

Fish Market Review 2016

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- Shortage of raw materials is hampering fish processing
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- Market for domestic wild fish remained stable
- Imports supplemented the domestic supply
- Utilisation of side streams improved
- Traceability provisions hard to implement

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The global market

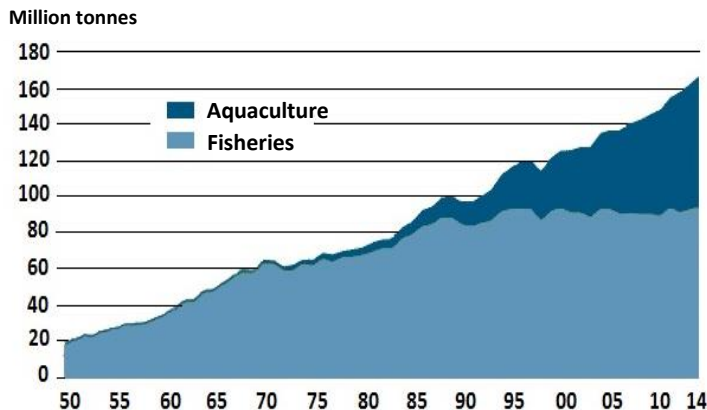
Fish helps to satisfy the growing demand for protein

The global population is expected to reach 9.7 billion by 2050. The population growth rate is particularly high in developing countries. At the current level of consumption, the global protein demand is expected to increase by approximately 40%.

For years, the global supply of fish has helped to satisfy the growing demand for protein. Over the past 50 years, fish production has grown twice as fast as the human population. Consumption of fish continues to grow, as rising incomes in the developing world are fuelling demand for animal protein. Diversifying diets, urbanisation and improved distribution channels are also contributing to the rising demand for fish products. Appreciation for healthy and sustainably produced food is also growing. Another reason behind the growing demand is that fish can be produced economically and ecologically, and it also satisfies many other requirements of modern consumers.

The catch of wild fish can no longer be increased, since most wild fish stocks are already being fully exploited. Advances in aquaculture and feed production technologies have already long enabled increasing the volume of fish production to meet changing global needs. In the field of aquaculture, the growth potential in inland waters is already largely exploited, but there is still plenty of capacity to increase protein production in marine areas. Next-generation farming technologies are being developed for both offshore uses and urban environments near the markets.

World production of fish 1950–2014

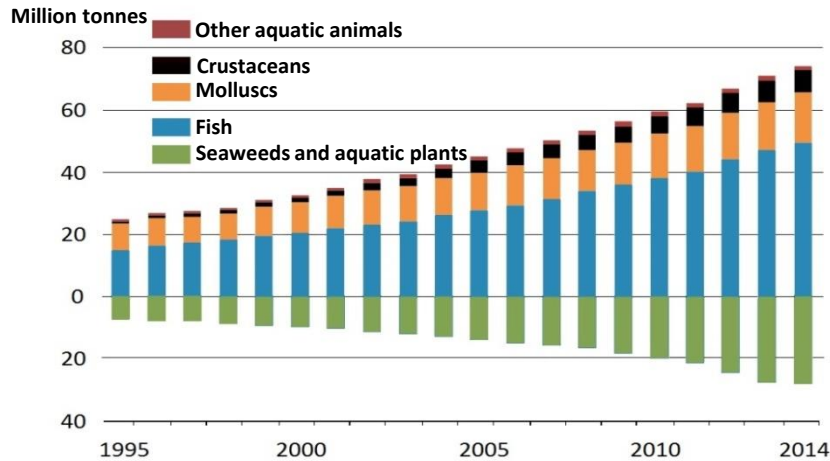


Efficiency figures for salmon farming and other protein production industries

Character	Unit	Salmon	Poultry	Pork	Beef
Feed conversion	Produced body weight kg / feed kg	1,1	2,2	3	4 - 10
	Edible meat /100 kg fed	61 kg	21 kg	17 kg	4 – 10 kg
Edible Yield	Edible meat/total body weight	68 %	42 %	52 %	41 %
Protein Renetation	Animal food protein/feed protein	31 %	21 %	18 %	15 %
Energy Retention	Energy in edible meat/fed gross energy	23 %	10 %	14 %	27 %
Carbon footprint	kg CO ₂ /kg edible meat	2,9	2,7	5,9	30
Water consumption	litre/kg edible meat	2 000	4 300	6 000	15 400

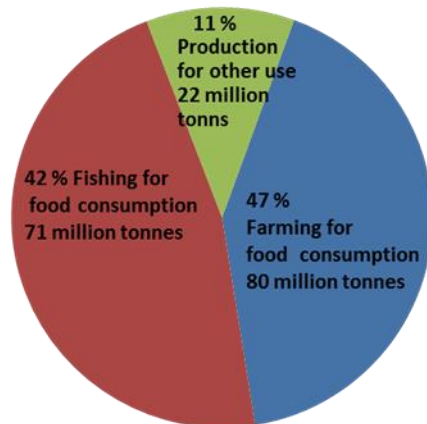
Aquaculture is the fastest-growing food production sector

World aquaculture production volume 1995–2014

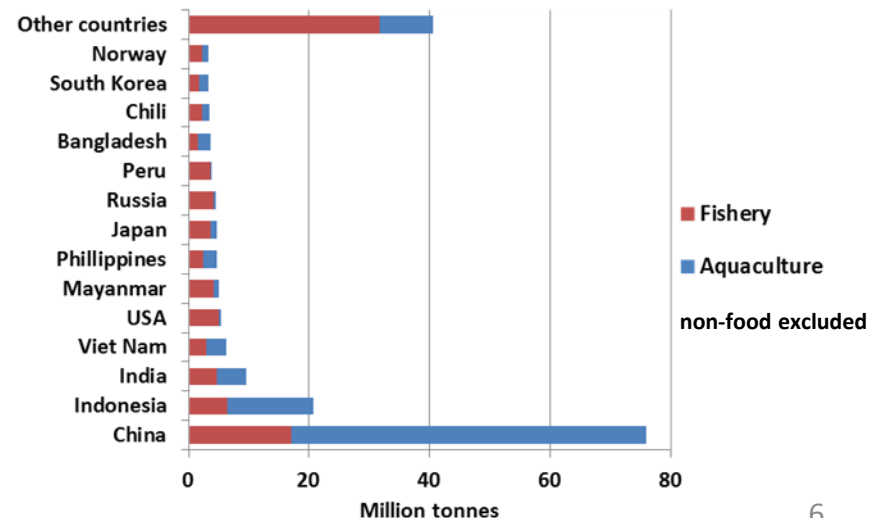


In 2016, the global production of fish, crustaceans and molluscs totalled around 170 million tonnes. Of this, over 91 million tonnes (54%) was caught. A growing proportion of the catch ends up for human consumption, and production side streams must now be utilised more efficiently. World aquaculture production amounted to over 80 million tonnes. Fish, molluscs and crustaceans are mainly used for human consumption. Seaweed farming is becoming more common, and other aquaculture production is also continuing to grow. Growth is fastest in Asia. China is by far the world's most important producer in both fisheries and aquaculture.

Utilisation of global production in 2016



Production by country in 2014



Growth of fish production and consumption continues

Outlooks from 2013–2015 to 2025

Catches will increase by 1%

- **Management of fish stocks will be tightened**
- **Catches will be utilised more efficiently**
 - Discarding of bycatches will decrease
 - Catch utilisation for human consumption will increase
 - 84% will be used for human consumption by 2025
 - **Utilisation of side streams will be intensified**
 - Fishmeal production will increase by 15%, and 96% of that will stem from side streams
 - By 2025, up to 38% of fishmeal will come from side streams

Fish consumption will grow by 8%

- **Growth will be fastest in developing countries (average 9.7%)**
- **In developed countries, consumption will grow slowly, remain stable, or fall slightly (average 3.1%)**
- **The annual growth rate of consumption will be 0.8%**
- **Average consumption will be 21.8 kg per capita/year in 2025**

Fish farming will grow by 39%

- **Aquaculture surpassed fishery production in 2014 > will provide 57% of total production by 2025**
- **Growth will be largest in Asia**
- **The annual growth rate of production will slow down to 3% (5.4% between 2005 and 2015)**
 - Lack of space in freshwater
 - Increasing production costs
 - Challenges related to regulation

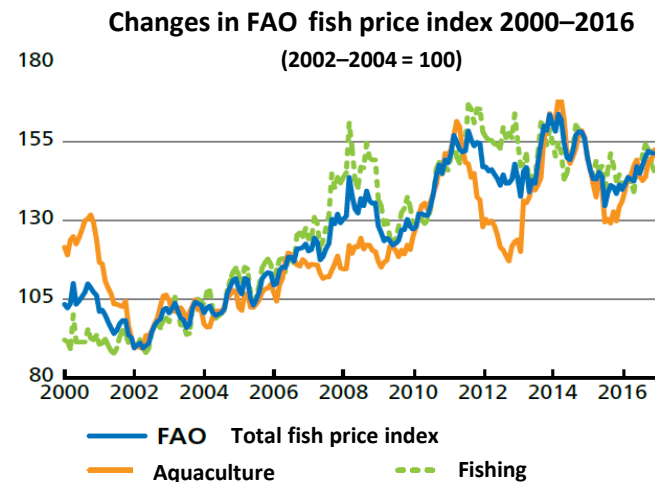


Value of fish products expected to increase

Outlook from 2013–2015 to 2025

Fish prices are expected to decline

- **Fish prices were exceptionally high in 2013–2015**
 - Since then prices have fallen, and real prices¹⁾ are projected to remain lower still in 2025 compared to the base period
- **The real average price of fish for food will drop by 13%, fishmeal by 30%, and fish oil by 21%**
- **The real price of farmed fish will decrease by 17%**



Internationalisation of trade will continue

- **Foreign trade in food fish will increase by 18%**
- **The annual growth rate of the food fish trade will slow down to 1.9% (2.3% between 2006 and 2015)**
 - Slowdown in growth of fish production
 - Increase in domestic demand for fish in fish-exporting countries
 - Imports of fish from both developed and developing countries will increase
 - The role of developing countries in world fish trade will grow

The nature of the international fish trade is changing

The volume and value of international fish trade increased from 2015. This growth is expected to decline in 2017, although fish production and consumption will continue to grow. The reason behind the change is the increasing prosperity of consumers in emerging countries. Exports of fish produced in emerging countries are decreasing because domestic consumption is growing.

Over the long term, fish prices are expected to increase as the available supply will not be enough to satisfy the growing demand in emerging countries. The US and EU demand is also expected to remain strong. China's growing and increasingly prosperous middle class will soon consume more valuable fish products, such as salmonids and shrimp. This will increase Chinese competition with European and US consumers.

World fish market	Million tonnes			
	2015	2016	2017 (For.)	Change 2017-2016
Production (million tonnes)	169,2	170,3	172,2	1,1 %
Capture fishery	92,6	90,8	91,2	0,4 %
Aquaculture	76,6	79,5	82,5	3,8 %
Trade value (USD billion)	133,0	142,7	141,0	-1,1 %
Trade volume (live weight)	59,4	60,4	60,2	-0,3 %
Total utilization	169,2	170,3	172,2	1,1 %
Food	148,8	150,9	152,5	1,1 %
Feed	15,1	14,3	14,7	2,8 %
other uses	5,2	5,1	5,0	-2,0 %
PER CAPITA CONSUMPTION				
Food fish (kg/y)	20,3	20,4	20,4	0,1 %
From capture fisheries	9,9	9,6	9,6	-0,8 %
From aquaculture	10,5	10,7	11,0	2,6 %



Russia is increasing its fish production

Due to trade sanctions imposed by the EU and other international bodies on Russia and Russia's own import bans, fish consumption in Russia has declined by almost 15%. There are major differences in consumption within the country: most of the fish is consumed in the Far Eastern part of Russia, in the coastal regions of the Pacific Ocean. In Moscow, the annual consumption of fish per capita reaches 30 kg, while in St. Petersburg the figure totals 18 kg per person. The most consumed fish species include herring, saury, salmon and pollock. Frozen fish accounts for more than 60% of the total fish consumption.

Russia is a major fishing nation. In 2016, the total catch increased by 5% to approximately 4.7 million tonnes. Almost 40% of the total catch is Alaska pollock caught in Far Eastern sea areas. Despite last year's rapid growth, the volume of aquaculture production still remains low. In 2016, it grew by 13% to a total of 174,000 tonnes. The output of freshwater carp farming amounted to over 100,000 tonnes. Salmonid farming is also increasing since the import sanctions imposed on Norway. The demand for salmonids in Russia has been satisfied through local production: a total of 40,000 tonnes of salmon and large rainbow trout was produced in Northwest Russia.

To enhance its fishery industry, Russia has prepared a plan aiming to solve the sector's problems, which include the poor quality of fishing vessels and ports, inadequate processing capacity, lack of distribution channels and storage facilities, insufficient supply of brood fish and fish fry, and a high share of expensive imported feed.



Salmon market

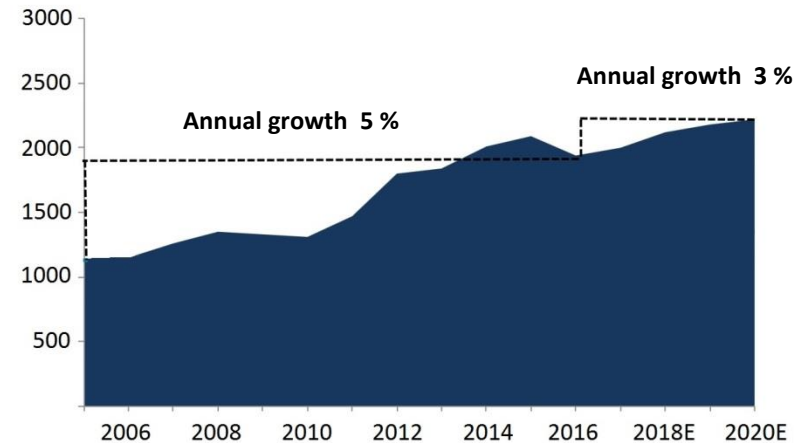
Europe is the main market for salmon

Atlantic salmon is one of the most important fish products in developed industrialised countries and the most important fish in the Finnish market. Approximately two million tonnes of salmon are farmed annually. Salmon production has increased over time on average by 8% annually. Growth in production has slowed down and is expected to continue to decline as there is a shortage of suitable fish farming locations. Norway produces over half and Chile just under a quarter of the total volume of salmon. Other producers are in North America and Europe. Production is concentrated, as larger companies have acquired smaller operators in the sector. The main markets for salmon are in the EU and North America. Salmon consumption is also rapidly growing in emerging countries. Demand in Russia has declined due to the country's economic situation and import bans.

