



Finnish agri- food sector outlook 2023

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Photo: Yrjö Tuunanen

Summary

Economic growth in Finland remains weak

Uncertainty about international economic development and its impact on Finland remains high. The start of 2023 has been marked by persistently weak business and consumer confidence. However, the recovery of consumers' purchasing power is supported by lower inflationary pressures at the end of the year and an increase in wages. The Finnish economy is expected to contract by 0-0.5% in 2023.

The increase in food prices is expected to decelerate

In 2022, there were unusual pressures to increase food prices, as the prices of the production inputs in the food chain increased significantly. Food prices increased by an average of 10.5% in 2022, while there were significant differences in the development of the prices of various food products. The prices continued to increase steeply at the beginning of 2023, and there will be cost pressures on food prices with a delay. The price increase is expected, however, to decelerate during 2023.

The trade deficit of all plant- and animal-based products increased

The export value of all animal- and plant-based products from Finland increased significantly in 2022 compared to previous years - due to the steep increase in the prices of agricultural products and foodstuffs. The value of exports reached EUR 2,199 million, up by 23.1% from the year before. The value of animal- and plant-based products imported into Finland was EUR 6,817 million, roughly 23.4% more than in the previous year. The trade deficit of all plant- and animal-based products increased by EUR 879 million - from EUR 3,739 to EUR 4,618 million - marking the largest annual change in history.

Agricultural policy requires more environmental and climate measures

The new term of the EU agricultural policy started at the beginning of 2023. Total EU funding for Finnish agriculture will remain close to the previous level. However, reaching the previous support level requires more action

from farmers regarding the environment and climate measures. The basic mandatory requirements to obtain direct support financed wholly or partly by the EU, will be stricter than before. Eco-schemes for direct support will be introduced as a completely new element, which are voluntary actions selected annually by farmers.

The grain market has calmed down

The high yields of 2022 stabilised the cereals market. Finland also strengthened the stocks of bread cereals after the shortage in spring 2022. Based on preliminary data about cultivated areas for 2023, lower cereal yields are expected, roughly 3.2 million tons, while the final volume may deviate by more than 10% in either direction as a result of growth conditions. The final harvest level will have an impact on prices in Finland, even though the price level is largely determined according to European and, more broadly, global supply and demand situation.

Cultivation of oil and protein crops increased

In 2022, the production volumes of oilseed and protein crops grew driven by increased surface areas and high average yields. Self-sufficiency in complementary proteins increased significantly from the previous years' level to almost 27%. However, yields in 2023 are expected fall behind the previous years' levels if the weather conditions remain normal which would return this year's self-sufficiency rate to a lower level.

Meat consumption and production are decreasing

Higher costs and the resulting increases in producer and consumer prices have caused significant changes in the Finnish meat markets. The financial situation has improved on meat farms, while differences between farms have increased. The production and consumption of meat fell in 2022, and both are expected to decrease further in 2023. In 2022, pork saw the largest decrease in production and beef in consumption. As a result of these changes, the self-sufficiency rate will decrease in pork and increase in beef. Overall, the focus of the consumption structure is shifting to more affordable product groups.

The economic situation of milk production has fluctuated

The dairy sector experienced a highly exceptional year in economic terms in 2022. The cost crisis that started in the previous year continued, while the unusual increase in producer prices that started at the beginning of the year eventually slowed the steep decline in profit margins. The stabilisation of feed costs at the end of the year, supported by the relatively large cereal harvest, enabled the profit margin of milk to return to the average level of the previous years. However, milk producer prices have already started to fall from their peak levels in Europe, and Finland will also see a return close to the recent years' situation in 2023.

Producer price of eggs increased by almost 28%, organic sales decreased

In 2022, egg consumption decreased by 5.3% and egg production by 1.6% from the previous year. Both consumption and production are expected to remain roughly at the same level in 2023. The consumer prices of eggs increased last year, being as much as a quarter (25%) higher than in the previous year on average. The producer price of all eggs grew by roughly a third (28%). A significant drop was seen in sales of organic eggs, whose market share was 16% of total consumption measured by value.

Horticultural production is concentrating strongly

In recent years, the number of horticultural enterprises has decreased, even though production has remained unchanged or even increased. The concentration of production in specific areas and on large farms has accelerated. The ten largest producers cover already 82% of Finland's total cucumber production. For tomatoes, the corresponding figure is 56%.

The aging of farmers affects the development of agriculture

The number of farms is decreasing, and the average farm size continues to increase. In 2022, the total number of agricultural and horticultural enterprises was 43,611. As there are fewer farm successions, the average age of farmers is increasing, and more and more farms will be run by farmers of retirement age. During the next ten years, a third of Finland's farmers will reach retirement age. This will also inevitably have an impact on the development of agriculture.

Price fluctuations affected the farms' finances

The price turbulence in 2022 had a significant impact on the economy of farms. According to estimates, profitability in agriculture in 2022 was almost as low as in the previous year. Costs on farms first increased steeply, while producer price increases followed with a delay. Cost pressures were especially reflected in the low profitability of livestock farming. The profitability of cereal and oilseed and protein crop farming improved from the previous year.

Operating environment in agriculture and food sector



General economic development

Jari Viitanen and Jyrki Niemi

The global economy is expected to grow by roughly 3% in 2023, and the economy of the euro area by about 1%. Although the euro area avoided drifting into recession during the beginning of the year, uncertainty about future economic development remains high. Even though energy prices are expected to continue to decrease towards the summer, problems in the energy sector may re-escalate in Europe next winter. Therefore, there is high uncertainty about international economic development and its impact on Finland. Inflation is upheld in Finland especially by the rapid and recurring increases in living expenses and food prices. However, the recovery of consumers' purchasing power is supported by lower inflationary pressures at the end of the year and an increase in wages. The Finnish economy is expected to contract by 0-0.5% this year.

Small signs of recovery in the global economy

According to preliminary data, the growth in the global economy decelerated to 3,4% in 2022, down by 2,5 percentage points from the previous year. The growth was especially curtailed by significantly rising inflation rates across the world, which reduced consumers' purchasing power and caused uncertainty. In Europe, the confidence of consumers and companies was also reduced by

the war in Ukraine, the ability to replace energy imported from Russia, and rising interest rates. Even though this year's economic development is still highly uncertain, there are several positive signals of economic development taking a turn for the better. In Europe, the energy crisis was avoided because of the milder winter than expected, through energy savings, and by increasing the use of alternatives to replace Russian energy, including liquefied natural gas (LNG) and wind power. In the USA, domestic energy generation and the steep increase in consumption by households after the pandemic supported economic development. In several economic areas, labour markets have remained in a good position, regardless of other economic decline, which also supports the recovery of economic growth.

According to the economic forecasts published at the beginning of the year, the global economy is expected to grow by an annual rate of roughly 3% this year. While the eurozone may avoid a recession, uncertainty about future economic development will remain high. Even though energy prices are expected to continue to decrease towards the summer, problems in the energy sector may re-escalate in Europe next winter. Furthermore, even stricter monetary policy will reduce companies' willingness to make investments and increase households' loan management costs. Then again, the increase in wages alongside decelerating inflation will restore consumers' purchasing power. The decision made by China in December 2022 to lift all coronavirus restrictions will revitalise not only its economy, but also the global economy. The USA will avoid drifting into recession. Slowing

inflation, rising wages and a good employment situation will cheer up the economy a bit towards the end of the year. Economies in the eurozone and the US are expected to grow by about 1% in 2023.

Inflation improving slowly - monetary policy to be tightened further

The global market prices of raw materials, oil and energy already started to increase already in 2021, and Russia's invasion of Ukraine in February 2022 escalated the situation. However, prices already started to decrease during summer 2022 when the outlook for growth and demand in the global economy deteriorated rapidly. Even though the outlook has slightly improved and the lifting of coronavirus restrictions in China, combined with the increase in its economic growth, increases demand for raw materials and oil, the poor performance of the global economy is not expected to present any significant pressure for new price increases during the rest of the year.

Central banks aim to reduce overall demand by tightening monetary policy, as a result of which inflation will decelerate over time. Inflation in the USA, which reached new peaks in spring 2022, already started to decelerate after the summer. In April 2023, core inflation, excluding the increase in energy and food prices, was still 5,6%. The interest rate hikes started by the Federal Reserve Bank of the United States (FED) in March 2022 may have already ended after the increases in May 2023, as inflation is expected to moderate during the rest of the year. In addition, the potential crisis in the banking sector is not wanted to be escalated.

The eurozone follows the USA with a slight delay, as inflation only started to decelerate in the eurozone at the end of 2022. Even though total inflation decelerated to 6,2% in May 2023, core inflation remained tenacious at 5,3%, which indicates that inflationary pressures remain highly extensive. Food prices, for example, were 12,5% higher in May compared to the same time last year.

To curb inflation, the European Central Bank (ECB) also has to consider the impact of tightened monetary policy on individual economies and the stability of financial markets. The loan management costs of already indebted economies will increase as interest rates go up which may lead to uncontrollable and long-lasting financial and political problems. However, the ECB has, so far, continued to increase interest rates and, provided that the instability in financial markets and the state of the banking sector do not escalate further during the spring, it is expected to continue its interest rate increases during the rest of this year until the most significant inflationary pressures are under control.

During 2022, the US dollar strengthened against the euro until the end of September. Since then, the avoidance of the energy crisis in the eurozone, the improved economic outlook and expectations of slower interest rate increases in the USA have weakened the US dollar relative to the euro. This weakening is expected to continue, and the exchange rate is expected to be roughly 1.15 (EUR/USD) at the end of the year.

The geopolitical situation perpetuates uncertainty

The situation in Ukraine and its development remain the most significant factors affecting the development of the global economy this year. This has a particular impact on the prices of raw materials, food and energy in Europe and perpetuates uncertainty about the future. Following Russia's invasion of Ukraine, it was feared that the global situation would escalate into a food crisis, and the drastic increase in the price of agricultural products would drive the masses onto the streets and initiate a new influx of refugees. These concerns were based on the fear that global exports from Ukraine, a key exporter of cereals and oil crops, would be impossible in the middle of warfare, and no cereals would be sown or harvested due to the war. Another cause of concern was the fear that yields would suffer in other countries as well because of a shortage of fertilisers and an increase in their prices. Europe especially was dependent on imports from Russia regarding nitrogen fertilisers, as the natural gas required in fertiliser products was imported from there, and the price of natural gas soared.

The most dramatic peak in the global market prices of raw materials resulting from the war lasted from March until May. In March 2022, the food index of the United Nations' Food and Agriculture Organization (FAO) was at the highest level ever measured between 2004 and 2022. Since then, the situation has calmed down in global markets. There are various reasons why the worst-case scenario did not materialise. One of the most important reasons is that, even during

all the fighting, a significant number of Ukrainian fields were sown and produced higher yields than expected. Cereal-carrying vessels were able to reach their destinations protected by the Montreux Convention signed under the UN. The fact that no major export country tried to secure their own situation through export restrictions also helped the situation. However, any increase in geopolitical and conflict risks, and any blocks between countries may, in the worst case, lead to an increase in protectionism, trade restrictions or blockades, or weaken the outlook of global trade and economy for a long time. In particular, China and its actions in relation to Russia and the United States play a key role in this.

Finland's economic development slow

Alongside Russia's invasion of Ukraine and the resulting energy crisis and exceptionally rapid inflation, the lifting of the coronavirus sanctions was a key factor in 2022. Demand for services recovered quickly in spring 2022. The hospitality industry made the largest leap forward, with its turnover increasing by almost 32% in euros and 23% quantitatively from the previous year. Nevertheless, the travel and restaurant sector remains in a difficult situation due to the impact of Russia's invasion of Ukraine. Tourist flows from Russia and Asia, key regions for tourism in Finland, have declined. The impact of the coronavirus pandemic and Russia's invasion of Ukraine can be understood by comparing the development of the food and beverage service sector's turnover in 2022 with the most recent "normal year" of 2019. The turnover of food and beverage service activities was approximately 7% higher in 2022

than in 2019, while the impact of increased prices causes the sector's development to be slightly below -1%. The labour shortage has become one of the largest obstacles in the way of growth and recovery from the coronavirus restrictions in the travel and restaurant sector. During the coronavirus restrictions, more than 10,000 people transferred from the sector to other industries.

According to preliminary data, the Finnish economy grew by 2.1% in 2022. However, during the last two quarters of the year, Finland's gross domestic product (GDP) decreased, and the Finnish economy ended up in a technical recession after export and investment volumes decreased. Even though the recession was short-lived and the economy grew by 0,2% in the first quarter of 2023 from the previous quarter, the economy is not expected to recover significantly during the rest of the year. Based on consumer confidence indicators published by Statistics Finland in May 2023, confidence in the economy has improved from a year ago, but it is still weak and far from the long-term average. The business sector's confidence remains also weak. In May 2023, confidence increased from the main sectors only in construction. As a bright spot in the Finnish economy, employment has remained at a good level overall. The risk of an energy crisis, which was a threat in the early winter, is being eliminated as the need for heating is decreasing and also the Olkiluoto 3 nuclear power plant started to generate energy in March.

However, there is high uncertainty about international economic development and its impact on Finland's exports. In Finland, the upcoming Government Programme following the parliamentary elections creates political



uncertainties in Finland. This year, inflation will be upheld especially by living expenses - as a result of rising interest rates - and the increase in prices, which continues to be rapid. Now that global raw material prices and producer prices in agriculture have started to decrease, food price inflation is

expected to decelerate significantly towards the end of the year. Lower inflationary pressures and higher wages support the recovery of consumers' purchasing power, especially at the end of the year. According to the most recent economic forecasts, the Finnish economy will contract by 0-0.5% this year.

Food consumption and consumer prices

Terhi Latvala, Erja Mikkola, Hanna Karikallio and Jyrki Niemi

In 2022, there were unusual pressures to increase food prices, as the prices of the production inputs required for producing food and various costs in the food chain increased significantly. Food prices increased as expected by an average of 10.5% in 2022, while there were significant differences in the development of the prices of various food products. The prices continued to increase steeply at the beginning of 2023, and there will be cost pressures on food prices with a delay. The price increase is expected to decelerate during 2023.

Beef consumption decreased significantly

According to preliminary calculations, the consumption of beef, pork, lamb and poultry meat was roughly 75 kilograms per capita in 2022. According to the Balance Sheet for Food Commodities, their consumption in 2021 was roughly 76.2 kilograms and total meat consumption approximately 78.9 kilograms per capita, also including horse meat and game. The consumption of beef decreased significantly in 2022, while that of pork and poultry remained relatively unchanged. According to preliminary figures, the consumption of beef was approximately 17 kilograms, that of pork nearly 29 kilograms, that of lamb 0.5 kilograms and that of poultry meat 28.3 kilograms per capita last year.

The meat consumption figures have been calculated as carcass meat. The figures also include game. Typically, carcass meat contains 80% of boneless meat. The weight of cooked meat is around 50% of the weight of carcass meat. The figures in the Balance Sheet for Food Commodities represent the amount available for consumption rather than actual consumption, because volumes of storage losses and other waste, among other things, are not available from all stages of the food chain. In fish statistics, the consumption of domestic fish has been converted into fillets, while the consumption of imported fish has primarily been calculated based on the product weight.

More wheat and oats consumed than in the previous year, the decrease in the consumption of liquid milk continued

In 2021, the consumption of wheat was 45.4, rye 14.2, barley 0.9, oats 10.2 and rice 6.9 kilograms per capita. According to preliminary calculations, the consumption of cereals as food increased slightly in 2022 from the previous year. The consumption of wheat and oats increased, while that of rye decreased. The consumption figures (2022) were over 48 kilograms for wheat, 13.4 kilograms for rye, 0.8 kilograms for barley, nearly 11 kilograms for oats, and more than 7 kilograms for rice. The consumption of other cereals was approximately 4 kilograms per capita, showing a decrease from the previous year. While the consumption of oats as food has increased significantly in recent years, the 2021 harvest was small and reduced consumption slightly. According to the Balance Sheet for Food Commodities, oat consumption per capita peaked

in 2020, and according to preliminary calculations, was almost identical in 2022.

According to preliminary calculations, the consumption of liquid dairy products was roughly 135 kilograms per capita in 2022. The average consumption of liquid milk (low-fat, skimmed, whole and raw milk) was more than 90 litres (roughly 93 kilograms) per capita. The consumption of liquid milk decreased by roughly 6% from the previous year. The shares of different types of milk remained nearly unchanged, with low-fat milk accounting for roughly 56%. The consumption of sour milk, yoghurt and curdled milk decreased from the previous year, that of other fresh products and soured cream products increased slightly, whereas that of cream remained relatively unchanged. Cheese consumption was still over 25 kilograms per capita. Butter consumption seems to have remained the same as before in 2022, being roughly 3.1 kilograms per capita.

Egg consumption down by more than half a kilogram

Egg consumption increased in 2020 but decreased in 2021 and 2022. In 2021, egg consumption was roughly 11.9 kilograms per capita, which equalled the pre-pandemic level, and according to preliminary figures approximately 11.1 kilograms in 2022.

According to the Balance Sheet for Food Commodities, the consumption of fresh vegetables was 63 kilograms per capita in 2021, but this volume also includes any waste and is only indicative. In 2021, the consumption of fresh fruit was approximately 56 kilograms per capita, of which citrus fruit accounted for 13.8 kilograms.

Crises disturbed the fish market

According to Luke's statistics on fish consumption, the consumption of fish was approximately 12.5 kilograms per capita in 2021. The consumption of imported salmon in 2021 decreased slightly from 2020. Fish consumption has ranged between 13 and 15 kilograms throughout the 2000s. It started to decrease after the mid-2010s when the prices of imported salmon increased. Imported salmon is the most popular fish product on the Finnish market, and its price has a significant impact on the prices of domestic fish. Imported fish accounted for 66%, or more than 8 kilograms, of total consumption. Regarding imported fish species, the consumption of farmed salmon (3.4 kilograms), tuna (1.4), pollock (0.3), Atlantic and Baltic herring (0.5), and farmed rainbow trout (0.2) was the highest.

Of domestic fish species, farmed rainbow trout (1.4 kilograms) was consumed most. Of wild-caught domestic fish, perch was consumed most (0.7 kilograms), followed by pike (0.5), Baltic herring (0.4), vendace (0.4), pikeperch (0.3), and European whitefish (0.3). Recreational fishery catches are included in the consumption figures.

The coronavirus pandemic, which broke out in 2020, caused disruptions in global salmon markets, due to which high volumes of affordable salmon and rainbow trout were imported into Finland. The decrease in import prices increased demand but reduced the profitability of domestic production. In spring 2021, the prices of salmonids returned to the previous years' high level which reduced demand once again. The salmon price peaked in spring 2022. At the time, coronavirus restrictions were lifted globally, and the supply of salmon could not meet

Consumption of certain foodstuffs per capita in Finland in 2017-2021, kg.

Year	Fresh vegetables ¹	Cereals total	Sugar	Meat total ²	Beef	Pork	Poultry	Eggs
2021*	62.6	84.1	28.1	79.1	18.4	28.9	28.4	11.9
2020	64.5	82.7	32.2	79.3	18.7	29.7	27.5	12.4
2019	66.3	80.3	27.9	79.6	18.8	30.8	26.4	11.9
2018	63.5	79.1	29.2	81.3	19.3	32.5	25.6	11.8
2017	63.8	80.3	30.6	81.0	19.4	33.4	24.9	11.9

¹Including any wastage. ²Including bones, i.e. carcass meat, including edible offal.

*Preliminary data. Source: Natural Resources Institute Finland (Luke), Balance Sheet for Food Commodities

its demand. The war in Ukraine also increased salmon production costs. The high price of salmonids, inflation and the decrease in purchasing power reduce the consumption of salmonids, as consumers shift to more affordable fish or other food products.

The increase in food prices reduced the sale of organic products, wholesale recovered to reach a new record

When the coronavirus pandemic continued in 2022, retail sales of foodstuffs and non-alcoholic beverages increased by 5%, and their turnover was EUR 15.4 billion. The euro-denominated increase in sales can be explained by the significant increase in prices (10.5%), even though the sales volumes of several products decreased. According to the Finnish Food and Drink Industries' Federation (ETL), the costs of production inputs used by food and beverage processing companies increased overall by 22% from 2021, and the profitability of companies close to primary production was

especially low. Costs are expected to increase further with a delay at the beginning of 2023.

According to the Finnish Organic Food Association Pro Luomu, the value of the organic market in the grocery trade fell to roughly EUR 375 million, accounting for 2.2% of the value of the food trade. Wholesale foodservice experienced ups and downs during the pandemic. In 2022, its sales reached a new record, with its turnover being more than EUR 2.3 billion (16%). The increase in prices partly explains this significant increase in turnover, but it is also based on an evident growth trend.

According to the Finnish Grocery Trade Association's statistics, the euro-denominated purchase volume of households decreased in meat products, fish and vegetables in 2022. The most significant decreases were seen in fish and coffee, as their prices increased the most of all food products, by as much as 20-30%. The decrease in birth rates stopped during the coronavirus pandemic in

2020 and 2021 which can be seen in trade statistics as an increase in baby food sales. The growing popularity of convenience foods also continued after multilocal work became a new standard. The value of the online grocery trade increased to EUR 536 million in 2021. However, it still accounts for a small part (2.6%) of online grocery sales.

Pressure to increase food prices remains

According to the 2022 consumer price index, the annual change in prices of foodstuffs was 10.5%. The increase in prices accelerated significantly throughout the year and did not even decelerate at the beginning of 2023. The increase in food prices is based on the steep increase in costs in agriculture and the food industry and in energy prices. Fresh fish (31.9%), eggs (25.0%), coffee (37.5%) and flour (28.7%) witnessed the most significant price increases in 2022.

Food prices have increased more rapidly in Europe than in Finland. Last year, the food consumer price index in the EU was 12.2% higher than in the previous year. In the EU, food prices increased by more than 20% in Hungary, Bulgaria, Latvia, Lithuania and Estonia last year. The increase in food prices picked up pace in the EU at the beginning of 2023: in February, food prices were 19.5% higher on average year-on-year.

Food inflation affects the market and consumers' purchasing decisions. Consumers have not only reduced their consumption, but especially also shifted to more affordable basic foodstuffs. Food costs accounted for roughly 12.2% of available income in Finland in 2022, showing a slight decrease from the previous year (12.5%).

Annual change in food prices per product group in 2018-2022, %.

Product group	2018	2019	2020	2021	2022
Food and non-alcoholic beverages	1.9	1.2	1.7	0.6	10.5
Grain products and bread	0.4	1.9	0.7	0.8	9.7
Meat	1.6	4.4	2.0	0.6	13.4
Fish and shellfish	0.3	-0.1	-1.8	0.8	21.1
Milk products, cheese and eggs	2.1	1.7	0.0	-0.3	11.8
Fats and oils	5.2	3.1	-0.7	0.4	15.0
Fruits and berries	3.8	-2.4	4.4	-2.5	5.4
Vegetables	5.7	-1.8	1.6	2.1	10.2
Sugar, jams, honey, chocolate and candies	1.3	0.6	1.9	0.2	6.4
Prepared food, other	-0.2	0.0	0.0	0.3	5.9
Non-alcoholic beverages	-0.2	1.3	5.3	3.4	13.9

Source: Statistics Finland.

The increase in food prices is expected to continue in 2023, albeit more slowly than in the previous year. In February 2022, the prices of food and non-alcoholic beverages were 16.3% higher than in the year before. The increase in food prices is expected to decelerate significantly during the year. At the end of 2023, the increase in food prices is expected to stop, and the market conditions will determine whether they will even start to decrease. Food

prices are expected to increase by 7-8% in 2023, more than the general increase in consumer prices. The decelerated increase in food prices is based on the calmed situation in agricultural products, raw material and energy markets and the prices even starting to decrease as the economic outlook declines. Living expenses, which reached very high levels last year, and rising interest rates reduce demand for food.

