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European Market Observatory for Fisheries and Aquaculture Products

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MONTHLY HIGHLIGHTS

CONTENTS

First sales in Europe:

Sole and plaice in Belgium
Crab and lobster in the UK

Global Supply

Case study: EU shrimp imports

Consumption: anchovy and hake

Macroeconomic context

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In this issue

Eleven European countries report first-sales data in this month's highlights. Eight countries experienced increases in volume and value, of which Norway is the most remarkable. Germany registers the highest decrease.

In Belgium, landings of sole have increased in volume since 2012. The abundance of supplies led to decreases in average prices. Landings of plaice increased in 2014 (January-September) by 57% in value and 61% in volume. In the UK, total first-sales value increased by 40% compared with January-September 2013. It reached 50% for crab.

EU seafood trade increased in the first three quarters of 2014. This concerns in particular exports of small pelagics (+23%) and imports of shrimps (+25%).

The EU imported EUR 3.3 billion of shrimps in 2013, 27% more compared to 2010. Tropical shrimp production has contracted due to extreme weather conditions and diseases. This has led to an increase in prices on the EU market by 40% between 2010 and September 2014. While imports decreased by 17% in volume from 2010 to 2013, they started increasing again in the first 9 months of 2014 (+4%). Ecuador and Vietnam register the main increase.

Retail prices of fresh anchovy are relatively consistent among the southern European Member States. By contrast, fresh hake retail prices show considerable variations in five Member States surveyed.

1. First sales in Europe

In September 2014, ten EU Member States (MS) and Norway reported first-sales data for ten commodity groups.¹

First sales have increased since the previous month in both value and volume for eight of the reporting countries. The most notable increases were in Latvia, Lithuania and Norway, where September marks the beginning of the fishing season. In summer, in July and August there are very limited fishing activities in these countries.

For Portugal and Germany, first sales have decreased in both volume and value, while for the UK they have decreased in volume (-3%) and increased in value (3%).

In September 2014, Spain landed 20.822 tonnes of fresh fish, 9% less than a year before. In the year-to-date (January–September 2014), 178.925 tonnes of fresh fish were landed, an increase of almost 2%, compared with the same period in 2013. In September 2014 landings in the ports of Vigo and A Coruña, accounted for 64% of all fresh fish landings.²

Table 1. **OVERVIEW OF THE REPORTING COUNTRIES** (value in million euro and volume in tonnes)

Reporter	September 2012		September 2013		August 2014		September 2014	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
BE	1.392	4,57	1.317	4,04	1.465	4,89	2.357	6,65
DE	512	1,59	10.425	7,77	4.100	1,69	939	0,39
DK	30.865	36,02	33.009	33,32	26.227	26,94	30.128	33,91
EL³	1.095	3,06	1.166	3,25	779	2,14	978	2,54
FR	18.942	51,56	18.671	51,01	17.477	53,33	20.365	54,94
LT	273	0,29	184	0,11	0	0,00	172	0,09
LV	3.861	0,96	4.082	1,13	1.659	0,44	4.651	1,31
NO	171.414	171,45	137.557	142,24	99.603	100,71	255.749	205,42
PT	13.527	15,91	12.713	15,60	10.613	19,70	10.405	15,78
SE	4.833	8,23	7.268	8,73	4.263	6,47	8.028	7,68
UK	46.170	64,25	34.652	48,72	41.996	55,17	40.565	56,92

Source: EUMOFA (updated 17.11.2014); volume data is reported in net weight.

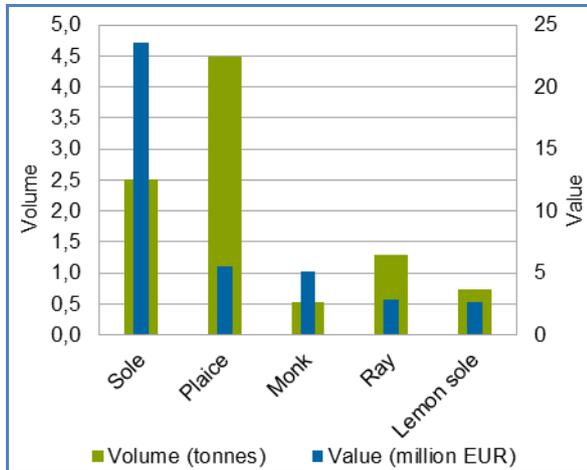
1.1. BELGIUM

Belgium’s fishing fleet (83 vessels in 2013) is the smallest among EU fishing countries, and it is expected to decrease further. It consists mainly of beam trawlers operating in the North Sea, English Channel and other areas of the North Atlantic.⁴

In 2013, landings in Belgium reached EUR 56,5 million corresponding to a volume of ca. 16.000 tonnes. Compared with 2012, this was lower in both value and volume, by 12% and 8% respectively. Most first sales take place in the auction markets of Zeebrügge (63% of the total volume of fish landed) Oostende, and Nieuwpoort. The latter handled only 2% of the volume of fish landed and sold in 2013.

Fishermen specialise in flatfish (sole and plaice), which are the most valuable species caught. From an economic perspective, they are still the most important species landed in Belgian ports, especially sole, which has the highest value, despite the decrease in landing volume and average price of these species in 2013 compared with 2012 and 2011.⁵

Figure 1. LANDINGS IN BELGIUM BY MAIN SPECIES (2013)



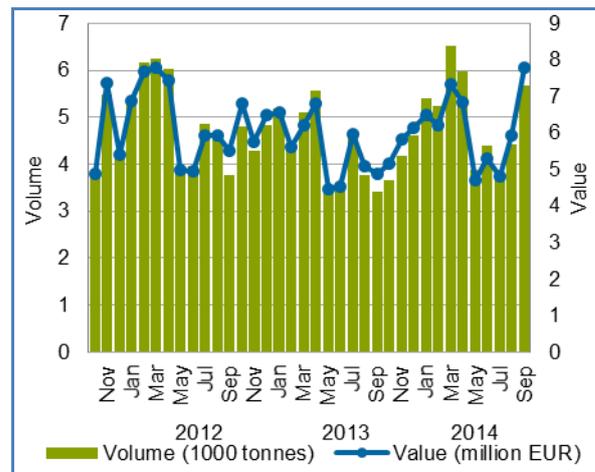
Source: StatBel. Volume in net weight.

In 2013, sole represented 42% of the country’s total landings (in value). Other important species were plaice (10% of the value and 28% of the volume), monk, ray, and lemon sole. The volume of cod decreased by 25% compared with a year before, reaching 3% of value and 4% of volume of the country’s total landings (2013). The volume and value of shrimp landed and sold (483 tonnes of EUR 2,4 million) almost doubled in 2013 compared with 2012.

First sales show a seasonal behaviour, with peaks in the first quarter of the year until April, and lowest yields registered in late spring and summer (May-August).

In 2014, first sales in Belgium have shown an increasing trend over the last year. The year-to-date (January – September 2014) accumulated value and volume were 13% and 18% higher, respectively. The opposite trend is observed compared with two years ago in terms of value: year-to-date first sales decreased -2% in value but increased 9% in volume, compared with January-September 2012.

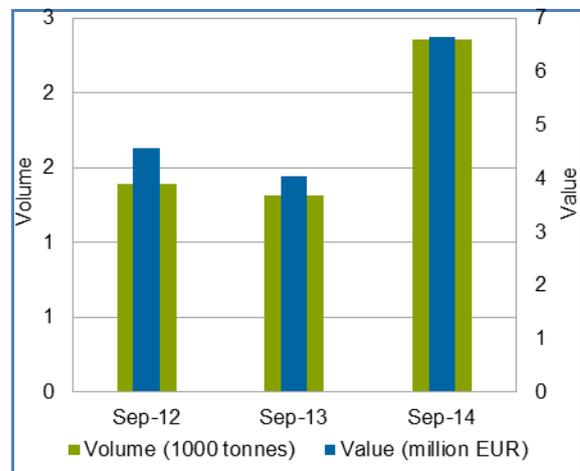
Figure 2. TOTAL MONTHLY FIRST SALES IN BELGIUM



Source: EUMOFA (updated 17.11.2014).

First sales in Belgium include seven of the ten commodity groups reported at the EU level.⁶ At 1.600 tonnes and EUR 4,34 million, flat fish represented 68% in volume and 65% in value of the country’s total first sales in September 2014. The 2014 year-to-date first-sales value and volume of flat fish were EUR 34,60 million and 8.400 tonnes. They show an increasing trend in both value and volume compared with the last two years, over the same reference period.

Figure 3. SEPTEMBER FIRST SALES IN BELGIUM



Source: EUMOFA (updated 17.11.2014).

1.1.1. SOLE



Landings of sole refer to *Solea solea*, or common sole. A bottom-dwelling flatfish that feeds on small bottom animals at night. It is commonly found in sandy and muddy habitats, where it stays well camouflaged.⁷

Sole are found throughout the North East Atlantic from Iceland and Norway to the northeast coast of Africa, as well as in the Mediterranean. Although they undergo seasonal migrations between spawning and feeding grounds, sole tend not to move over great distances. When they reach about 15–18 mm in length, the left eye moves to the right side of head. The juveniles remain in nursery areas for around two years before moving to deeper water to join the adult stock.⁸

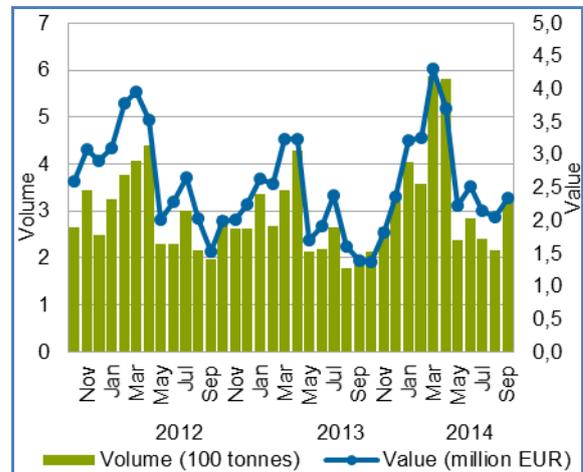
Sole catches are seasonal; the main season starts in January and reach peaks between March and April. It is mainly caught in a beam trawl fishery that also catch plaice, cod, rays, brill, turbot and monk. The average adult size is between 24-35 cm.