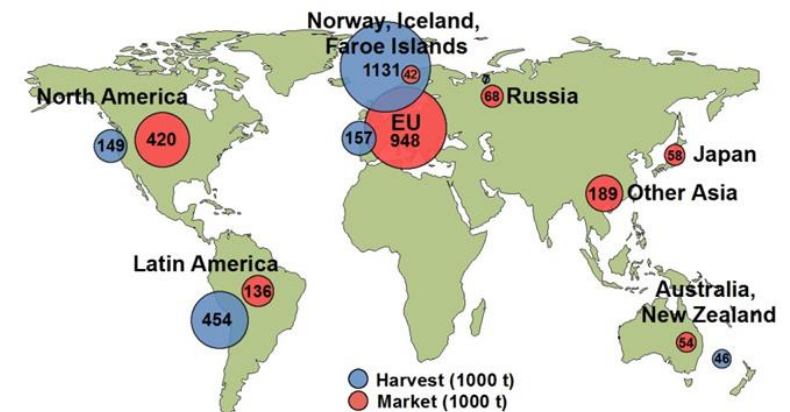
Total production of the top four producers of Atlantic salmon in 2016

4 top players of farmed Atlantic salmon	Harvest (thousand tonnes GWE)	%
Marine harvest	381	20 %
Mitsubishi	121	6 %
Salmar	116	6 %
Lerøy Seafood	115	6 %
Harvest of top 4	732	38 %
Harvest of Atlantic salmon	1949	100 %

Total production of Atlantic salmon



Atlantic salmon production and market areas in 2016



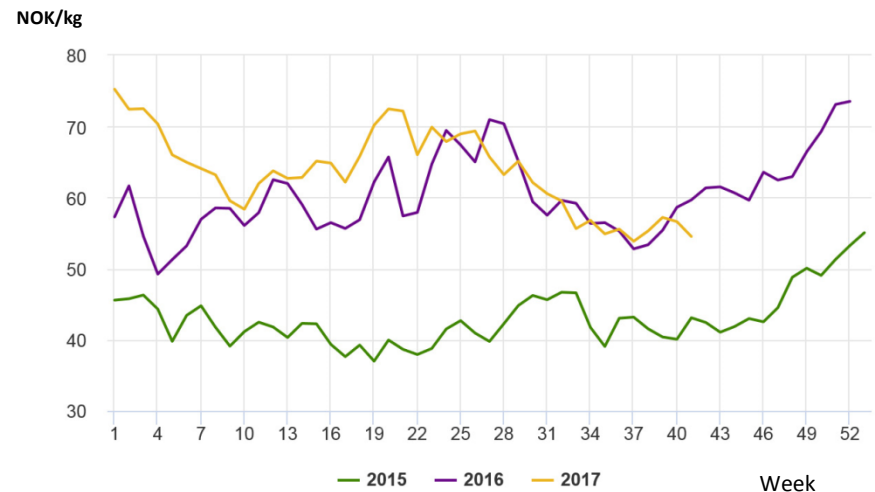
Price of salmon is determined on the global market

It is typical for the salmon market that changes in supply have a considerable impact on prices. In recent years, demand for salmon has grown faster than supply, which has kept the prices relatively high. In 2015, salmon prices remained stable until they took an upward turn towards the end of the year. In 2016, salmon prices were even higher than in the previous year, since the supply of salmon decreased due to an algal outbreak in Chile. Norwegian production also declined. Towards the end of the year, prices rose to a record high level, and continued to remain exceptionally high in early 2017. Salmon prices started to fall in autumn, as anticipated.

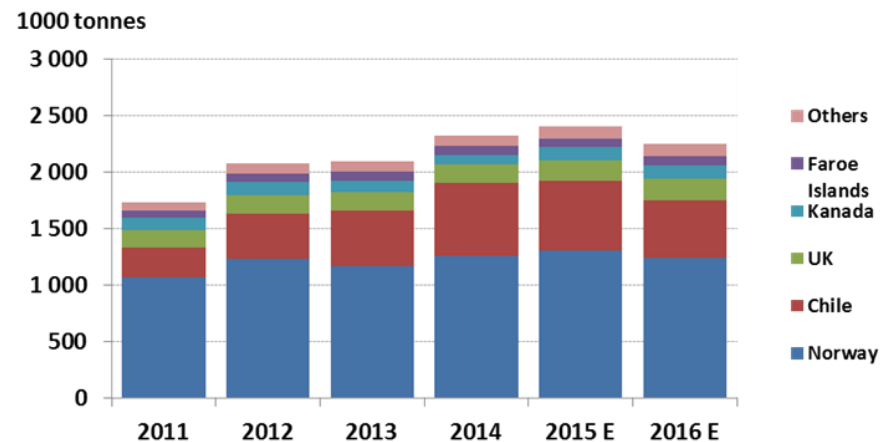
Fish production conditions (temperature of sea water, fish diseases, fry situation, biomass restrictions) affect the salmon supply. Fish quality, concentration of production, feed prices, purchasing agreements, exchange rates, and trade policy also affect salmon price formation. Changes in the global market are rapidly reflected in all market areas.

Exports from Chile declined due to the reduction in the production volume. Only exports to China increased in 2016. Norway has increased its salmon exports to the US, and now Chile and Norway partly compete on the same market. Fresh salmon is exported from Norway by air across the Atlantic, and Chile exports frozen salmon fillets to Europe for the food service industry.

Export prices for fresh Norwegian salmon 2015–2017



Total production of Atlantic salmon 2011–2016



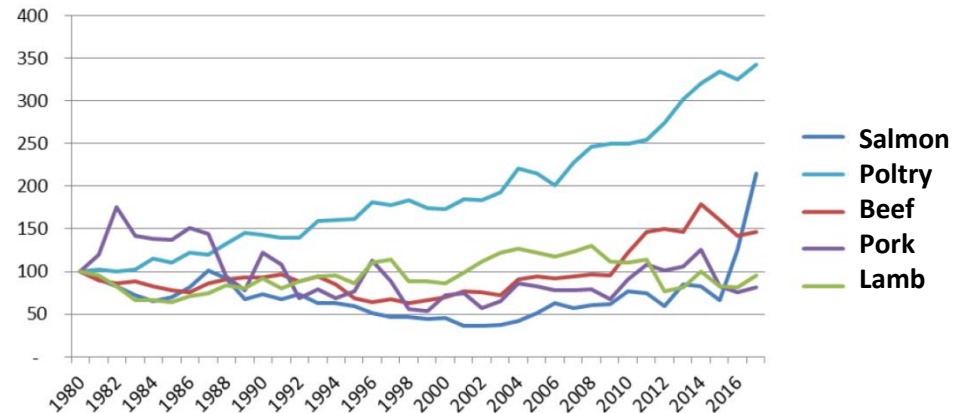
High salmon price hinders competitiveness

Growth in world salmon production has levelled off. The price of salmon relative to other foods decreased for a long time, but now the price has grown exceptionally high, which had a negative impact on the competitiveness of salmon in the food market.

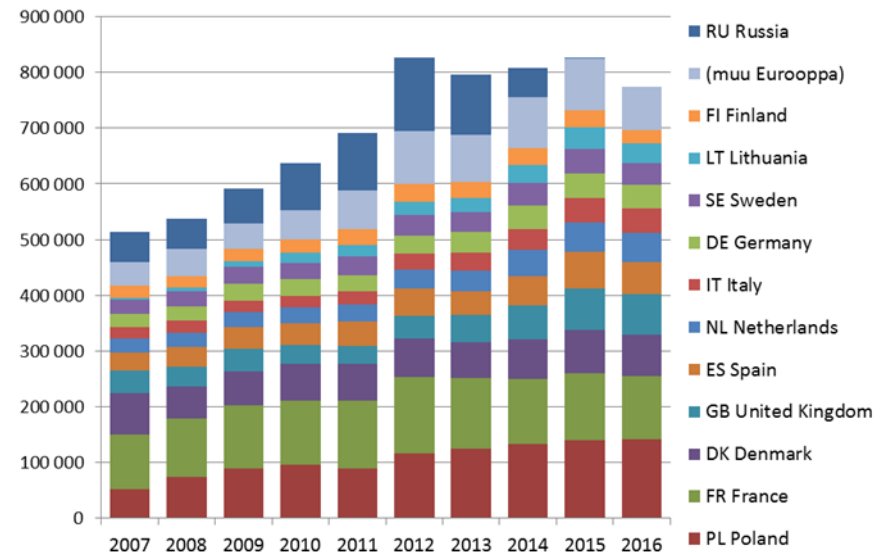
The exchange rate of the Norwegian krone remained weak in 2016 compared to the US dollar and the euro, which also improved the competitiveness of Norwegian salmon both in the US and in the EU. Despite this, Norwegian exports to the EU decreased from the 2015 level. The main destination for Norwegian salmon exports is Poland, which processes salmon products for the EU market. Exports to Poland continued to grow, but exports to France, Spain, Sweden and Finland, among other countries, declined.



Relative prices of fish and meat 1980–2017E



Exports of Norwegian salmon to the EU



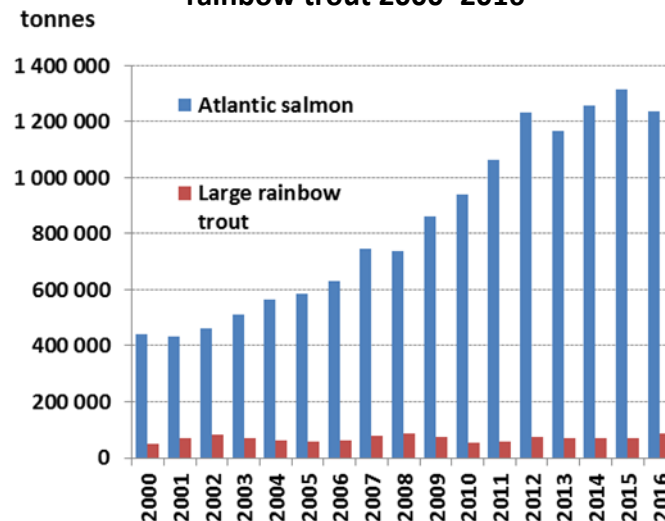
Price of large rainbow trout is also on the rise

Prior to the difficulties caused by fish diseases and environmental problems, Chile was the world's biggest producer of large rainbow trout. In five years, its production collapsed to a quarter, and in 2016, Chile's large rainbow trout production remained at only 70 million kilograms. Although Chile's main market is North America, the decline in supply has increased large rainbow trout prices worldwide.

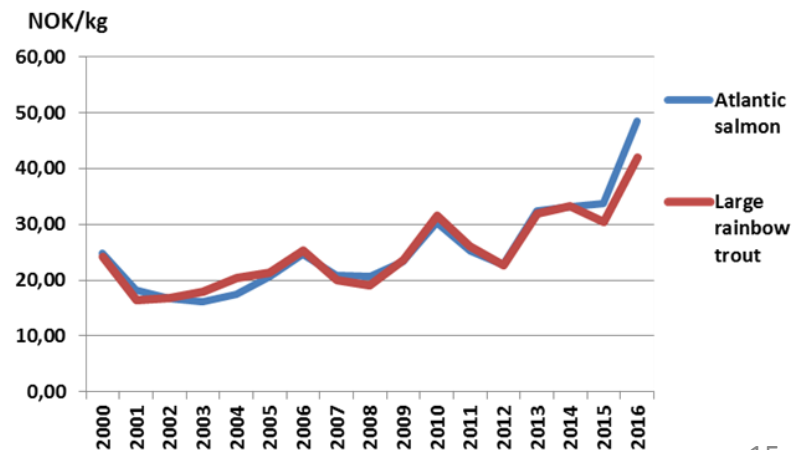
In Europe, the annual production of large rainbow trout totals 140 million kilograms. More than half of this is produced in Norway. Other major producers are Finland, France, Denmark and Sweden; each of them produce annually about 10 million kilograms.

In 2016, large rainbow trout accounted for just under seven per cent of the total salmonid production in Norway, which was slightly higher compared to the previous year. In 2016, export volumes of Norwegian large rainbow trout increased by 22%, while prices rose by 38%. Since Russia's import restrictions, growing markets for Norwegian large rainbow trout have opened up in Belarus, Japan, Poland, the US, Thailand and Ukraine.

