FINLAND'S FISHERIES INDUSTRY

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Pro Kala

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THE FISHERIES INDUSTRY IS PART OF THE BLUE BIO-ECONOMY

The fisheries industry comprises the sustainable exploitation of natural water resources, part of the blue bio-economy. The value chain of the industry consists of companies and entrepreneurs whose task is to transfer fish out of the water and onto consumers' dinner tables. This chain serves Finnish consumers and responds to their desire to eat seafood.

THE VALUE OF FISH IS MULTIPLIED IN THE VALUE CHAIN

Restaurants

Retail

Export

Other livelihoods

Wholesale

Logistics

Processing

Commercial fishing
Fish farming

Commercial fishermen and fish farmers produce all domestic seafood offered in shops or restaurants.

1. SEAFOOD IS IN DEMAND

Finnish plates need more fish. Fish is the main source of the natural dietary intake of vitamin D and, due to its excellent composition, is an important source of omega-3 fatty acids. Finns already eat plenty of seafood, but, according to recommendations, fish consumption should be further increased, a change which a vast majority of consumers would also like to undertake.

- **94% of Finns eat fish**
- **80% of Finns would like to eat more fish ***
- **Finns eat 13 kg of fish per person per year ****
- **Fish should be consumed at least 2–3 times a week**

(* Consumer Survey Study "Kala suomalaisten ruokapöydässä", Consumer Compass, 2019)

(** Natural Resources Institute)

Fish consumption

Statistics from the Natural Resources Institute Finland show that Finns eat around 13 kg of fish per year per person, when weighed as fillets. This number includes all kinds of fish, commercially fished, farmed and imported fish, as well as fish caught through recreational fishing.

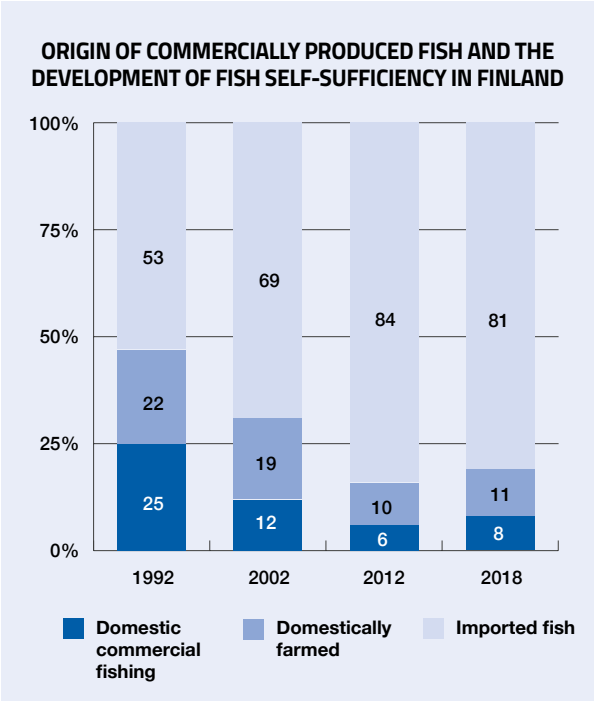



PHOTO: MARKKU SAIHA

2. COMMERCIAL FISHING

Commercial fishing is fishing where the fish caught is intended to be sold. In order to operate as a commercial fisher, an entrepreneur must be entered as a commercial fisher into a registry upheld by a Centre for Economic Development, Transport and the Environment (ELY Centre) and the fisher/company needs to have a fishing vessel that is entered in the fishing vessels register.

Only commercial fishers have the right to sell fish caught in sea areas. Occasional selling of small amounts of fish that are caught in inland areas and sold directly to the consumer is allowed for others as well.

Commercial fishers are divided into two groups, on the basis of their turnover

- **Group I** operations that exceed limits concerning value added tax liabilities (turnover of more than 10,000 Euro), for which the term commercial fishers is used in this document
- **Group II** thers

According to the Fishing Act, a commercial fisher is an administrative registration unit. Therefore, the amount of commercial fishers does not reflect the number of professional fishers, self-employed people operating as fishers or salaried professional fishers.