The main fisheries for sole occur in the North Sea, English Channel, Bristol Channel, Irish Sea and northern Bay of Biscay. In 2014, the total allowable catch (TAC) for sole in EU waters amounted to ca. 11.900 tonnes, of which Belgium's share was 25% (3.050 tonnes). It is expected that the TAC will be further decreased in 2015, since according to scientific advice, the state of the stock has been deteriorating in some EU seabasins.

Sole has an important economic value. On the market it is sold mainly whole and fresh, as well as frozen, whole and filleted.

From January – September 2014 the cumulative value and volume of sole first sales accounted for 55% of value and 25% of volume of the country's total first sales, reaching EUR 25,77 million and 3.240 tonnes. This was an increase in both value and volume (25% and 32% respectively) from the same period of the previous year. The same trend is observed compared with the accumulated value of two years ago (January-September 2012), an increase of 4% in value and 19% in volume.

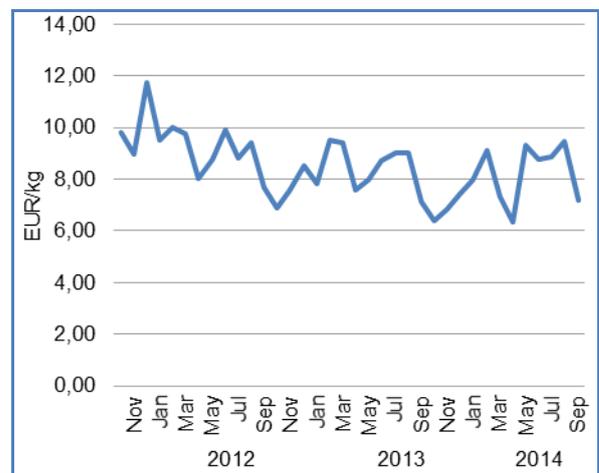
Figure 4. SOLE: MONTHLY FIRST SALES IN BELGIUM



Source: EUMOFA (updated 17.11.2014).

Overall, the average unit prices in the period surveyed (October 2011 – September 2014) showed a decreasing trend.

Figure 5. SOLE: FIRST-SALE PRICE IN BELGIUM



Source: EUMOFA (updated 17.11.2014).

The average unit price of sole in September 2014 was 7,19 EUR/kg. This was 24% lower than the previous month when less volume was sold (217 tonnes). It marginally increased over September 2013 (less than 1%) and decreased 6% with respect to September 2012, when 196 tonnes and 198 tonnes were sold, respectively.

The highest unit price of sole observed in the period surveyed was in December 2011 at 11,72 EUR/kg, corresponding to 249 tonnes sold.

1.1.2. PLAICE



Plaice (*Pleuronectes platessa*) or European plaice is a demersal flatfish species that lives on sea bottoms at depths from a few meters to about 100 m; the older the fish, the deeper its habitat. It prefers shallow water and small plaice can be seen on bathing beaches. It occurs at a temperature range of 2-15 °C and spawns when the temperature is about 6 °C. Plaice uses sand as camouflage. They are active at night, and are known to eat thin-shelled clams and bristle worms.⁹

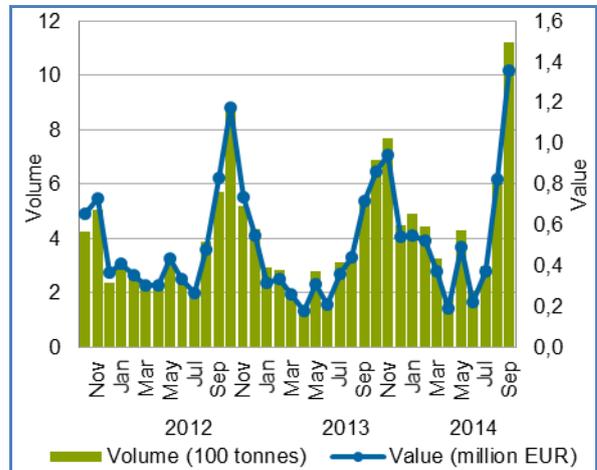
The species is easily identified by distinctive orange spots which also give an indication of the freshness (the brighter the spots the fresher the plaice). Plaice are caught predominantly in mixed fisheries using demersal towed gears, otter trawls, beam trawls and anchor seines. In most beam-trawl fisheries, plaice is targeted along with sole.

Plaice undergo a seasonal spawning cycle which causes the condition and quality of the fish to vary: the flesh is thin and watery during and after spawning.¹⁰

The species is subject to total allowable catches (TACs). Belgium has 6% of the total EU quota. This represents 7.446 tonnes in 2014 which is an increase of 9% compared with 2013.

The year-to-date (January-September 2014) first sales of plaice accounted for 10% of value and 31% of volume of the country's total first sales at EUR 4,91 million and 4.127 tonnes. This was a 57% increase in value and 61% in volume compared with the same period of the previous year. The same increasing trend is observed compared with two years before (January-September 2012): first sales have increased remarkably, by 32% in value and 48% in volume.

Figure 6. PLAICE: MONTHLY FIRST SALES IN BELGIUM



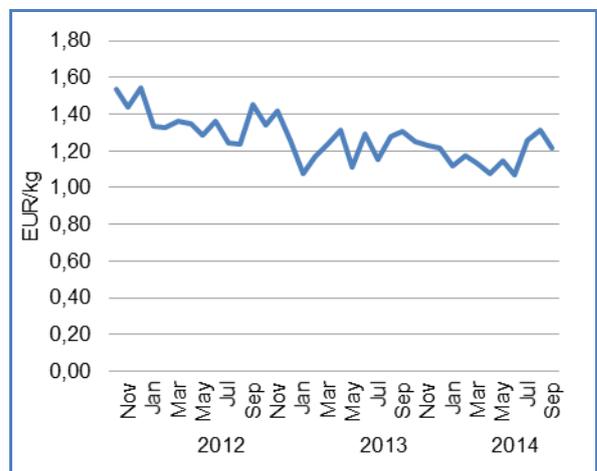
Source: EUMOFA (updated 17.11.2014).

The average unit prices of plaice showed a decreasing trend in the period surveyed (October 2011–September 2014).

The average unit price of plaice in September 2014 was close to 1,21 EUR/kg, 8% lower than the previous month when 628 tonnes were landed and sold. It was 8% lower compared with a year before when 547 tonnes landed and sold. Compared with September 2012, the price was 16% lower, corresponding to a first-sales volume of 571 tonnes of plaice.

The highest unit price of plaice observed in the period surveyed was in October and December 2011, at 1,54 EUR/kg, corresponding to 424 and 238 tonnes sold, respectively.

Figure 7. PLAICE: FIRST-SALE PRICE IN BELGIUM



Source: EUMOFA (updated 17.11.2014).

1.2. THE UNITED KINGDOM

The fisheries sector plays an important role in the UK economy, a country with a coastline of 10.500 km and a shelf area of approximately 500.000 km². Since 2002, the UK fishing fleet has decreased ca. 15%, reaching a size of 6.400 fishing vessels. Meanwhile, the employment of fishermen has been shrinking to approximately 12.445 people (-12%) in the same period.

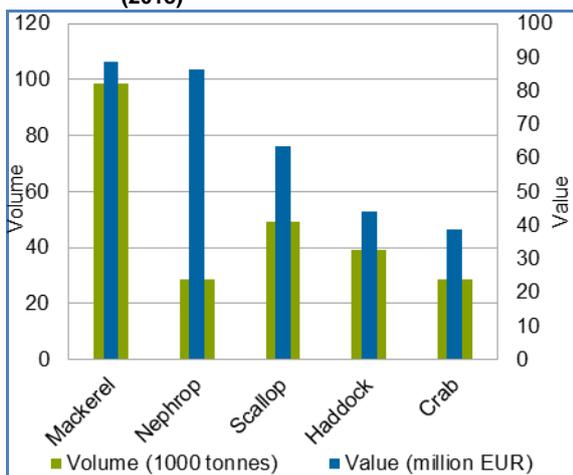
In 2013, 404.600 tonnes at ca. EUR 658 million, of fish and shellfish were landed by UK vessels into the UK. It has decreased 2,7% in volume and 3,5% in value over 2012.

The fish landed is sold mainly through the auction markets. The most important markets in volume are Peterhead, Lerwick and Fraserburgh (located in Scotland) followed by Brixham, Plymouth and Newly (in England).

The UK landings include a large variety of demersal, pelagic, and shellfish species. On average, more than 100 species are landed, of which the most valuable are lobster, halibut, turbot, sole, and seabass.

