieved the highest first-sales value. In volume, herring was by far the highest (122.156 tonnes), followed by mussel, plaice, cod and mackerel. The top three ports: Hanstholm (EUR 84,6 million), Hirsthals (EUR 82,9 million) and Skagen (EUR 70 million) accounted for 64% of the first-sales value. Overall, the average price per kg increased significantly, mostly for common shrimp, cod, and mackerel. Higher average prices of plaice (+10%) and herring (+22%), combined with higher volume, contributed to the overall value increase. First-sales value also increased for Norway lobster (+49%), common shrimp (+93%), sole (+34%), and monk (+34%). Lower volumes of mackerel (-24%), mussel and saithe (both -19%), and cod (-11%) caused the overall decrease. In **December 2016**, mussel, Norway lobster, herring, plaice, cod, saithe, and especially herring, experienced higher first-sales value and volume. At the same time, the average prices decreased remarkably for cod (-56%), Norway lobster (-17%), plaice (-16%), and saithe (-13%).

Figure 3. FIRST SALES IN DENMARK BY MAIN SPECIES BY VALUE (2016)



Source: EUMOFA (updated 10.02.2017).

Figure 4. FIRST SALES IN DENMARK (2014-2016) BY MAIN SPECIES (million EUR)

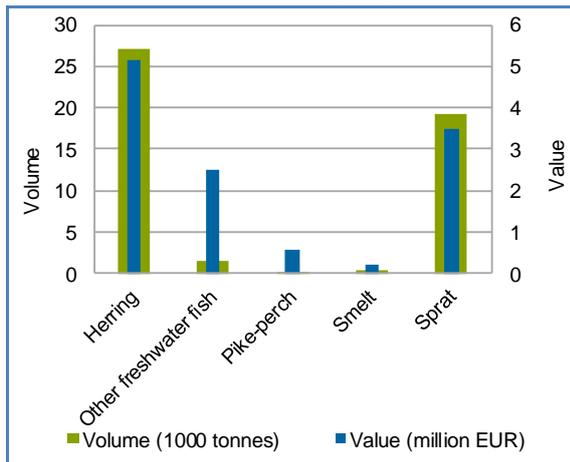


Source: EUMOFA (updated 10.02.2017).

### ESTONIA

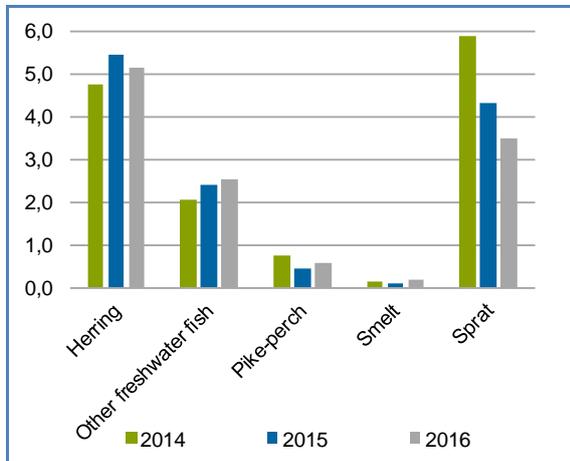
Herring, sprat, other freshwater fish (of which 94% is European perch) and smelt, accounted for the highest first-sales value and volume in 2016. Other species that experienced significant first sales were pike-perch (in value) and seaweed and other algae (in volume). The most active ports were Haapsalu (EUR 2 million), Paldiski Lõunasadam (EUR 1,7 million), Liu Kalatsehh (EUR 1,5 million), and Lemmetsa (EUR 1,4 million). Sprat (-19% in value and -15% in volume) and herring (-5% in value and -4% in volume) caused the decreases from 2015. Prices of European perch increased, as well as those of cod and smelt; prices of pike-perch, herring, and sprat experienced an opposite trend. In **December 2016**, larger landings of sprat and especially herring (which doubled in volume), resulted in significant price decreases (-7% for sprat and -11% for herring). However, this has not affected the overall value increase over December 2015.

Figure 5. **FIRST SALES IN ESTONIA BY MAIN SPECIES BY VALUE (2016)**



Source: EUMOFA (updated 10.02.2017).

Figure 6. **FIRST SALES IN ESTONIA (2014-2016) BY MAIN SPECIES (million EUR)**

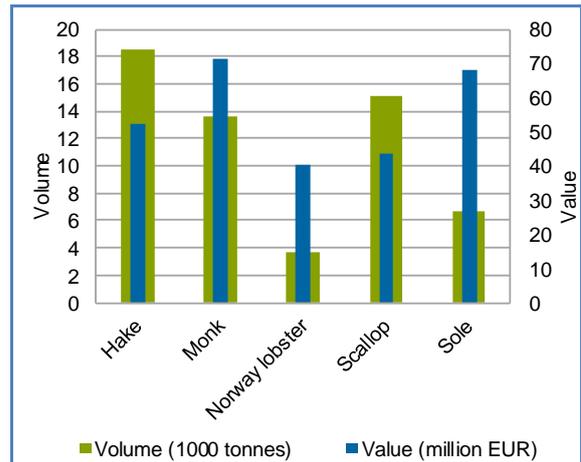


Source: EUMOFA (updated 10.02.2017).

### FRANCE

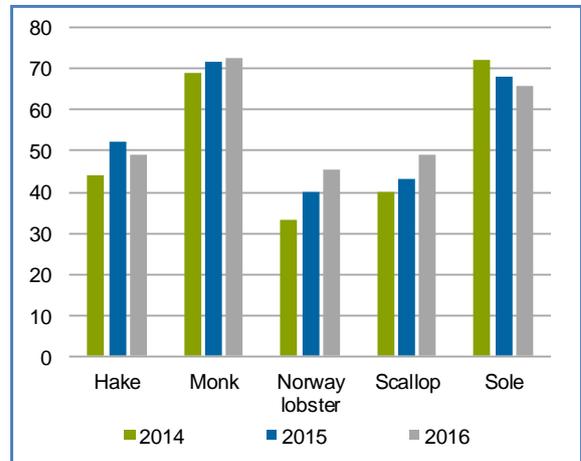
In 2016, monk, sole, hake, scallop and Norway lobster accounted for 42% of the first-sales value. In terms of volume, sardine and whiting were among the top five species, in addition to hake, scallop and monk. The top three ports were Le Guilvinec with first sales of EUR 74,7 million; Lorient, EUR 70,7 million; and Boulogne-sur-Mer, EUR 53,3 million. Scallop (+13%), Norway lobster (+14%), and monk (+2%) increased in value. The decrease in first-sales volume was mainly attributable to cuttlefish (-21%), anchovy, red mullet (both -36%), and cod (-32%). Among the most valuable species, Norway lobster (10,72 EUR/kg) and monk (5,18 EUR/kg) saw declines in the average price. By contrast, prices of European seabass (+6%), sole (+9%), and squid (+4%) experienced an opposite trend, compared with 2015. In **December 2016**, scallop, squid, monk, sole, and European seabass were the top species in value. Scallop and squid experienced increases of 10% and 91%, respectively. The significantly lower value of hake (-39%) did not prevent the overall increase. Scallop, squid, monk, and especially sardine contributed to the overall volume increase.

Figure 7. **FIRST SALES IN FRANCE BY MAIN SPECIES BY VALUE (2016)**



Source: EUMOFA (updated 10.02.2017).

Figure 8. **FIRST SALES IN FRANCE (2014-2016) BY MAIN SPECIES (million EUR)**



Source: EUMOFA (updated 10.02.2017).

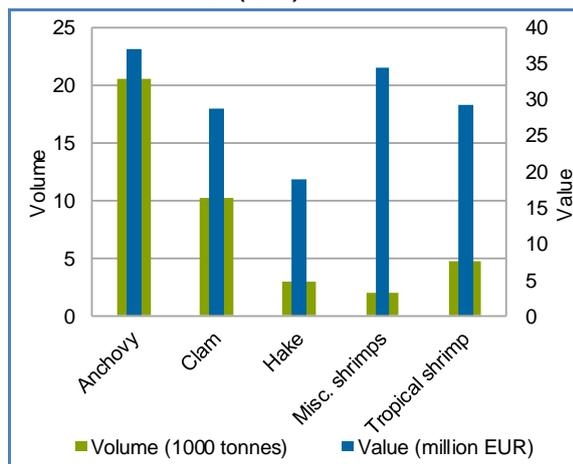
### ITALY

In 2016, anchovy, clam, giant red shrimp, deep-water rose shrimp (75% of tropical shrimp), and hake had the highest first-sales value. Anchovy, clam, deep-water rose shrimp, as well as sardine and red mullet accounted for 42% of the first-sales volume. Mazara del Vallo (EUR 32,9 million), Chioggia (EUR 23 million) and Ancona (EU 15,4 million) represent 22% of the total first-sales value. Deep-water rose shrimp (-11%) and anchovy (-6%) experienced the greatest decrease in value. Increased volume of clam (+14%) did not offset the overall decrease caused mostly by anchovy (-12%). Lower volumes of hake and octopus triggered higher average prices (both +9%). Prices of deep-water rose shrimp decreased remarkably (-15%), reaching 5,18 EUR/kg. Prices of giant red shrimp increased 3% to 19,38 EUR/kg, over 2015. In **December 2016**, the decreasing trend continued, mainly because of anchovy, clam, and deep-water rose shrimp. Except for deep-water rose shrimp (-17%), the average price increased for all main species: anchovy (+11%), clam (+30%), giant red shrimp (+13%), and squillid (+20%) over December 2015.

### LATVIA

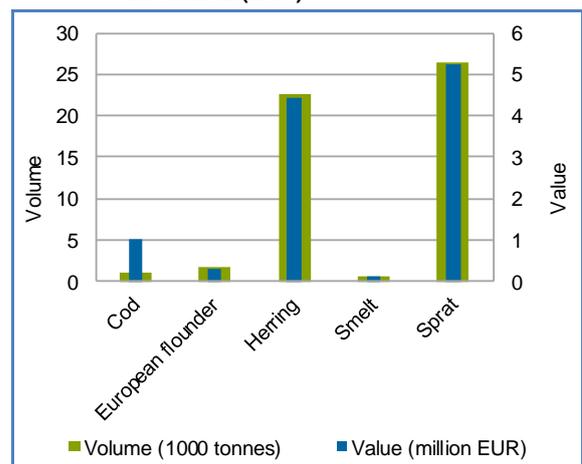
Sprat, herring, cod, European flounder and smelt were the most important species sold in 2016, representing 99% of all first sales (both value and volume). Out of seven reporting ports, three handled 86% of first-sales value: Ventspils (EUR 4,1 million), Liepaja (EUR 3,5 million), and Roja (EUR 1,9 million). In 2016, first sales decreased in both volume and value from 2015. Value decreased mostly because of cod (-25%), sprat (-21%), and to a lesser extent herring (-12%). Sprat (-11%), which accounted for half of first-sales volume, was the main cause of the volume decrease. Smelt and European flounder also contributed to the overall decrease in volume. Compared with 2015, all major species registered lower average prices: smelt (-19%), cod (-13%), herring (-12%), and sprat (-11%). In **December 2016**, all major species experienced increases in both volume and value; however, they did not offset the overall decrease, caused by sprat (-24%) in both value and volume.

Figure 9. **FIRST SALES IN ITALY BY MAIN SPECIES BY VALUE (2016)**



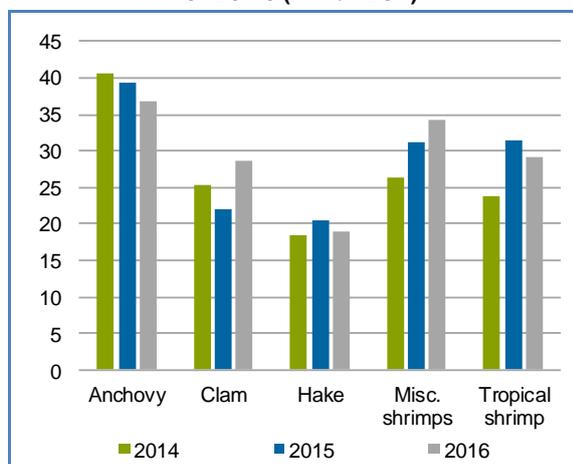
Source: EUMOFA (updated 10.02.2017).