Annual changes in foodstuffs and non-alcoholic beverages, 01/2018-03/2023.

	2018	2019	2020	2021	2022	2023
January	1.5	2.1	1.8	0.4	3.2	15.4
February	1.3	2.0	1.3	-0.2	4.5	16.3
March	2.5	0.9	1.8	0.5	5.1	16.2
April	1.7	2.0	1.0	0.8	6.0	13.7
May	2.4	0.5	2.4	0.5	9.0	
June	2.4	1.1	2.4	-0.4	10.9	
July	2.0	0.7	2.9	0.0	12.4	
August	1.8	1.7	0.9	0.5	12.5	
September	2.8	0.3	2.0	0.6	14.0	
October	2.6	0.4	1.7	1.0	51.0	
November	1.1	1.1	1.5	1.5	15.7	
December	1.1	1.8	0.2	1.7	16.1	
Yearly average (%)	1.9	1.2	1.7	0.6	10.5	
Consumer price index	99.8	101.0	102.7	103.3	114.2	

Source: Statistics Finland.

Statistics

Luke, Balance Sheet for Food Commodities

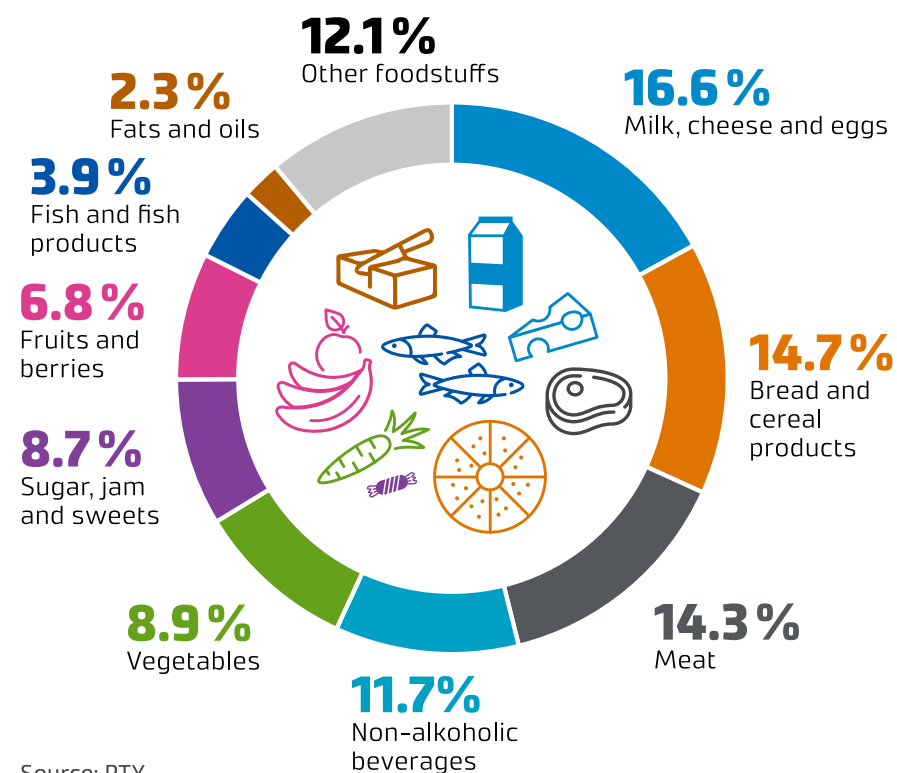
Luke, Fish consumption

PTY, Sales by product group

Forkful of facts 2022

Monitoring of agricultural products and consumer prices in the EU

Euro-denominated retail sales of foodstuffs and non-alcoholic beverages per product group in 2022, %



Foreign trade of agricultural and food products

Csaba Jansik and Irene Rosokivi

In 2022, an exceptional change in the level of value was seen in foreign trade across the world - also in Finland - due to the steep increase in the prices of agricultural products and foodstuffs. The export value of all animal- and plant-based products from Finland increased significantly in 2022 compared to previous years. The value of exports reached EUR 2,199 million, up by 23.1% from the year before. In 2022, the value of animal- and plant-based products imported into Finland was EUR 6,817 million, roughly 23.4% more than in the previous year.

Trade balance continues to be negative

The trade deficit of all plant- and animal-based products has increased rather steadily during the last two decades with the exception of 2019 and 2020. In 2022, the deficit increased by EUR 879 million - from EUR 3,739 to EUR 4,618 million - marking the largest annual change in history. The record-high increase in the deficit resulted from the import value being three times higher than the export value. Even though imports and exports increased nearly identically by 23%, the impact of

the increase in imports on the development of the trade balance was much more significant.

Traditionally, the trade balance has largely been negative due to the intensity of the import of fruit, vegetables, raw coffee, and alcoholic beverages. Other important products imported into Finland include cheeses and cereal products. In recent years, Finnish food production has also faced competition in product groups that used to be dominated by domestic production, such as meat, dairy and fish.

Combined Nomenclature (CN) codes 01-24 of the foreign trade statistics have normally been used to measure the import and export of agricultural products and foodstuffs. The use of a standard method facilitates an international comparison and the analysis of the countries of origin and destination especially. According to the original definition, these codes include all plant- and animal-based items, regardless of whether they are foodstuffs or used in food production. A few insignificant statistical codes consist only of inedible items or items unsuitable for use as raw material for food. These are 05 (Products of animal origin, not elsewhere specified or included), 06 (Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage), 13 (Lac; gums, resins and other vegetable saps and extracts), and 14 (Vegetable plaiting materials; vegetable products not elsewhere specified or included).

In addition, individual larger items such as plant oils imported for fuel production and pet food have been excluded from the more detailed calculation of foodstuffs. Instead, feed and fodder material used for feeding in the livestock sector are food production inputs that can therefore be regarded as items included in the food chain. The re-export of Norwegian salmon does not affect the trade balance, because it is included in both imports and exports. However, its impact on the value of food imports and exports must be adjusted, because it is not imported for consumption in Finland, and it is not an export item achieved by the Finnish food chain.

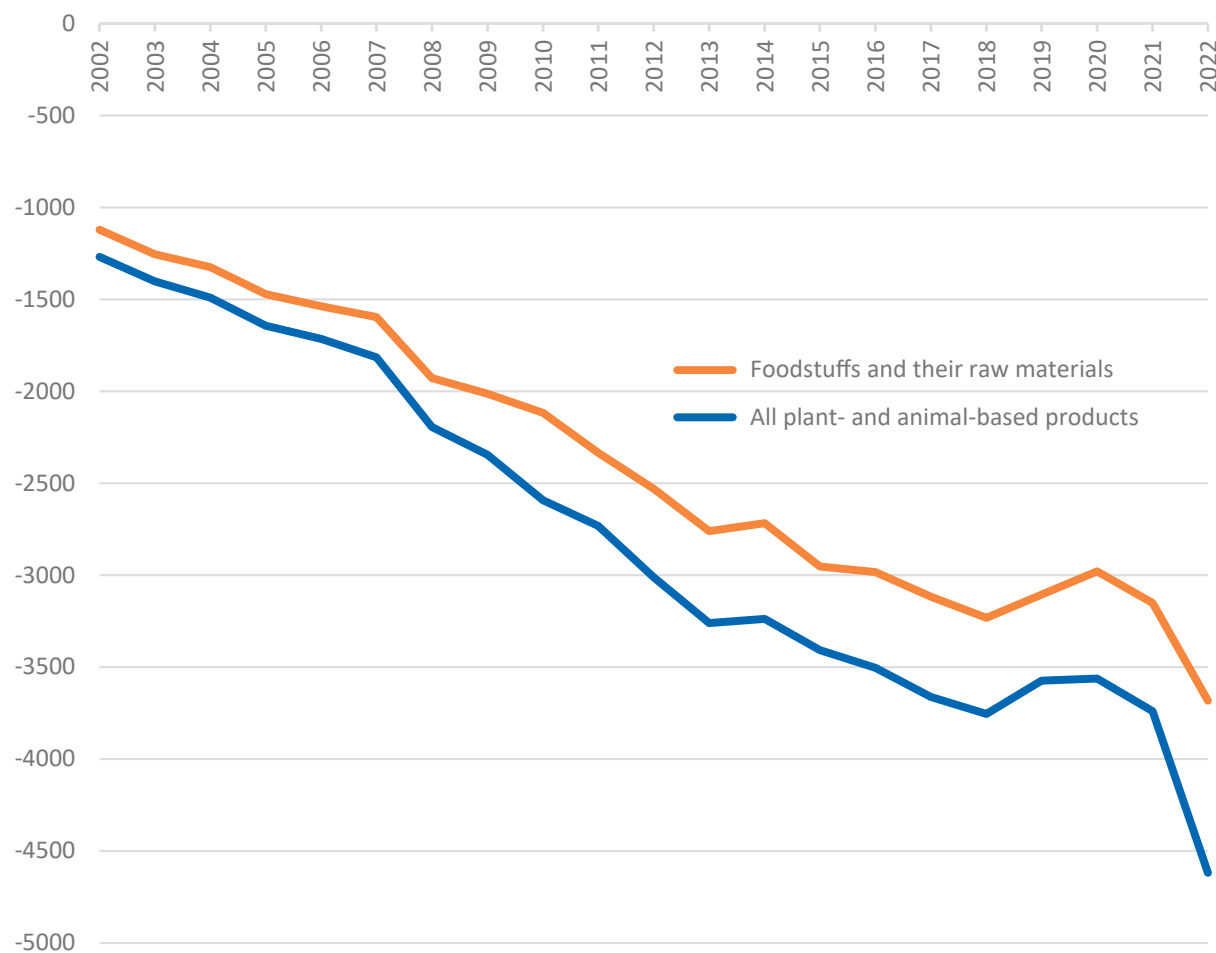
The foreign trade balance of foodstuffs and their raw materials alone is significantly lower than that of all plant- and animal-based product items. The adjusted deficit increased steadily at the beginning of the 2000s from EUR 1 billion to EUR 3 billion, while its development stopped in the mid-2010s. In recent years, it has remained around EUR 3 billion, being above or below the limit in different years. In 2022, however, the adjusted balance of foreign trade of agricultural and food products fell sharply to EUR 3,682 million. Yet, the adjusted deficit was as much as EUR 936 million smaller than the deficit of all plant- and animal-based items.

This large difference of nearly EUR 1 billion can be explained by inedible items or items unsuitable for use as raw material for food accounting for such

a large part of our imports. When these items are deducted from the imports of all plant- and animal-based items (CN01-24), the value of imported foodstuffs and their raw materials was only EUR 5,528 million instead of EUR 6,817 million.

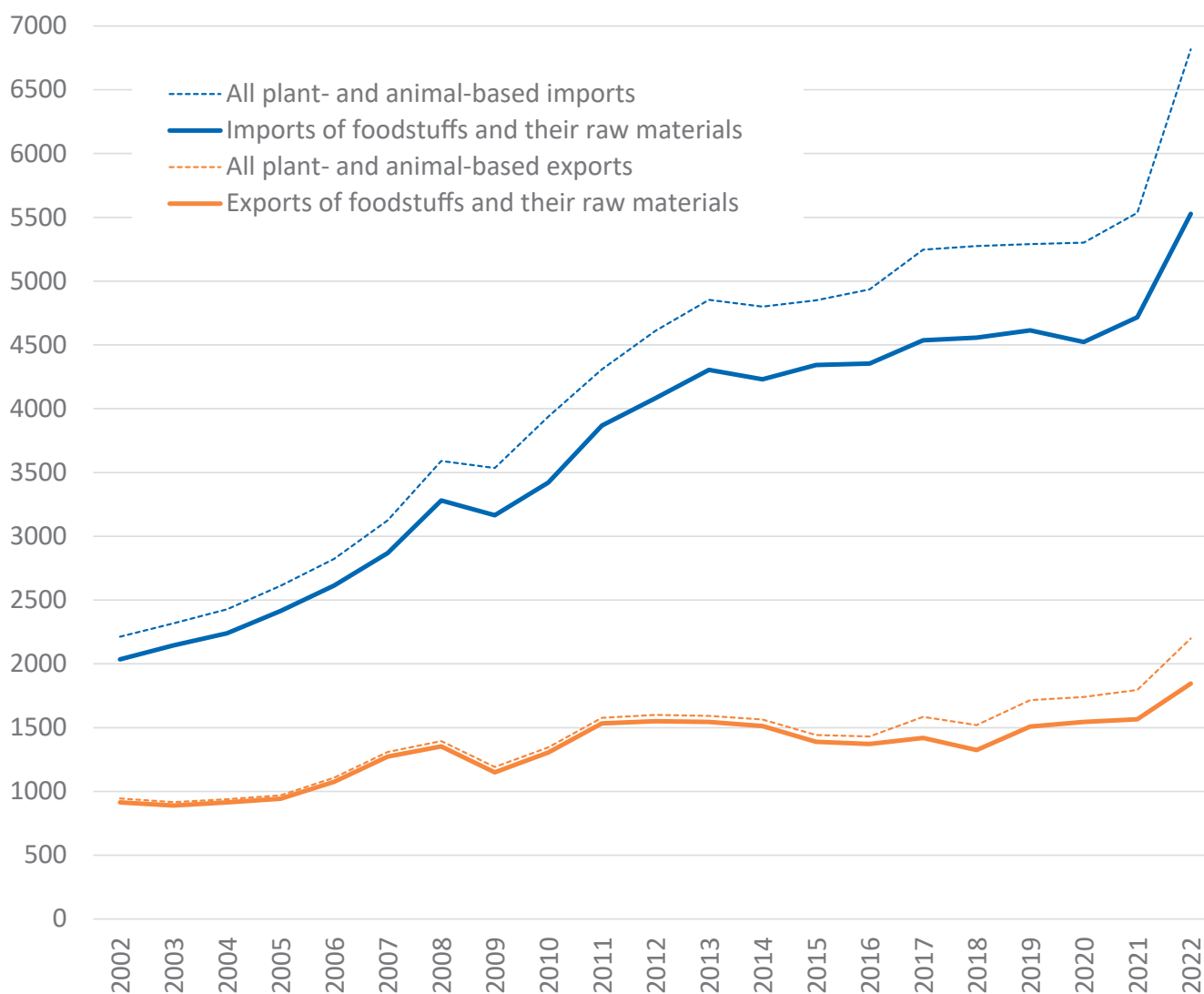
In our food exports, inedible items are relatively small, while the impact of salmon transiting on the level of exports has been increasing since 2016. In 2022, Finland's adjusted food exports were EUR 1,846 million compared to total exports of EUR 2,199 million (CN01-24). The value of our adjusted food exports developed fairly moderately until 2021, but they also increased by 18% in 2022 due to the increase in product prices.

Trade balance of agricultural products and foodstuffs in 2002-2022, EUR million



Source: Finnish Customs, ULJAS database. Note: All plant- and animal-based items include CN codes 01-24. Foodstuffs and their raw materials cover CN codes 01-04, 07-12 and 15-24. In addition, plant oils imported for fuel use and pet food have been deducted from the codes mentioned last.

Imports and exports of agricultural products and foodstuffs in 2002-2022, EUR million.



Source: Finnish Customs, ULJAS database. Note: All plant- and animal-based items include CN codes 01-24. Foodstuffs and their raw materials cover CN codes 01-04, 07-12 and 15-24. In addition, plant oils imported for fuel use and pet food have been deducted from the codes mentioned last. The transiting of Norwegian salmon has been deducted from both imports and exports.

Sweden the most significant export country, trade with Russia dwindling

The geographical distribution of food exports has varied considerably more than the structure

of food imports. Until the beginning of the 2010s, Russia was the largest destination country for exports. As a result of the import ban imposed by Russia in 2014, Finland's exports to Russia have

fallen dramatically. In the peak year of 2013, the value of food exports to Russia totalled EUR 442 million (CN01-24). By 2021, this value crashed to EUR 113 million.

The largest countries of origin for food imports into Finland

	CN01-24		Adjusted import		
	2021, mill. EUR	2022, mill. EUR	2021, mill. EUR	2022, mill. EUR	2022, %
Germany	666	786	634	746	13.5
Sweden	596	672	576	655	11.9
Netherlands	866	1203	495	516	9.3
Spain	330	309	320	305	5.5
Denmark	297	327	251	281	5.1
Italy	250	285	247	276	5.0
Poland	223	322	179	246	4.4
Estonia	185	249	181	245	4.4
Norway	333	475	202	243	4.4
France	193	218	178	196	3.5
Brazil	103	186	103	183	3.4
Belgium	173	197	163	183	3.3
USA	103	138	94	136	2.5
Lithuania	78	130	75	126	2.3
United Kingdom	112	130	89	103	1.9
Other countries	1,027	1,192	1,059	1,086	19.7
Total	5,535	6,817	4,847	5,528	100

The largest destination countries for food exports from Finland

	CN01-24		Adjusted export		
	2021, mill. EUR	2022, mill. EUR	2021, mill. EUR	2022, mill. EUR	2022, %
Sweden	374	446	348	417	22.6
Estonia	156	195	143	180	9.7
China	151	170	150	170	9.2
Germany	122	152	110	130	7.0
Denmark	85	99	76	86	4.7
France	75	117	51	74	4.0
Russia	113	100	83	70	3.8
Poland	80	107	51	64	3.4
Norway	66	83	51	55	3.0
Netherlands	74	85	63	55	3.0
Belgium	44	49	44	49	2.7
USA	34	49	34	48	2.6
Lithuania	53	78	28	45	2.4
South-Korea	33	41	33	41	2.2
Japan	22	31	22	31	1.7
Other countries	315	398	280	333	18.0
Total	1,796	2,199	1,567	1,847	100

Source: own calculations based on the ULJAS database of Finnish Customs. Note: Adjusted imports and exports cover CN codes 01-04, 07-12 and 15-24. In addition, plant oils imported for fuel use, pet food and the transiting of Norwegian salmon have been deducted.

Even though exports to Russia were expected to stop after Russia invaded Ukraine, they continued after February, showing high monthly variation. The value of total exports was nearly EUR 100 million. Combined, the largest product groups - coffee, tea and spices, miscellaneous edible preparations, and livestock feed - accounted for roughly 68% of exports to Russia. Russia's role in Finland's exports fell from 28% in peak years to 5% in 2022, with the number one export country dropping to 20th place.

Neighbouring countries have traditionally been the cornerstone of Finland's food exports, accounting for more than half of total food exports. However, the percentage declined steeply after Russia's import ban, even though some of the exports have been channelled to other neighbouring countries Sweden, Estonia and Norway. In 2022, the neighbouring countries accounted for slightly more than 39% of total food exports.

The steep increase in the global market prices of agricultural raw materials and foodstuffs is also expected to continue in 2023 which will probably increase the value of exports significantly. This price increase will also affect the value of imports. It is highly probable that the import value of all plant- and animal-based products will approach EUR 8 billion (CN01-24) and the adjusted import value may exceed EUR 6 billion in 2023.

Dairy products the most significant product group in exports

The main items of food imports into Finland are beverages (EUR 682 million), cereal and bakery products (EUR 539 million), fruit (EUR 445 million),

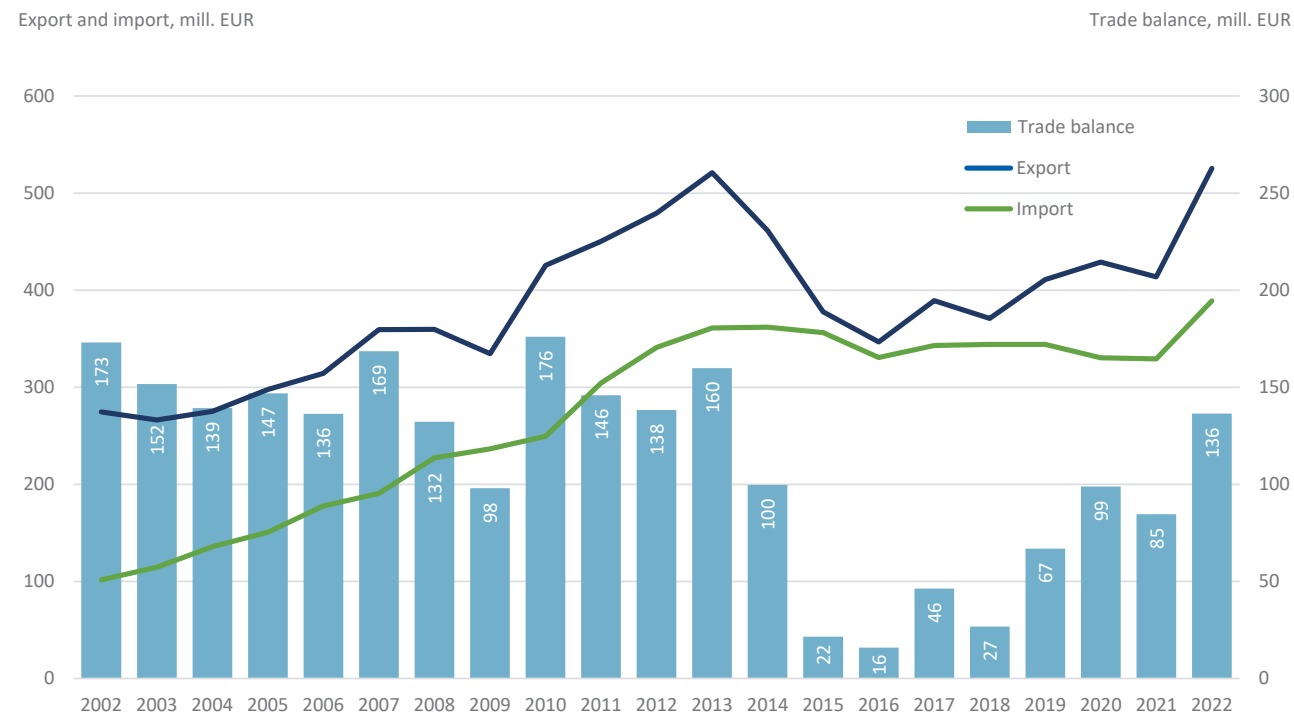
miscellaneous edible preparations (EUR 438 million), coffee, tea and spices (EUR 435 million), cheeses (EUR 389 million), vegetables (EUR 271 million), and fish (EUR 287 million).

Dairy products continue to form the most significant single product group in food exports. However, exports of dairy products fell from EUR 521 million in the peak year of 2013 to a low point of EUR 346 million in 2016. Exports have increased slowly since then. In 2022, the value of dairy products

exported from Finland was EUR 525 million. The price increase has been a key factor behind the 27% increase in the export of dairy products from the previous year.