- The number of full-time commercial fishers in Finland at the end of 2019 was 670, of which 400 fished in sea areas and 270 in inland waters.
- There were about 2,600 part-time fishers, of which 1,800 fished in sea areas and 800 in inland waters.
- The number of commercial fishers has decreased steadily and has halved during the 2000s.
- Around 70 per cent of full-time fishers are approaching retirement age and their average age is 58 years.
- Business developments in the future will also be affected by the age structure of entrepreneurs.

Only commercial fishers have the right to sell their catch to wholesale and retailers for resale purposes.

The amount of professional fishers is decreasing and their average age is rising.

Professional fishing in Finland is can be divided into offshore fishing, coastal and archipelago fishing, and inland water fishing.


PHOTO: MARKKU SAIHA

"In order to secure the availability of fish in the future we need new professional fishers. New fishers can't come into the field unless they can live off of fishing. We are in a hurry!"

Jarno Aaltonen, professional fisher

CATCH VALUE AND FORM OF CATCH

Offshore fishing

Baltic herring, sprat and cod trawling
Catches approx. 126 million kilograms (2019)
Value of approx. 27,9 million Euro (2019)*

Coastal and archipelago fishing

Whitefish, pike-perch, perch, salmon and herring by fyke and net catch
Catches approx. 9 million kilograms (2019)
Value of approx. 8,7 million Euro (2019)*

Inland water fishing

Vendace trawling, whitefish, pike-perch, perch by fyke and net catch
Catches approx. 6,4 million kilograms (2019)
Value of approx. 17,5 million Euro (2019)*

* Value as producer prices, excluding VAT.

PHOTO: MIKA REMES

FISHING REGULATIONS

Professional fishing utilizes aquatic resources sustainably. Fishing is business done on nature's terms and it is regulated, supervised and controlled both at the national and at the EU level.

Fishing quotas

- Professionally fished species in Finland that are subject to quotas are Baltic Sea salmon, cod, Baltic herring, sprat and plaice.
- In the beginning of 2017, Finland (excl. Åland) implemented individual fishing quotas and the fishing rights for the quotas for Baltic herring, sprat and salmon were divided among actors.

Fishing fleet

- The EU has set a capacity ceiling for Finland's fishing fleet in gross tonnes (GT) and kilowatts (kW). Registering a fishing vessel and starting fishing requires that there is available space in the register.

Controlling and supervising fishing

- Fishing is controlled by various EU regulations and on the national level by the Fishing Act and the Fishing Decree, which define fishing rights, authorised gear, permitted catch sizes and closed seasons.
- Fishing gear meant for commercial fishing can only be used by commercial fishers.
- Finland has private water ownership and the private owner has the right to fish and manage fishing in their own waters.
- The Ministry of Agriculture and Forestry governs fishing on the central level. Employment and Economic Development Centres are regional authorities who are responsible for e.g. the monitoring of catches in marine areas and fishing in general. The police, border guard, customs and fisheries inspectorates are also ensuring that rules and regulations are followed.

Fish-specific strategies

- Multiannual plan for managing Baltic Sea cod, sprat and herring stocks (EU)
- Whitefish research programme (Finland)
- National salmon and sea trout strategy (Finland)

3. FISH FARMING

Finland has excellent prerequisites for being self-sufficient in fish farming. Fish is farmed in marine and inland water areas. Re-circulating aquaculture facilities built on land are an example of new technology.

Over twenty species of fish and crayfish are grown through fry production. Fry are used for farming of food fish as well as for stocking fish waters. The most important species in food fish production is rainbow trout.