Production volumes of Norwegian salmon and rainbow trout 2000–2016



Producer prices for Norwegian salmon and rainbow trout 2000–2016

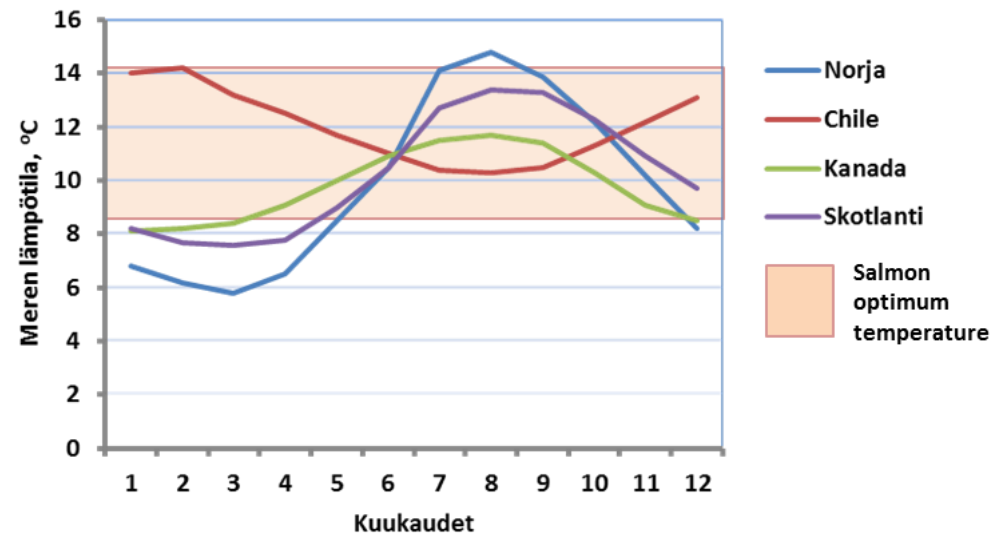


Natural conditions and regulations limit salmon production

Atlantic salmon can be farmed at temperatures ranging between 0 and 20°C, but the optimum farming temperature is between 8 and 14°C. Ideal farming locations can be found in fjords and coastal archipelago areas. Farming conditions are most favourable in northern and southern maritime zones, which is why production is concentrated in Northern Europe, North America and Chile. In several producer countries, suitable farming locations are scarce, and in many existing sites biological factors limit the possibilities for future growth. In Chile, the temperatures are optimum for salmon farming, but at the same time also for many fish diseases. In Norway, fish lice are causing more and more financial and production problems.

Producer countries regulate salmon farming in many ways. In Norway, salmon farming licences are awarded by the Ministry of Trade, Industry and Fisheries. In 2016, the number of licences for salmon and large rainbow trout farming in sea water was limited to 990 licences. The maximum volume of biomass a company can hold at a time is 780 tonnes, except in the counties of Tromsø and Finnmark, where the limit is 945 tonnes. In addition, each farming site also has its own maximum allowed biomass (MAB). Generally, the site-specific MAB ranges between 2,500 and 4,500 tonnes. The scheme allows companies to optimise production while also taking account of their biomass limits. Average annual production per farming licence totals approximately 1,200 tonnes.

Farming temperatures in main producing countries



Help from new technologies

In Norway, new farming licences are rarely awarded. In 2014, Norwegian authorities issued a total of 45 new 'green' licences, which require using technologies that are more environmentally friendly. In 2015, the Norwegian Government announced the opportunity – subject to strict conditions – to increase the production volume for all existing licences, provided that the level of fish lice can be kept low in production. The Government also announced new development licences open for application, with a view to motivate investment into new marine farming technologies. Development licences are free of charge for up to 15 years, after which they can be converted into commercial farming licences against a fee. By May 2017, a total of 56 farming concept applications had been submitted, of which three have been approved and 11 rejected.

In 2017, the Norwegian Government revised the aquaculture regulations with the intention of securing sustainable growth of the industry. The coast was divided into 13 production areas, and there is now an opportunity to increase or reduce the production capacity of each area depending on the fish lice situation. Any reduction in production capacity will not be imposed before 2019. If the criteria for growth are met, the production areas may grow by a maximum of 6% per every two years. These reforms entered into force in September 2017.

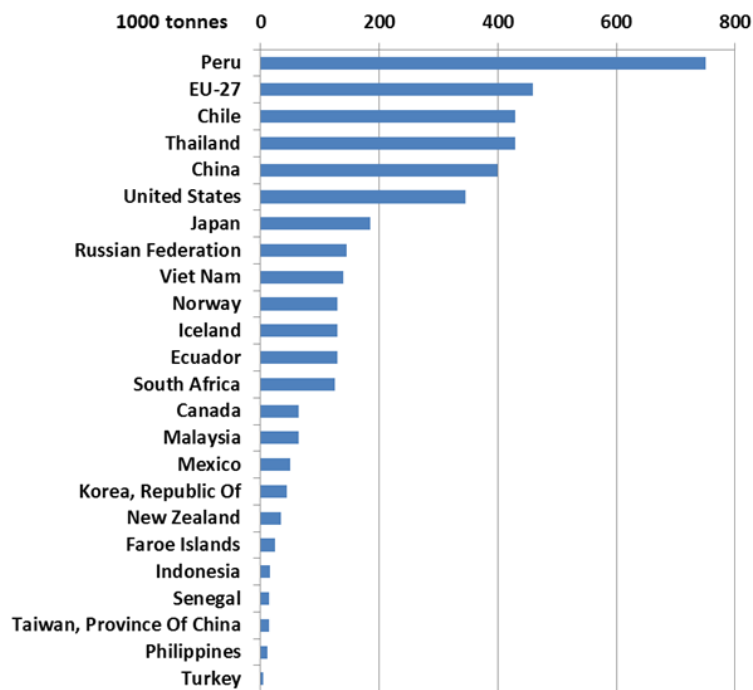


Fish oil and fishmeal market

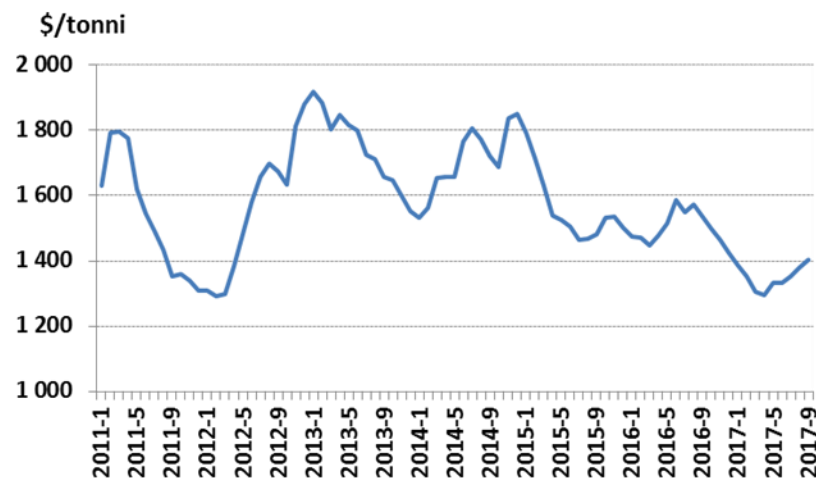
Weakening El Niño reduced the price of fishmeal

In 2016, world fishmeal production totalled 4.2 million tonnes. Approximately 20% of the global fish catch is used to produce fishmeal and fish oil. Over a quarter of the raw material for fishmeal consists of side streams from the industry. The coast of South America is the most important production area. In recent years, catches in the area have varied considerably as a consequence of the El Niño phenomenon. In 2016, the effects of El Niño in the area weakened, and the phenomenon was over by 2017. The catches in the area also affect fishmeal prices. Over the longer term, prices are foreseen to rise as the demand is expected to increase and the supply to remain relatively unchanged. Europe produces approximately 0.5 million tonnes of fishmeal annually. Denmark, Norway and Iceland are the biggest producers in Europe.

Fishmeal producer countries 2016



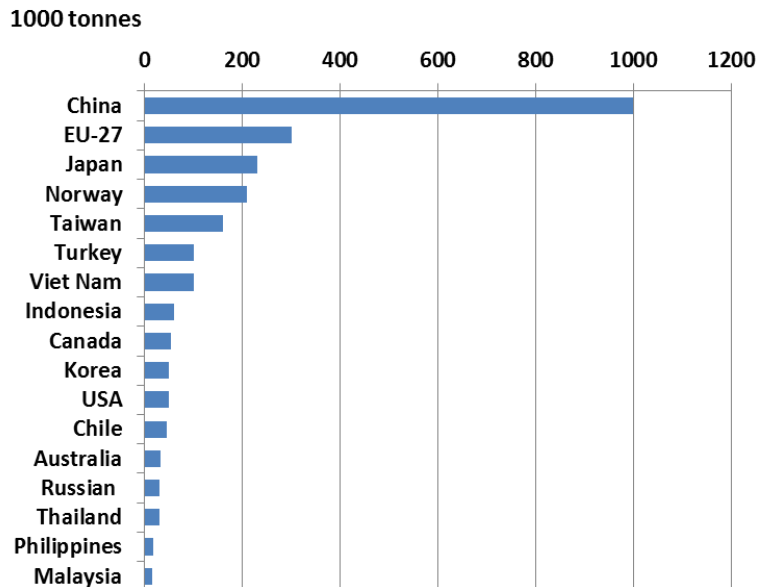
Fishmeal prices 2011–2017 ¹



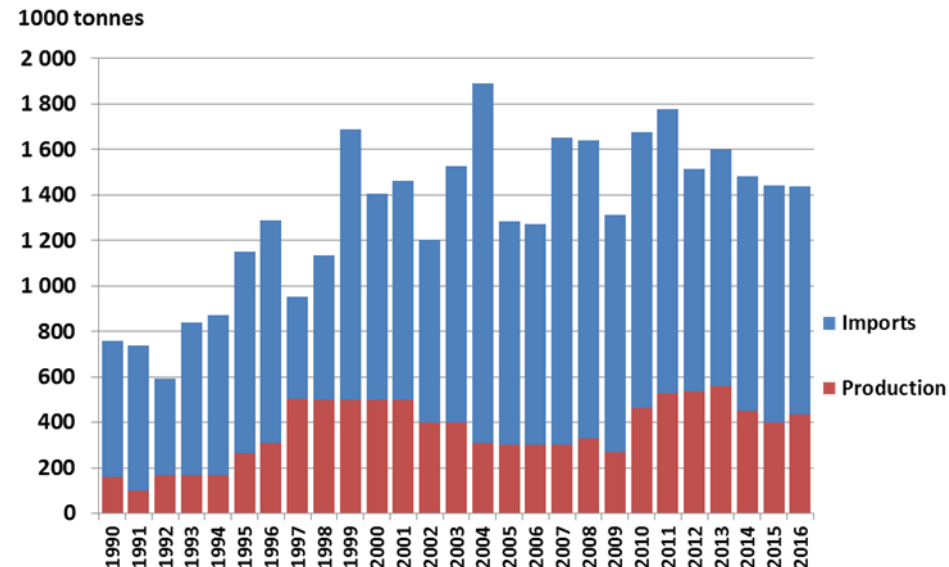
China is the biggest buyer of fishmeal

The downturn of China's economy has affected the demand for fishmeal. Global demand for fishmeal is also influenced by developments in Chinese pork and shrimp production. In previous years, China's imports of fishmeal increased markedly but have subsequently declined in recent years. In 2016, China purchased a total of 40% of the world's fishmeal output. This amount is expected to be around 35% in 2023. China's own fishmeal production amounted to 436,000 tonnes in 2016. Due to the high price of fishmeal, China is increasing its own production to meet the needs of its aquaculture and pork production industries.

Fishmeal imports by country 2016



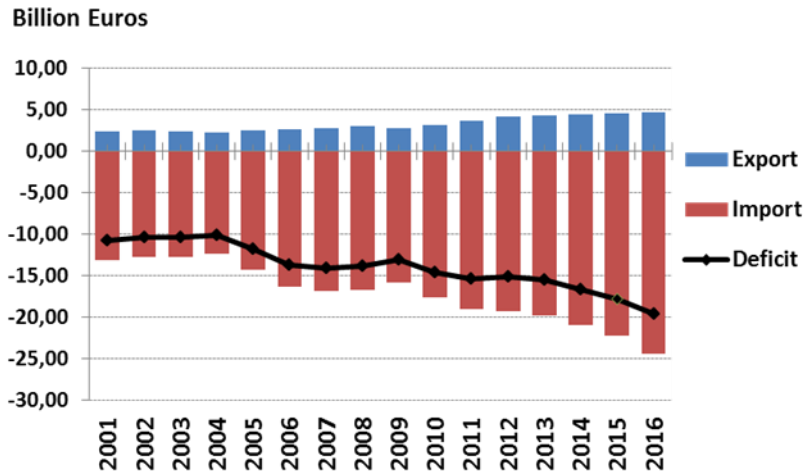
China's fishmeal production and import volumes 1990–2016



European market

EU's trade balance negative

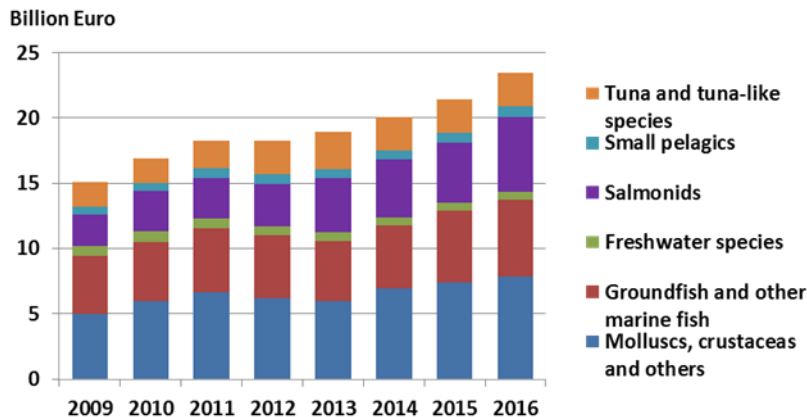
EU's trade balance 2001–2016



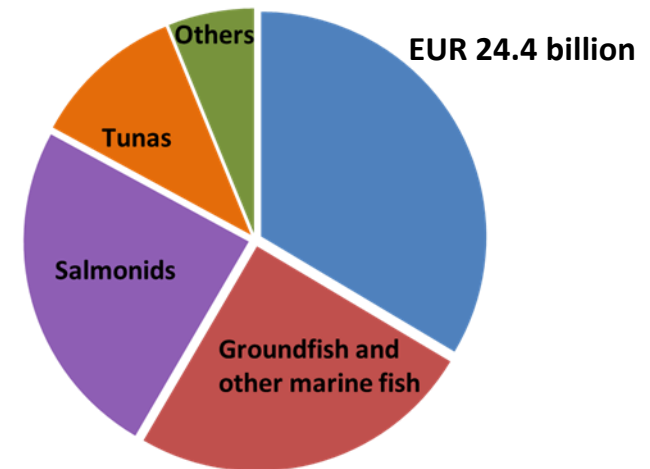
The demand for fish in the EU is strong. This is reflected in the foreign trade in fish. Since 2010, the value of fish imports has grown by approximately EUR 1 billion per year. In 2016, the value of fish imports to EU countries increased by 9% to EUR 24.4 billion. A major factor behind the growth was the increase in salmon prices. The fish trade deficit continued to increase. Fish import volumes increased by 3%.