The dairy industry continues to be the only industry in the Finnish food sector that has maintained a positive trade balance throughout Finland's EU membership. Nevertheless, the trade balance was barely positive following a dive from EUR 160 million in 2013 to under EUR 16 million in 2016. In 2022, the

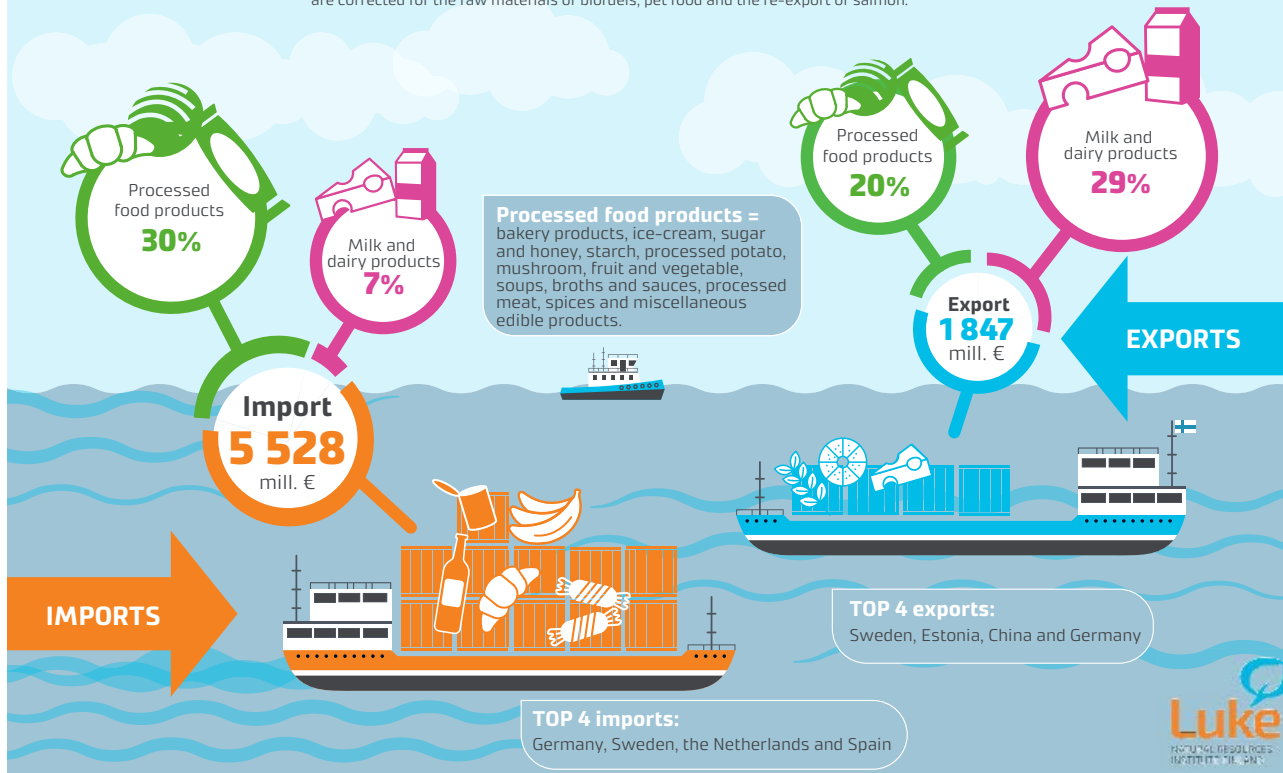
Trade balance of dairy products in Finland 2002-2022



Source: own calculations based on Finnish Customs' ULJAS dataset.

Foreign trade in agri-food products 2022

Source: Finnish Customs, ULJAS dataset. Figures include CN01-04; 07-12; 15-24 groups. Figures are corrected for the raw materials of biofuels, pet food and the re-export of salmon.



positive balance of dairy products strengthened from EUR 85 million in the previous year to EUR 136 million.

The product structure in dairy exports has developed in a more unfavourable direction after the export of cheeses had to be replaced by butter and milk powder when the Russian market closed in 2014. The percentage of cheese in dairy exports between 2013 and 2022 fell from 32% to less than 10%, while the percentage of butter and milk powder increased from 32% to 63%. In 2022, the largest product groups in exports alongside dairy products were beverages (EUR 212 million), meat (EUR 174 million), confectionery (EUR 164 million), and miscellaneous foodstuffs (EUR 155 million).

Agricultural policy

Jyrki Niemi, Timo Karhula and Olli Niskanen

The new term of the EU agricultural policy started at the beginning of 2023. Many of the measures from the 2014-2020 period are still included, but reaching the previous support level requires more action from farmers, especially regarding the environment and climate. The basic mandatory requirements, i.e. the conditionality required to obtain direct support financed wholly by the EU and partly financed support from the EU, will be stricter than before. Eco-schemes for direct support will be introduced as a completely new element, which are voluntary actions selected annually by farmers. The familiar agri-environment support scheme, in which farmers commit to taking action to reduce the environmental burden of agriculture for several years, will be maintained as part of the policy.

The implementation of the EU's reformed Common Agricultural Policy (CAP) for 2023-2027 started at the beginning of this year after the European Commission approved Finland's CAP plan on 31 August 2022. The objectives set for the CAP can be divided into three groups: (i) financial; (ii) environmental and climate; and (iii) societal objectives. Modernising agriculture through innovation and increasing digital solutions are other key objectives spanning across the CAP.

The basic structure of the CAP will remain nearly unchanged during the 2023-2027 period, and the reform does not present any significant changes in spending either. This also applies to Finland's national CAP plan.

Environmental and climate measures are a significant part of the implementation of the new CAP. The objectives are already strengthened in the basic mandatory requirements of the CAP (known as "conditionality" in the new CAP). In addition, funding will increase for targeted environmental and climate measures (eco-schemes + agri-environment payments) during this funding period. As a result, in the period 2023-2027, about a fifth of the total agricultural support funding in Finland

will be directed to these targeted environmental measures.

The mandatory conditionality requirements set as criteria for access to EU subsidies, i.e. the requirements for a good agricultural and environmental conditions, play a very important role in 2023-2027. The stricter conditionality requirements enable the achievement of environmental and climate objectives in such

Total funding for the development of agriculture and rural areas during different funding periods* (EUR million per year on average).

	Financial season 2014-2020	Financial season 2023-2027	Change, %
CAP/EU income support	523	523	
• coupled support	103	102	-1 %
• eco schemes	-	86	-
• young farmers support	10	13	+31 %
• other (decoupled support)	410	321	-22 %
National agriculture aid (inc. not CAP-plan)	349	350	
Rural development funding total:	1,139	1,173	
Area and animal supports	884	853	
• natural constraint payments	528	500	-5 %
• agri-environment payments	250	203	-19 %
• organic production payments	50	76	+52 %
• animal welfare payments	55	74	+35 %
Structural support	110	136	+24 %
Other rural development	146	183	+25 %
Total funding:	2,011	2,045	

*Does not include funding for the transitional period 2021-2022 and no crisis aid paid in 2014-2020

areas as the minimum protection of peatlands, more diverse crop rotations, and the level of plant cover outside the growing season.

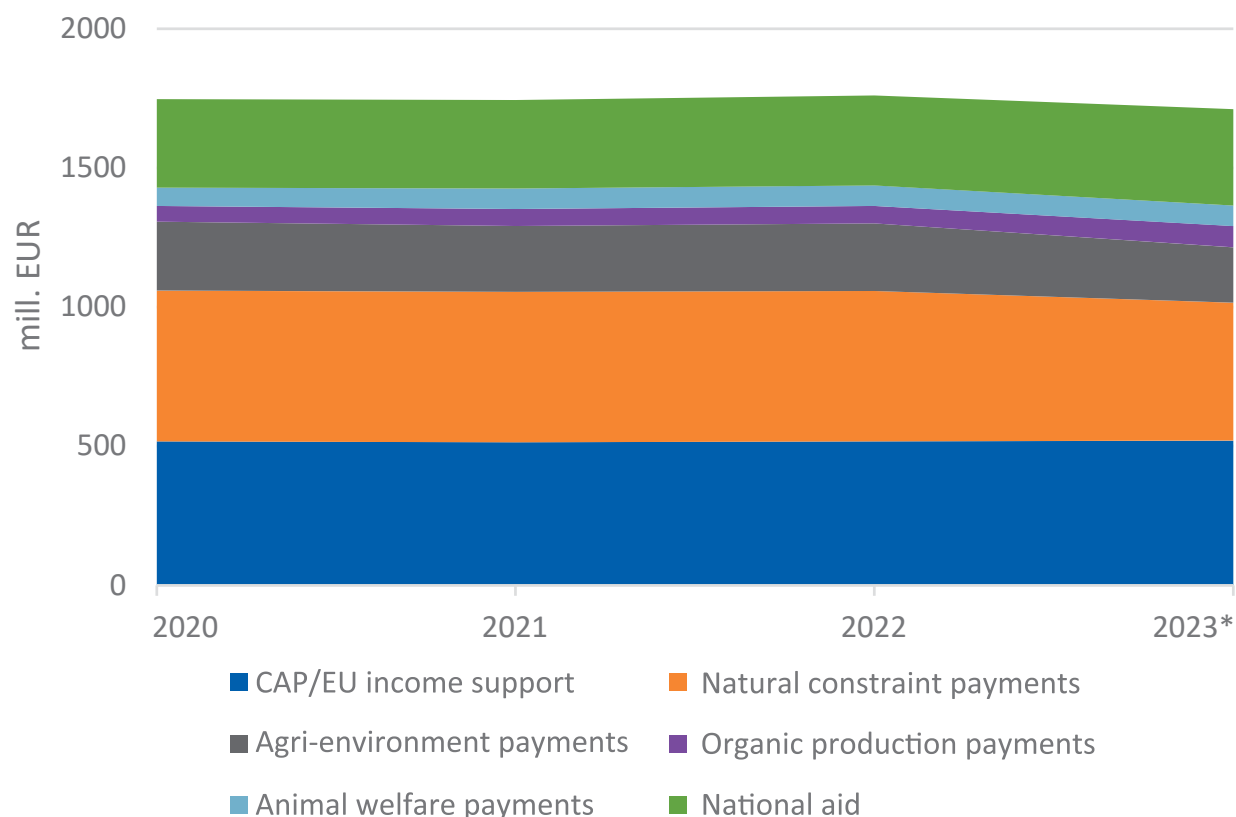
Eco-schemes that are mandatory for EU countries to include in their plans, but voluntary for farmers, supplement the environmental and climate measures. The agri-environment support and compensation for animal welfare include new measures and focus areas.

The new CAP features many measures familiar to farmers, so farmers can continue many of the 2014-2020 measures also during the new funding period. Total CAP funding will also remain close to the previous level, although support will be paid to farms with slightly different conditions and methods. Reaching the previous support level will require more action than before, especially regarding the environment and climate.

Allocating direct support to farms smaller than the average size, i.e. redistributive payments, is a new element during this funding period. Payment entitlements will be discontinued, and income support will be paid to farmers based on hectares used in production. The definition of an active farmer is another new element, which will be mandatory in income support.

Regulating the use of nitrogen and phosphorus in arable farming relating to restrictions on the use of nutrients was included in national legislation at the beginning of 2023, whereas earlier, it was controlled as part of the agri-environment support scheme. From 2023 onwards, the restrictions on nutrients apply to all farmers, regardless of

Composition of agricultural support in Finland in 2020-2023, EUR million (support allocated to production years; figures for 2023 are estimates).



whether a farm is within the scope of the agri-environment support scheme. For the few farms that are not within the scope of the scheme, the change may be drastic, especially regarding phosphorus, if a farm produces too much manure relative to the permitted application area.

EU agricultural support in Finland

In 2023, according to the government budget proposal, a total of EUR 1,711 million will be paid in subsidies to farmers in Finland. CAP support will total EUR 1,365 million. The support consists of direct CAP income payments for arable crop and livestock farmers (EUR 520 million), natural

**EU agricultural support in Finland in 2020-2023 (fully or partly financed by the EU),
EUR million**

	2020	2021	2022	2023*
CAP/EU income support	518	514	518	520
• basic payments				293
• redistributive payments				26
• eco schemes				86
• young farmers payments				13
• other (decoupled support)				102
Natural constraint payments	541	540	540	496
• EU contribution	48	188	165	77
• National share	494	352	375	419
Agri-environment and organic payments	297	300	305	279
• EU contribution	125	126	128	120
• National share	172	174	177	159
Animal welfare payments	66	74	74	74
• EU contribution	28	31	31	32
• National share	38	43	43	42
Total*	1,421	1,428	1,437	1,369
• EU contribution, mill. €, total	718	859	842	749
• National share, mill. €, total	704	569	595	620

*estimate

constraint payments for less-favoured agricultural areas (EUR 496 million), and agri-environment and organic production payments (EUR 279 million). In

addition, compensation for animal welfare is paid (EUR 74 million).

CAP support is either fully funded by the EU or co-funded by the EU and Finland. Direct CAP income payments are fully financed from the EU's budget. In 2023, a total of EUR 749 million, or 44% of total farmer subsidies, will be paid from the EU budget. This means that EUR 962 million, or 56% of total farmer subsidies, will be paid from the national budget. These nationally paid subsidies include the partial EU support funding and the national aid of EUR 346 million.

Direct CAP income payments

Direct CAP support is included in subsidies paid to farmers and funded from the EU budget. Direct CAP support paid in Finland from 2023 includes income, eco-scheme and redistributive payments, support for young farmers, and coupled support. In 2023, the amount of direct support will be roughly EUR 520 million.

Income support

Income support is wholly financed by the EU and decoupled from production. In 2023, a total of EUR 293 million will be paid in income support. It secures the basic livelihood of farmers, and it will be paid annually based on the agricultural land area eligible for support and controlled by an active farmer. Income support will be divided between support areas AB and C. In Finland, it will be granted without payment entitlements, which were discontinued at the end of 2022.

Redistributive payments

The aim of the redistributive payments is to transfer support from large farms to small and medium-

sized farms. In year 2023, a total of EUR 26 million in Finland will be paid in redistributive payments. The payments will be allocated separately to farms entitled to receive income support based on their first 50 hectares eligible for support; however, at most, to each farm's total hectares eligible for support.

Coupled support

In 2023, a total of EUR 102 million will be paid in coupled support based on livestock or area. It is a voluntary form of support for the EU Member States. In Finland, coupled support will be allocated to dairy, cattle, sheep and goats, starch potato and other special crops. Support levels will be adjusted regionally, and the support will be coordinated with national Nordic aid.

Eco-scheme

A total of EUR 86 million will be paid in eco-scheme payments. The eco-scheme is wholly financed by the EU, and payments are made based on area. The aim of the eco-scheme is to improve the environment, climate and animal welfare. In Finland, eco-scheme measures include plant cover during winter, nature management grasslands, grasslands for green manure, and biodiversity crops. All these four elements were used in the eco-scheme for 2014-2022.

Support for young farmers

The new CAP will include stronger support for young farmers. In Finland, support for young farmers accounts for 2.5% of the total amount of direct support annually, i.e. EUR 13 million. It is income support decoupled from production paid to young farmers based on area to encourage young people to engage in agriculture and make it easier to start a farm.

Support paid through the European Agricultural Fund for Rural Development

Agri-environment support and support for organic production

The agri-environment support is intended to compensate farmers who commit to measures to reduce the environmental burden of agriculture for income losses resulting from reduced production and increased costs. Support for organic production and animal welfare aims to steer agricultural production in a more ecological and ethical direction.

In 2023-2027, activities under the agri-environment support will be coordinated with the eco-scheme for direct payments to ensure that the payments do not overlap. In 2023, a total of EUR 279 million will be paid in agri-environment and organic production payments, of which the national contribution will be EUR 159 million. The EU will cover the remaining amount.

Compensation for animal welfare will also be paid through the European Agricultural Fund for Rural Development (EAFRD). The compensation for animal welfare budgeted for 2023 totals EUR 74 million, of which the national contribution is EUR 42 million. The EU will cover the remaining amount.

Natural constraint payments

Certain rural areas in the EU are classified as less-favoured areas. The whole of Finland is classified as a less favoured area due to its northerly location. The objective of the natural constraint payment is to safeguard agricultural production in less-favoured areas, manage the number of farms and maintain economically viable agricultural units, and thus to also maintain employment in rural areas and promote their economic development.

The natural constraint payments budgeted for 2023 total EUR 496 million, of which the national contribution is EUR 419 million and the EU contribution is EUR 77 million. The additional support granted to livestock farms in the natural constraint payments will be discontinued in 2023.

National agricultural aid in Finland in 2020-2023, EUR million (support allocated to the production year).

	2020	2021	2022	2023*
Nordic aid	294	300	300	323
National aid for Southern Finland	17	17	17	17
Other national aid	5	6	6	6
Total	317	323	323	346

*estimate

National aid

Nordic aid, national aid for Southern Finland and certain other forms of support paid wholly from national funds form a whole which aims to ensure the conditions for Finnish agriculture in different parts of the country and also in different production lines. In 2023, the total amount of national aid will be EUR 346 million.

The majority of national aid will be allocated to Nordic aid. In 2023, the total amount of Nordic aid will be EUR 323 million. Nordic aid consists of milk production aid, aid paid on the basis of livestock numbers and aid paid on the basis of the arable area. The scheme also includes greenhouse production aid and storage aid for horticultural products, wild berries and mushrooms, as well as headage-based reindeer husbandry aid.

In 2023, a total of EUR 17 million in national aid will still be paid for pig and poultry farming, as well as horticultural production in Southern Finland. In addition, roughly EUR 6 million will be paid in other national aid.

Structural support

The goal of structural support for agriculture is to develop competitiveness and modernise production. During the 2023-2037 funding period, a total of EUR 136 million per year has been reserved for structural support. All the support elements used during the previous funding period will still be available: aid, interest subsidy, and state guarantee.

Key elements of agricultural investment payments aim to promote growing farm sizes and thus reduce production costs. Support is also paid for energy

investments and investments that promote the state of the environment, sustainable production methods, animal welfare, and biosecurity.

The goal of the start-up support for young farmers is to improve their financial position and attract

new farmers who can engage in productive operations and develop farms. In addition, the position of young farmers is promoted by paying an increased investment aid for at most seven years after starting a farm.



Agricultural and food markets



Cereals market

Csaba Jansik and Anneli Partala

The high yields of 2022 stabilised the cereals market. Finland has strengthened the stocks of bread cereals after the shortage in spring 2022. Based on preliminary data about cultivated areas and forecasts prepared for 2023, lower cereal yields are expected, roughly 3.2 million tons, while the final volume may deviate by more than 10% in either direction as a result of growth conditions. The final harvest level will have an impact on prices in Finland.

The forecast for 2023 promises a lower cereal level than in the previous year

The popularity of autumn sowing continued in autumn 2022, supported by favourable weather conditions, high producer prices and subsidies. In 2022, the area sown with winter wheat was the second largest in statistical history at 74,000 hectares, without still being close to the record of 106,000 hectares achieved in autumn 2021. However, only just over a third of the area sown with winter wheat in 2021 survived the winter. The wintering rate of autumn-sown wheat in 2023 is not yet known, but it is expected to be significantly higher than in the previous winter as a result of milder temperatures.

The total wheat area next summer is expected to be nearly 230,000 hectares, which will produce a yield of more than 800 thousand tons based on normal weather conditions and mid-term average yields, being 6% smaller than in 2022.

Autumn-sown rye has normally wintered better than wheat. If the whole area of 31,000 hectares

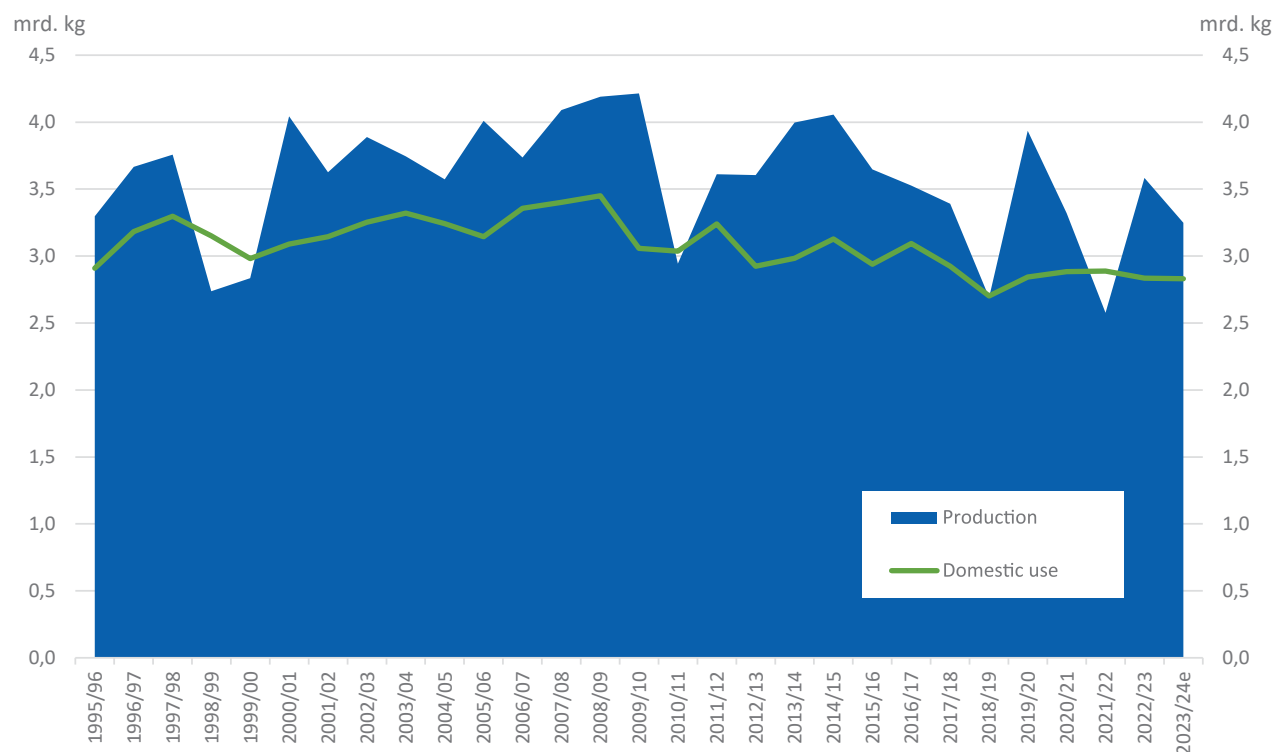
survived the winter, the harvest would be almost 110 thousand tons, clearly exceeding the annual consumption in Finland.

According to forecasts, the areas sown with barley and oats will decrease in 2023. The barley harvest is expected to be roughly 1.2 million tons and the oat harvest approximately 1 million tons. This

means that total production volumes will be 12% and 17% smaller than the previous year's barley and oat harvests.

Cereal sowing plans are decelerated by the persistently high prices of production inputs, fertilisers in particular. Part of arable land will be turned into set-aside and environmental grassland.

Cereal supply and demand in Finland



Source: Luke, the Finnish Cereal Committee's domestic cereals balance sheets. Note: The calculations for the forecast for the 2023/2024 market period are based on Luke's statistics on autumn-sown cereals and harvest levels, as well as the Finnish Cereal Committee's survey of cultivation plans. In addition, the estimates are based on the ten-year average difference between the utilised agricultural area and actual harvesting area.

All cereals included, the summer 2023 harvest is expected to climb to 3.25 million tons, which would be 9% smaller than the 2022 harvest.

Domestic supply has a direct link to cereal producer prices, even though the price level is largely determined according to European and, more broadly, global harvest levels. The harvest of summer 2022 returned Finnish stocks to their normal level which already reduced prices in autumn 2022. After the price drop in winter, cereals did not tend to enter the market, as they remained in farm stocks. The new harvest will determine the price level from late summer onwards.

Depending on the growth conditions during spring and summer and the harvesting weather in autumn, the final cereal harvest level may deviate from the forecast by even more than 10% in either direction. If the weather conditions are favourable, a harvest of 3.5-3.7 million tons would restrain cereal prices even further. Correspondingly, a harvest of less than 3 million tons, which has been seen a couple of times in recent years, would at least maintain prices at the current level. However, even a smaller harvest level will not cause any significant increase in prices as a result of normal stock levels.