Fish farming is developing

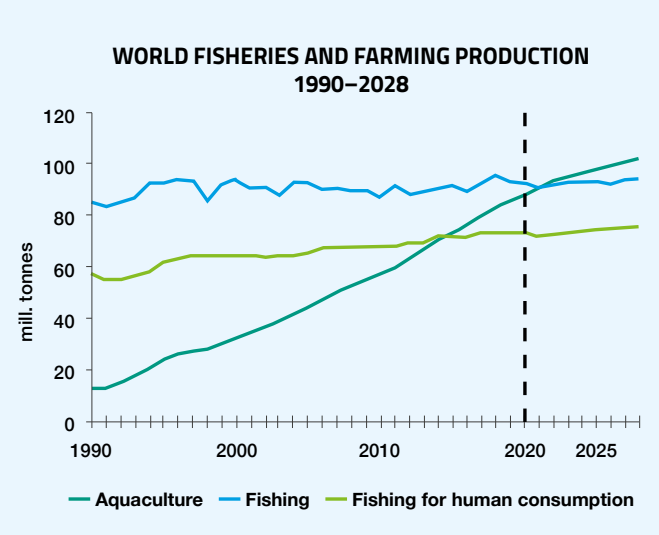
Fish is an eco-efficient and eco-friendly source of protein. Advanced feed and modern operational procedures have reduced the environmental impact of fish farming and strengthened the ecological and social sustainability of the industry.

Finland has great conditions for sustainable fish farming. The abundant water resources of Finland offer great opportunities for the development of fish farming. Increasing fish farming is among the central goals of Finland's as well as the EU's blue growth strategy.

In order to achieve the growth targets, the areas that are suitable for fish farming have to be identified and the required environmental permits need to be granted.

Fish farming is the fastest growing form of food production in the world

(approx. 6% per year).



Aquaculture production in Finland in 2019

Food fish approx. 15,300 tonnes
(value of approx. 69,8 million Euro)

Rainbow trout 14,200 tonnes

Whitefish 800 tonnes

Pike-perch, sturgeon, trout and arctic char in total approx. 300 tonnes

Rainbow trout roe 415 tonnes

Offshore fish farming and recirculating aquaculture

Aquaculture's best growth opportunities are in food fish production in offshore facilities and in fry fish production in recirculating aquaculture facilities.

It is believed that there are offshore areas where larger facilities can be established so that the local impact will remain minor. A functional offshore facility will still need support and maintenance areas in the coastal and archipelago region.

In recent years, major investments have been made in recirculating aquaculture. These facilities have better capabilities for reclaiming the nutrient inputs of production. The challenges of recirculating aquaculture are high investment and operating expenses. Thus far, recirculating aquaculture facilities produce less than ten per cent of the total production. Traditional net pen farming is still the most economic and secure method of producing rainbow trout for food.

In 2019, there were 260 fish farming companies in Finland*

There are about 260 fish farming companies in Finland. Companies have multiple facilities and production lines. About 70 per cent of fish farms produce food fish and there are about 60 fry fish plants.

- **The industry employs approx. 500 people.**
- **In addition to the aforementioned there are 5 recirculating aquaculture facilities producing food fish.**

*Companies have multiple facilities and often numerous production lines as well.

The majority of food fish is produced in sea areas

Finnish aquaculture production includes growing of the parent fish, roe incubation and fry growth in inland plants as well as food fish production that is done both in sea areas and in inland plants. Over 80% of food fish is produced in sea areas.

LICENSING AND MONITORING PROCEDURES FOR FISH FARMING

Fish farming is a tightly regulated and controlled business.

The environmental permit required for fish farming includes a farming permit in accordance with the Environmental Protection Act, as well as a permit required by the Water Act for water construction, the holding of buildings in water areas and the supply of water to the plants.

In addition, the operations of plants carrying out gutting and other handling procedures are subject to licensing.

Environmental permits

- The environmental permits for a fish farm are granted by the Regional State Administrative Agencies. The supervision of environmental permits is carried out by ELY Centres.
- The permit specifies the area used for fish farming and the production method and volume. The permits closely regulate the feed's nutrient quantities and the nutrient input of production.

Monitoring and supervision

- The environmental impact and effect on water status of every fish farming facility is examined according to a monitoring programme approved by the Regional State Administrative Agencies or ELY Centres.
- Environmental health care officials are responsible for monitoring regarding food produced by the facilities, veterinary and habitat.

"We want to secure the availability of domestic fish in Finland, but it is unreasonably difficult to attain environmental permits to increase production."

Mikko Pajula, Haverön Lohi Oy

4. FISH PROCESSING AND TRADE

Enterprises engaged in the fish trade and fish processing ensure the availability of fish products for consumers. Companies collect fish from coastal and inland fishers, process them for consumers and professional catering in reconstituted forms, and deliver the products onwards to the retail trade and institutional caterers. Products that are tasty, easy to use and interesting to customers are constantly being developed also from species that so far have been underutilised.