The EU's main trading partner is Norway, which accounts for approximately a quarter of total fish imports. The next most important import countries are China, Morocco, Iceland and Ecuador.

Value of imports to the EU 2009–2016



Value of imports by fish group in 2016



Norway's exports to the EU are growing

In 2016, Norway's total fish production amounted to 3.4 million tonnes. Fish farming accounted for almost 40% of total production. Fish catches decreased by 12.5%, and fish production by 3.8%. However, the value of aquaculture production increased by 36%, and the value of capture production by 8%. Consequently, the total production value reached a record high level.

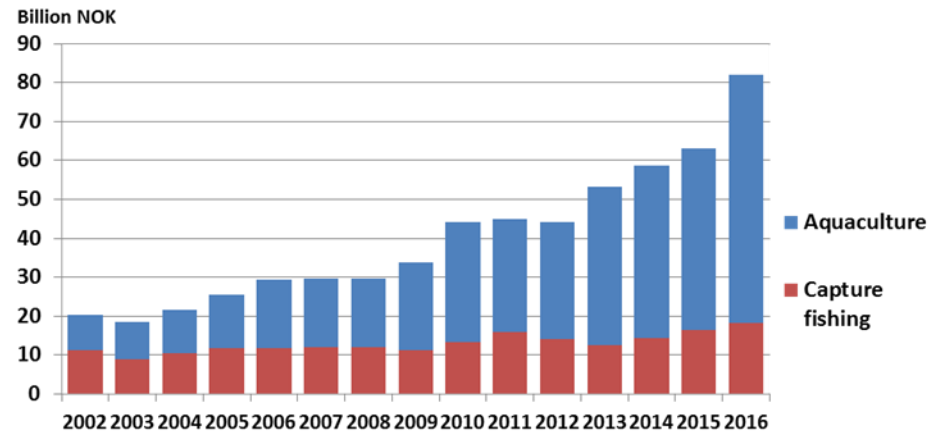
The value of Norway's fish product exports has grown considerably in recent years. In 2016, the value of exports totalled almost EUR 10 billion, which is 23% higher compared to 2015. Salmonids accounted for over 70% of this total value. The value of cod was approximately EUR 1.5 billion.



In 2016, Norway exported fish products to a total of 146 countries. Of the total exports, 67% went to EU countries. The total value of Norway's fish exports rose by 23% to EUR 6.6 billion. The high price of salmon reduced Norway's salmon exports to the EU by 6%. Furthermore, salmon exports to Asia decreased by 1%, however, exports to North America grew by 2%.

The Norwegian fish processing industry remains minimal. Norway mainly supplies raw materials to the fish processing industry in its export countries. Norway's main export products are fresh or frozen gutted fish.

Total value of Norwegian fish production 2002–2016



Domestic market

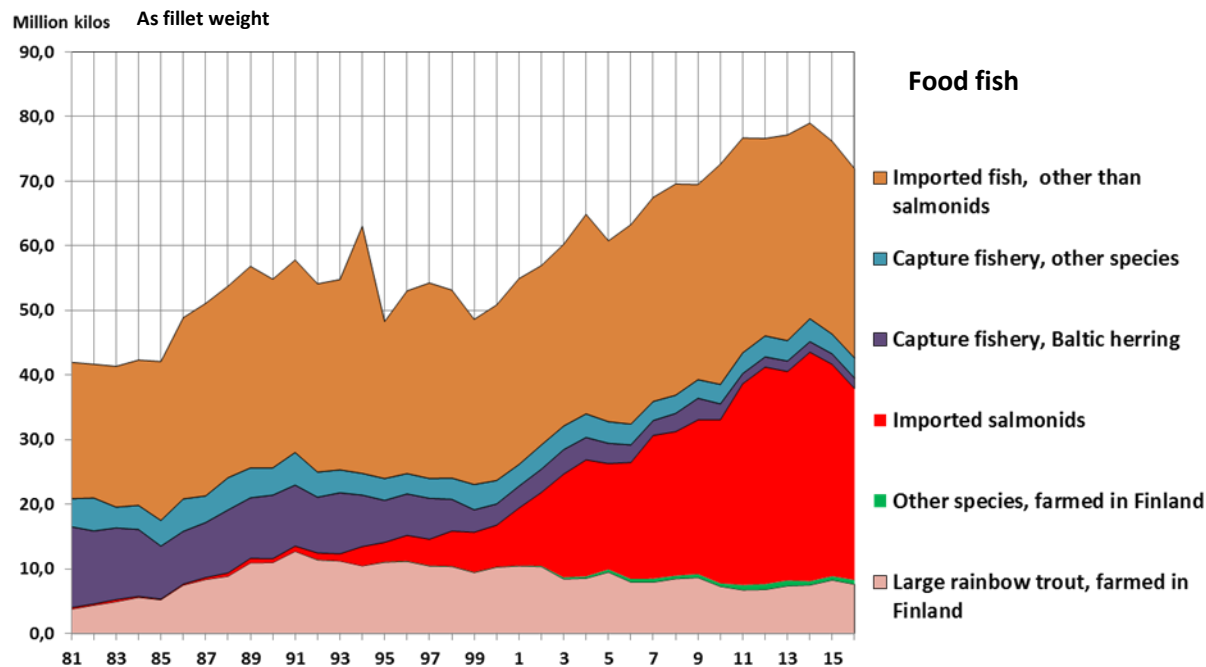
Imported fish

A dip in the Finnish fish market

The demand for fish in the domestic food market has doubled since the early 1980s. Domestic fish has been replaced by imported fish. In the early 1980s, half of fish was domestic, while in 2016, imported fish accounted for 82% of the total supply. Farmed salmonids account for half of the market, of which majority consists of imported fish.

The demand for salmonids has increased in Finland at the same rate as world production of Atlantic salmon, on average by approximately 8% annually. Imports of salmonids have grown considerably faster. In particular, salmonids have replaced the use of Baltic herring, which was the most important commercial fish in Finland in the early 1980s. Today, it is Norwegian salmon. In recent years, growth in demand for salmonids has slowed down.

Finnish fish market 1981–2016



In 2016, approximately 25 million kilograms of fresh salmon were imported to Finland from Norway and around 10 million kilograms of large rainbow trout, mainly from Sweden. In addition, approximately 30 million kilograms of other import fish were consumed. Slightly less than 11 million kilograms of domestically farmed large rainbow trout were sold in the Finnish market. The same figure for Baltic herring was just under 4 million kilograms, and approximately 6 million kilograms for other wild-caught fish.

Value of fish imports increased in 2016

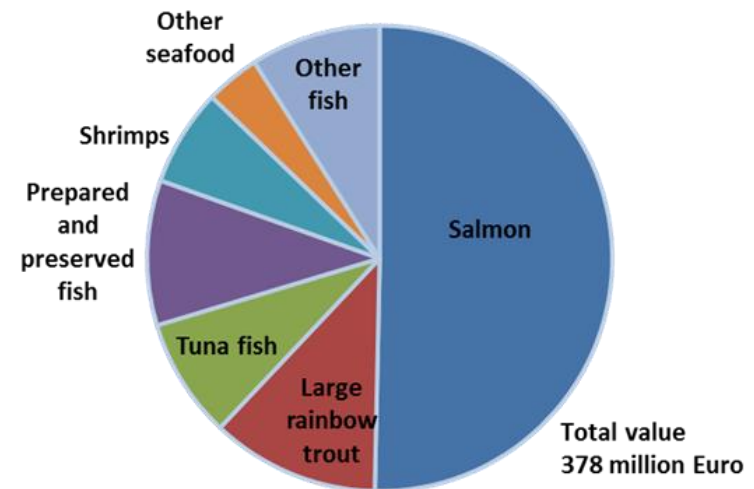
In 2016, the value of fish product imports to Finland totalled EUR 398 million. Of this, products for human consumption accounted for EUR 378 million. The value of imports of fish products for human consumption increased by 11%.

The value of salmonid imports increased markedly, totalling EUR 234 million, or 62% of the total value. Salmon imports grew by 20% and large rainbow trout imports by 24%. However, the volume of salmonid imports decreased by approximately 9% from 2015.

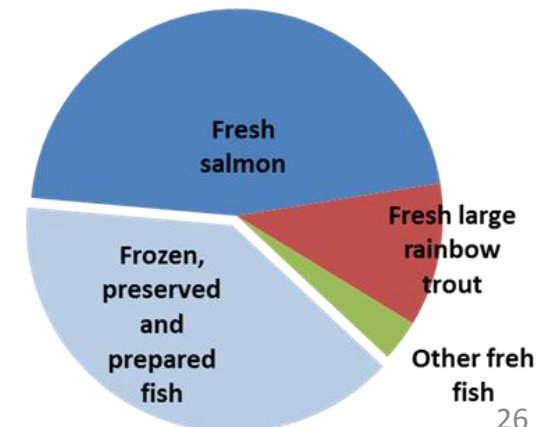
The value of imports of processed fish products decreased by 4%. The value of imports of crustaceans, molluscs and fish roe dropped by 9%, roughly to the 2014 level. Norway accounts for nearly half of the total value of fish imports. This is 44% of the total volume. Sweden's share is 18%.

In 2016, approximately 60% of fish imported for human consumption was fresh fish consisting of fresh fillets or gutted fish. Salmonid-based fresh fish imports have grown rapidly over the past 20 years. Fresh fish are mainly imported from Norway, Sweden and Estonia, as well as from Denmark and Iceland.

Value of fish imported for human consumption by main product group 2016

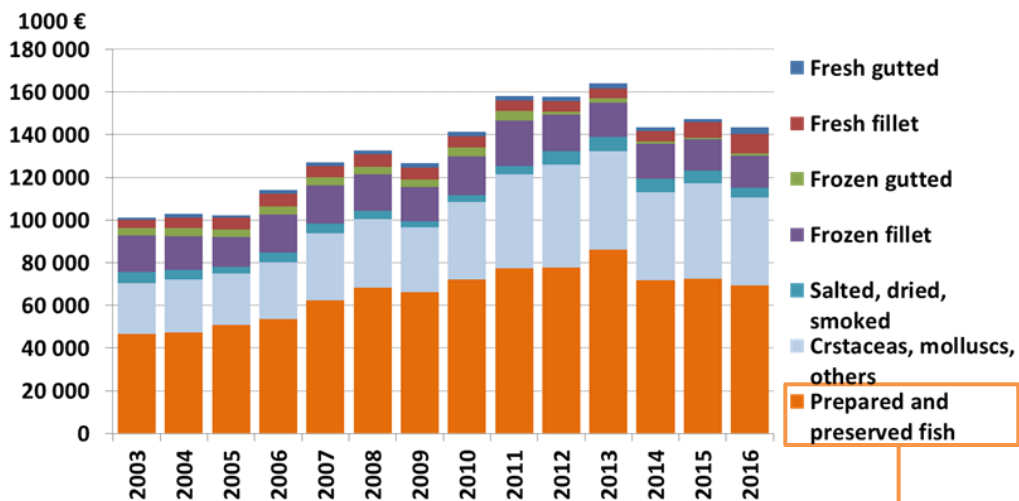


Value of imports by fresh products and other fish products in 2016



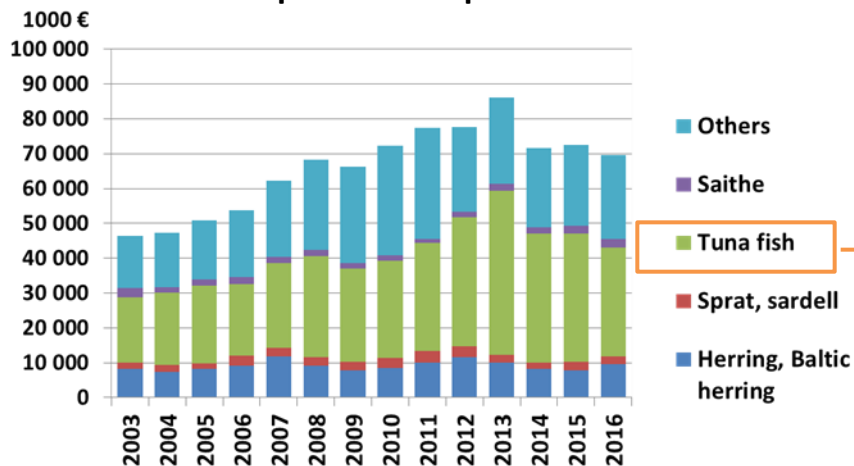
Tuna imports decreased

Value of non-salmonid imports 2003–2016

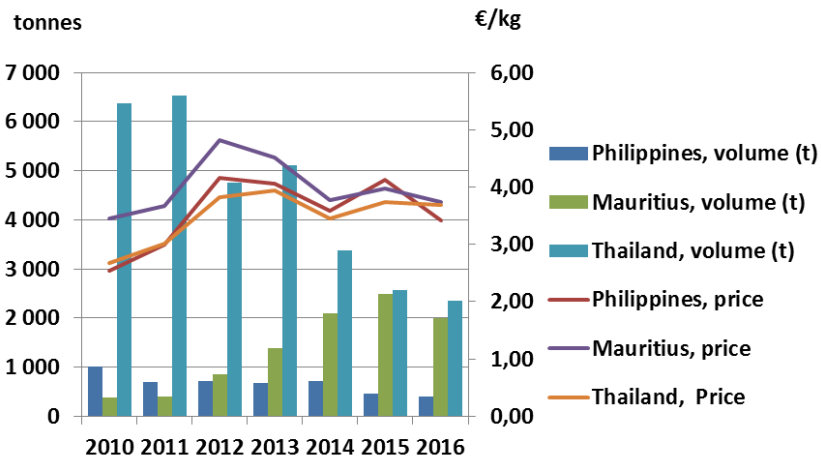


In addition to salmonids, considerable amounts of other fish and fish products are imported into Finland. Imports of these products have increased up until the present decade. In 2016, the value of tuna imports dropped by 15% on the previous year. Tuna imports from Thailand have decreased considerably in the 2010s. Imports from Mauritius grew markedly in the first half of the 2010s, but fell by nearly 20% in 2016.