Oats boost the food use of cereals

A change has been identified in the structure of use between different crops for quite some time now. The milling volume of wheat has decreased during the last two decades. It amounted to roughly 326 thousand tons in 1998, while it was down to 225 thousand tons in 2018. At the same time, the milling volume of rye has increased from 87 thousand tons at the end of the first decade of the 21st century to some 100 thousand tons. This trend was based on

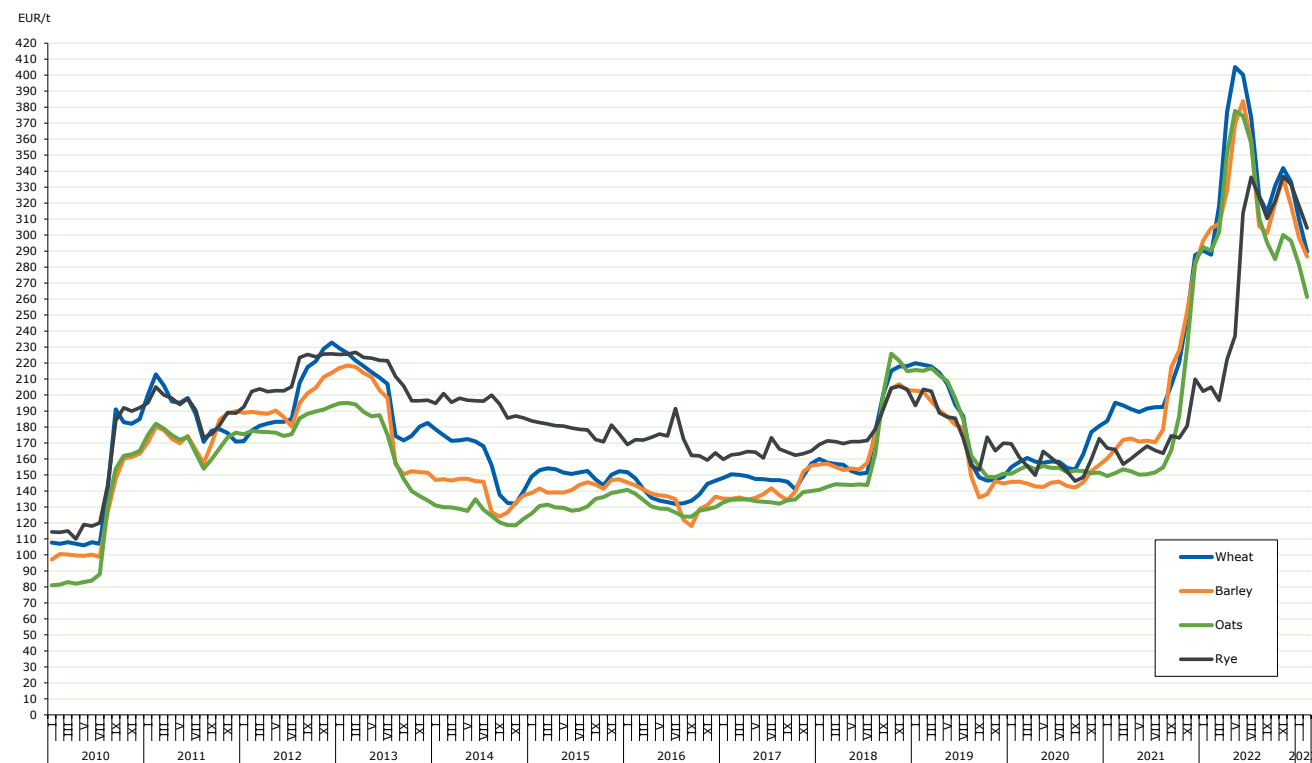
health aspects, as a result of which the popularity of dark rye bread increased at the expense of light wheat bread.

However, the use of rye returned to the initial level in the 2010s. The bread range expanded to oat and partly also to barley bread which reduced the use of the conventional bread cereals wheat and rye. The baking properties of oats were for long considered

to be challenging, but methods developed in the bakery industry enabled tasty and attractive oat bread products for consumers. The use of oats as food moved ahead of rye in 2016.

The pace of oats being used as a foodstuff has accelerated since the mid-2010s. Finland's oat mill capacity has been increased, supported by significant investments, and food companies

Monthly prices of cereals in Finland in 2010-2023



Source: Luke, price statistics. Note: Basic price without any quality adjustments.

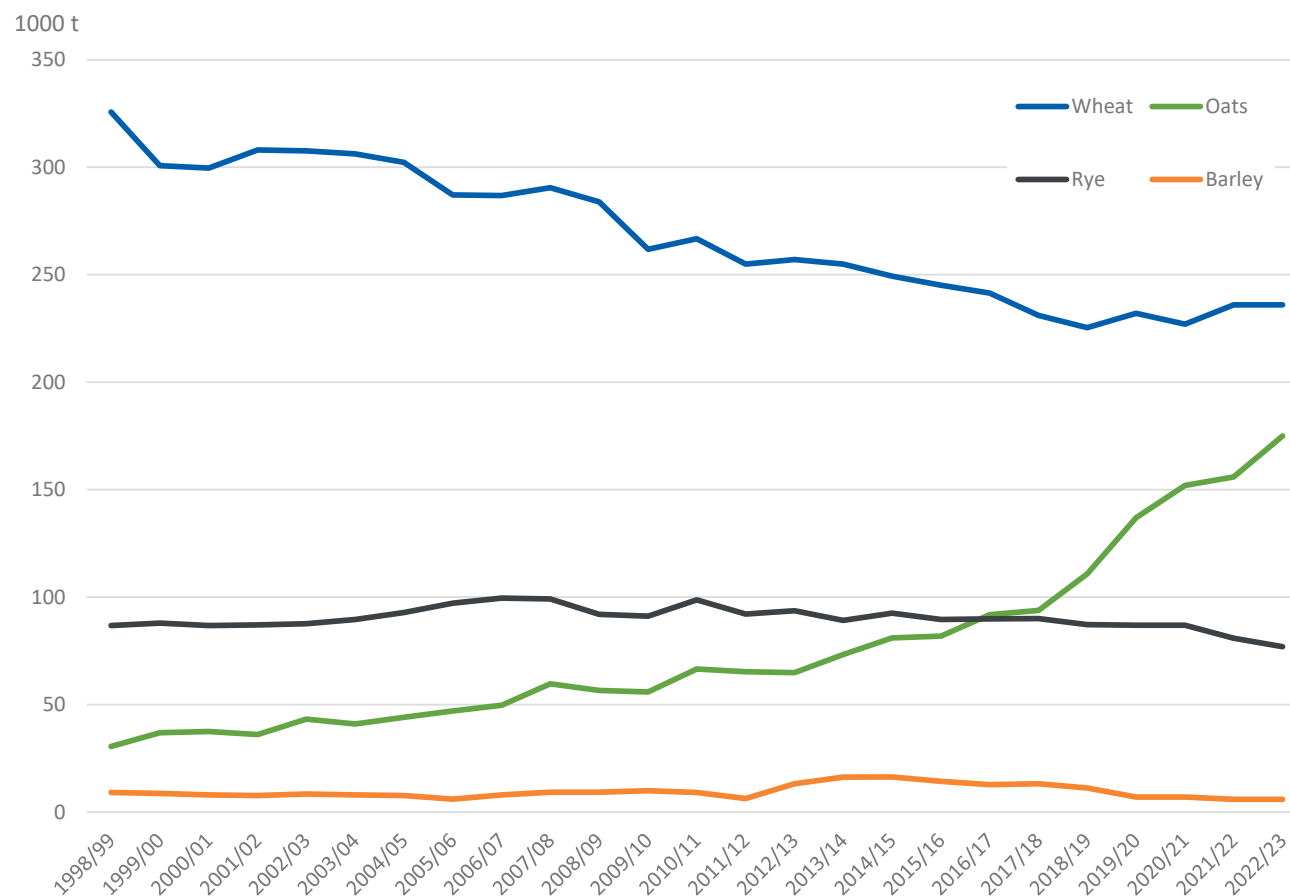
also export increasing volumes of processed oat products. The export volumes of oat flakes and flour alone increased from 15 to 33 thousand tons between 2014 and 2022. Oats are also used in plant protein products, including milk and meat substitutes, whose exports have also increased. The volume of oats used in plant protein products is still small compared to milling products, but its increase has been significant. The use of oats as food has doubled during the last six to seven years, with increased exports accounting for a considerable part of this growth. In recent year, the oat mill capacity has been increased even further, as a result of which the export of oat-based milling products is expected to further accelerate the use of oats as food in the future.

Structural changes have also been seen during the last two years. The use of wheat has recovered slightly. Conversely, the milling volume of rye has decreased by 8% from 84 to 77 thousand tons. This can be explained by the decrease in the consumption of dark bread by half a kilogram per year per capita and also by the decelerated exports of crispbread. Driven by the success of oats, the total use of cereals as food in the mill industry increased in Finland from 429 to 494 thousand tons between 2011 and 2022.

Stable use of cereals as feed and for other industrial purposes

The use of cereals as feed has remained stable at 1.7 million tons during the last five years. The structure of the use of cereals as feed has fluctuated, even significantly from time to time, as the relationships between cereal prices have changed. More than half of the wheat harvest has been used as feed, while the corresponding figure

Use of cereals as food in Finland by crop



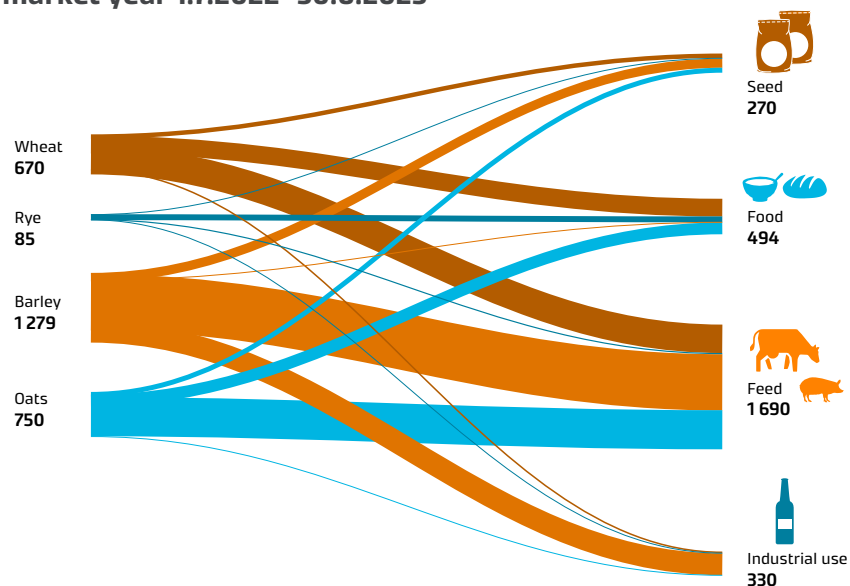
Source: Luke and VYR domestic cereal balance sheets.

for barley has been two thirds. During the last two decades, the relative share of feed use of oats has decreased from more than 80% to 66%, whereas food use of oats has increased from 5% to 23%. Rye is not normally used as feed in Finland. However, during the 2021/2022 market season, 15 thousand tons of rye was released from emergency stocks

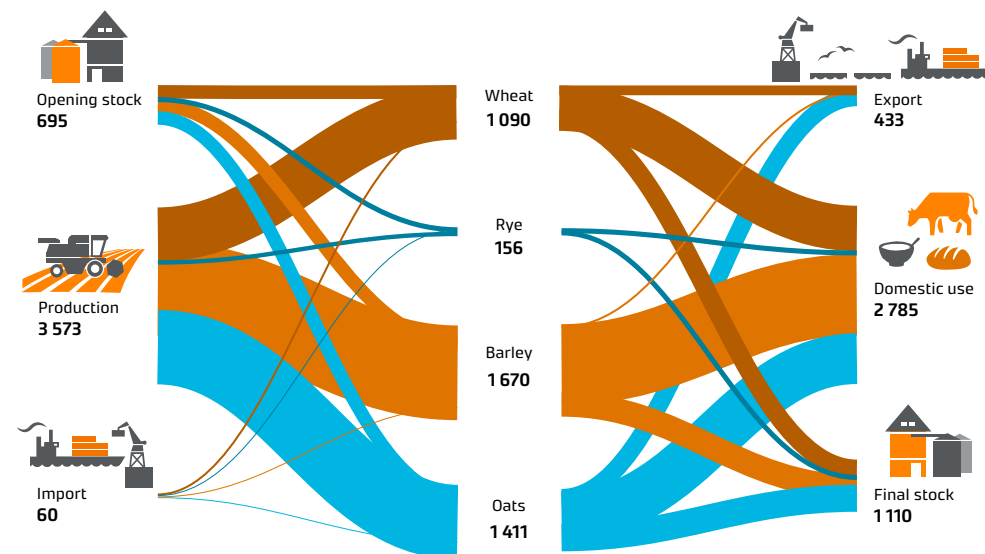
for use as feed which indicates that rye can also be used in this way.

Other industrial uses include malt and ethanol production, as well as various special products. Their combined share has remained relatively stable in Finland. During the market season, these

Estimated use of cereal in Finland (1,000 tons), market year 1.7.2022–30.6.2023



Provisional cereal balance sheet for Finland, market year 1.7.2022–30.6.2023 (1,000 tons)



industries consumed 327 thousand tons of cereals, accounting for 12% of total domestic consumption. The malt, brewery and ethanol industry's processes produce alcoholic beverages, and its side streams are used as feed. In addition, malt is used in special foodstuffs and in the bakery industry.

Food cereal emergency reserves increased

Emergency reserves are not taken into account in the cereals balance sheet, as their volume usually remains stable. Even though reserves are regularly replaced, this has no impact on the amount of cereals available on the market. However, during

the 2022/2023 market season it was decided that food cereal reserves be increased from the level of six months to nine months. Wheat accounted for 40% and oats for 60% of cereal purchases that were carried out by the Emergency Supply Agency from January to March 2023. During the 2022/2023 market season, Finland's cereals balance showed a significant surplus, these additional purchases decreased the export volumes of wheat and oats.

While the purchases increased demand for cereals temporarily during the replenishment, cereal volumes were sufficient to cover domestic consumption. From the market perspective, the

increase in emergency reserves was one type of use alongside other conventional uses as food and feed, as well as industrial uses, which means that this volume must be taken exceptionally into account in Finland's cereals balance sheet.

Self-sufficiency in cereals improved

Driven by the good harvest in 2022, self-sufficiency in cereals improved from the previous market year. Self-sufficiency was again significantly above the 100% limit, being 160% for oats, 127% for wheat, and 113% for barley.

During the last three market years, the rye self-sufficiency rate has settled between 60% and 75% as a result of the level of production relative to consumption having been lower than before. In the long term, though, rye self-sufficiency has been closer to 100%. After the peak harvest level in 2019, domestic rye was released from stocks to

the market for a couple of years so that relatively no rye needed to be imported. The first larger batch of 15 thousand tons had to be imported during the current 2022/2023 market season, but this batch was not as high as the annual import volumes of 40-80 thousand tons in the 2000s. According to

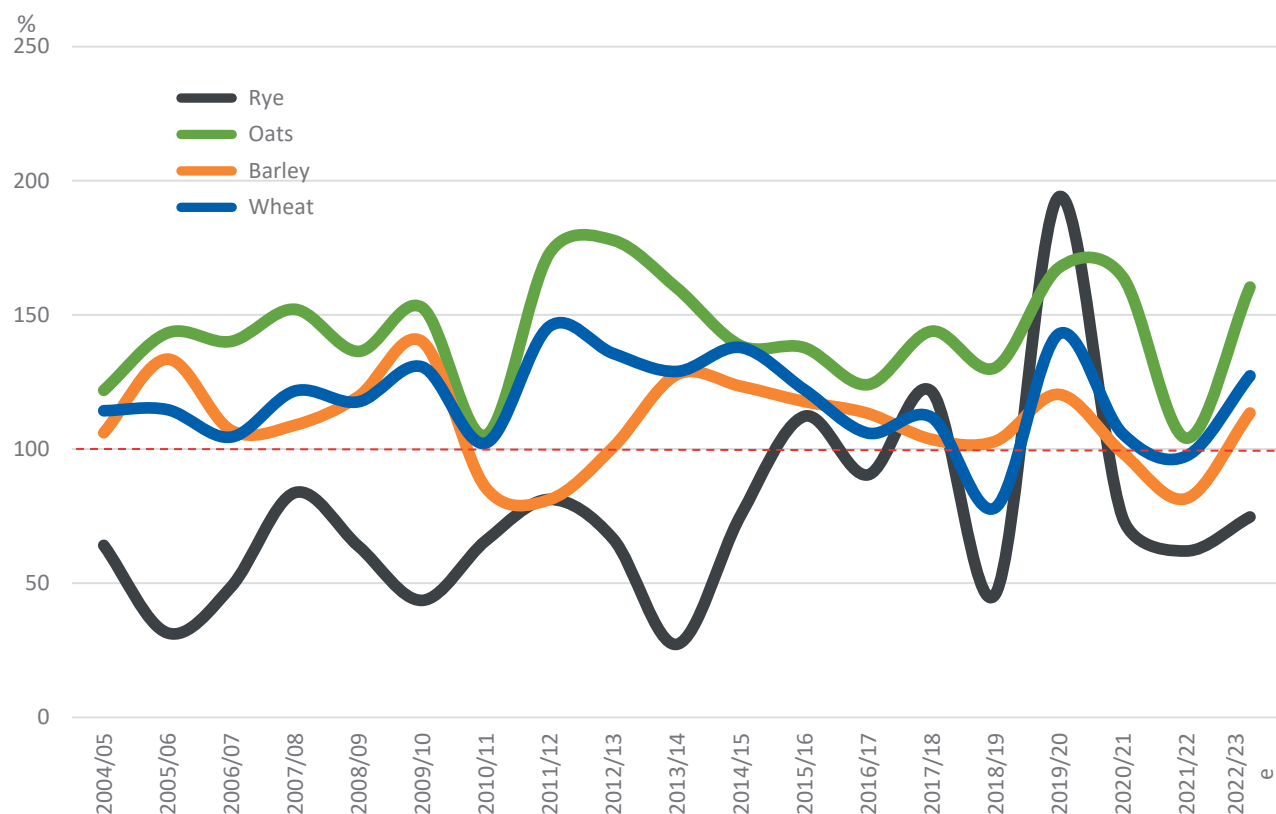
the rye harvest forecast for 2023 self-sufficiency would improve even further.

Organic cereals accounting for 5% of total production

In 2022, organic cereal production increased to 155 thousand tons, calculated as the total of all four key cereals. This accounted for some 5% of Finland's total cereal harvest. Oat makes up 70% of organic cereal production.

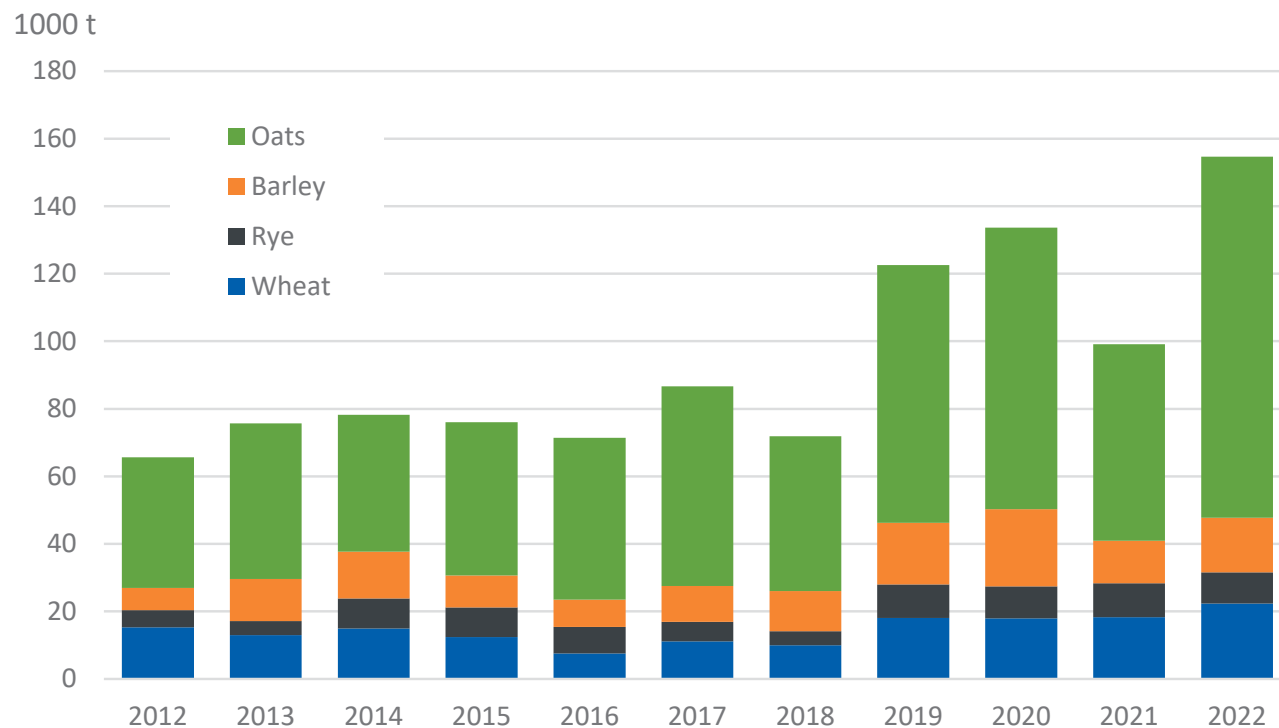
The organic cereal harvest remained unchanged for a long time, at roughly 70-80 thousand tons, from 2011 all the way to 2018. In 2019, the organic cereal harvest nearly doubled, and its growth continued in 2020 by already exceeding 130 thousand tons. The harvest level dropped in 2021 when drought reduced the yields of crops. In 2022, organic cereals produced record-high yields after the oat harvest almost doubled from the previous year.

Development of self-sufficiency by crop



Source: own calculations based on Luke's statistics. Calculation formula for the self-sufficiency rate: production / (production + imports - exports - stock level change) (Puma et al., 2015)

Organic cereal harvest in 2012-2022 (1,000 tonnes)



Source: Luke, crop production statistics.

The percentage of organic rye from Finland's rye production has ranged from 6% to 16%. The annual volume of organic rye production has been 4-10 thousand tons. Oat production is much higher at an annual level. The organic oat harvest has increased from 40 to 107 thousand tons in ten years. Organic oat accounted for 4% of Finland's oat production a decade ago, being as much as 9% in 2022. The percentage of organic wheat and barley from total wheat and barley production has remained at 0.5-3%.

Organic cereals, like all other cereals, are mostly used as feed - mainly for organic livestock. Finland's cereal-using industries purchased more than a quarter of the last autumn's harvest, nearly 45 thousand tons. The majority, almost 35 thousand tons, consisted of oats. The six-month purchase volume of rye was nearly 5 thousand tons and that of wheat almost 4 thousand tons. In recent years, it has been estimated that some 5 thousand tons of organic rye has been milled for food per year. The use of organic oats in the food industry has

probably increased in recent years. The estimated volume of organic oats used as food was less than 30 thousand tons five years ago, while their use was up to 41 thousand tons in 2022.

Milling products are key products in organic exports - no cereals exported

Unlike conventional oats, no organic oats were exported from Finland in 2022. Instead, organic oat products were exported in high volumes, with milling products accounting for some 40% of the

value of exported organic products. Furthermore, organic milling products made up a significant part - roughly 30% - of the total export value of milling products. Oat products, including flakes and flour, are key export products whose competitive edge lies in their high quality, safety and good availability.