The domestic primary production alone is not enough to cover the demand for seafood in Finland; there is also an additional need for imported fish, which has taken on an increasingly larger role in Finland's fisheries industry. Imported fish is also often processed in Finland.

In 2017, the number of enterprises involved in fish processing was 143. There are around 130 specialised fish retail trade enterprises. In reality, the retail fish trade sector is considerably larger, as around 80 per cent of fish is sold through grocery stores. In addition, Finland has around 15,000 institutional caterers, most of which offer seafood dishes.

- **Centralised fish collection and distribution enables the cost-effective provision of smaller amounts of fish as well as ensuring availability for larger customers.**
- **In 2017 32% of processed fish was domestic Baltic herring and sprat, 32% other domestic fish and 36% imported fish.**

PHOTO: HÄTÄLÄ OY

Fish processing and wholesale

In Finland, fish processing companies also act as wholesalers. Fish processing companies, both in Finland and throughout the EU, are dependent on imported raw material. Although consumers appreciate domestic local food and local seafood, it is a prerequisite for profitable production that the availability of an even quality and quantity of raw material is ensured. Enterprises have thus arranged access to a variety of domestic and international acquisition channels. Furthermore, to ensure availability, there is a need for imported fish to supplement the range of domestic species.

The distribution of fish products onwards from the processing plant / wholesaler is organised through two distribution channels, either through the fish wholesalers' direct distribution or through central enterprises.

Foreign trade of fish and fish products

In 2019, 100 million kilograms of fish and fish products were imported to Finland, with a value of 487 million Euro. At the same time 87 million kilograms of fish and fish products was exported from Finland, with a value of 163 million Euro. Finland's most important exports are fresh salmon and rainbow trout and frozen Baltic herring and sprat. Smaller amounts of salmon products and roe is also exported. Main export destinations are the UK, France, Lithuania, Estonia and Poland. A part of exported fish is returned to the domestic market as processed products.

The majority of imported goods is farmed Norwegian salmon and nearly 60% of all imports come from Norway.

The quality of fish products is ensured with an unbroken cold chain throughout the entire supply chain.

"Fish is in demand! We need to urgently put all possible means to use for fishers to be able to fish and for fish farmers to be able to farm domestic fish."

Juha Lindberg,
Kalakauppa E:Eriksson Oy,
Wanha kauppahalli Helsinki

PHOTO: MIKA REMES

Fish products require accurate temperature regulation and have a fairly short shelf life, which is why well-functioning logistics are very important in the supply chain of fish.

The vast majority of fish is sold to consumers through grocery stores. The share of fish in grocery sales is on average less than 2 per cent, but it is often stated that its image value is of a greater value than what could be measured in monetary terms. Fish is sold to consumers also through fishers' direct sales points, food circles and commercial and open-air summer markets.

About a quarter of all fish is sold through the industrial kitchen sector. In professional kitchens, more and more servings nowadays involve seafood. Most of the food uses rainbow trout, salmon, saithe and cod.

5. EFFECTS OF THE FISHERIES INDUSTRY

ECONOMIC EFFECTS

- In 2017, approximately 1,643 companies operated in the fisheries industry. 72% were fishing companies, of which the majority are engaged in small-scale fishing.
- The total profit of fisheries industry companies was 959 million Euro. The biggest industry in terms of profit was fish processing.
- Employment in the fisheries industry amounted to 2,498 person-years.
- The value of domestic commercial fishing in 2018 was approximately 51 million Euro and food fish farming around 74,5 million Euro. In addition, fish farmers bred approx. 50 million fry fish for further growth and planting.
- Commercial fishing and fish farming have a wide range of secondary impacts on companies producing production equipment (e.g., vessels, gear, feed) and services, as well as in fishery product processing, fishmongers and fur production

Fishing is one of the most effective ways of removing nutrients from waterways.

ECOLOGICAL EFFECTS

Commercial fishing and aquaculture are renewable resources, operations that utilise fish stocks and the aquatic environment, with implications for the business environment.

In Finland, the catching of Baltic herring by trawl or fyke net is MSC-certified.