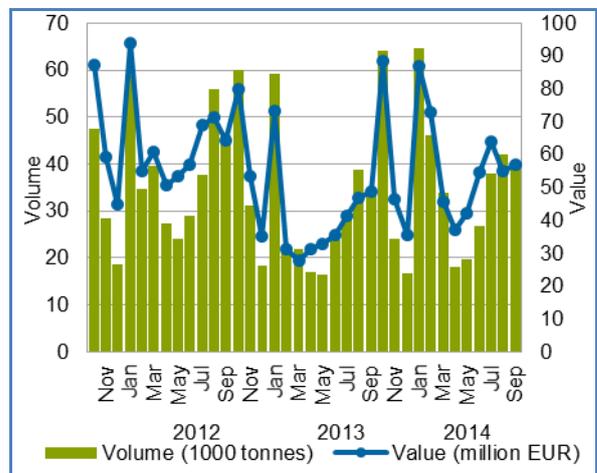
The top five species (in volume) landed in the UK (2013) were mackerel, herring, scallop, haddock, and brown crab. Four of the five species (except herring) were also the top five species in value.¹¹

Figure 8. LANDINGS IN THE UK BY MAIN SPECIES (2013)



Source: Marine Management Organisation. Volume in net weight.

Figure 9. TOTAL MONTHLY FIRST SALES IN THE UK



Source: EUMOFA (updated 17.11.2014).

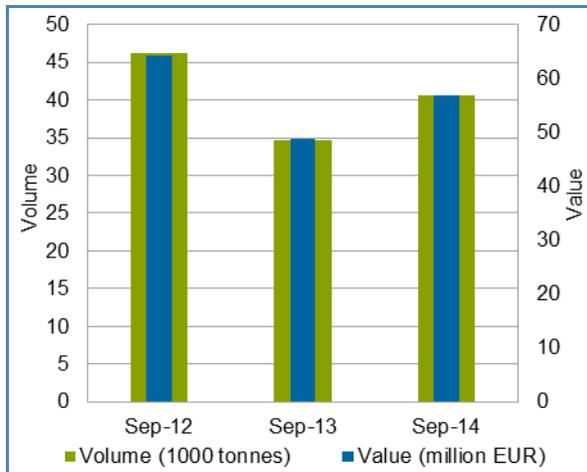
In September 2014, first sales reached EUR 56,92 million and 40.565 tonnes. Compared to last year, first-sales increased by 17% in both value and volume. Two years prior (September 2012), an opposite, decreasing trend in both first-sales value and volume was observed, of 11% and 12% respectively.

The year-to-date first-sales value and volume of the ten commodity groups reported in the UK were EUR 524,13 million and 334.523 tonnes. This was 42% increase in value and 27% increase in volume compared to the corresponding period in 2013. When comparing with the same time reference in 2012, the first-sales value decreased with 9% and volume decreased with 5%.

One of the main species to show an increase in the last two years is mackerel. First-sales value and volume increased by 72% and 56% respectively compared with the corresponding period in 2013. Compared to 2012, first-sales value increased by 58% and volume by 63%. Other main commercial species that have increased in first-sales value and volume so far in 2014 are haddock and crab. For herring, on the other hand, first-sales value has shown the opposite trend. Compared to the January-September period in 2013 and 2012, first-sales value decreased by 10% and 60% respectively. Over the same period, herring volume increased by 12% compared to 2013, while decreasing by 25% compared to 2012.

In September 2014, Crustaceans accounted for 33% of the value, and 14% of the volume of UK's first sales. The year-to-date first-sales value and volume for crustaceans were EUR 139,34 million and 41.763 tonnes, respectively. Compared with January–September 2013, first-sales value and volume increased 51% and 38%, respectively. Two years prior (January–September 2012) first-sales decreased by 15% in value and 10% in volume.

Figure 10. **SEPTEMBER FIRST SALES IN THE UK**



Source: EUMOFA (updated 17.11.2014).



1.2.1. CRAB

The brown crab (*Cancer pagurus*) mainly lives around the UK and at the coast of France and Norway. Though, one can find it all the way to

the northern parts of Africa. It seeks waters with high, stable salinity and hard bottoms.

Brown crab can be up to 30 cm wide (carapace) and 2,5 kg in weight. Spawning happens in late autumn after the female has been hiding in the sandy bottom since summer. Usually they sit here for about 4 months before the eggs hatch. When the winter comes the brown crab move deeper down, commonly 30-50 meters, to avoid the cold water on the surface. It eats whatever it comes over on the bottom, e.g. dead fish or benthos.¹²

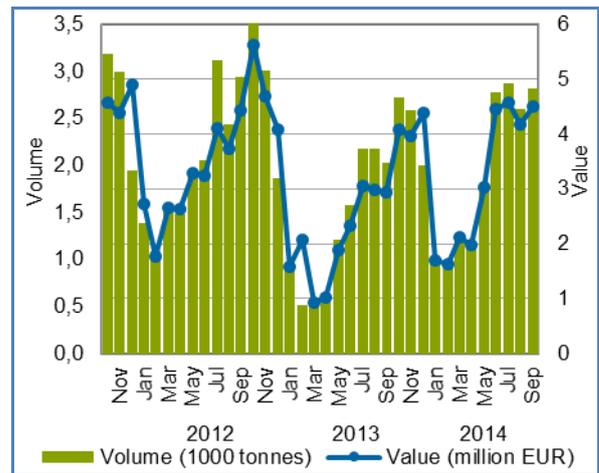
Brown crab is commonly caught with traps, but is also included in by-catch for bottom trawl fisheries. The UK and France are largest fishery countries for this species.¹³

From the start of 1970, the Scottish brown crab fishery has increased from 2.000 tonnes to approx. 10.000 tonnes. For brown crab there is no EU TAC or national quotas. A minimum landing size is set in the EU at 115 mm carapace width.¹⁴

Within the crustaceans commodity group, crab was the third most significant commercial species in September 2014, with 24% of the total first-sale value. In volume, crab was the most significant commercial species, representing 49% of total crustaceans landed and sold.

During January-September 2014, the cumulative first-sales value of crab was EUR 28,12 million, a 50% increase compared with January-September 2013. The volume in the same period was 17.192 tonnes, representing a 47% increase.

Figure 11. **CRAB: MONTHLY FIRST SALES IN THE UK**

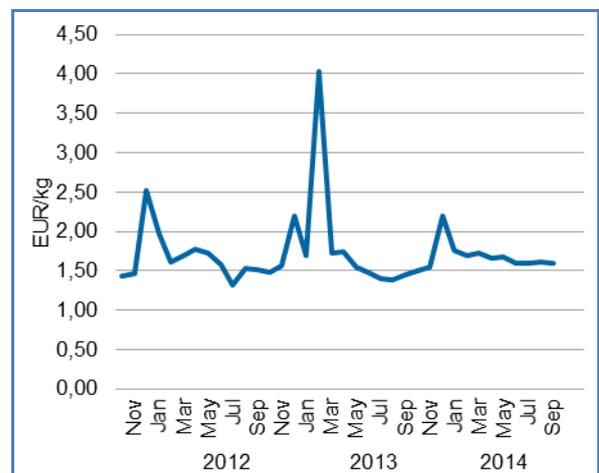


Source: EUMOFA (updated 17.11.2014).

Since the beginning of 2012, except in February 2013, the average unit price of crab has been fluctuating between 1,32 EUR/kg and 2,19 EUR/kg. In February 2013 the average unit price was 4,03 EUR/kg.

The average unit price of crab in September 2014 was 1,60 EUR/kg, a 10% increase from one year ago, when less supplies were available. The highest unit price registered for crab in 2014 was in January, at 1,75 EUR/kg with 973 tonnes landed and sold.

Figure 12. **CRAB: FIRST-SALE PRICE IN THE UK**



Source: EUMOFA (updated 17.11.2014).

1.2.2. EUROPEAN LOBSTER



European lobster (*Homarus gammarus*) can be found in warmer waters close to Morocco and all the way through the North-East

Atlantic, around the UK and up to the northern parts of Norway.

It has also been discovered in the Mediterranean Sea but this is more rare. The lobster avoids the Baltic Sea; this could be attributed to salinity and temperature which are of importance to the lobster when it matures and reproduces.

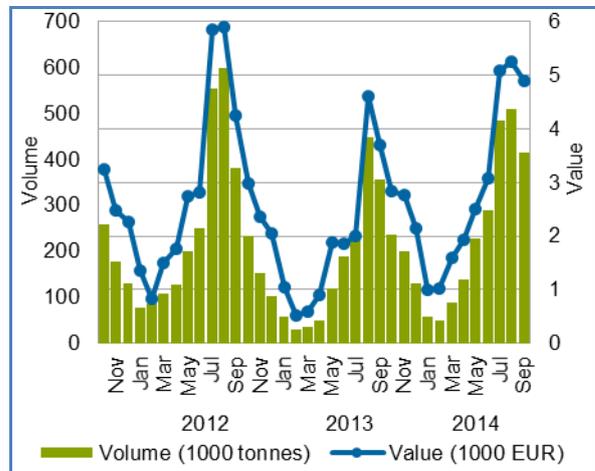
Lobster commonly do not mature before 5-8 years and spawning occurs annually or bi-annually and takes place during summer. It is a nocturnal species which feeds on other crustaceans, like crab, molluscs and polychaetes.¹⁵

For the UK vessels, landings have increased from 290 tonnes in 2001 to 1.100 tonnes in 2012, with Orkney, Hebrides and South Minch being important areas for fishing. As for brown crab, the lobster fishery is not regulated by an EU TAC but by a licensing system. For European lobster there is a minimum landing size of 87 mm carapace length (CL), and a maximum CL for catches of females at 155 mm. CL.¹⁶

In September 2014, European lobster was the second most important main commercial species in value in the crustaceans commodity group with 26% of the total first-sale value. In volume, European lobster was the third most significant commercial species, representing 7% of first-sales value.