Value of imports of fish products 2003–2016



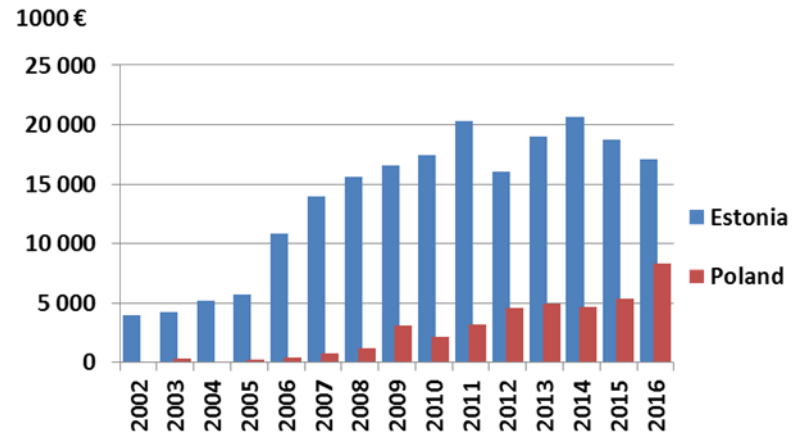
Imports of canned tuna by country



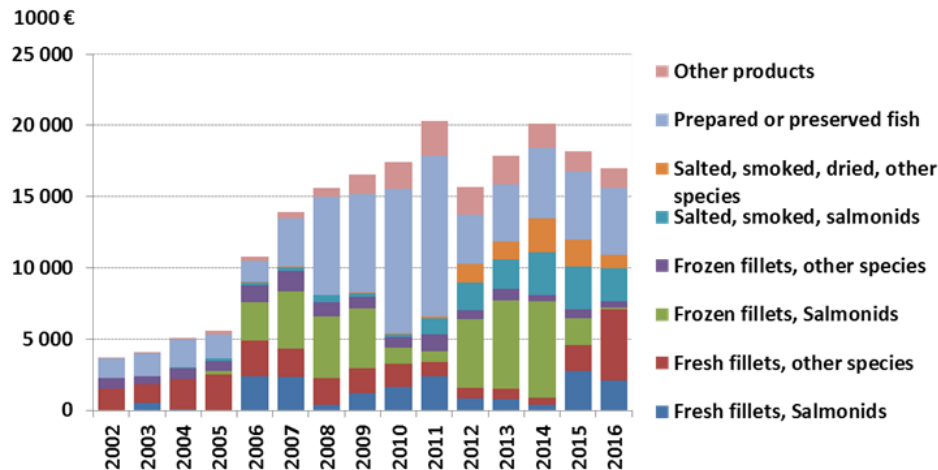
Imports of processed fish products from Poland continued to grow

Estonia and Poland accounted for 6% of the total value of fish product imports in 2016. The value of imports from Estonia totalled EUR 17 million and from Poland EUR 8 million. Imports from Poland grew considerably in 2016, but the value of imports from Estonia declined for the second year running. Despite this, the volume of fish imported from Estonia increased due to increased sprat imports. Imports of frozen salmonids from Estonia have considerably decreased. However, the value of fresh non-salmon imports from Estonia grew markedly in 2016. In previous years, imports of fresh fish from Poland have been uncommon, but in 2016, fresh salmon fillets were imported from Poland. Imports of smoked and frozen salmon from Poland also increased in 2016.

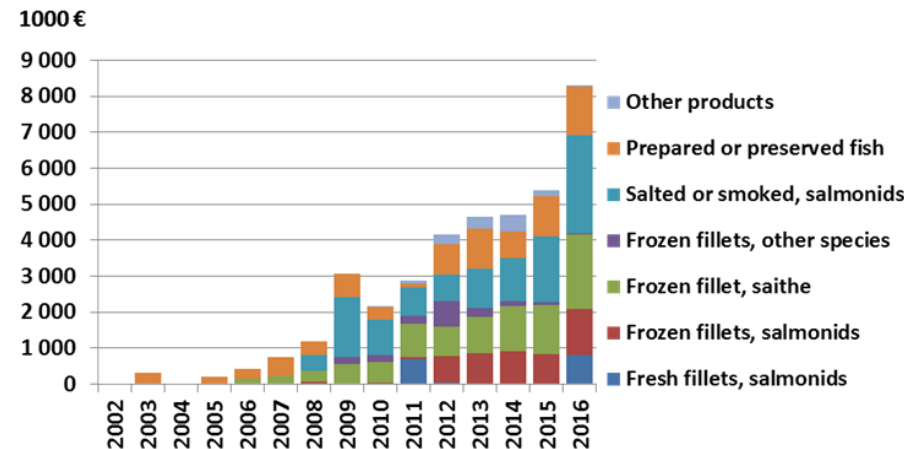
Value of fish imported from Estonia and Poland 2002–2016



Value of fish products imported from Estonia 2002–2016



Value of fish products imported from Poland 2002–2016



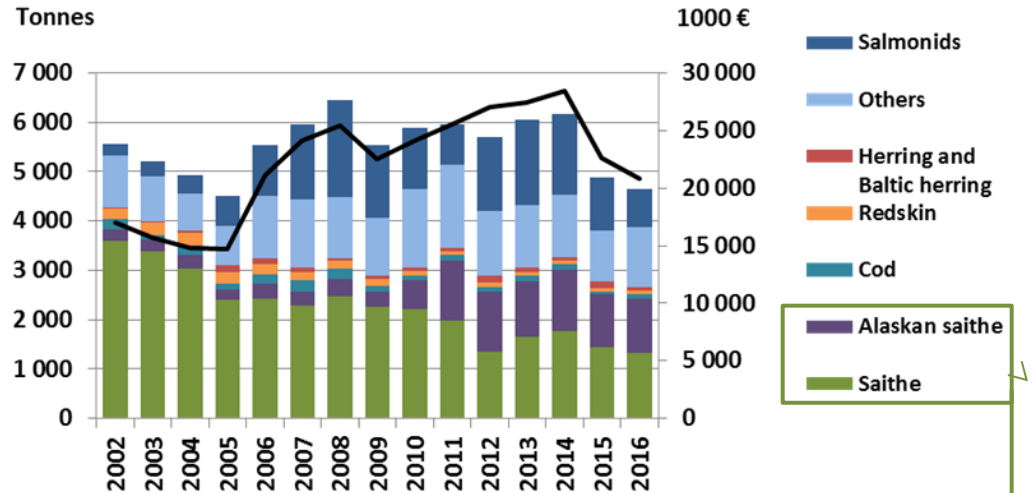
Imports of frozen fillets shrank

Imports of frozen fillets have remained stable for a long time, but in 2015, imports declined by a fifth on the previous year, and the decline continued in 2016. Imports of frozen salmon and rainbow trout fillets continued to plummet and totalled nearly 30% less than in the previous year.

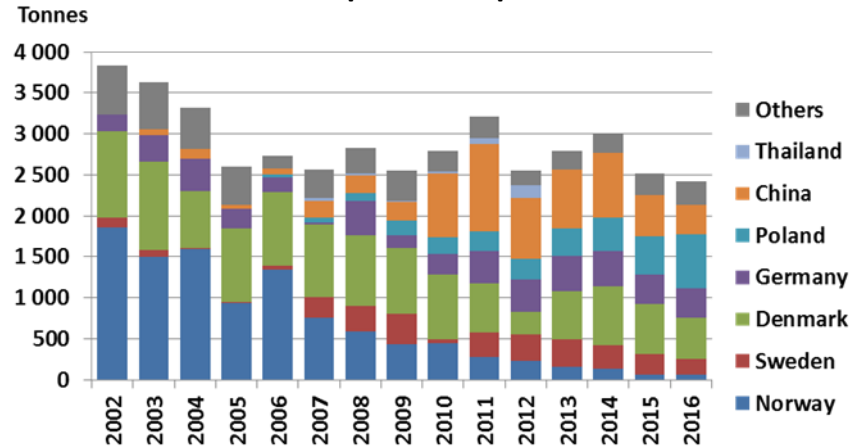
In the early 2000s, two-thirds of frozen fillets imported to Finland were saithe. Since then, nearly half of saithe imports have been replaced by the less expensive Alaska pollock. China's share of frozen fillet imports has decreased in recent years, while the importance of Poland has grown.



Frozen fillet imports 2002–2016



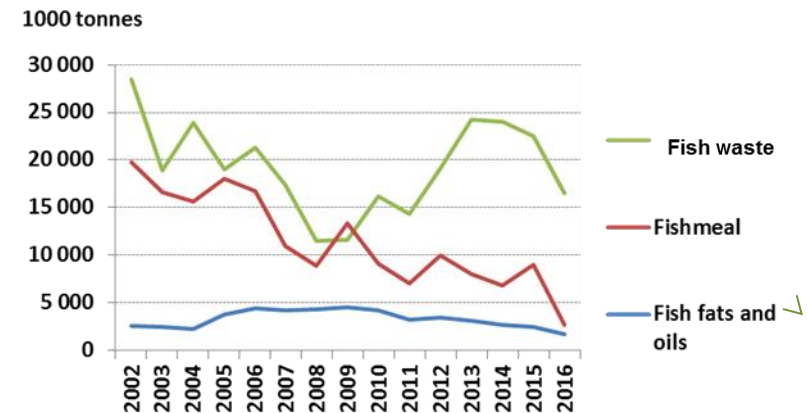
Saithe and Alaska pollock import countries 2002–2016



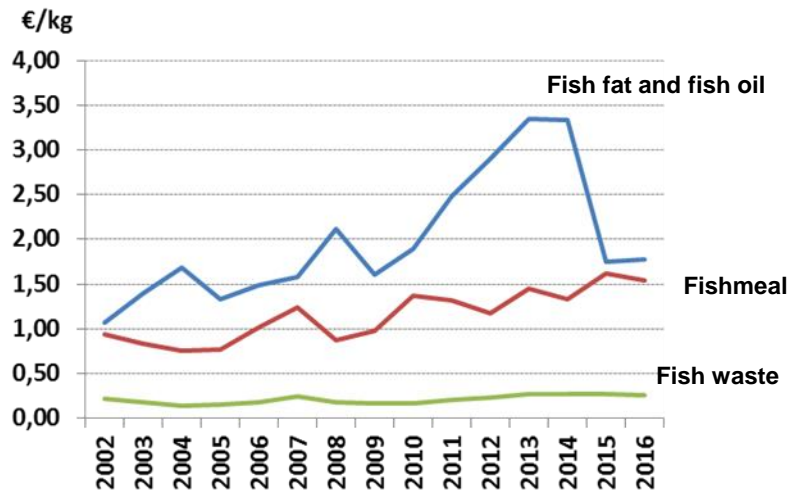
Feed raw materials from Nordic countries

Imports of fishmeal have declined as fishmeal used in fish feeds has been replaced by plant-based raw materials and domestic fishmeal. Fish fat and fish oil import volumes have remained more stable. In 2016, fishmeal was imported mainly from Iceland and Denmark, and fish oil and fish waste from Norway. Fish waste is used in feed for fur animals. The demand for fish waste grew in the early 2010s and was at its highest in the fur industry's peak year of 2013. Since then, the demand for furs, and consequently for fish waste, has declined.