Figure 11. **FIRST SALES IN LATVIA BY MAIN SPECIES BY VALUE (2016)**



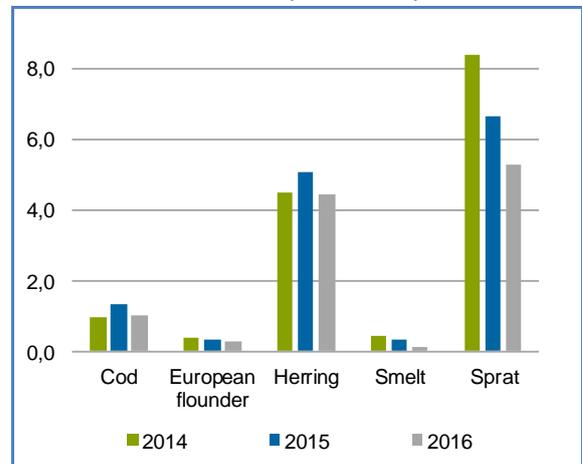
Source: EUMOFA (updated 10.02.2017).

Figure 10. **FIRST SALES IN ITALY (2014-2016) BY MAIN SPECIES (million EUR)**



Source: EUMOFA (updated 10.02.2017).

Figure 12. **FIRST SALES IN LATVIA (2014-2016) BY MAIN SPECIES (million EUR)**

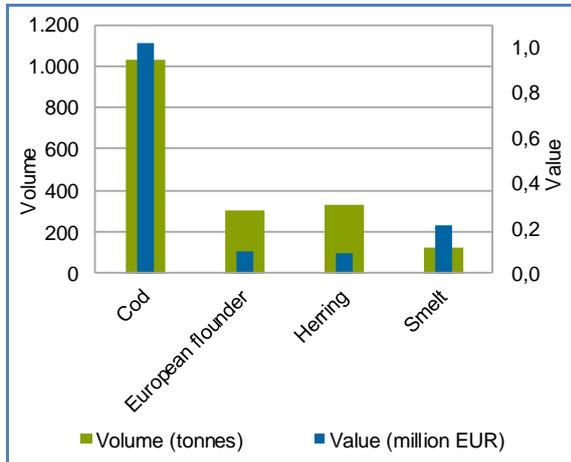


Source: EUMOFA (updated 10.02.2017).

### LITHUANIA

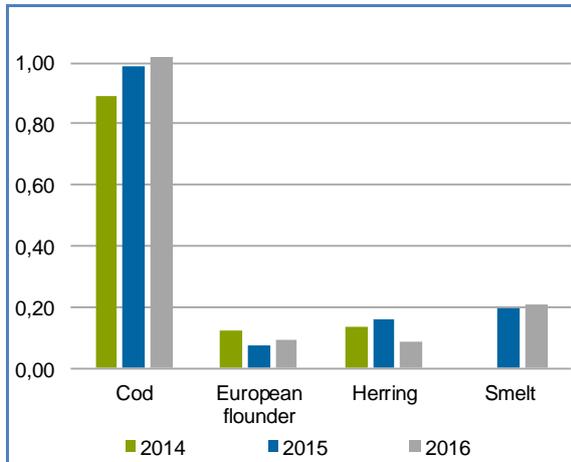
In 2016, cod, smelt, herring and European flounder accounted for 93% and 86 % of the first-sales value and volume, respectively. First sales (reported by the Klaipeda port) increased in both value (+4%) and volume (+9%) over 2015. European flounder (+27%) and cod (+2%) contributed to the increase in first-sales volume. The increase in first-sales value was mainly attributable to European flounder (+19%), smelt (+5%), and cod (+3%). Herring experienced significant decreases in volume (-32%) and price (-18%); however, this did not affect the overall first-sales value increase. Unit prices decreased for European flounder and herring. In **December 2016**, the increase in both first-sales value and volume over December 2015 was caused mainly by cod (+149% in value and 165% in volume). Among the main species landed, average prices increased remarkably for smelt (+46%) and fell sharply for European flounder (-48%).

Figure 13. **FIRST SALES IN LITHUANIA BY MAIN SPECIES BY VALUE (2016)**



Source: EUMOFA (updated 10.02.2017).

Figure 14. **FIRST SALES IN LITHUANIA (2014-2016) BY MAIN SPECIES (million EUR)**

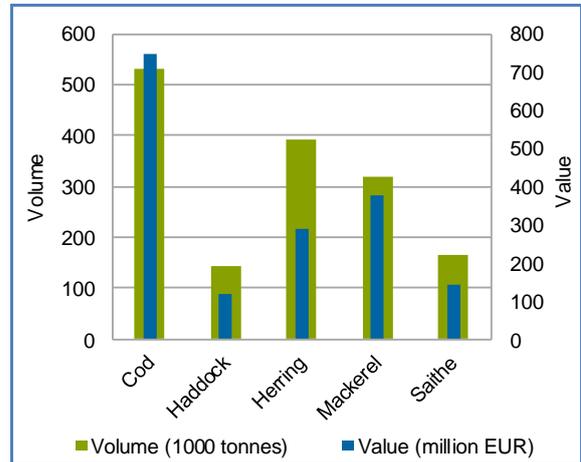


Source: EUMOFA (updated 10.02.2017).

### NORWAY

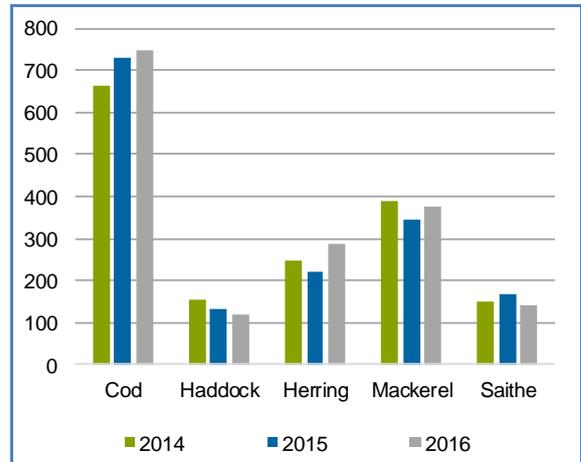
In 2016, first sales of cod, mackerel, herring, saithe and haddock accounted for 78% of the total value. Cod and herring, as well as blue whiting, mackerel and Antarctic krill represented 72% of the volume. The top three landing ports were Tromsø (EUR 368,7 million), Ålesund (EUR 324,8 million), and Båtsfjord (EUR 134 million), accounting for 36% of the total first-sales value<sup>1</sup>. Norwegian first sales increased in value mainly because of herring (+32%), mackerel (+9%), and crab (+43%). Smaller landings of blue whiting (-32%) and mackerel (-18%) contributed to the overall decrease in volume. In **December 2016**, first-sales volume increased mainly because of herring (+11%) and saithe (+120%), whereas first-sales value decreased because of crab (-37%), haddock (-28%) and cod (-21%). Among the top five species, prices increased for mackerel (+30%) and herring (+1%), and decreased for saithe, haddock (both -17%) and cod (-12%).

Figure 15. **FIRST SALES IN NORWAY BY MAIN SPECIES BY VALUE (2016)**



Source: EUMOFA (updated 10.02.2017).

Figure 16. **FIRST SALES IN NORWAY (2014-2016) BY MAIN SPECIES (million EUR)**

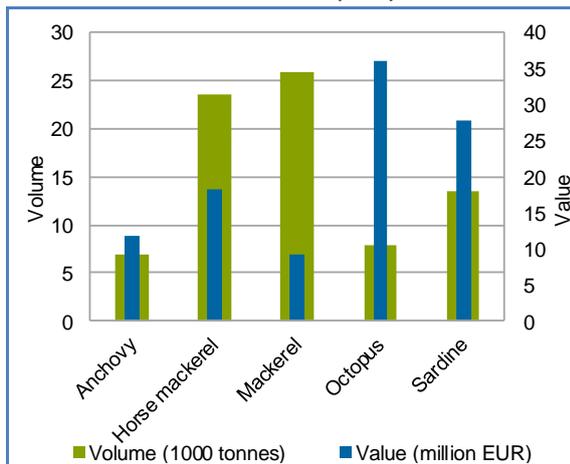


Source: EUMOFA (updated 10.02.2017).

### PORTUGAL

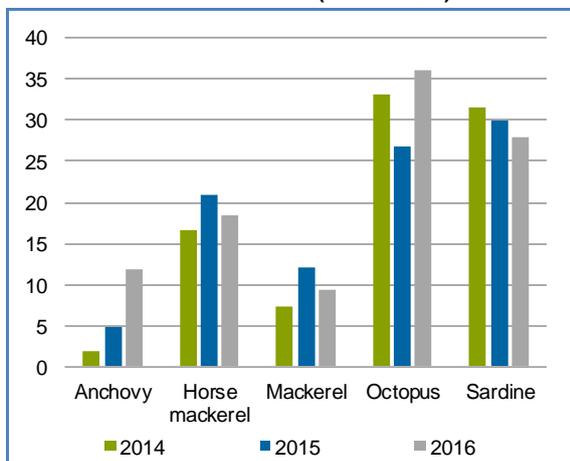
In 2016, octopus, sardine, horse mackerel, anchovy, and mackerel were the species with the highest first-sales, and accounted for 53% and 77%, respectively of the total first-sales value and volume. The top three ports in value were Sesimbra (EUR 31 million), Peniche (EUR 28,9 million), and Matosinhos (EUR 28,6 million). First-sales value increased 5% while volume decreased 11%. Anchovy (+145%) and octopus (+35%) experienced significant increases, offsetting the drop in first-sales value experienced mainly by mackerel and horse mackerel (-23% and -13%, respectively). A significant drop in mackerel landings (-41%) was the main cause of the decrease in volume from 2015. Many significant species experienced decreases in the first-sales prices, such as horse mackerel (-17%), anchovy (-10%), and sardine (-6%). In **December 2016**, first-sales value increased 18% mostly because of remarkable higher octopus first-sales value (+63%). Volume decrease was mainly the result of horse mackerel (-26%). Average prices increased for mackerel (+16%), octopus (+7%), and swordfish (+10%) and decreased for sardine (-16%), hake (-13%), and horse mackerel (-9%).

Figure 17. FIRST SALES IN PORTUGAL BY MAIN SPECIES BY VALUE (2016)



Source: EUMOFA (updated 10.02.2017).

Figure 18. FIRST SALES IN PORTUGAL (2014-2016) BY MAIN SPECIES (million EUR)

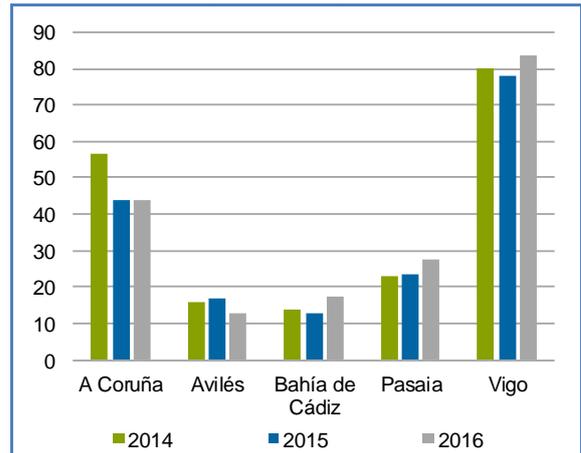


Source: EUMOFA (updated 10.02.2017).

### SPAIN

Spain landed 232.136 tonnes of fresh fish in 2016 (in the public ports, members of the state-owned Spanish Port System), a 5% increase over 2015. Vigo and A Coruña handled most of the landings, 83.366 and 43.690 tonnes, respectively<sup>2</sup>. In Vigo in **December 2016**, 11.267 tonnes of fresh fish were landed (+9% over December 2015). The increase was caused mainly by hake, horse mackerel, and Atlantic pomfret<sup>3</sup>.