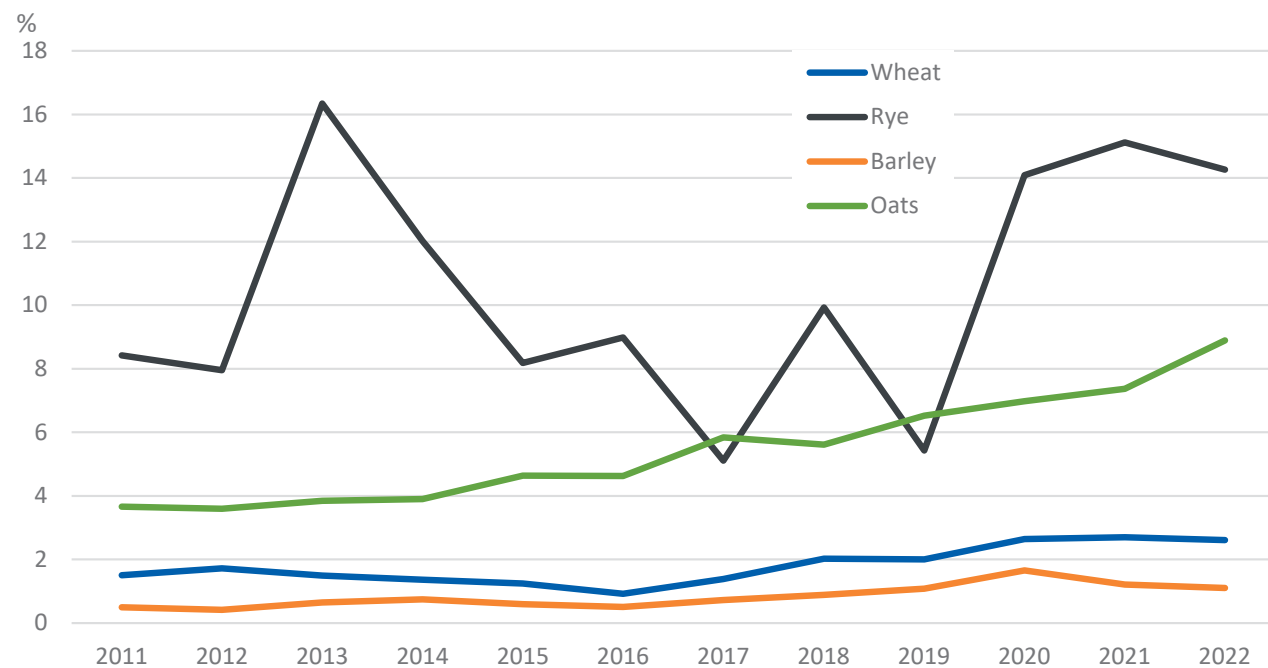
Statistics and Sources

Crop Production Statistics

ProLuomu, Luomuelintarvikkeiden vientiselvitys 2022.

Puma, M.J., Bose, S., Young Chon, S. and Cook. B.I. 2015. Assessing the evolving fragility of the global food system, *Environmental Research Letters*, Volume 10, Number 2

Percentage of organic cereals from the total harvest in 2012-2022, %



Source: Luke, crop production statistics.



Oilseed and protein crops markets

Csaba Jansik

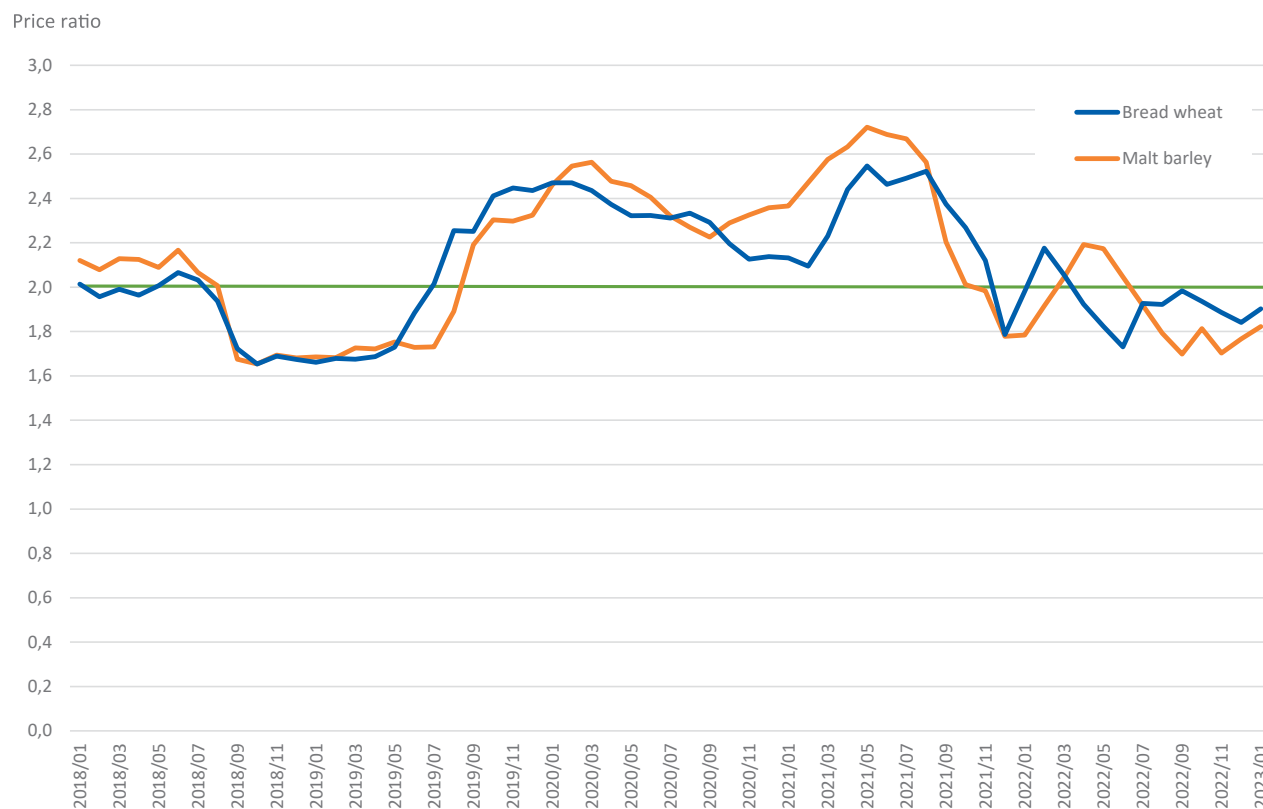
In 2022, the production volumes of oilseed and protein crops grew driven by increased surface areas and high average yields. Self-sufficiency in protein feed supplements increased significantly from the previous years' level to almost 27%. However, yields in 2023 are expected to fall behind the previous years' levels if the weather conditions remain normal which would return this year's self-sufficiency rate to a lower level.

A smaller oilseed crop harvest expected in summer 2023

High prices in spring 2022, especially relative to cereals competing over the cultivated area, contributed to an increase of 13% in the areas sown with oilseed crops. The 2022 harvest was relatively successful for rapeseed in particular, and production increased by 37% from the previous year to almost 57 thousand tons.

The popularity of autumn-sown oilseed crops has increased because, if successful, their harvest potential is higher than that of spring-sown oilseed crops. However, only a fifth of the record-high cultivated area of 10,000 hectares in autumn 2021 survived the winter which slightly reduced farmers' willingness to increase the area of autumn-sown oilseed crops. In autumn 2022, the combined area of autumn-sown turnip rape and rapeseed was 6,000 hectares, which marks the second highest area of autumn-sown oilseed

The price of turnip rape and rapeseed relative to bread wheat and malting barley in 2018-2023



Source: own calculations. Luke, crop production statistics.

crops in the statistical period. The wintering rate is expected to be higher than last year, but the exact figure can only be identified later in spring.

Expectations for the 2023 harvest are moderate, with forecasts predicting the total cultivated area to return to the 2021 level. The current price

relationships restrain oilseed crop sowing plans. The price of turnip rape and rapeseed has already decreased since spring 2022, and its relationship with the producer prices of bread wheat and malting barley has weakened, falling below the price coefficient of two. This may not be enough to encourage farmers to increase the cultivated

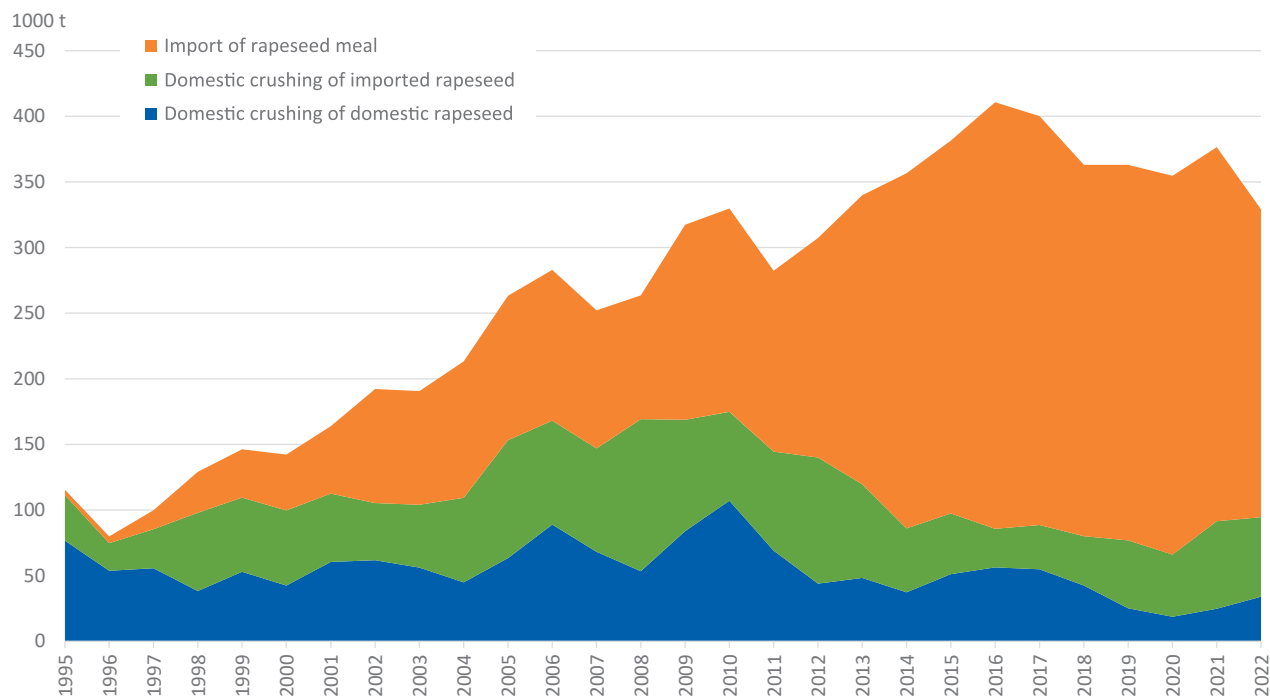
area. Oilseed crops are considered to require utmost care, high fertility conditions of fields, nutrients and accurate crop protection. Last year's weather conditions and harvest levels have shown that cereals are more reliable and easier options, especially where the high use of inputs cannot be ensured.

The oilseed crop harvest is expected to be 41 thousand tons based on normal growth conditions and average mid-term yields. This would mean a return to the 2021 production level. Domestic production only covers a fraction of total demand in Finland. Oilseed crops are required in high volumes for oil and meal.

Russia's share in imports has been replaced

The percentage of domestic seeds in turnip rape and rapeseed crushed in Finland increased to 35% in 2022 from the previous years' 28-29%. Rapeseeds have been imported into Finland for pressing in equal volumes from all three Baltic countries in recent years. The import of rapeseed meal included, domestic seeds only accounted for slightly more than 10% of all rapeseed meal in 2022. In 2020 and 2021, the corresponding figure was only 5-7%, and the figure for 2023 is at risk of decreasing to the same level.

Total supply of turnip rape and rapeseed meal in Finland by source



Source: Luke's crop statistics and the Finnish Custom's ULJAS database.

The volume of imported rapeseed meal decreased to less than 235 thousand tons in 2022 from the previous year's 285 thousand tons as a result of the high yields of oilseed and crops and legumes in Finland. Russia's invasion of Ukraine complicated imports. After steady growth, Russia already accounted for almost 36% of Finland's total rapeseed meal imports in 2021. In 2022, Russia's role had to be compensated for partly by imports from other Eastern European countries, including Belarus, Lithuania and Poland. Russia only covered 11% of rapeseed meal imports in 2022. Germany accounted for 53% and Estonia for 9% as in the previous year.

Russia also made up a significant part of the import of soymeal, another important high-protein feed raw material, 31% in total. The reorganisation of procurement channels turned out to be challenging after Russia invaded Ukraine. In the end, imports from Russia have been replaced by importing more from Germany and the Netherlands. The import

volume of soymeal increased to 144 thousand tons from the previous year's 125 thousand tons. At the same time, Finland's exports have continued above all to Norway's fish sector, with net imports being roughly 94 thousand tons in 2022, or 7% more than in the previous year.

Annual imports of sunflower meal have been roughly 4-5 thousand tons, originating almost completely from Russia in recent years. In 2022, Russian imports of sunflower meal were nearly fully replaced by imports from Ukraine, with it accounting for 89% and Russia only for 4%. In addition, Lithuania covered 6%.

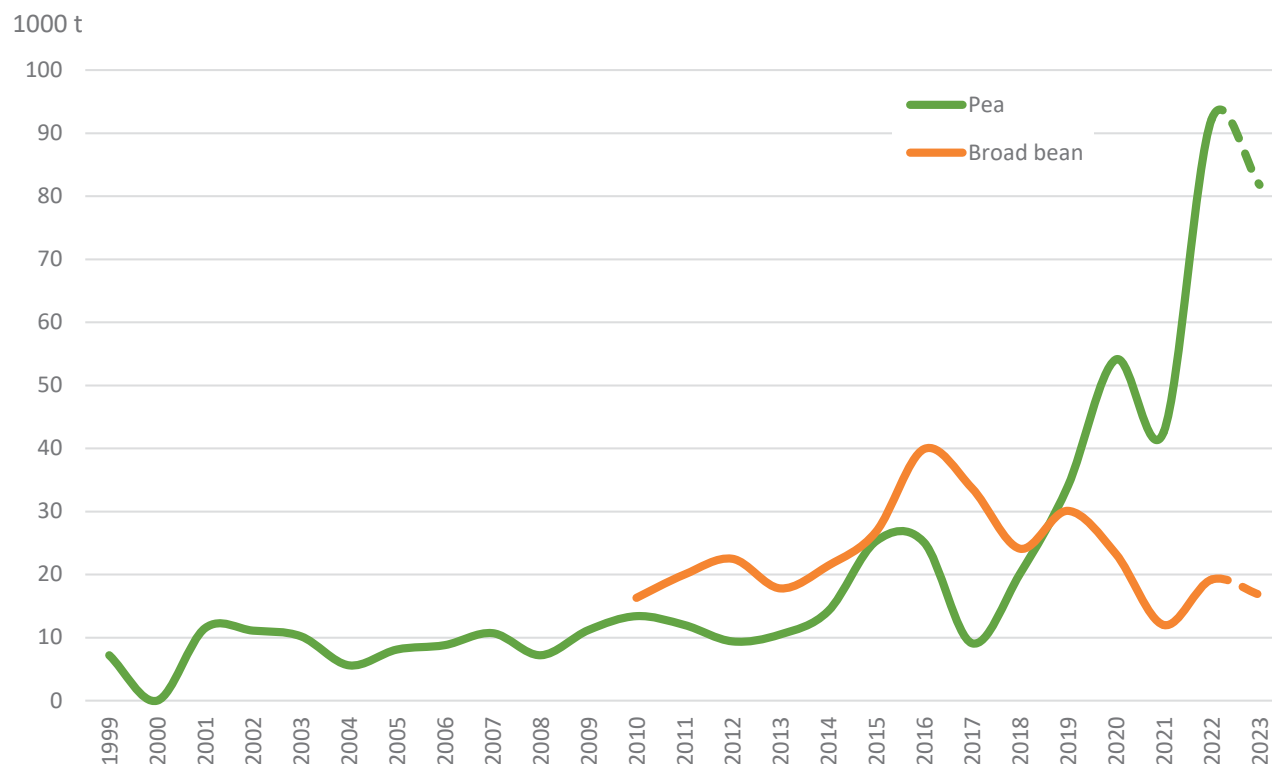
Pea has become the key crop for domestic complementary protein crop fodder

The pea production volume reached 92 thousand tons in 2022, marking the highest pea yield ever recorded in Finland. Production more than doubled from the previous year. The rapidly grown popularity can be explained by several factors. The production reliability of pea is high, and it is excellent in crop rotation. It only requires phosphorus and potassium as nutrients and only a little or no nitrogen. The latter factor has proven a strong argument, especially as the prices of fertilisers are high. Pea has established its place among feed manufacturers, and it is in high demand. New varieties have increased average yields and provided farmers with higher returns than broad bean, for example.

The pea area is expected to increase by 5% in spring 2023 to as much as 36,300 hectares. However, total production will remain at 82 thousand tons. This is over 10% lower than last summer's record-high yield, which resulted not only from the high cultivated area, but also from the all-time high average yield produced by the favourable weather conditions.

Broad bean sowing plans are still curbed by its sensitivity to drought. In recent years, hot and dry summers have reduced average broad bean yields and also the financial attractiveness of broad bean production. In spring 2023, the price difference between pea and broad bean was only EUR 20-30 per tonne in favour of broad bean, while pea yields have been 50-70% higher in recent years. The increased use of broad bean is still decelerated by

Development of pea and broad bean production in Finland in 1999-2023e



Source: Luke's crop statistics Note: figures for 2023 are preliminary. excluding garden pea and pea silage fodder. Broad bean, excluding silage fodder.

varieties with antinutrients, even though varieties without antinutrients are also available on the market. The long growth period of the current varieties is another challenge.

Even though the broad bean area is expected to increase by 7% from the previous year, production will be 10% lower, below 17 thousand tons, for the same reasons as in the case of pea. In 2022, the average broad bean yield was significantly above the average of several years, and a similarly high level cannot be taken for granted.

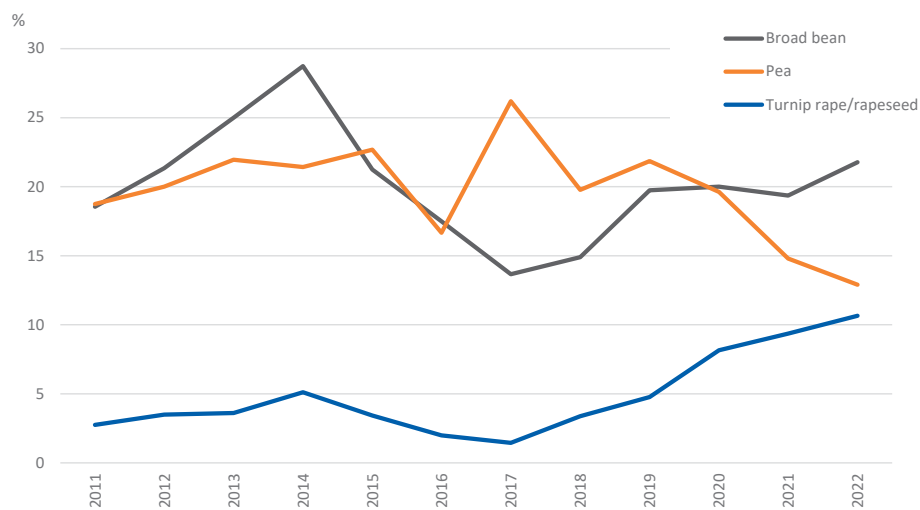
The increase in food prices reduces demand for organic products

The organic oilseed crop area more than doubled between 2020 and 2022 to 4,400 hectares. In 2022, the organic pea area was roughly 4,000 hectares and the organic broad bean area was 2,200 hectares. The share of the organic area increased for oilseed crops and broad bean but decreased for pea due to the significant increase in the total area.

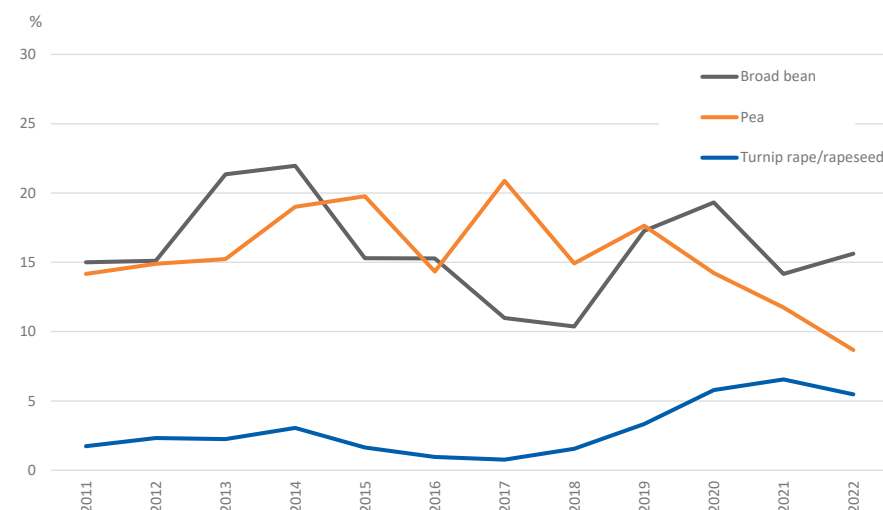
Organic crops account for a smaller part of total production than the organic area as a result of smaller average yields in organic production. In 2022, organic oilseed crops accounted for 5%, organic pea for 9% and organic broad bean for 16% of total production.



Percentage of organic production from the area



Percentage of organic production from the yield



Source: Luke's crop production statistics.

Sowing decisions on production in 2022 were made before food prices increased. The increase in prices has especially reduced demand for higher priced foodstuffs since spring 2022. This applies to organic products in general and especially to animal-based organic foodstuffs. Most organic oilseed and protein crops are used in feed production. In 2023, the organic area and production will be significantly lower than in the previous year. The probability of using organic raw

material to produce conventional foodstuffs will increase.

A significant increase in self-sufficiency of protein feed supplements

A delightful turn has been seen in the self-sufficiency rate of protein feed supplements after a decrease of several years. In 2022, it increased by several percentage points from the previous year to 26.6%, which is close to the level of early 2010s.

This turn is based on several of the factors described above, including the increase in the production of domestic turnip rape and rapeseed, as well as the record-high pea yield. The volume of domestic raw proteins, including side streams, increased by a third in 2022. At the same time, the volume of imported raw proteins decreased by more than 4%. Total meal imports, including rapeseed- and sunflower- and soymeal, decreased by 8%. Part of rapeseed meal imports was replaced by soymeal which has a higher protein content.

Normally, imports have covered the amount required in addition to domestic production. In other words, when domestic production increases, imports decrease. If the lower production volumes of oilseed and protein crops estimated for the next year come true, imports will increase and, at the same time, the self-sufficiency rate of protein feed supplements will decrease once again.

Self-sufficiency in complementary protein crop fodder, 2010-2022



Source: Luke's calculations based on the statistics of Luke and Finnish Customs, and companies' volume data.

Meat market

Csaba Jansik and Timo Karhula

Higher costs and the resulting increases in producer and consumer prices have caused significant changes in the Finnish meat markets. The financial situation has improved on meat farms, while differences between farms have increased. The production and consumption of meat fell in 2022, and both are expected to decrease further in 2023. In 2022, pork saw the largest decrease in production and beef in consumption. The focus of the consumption structure is shifting to more affordable product groups. As a result of these changes, the self-sufficiency rate will decrease in pork and increase in beef.