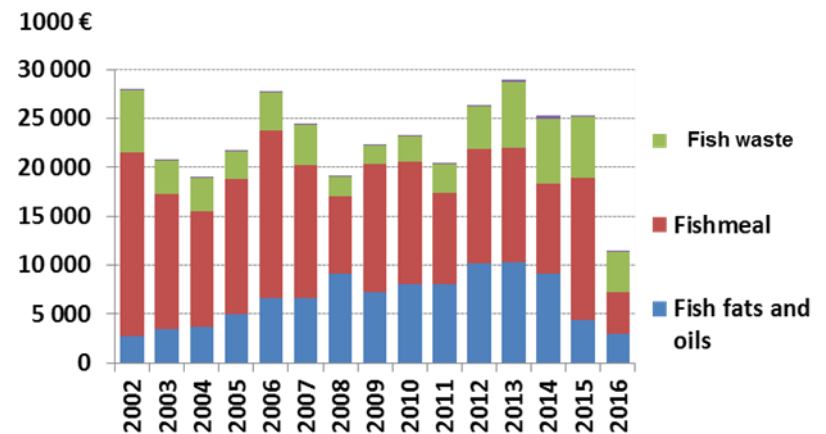
Imports of fish fats and fish oil, fishmeal and fish waste 2002–2016



Prices for fish fat, fish oil, fishmeal and fish waste 2002–2016



Value of imported fish fat, fish oil, fishmeal and fish waste 2002–2016



Domestic market

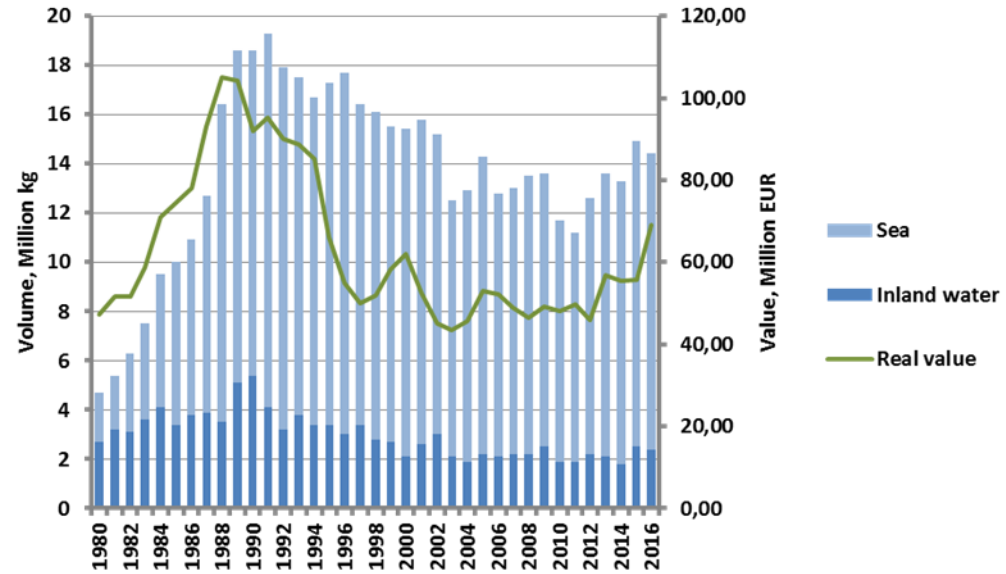
Domestic fish

Value of domestic aquaculture production increased

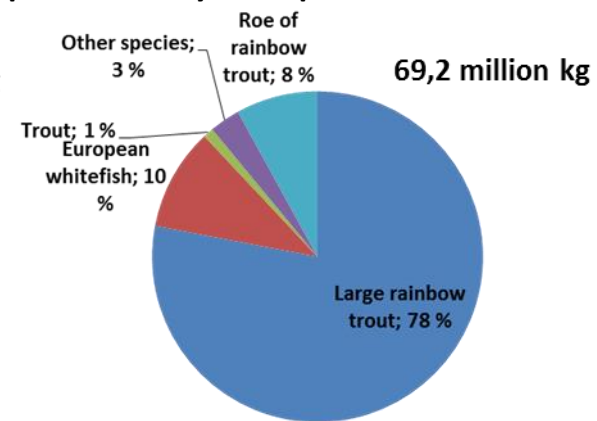
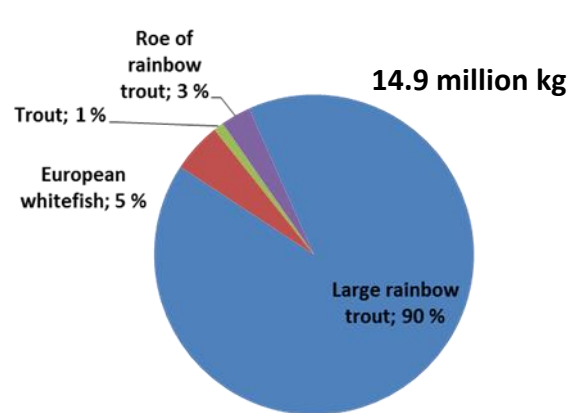
Finland's farmed fish production for food increased rapidly in the 1980s and was at its highest at the turn of the 1990s, standing at more than 19 million kilograms. Since then, production has declined due to tightening international competition and environmental restrictions. During recent years, fish farming conditions have been favourable, and there has been a slight increase in production.

Large rainbow trout accounts for the majority of production and its value. European whitefish is the next most important species. Increase in the price of fish also increased the value of aquaculture production. In 2016, the value grew by 25% to nearly EUR 70 million. Endeavours have been made to diversify production, but the share of other species of the total volume has remained modest.

Food fish production 1980–2016



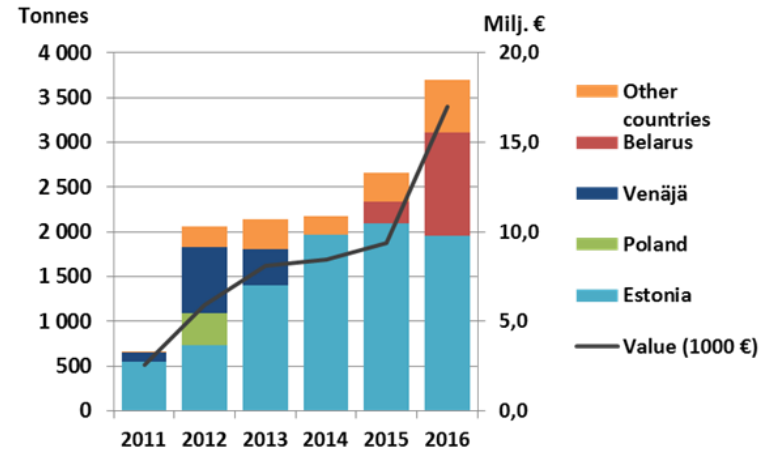
Volume and value of food fish production by main products in 2016



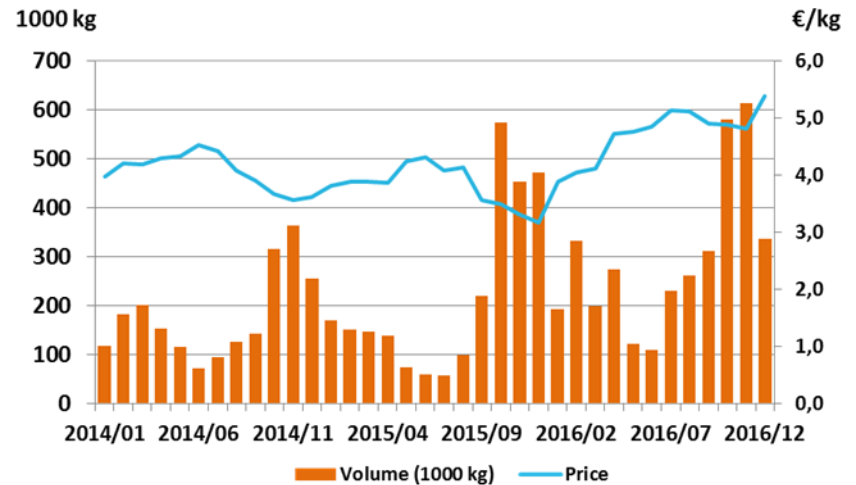
Exports of large rainbow trout strong

There is currently a worldwide shortage of large rainbow trout due to the problems in Chile's production. Exports of fresh large rainbow trout from Finland grew by over 30% from 2015, totalling 3.6 million kilograms in 2016. Of this, exports to Estonia accounted for approximately 2 million kilograms, as in the previous year. Exports to Eastern Europe increased: more than one million kilograms of large rainbow trout were exported to Belarus. The value of exports increased by more than 80% due to the high prices. The price of large rainbow trout produced in Finland was more clearly affected by the global demand for large rainbow trout.

Volume and value of fresh rainbow trout exports 2011–2016



Monthly export volumes and prices of fresh rainbow trout 2014–2016

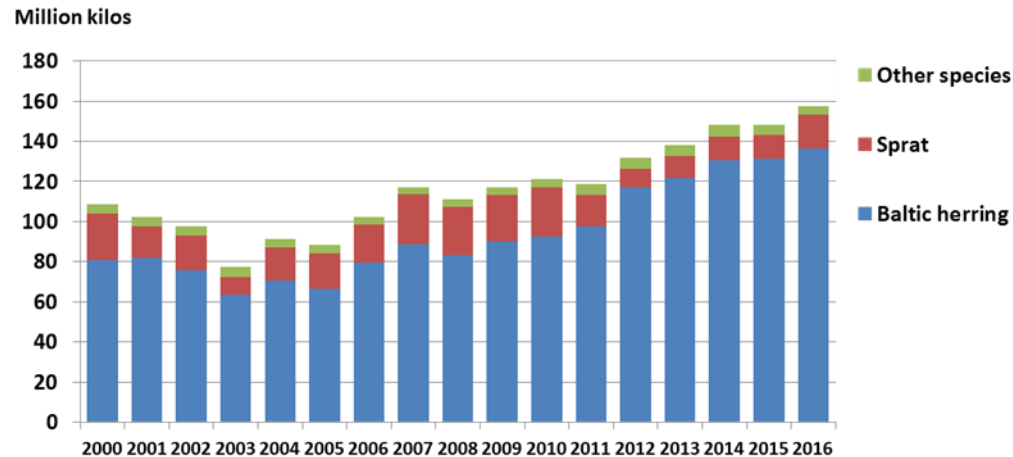


Majority of marine catch Baltic herring

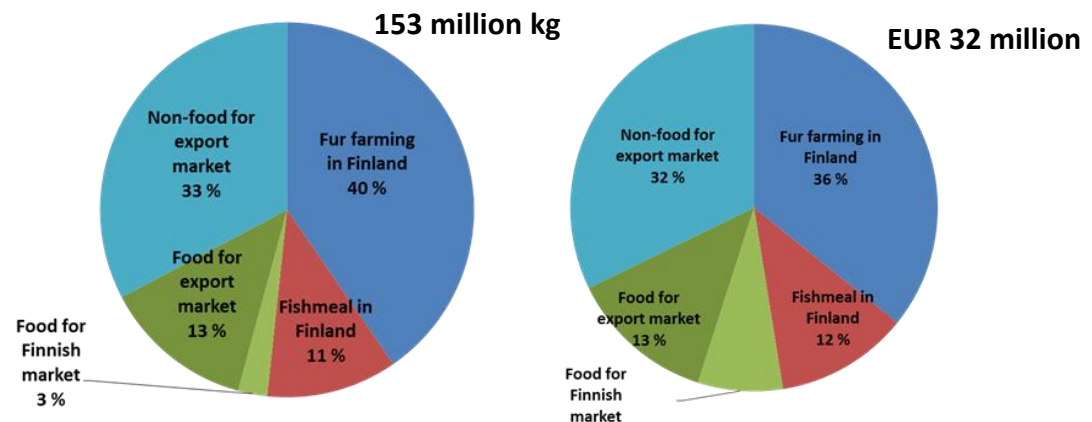
In 2016, the commercial fish catch in Finland's sea area totalled approximately 158 million kilograms, with a value of about EUR 40 million. Baltic herring and sprat accounted for 98% of the total volume and 80% of its value. In 2016, more than half of the Baltic herring and sprat catch was used as feed for fur animals in Finland or in Denmark. Baltic herring and sprat were also exported for use as raw material for fishmeal. Over the last decades, domestic consumption of Baltic herring for food has plummeted to one-tenth of the level in the 1980s. A considerable volume of Baltic herring for food was previously exported to Russia, but these exports dried due to the import bans imposed by Russia. Baltic herring is still exported to Russia as pickled fish, and exports to other Eastern European countries have grown.



Commercial marine catch 2000–2016

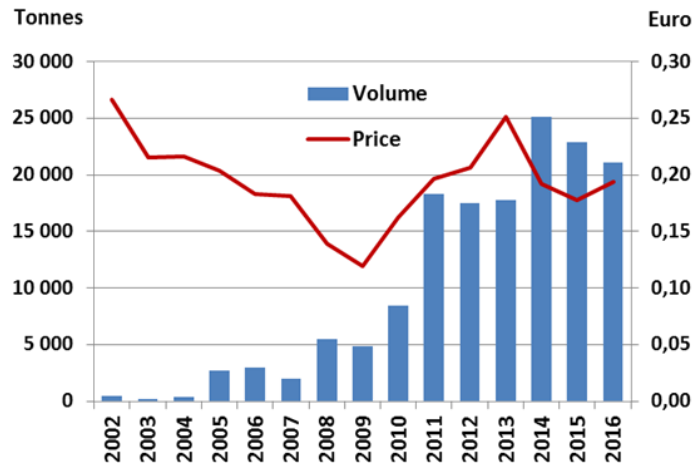


Use of Baltic herring and European sprat in 2016



Baltic herring exported fresh to Denmark, frozen to Eastern Europe

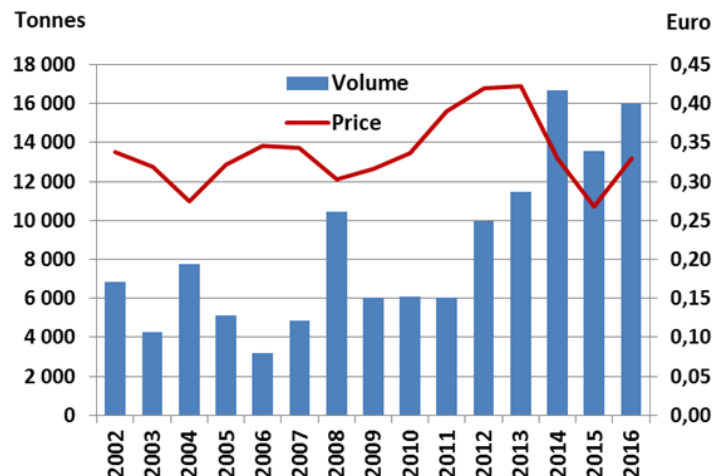
Exports of fresh Baltic herring 2002–2016



The total value of Baltic herring exports amounted to approximately EUR 7.7 million in 2016, which means that exports remained at the 2015 level.

Exports of fresh Baltic herring declined to 21 million kilograms. Almost all Baltic herring exported fresh is used in Denmark as raw material for fishmeal and mink feed. The average price for exported fresh Baltic herring increased slightly in 2016.