Figure 19. LANDINGS IN SPAIN BY MAIN PUBLIC PORTS (1000 tonnes)

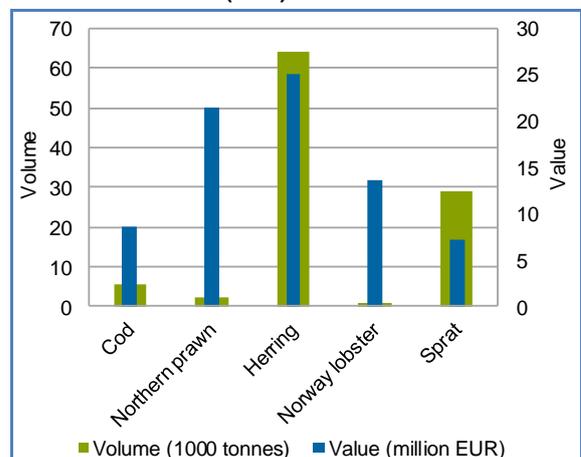


Source: EUMOFA (updated 10.02.2017).

### SWEDEN

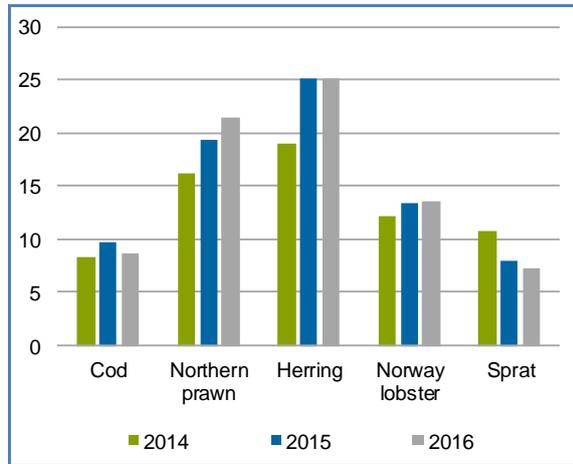
In Sweden in 2016, herring, northern prawn, Norway lobster, cod and sprat represented 89% and 97%, respectively of the first-sales value and volume. Lower values of haddock (-39%), saithe (-24%), sprat (-15%), and cod (-14%) contributed to the overall decrease of first sales, despite higher first-sales prices: haddock (+15%), sprat (+6%). Herring (-18%), sprat (-15%), and cod (-14%) caused the overall decrease in landings, which was not offset by 20% increase in northern prawn first-sales volume. In **December 2016**, Norway lobster (+63%), cod (+49%), and northern prawn (+36%) were the main contributors to the increase in first-sales value. First-sales prices decreased for Norway lobster (-34%), northern prawn (-29%), and herring (-5%) and increased for sprat (+6%).

Figure 20. FIRST SALES IN SWEDEN BY MAIN SPECIES (2016)



Source: EUMOFA (updated 10.02.2017).

Figure 21. **FIRST SALES IN SWEDEN (2014-2016) BY MAIN SPECIES (million EUR)**

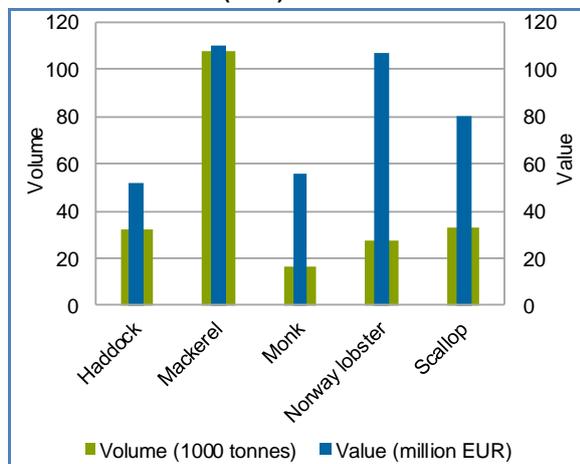


Source: EUMOFA (updated 10.02.2017).

### UNITED KINGDOM

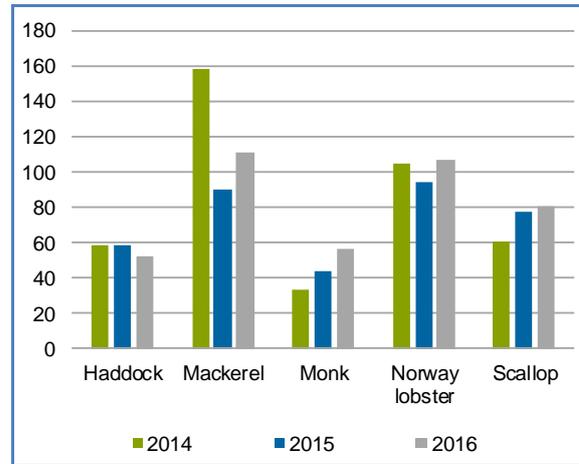
In the UK in 2016, mackerel, Norway lobster, scallop, monk, and haddock were the top species sold representing 51% of the total first-sales value. At the same time, mackerel, herring, scallop, haddock, and Norway lobster, accounted for 56% of the first-sales volume. Peterhead was the top reporting port, with 25% (EUR 197,8 million) of UK first-sales value, followed by Lerwick (8%, EUR 67,4 million), and Fraserburgh (5%, EUR 42,7 million). First-sales value increased 11% over 2015. This was mainly the result of an increase in the average unit price of several important species, especially monk, mackerel, and scallop. Other species contributing to the overall increase in value were crab (+12%) and cod (+4%). Of the top five species, haddock experienced decreases in both value and price. In **December 2016**, the first-sales increase in value was caused mainly by Norway lobster, scallop, and mackerel. Except for scallop (+17%), average prices decreased for all top species: crab (-6%), Norway lobster (-18%), cod (-20%), haddock (-39%), monk (-16%), and mackerel (-26%).

Figure 22. **FIRST SALES IN THE UK BY MAIN SPECIES (2016)**



Source: EUMOFA (updated 10.02.2017).

Figure 23. **FIRST SALES IN THE UK (2014-2016) BY MAIN SPECIES (million EUR)**

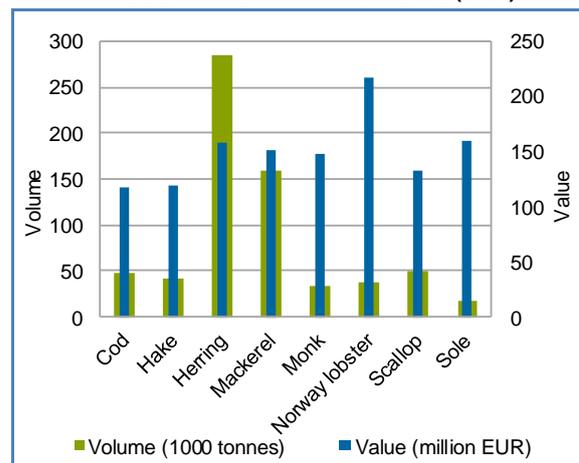


Source: EUMOFA (updated 10.02.2017).

### 1.2. FOCUS ON SPECIES IN SELECTED COUNTRIES

In 2016, the top species of the reporting countries<sup>4</sup> (with a value higher than EUR 100 million) were: Norway lobster (EUR 216,5 million), sole (EUR 160,1 million), herring (EUR 157,1 million), mackerel (EUR 151,9 million), monk (EUR 147,8 million), scallop (EUR 132,1 million), hake (EUR 119,1 million) and cod (EUR 118,1 million). Of these, Norway lobster, mackerel, monk, scallop, and especially herring (+30%) experienced increases, whereas the remaining species saw lower first-sales values than the previous year. On average, unit prices have increased for sole, herring, mackerel, cod, and scallop, and decreased for Norway lobster, monk, and hake.

Figure 24. **FIRST SALES IN THE REPORTING COUNTRIES BY MAIN SPECIES (2016)**



Source: EUMOFA (updated 10.02.2017).

1.2.1. NORWAY LOBSTER



Norway lobster (*Nephrops norvegicus*) is distributed throughout the Atlantic, from Iceland, the Faroe Islands, and Norway (Lofoten Islands)

to the Azores and the Adriatic Sea. It lives on muddy bottoms at depths of 20–800 m, and feeds on crustaceans and worms. Spawning occurs in summer<sup>5</sup>.

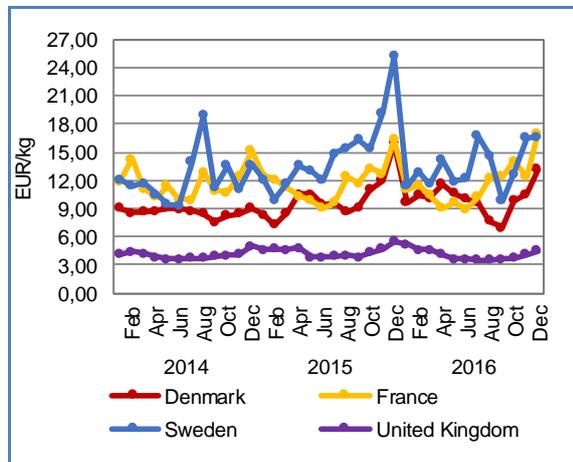
Norway lobster can live up to 12 years in the case of males, 30 in the case of females, and can reach more than 25 cm in length (measured by the carapace), though most adults are typically between 10 and 20 cm long. They reach sexual maturity at between two and three years of age. Commercially important stocks of Norway lobster in EU waters include those in the Irish and North seas, Bay of Biscay, and on the Atlantic-Iberian coast.

The most common method of catching Norway lobster is trawling, which is done when Norway lobster leaves its burrows to feed. This usually happens twice a day, at dusk and dawn. A substantial share of the catches of Norway lobster is from mixed fisheries, i.e. the southern stock is caught in the commercial fishery of southern hake<sup>6</sup>.

Norway lobster is subject to total allowable catches (TACs), which are shared between ten Member States. For 2017, the EU TACs for Norway lobster are set at 79.088 tonnes, 15% higher than in 2016. The UK has the highest fishing quota (53% or 41.742 tonnes) of the total EU TACs, followed by Denmark (14%)<sup>7</sup>.

In January 2014–December 2016, first-sales prices of Norway lobster fluctuated appreciably in the reporting countries from around 4,00 EUR/kg in the UK to 14,00 EUR/kg in Sweden. They varied significantly in Denmark, France and Sweden following an increasing trend. In the UK prices remained relatively stable. The average unit price for the period was the highest in Sweden (13,53 EUR/kg). In December of each of the past three years, prices peaked in all four countries. In France, Norway lobster experienced the highest price in December 2016.

Figure 25. NORWAY LOBSTER: FIRST-SALES PRICE IN SELECTED COUNTRIES



Source: EUMOFA (updated 10.02.2017).

We have covered **Norway lobster** in previous *Monthly Highlights*:

First sales: France (9/2016, October, 2013), Sweden (1/2016, 4/2015), Norway (4/2015), Denmark (March, 2013)

Topic of the month: (12/2016)

Trade: Intra-EU exports (5/2016)

1.2.2. COD



Cod is found on the continental shelves and in coastal waters throughout the North Atlantic. It is a demersal species, living at depths of less than 200 m.

However, in the Baltic Sea, owing to the lack of oxygen at lower depths, cod behaviour is pelagic, living in midwater. Fourteen different cod stocks exist in the Northeast Atlantic, of which the largest is the Arctic stock, located off the coast of Norway. There are also two stocks of Baltic cod, the Eastern and Western Baltic cod. The latter is the smaller of the two<sup>8</sup>.

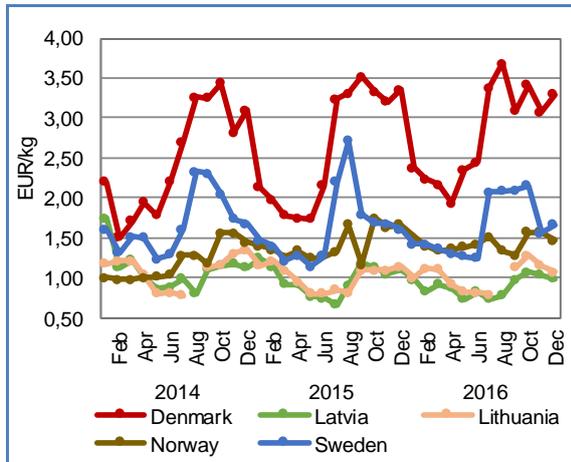
Cod is caught mainly with trawls and gillnets, usually in mixed demersal fisheries with a bycatch of flatfish (plaice, dab, flounder, and turbot).