Meat production will continue to decrease in 2023

During 2022, the Finnish meat market was characterised not only by the costs incurred by meat producers, but also by the increase in consumer prices in early summer. Both factors put pressure on meat production. In 2022, the production of all types of meat decreased with the exception of turkey, which has a relatively insignificant share in total meat. Turkey production increased by 3.4%.

Pork production fell by 5.2 thousand tons in 2022, down by 3.2% from the previous year. The slaughter volume decreased steadily throughout the year. Beef production decreased by 1.7 thousand tons (1.9%), while poultry meat production remained at the previous year's level.



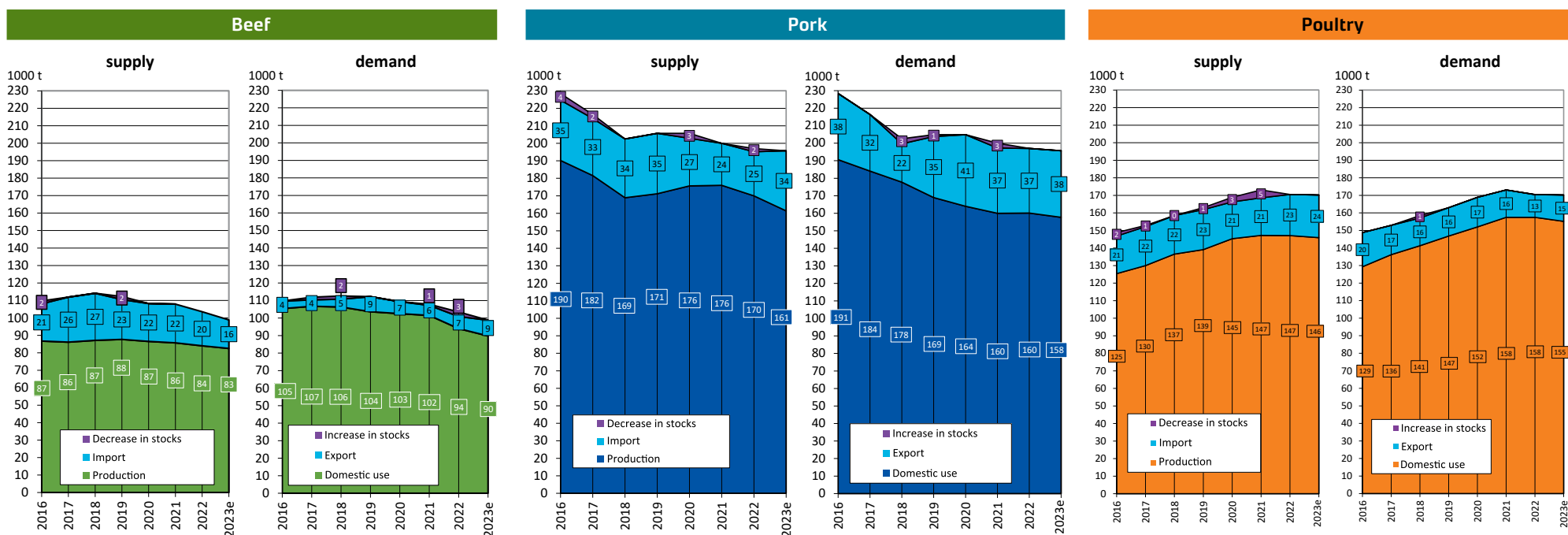
However, slaughter volumes showed variation during the year. The short production cycle enables poultry meat production to react quickly to price changes. Slaughter volumes increased as a result of favourable price relationships at the beginning of the year only to fall again from the summer after consumer prices increased.

The development of slaughtering in beef production usually follows a regular seasonal variation: volumes decrease at the beginning of the year and increase during the second half. This was also the situation in 2022, with the difference of less pronounced increase in production at the end

of the year. The consumption of beef fell steeply towards the end of 2022. The aim was to keep stocks under control by postponing slaughtering to the following year.

In 2023, meat production is expected to decrease by almost 3%. Pork production is expected to fall the most, by more than 5%. This can be explained by the decreasing number of sows, in 2021 and 2022, which recovering piglet productivity is expected to offset only in part in 2023. Pork production forecasts are usually fairly reliable, as they are based on the number of sows and the intensity of insemination.

Finland's meat balance sheets per meat type



Source: Luke, Finnish Customs, Uljas dataset. Projections for 2023: Luke and Kantar.

Instead, there may be significant changes in the consumption structure of various pork products. The proportion of domestic production consumed in Finland depends on several factors, including the development of prices in Finland, export prices and opportunities, and pressures placed by imports. An increase in imports and/or the development of price ratios relative to other types of meat may reduce the share of meat sold in Finland, especially if good opportunities open up concurrently on the export market. Then again, pork consumption proved in 2022 that it adapts to diverse and flexible uses in different product segments on the

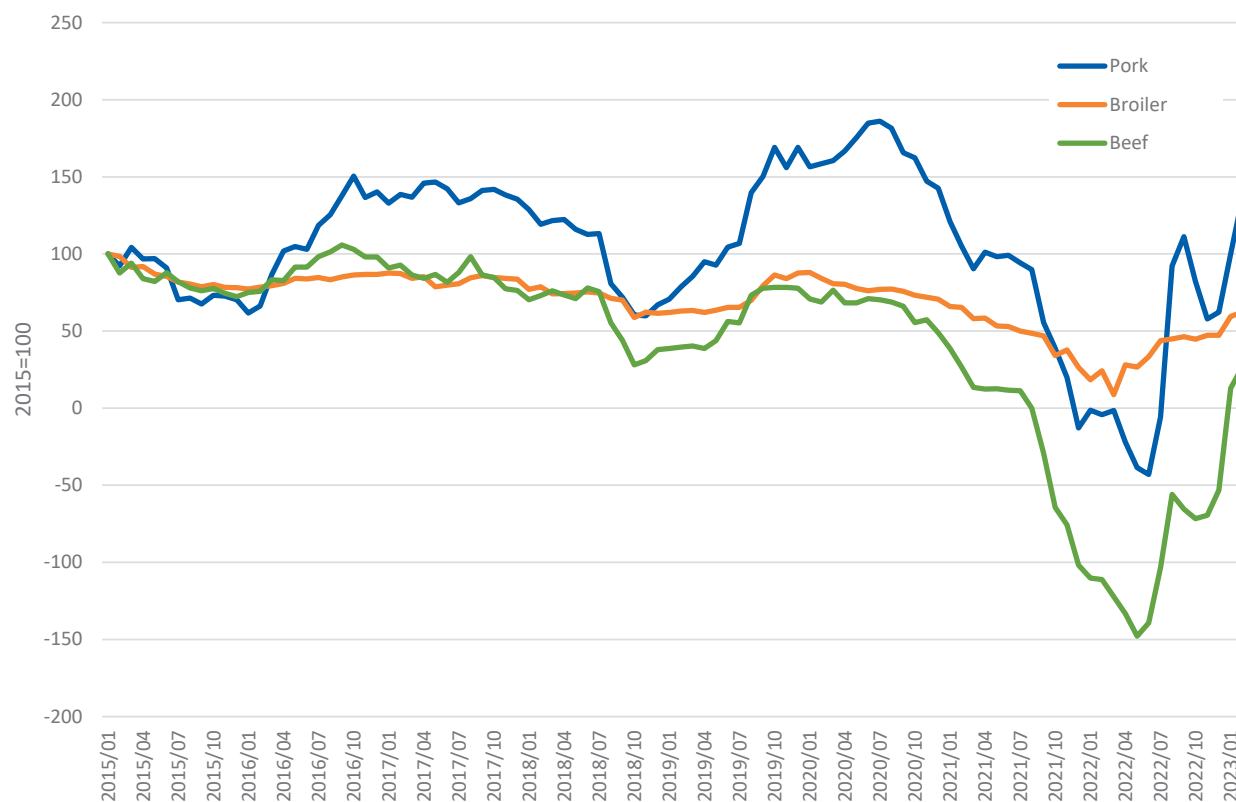
domestic market which strengthened its relative market position.

Beef production is expected to decrease by roughly 2% in 2023, the same amount as in the previous year. Changes in production are slow due to long rearing periods. The imbalance between calves and their rearing places has for long put a strain on the beef production chain. The shortage of calf rearing places worsened after producers' discontinuation decisions in 2022. Rearing places decreased steadily across Finland. What makes this situation more difficult is that there are no investment

subsidies available, even though the new support programme period has started. Meat companies are seeking various solutions and incentives to continue rearing in the discontinued farms either by buying or renting their operations.

Accelerating the rearing cycle could offer a solution for the oversupply of calves, in which case animals would reach the slaughter weight faster through more intensive feeding and would be slaughtered at a younger age. However, this has not been possible recently due to high cereal and silage fodder prices. In practice, weaker growth and lower

Market margin index in pork, chicken meat and beef production (2015=100)



Source: Luke market margins

slaughter weights have been achieved during the same rearing periods than before. The slaughter weight of animals slaughtered at a younger age and the amount of meat produced have decreased, also leading to a decrease in total production.

Poultry meat production also expected to decrease unusually

In the production of poultry, chicken meat in particular, cycles are short and production can quickly react to changes in demand. Rising production costs have increased the price of chicken meat. Consumers still had purchasing power in summer 2022, but their purchasing

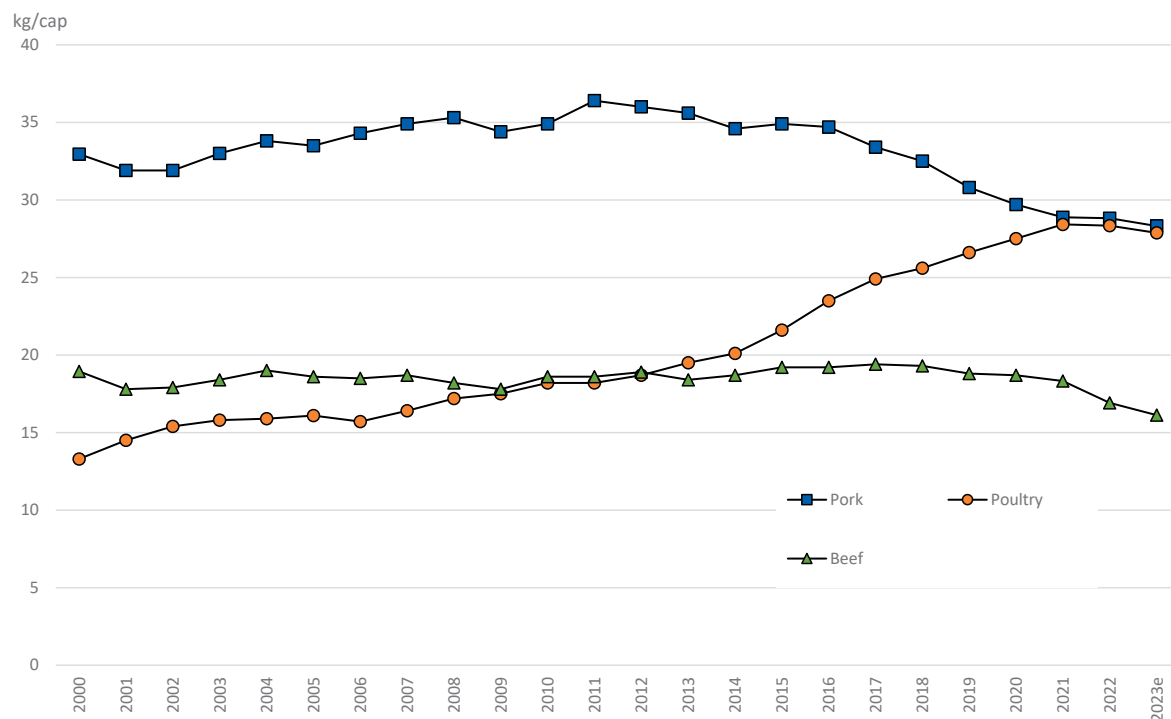
behaviour changed from the autumn. If the prices remain at their current level in summer 2023, consumption will decrease. A fall has especially been seen in the consumption of the most valuable parts such as breast fillet. If the fall continues, it will cause poultry meat production to decrease for the first time since 2009. Production is expected to decrease by 1.2 thousand tons in 2023, i.e. by 0.8% from the previous year. This equals two slaughter days' production per year.

In recent years slow years of construction have characterised poultry farming. While no extensive construction is required, new investments will be needed in the next few years, especially to replace buildings completed in the 1970s and 1980s, while buildings completed later will require repair investments and machinery replacements. In chicken meat production, the number of farms has decreased slowly, as only a few farms have discontinued each year, mainly among smaller farms. During two decades, the number of farms decreased by 50, from almost 220 farms in 2000 to 170 in 2020. At the same time, the average size of farms doubled from 34,300 to 70,000 chickens. The role of individual farms in Finland's total production has increased considerably. An even smaller group of producers account for the majority of production.

Meat farms in a better, albeit still tight, financial situation

Luke's market margins are indicators of the profit margin in different agricultural production branches that measure the difference between market income and costs. The market margins show the impact of fluctuations in the prices of agricultural products, including pork, chicken meat,

Meat consumption in Finland from 2000 to 2023e



Source: Luke, forecasts for 2021 Kantar TNS. Note: 2023 kg/capita figures are own calculations based on Statistics Finland's Population statistics.

beef on one hand, and production inputs on the other hand as well as their difference which can be considered as a special margin for the producers.

It should be noted that market margins only cover part of income and costs, and they do not represent profitability. The market margins are rather indicators of price risks associated with the market.

During the first half of last year, the market margins fell steeply. For pork and beef they even became negative. When the market margin is negative, income from meat sales cannot even cover key variable costs on farms.

However, the market margins of meat production started to increase for all meat types in the middle of last year as a result of higher producer prices.

Currently, the market margins are positive in all meat production lines.

However, meat farms have not yet found their way out of the difficult financial situation, as there may be significant differences between farms. Notably higher interest rates have especially strained finances on farms that have made investments in recent years. Various production inputs, including the timing of fertiliser and fuel purchases and electricity agreements, have a significant impact on the finances of individual farms through major fluctuations in the prices of production inputs. For example, while the feed cost pressures faced by chicken farms have been alleviated, the price of one-day chicks have recently increased more due to the parent generation's higher production costs.

Price increases have led to changes in consumption

In Finland's structure of meat consumption, the popularity of poultry meat has increased for several years now at the expense of pork, while beef consumption has remained very stable. Before 2021, total meat consumption was close to 80 kg per capita. Prices in 2022 and their expected development in 2023 have achieved what increasing environmental consciousness and nutritional recommendations have failed to achieve for years. Total meat consumption is expected to decrease from 78.9 to 75.6 kg, or by 3.3 kg per capita from 2021 to 2023.

The cost pressures that started in the meat supply chain in 2021 and the resulting price increases have caused unexpected twists in the cost structure. After remaining stable for years, beef consumption

fell steeply. The increases in meat prices coincided with the steep increase in living expenses, reducing demand most significantly for the most expensive types of meat.

The focus of meat consumption shifted to more affordable pork and poultry meat, and an unexpected turn has also been seen in their relationship. The shift between poultry and pork as the most popular meat in consumption estimated for 2022 never happened, as consumption of both meat types remained at the previous year's level. Pork is also expected to maintain its position as the most popular meat type in 2023. Its use has increased in the food service sector as the most affordable option at restaurants. Pork tenderloin has always been more affordable than chicken or turkey breast, and the difference has become even more prominent after the price increases. When the purchasing power decreased, pork gained a foothold at restaurants and institutional kitchens, especially where the domestic origin of meat is a key factor.

Structural changes are reflected in consumption shifts between different product groups, from the most valuable to more affordable parts, including from fillets to minced meat and from chicken breast fillets to legs, wings and cutlets. Minced pork and poultry meat are gaining a market share at the expense of minced beef. Pork consumption has partly been supported by the shift towards cutlets and ready-to-eat foods. The range of ready-to-eat food products that contain poultry meat is also

broadening. For example, chicken wings and legs that were previously exported in part now remain in Finland, and companies are developing ways to cut these parts as boneless and use them in convenience foods.

Even though the decrease of more than 3 kg in total meat consumption in 2022 and 2023 is the largest in decades, a drop of 4% in consumption does not seem overly dramatic in the light of the steep increases in meat prices. The relatively small decrease in consumption can partly be explained by changes in consumption between different meat products and changes in purchasing behaviour resulting from price development. Consumers may plan their purchases more closely, and higher meat prices have made it more important to reduce household food waste. More affordable options, including retail chains' own brands, especially in processed and convenience foods and various special offers, including red-labelled discount products, have increased in popularity. Imported meat is another affordable alternative.

Imports and exports^[1]

Meat imports and exports in 2022 were characterised by a significant increase in value. Volumes increased the most in the import of poultry meat and related products. The import of chicken meat and related products increased by 26% from 16.8 to 21.2 thousand tons. The import value increased by 47% to nearly EUR 95 million in 2022. The largest countries of origin were Germany (18%), Thailand (17%) and Poland (11%).

Turkey meat and related products are imported in smaller quantities. Their volumes increased from 2.5 to 3 thousand tons and their value from EUR 10 million to EUR 15 million. Germany and Poland account for roughly 90% of imports.

The import of pork and related products increased less, as import volumes in 2022 increased to 23 thousand tons from the previous year's 20.4 thousand tons. The import value already increased to EUR 100 million in 2022. Volumes grew by 13% and the value by 33% from the previous year. Germany accounted for the majority, 44%, of imports in 2022. The remaining part of imports was divided between several countries of origin, with Austria (6%) and Denmark (4%) being the largest.

Beef import volumes remained close to the previous year's level in 2022. The volume of imported beef and related products was once again roughly 20 thousand tons. However, the import value increased by 34% from the previous year to almost EUR 114 million. Italy (17%), Denmark (16%), Germany (12%) and the Netherlands (9%) were the largest countries of origin.

With regard to different types of meat, the foreign trade balance was only positive in pork. In 2022, pork and related products were exported at a value of EUR 120 million, exceeding the import value by EUR 20 million. The export structure continues to focus on unprocessed meat and different parts of the carcass. Processed food products only accounted for 1% of the export value. Instead,

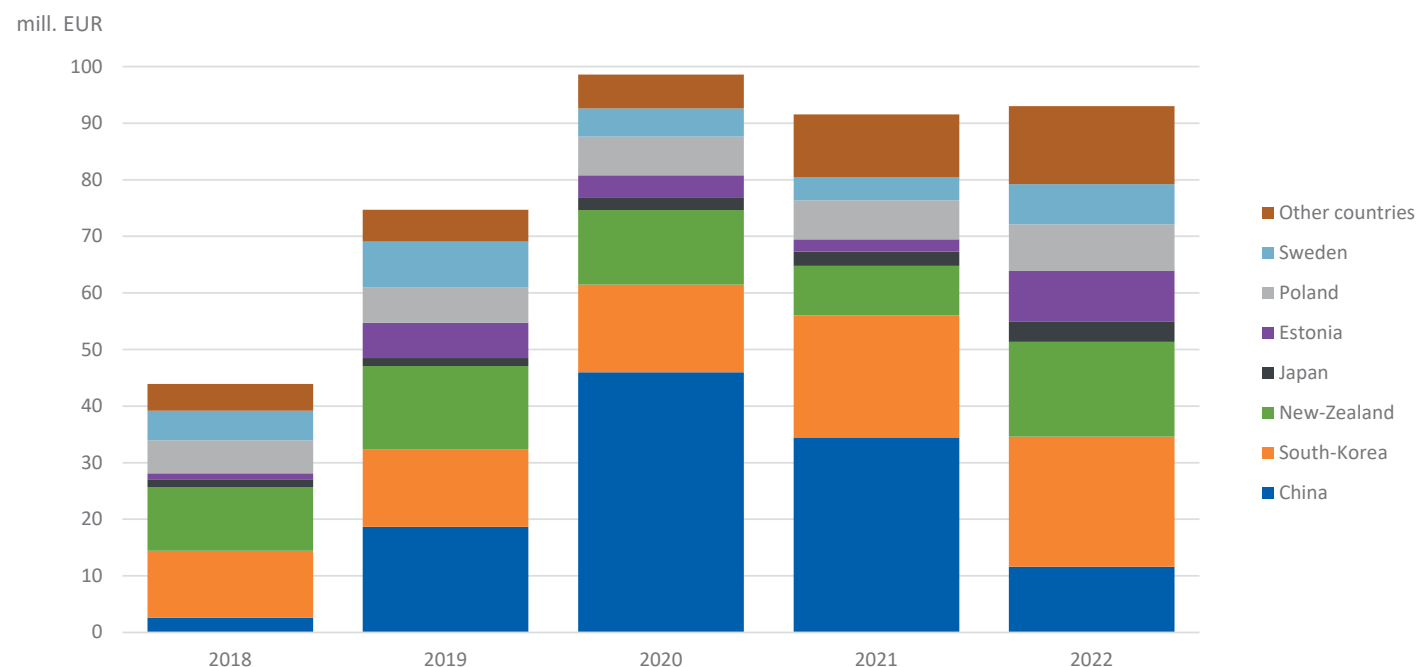
[1] The figures presented in this section for the volumes of import and export differ from the figures for foreign trade in the meat type balance sheets. The volumes of the meat balance sheets have been converted to include bones by Kantar TNS, using multipliers approved by operators in the industry. The figures presented in this section, including unit price calculations and time series, are based directly on figures obtained from the Finnish Customs' ULJAS database.

processed pork products covered a quarter of the import value. Measured by the average price, processed products are roughly twice as expensive as unprocessed meat. Finland's export volumes were significantly higher than import volumes as a result of the lower unit price, being 51.7 thousand tons in 2022, down by 1.3 thousand tons from the previous year.

On the Chinese market, the price of pork fell steeply after domestic supply recovered. Finnish exports have been rerouted to better paying Asian markets, including South Korea and New Zealand, and to a smaller extent to Japan. Exports also increased to European countries, including Estonia, Poland and Sweden, in which the price level was higher than on the Chinese market.

In addition to fresh, chilled and frozen pork, the second largest product group consisted of other edible parts of pork that are not usually in demand in Finland or Europe. Of the product group's exports of 21.5 thousand tons, China accounted for 83% and other Asian countries, including Taiwan, Singapore, South Korea and Thailand, for more than 10%.

Export value of fresh, chilled or frozen pork by destination country in 2018-2022



Source: Finnish Customs, ULJAS dataset. Note: figures for CN0203 group.