Frozen Baltic herring exports 2002–2016



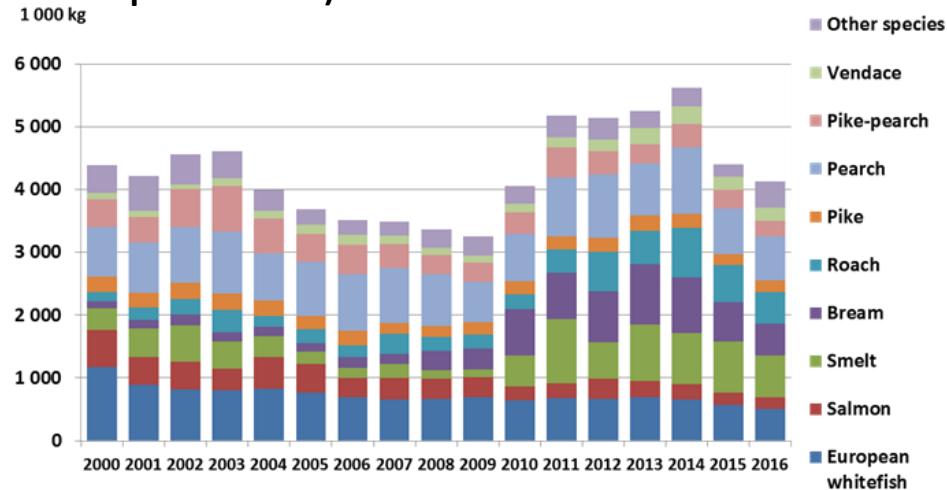
Exports of frozen Baltic herring grew back to 16 million kilos. Estonia and Denmark were the main export countries. Over 60% of frozen Baltic herring are sold to these two countries, mainly for use as feed. Exports of Baltic herring for food to Belarus nearly doubled on the previous year, while exports to Ukraine fell by more than a third. The average price for frozen Baltic herring increased in 2016.

Export of frozen Baltic herring to Russia is still banned by Russia. However, Baltic herring processed products worth just under EUR 0.5 million of were still sold to Russia.

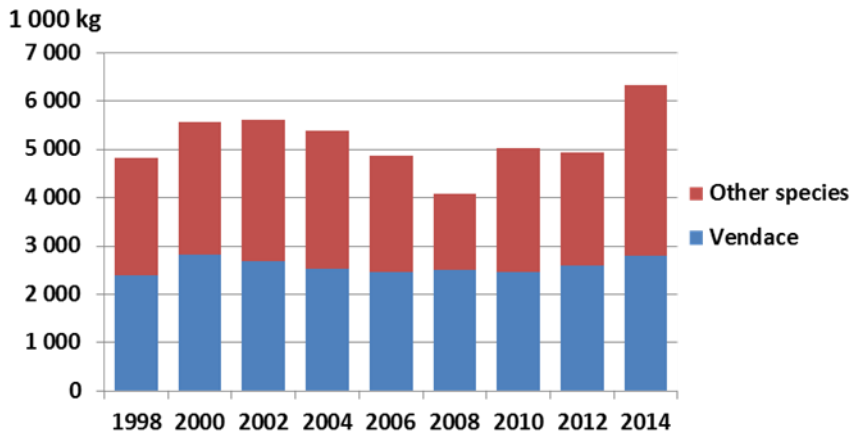
Coastal wild catches continued to decline

Most of the coastal and inland water commercial catch is consumed in Finland. In inland waters, the vendace catch has remained at around 2.5 million kilograms. The commercial total supply of other important wild fish for the domestic food market continued to decline in 2016. Coastal catches of European whitefish and pike perch in particular decreased, as did catches of smelt and cyprinids. In inland waters, pike perch catches increased, and the utilisation of smelt and cyprinids improved.

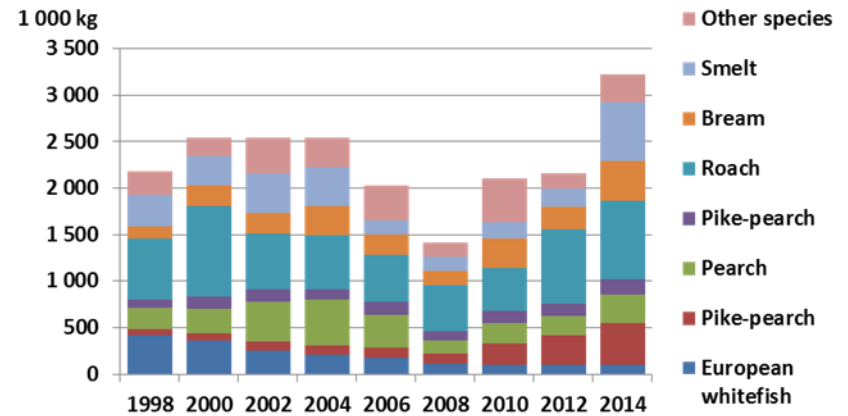
Commercial coastal catch (excl. Baltic herring, sprat and cod) 2000–2016



Inland fishery catches 1998–2014



Inland fishery catches (excl. vendace) 1998–2014



Note: The coastal commercial catch only includes the species shown in the image caption. In addition, some of the salmon was caught in the southern reaches of the Baltic Sea.
Sources: Luke statistics

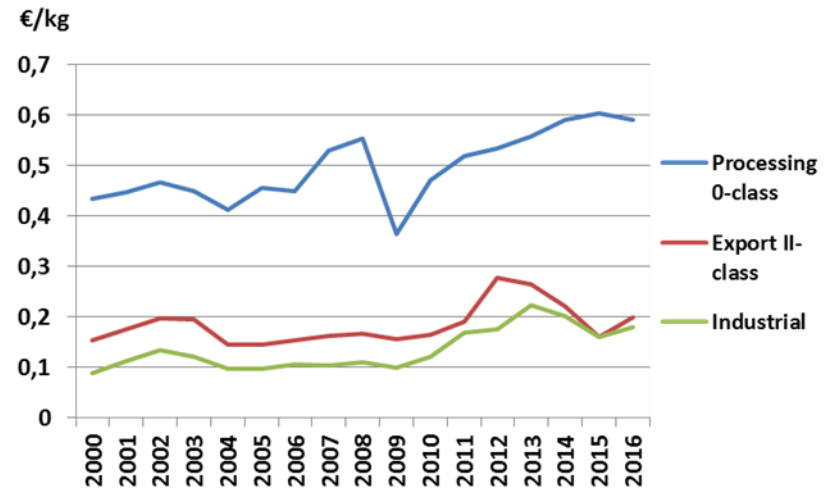
Producer prices for wild fish increased

Prices for Baltic herring for export and industrial use grew slightly in 2016. The price paid by the domestic fillet-production industry remained at the high level of previous years.

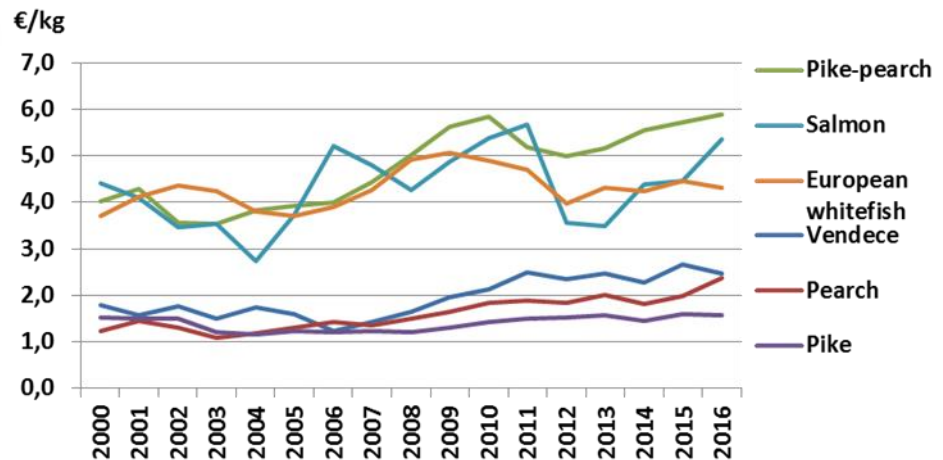
The price of wild-caught salmon increased significantly in 2016. Perch prices also improved. Prices for other species remained roughly at the 2015 levels.



Baltic herring producer prices 2000–2016



Producer prices for other fish 2000–2016



Finnish food market

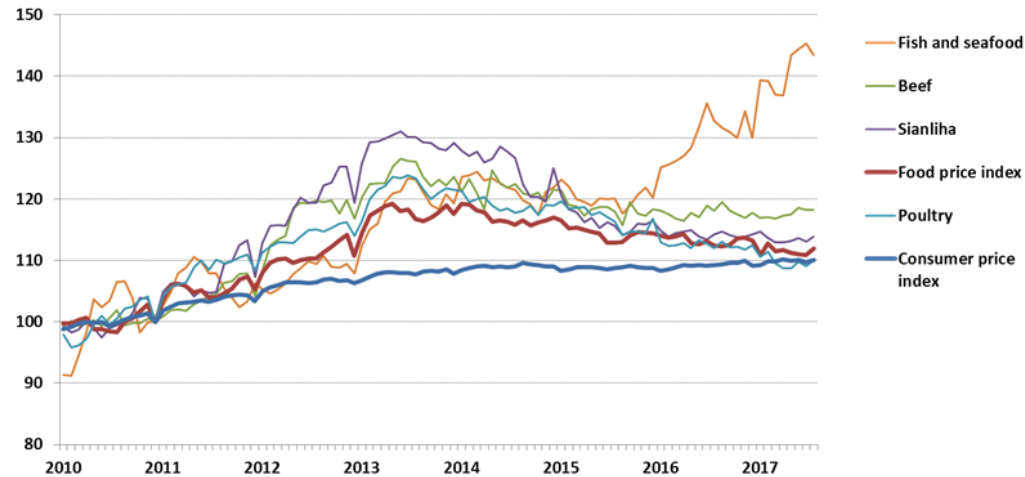
Competitiveness of fish in the food market declined

The development of Finnish consumer prices differs from the rest of the EU. In Finland, the general price level has increased faster than food prices. In the rest of the EU, the trend has been opposite: food prices have risen faster than inflation.

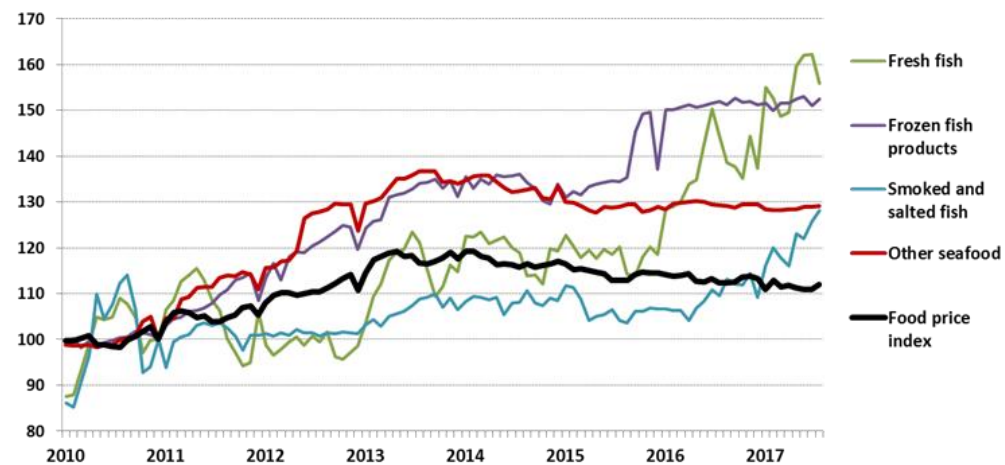
Consumer food prices continued to decline in Finland, and prices are not expected to increase considerably in the near future. The price for beef has remained stable, but consumer prices for pork and poultry are still falling.

Despite the general food price trends, prices for certain individual product groups or products have risen. The increase in prices for salmonids differs considerably from the general food price trend. Consumer prices for fresh fish and smoked and cured fish in particular have increased sharply. This has weakened the competitiveness of fish in the domestic food market, which in turn has reduced fish consumption.

Comparison of general price index with food prices



Comparison of fish product groups with the food price index

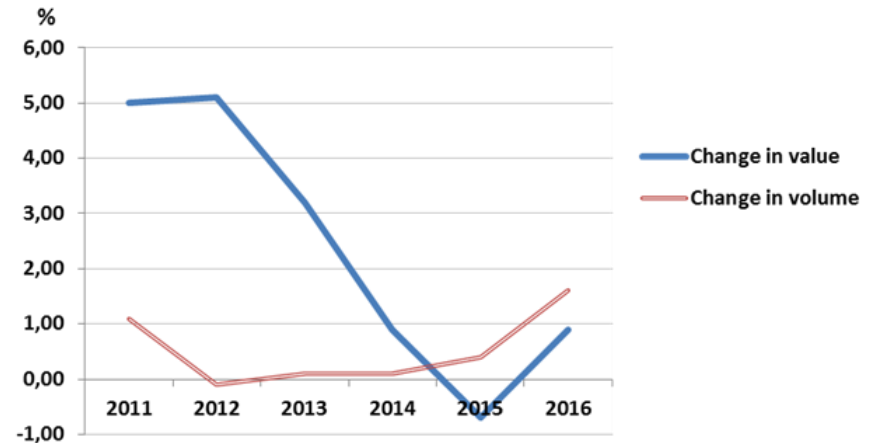


Retail sales picking up

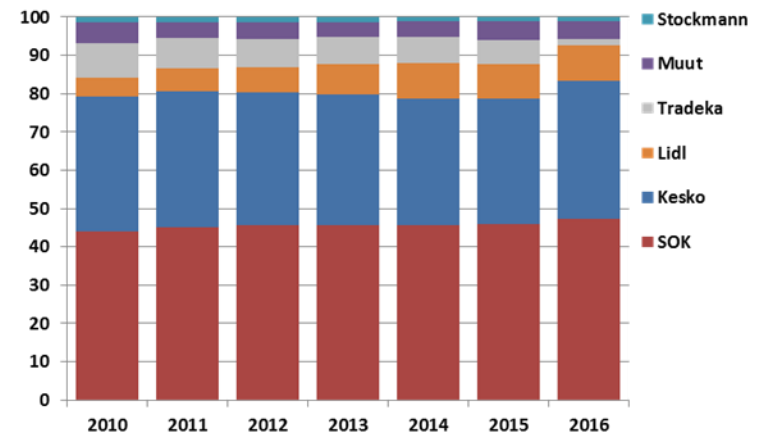
Food prices took a downward turn already in 2014. The reason behind this was the decreased purchasing power of Finnish consumers, the slowdown in global economic growth, and the decline in raw material and producer prices. This was clearly reflected in the development of retail sales. At the beginning of 2015, the tightened competitive situation led to retail chain campaigns advertising general price drops or price decreases of selected products.