Cod is subject to TACs, which are shared between 14 Member States. For 2017, the EU TACs for cod are set at 77.755 tonnes, of which 5.597 tonnes are for the Baltic Sea stocks. Member States with highest quotas are the UK and Germany for Atlantic cod (16.856 tonnes and 11.782 tonnes, respectively) and Denmark for Baltic cod (2.444 tonnes).

There are EU management plans for the species' long-term protection. They concern the stocks in the Kattegat, North Sea, the Skagerrak and the Eastern Channel, the west of Scotland and the Irish Sea, and the Eastern and Western Baltic. The management plans include the setting of annual TACs, restrictions on fishing effort, minimum mesh size, catch composition rules, minimum landing size, and closed areas/seasons.<sup>9</sup>

In January 2014–December 2016, first-sales prices of cod exhibited an increasing trend in Denmark, Sweden, and Norway, and a decreasing trend in Latvia and Lithuania. In 2016, unit prices were highest in Denmark (2,79 EUR/kg) and lowest in Latvia (0,90 EUR/kg); in Sweden and Lithuania they averaged 1,64 EUR/kg and 1,02 EUR/kg, respectively. In Denmark and Sweden, prices were higher in June–August and averaged 2,93 EUR/kg and 1,87 EUR/kg, respectively.

Figure 26. **COD: FIRST-SALES PRICE IN SELECTED COUNTRIES**



Source: EUMOFA (updated 10.02.2017).

We have covered **cod** in previous *Monthly Highlights*:

First sales: Lithuania (6/2016, 2/2015, 1/2014), Norway (4/2016), Denmark (8/2015), Latvia (5/2014), Sweden (February/2013, November/2013)

Topic of the month: (June/2013)

Trade: Extra-EU imports (4/2015)

Consumption: Denmark, Germany and Ireland (3/2016), Lithuania (3/2016, 4/2016), United Kingdom (3/2016, 4/2015, July 2013), Poland and Portugal (4/2015), France (4/2015, July 2013), Belgium and Sweden (July/2013)

1.2.3. **SOLE**



First-sales data apply to common sole (*Solea solea*) a long-lived flatfish that lives partly buried in sandy and muddy bottoms in both

shallow and deep (300 m) waters, searching for camouflage. During winter, sole migrates to deeper waters. The species feeds at night on small bottom animals. Sole is distributed from the Eastern Atlantic (including the North Sea and western Baltic) to the Mediterranean Sea<sup>10</sup>.

Sole spawns in spring and early summer in shallow coastal waters, from April to June in the southern North Sea, from May to June off the coast of Ireland and southern England, and in February in the Mediterranean<sup>11</sup>.

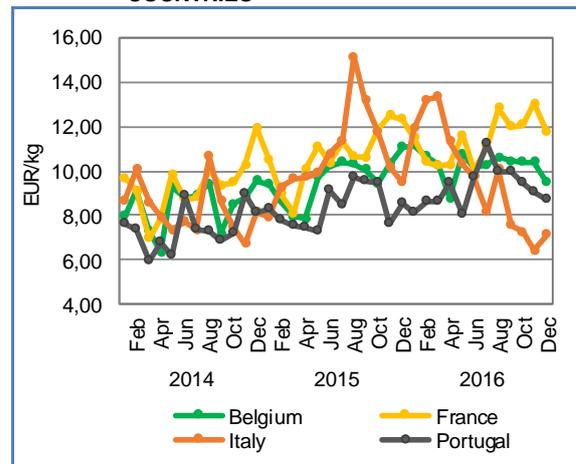
Sole is caught using beam and otter trawls, which also catch plaice, cod, rays, brill, turbot, and monk. It is also caught in a fixed-net fishery targeting sole. The minimum landing size of sole is 24 cm<sup>12</sup>. The EU sole fishery is covered by long-term management plans for the stocks in the North Sea, Bay of Biscay, and Western Channel<sup>13</sup>.

Sole is subject to TACs, which are shared between ten Member States. For 2017, the EU TACs of sole are set at 26.432 tonnes, 12% higher than in 2016. The Netherlands and France are the Member States with

highest quotas, 12.455 tonnes and 5.437 tonnes, respectively.

In the past three years, first-sales prices of sole experienced significant variability in Belgium, France, Italy, and Portugal. In 2016, in France and Portugal prices followed an increasing trend; they decreased in Italy and were relatively stable in Belgium, compared with 2015. Prices ranged on average from 9,24 EUR/kg (Portugal) to 11,40 EUR/kg (France). In December 2016, with the exception of Portugal, prices decreased in the remaining countries, especially in Belgium (-14%), compared with December 2015.

Figure 27. **SOLE: FIRST-SALES PRICE IN SELECTED COUNTRIES**



Source: EUMOFA (updated 10.02.2017).

We have covered **sole** in previous *Monthly Highlights*:

First sales: Belgium (8/2016, 4/2015, 2/2014), United Kingdom (5/2016, July 2013), France (1/2015, March 2013),

Topic of the month: (10/2016, March/2013)

Consumption: France and Spain (1/2017)

1.2.4. **MONK**



Several monk species are caught and landed together, but the most popular is *Lophius piscatorius*, also known as anglerfish, which has

high commercial value.

Monk is a predatory demersal species that is distributed widely throughout European waters: the Strait of Gibraltar, Mediterranean Sea, Black Sea, eastern North Atlantic, and southwestern Barents Sea. It lives almost buried in water, at depths of 50–500 m. It uses its large jaws to attract prey, mainly other fish species (e.g. pout and goby), squid, and occasionally seabirds.

Monk is caught with bottom trawls, gillnets, and bottom longlines<sup>14</sup>.

Monk is subject to TACs, which are shared between ten Member States. For 2017, the EU TACs for monk are set at 69.122 tonnes, 8% higher than in 2016. France

and the UK have the largest quotas, 30.971 tonnes and 19.653 tonnes, respectively.

For the past 36 months, first-sales prices of monk varied considerably in Belgium at an average of 11,16 EUR/kg, following a decreasing trend. In 2016, monk first-sales prices were lowest in the UK (3,49 EUR/kg); they converged in Denmark and France (5,01 EUR/kg and 5,18 EUR/kg, respectively), and were highest in Belgium (10,64 EUR/kg). Typically, prices peak in the month of December. In Belgium in December 2016, monk reached 11,81 EUR/kg.

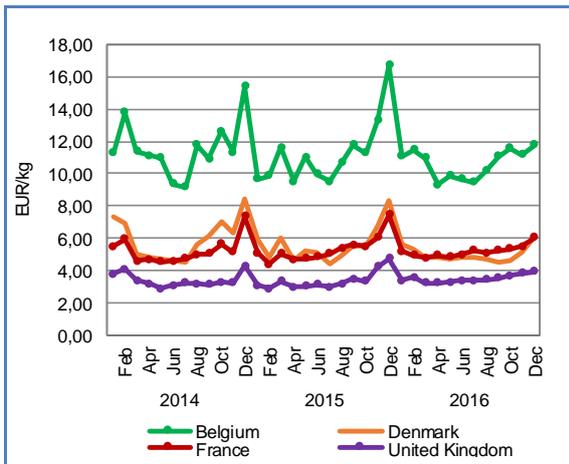
We have covered **monk** in previous *Monthly Highlights*:

First sales: Denmark (7/2016), Belgium (4/2015, 6/2014, January/2013, August–September 2013), Portugal (9/2015, 2/2014)

Topic of the month: (January/2013)

Consumption: France, Italy, the United Kingdom (4/2016, 5/2015, 2/2014), Belgium and the Netherlands (5/2015, 2/2014)

Figure 28. **MONK: FIRST-SALES PRICE IN SELECTED COUNTRIES**



Source: EUMOFA (updated 10.02.2017).

## 2. Global Supply

**Fisheries / EU / Discard ban:** Since 2015, the landing obligation has covered small and large pelagic species, industrial fisheries, and the main fisheries in the Baltic Sea. In 2016, it was extended to demersal fisheries in the North Sea and the Atlantic. In 2017, the discard ban will cover more species in the Atlantic, as well as species in the Mediterranean and the Black seas, which are included for the first time<sup>15</sup>.

**Fisheries / IUU:** The European Commission has lifted the “yellow cards” for Curaçao and the Solomon Islands, recognising the countries’ substantial progress in the fight against illegal, unreported, and unregulated (IUU) fishing. Both countries have embarked on a series of reforms to bring their fisheries’ legal and administrative frameworks in line with international law, and are now equipped to tackle illegal fishing effectively. Working closely with the EC, they have strengthened their sanctioning systems and have improved monitoring and control of their fleets<sup>16</sup>.

**Fisheries / EU:** The European Parliament adopted the EC’s proposal on the sustainable management of external fishing fleets. A new regulation aims to create more transparency, simpler rules, and better monitoring and control of the EU fleet. It will apply to all EU vessels fishing outside EU waters. These vessels will not be able to fish in third-country waters or on the high seas unless they have been previously authorised by their flag Member State<sup>17</sup>.

**Fisheries / Croatia:** In 2016, the total landings of small pelagic species amounted to 62.520 tonnes. The main species in volume were sardine (*Sardina pilchardus*) with 54.230 tonnes, a 6% increase over 2015, but 5% less than in 2014. Anchovy (*Engraulis encrasicolus*) is the second largest species in volume landed, with 8.281 tonnes in 2016 (–52% and –10% compared with 2015 and 2014, respectively). Other pelagic species contributed to the total landings with 8.887 tonnes or 14%. Overall, landings have decreased in volume for two consecutive years, 3% from 2015, and more than 13% from 2014<sup>18</sup>.

**Fisheries / Iceland:** The total catch for Icelandic vessels was 7.610 tonnes in January 2017, 90% less than in January 2016, owing to a fishermen’s strike. Small fishing vessels as well as hook-and-line boats landed

94% of the catch in January 2017. On a year-to-year basis (February 2016–January 2017), the total catch decreased 23%, from the same period a year before<sup>19</sup>.

**Resources / Argentina:** For the second year in a row, landings decreased from 785.000 tonnes in 2015 to 752.000 tonnes in 2016. Among the top species, squid (–10%, 60.000 tonnes) and Patagonian grenadier (–34%, 33.000 tonnes) lost the most. Argentine hake (+6%, 282.000 tonnes) and red shrimp (+17%, 167.000 tonnes) increased significantly<sup>20</sup>. Argentinian exports of fishery products reached EUR 1,535 billion in 2016, despite a slight decrease in volume (–3%). Shrimp accounted for 59% of the total value at EUR 1,0 billion<sup>21</sup>.

**Resources / Chile:** Landings decreased 13% in 2016, down from 1,77 million tonnes in 2015 to 1,54 million tonnes. Pelagics, 76% of total landings, decreased 19% to 1,17 million tonnes. Main pelagic species are anchoveta (Peruvian anchovy), which dropped 38% to 334.000 tonnes, horse mackerel (+12%, 320.000 tonnes), sardine (–36%, 280.000 tonnes), and jumbo flying squid (+26%, 181.000 tonnes). Aquaculture production also recorded a significant decrease (–15%, 971.000 tonnes), owing to bad results for all salmonids. Chilean mussel (–2%, 277.000 tonnes) was almost stable, and oyster (+16%, 3.400 tonnes) was the only farmed species that increased<sup>22</sup>.

**Resources / Philippines:** In 2016, production in the fisheries and aquaculture sector decreased 6,3% from the previous year. This decline was reflected in all subsectors. Commercial fisheries caught fewer species because of higher seawater temperatures caused by El Niño. Less frozen tuna (skipjack and yellowfin) was unloaded owing to conservation measures implemented by the Western and Central Pacific Fisheries Commission (WCPFC). Aquaculture output was affected by a dry spell, which caused high mortality and slow growth<sup>23</sup>.

**Certification / Fisheries / Spain:** Two Spanish fisheries (of the Basque Country and Cantabria) have achieved Marine Stewardship Council (MSC) certification for sardine. The certification covers 59 seine-netting vessels fishing in the Bay of Biscay. In 2016, 3.791 tonnes of sardine were landed by one of the fisheries<sup>24</sup>.

## 3. Case studies

### 3.1. THE POLISH MARKET



Poland is one of the main seafood processing countries in Europe with hundreds of facilities processing raw materials from countries around the world including Norway, Sweden and China.