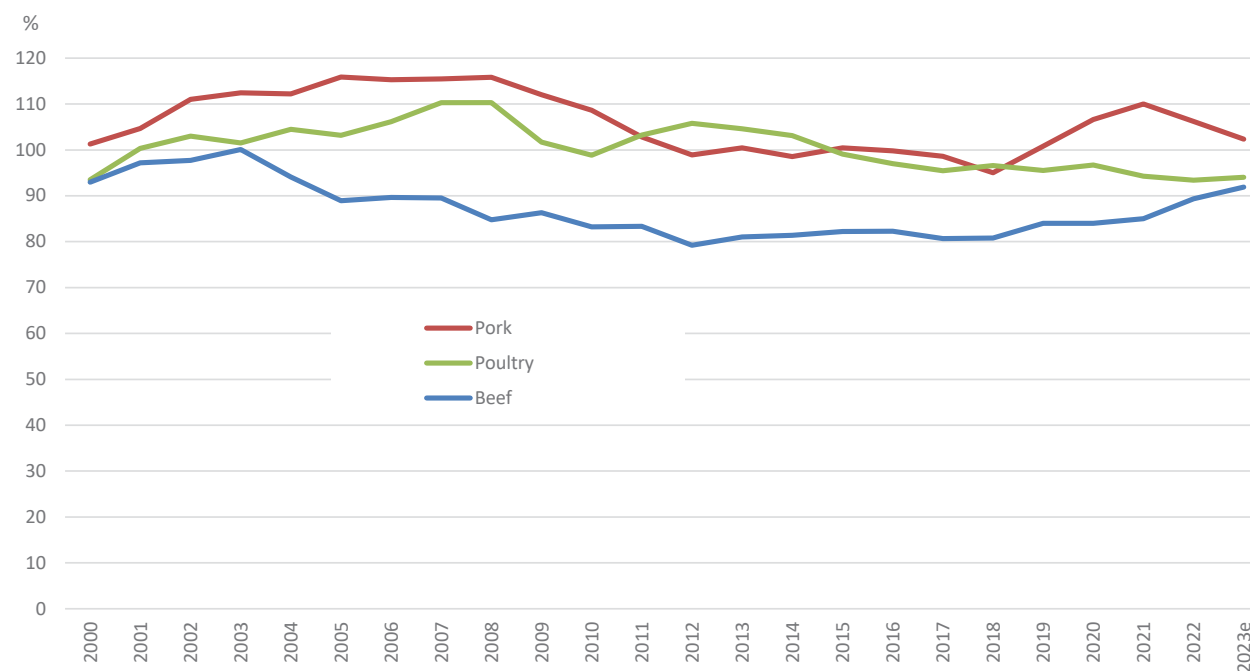
The meat self-sufficiency rate remained at 97%

No major changes were seen in the total meat self-sufficiency rate. It increased to 97% in 2020 and has remained there ever since, also being close to the same level in 2022 and 2023. However, the self-sufficiency rates of beef and pork are moving in opposite directions.

Beef production is decreasing much more slowly than its consumption which will increase the beef self-sufficiency rate from 85% in 2021 to 92% in 2023. The development of the pork self-sufficiency rate is opposite, pork production has dropped by more than 8% in 2022-2023 due to the weakened domestic and export market outlook in 2021. The previous average annual decrease in pork consumption of 3.5%, slowed down unexpectedly to below 1% in 2022, and it is expected to remain at the same level in 2023. As a result, consumption and production have approached one another, and the self-sufficiency rate is expected to drop from 110% in 2021 to 102% in 2023.

The poultry meat self-sufficiency rate has remained at the 2021 level, as production and consumption have developed along the same lines. In 2023, it is expected to be 94%.

Meat self-sufficiency rate in Finland in 2000-2023e



Source: calculations based on meat balance sheets, Luke and Kantar TNS.

Dairy market

Olli Niskanen and Sanna Vuorisalo

The dairy sector experienced a highly exceptional year in financial terms in 2022. The cost crisis that started in the previous year continued, while the unusual increase in producer prices that started at the beginning of the year eventually slowed the steep decline in profit margins. The stabilisation of feed costs at the end of the year in particular, supported by the relatively large cereal harvest, enabled the profit margin of milk to return to the average level of the previous years. However, milk producer prices have already started to fall from their peak levels in Europe, and Finland will also see a return close to the recent years' situation in 2023.

Profitability in turmoil

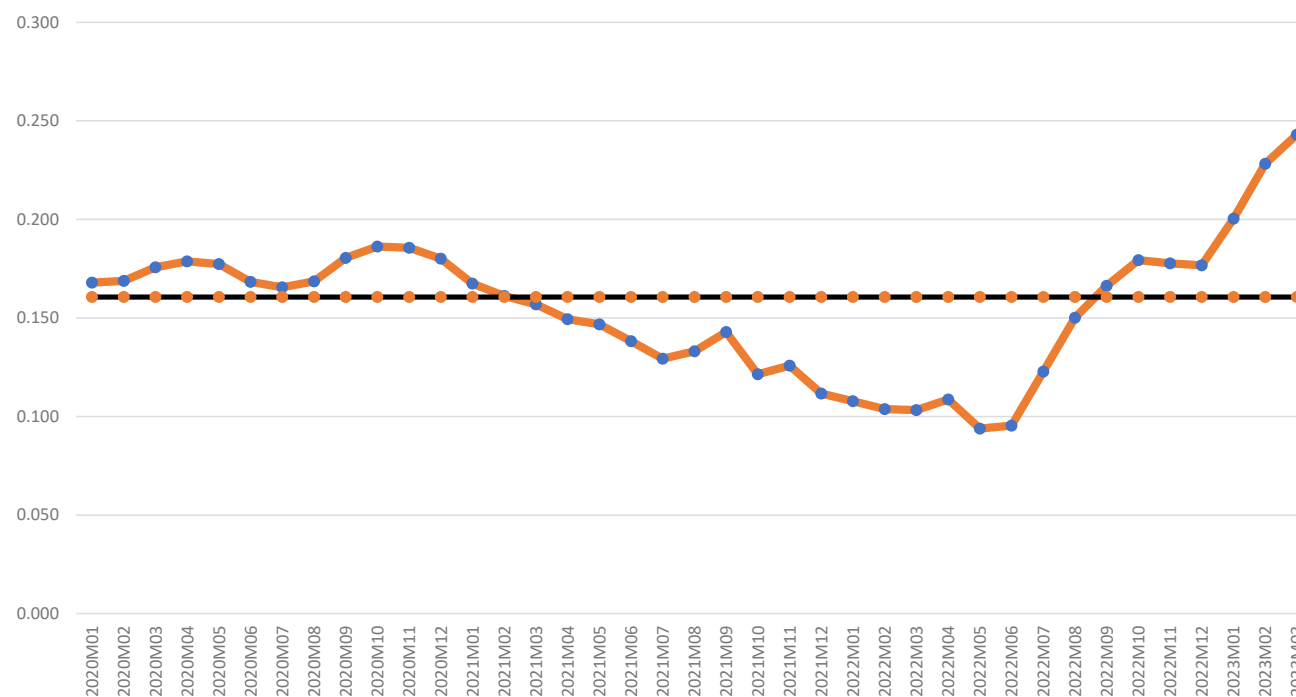
The average producer price climbed historically high during the year. The peak average price was reached in December 2022 when it was up to EUR 55.97 per litre, with concentrations being 4.57% for fat and 3.60% for proteins. Concentration prices were strengthened at the beginning of 2023, albeit there are differences in prices between dairies. In January 2023 (December 2022), the average price of a tenth was 0.50 (0.39) cents for fat and 0.66 (0.64) cents for proteins. The increase in the value of concentrations results from the lower demand for liquid milk, based on which the dry matter concentration of milk carries more value in the dairy industry.

Measured by the market margin (milk income over main variable costs), the profit margin of milk production has experienced unprecedented

changes during a single year. The margin hit its low point of less than 10 cents when the prices of production inputs were at their highest in summer 2022. Especially the recovery of feed prices from the peak figures in spring, combined with the increase in producer prices, quickly raised the margin level, being roughly 18 cents at the end of the year, which has been a typical level in previous years. At the beginning of the year, the margin rose fairly high to more than 22 cents, while the prices of key production inputs, including feed cereals

and fertilisers, continued to decrease and milk prices remained fairly high at more than 55 cents during the first months. The profit margin obtained by farms has shown unusual amounts of variation: especially the timing of purchases of stocked production inputs has been highly significant. However, the amount of input purchases was little low when input prices were at their highest level. Then again, milk producer prices between dairies have also shown unusually high variation.

Milk market margin, cent per litre



Structural development raises questions

Dairy milk production in 2022 totalled 2,151 million litres, down by 2% from 2021. At the end of 2022, there were 4,572 milk producers. Operations were discontinued to a significant extent for the second year in succession, with 8%, or nearly 400 farms, discontinuing milk production last year. The total full-year milk volume of the dairy farms that discontinued their production operations during the year was more than 70 million litres, measured at a normal annual level. The discontinued farms had an average of 23 dairy cows during regular production, while there were significant variations in herds.

The amount of investment aid provided for dairy cattle farming continued to decrease. In 2022, the construction of cow places was at its lowest in the 2000s in real terms. This means that only a few new cowhouses and cow places will be completed in 2023 and 2024, affecting total milk production in the mid-term.

Production and manufacturing in Finland

Of the total consumption of milk in Finland, a significantly larger share is consumed by eating than drinking. In 2022 (2021), a total of 533 (567) thousand tons of liquid milk was packaged. Therefore, the production of liquid milk products fell by 6%. The production volume of buttermilk was 39.8 thousand tons (-8%), while the corresponding figure for cream was 45.7 thousand tons (+3.2%), for yoghurt 108 thousand tons (+0.4%) and for cheese 82.4 thousand tons (-1.5%). Butter production decreased by 4.2% to 47.1 thousand tons.

Consumer prices rose in 2022. The sales value of milk products, cheese and butter totalled EUR 2.59

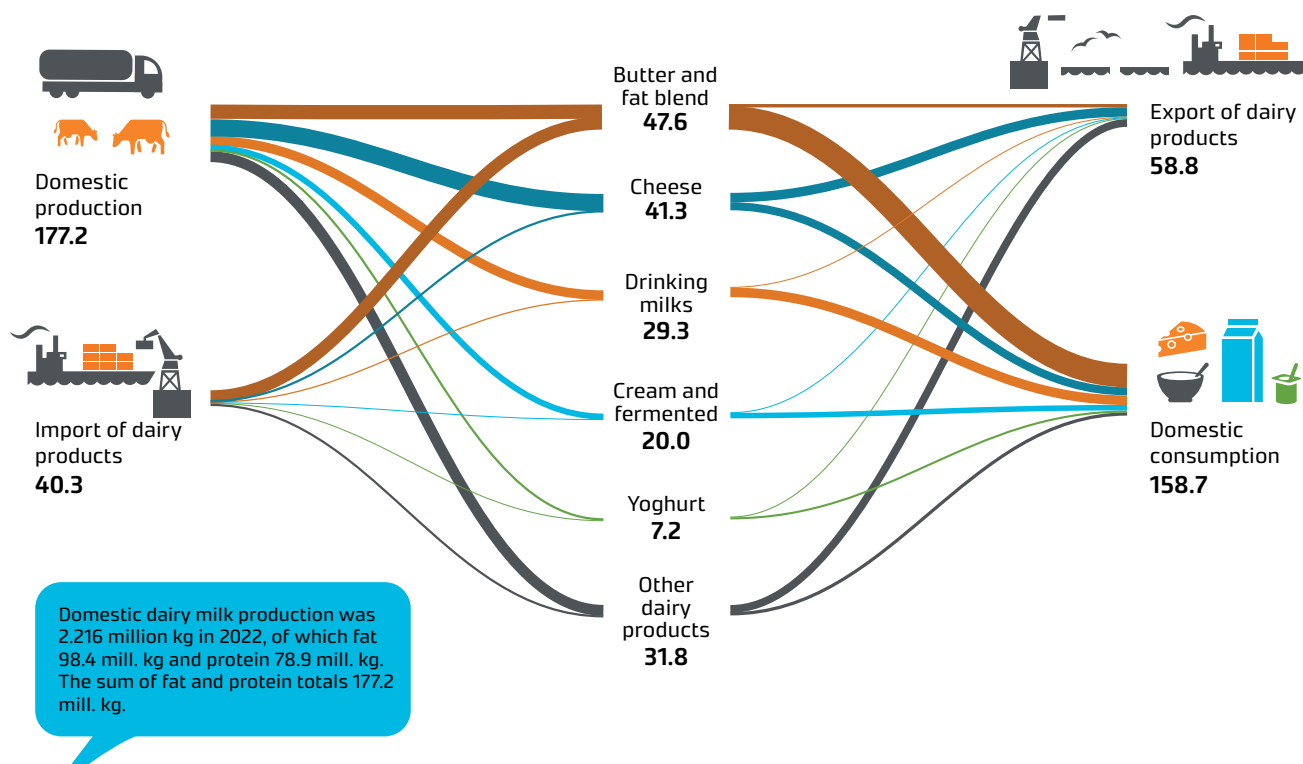
billion in 2022, showing an increase of EUR 134 million (5.5%) driven by higher consumer prices. At the same time, the sales volume decreased by 5.15% which is an indication of flexible prices in demand on the domestic market.

The export value grew considerably in 2022

The trade balance for dairy products improved significantly in 2022. The export volume decreased

by roughly 4.6 million kg, while export income increased by EUR 112 million to EUR 525 million (EUR 413 million in 2021) driven by higher unit prices. The import volume decreased by roughly 4 million kg, while its value still increased by EUR 60 million. The increase in import prices is an indication of the international competitive situation: food prices went up in all countries, due to which the competitive position of imported products relative to domestic products changed.

Allocation of fat and protein of delivered milk to different dairy products, and their domestic use including imports and exports in 2022 (million kg)



China was the most important export country for Finnish dairy products for the first time in 2022 (2021), in which the export value increased significantly from the previous year, being EUR 127 (90) million, driven especially by the increase in the value of industrial products. It was followed by Sweden with an export value of EUR 106 (91) million and France at EUR 66 (40) million. The most significant countries for imports were Germany, with a total import value of EUR 94 (81) million, Denmark with EUR 92 (84) million, Sweden with EUR 43 (35) million, and Estonia with EUR 32 (26) million.

The self-sufficiency rates for milk protein and milk fat have increased in recent years as the structure of domestic demand has changed, and the protein and fat content has improved in primary production. The share of domestic production relative to domestic consumption remained roughly at the same level as in the previous year, being 109% for milk protein and 118% for milk fat.

Financial and market situation in milk production in 2023

The global dairy market has shrunk considerably quickly from the figures at the end of 2022, and the price level of industrial products at the beginning of the year approached the long-term average price levels. Producer prices have quickly started to decrease in many EU countries, the most steeply in Lithuania, Latvia, Ireland, Belgium, Poland and the Netherlands. In other words, countries that

experienced rapid price increases in 2022 have also seen the most significant changes. Finland will also approach the previous year's level in producer prices during 2023. The latter half of the year will be more challenging than the first half in the Finnish dairy sector, as the increase in consumer prices will reduce demand for dairy products even further, export income will decrease from the previous year's peak figures, and the drop in global market prices will cause more competition on the domestic market through the import of affordable products. The impact of inflation on many parts of the production chain will increase costs, partly weakening the share of primary production in the distribution of the value added in the entire chain. Apart from financial expenses, production costs in primary production have, however, improved in purchased feed, energy and fertilisers, even though the market uncertainty will continue for as long as the war in Ukraine goes on. The decreasing trend in production volumes is expected to continue, even though the average production levels of dairy cows have room for improvement after poorer harvest years and the highest industrial feed prices. According to Kantar Agri Ltd's forecast, dairy production will decrease by 2% and the number of farms by 8% in 2023.

Statistics

Market margin indices

Number of livestock



Egg market

Jukka Markkanen and Timo Karhula

In 2022, egg consumption decreased by 5.3% and egg production by 1.6% from the previous year. Both consumption and production are expected to remain roughly at the same level in 2023. The consumer prices of eggs increased last year, being as much as a quarter (25%) higher than in the previous year on average. Even though consumption fell, the increase in consumer prices raised the sales value of eggs in the grocery sector to EUR 163 million, up by 14% from the year before. Of this, producers' returns at market prices were EUR 104 million. The producer price of all eggs grew by roughly a third (28%). A significant drop was seen in sales of organic eggs, whose market share was 16% of total consumption measured by value.

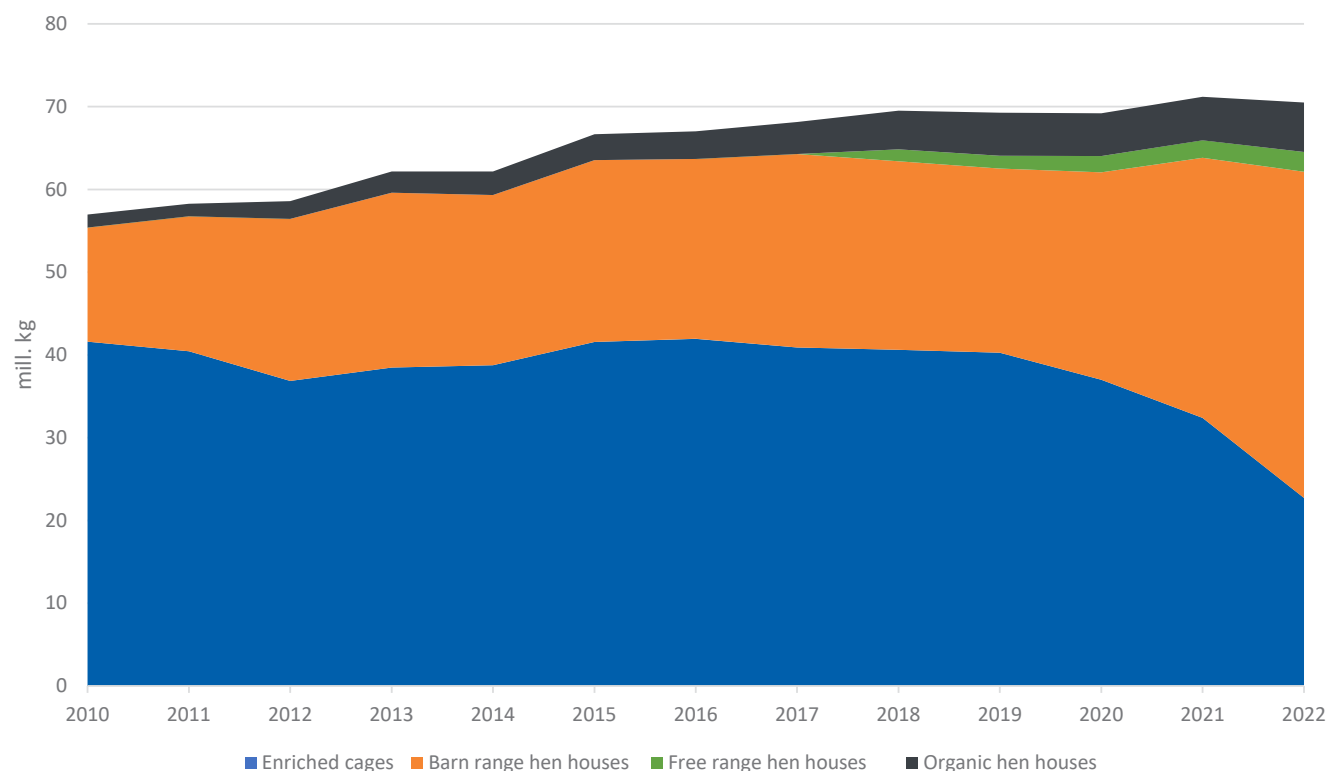
In 2022, some 64.5 thousand tons of eggs were consumed in Finland, including use on farms, direct sales and imports. Total egg consumption fell by 5.3% and the consumption of eggs in shells by 6.2% from the previous year. The consumption of eggs in shells was 51 thousand tons. Although direct sales and other schemes for distributing locally produced goods directly to consumers have become more popular, only a little more than one million kg of eggs are sold directly to consumers by producers.

Egg consumption decreased by 11.6 kg per capita. This equals fewer than four eggs a week and 197 eggs a year per capita. In 2023, consumption is

expected to remain at the same level. The increase in egg consumer prices from March 2022 until March 2023 was among the highest in agricultural products at 32%.

In 2022, more than 77.5 thousand tons of eggs were produced, down by 1.5% from the previous year. Of this, 76.3 thousand tons were supplied to packaging plants, which is 1.6% lower than in the previous year. In 2023, the volume of eggs supplied to packaging plants is expected to remain

Egg production per production method in 2010-2022, million kg



Source: Luke

at the 2022 level. The self-sufficiency rate of egg production increased to 120% in 2022. It is expected to decrease slightly in 2023.

The number of eggs produced in enriched battery cages decreased by 30% last year. Of class A eggs, 42% were produced in enriched battery cages during the first part of the year and only 28% at the end of the year. Instead, the number of eggs produced in barn henhouses increased by 25%, accounting for as much as 61% of all eggs at the end of the year. The number of eggs produced in free-range henhouses also increased by 25%, accounting for 4% of all eggs. Then again, there are only slightly more than ten farms that produce eggs in free-range henhouses. The proportion of organic henhouses increased slightly, accounting for 7% of production. Organic eggs are produced on around 55 chicken farms, with an average henhouse size of 6,000 chickens.

The import of eggs in shells and processed egg products increased by 11.7% to 2.3 thousand tons in 2022. Therefore, the domestic content of consumption was more than 96%. The consumption of imported eggs in shells is particularly low.

A total of 15.4 thousand tons of eggs was exported, mainly as eggs in shells, which accounted for 12.1 thousand tons of total exports. The volume of exported eggs in shells increased by 12%. The export of processed egg products increased by 66%, while their export volume was only 3.3 thousand tons converted into eggs in shells. In 2022, eggs were mainly exported to Denmark (37%), Sweden (16%),



Germany (15%), and Lithuania (11%). The average export price of eggs was EUR 1.61 per kg.

A significant improvement was achieved in egg producer prices at the beginning of May 2022. Average producer prices also increased in 2022, while prices showed a significant variation between production methods. In total, egg producer prices increased by 28% to an average of EUR 1.36 per kg last year. During the year, producer prices for eggs produced in enriched battery cages increased by 24% to an average of EUR 1.13 per kg, for eggs produced in barn henhouses by 30% to EUR 1.43 per kg, and for free-range eggs by 13% to EUR 1.53 per kg on average. The producer price of organic eggs only increased by 4% to an average of EUR 2.57 per kg, while it started to decrease at the end of the year.

The increase in producer prices translated into an increase of 25% in egg market returns. The market returns of egg production were roughly EUR 83 million in 2021 and EUR 104 million in 2022. Market returns represent the total amount paid for eggs to egg producers.

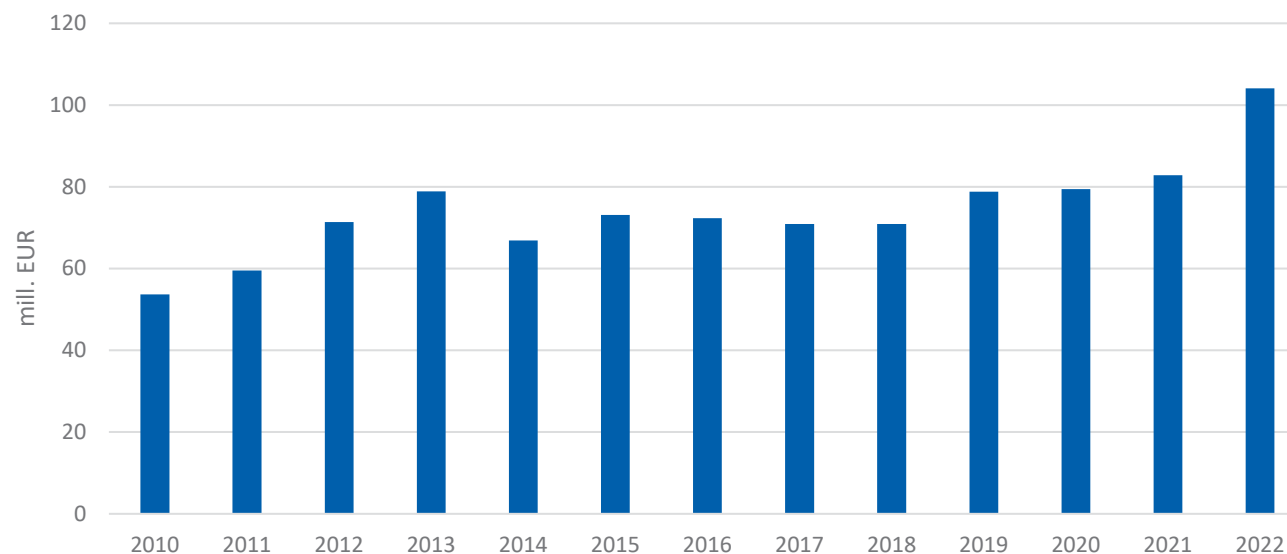
In 2022, there were an average of 3.9 million egg-laying hens in Finland. As there were 244 egg farms at the beginning of last year and 240 farms at the end of the year, the discontinuation rate was low (2%). It is expected that there will be around 225 farms at the end of 2023 (-6%), but the total number of hens is expected to remain close to the previous year's level.