First sales of European lobster were ca. EUR 4,90 million and 415 tonnes in September 2014. This was an increase in both value (33%) and volume (16%) from September 2013. First-sales cumulative value (January-September) of European lobster was EUR 26,36 million, a 54% increase compared with the same reference period one year before. The corresponding volume was 2.261 tonnes, a 48% increase over January-September 2013.

Figure 13. LOBSTER: MONTHLY FIRST SALES IN THE UK



2. Global Supply

Resources / EU: The European Commission has proposed the fishing opportunities for 2015 in the Atlantic and North Sea, based on the new Common Fisheries Policy (CFP) so that all stock are fished at MSY (Maximum Sustainable Yield) levels, in accordance with scientific advice. For stocks in EU waters, the Commission proposes to increase or maintain catch limits for 29 stocks and to reduce them for 40 stocks. At the same time the EC proposed deep-sea fishing opportunities for 2015-2016 to protect vulnerable species. This concerns a decrease in catch limits for 9 fish stocks, an increase for 4 stocks, and no change for 5 stocks.¹⁷

Resources / ICCAT: The International Commission for the Conservation of Atlantic Tunas (ICCAT) decided to increase the quota for bluefin tuna in the Eastern and Mediterranean Sea by just under 20% a year over the next three years. For Western bluefin tuna, the quota will be increased by 14% for the next two years. These decisions are in line with scientific advice and come after several years of prudent management following the near collapse of the stock.¹⁸

Resources / Baltic Sea: A multiannual fisheries management plan for the Baltic Sea that applies to cod, herring and sprat stocks has been proposed by the EU. It is the first multiannual plan adopted in accordance with the new Common Fisheries Policy.¹⁹

Illegal fishing / World: The EC has proposed to ban imports of fisheries products from Sri Lanka, since the country cannot demonstrate that it sufficiently addresses illegal, unreported and unregulated (IUU) fishing. In contrast, Belize, Fiji, Panama, Togo and Vanuatu who had received formal warnings at the same time as Sri Lanka, have successfully taken measures to tackle illegal fishing. The trade measures imposed in March this year against Belize have also been lifted. The EC has prolonged cooperation with Korea, Curacao and Ghana until January 2015. Despite some progress achieved in these countries, more time is needed to make changes.²⁰

Trade / EU: In 2014, EU exports and imports increased in the first three quarters of the year compared to the same period in 2013. EU exports have been particularly dynamic for small pelagics with an additional 108.000 tonnes worth EUR 34 million. Meanwhile, EU imports have increased 5% in volume and value. This represents an additional EUR 707 million and is led by crustaceans (EUR 580 million and 23%), salmonids (EUR 256 million) and bivalves (EUR 107 million). Imports of tuna decreased 14% and EUR 320 million.²¹

EU-Canada Trade Agreement: the EU-Canada trade agreement (CETA) – which will need to be approved by the Council and the European Parliament will remove over 99% of tariffs between the two economies and will create new market access opportunities. Fish exports from Canada to the EU are expected to increase by 16% after CETA is signed.²²

Fisheries / Sustainability: The Icelandic golden redfish (*Sebastes marinus*) fishery – ca 45.000 tonnes - in the North East Atlantic has been certified by the Marine Stewardship Council (MSC) as sustainable and well-managed. The fishing methods are: bottom trawl; nephrops trawl; Danish seine; gillnet, long line and handline. Golden redfish is processed mostly at sea for export especially as frozen fillets, but it is also exported chilled. The largest markets for redfish are Germany, Japan, the Netherlands and China.²³

Aquaculture / Sustainability / Vietnam: ASC (Aquaculture Stewardship Council) certified the first black tiger shrimp. The ASC certification ensures that the impact on the environment and local communities is reduced, by preserving wetlands and mangroves. Shrimp are nourished completely naturally and the use of antibiotics is strictly prohibited.²⁴

Aquaculture / Sustainability / UK: Three oyster farms have become the first in the world to enter assessment against the ASC Bivalves Standard for responsible aquaculture. It concerns specifically the European native oyster (*Ostrea edulis*). The standard addresses key impacts of bivalves farming such as responsible use of medicine and antibiotics, site impacts, protection of natural habitats, pollution and waste management, as well as labour rights for farm workers.²⁵

Trade / Norway: Exports of Norwegian seafood in October 2014 increased 5% in value, compared with the previous year (October 2013). This was attributed to larger volumes of mackerel, combined with better prices and larger volumes of cod. Concomitantly, fresh salmon exports went down 3%.²⁶

Trade / Spain: In the first eight months of 2014, Spain exported 2,5% more canned seafood (ca. 107.000 tonnes) than in the same period in 2013 (January-August). However, the value of exports (EUR 472,5 million) was 4,5% lower than previous period. This is due mainly to the average price of Spanish canned tuna which fell from EUR 5,28/kg (2013) to 4,82 EUR /kg (2014). In the first eight months of 2014, Spain exported 65.000 tonnes (EUR 313 million) of canned tuna and 854 tonnes (EUR 4.2 million) of canned mussel. The latter was a 17% increase from the previous year.²⁷

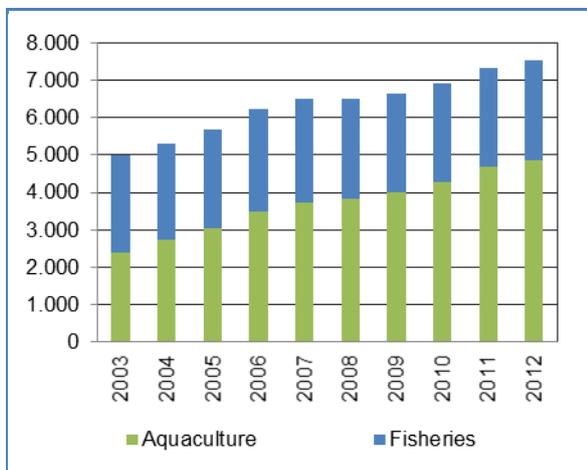
3. Case study: EU shrimp imports

There are a variety of shrimp species and in trade and market terms shrimps are often divided into cold water and warm water (or tropical) shrimp. In the North Atlantic and Pacific, fisheries are dominated by Northern prawn (*Pandalus borealis*). Catches of different warm water shrimp species take place in the areas close to the equator. As opposed to cold water shrimp, warm water shrimp are also farmed.

3.1. Production

Over the past ten years there has been significant growth in production of farmed tropical shrimp. According to the FAO, harvest of tropical shrimp more than doubled from 2003 to 2012, from 2,4 million tonnes to close to 4,9 million tonnes. Catches of shrimp in the same period remained stable at around 2,6 million tonnes. EU landings of shrimp in 2013 totalled approx. 20.000 tonnes valued at EUR 91 million. Shrimp species landed in the EU are common shrimp (*Crangon crangon*) and Northern prawn (*Pandalus borealis*). With very few exceptions, EU landings consist of fresh product.

Figure 15. GLOBAL CATCHES AND HARVEST OF SHRIMP 2003-2012 (1000 tonnes)

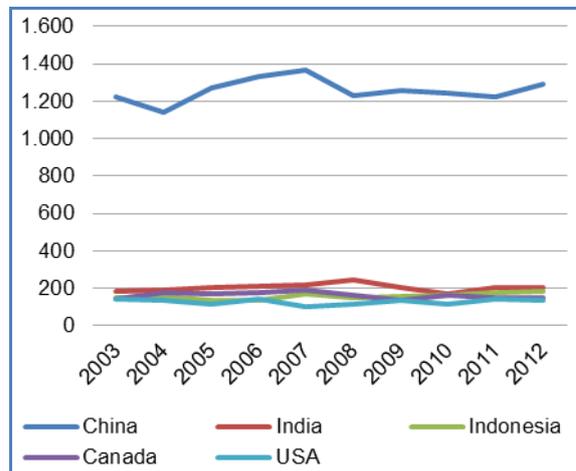


Source: FAO.

Production from the world's shrimp fisheries totalled 2,68 million tonnes in 2012, of which 1,3 million tonnes were caught by China. India ranked 2nd with 0,2 million tonnes, followed by Indonesia. Catches by the three countries amounted to 63% of the world total.

Shrimp farming is dominated by Asian and South American countries. The world's largest shrimp farmer is China which alone accounted for over 2 million tons and 43% of the total harvest volume in 2012. Thailand, Vietnam and Indonesia follow as the largest producers. Ecuador is the largest shrimp farmer in South America.

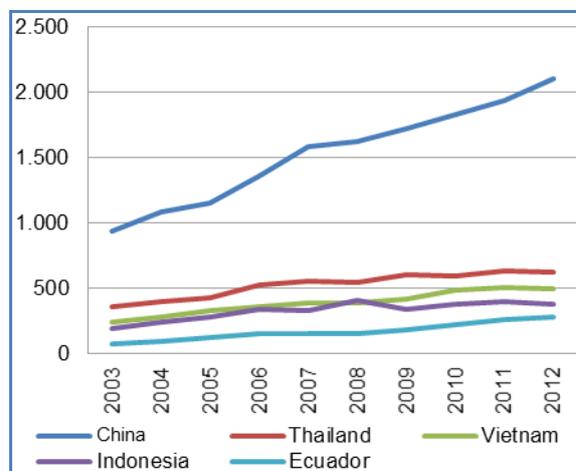
Figure 16. TOP 5 SHRIMP FISHING COUNTRIES 2003-2012 (1000 tonnes)



Source:FAO.