Poland participates in marine fisheries in the Baltic Sea and North Sea, as well as producing substantial volumes

of trout and carp from freshwater aquaculture. Polish fisheries and aquaculture sector is small compared with other economic sectors, however, it plays an important role in local communities and rural areas. In 2015, Poland ranked 12th in the EU in total expenditure for fishery and seafood products, but the per capita expenditure (EUR 25) was well below the EU average (EUR 106).

#### 3.1.1. PRODUCTION

##### MARINE FISHERIES

The Polish fleet is split between the Baltic and long-distance fisheries. In 2015, it consisted of 875 vessels, including 556 registered vessels in the small-scale fleet<sup>25</sup>. The long-distance fleet includes three vessels and operates mainly in the North Sea and Norwegian waters and in waters under the jurisdiction of Angola, Guinea, and Mauritania, all in waters managed by the Northeast Atlantic Fisheries Commission (NEAFC). The Baltic fleet mainly targets cod, sprat, herring, salmon, and sea trout, whereas the long-distance fleet catches cod as well as saithe, redfish, halibut, mackerel, and horse mackerel. In 2014, catches by the long-distance fleet totalled approximately 52.000 tonnes.

Most Polish fishing fleet is targeting and performing mixed fisheries<sup>26</sup>. In 2015, the most valuable species landed in Poland was Atlantic cod, followed by herring and sprat. The three-species represented approximately 80% of the first-sales value, at EUR 35 million.

Table 3. TOP SPECIES LANDED IN POLAND (value in million EUR and volume in 1000 tonnes)

Species	2013		2014		2015	
	Value	Volume	Value	Volume	Value	Volume
<b>Cod</b>	19	14	18	14	18	17
<b>Herring</b>	8	21	10	27	10	35
<b>Sprat</b>	13	48	11	48	7	44
<b>Other</b>	8	5	6	7	6	7
<b>Total</b>	53	102	50	109	45	114

Source: EUMOFA, based on elaborations of EUROSTAT data.

#### 3.1.2. AQUACULTURE

Aquaculture production in Poland has a long history and, in most locations, it is land-based freshwater farming, using traditional earth ponds in a 3-year cycle. This production method is limited to a few Central and Eastern European countries. Although production of carp follows the traditional production cycle in earth ponds, trout production occurs in intensive fish production facilities.

In 2015, the two most valuable species produced from aquaculture in Poland were trout (mainly rainbow trout) and carp (mainly silver carp, grass carp, and bighead carp). They had a value of EUR 76 million or 92% of the total for farmed fish. Other species produced are different types of salmonids and tilapia. In 2014, Poland was well behind the largest producers of trout in the EU (Denmark, France and Italy), with approximately half of the volume, whereas for carp it was the largest producer, followed by the Czech Republic and Hungary.

Table 4. TOP SPECIES FARMED IN POLAND (value in million EUR and volume in 1000 tonnes)

Species	2014		2015	
	Value	Volume	Value	Volume
<b>Trout</b>	39	14	41	15
<b>Carp</b>	38	19	35	16
<b>Other</b>	12	3	7	3
<b>Total</b>	89	36	83	34

Source: EUMOFA, based on elaborations of EUROSTAT data; Ministry of Maritime Economy and Inland Navigation of Poland.

The Polish aquaculture industry aims to achieve a production of 51.600 tonnes by 2023 and at the same time create sustainable employment and protect the environment. In 2014, the Polish aquaculture sector employed approximately 4.400 full-time workers<sup>27</sup>.

Supported by the European Maritime and Fisheries Fund (EMFF), Poland is diversifying and adding greater value to its aquaculture production, and rewarding producers looking to introduce innovative products, processes, or species. Poland is among the countries at the forefront of implementing recirculated aquaculture systems (RAS)-based salmon production inaugurating one of Europe's largest plant in 2015<sup>28</sup>.

### 3.1.3. TRADE

In 2015, imported seafood products were valued at EUR 1,6 billion and 534.000 tonnes. Of those, 42%, goes for internal consumption and 58% for processing and export<sup>29</sup>. Fresh whole salmon was the main product category imported at EUR 590 million and 121.000 tonnes. Most of the volume of salmon was of Norwegian origin.

The main suppliers to the Polish processing industry are Norway, Sweden, China, Germany, Denmark, and the Netherlands.

Other important species imported to Poland are herring (Denmark/Norway), cod (Russia/Norway), and Alaska pollock (China/USA). Frozen fillets of herring account for 54% and 55% of the total import value and volume, respectively, of herring products, and the imported volume for Alaska pollock is exclusively frozen fillets. For cod, there is a significant split between frozen fillets and frozen whole products. In 2015, the import value of frozen cod fillets was EUR 64 million and 13.000 tonnes; for frozen whole cod, it was EUR 56 million and 20.000 tonnes.

Table 5. **TOP SPECIES IMPORTED BY POLAND** (value in million EUR and volume in 1000 tonnes)

Species	2013		2014		2015	
	Value	Volume	Value	Volume	Value	Volume
Salmon	713	132	748	142	716	142
Herring	144	90	135	91	140	88
Cod	91	38	121	50	136	47
Alaska pollock	68	39	71	38	84	39
Trout	44	12	54	14	51	14
Mackerel	56	41	50	39	50	41
Other	404	178	409	173	447	164
<b>Total</b>	<b>1.520</b>	<b>529</b>	<b>1.587</b>	<b>546</b>	<b>1.623</b>	<b>534</b>

Source: EUMOFA, based on elaborations of EUROSTAT data.

The most important seafood product exported from Poland is smoked salmon, followed by prepared and preserved (canned) herring fillets and frozen salmon fillets. In 2015, the top three product categories accounted for 50% of the total export value and 25% of the volume.

In 2015, the largest market for exports of Polish seafood products was Germany, accounting for 52% of the value and 34% of the volume. France and the UK were the second and third largest market, representing 8% and 7% of the value and 6% and 7% of the volume, respectively.

Most of the exported volumes of Polish seafood, both processed and non-processed, end up in the European market (~90%).

Table 6. **TOP SPECIES EXPORTED BY POLAND** (value in million EUR and volume in 1000 tonnes)

Species	2013		2014		2015	
	Value	Volume	Value	Volume	Value	Volume
Salmon	676	69	761	71	765	74
Herring	157	59	151	60	151	64
Cod	85	19	78	18	96	19
Trout	47	6	63	7	61	7
Mackerel	24	8	26	8	25	9
Alaska pollock	12	4	13	5	14	5
Other	474	230	483	223	544	281
<b>Total</b>	<b>1.473</b>	<b>396</b>	<b>1.575</b>	<b>391</b>	<b>1.655</b>	<b>457</b>

Source: EUMOFA, based on elaborations of EUROSTAT data.

### 3.1.4. PROCESSING

The Polish fish processing industry is one of the largest in the EU after Spain, France and the United Kingdom. In 2014, it was valued at EUR 1,78 billion<sup>30</sup>.

In 2014, approximately 250 processing plants were eligible to export to the EU market, whereas several hundred smaller companies were only permitted to sell to regional markets in Poland<sup>31</sup>.

Important products processed in Poland include smoked (mainly salmonids species), canned (mainly pelagic species), and ready-to-eat fish products. However, ready-to-prepare products (breaded) and fresh and frozen whole products for cod, trout, and sprat account for a strong share of the processed volume. Sturgeon caviar production in Poland went from being an insignificant producer to the fourth largest in Europe and the seventh in the world, in volume. In 2015, Polish production of sturgeon caviar was 11.372 kg<sup>32</sup>.

### 3.1.5. CONSUMPTION

In 2015, the expenditure for fishery and aquaculture products for EU households totalled EUR 54 billion.

Poland accounted for 2%, at EUR 940 million, ranking 12th among the EU Member States. This was a 1,7% increase over 2014. However, with a population of 38 million, the per capita household expenditure was well below the EU average, at only EUR 25, the same as in 2014.

In 2014, Poland ranked 22 out of the 28 EU Member States in apparent consumption of fish and seafood in volume per capita (13 kg). This was an 11% decrease from 2013. By comparison, Portugal and Spain, ranked one and two respectively, had 55,3 kg and 46,2 kg per capita consumption in the same year<sup>33</sup>.

Pollock, herring, and mackerel are the most popular saltwater species consumed in the domestic market, while carp, trout, and pangasius are the most common freshwater species. However, since 2007, the consumption of pangasius – as in many other markets – has declined, mainly because of health concerns and the product's perceived low quality.

## 3.2. OYSTERS IN THE EU



EU oyster production depends strongly on French production and its consumer market. After several years of decreasing production caused by the 2008 disease outbreak in French oyster farming areas, production has increased again since 2014. The key market is France, but a few niche export markets for high-range products have emerged.

### 3.2.1. BIOLOGY, RESOURCES AND EXPLOITATION

#### BIOLOGY

Oyster is the common name for several different families of saltwater bivalve molluscs that live in marine or brackish habitats. Many, but not all, oysters are in the taxonomic superfamily Ostreoidae. Oysters grow naturally in estuaries of brackish water.

Oysters are filter-feeders living mostly in the intertidal zone (*Crassostrea* and *Saccostrea*); some are subtidal (*Ostrea*). Oyster larvae are known as spat. Reproduction depends on water temperature and salinity. Before settlement, the larvae spend some time at the pelagic stage and can be widely dispersed by water currents.

Commonly farmed oysters include the Eastern oyster (*Crassostrea virginica*), the Pacific oyster (*Crassostrea gigas*, the most-farmed oyster species worldwide), Belon oyster (*Ostrea edulis*), the Sydney rock oyster (*Saccostrea glomerata*), and the Southern mud oyster (*Ostrea angasi*).

#### RESOURCE EXPLOITATION AND MANAGEMENT IN THE EU

Oyster farming has a long history and is much more important than oyster fishery in most of producing regions (farmed oyster provided 98% of the world production of oysters in 2014, according to FAO).

However, oyster harvesting (hand-gathering, dredging, diving, etc.) still represents a significant share of the production in a few major producing countries, e.g. Mexico (76%), the USA (34%), and to a lesser extent South Korea (7%).

In the EU, the culture of the native flat oyster (*Ostrea edulis*) is limited, despite stable production in recent years, as overexploitation and disease have led to its depletion. The Pacific cupped oyster, native to Japan,

was brought to Europe in the 1970s after the depletion of the Portuguese oyster (*Crassostrea angulata*). Thanks to its rapid growth and adaptability to different surroundings, it is now the most widely reared oyster worldwide.

Production starts with the collection of spat in their natural setting. To gather the wild spat, oyster farmers use collectors placed at strategic locations. When the spat has grown to a few millimetres, they are removed from the collectors and are ready for rearing. However, a large share of spat now comes from hatcheries.

The kind of oyster-rearing method used depends on both the environment (tidal range, water depth, etc.) and tradition. Along the Atlantic coastlines of France, oysters are produced mainly by off-bottom culture. The oysters are placed in plastic mesh bags attached to low shore trestles. Bottom culture, where the oysters are placed directly on the shore or below low water, is less common today. Suspended culture, where oysters are reared on ropes like mussels, is practiced in Spain. This method is suitable for rearing in waters without tides or offshore. Deep-water culture consists of placing the oysters in parks, which can be located at depths of up to 10 m<sup>34</sup>.

Over the past decade (as of 2008), Pacific cupped oyster experienced significant mortality in France caused by disease outbreaks (herpes virus in 2008 and *Vibrio aestuarianus* in 2012), which strongly affected production levels and profitability<sup>35</sup>.

Oyster processing is seldom practiced in the EU, because consumers prefer oysters live or raw. A limited consumption of cooked or prepared oyster exists in southern Europe, but to a lesser extent than in Asia, where cooked or fried oyster is considered a delicacy.

### 3.2.2. PRODUCTION

#### GLOBAL PRODUCTION

Production of all species of oysters amounted to 5,3 million tonnes in 2014. China is by far the leading producer, with 82% total world production in 2014. Other major producers are South Korea (6%), the USA (4%), Japan (3%), and the EU (2%). Between 2004 and 2014, world production experienced a 23% increase, mostly attributable to Chinese production (+33%) and, to a lesser extent, South Korea (+14%). However, significant decreasing trends have occurred in the USA (-12%), Japan (-21%) and the EU (-32%).