Effects of commercial fishing on fish stocks

Commercial fishing complies with the principles of sustainable fishing. Fish stocks are monitored continuously, and the Natural Resources Institute is of the opinion that Finland's fish stocks are mostly strong and highly resistant to current and even larger fishing measures. Regarding fish species subject to a quota, fishing complies with Finland's fishing quotas defined on the basis of scientific advice.

Commercial fishing helps prevent eutrophication

Commercial fishing in Finnish waters removes approx. 600 tonnes of phosphorus and more than 3,000 tonnes of nitrogen annually. The bulk of this, just under 600 tonnes, is removed during catches of herring and sprat.

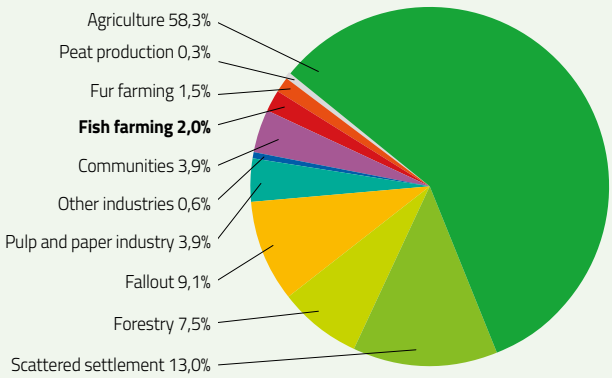
	Catch, tonnes	Content / kg fish		Removed nutrition, tonnes		Percentage of total removal	
		Phos-phorus	Nitrogen	Phos-phorus	Nitrogen	Phos-phorus	Nitrogen
Baltic herring and sprat	128,802	0,004	0,021	515	2,705	84%	88%
Other catch from the sea	6,330	0,0075	0,0275	47	174	8%	6%
Inland water fish	6,394	0,0075	0,0275	48	176	8%	6%
				610	3,055		

Environmental impact of fish farming

The environmental impact of fish farming has been discussed greatly in the past. The share of fish farming in Finland's total phosphorus load in 2012 was, however, only 1–2 per cent (Finnish Environment Institute).

The comprehensive environmental monitoring observes and evaluates the state of the environment and the environmental impact of operations on a regular basis. Results are published yearly.

Share of fish farming in Finland's total phosphorus load, in relation to other industries



Effects of fish farming on natural fish stocks

Fish farming has not been found to spread parasitic diseases to natural fish stocks. Problems with possible escapees are also not a problem, as rainbow trout do not reproduce naturally in our waters. Fish farming supports the preservation of natural fish stocks by maintaining a number of endangered fish stocks, and by strengthening them with fry plantings.

Other environmental impacts

The environmental impacts from the processing of fish products is caused mainly by the production plant's energy consumption, water consumption and wastewater.

The environmental impact of eating fish is seen as positive compared to other comparable food sources. Therefore, eating fish can be seen as an ecological act.

SOCIAL IMPACTS

The primary sector occupations, fishing and fish farming are an important part of the coastal and inland culture and identity. Fishing and fish farming create jobs in areas where creation of new employment is scarce. The impact on employment is wide, going beyond fishing and fish farms to fish processing, wholesale, the production of fish feed and retail.

Fish and public health

Eating seafood has many positive effects on health and the consumption of fish is beneficial to cardiovascular health because of the excellent fatty acid composition of fish. The most common cause of death in Finns is said to be cardiovascular diseases, which can be greatly influenced by one's way of life and diet.

- Fish is the most natural source of vitamin D for Finns. During the darker times of the year, here in the North, vitamin D has to be obtained either through diet or as a dietary supplement.
- Fish is recommended to be eaten at least twice a week.

Those who eat a great deal of fish have been found to be healthier and to have an increased variety of nutrients than the general population.

6. THE FUTURE OF THE FISHERIES INDUSTRY

The demand for fish continues to grow, and in Finland it seems that fish will continue to have a good market. A challenge to the future of the fisheries industry is its availability. While caught fish is used better than before, fish catches are not expected to increase, thus growth is likely to take place through aquaculture.

NO DOMESTIC FISH WITHOUT VIABLE PRIMARY PRODUCTION

In regard to the future of the whole fisheries industry, it is crucial to secure the position of the primary production industries in the water policy. Without commercial fishing and aquaculture activities, domestic fish will not be available to the market.