In recent years some shrimp farming countries have been challenged by disease. Early Mortality Syndrome (EMS) - also named Acute Hepatopancreatic Necrosis Syndrome (AHPNS), was first discovered in 2009 and in the following years caused much damage in China and Thailand, two of the major producing countries that were hit hardest. In 2013, Thailand's production decreased from 600.000 tonnes to 300.000 tonnes. This decrease has continued in 2014, but it is estimated that a recovery will occur next year. While the EMS-situation is somewhat under control, the weather conditions have been difficult for the farmers in Thailand this year.

Figure 17. TOP 5 SHRIMP FARMING COUNTRIES 2003-2012 (1000 tonnes)



Source:FAO.

3.2. Imports

The main importers of shrimp are the USA and the EU with 5 year-average import volume of approx. 550.000 tonnes. Shrimp have been the number one seafood species consumed in the USA for the last 10 years. Tropical shrimp ranked number 10 on the list of the most important species consumed in the EU in 2011

The main commercial shrimp species imported to the EU is tropical shrimp as frozen whole product. Over the last years imports have shown a negative trend. From 2010 to 2013 import volumes have fallen 17%. In the same period the import value was unchanged, at close to EUR 1,7 billion.

Table 2. EU IMPORTS OF SHRIMP BY MAIN COMMERCIAL SPECIES AND PRESERVATION STATE (tonnes)

Main commercial species	Preservation state	2010	2011	2012	2013	2014 Jan-Sep
Cold-water shrimp	Fresh	1.051	752	729	1.128	1.043
	Frozen	52.953	46.195	44.692	45.431	32.945
Miscellaneous shrimp	Fresh	348	317	243	239	226
	Frozen	103.517	122.997	111.731	117.255	77.323
	Prepared-Preserved	52.489	104.823	126.256	123.096	86.750
Tropical shrimp	Frozen	312.369	297.537	271.526	260.160	201.100
Total volume		522.726	572.620	555.343	547.367	399.391

Source: EUMOFA.

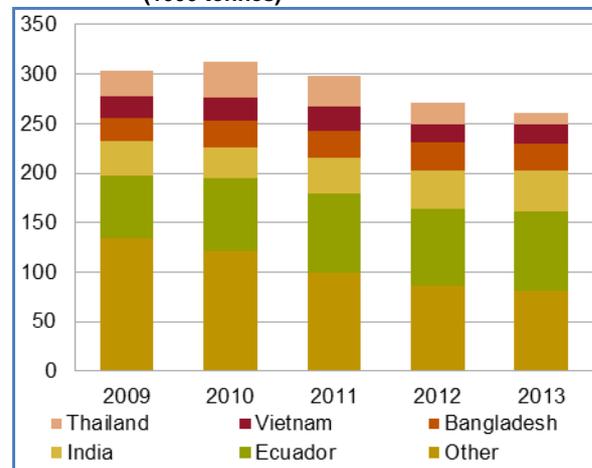
with consumption estimated at 0,75 kg/capita.²⁸ EU shrimp imports are valued ahead of salmon, tuna and cod. Among the main importers of shrimp, Japan ranks 3rd. China has also become an important market. Because of the strong domestic demand, China is now moving towards becoming a net importer.

EU shrimp-import value amounted to EUR 3,3 billion in 2013. This represents an increase of 27% from 2010. In the first 9 months of 2014 imports rose 23% and 4% in terms of value and volume respectively.

Denmark is the biggest importer of frozen cold water shrimp in the EU, with an import share of 97% in 2013. Denmark's close relation to Greenland makes Denmark a hub for shrimp of Greenlandic origin. Danish imports of frozen cold water shrimps from Greenland amounted to 39.000 tonnes in 2013 of which 21.000 tonnes were re-exported to other EU Member States.

Almost half of the EU imports of frozen miscellaneous shrimp is red shrimp (*Pleoticus mulleri*) from Argentina and the main EU importer is Spain. There is also a significant volume of prepared-preserved shrimp under the miscellaneous shrimp category. Prepared-preserved shrimp consist mainly of tropical shrimp, where the main product forms include peeled frozen/in brine and frozen breaded shrimp.

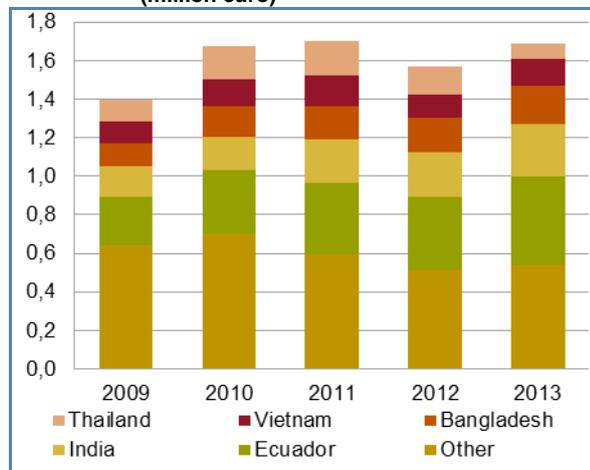
Figure 18. EU IMPORTS OF FROZEN TROPICAL SHRIMP FROM MAIN PARTNERS (1000 tonnes)



Source: EUMOFA.

While Ecuador is the 5th largest world producer of farmed shrimp, the country is the main supplier of frozen tropical shrimp to the EU with a market share of 30%. EU imports from Ecuador in 2013 were approx. 80.000 tonnes, which is 4% higher than in 2012 and 10% higher than in 2010. The imports from Ecuador rose by 23% in value from 2012 to 2013 and by 30% in the first 3 quarters of 2014.

Figure 19. **EU IMPORTS OF FROZEN TROPICAL SHRIMP FROM MAIN PARTNERS** (million euro)



Source: EUMOFA

Behind Ecuador, East Asian suppliers dominate the EU market. From being the 2nd largest supplier in 2010, EU imports of tropical shrimp from Thailand have trended downward. From 2012 to 2013 the EU import volume from Thailand more than halved. The drop in 2013 can be attributed to EMS (Early Mortality Syndrome).

Table 3. **EU QUARTERLY IMPORTS OF FROZEN TROPICAL SHRIMP FROM MAIN PARTNERS** (value in million euro and volume in tonnes)

Partner	Q1+Q2+Q3 2013		Q1+Q2+Q3 2014	
	Vol	Val	Vol	Val
Ecuador	60.403	330,17	66.335	429,06
India	26.819	162,96	39.446	310,93
Bangladesh	18.893	124,49	18.928	164,16
Viet Nam	12.942	86,73	16.915	134,83
Thailand	8.732	64,10	5.945	65,37
Other	53.609	335,66	53.531	397,08
Total	181.398	1.104,10	201.100	1.501,43

Source: EUMOFA.

Imports of frozen tropical shrimp bottomed out in 2013. In the first 3 quarters of 2014, EU imports rose by 11% and 36% in terms of volume and value. While imports from most EU trade partners are increasing, imports from Thailand have so far in 2014 trended down in volume and are stable in value.

Based on the import trend seen in the first 9 months of 2014, the import value of frozen tropical shrimps this year is expected to be the highest so far recorded.

Table 4. **TOP 5 EU MS IMPORTERS OF FROZEN TROPICAL SHRIMP** (value in million euro and volume in tonnes)

Member State	2010		2011		2012		2013	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
France	68.619	364,35	59.300	340,47	65.208	375,34	67.907	436,50
Spain	94.822	487,97	83.990	426,56	67.029	327,71	64.054	371,03
UK	24.646	160,28	25.156	178,09	23.819	170,15	24.270	191,57
Belgium	35.743	191,44	42.303	251,15	31.771	193,03	26.842	188,57
Italy	35.266	174,83	35.706	182,10	31.335	163,76	26.259	156,60
Other	53.273	299,11	51.082	325,14	52.364	338,23	50.828	346,27
Total	312.369	1.677,98	297.537	1.703,50	271.526	1.568,22	260.160	1.690,54

Source: EUMOFA.

Table 5. **TOP 5 EU MS IMPORTERS OF FROZEN TROPICAL SHRIMP** (value in million euro and volume in tonnes)

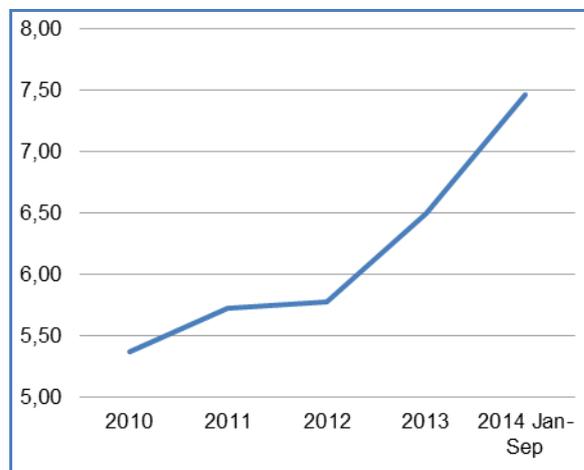
MS	Q1+Q2+Q3 2013		Q1+Q2+Q3 2014	
	Vol	Val	Vol	Val
FR	49.835	301,45	48.654	350,22
ES	41.779	223,79	49.172	309,67
UK	16.604	124,47	18.619	176,05
BE	18.830	119,07	21.727	195,48
IT	19.774	112,55	23.178	159,54
Other	34.576	222,77	39.750	310,47
Total	181.398	1.104,10	201.100	1.501,43

Source: EUMOFA.