The continuing price competition and extension of retail business hours have allowed retail sales to grow. In 2016, the growth of the retail sector in terms of volume was the fastest since the 2007 financial crisis. The value also improved noticeably.

Changes in the value and volume of retail sales



Market shares of retail trade groups



Views of enterprises

Current information from fishery companies

PANEL

- Apetit Oyj
- Chipsters Oy
- Finnish Freshfish Oy
Kalamesta
- Heimon Kala Oy
- Heimon tukku Oy
- Hätälä Oy
- Kalaliike Eriksson Oy
- Kalaneuvos Oy
- Kalaset Oy
- Kolvaan Kala Oy
- Lerøy Finland Oy
- Länsirannikon Kala Oy
- Martin Kala Oy
- Raisio Oyj

Fish market year 2016 in brief

PANEL

- In the beginning of the year, the price of salmon was high and it continued to increase during the year.
- Promotional campaigns concerning salmon stopped, and salmon imports declined.
- Campaigns of large rainbow trout were still organised early in the year, and exports of large rainbow trout continued to grow.
- The supply of wild-caught fish was limited.
- Kalarannan Viannes Oy, a large wild fish buyer in Southwest Finland, ceased its operations.
- Fish farming conditions were favourable, and the demand for large rainbow trout, and consequently prices, reached a record high in the autumn.
- Salmon prices dipped in early autumn, and the demand for salmon has still not fully recovered.
- Towards the end of the year, salmon imports are expected to recover and salmon prices to reach a new record high.

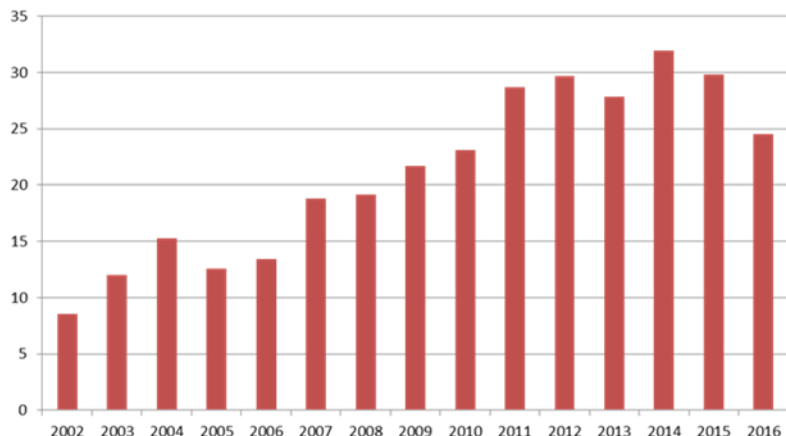
Salmon imports declined, but the import value rose

PANEL

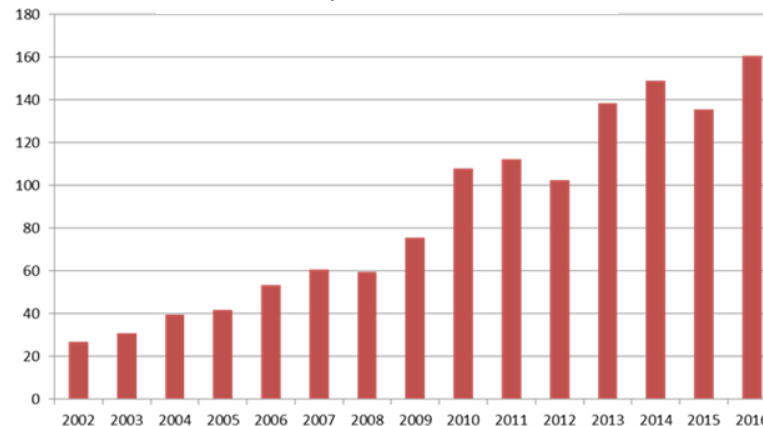
- Consumption and import volumes of imported salmon decreased.
- High salmon prices resulted in increased revenues.

Salmon import from Norway to Finland

Volume, million kg



Value, million €



The volume of imports of gutted fresh salmon decreased by 23%, but the import value increased by 8% from 2014 to 2016.

Scarcity of salmon is increasing the prices

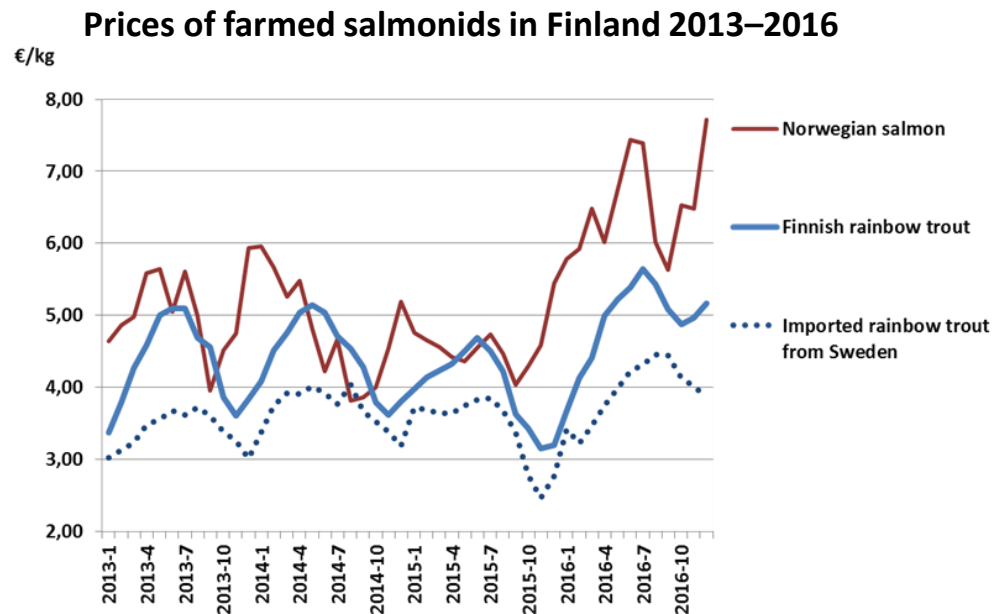
PANEL

- Norway is currently facing production problems, which has further limited the opportunities to grow Norway's production.
- Global marketing has increased the demand for salmon, especially in Asia. Norway is investing in logistics to streamline its supply chain.
- Norway is seeking to keep the price level high in the European market.
- The high prices are reducing salmon consumption in the EU, but the price changes have delayed effects on the Central European trade due to long-term supply contracts.

Prices of large rainbow trout followed salmon prices

PANEL

- The Finnish market reacted quickly to the price changes in the global market. Salmon is now purchased directly from the spot market, as most salmon in Finland is sold fresh.
- In the Finnish market, salmon prices have increased by over 40% since 2015.
- Prices of large rainbow trout have followed the price trend for salmon.



Salmon is losing ground as a promotional product

PANEL

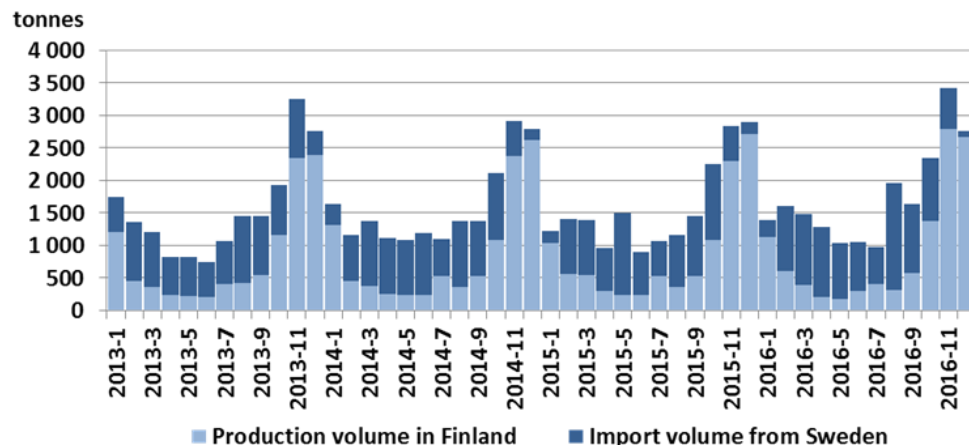
- Expensive salmon has been replaced in promotional campaigns with cheaper poultry and pork products, which has also reduced the demand for processed salmon products.
- Campaigns focused on salmonids have previously increased salmon sales: retail traders prominently promoted salmon and consumers benefited from cheap fish prices and the fish wholesale and processing industry from the increasing demand for fish.
- Fresh salmon has gradually lost its status as a promotional product in retail trade.
- The Kesko and SOK retail chains extended their food campaigns to a wider range of products. The chains reduced their retail prices by arranging competitive biddings among suppliers and by reducing their own markups.
- Fresh salmon was left outside these campaigns, as its margins had already been cut to the minimum over the previous years. Retail traders were reluctant to continue selling fish if the related costs would have to be passed on to the reduced margins of other products.

Campaigns of large rainbow trout also stopped

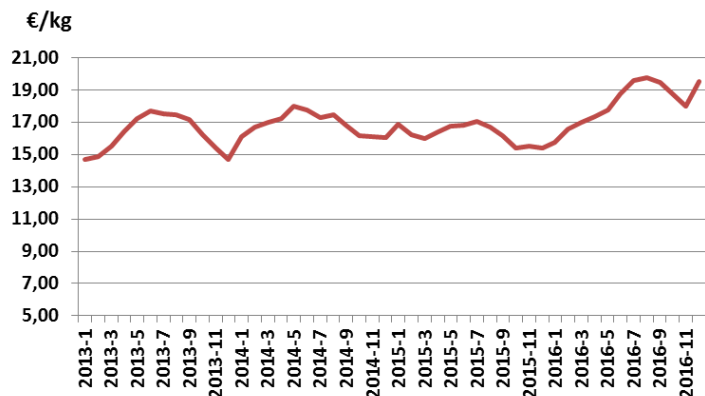
PANEL

- As in the previous year, large rainbow trout were farmed in and imported from Sweden. Fresh large rainbow trout were imported to supplement the seasonal shortage of domestic supply.
- The supply of large rainbow trout was exceptionally limited in the autumn, as exports of large rainbow trout exceeded the level of previous years.
- In previous years, the retail trade's promotional campaigns switched from salmon to large rainbow trout during the autumn. During the 2016 slaughter season, there were no campaigns of large rainbow trout.

Monthly production of rainbow trout 2013–2016



Consumer prices for rainbow trout fillet 2013–2016



Shortage of raw materials is hampering fish processing

PANEL

- Large rainbow trout is the main raw material of many fish processing companies.
- High salmon prices and the shortage of large rainbow trout have caused financial and production problems for fish-processing companies.
- Processing companies are worried about the availability of raw materials and the future of domestic production of large rainbow trout, as well as the entire processing industry.
- A distorted view of the possibilities of recirculating aquaculture system has led to cuts in the number of sea farming licences. Sea farming should not be reduced until it is demonstrated that recirculating system can actually produce enough large rainbow trout at competitive prices.
- The demand for salmon products has also declined. The increase in the price of salmon has resulted in changes to the raw materials and processes used in the processing industry.

Are retail traders' attitudes towards fish changing?

PANEL

- Concentration of the retail trade continues.
- The cost of salmon as a raw material has reduced the volume of private-label trade by retail trade chains, reduced packaging sizes, and caused changes in the raw materials used in products.
- The fish campaign organised by Lidl has also contributed to the changing attitudes towards fish in the retail trade: instead of organising campaigns, it is possible to increase the margins for fish products.
- Fish retail prices increased more than producer prices.

The market for domestic wild fish remained stable

PANEL

- Retail chains have been running more campaigns for Baltic herring fillets, and they are selling well.
- There is a sufficient supply of Baltic herring, and the new quota system allows for better planning.
- The market for Baltic herring exports is limited, but nevertheless, food exports to Eastern Europe have grown.
- The demand for vendace remained stable. The supply would also be sufficient for exports, but sales are limited to the domestic market.
- Some companies have stopped processing wild fish, as supply has decreased and is sufficient only as a seasonal product.
- The supply of domestic perch, pike perch and whitefish is insufficient.
- The supply of roach products has increased.
- Exotic species farmed in Finland, such as mudfish and *Stenodus nelma*, are not expected to have enough domestic market demand.

Imports supplemented the domestic supply

PANEL

- A stable and varied supply of cod is increasing its consumption.
- The popularity of bluefin tuna has halted, perhaps because of ethical concerns.
- The pike perch supply is abundant in Europe. Imports of Estonian pike perch increased since the species was removed from the WWF Red List.
- Arctic char is an interesting specialty, but sales volumes have remained low.
- The availability of Canadian whitefish remained good. The price remained considerably lower than that of domestic whitefish.
- Consumer habits are diversifying and changing rapidly. Imported fish species can become short-term hit products.

Utilisation of side streams improved

PANEL

- Salmonid side streams are declining, and there have even been shortages of salmon and mass of large rainbow trout. Salmon and rainbow trout materials were imported from Norway to satisfy the needs of the food industry.
- The potential of side streams has been widely identified, and companies are interested in research collaboration.
- The quality of rainbow trout roe varies considerably, which is hindering the sales. A standard for the classification of roe quality would help to improve the situation.
- Access to raw materials is an increasingly important competitive factor. Export potential remains untapped if there is a scarcity of supply.

Traceability provisions hard to implement

PANEL

- In the regulation of the fisheries industry, attention should be paid to the special characteristics of the Finnish fisheries sector, and particularly to the low volume of fish.
- Flexibility is needed in regulation.
- The supervision of compliance with the traceability requirements and related practices differ throughout the country.

Sources

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Further information

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