The future of aquaculture is controlled by the strict licensing policy. For commercial fishing to continue, the predator issues have to be solved and access to fishing rights secured.

Fish farming

The competitiveness of domestic fish farming in relation to foreign production needs to be improved. This means optimising production and scaling up facilities. By facilitating the granting of permits, it is possible to double domestic fish farming by the year 2023. The industry expects its value then to increase over 40% and employability to improve over 20% compared to now.

Commercial fishing

Predators, seals and cormorants, are detrimental to fish stocks and damage professional fishing. The adverse effects have just increased in the recent years and in certain areas the situation can be called a crisis.

The damages caused by seals consist of lost catch (eaten and damaged fish) and broken fishing gear.

"Many of the field's problems are external, and the industry's work alone is not enough to solve them, political willpower and concrete actions are needed. When individual decisions are made, their effect on a fishing entrepreneur's operations should always be thought over."

Kim Jordas,
Suomen Ammattikalastajaliitto

Seals and cormorants

Based on calculations in the Baltic Sea area, the total grey seal population is circa 40,000–54,000, and according to a Swedish estimate, the actual total population of ringed seals is over 20,000. An adult grey seal eats an average of 4,5–7,5 kilograms of fish per day and a ringed seal eats 2,5–3,5 kilograms.

The total number of cormorants in Finland is estimated to be about 120 000 during the nesting period in July. A cormorant eats 350–500 grams of fish per day.

Roughly estimated, seals and cormorants eat at least the same amount of fish per year as is the whole catch of commercial fishing in a year.

Fishers and fish farmers have developed seal safe fishing gear and fences to surround fish farms, but the issue is more extensive and the detrimental effect that predators have on fish stocks cannot be prevented with fences.

The price of rainbow trout as well as herring and sprat is dependent on the global market

The markets for herring and sprat, the main species caught through commercial fishing, follow fur market trends and the global fishmeal situation. Rainbow trout's producer price is influenced by salmon's global prices.

In the domestic market, locally produced food can have certain market advantages, as consumers want to eat domestic fish. However, price competition cannot be avoided and the efficiency of production is a very significant competitiveness factor.

Consumers want to eat fish

Since the early 1980s, the demand for fish in the domestic food market has doubled. According to consumer surveys, the demand still appears to be strongly on the rise

Fish is an important image product for the retail trade, and this has been reflected in the growth of the consumer product range and the improvement in the availability of fish. As the availability of domestic fish decreases, retail stores have broadened their selection of fish through imported fish. In order to meet the constantly growing demand, it is also necessary to secure the vitality of domestic primary production. Security of supply also requires the self-sufficiency rate to be raised quickly.

The Baltic Sea is a common cause

Efforts to improve the state of the Baltic Sea are being made on several fronts. Through their own labour, commercial fishers take care of the Baltic Sea via the removal of nutrients along with the fish. The removal and treatment of fisheries projects have helped to improve the state of local water and provide living space for desired fish stocks. Work done for the Baltic Sea both nationally and internationally should absolutely be continued in the future. In fish farming, using Baltic blend (fish feed made from fish originating from the Baltic Sea) recycles and removes nutrients from the Baltic Sea.

Improving profitability in the entire chain and in primary production in particular creates a base for new enterprises in the field.

The sustainability of the fisheries industry has to be seen as a whole that takes economic, ecological and social sustainability into account.

The development of the fisheries industry demands commitment

The objective of fisheries industry associations is to secure its continuity.

Primary production is experiencing critical times that will define the future of the industry. If resolutions on permits for aquaculture and the predator issue for commercial fishing are not made in the near future, the industry that produces domestic food for domestic consumers will go down in history as an unprofitable business. The situation is widely acknowledged, and it is generally seen as a matter of importance, but viable solutions are yet to be seen.

Good decisions are needed in order for the existing demand for fish to be met, and to thereby create added value and new jobs.

"Fish farming can be increased without increasing the detrimental environmental impacts. We need neutral research and new innovations."

Jouni Vielma, principal scientist, Natural Resources Institute

PHOTO: NATURAL RESOURCES INSTITUTE

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