France is the largest market for frozen tropical shrimp within the EU. France accounted for 26% of EU imports in 2013, in terms of volume. Even though French imports have been stable over the last four years, import share has trended up as overall EU imports have trended in the opposite direction.

Spain, which was the biggest EU market for frozen tropical shrimp from 2010 to 2012, fell behind France in 2013. During this period Spanish imports of frozen tropical shrimp fell by 32%. Argentine frozen red shrimp (which is a cold water species) have replaced tropical shrimp to some extent.

Figure 20. **EU IMPORT PRICE TREND FOR FROZEN TROPICAL SHRIMP (EUR/KG)**

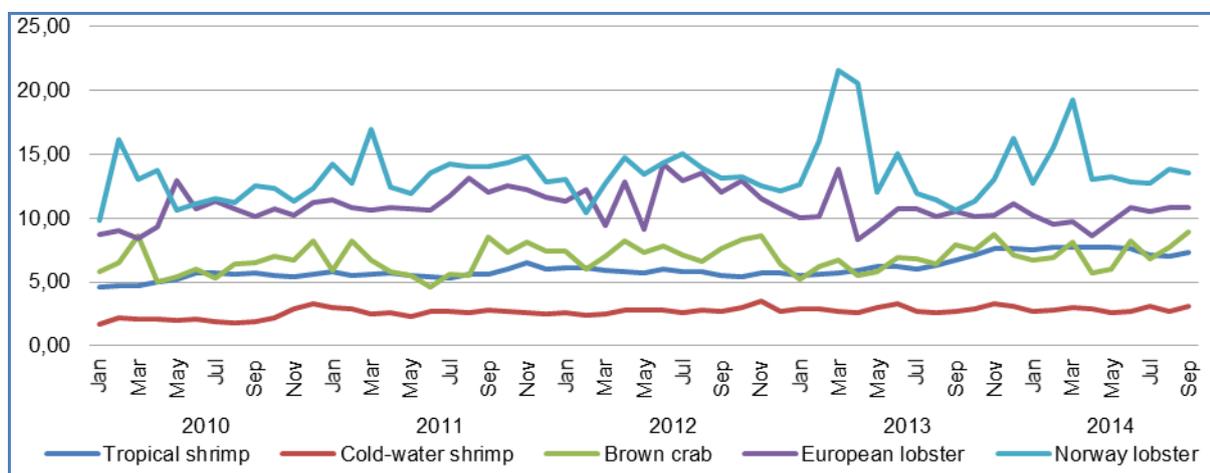


Source: EUMOFA.

The production challenges in shrimp farming since 2013 related to disease problems, have contributed to a reduction in harvest volumes - especially in some East Asian countries. As farmed tropical shrimp is a commodity sold on the global market, reduced availability has driven prices up. This has also been true for the EU market. From 2012 to 2013, average EU import prices for frozen tropical shrimp rose by 13%. The average import price in the first 3 quarters of 2014 was 7,47 EUR/kg which is 15% higher than in 2013 (whole year).

EU import prices for frozen tropical shrimp rose steeply in the 2nd half of 2013 and remained high in the first three quarters of 2014. The price increase for frozen tropical shrimp has so far not had any impact on EU import prices for cold water shrimp. This points to limited substitution between frozen tropical and cold water shrimps on the EU market.

Figure 21. **EU IMPORT PRICE TREND FOR SELECTED FROZEN WHOLE CRUSTACEAN SPECIES (EUR/KG)**



Source: EUMOFA

3.3. Supply trends

While catches of tropical shrimp over the last years have been stable, production of farmed shrimp has grown at an annual average of 4% from 2006 to 2012. Tropical shrimp aquaculture production fell by 19% worldwide from 2012 to 2013²⁹. Both South American and Asian producing countries faced drops in aquaculture production in 2013, but some East Asian producers, especially Thailand and China were hit the hardest. A slight recovery is expected as from 2014.

Vietnam, the 3rd largest producer of farmed tropical shrimp and the 4th biggest supplier of frozen tropical

shrimp to the EU market, has increased its exports significantly in 2014. In the first 3 quarters of 2014 EU imports of frozen tropical shrimp rose by 31% in terms of volume and 55% in value. US imports of shrimp from Vietnam rose by 59% in terms of volume in the first 8 months of 2014. The US imposed in September higher duty rates, ranging between 4,98% to 9,75% on Vietnam shrimp. This may lead to reallocation of volumes to other markets. Vietnam has taken advantage of the overall fall in shrimp production. The country suffered to a limited extent from EMS, and has in 2013 and so far in 2014 benefited from high prices on the world markets.



4. Consumption

FRESH ANCHOVY

There is a market for fresh anchovy especially in southern Europe, where fresh anchovies are in high demand. Spain and Italy have among the highest levels of consumption of fresh anchovy in the EU.³⁰

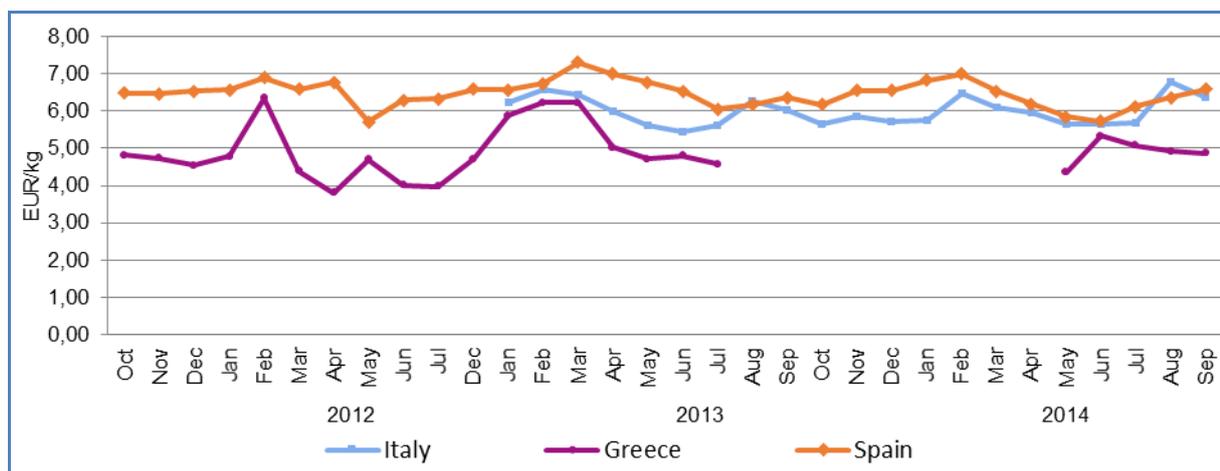
Retail prices of fresh anchovy are relatively consistent between the EU Member States surveyed. In **Spain** and **Italy** prices were relatively stable, and converging in recent months. In **Greece** prices were the lowest and have fluctuated a bit more over the past two and a half years. Retail price of anchovy follows cyclical trends, spiking in the winter months, starting in January and levelling out over the course of the spring months.

In **Greece**, monthly retail prices of fresh European anchovy, whole, have fluctuated between 3,80 and 6,34 EUR/kg (October 2011-October 2014). In October 2014, the average retail price was 4,71 EUR/kg, slightly higher (2%) than the same period of the previous year and quite stable compared with October 2012. In the early spring months, particularly February and March, ad-hoc price hikes are observed, which explain part of the variability in prices over the past three years.

In **Italy**, the price of fresh whole anchovy, remained fairly stable over the last 22 months, showing an average value of 5,99 EUR/kg. Overall, prices fluctuated from 5,44 EUR/kg to 6,79 EUR/kg. In August 2014, the price of anchovy peaked. Prices have decreased since then to 6,00 EUR/kg in October 2014. The YTD/year-to-date price (October 2014) increased only 1% from YTD October 2013.

In **Spain**, retail prices of whole European anchovy have remained relatively stable over the past three years, averaging 6,64 EUR/kg. They do however register higher value in the spring months: February to April. In October 2014, the YTD price of anchovy was 6,36 EUR/kg 3% lower than in 2013, and 1% lower than in 2012. The average retail price of anchovy increased until March 2013 when it reached a high of 7,31 EUR/kg, and has since fluctuated at an average price of 6,41 EUR/kg (April 2013-October 2014). Since June 2014, when the retail price reached a three-year low, prices have increased at an average rate of 3% per month.

Figure 22. RETAIL PRICES OF FRESH ANCHOVY



Source: EUMOFA (updated 17.11.2014).

FRESH HAKE

Hake is widely consumed in Europe, particularly in Spain, France and the UK. Fish are sold as fresh whole gutted, fillets and steaks into retail and food service. The European hake (*Merluccius merluccius*) is the main species consumed. The European hake is widely distributed over the Northeast Atlantic shelf and the supply peaks in the months of April till August.

Retail prices of fresh hake show considerable variations between the EU Member States surveyed. In **Greece** prices were the highest and varied considerably. In **Portugal** prices were very low and remained relatively constant, while in **Italy** prices showed an increasing trend.