#### EU PRODUCTION

According to FAO, EU production amounted to 93.103 tonnes in 2014, providing approximately 2% of the world supply. France (82% of EU production), Ireland (11%), and the Netherlands (3%) were the main producers. Other notable EU producers are the UK, Portugal, and Spain.

In 2015, according to the European Mollusc Producers Association (EMPA), the EU production of oysters was 108.910 tonnes. Pacific cupped oysters accounted for 97,5% and flat oysters for 2,5%.

EU production has declined from 2008 owing to a virus, which caused mortality and was particularly active in France, where production decreased 31% in the period 2008–2013. The production stabilised in 2013–2014 and started to rise again in 2015. In 2016, the level of 100.000 to 110.000 tonnes should be reached again, if no other problems emerge. The largest production increases have been observed in Ireland and Portugal, both of which target the French market.

The presence of French stakeholders is significant in the Irish and Portuguese fish-farming sector, where they hold 50% of the means of production. Half of the spat used for oyster farming is supplied by hatcheries; the remaining 50% is wild spat collected by farmers.

Three farmed oysters have a European geographical indication:

- Whit stable oysters (UK), PGI (protected geographical indication) since 1997;
- Huîtres de Marennes-Oléron (France), PGI since 2009;
- Fal oysters (UK), PDO (protected designation of origin) since 2013.

In France, two *Label Rouge* (*Huîtres fines de claires vertes*, and *Huîtres pousse en claires*) are linked to the PGI *Huîtres de Marennes-Oléron*.

In addition, the Limfjord oyster dredge fishery (Denmark) was the first oyster fishery in the world to be granted MSC certification in 2012. In 2013, the two fisheries of the Dutch Oyster Association achieved MSC certification for harvested Pacific cupped oyster and flat oyster<sup>36</sup>.

Table 7. **WORLD PRODUCTION OF OYSTER SPECIES** (volume in tonnes)

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
China	3.281.883	3.346.963	3.455.461	3.508.934	3.354.382	3.503.782	3.642.829	3.756.310	3.948.817	4.218.644	4.352.053
Republic of Korea	264.960	279.026	314.312	350.592	279.161	265.165	290.462	306.007	303.280	252.530	303.347
USA	214.829	180.769	184.745	191.970	173.239	188.836	172.582	144.556	200.316	202.525	188.491
Japan	234.151	218.896	208.182	204.474	190.344	210.188	200.298	165.910	161.116	164.139	184.100
EU 28	136.861	137.030	131.856	134.088	122.329	123.127	118.262	103.744	97.395	92.913	93.103
Mexico	48.608	46.136	48.320	50.265	44.453	40.645	52.715	85.696	51.990	42.945	53.758
Taiwan	20.750	28.430	28.547	28.199	34.514	21.882	36.056	34.643	26.923	27.793	25.276
Philippines	15.993	16.569	16.922	20.596	20.276	20.016	22.644	21.581	20.764	22.175	22.457
Other	73.882	64.590	63.546	66.637	57.627	68.451	72.190	73.882	64.590	63.546	66.637
<b>Total</b>	<b>4.291.917</b>	<b>4.318.409</b>	<b>4.451.891</b>	<b>4.555.755</b>	<b>4.276.325</b>	<b>4.442.092</b>	<b>4.608.038</b>	<b>4.668.260</b>	<b>4.866.622</b>	<b>5.086.631</b>	<b>5.286.011</b>

Source: FAO Fishstat.

Table 8. **PRODUCTION OF OYSTER SPECIES IN THE EU** (volume in tonnes)

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	118.762	119.485	112.819	112.986	105.123	105.056	96.294	84.827	83.165	77.699	76.705
Ireland	6.718	6.153	7.304	8.876	8.833	9.938	13.106	11.280	7.560	8.851	9.777
Netherlands	2.873	3.195	3.353	3.390	2.069	2.011	3.958	2.680	2.540	2.501	2.500
UK	2.181	1.700	2.099	1.800	1.379	1.901	1.514	1.254	1.528	1.458	1.346
Portugal	432	533	681	733	1.086	752	616	943	819	869	1.107
Spain	4.896	4.917	4.520	4.965	2.211	2.169	1.607	1.868	1.361	1.060	1.072
Denmark	69	68	122	115	76	67	68	32	70	284	462
Italy	896	942	911	1.212	1.490	1.172	1.050	804	296	142	83
Sweden	32	35	47	10	46	48	38	42	45	45	45
<b>EU-28</b>	<b>136.861</b>	<b>137.030</b>	<b>131.856</b>	<b>134.088</b>	<b>122.329</b>	<b>123.127</b>	<b>118.262</b>	<b>103.744</b>	<b>97.395</b>	<b>92.913</b>	<b>93.103</b>

Source: FAO Fishstat.

Table 9. EU PRODUCTION BY MAIN SPECIES (2015, tonnes)

Country	Cupped oyster	Flat oyster
Germany	80	0
Ireland	7.000	500
Spain	600	400
France	93.500	1.500
Italy	70	10
Croatia	0	50
Netherlands	2.500	200
Portugal	1.000	0
United Kingdom	1.450	50
<b>Total</b>	<b>106.200</b>	<b>2.710</b>

Source: EMPA.

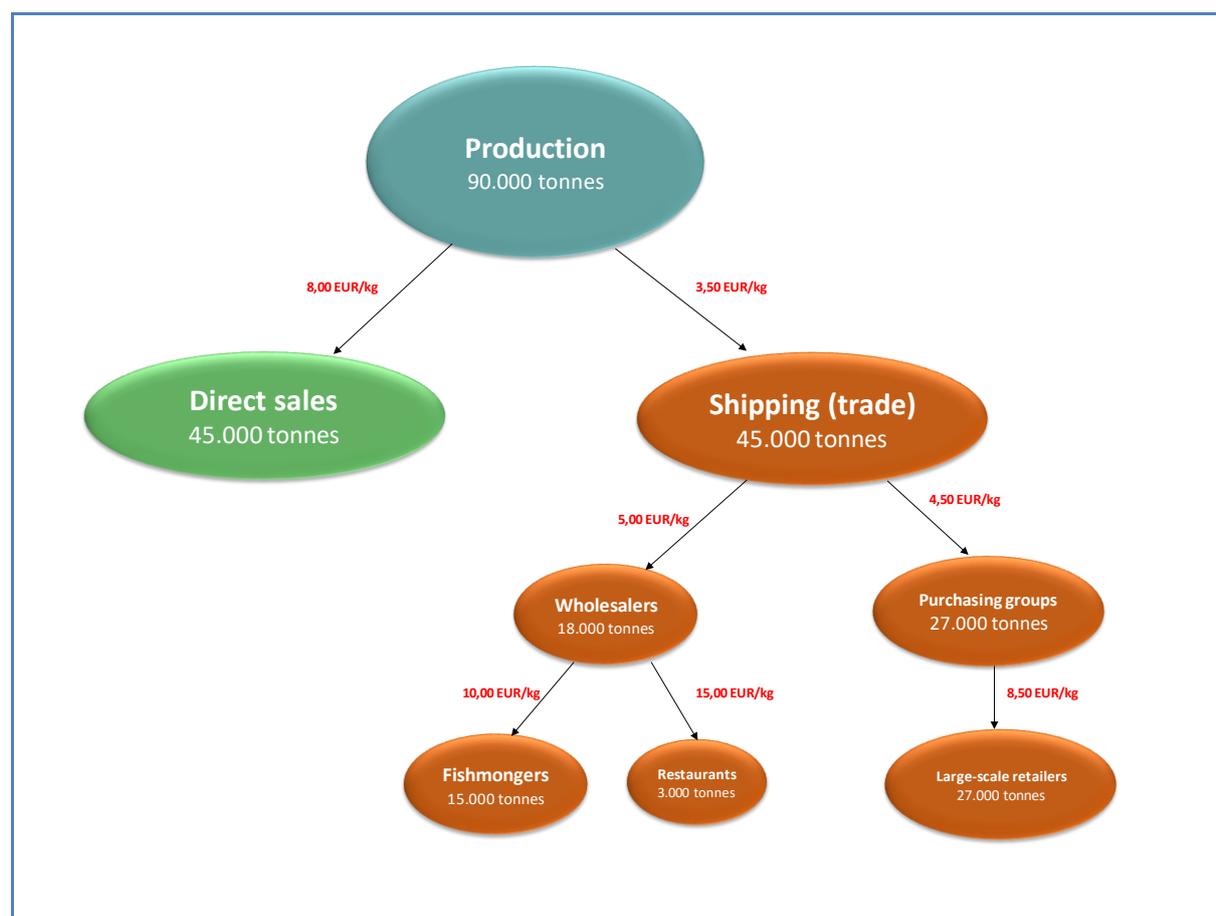
### 3.2.3. FOCUS ON THE FRENCH SUPPLY CHAIN

France had 4.246 shellfish farmers in 2016 (source: CNC), of whom 3.022 farmed oysters. Of these, 951 farmed on an exclusive basis. The rest farmed non-exclusively, usually in combination with other shellfish farming activities, in most cases mussel farming. The number of oyster farmers fell slightly in 2014, as consequence of the mortality episodes (as mortality affects the juveniles, the effects on production and profitability are being felt two years later) and the retirement of older farmers, which led to a small decrease in areas devoted to oyster farming in 2015–2016.

The total turnover for 2014 of the French Pacific cupped oyster supply chain, as calculated by the French Shellfish Farming Committee (*Comité National de la Conchyliculture* or CNC), is close to EUR 1,2 billion, for a production of 90.000 tonnes: EUR 517,5 million at the farm level, EUR 121,5 million at the wholesale level, and EUR 424,5 million at the consumer level.

A major characteristic of the French oyster supply chain is that half of the production is sold directly to consumers by oyster farmers.

Figure 29. FRENCH OYSTER SUPPLY CHAIN



Source: EUMOFA and CNC (2014 data).

### 3.2.4. TRADE

#### EU TRADE

Exchanges between EU Member States are relatively important and have significantly increased in recent years, with intra-EU exports exceeding 18.000 tonnes and EUR 83 million in 2015. Extra-EU imports are negligible (2,2 tonnes in 2015), whereas extra-EU exports are more than 3.000 tonnes (for EUR 26,3 million).

Table 10. **EU EXPORTS OF LIVE OYSTERS** (value in EUR)

Trade flow	2012	2013	2014	2015
<b>Intra-EU</b>	105.056	96.294	84.827	83.165
<b>Extra-EU</b>	9.938	13.106	11.280	7.560

Source: Comext (CN 03 07 11).

The largest extra-EU exporters are France (80% of total export value in 2015) and Ireland (13%). Within the EU, France (49% of total intra-EU export value in 2015) is the largest, followed by Ireland (27%), the Netherlands (10%), and the UK (5%).

Table 11. **EU EXPORTS OF LIVE OYSTERS IN 2015** (volume in tonnes, value in 1000 EUR)

Country	Extra-EU		Intra-EU	
	Tonnes	1000 EUR	Tonnes	1000 EUR
<b>France</b>	2.477	21.056	6.991	40.879
<b>Ireland</b>	423	3.553	5.837	22.588
<b>Netherlands</b>	125	626	1.571	8.422
<b>UK</b>	36	289	1.187	4.163
<b>Italy</b>	20	90	488	1.973
<b>Portugal</b>	3	5	373	1.106
<b>Spain</b>	45	392	182	587
<b>Denmark</b>	9	80	111	970
<b>Other</b>	36	228	547	2.412
<b>EU-28</b>	3.173	26.319	17.286	83.145

Source: Comext (CN 03 07 11).

Within the EU, France exports mainly to Italy (3.874 tonnes in 2015), the Netherlands (769 tonnes), Spain (676 tonnes), Belgium (549 tonnes), and Germany (337 tonnes). Outside the EU, France's main clients are China (1.118 tonnes in 2015), Hong Kong (572 tonnes), Switzerland (261 tonnes), and United Arab Emirates (117 tonnes).