In **France**, retail prices of fresh hake, whole, less than 1 kg, have fluctuated over the past three years, between 8,45 EUR/kg and 11,84 EUR/kg, overall remaining at an average of 10,04 EUR/kg. In October 2014, the year-to-date (YTD) average monthly price (10,13 EUR/kg) has remained stable compared with the same reference period one and two years prior. In the winter months France has seen price spikes particularly in January and February, because of reduced supply. During this period the price usually increases above 11 EUR/kg, more than 10% than the average price.

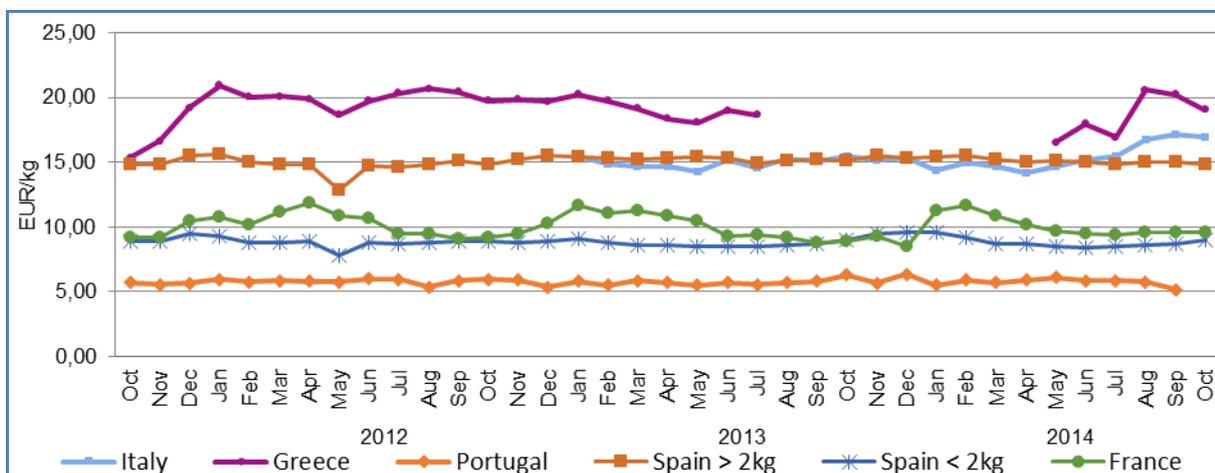
In **Portugal**, the prices of fresh hake, whole, have been quite stable, showing a linear trend over the past 35 months, with an average value of 5,76 EUR/kg. Overall, prices fluctuated between 5,17 EUR/kg to 6,37 EUR/kg. The retail price reached a 3-year low in September 2014 of 5,17 EUR/kg a 11% decrease in price from both September 2012 and 2013.

In **Spain**, larger hake is preferred, and on average is priced 71% more per kilogram than smaller specimens of hake. Retail prices of European hake, gutted, greater than 2 kg, have remained relatively stable over the past 3 years at ca. 15,00 EUR/kg. In October 2014 prices reached their lowest point since October 2012, at 14,80 EUR/kg. Prices for European hake, gutted, less than 1kg, followed a similar trend, averaging 8,97 EUR/kg and remaining around that level for the past three years. Since June, hake, less than 2 kg has been increasing in price.

In **Greece** retail prices of European hake, fresh, have remained among the highest in the observed countries, and extremely variable ranging from 15,32 to 20,92 EUR/kg. In October 2014, the average monthly price registered at 19,07 EUR/kg, was stable compared with 2012, but 25% higher than October 2011.

In **Italy**, retail prices of fresh hake, whole, have remained steady over the past 22 months, but since May 2014 have showed an increasing trend. The average price for hake in the first 5 months of 2014, was 14,57 EUR/kg compared with June-October 2014, where the average price registered at 16,30 EUR/kg. Italian prices of hake have been close to Portugal's at ca. 15,00 EUR/kg but they are increasing at a faster rate.

Figure 23. RETAIL PRICES OF FRESH HAKE



Source: EUMOFA (updated 17.11.2014).

5. Macroeconomic context

5.1. INFLATION

The EU annual inflation rate was 0,5% in October 2014, up from 0,4% in September 2014; it was 0,9% a year earlier (October 2013). In October 2014, the lowest individual annual rates were observed in Greece (-1,8%), Bulgaria (-1,5%), Hungary and Poland (both -0,3%), Spain (-0,2%) and the highest in Romania (1,8%), Austria (1,4%) and Finland (1,2%). Compared with September 2014, annual inflation increased in 16 EU Member States, remained stable in 3, and fell in 8 Member States.

Prices of food and non-alcoholic beverages increased slightly in the EU (0,14%), compared with the previous month (September 2014).

Compared with September 2014, the price index of fish and seafood held stable, and has exceeded the food index. Compared with a year ago, the fish and seafood index grew at a higher pace than the food index (1,3%).

Table 4. **HARMONISED INDEX OF CONSUMER PRICES IN THE EU (2005 = 100)**

HICP	Oct 2012	Oct 2013	Sep 2014 ³¹	Oct 2014 ³²
Food and non-alcoholic beverages	123,08	125,06	124,64	124,82
Fish and seafood	122,63	124,68	126,30	126,27

Source: EUROSTAT.

5.2. EUROPEAN UNION ECONOMIC OVERVIEW

The EU economy has remained stagnant, with little growth for the third quarter. GDP grew by 0,3% in the EU28 in Q3-2014, compared with 0,2% over the previous quarter. The growth rate in the euro area rose by 0,2%, up from 0,1% growth in Q2-2014.

Of the largest EU economies, GDP in the **UK** and **Spain** continued to experience the largest growth during Q3-2014 at 0,7% and 0,5% respectively. **France** and **Germany** both experienced positive growth (0,3% and 0,1%). In **Italy** GDP decreased by 0,1%. Other EU countries, including **Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovenia** and **Sweden**, saw positive growth.³³

The European Commission's autumn forecast indicates weak economic growth in the EU through the end of 2014. Real GDP growth is predicted to reach 1,3% in the EU and 0,8% in the euro area. In 2015 growth is expected to be driven by increases in foreign and domestic demand. Low inflation rates will continue to the end of the year and will increase slowly though 2015 as wages rise.

Portugal concluded its 3 year economic adjustment programme and as a result economic conditions have improved and normal market financing is being restored. High amounts of public and private debt have still constrained recovery efforts. Post Programme Surveillance (PPS) conducted by the European Commission and the ECB will monitor economic developments since the conclusion of the programme in June this year. PPS will continue until at least 75 percent of the financial assistance provided to Portugal is repaid.³⁴

5.3. EXCHANGE RATES

The euro continued to depreciate against the US dollar. In October 2014 (0,5%), a trend which had been observed since April 2014. The marginal decrease from September 2014, still resulted in the lowest rate in nearly two years.

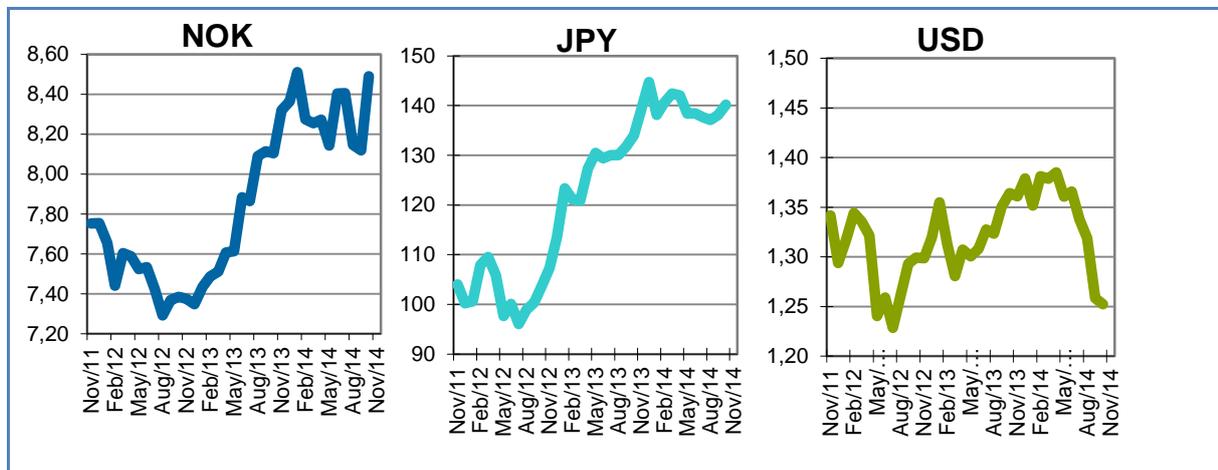
The euro appreciated remarkably (4,6%) against the Norwegian krone and also against the Japanese yen (1,5%).³⁵

Table 5. THE EURO EXCHANGE RATES AGAINST THREE SELECTED CURRENCIES

Currency	Oct 2012	Oct 2013	Sep 2014	Oct 2014
USD	1,2993	1,3641	1,2583	1,2524
JPY	103,78	133,99	138,11	140,18
NOK	7,3855	8,1040	8,1190	8,4900

Source: European Central Bank.

Figure 24. TREND OF EURO EXCHANGE RATES



Source: European Central Bank.

5.4. FUEL

The price of Brent crude oil has begun to drop over the last few months. After reaching a peak in June (82,30 EUR/barrel) prices have significantly decreased every month. In October 2014 the price was 69,50 EUR/barrel, which is 9,0% lower than the previous month and 13,1% lower than one year ago (October 2013). Currently at the lowest price in 4 years, the recent decrease in oil prices suggests a well-supplied market. Slightly higher prices are expected over the medium term (December). The global demand of crude oil is expected to decrease through next year, in line with a slower GDP growth, particularly in China and decreases in US oil imports due to increased shale oil production.