Table 12. **EU IMPORTS OF LIVE OYSTERS IN 2015** (volume in tonnes)

Country	Extra-EU		Intra-EU	
	Tonnes	1000 EUR	Tonnes	1000 EUR
<b>France</b>	0,4	21.056	6.330	26.039
<b>Netherlands</b>	1	626	731	3.311
<b>UK</b>	-	289	1.187	1.465
<b>Italy</b>	-	90	5.556	22.397
<b>Germany</b>	0,2	5	600	3.372
<b>Spain</b>	-	392	2.368	9.331
<b>Belgium</b>	0,1	80	1.484	7.438
<b>Other</b>	1	228	529	7.958
<b>EU-28</b>	2	26.319	18.785	83.723

Source: Comext (CN 03 07 11).

The largest EU importers are France (31% of total import value in 2015), Italy (27%), Spain (11%), Belgium (9%), and Germany (4%). France sources oysters from Ireland (4.126 tonnes in 2015), the UK (1.954 tonnes), and the Netherlands (403 tonnes). Italy imports mainly from France (4.097 tonnes), the Netherlands (940 tonnes), and Croatia (347 tonnes). Spain imports from France (920 tonnes), the Netherlands (513 tonnes), Italy (482 tonnes), and Ireland (256 tonnes). Belgium's key suppliers are the Netherlands (986 tonnes) and France (492 tonnes).

### 3.2.5. OYSTER HOUSEHOLD CONSUMPTION

The key feature of oyster consumption is its strong seasonality. In France, 45% is consumed in December. The consuming population is elderly. The age group consuming most are people over 65 years old, followed by the categories 50–64 years and 35–49 years. For most consumers, consumption begins at the age of 40 and peaks at 65. To develop consumption, French stakeholder associations aim at lowering the age of first consumption. At the regional level, oyster is particularly popular in the west, the southwest, the southeast, and the Paris region.

### 3.2.6. MARKET PERSPECTIVES

The perspectives are positive for the French market. It is expected that French production will return to its pre-mortality-episode production level, i.e. 130.000 tonnes, in coming years.

The European market, excluding France, is stable. The future of Asian markets looks good. China has huge potential, and France already exports more than 1.000 tonnes. The perspective for Russia, which was on a positive trend before the import ban, is also good.

## 4. Consumption

### HOUSEHOLD CONSUMPTION IN THE EU

In November 2016, the volume of fresh fisheries and aquaculture products consumed decreased in nine Member States, increased in one, and remained stable in two compared with November 2015. Values increased in four Member States, decreased in seven, and remained stable in one.

In volume, an increase in consumed fresh fisheries and aquaculture products was observed only in Italy (+3%);

however, in France and the UK the consumed volumes remained stable. The largest drop in volume was observed in Hungary (-39%), followed by Sweden (-27%) and Denmark (-24%).

In November 2016, the greatest decrease in consumption value was also observed in Hungary (-33%) and Denmark (-22%). The greatest increase was 9%, registered in France.

Table 13. **NOVEMBER OVERVIEW OF THE REPORTING COUNTRIES** (volume in tonnes and value in million EUR)

Country	Per capita consumption 2014* (live weight equivalent) Kg/capita/year	November 2014		November 2015		October 2016		November 2016		Change from November 2015 to November 2016	
		Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Denmark	22,1	696	10,61	696	9,77	693	10,24	527	7,58	-24%	-22%
Germany	13,3	5.132	62,09	6.197	77,46	5.956	81,49	5.164	67,84	-17%	-12%
France	34,4	20.522	196,43	19.540	191,35	20.122	209,41	19.521	209,29	0%	9%
Hungary	4,6	404	1,65	415	2,08	414	1,8	254	1,39	-39%	-33%
Ireland	23,0	763	10,20	859	12,16	929	13,53	817	11,83	-5%	-3%
Italy	28,9	23.858	202,34	25.211	215,98	23.111	202,20	26.001	226,32	3%	5%
Netherlands	22,6	1.789	21,83	1.984	22,70	2.622	28,48	1.950	24,55	-2%	8%
Poland	13,0	5.709	28,87	5.677	27,67	4.533	24,45	5.228	24,98	-8%	-10%
Portugal	55,3	4.419	26,07	4.767	27,26	5.065	30,89	4.568	28,31	-4%	4%
Spain	46,2	57.552	411,79	58.898	416,67	59.040	424,14	56.420	416,43	-4%	0%
Sweden	33,2	666	8,25	759	9,04	1.080	14,12	553	7,28	-27%	-19%
UK	24,9	22.483	236,37	22.855	269,04	24.266	223,71	22.959	232,11	0%	-14%

Source: EUMOFA (updated 09.02.2017).

\* Data on per capita consumption of all fish and seafood products for all EU Member States can be found at: <http://www.eumofa.eu/documents/20178/77960/The+EU+fish+market+-+2016+Edition.pdf>

Generally, in the past four years, November saw an increasing consumption trend in volume and value in Germany, Ireland, Italy, the Netherlands and the UK, and a decreasing trend in Denmark, Hungary, Poland, and Spain. In France, Portugal and Sweden, consumption decreased in volume; however, value increased.

In November, the household consumption of fresh products was 6% above the yearly average for the past three years in Germany (5.222 tonnes). In France, it was 7% above the three year average (18.522 tonnes). In Poland and Spain, similar trends were observed with

12% and 1%, respectively, above the three year average (4.253 and 54.723 tonnes, respectively). In the rest of the Member States analysed, the consumed volumes remained lower than the yearly average in the past three years.

In value, the household consumption in the Member States analysed was lower than the yearly average since 2014, except in Poland, Spain and France. In Poland in November, value was 11% above the three years average of EUR 24,7 million, whereas in France and Spain, it was 2% above the average of EUR 195,1 million and EUR 311,2 million, respectively<sup>37</sup>.

### 4.1. SCABBARDFISH



**Habitat:** A benthopelagic living on sandy and muddy bottoms<sup>38</sup>.

**Catch area:** The coastal areas mainly of Portugal, but also along the coast of northern Spain and France, and west and north of the British Isles<sup>39</sup>.

**Main producing countries in Europe:** Portugal (black scabbardfish 67%, silver scabbardfish 26%), France (black scabbardfish 27%), Spain (silver scabbardfish 21%), Italy (silver scabbardfish 51%).

**Production method:** Caught. Traditionally caught by line gears in the Portuguese waters and by trawlers in France. Port of Madeira provides half of total Portuguese production (49% in value and 43% in volume in 2015).

**Main consumers in the EU:** Portugal, France.

**Presentation:** Mostly in fillets.

**Preservation:** Fresh or frozen.

**Ways of preparation:** Grilled, steamed and fried.

#### GENERAL OVERVIEW OF HOUSEHOLD CONSUMPTION IN PORTUGAL

Of all EU Member States, Portugal displayed the highest per capita consumption of fish and seafood products, 55,3 kg in 2014. However, it experienced a moderate decrease of 2% from 2013. Compared with the EU average per capita consumption (25,5 kg), it was almost two times higher. See more on per capita consumption in the EU in Table 13.

We have covered **Scabbardfish** in previous *Monthly Highlights*:

First sales: Portugal (11/2016)

#### CONSUMPTION TREND IN PORTUGAL

**Long-term trend, January 2013–November 2016:** increasing in price and fluctuating in volume.

**Average price:** 6,34 EUR/kg (2013), 6,39 EUR/kg (2014), 6,45 EUR/kg (2015).

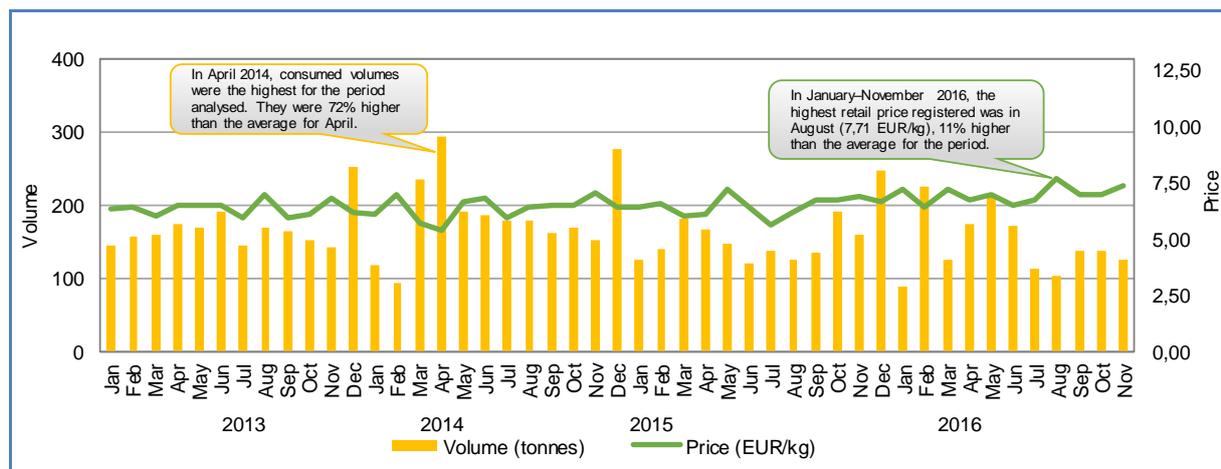
**Total consumed volume:** 2.017 tonnes (2013), 2.233 tonnes (2014), 1.872 tonnes (2015).

**Short-term trend, January–November 2016:** increasing in price and decreasing in volume.

**Average price:** 6,97 EUR/kg.

**Total consumed volume:** 1.619 tonnes.

Figure 30. RETAIL PRICE AND VOLUME SOLD OF SCABBARDFISH

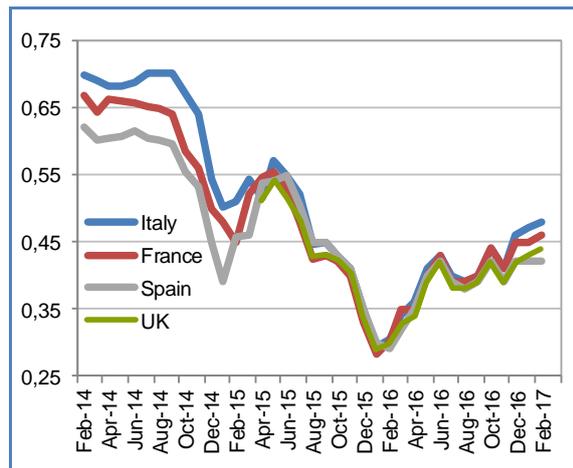


Source: EUMOFA (updated 09.02.2017).

## 5. Macroeconomic context

### 5.1. MARINE FUEL

Figure 31. **AVERAGE PRICE OF MARINE DIESEL IN ITALY, FRANCE, SPAIN, AND THE UK (EUR/LITRE)**



Source: Chamber of Commerce of Forlì-Cesena, Italy; DPMA, France; Spain; ARVI (January 2013–March 2015); MABUX (June 2015–February 2017).

In February 2017, the fuel price in the French ports of Lorient and Boulogne was 0,46 EUR/litre and increased 2% compared with January 2017. It increased 52% over February 2016.

In the Italian ports of Ancona and Livorno, the average price of marine fuel in the second month of 2017 was 0,44 EUR/litre. It increased 2% from the previous month and 57% compared with February 2016.

The price of marine fuel in the ports of A Coruña and Vigo, Spain in February 2017, remained unchanged at 0,42 EUR/litre in a third consecutive month. It increased 44% compared with February 2016.

The fuel price observed in the UK ports of Grimsby and Aberdeen was 0,44 EUR/litre in February 2017 and increased 2% compared with the previous month. Compared with the same month a year ago, the fuel price increased 48%.

### 5.2. FOOD AND FISH PRICES

Annual EU inflation was 1,7% in January 2017, up from 1,2% in December 2016. A year earlier, the rate was 0,3%. In January 2017, the lowest annual rates were recorded in Ireland (+0,2%), Romania (+0,3%) and Bulgaria (+0,4%), while the highest annual rates were registered in Belgium (+3,1%), Latvia and Spain (both +2,9%), and Estonia (+2,8%).

Compared with December 2016, annual inflation fell in 2 Member States (Finland and Sweden) and rose in the remaining Member States.

In January 2017, prices of both food and non-alcoholic beverages and fish and seafood increased 0,9% and 2,2%, respectively, over December 2016.