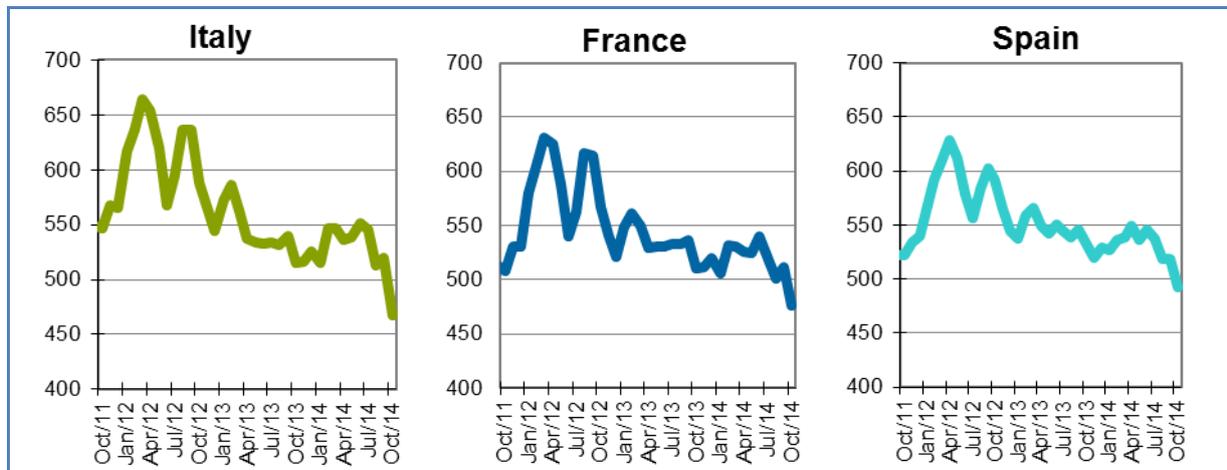
Oil production from shale oil, mainly in the United States, has increased steadily and increases in OPEC production mainly from Libya and Iraq have caused plentiful supply.³⁶

Table 6. MONTHLY AVERAGE PRICES FOR LOW-SULPHUR OIL (EUR/T)

EU Member State	Oct 2014	% change from Sep 2014	% change from Oct 2013
France	475,90	-6,9%	-6,8%
Italy	467,38	-10,1%	-9,3%
Spain	492,74	-4,9%	-7,4%

Source: International Energy Agency (IEA) – Oil market report – November 2014.

Figure 25. TREND OF LOW-SULPHUR OIL MONTHLY PRICES (EUR/T)



Source: IEA.

In October 2014, compared with previous month (September 2014), the average prices for low-sulphur oil (used by many fishing vessels) decreased in all three Member States surveyed. Compared with a year ago (October 2013), all prices were lower, most notably in Italy (-9,3%).³⁷

Along Italy's Adriatic coast, the average price for marine diesel fuel for small boats in October 2014 was 0,67 EUR/litre, 4% less than previous month (September 2014) and 5% lower than a year ago (October 2013).³⁸

5.5. DEVELOPMENTS IN SELECTED ECONOMIES

The global economy is showing signs of slow improvement, however the recovery is still fragile. The progress in the second half of 2014 has resulted from steady growth in advanced economies and conversely growth in emerging markets has stagnated.

The **US** economy continued to grow in the third quarter of 2014, but slightly slower than in the previous quarter. The GDP grew 0,9%, with a contribution from increases in net exports, and by sustained domestic demand. Consumer spending has increased, even in the wake of a relatively weak housing market.

In **Japan**, the economy registers a sharp contraction in Q2 (-1,7%). Following weak demand, due to a VAT hike, production has declined. Decreases in private consumption has been a result of declines in real income and consumer sentiment.

In **China**, slow sustained growth continued as a result of decreases in fiscal stimulus and investment. GDP decreased to 1,9% in Q3 2014, down from 2,0% in Q2. Increases in consumption and trade contributed to growth, however investment weakened, resulting in a slowdown of the housing market.³⁹

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

First sales: EUMOFA. Data analysed refers to the month of September 2014.

Global supply: European Commission, Directorate-General for Maritime Affairs and Fisheries (DG MARE); ANFACO; ASC; EUMOFA; GLOBEFISH; MSC; Norwegian Seafood Council.

Case study: EUMOFA, FAO.

Consumption: EUMOFA; FAO; EUROFISH

Macroeconomic context: European Central Bank (ECB); European Commission, Directorate-General for Economic and Financial Affairs (DG ECFIN); EUROSTAT; International Energy Agency (IEA); Chamber of Commerce of Forli-Cesena, Italy.

The underlying first-sales data is in a separate Annex available on the EUMOFA website.

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 four languages: English, French, German, and Spanish.

EUMOFA website is publicly available at the following address: www.ec.europa.eu/fisheries/market-observatory.

6. Endnotes

- ¹ Bivalves and other molluscs and aquatic invertebrates, cephalopods, crustaceans, flatfish, freshwater fish, groundfish, other marine fish, salmonids, small pelagics, and tuna and tuna-like species.
- ² http://www.puertos.es/en/estadisticas/estadistica_mensual/index.html
- ³ Data for first sales for Greece covers the port of Piraeus, which is an important place of sale, representing about 30%–35% of country's total first sales and a benchmark for understanding prices in EL.
- ⁴ http://stecf.jrc.ec.europa.eu/documents/43805/804458/2014-11_STECF+14-16+-+AER+Fleet+economics+2014_JRC92507.pdf
- ⁵ http://statbel.fgov.be/fr/modules/publications/statistiques/economie/downloads/agriculture_-_peche_maritime_series_detaillees_1950-2014.jsp
- ⁶ Bivalves and other molluscs and aquatic invertebrates, cephalopods, crustaceans, flatfish, groundfish, other marine fish, and small pelagics.
- ⁷ http://ices.dk/sites/pub/Publication%20Reports/Advice/Popular%20advice/sol-celt_popular.pdf
- ⁸ http://www.seafish.org/media/publications/SeafishResponsibleSourcingGuide_Doversole_201305.pdf
- ⁹ <http://www.fao.org/fishery/species/3354/en>
- ¹⁰ http://www.seafish.org/media/publications/SeafishResponsibleSourcingGuide_plaice_201305.pdf
- ¹¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/358342/UK_Sea_Fisheries_Statistics_2013_online_version.pdf
- ¹² <http://www.imr.no/temasider/skalldyr/taskekrabbe/en>
- ¹³ <http://www.fao.org/fishery/species/2627/en>
- ¹⁴ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32001R0724&from=EN>
- ¹⁵ http://www.imr.no/genimpact/filarkiv/2007/07/european_lobster.pdf/en
- ¹⁶ <http://www.scotland.gov.uk/Publications/2014/09/5642/27>
- ¹⁷ http://europa.eu/rapid/press-release_IP-14-1210_en.htm?subweb=347&lang=en; http://europa.eu/rapid/press-release_IP-14-1084_en.htm?subweb=343&lang=en
- ¹⁸ http://europa.eu/rapid/press-release_IP-14-1886_en.htm?subweb=347&lang=en
- ¹⁹ http://europa.eu/rapid/press-release_IP-14-1097_en.htm?subweb=343&lang=en
- ²⁰ http://europa.eu/rapid/press-release_IP-14-1132_en.htm?subweb=347&lang=en
- ²¹ EUMOFA.
- ²² GLOBEFISH European Price Report, November 2014 ; <http://www.international.gc.ca/trade-agreements-accords-commerciaux/agr-acc/eu-ue/initialEA-ceta-aecq-EEinitiale.aspx?lang=eng>
- ²³ <http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/isf-iceland-golden-redfish/>
- ²⁴ http://www.asc-aqua.org/upload/Binca_Thadimexco_ASCBlackTigerShrimp.pdf
- ²⁵ <http://www.asc-aqua.org/index.cfm?act=update.detail&uid=245&lng=1>
- ²⁶ <http://en.seafood.no/News-and-media/News-archive/Press-releases/October-sales-a-record-month-for-Norwegian-seafood>
- ²⁷ <http://www.anfaco.es/es/>
- ²⁸ The EU fish market is published by the Directorate-General for Maritime Affairs and Fisheries of the European Commission.
- ²⁹ GOAL, Global Aquaculture Alliance.
- ³⁰ http://www.fao.org/fileadmin/user_upload/Europe/documents/Publications/Anchovies_report_2.03.2012.pdf
- ³¹ Revised.
- ³² Provisional.
- ³³ Eurostatistics – Data for short-term economic analysis, Issue number 11/2014. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-BJ-14-011/EN/KS-BJ-14-011-EN.PDF
- ³⁴ http://ec.europa.eu/economy_finance/enewsletter/108_141106/
- ³⁵ European Central Bank. www.ecb.int
- ³⁶ European Central Bank – Monthly Bulletin – November 2014. <http://www.ecb.int/pub/pdf/mobu/mb201411en.pdf>
- ³⁷ International Energy Agency – Oil Market Report – November 2014. <https://www.iea.org/media/omrreports/tables/2014-11-14.pdf>
- ³⁸ Chamber of Commerce of Forlì-Cesena. <http://www.fc.camcom.it/prezzi/listino/prodotti/prodotto.jsp?id=1440>
- ³⁹ European Central Bank – Monthly Bulletin – November 2014. <http://www.ecb.int/pub/pdf/mobu/mb201411en.pdf>