Compared with the same month a year ago, both food and fish prices increased 1,7% and 3,2%, respectively. Compared with January 2014, fish and seafood prices increased 6%, while food and non-alcoholic beverages remained stable.

Table 14. **HARMONISED INDEX OF CONSUMER PRICES IN THE EU (2015 = 100)**

HICP	Jan 2015	Jan 2016	Dec 2016	Jan 2017
<b>Food and non-alcoholic beverages</b>	99,89	99,98	100,81	<b>101,71</b>
<b>Fish and seafood</b>	100,54	103,30	104,28	<b>106,56</b>

Source: Eurostat.

### 5.3. EXCHANGE RATES

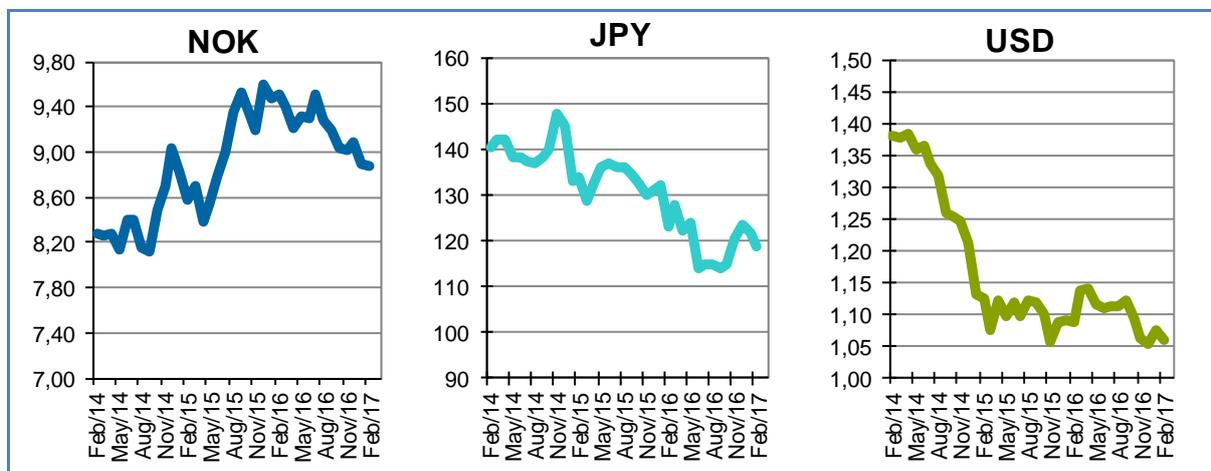
In February 2017, the euro depreciated against the Norwegian krone (-0,2%) and the Japanese yen (-2,6%), and the US dollar (-1,5%) from January 2017. For the past six months, the euro has fluctuated around 1,07 against the US dollar. Compared with February 2016, the euro has depreciated -6,7% against the Norwegian krone, and -3,5% against the Japanese yen and -2,7% against the US dollar.

Table 15. **THE EURO EXCHANGE RATES AGAINST THREE SELECTED CURRENCIES**

Currency	Feb 2015	Feb 2016	Jan 2017	Feb 2017
<b>NOK</b>	8,5740	9,5043	8,8880	<b>8,8693</b>
<b>JPY</b>	134,05	123,14	121,94	<b>118,83</b>
<b>USD</b>	1,1240	1,0888	1,0755	<b>1,0597</b>

Source: European Central Bank.

Figure 32. TREND OF EURO EXCHANGE RATES



Source: European Central Bank.

#### 5.4. EUROPEAN UNION ECONOMIC OVERVIEW

In the last quarter of 2016, seasonally adjusted GDP increased 0,5% over the previous quarter. Compared with the same quarter of the previous year, seasonally adjusted GDP grew by 1,8%.

In October–December 2016, seasonally adjusted GDP increased the most in Poland (+1,7%) over

June–September 2016. It was followed by Lithuania (+1,3%), Bulgaria (+0,9%), and Latvia and Slovakia (both +0,8%). A deceleration of the seasonally adjusted GDP was observed in Finland (−0,5%) and Greece (−0,4%).

Compared with October–December 2015, seasonally adjusted GDP accelerated the most in Romania (+4,8%), Bulgaria (+3,4%), Poland (+3,1%), and Spain (+3,0%)<sup>40</sup>.

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**THIS REPORT HAS BEEN COMPILED USING EUMOFA DATA AND THE FOLLOWING SOURCES:**

**First sales:** EUMOFA; Puertos del estado; Autoridad Portuaria de Vigo. Data analysed refers to 2016 and December 2016.

**Global supply:** European Commission; Croatian Ministry of Agriculture, Directorate of Fisheries; Statistics Iceland; Argentinian Ministry of Industry and Agriculture; Chilean Under-secretariat for Fisheries and Aquaculture; Philippine Statistic Authority; Marine Stewardship Council; Aquaculture Stewardship Council.

**Case study:** EUMOFA; EUROSTAT; European Commission, EUROFISH; EUROFISH Magazine; SeaWeb Europe; Marine Stewardship Council.

**Consumption:** EUMOFA.

**Macroeconomic context:** EUROSTAT; ECB; Chamber of Commerce of Forlì-Cesena, Italy; DPMA, France; ARVI, Spain; MABUX.

The underlying first-sales data is available in a separate Annex on the EUMOFA website. Analyses are made at aggregated (main commercial species) level.

The **European Market Observatory for Fisheries and Aquaculture Products (EUMOFA)** was developed by the European Commission, representing one of the tools of the new Market Policy in the framework of the reform of the Common Fisheries Policy. [Regulation (EU) No 1379/2013 art. 42].

As a **market intelligence tool**, EUMOFA provides regular weekly prices, monthly market trends, and annual

structural data along the supply chain.

The database is based on data provided and validated by Member States and European institutions. It is available in 24 languages.

EUMOFA website is publicly available at the following address: [www.eumofa.eu](http://www.eumofa.eu).

## 6. Endnotes

- <sup>1</sup> <http://www.fiskeridir.no/Statistikk/Statistikkbank>
- <sup>2</sup> [http://www.puertoes.es/en-us/estadisticas/Pages/estadistica\\_mensual.aspx](http://www.puertoes.es/en-us/estadisticas/Pages/estadistica_mensual.aspx)
- <sup>3</sup> <http://www.apvigo.com/ficheros/descargas/4205.pesca.diciembre.pdf>
- <sup>4</sup> Belgium, Denmark, Estonia, France, Latvia, Lithuania, Italy, Norway, Portugal, Sweden, the United Kingdom.
- <sup>5</sup> <http://www.fao.org/fishery/species/2647/en>
- <sup>6</sup> [https://ec.europa.eu/fisheries/marine\\_species/wild\\_species/norway\\_lobster\\_en](https://ec.europa.eu/fisheries/marine_species/wild_species/norway_lobster_en)
- <sup>7</sup> COUNCIL REGULATION (EU) 2017/127 of 20 January 2017 fixing for 2017 the fishing opportunities for certain fish stocks and groups of fish stocks, applicable in Union waters and, for Union fishing vessels, in certain non-Union waters.
- <sup>8</sup> [http://ec.europa.eu/fisheries/marine\\_species/wild\\_species/cod/index\\_en.htm](http://ec.europa.eu/fisheries/marine_species/wild_species/cod/index_en.htm)
- <sup>9</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:248:0001:0010:EN:PDF>
- <sup>10</sup> <http://www.fao.org/fishery/species/3367/en>
- <sup>11</sup> <http://www.fishbase.org/Summary/SpeciesSummary.php?ID=525&AT=sole>
- <sup>12</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31996R2406&from=EN>
- <sup>13</sup> [https://ec.europa.eu/fisheries/marine\\_species/wild\\_species/sole\\_and\\_plaice](https://ec.europa.eu/fisheries/marine_species/wild_species/sole_and_plaice)
- <sup>14</sup> <http://www.fao.org/fishery/species/3379/en>
- <sup>15</sup> [https://ec.europa.eu/fisheries/landing-obligation-whats-new-2017\\_en](https://ec.europa.eu/fisheries/landing-obligation-whats-new-2017_en)
- <sup>16</sup> [https://ec.europa.eu/fisheries/fighting-illegal-fishing-commission-lifts-yellow-cards-cura%C3%A7ao-and-solomon-islands\\_en](https://ec.europa.eu/fisheries/fighting-illegal-fishing-commission-lifts-yellow-cards-cura%C3%A7ao-and-solomon-islands_en)
- <sup>17</sup> [https://ec.europa.eu/fisheries/european-parliament-adopts-commission-proposal-sustainable-management-external-fishing-fleets\\_en](https://ec.europa.eu/fisheries/european-parliament-adopts-commission-proposal-sustainable-management-external-fishing-fleets_en)
- <sup>18</sup> <http://www.mps.hr/ribarstvo/default.aspx?id=1674> (in Croatian language).
- <sup>19</sup> <http://www.stalice.is/publications/news-archive/fisheries/fish-catches-in-january-2017/>
- <sup>20</sup> [http://www.agroindustria.gob.ar/sitio/areas/pesca\\_maritima/informes/coyuntura/archivos/020000-2016/161201\\_Informe%20de%20coyuntura%20-%20Diciembre%202016.pdf](http://www.agroindustria.gob.ar/sitio/areas/pesca_maritima/informes/coyuntura/archivos/020000-2016/161201_Informe%20de%20coyuntura%20-%20Diciembre%202016.pdf)
- <sup>21</sup> [http://www.agroindustria.gob.ar/sitio/areas/pesca\\_maritima/informes/coyuntura/archivos/010000\\_2017/170101\\_Informe%20de%20coyuntura%20-%20Enero%202017.pdf](http://www.agroindustria.gob.ar/sitio/areas/pesca_maritima/informes/coyuntura/archivos/010000_2017/170101_Informe%20de%20coyuntura%20-%20Enero%202017.pdf)
- <sup>22</sup> [http://www.subpesca.cl/publicaciones/606/articles-95982\\_documento.pdf](http://www.subpesca.cl/publicaciones/606/articles-95982_documento.pdf)
- <sup>23</sup> <http://psa.gov.ph/fisheries-situationer>
- <sup>24</sup> <https://www.msc.org/newsroom/news/basque-country-and-laredo-spanish-fisheries-obtain-msc-certification-for-sardine-fishing-operations-in-the-bay-of-biscay>
- <sup>25</sup> <https://www.eurofish.dk/index.php/member-countries/poland>
- <sup>26</sup> [https://ec.europa.eu/fisheries/sites/fisheries/files/docs/body/op-poland-fact-sheet\\_en.pdf](https://ec.europa.eu/fisheries/sites/fisheries/files/docs/body/op-poland-fact-sheet_en.pdf)
- <sup>27</sup> <https://www.eurofish.dk/index.php/member-countries/poland>
- <sup>28</sup> Eurofish Magazine 5/2016 (page 36).
- <sup>29</sup> National Marine Fisheries Research Institute (MIR-PIB), Poland
- <sup>30</sup> <http://www.eumofa.eu/documents/20178/77960/The+EU+fish+market+--+2016+Edition.pdf>
- <sup>31</sup> <https://www.eurofish.dk/index.php/member-countries/poland>
- <sup>32</sup> Ministry of Maritime Economy and Inland Navigation of Poland
- <sup>33</sup> EUMOFA based on elaboration of EUROSTAT data.
- <sup>34</sup> [https://ec.europa.eu/fisheries/sites/fisheries/files/docs/body/oyster\\_en.pdf](https://ec.europa.eu/fisheries/sites/fisheries/files/docs/body/oyster_en.pdf)
- <sup>35</sup> Guide des espèces à l'usage des professionnels (SeaWeb Europe, 2016 Edition).
- <sup>36</sup> <https://www.msc.org/newsroom/news/dutch-oyster-fisheries-achieve-msc-certification>
- <sup>37</sup> EUMOFA.
- <sup>38</sup> <http://www.eumofa.eu/documents/20178/22933/Monthly+Highlights+--+N.11-2016.pdf>
- <sup>39</sup> <http://www.eumofa.eu/documents/20178/22933/Monthly+Highlights+--+N.11-2016.pdf>
- <sup>40</sup> <http://ec.europa.eu/eurostat/documents/2995521/7868348/2-14022017-BP-EN.pdf>