At the end of 2022, the number of hens per farm was 16,400 on average, remaining unchanged from the previous year. New investments will again increase the average size of henhouses in 2023, with large henhouse units owned by packaging plants being a new trend. In 2023, the average number of hens is expected to increase by 7% to 17,500 hens per farm.

Statistics

Statistics Finland, Consumer Price Index
Luke, Producer Prices of Agricultural Products
Luke, Egg Production

Egg returns at market prices in 2010-2022 (EUR million)



Source: Luke

Horticultural market

Anna-Kaisa Jaakkonen and Anu Koivisto

In recent years, the number of horticultural enterprises has decreased, even though production has remained unchanged or even increased. The concentration of production in specific areas and on large farms has accelerated. Investment payments have had a significant impact on greenhouse production, in particular.

Production becoming highly concentrated

Cucumber and tomato production is highly concentrated regionally, and the same trend will continue. The region of Ostrobothnia accounted for 64% of the cucumber yield in 2014 and as much as 75% in 2022. Correspondingly, Ostrobothnia accounted for 70% of tomatoes and up to 84% of special tomatoes.

In addition to regional concentration, cucumber production has also become concentrated so that the ten largest producers cover 82% of Finland's total production. For tomatoes, the corresponding figure is 56%.

In greenhouse production, this trend has been driven by the placement and expansion of companies seeking growth. The geographic location is rather irrelevant in greenhouse production. Instead, regional concentration in outdoor production is based on the climate, the soil type in fields and its suitability for each crop. This has caused vegetable production to become concentrated in certain regions. Southwest Finland

produces 39% of onions and 34% of carrots. Another significant production area is Northern Savonia for onions and Tavastia for carrots.

The ten largest produces account for 58% of the total onion yield and 46% of the total carrot yield. The concentration of production on the largest farms has also been particularly significant in raspberry production, in which the ten largest farms account for 56% of the total yield.

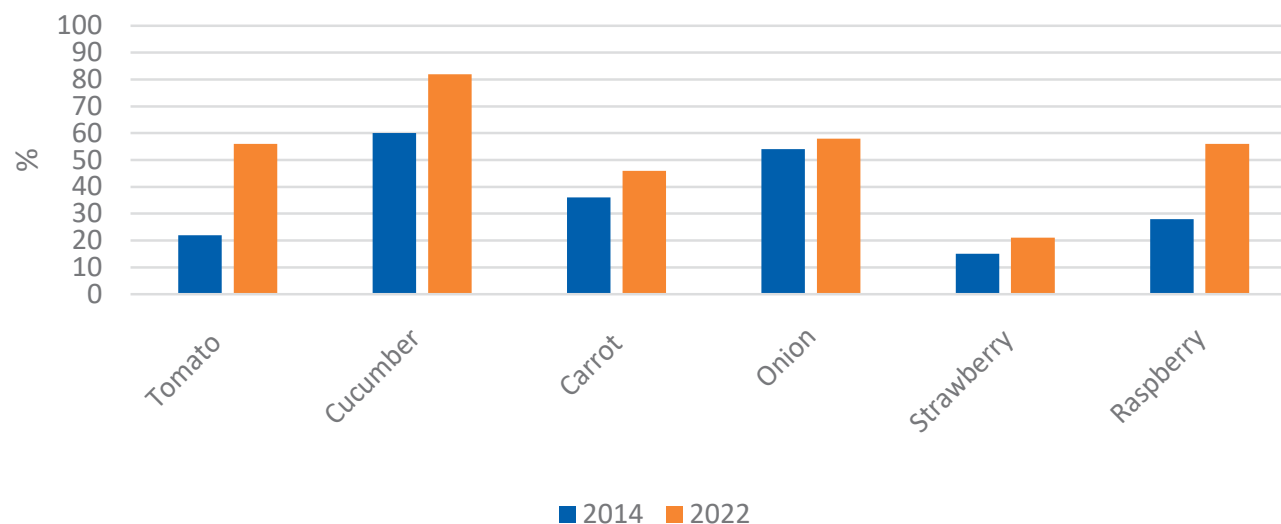
Significant investments in the greenhouse sector

Even though the greenhouse area recorded in statistics decreased by 30 hectares from 2015 until

2022, new greenhouses were built over 41 hectares during the same period. In 2022, the greenhouse area was 362 hectares. A significant structural change is underway in greenhouse production, as the number of greenhouse enterprises decreased by 33% during the period above.

During the 2015-2022 investment funding period, significant investments were made in the greenhouse sector. During the period, there were some 390 supported projects related to greenhouse and tunnel production. When this figure is compared to the number of greenhouse enterprises (784), it becomes evident that the investment activity has been particularly high. The supported projects also

The share of the ten largest producers of the total yield in 2014 and 2022



Source: Luke.

included almost thirty very large projects of more than EUR 1 million.

Greenhouse enterprises have invested in building new greenhouses and restoring current greenhouses. Investments have also been made in energy, including plants which generate heat from solid fuels and storage facilities for wood chips, as well as in LED lighting systems.

The investments have increased the efficiency of greenhouse production, measured by both yields and the use of energy. Where energy costs made up some 28% of production costs in 2011, they were down to 21% in 2021. In cucumber production, the yield per square metre has increased considerably, by roughly 60% since 2011. The corresponding figure for tomatoes has not changed significantly.

In outdoor production, investment projects eligible for funding have included product warehouses, with the number of such projects being 110 during the previous investment funding period. In berry production, investments have been made in tunnels in 120 projects. Considering that there are roughly 2,500 enterprises engaged in outdoor production, the investment activity has been considerably lower than in greenhouse production. Then again, greenhouse production has more eligible investment targets.

What do the following years look like?

There are signs that greenhouse cucumbers have reached their maximum production and consumption level, and the total yield has started to decrease after an extended upward trend. In practice, the maximum level comes from

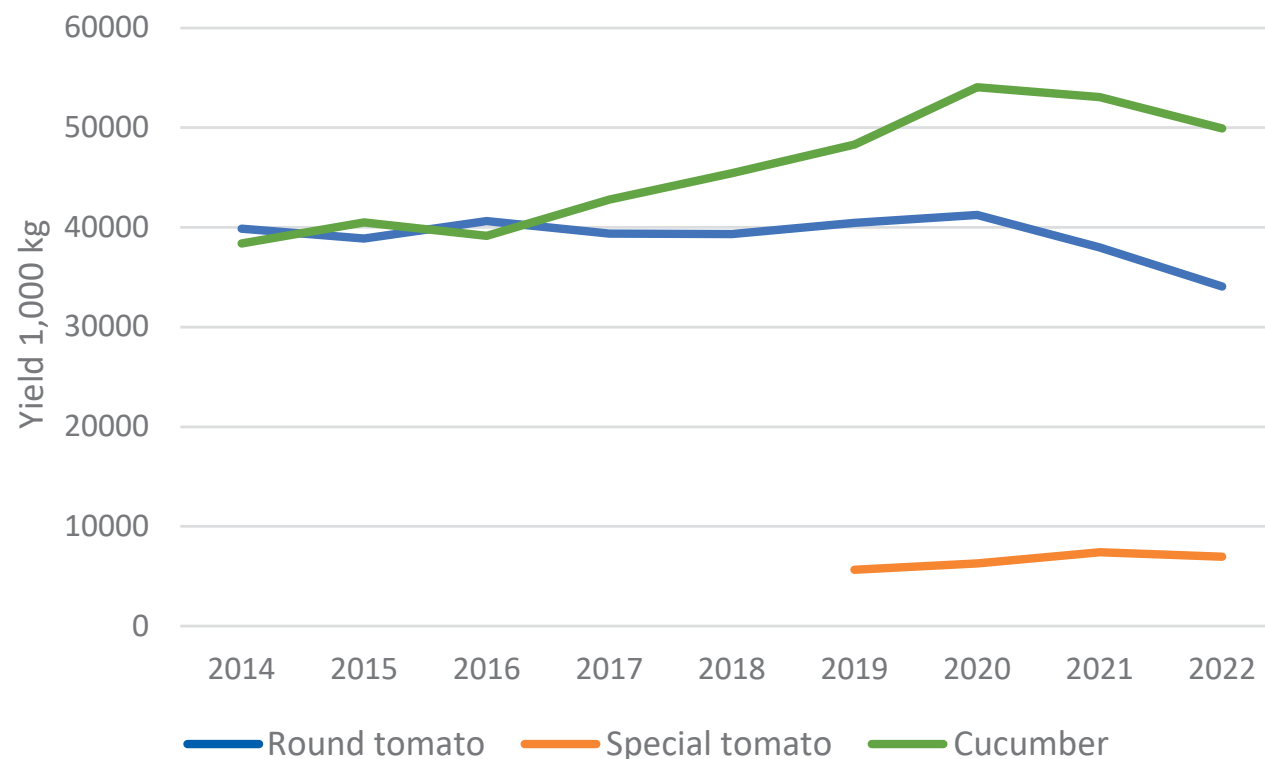
consumers' will and ability to consume cucumbers, and it does not appear to rise any higher.

The production volume of basic round tomatoes has also reached its high point, and total production has started to decrease. This can also be partly explained by a change in demand, as the production of special tomatoes has increased.

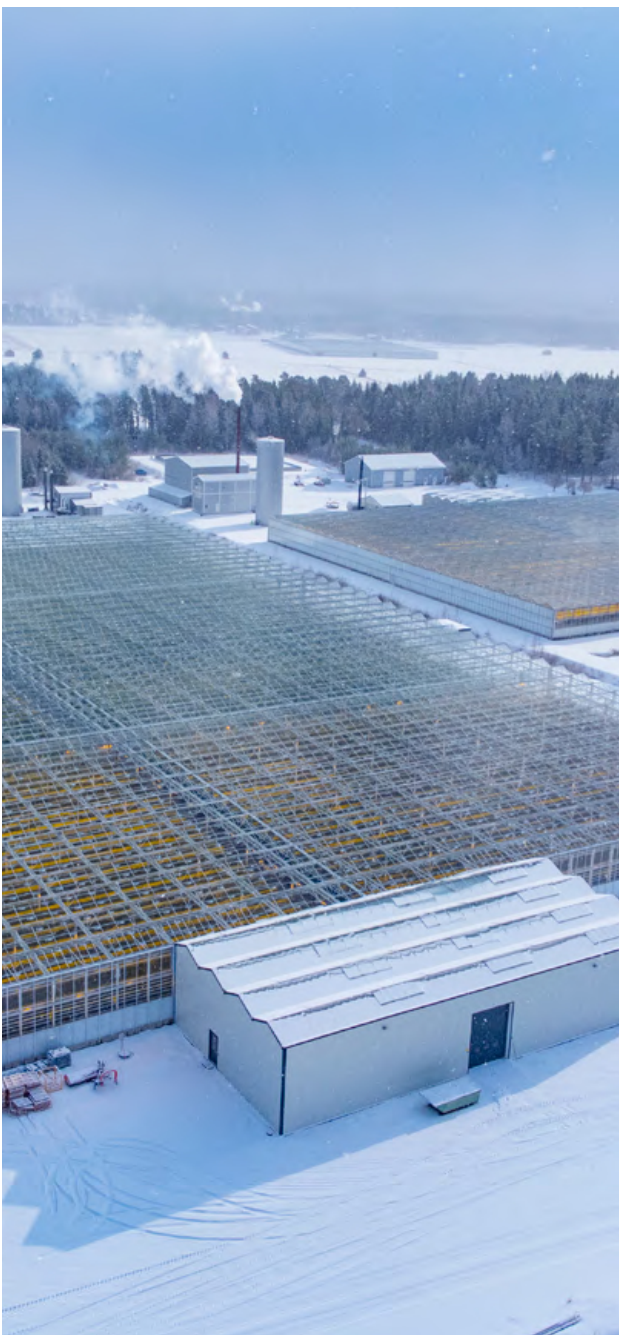
The rising price of energy has partly affected and accelerated the downward trend in total yields. Greenhouse enterprises are industrial electricity users. The price of industrial electricity started to increase steeply at the end of 2021, while the total production of cucumbers and tomatoes already started to decrease earlier in 2020.

The production of carrots and onions, key vegetables in outdoor production, and that of

Greenhouse vegetable production volumes



Source: Luke.



strawberries has been fairly stable for a long period, and production growth has been fairly moderate which are indications of a balance between supply and demand.

Energy and irrigation are critical factors in horticultural production in Europe.

Horticultural production has also undergone changes in Europe. For example, the high price of energy has raised the price of tomatoes to new record levels in the EU this winter. The production of

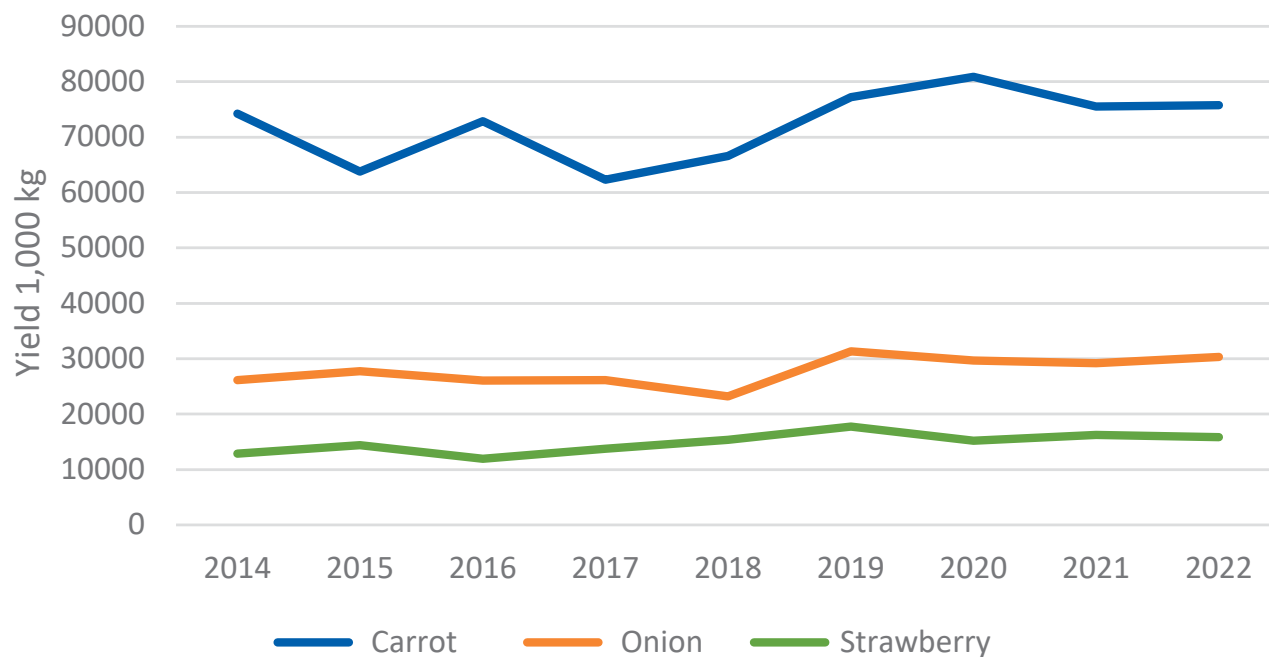
fresh tomatoes has for long been in slight decline in the EU and imports from third countries, Morocco in particular, have been increasing. In addition to price, the availability of water for irrigation is a critical factor especially in the production of Spanish tomatoes.

Statistics

Horticultural statistics

Eurostat

Outdoor production volumes



Source: Luke.

Structural development and economic situation of agriculture



Structure of agriculture and horticulture

Anna-Kaisa Jaakkonen and Minna Väre

The number of farms is decreasing and the average farm size continues to increase. As there are fewer farm successions, the average age of farmers will increase, and more and more farms will be run by farmers of retirement age. During the next ten years, a third of Finland's farmers will reach retirement age. This will also inevitably have an impact on the development of agriculture.

The number of farms is decreasing, and the farm size is increasing

In 2022, the total number of agricultural and horticultural enterprises was 43,611. During the previous ten years, the number of farms has decreased by nearly 22%. At the same time, the average farm size has increased by roughly 11 hectares. While the number of farms was 55,816 in 2012 with an average agricultural area of 41 hectares, the average farm size had increased to 52 hectares in 2022.

Land leasing also increases the average farm size. Of all farms, 64% have leased land, and 37% of the total utilised agricultural area is leased. The significance of land leasing is the highest in the Åland Islands. The role of land leasing is smaller than average in Northern and Southern Ostrobothnia, and Southwest Finland. Then again, 70% of farms in Northern Ostrobothnia had leased at least some land.

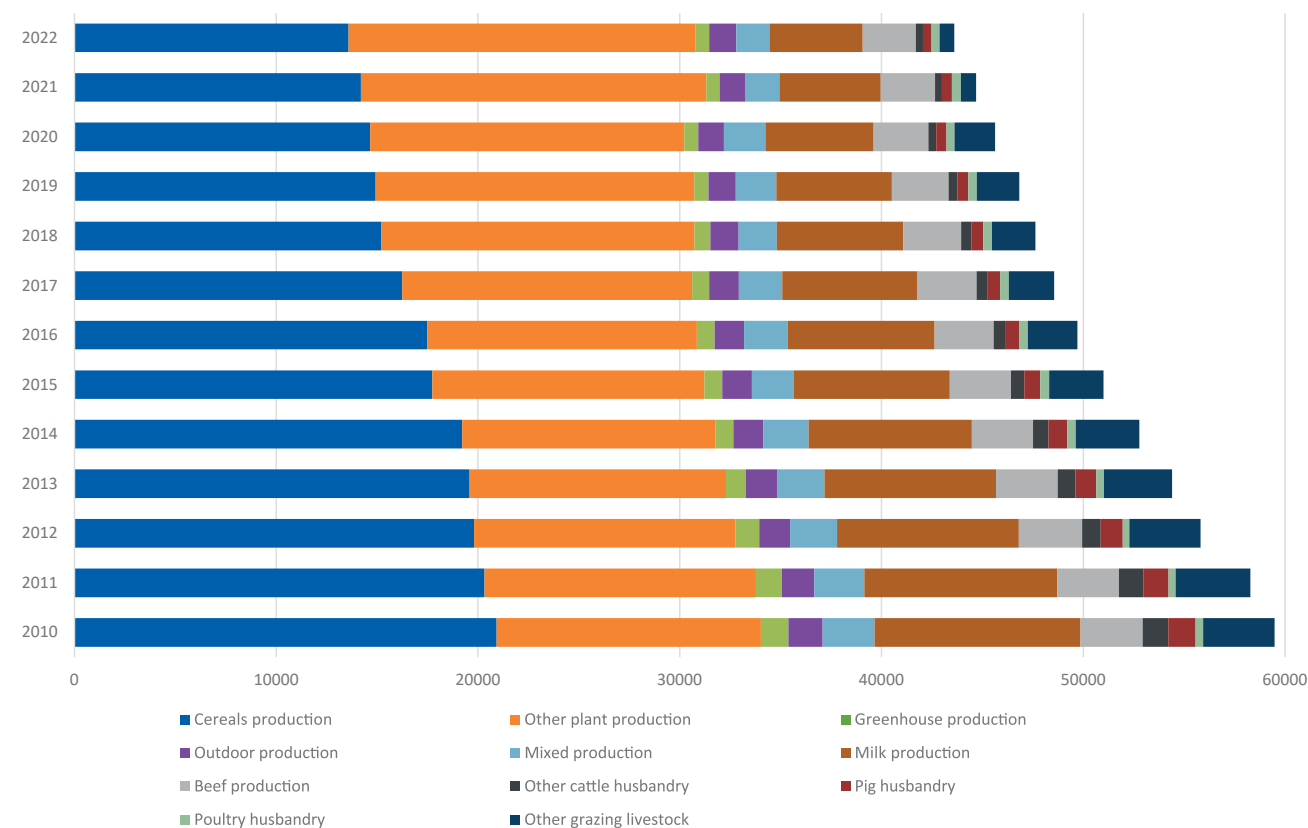
The number of livestock farms is decreasing

Farms engaged in combined dairy and beef production and pig farms have decreased the most, as their number has fallen by more than 60% during the last ten years. At the same time, the number of cattle farms has almost halved, and that of companies engaged in greenhouse production has decreased by roughly 44%. After a

period of growth, the number of poultry farms has also started to decrease.

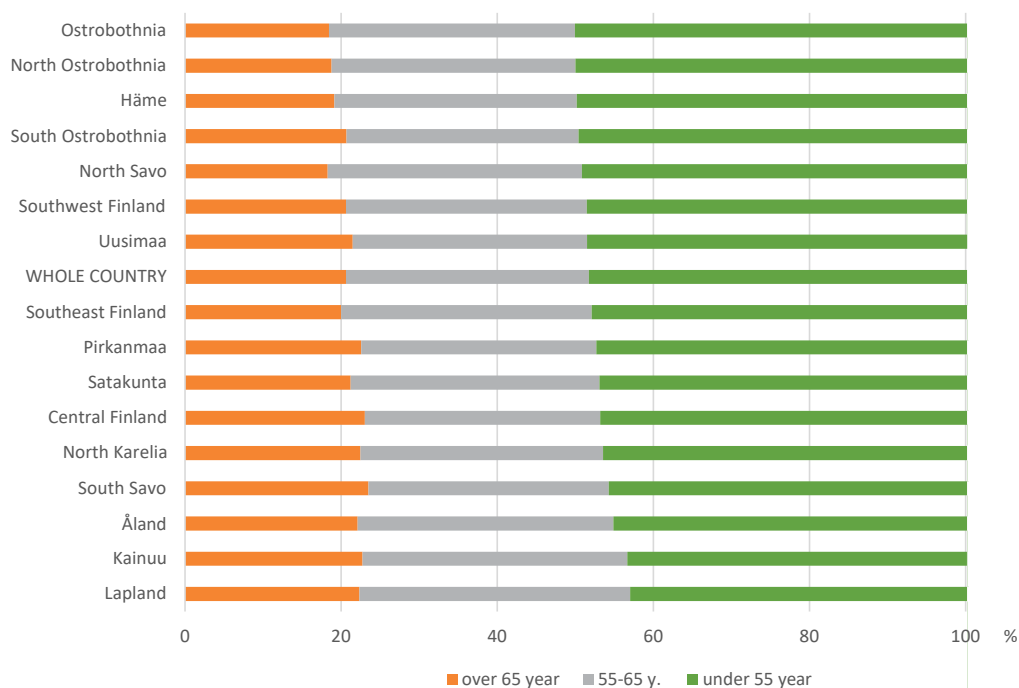
The only production line in which the number of farms has increased is other plant production, by roughly a third during the last ten years. This production line includes grassland production, as the largest sector measured by arable area, as well

The number of agricultural and horticultural enterprises by production line



Source: Luke.

Percentage of farms by the farmer's age



Source: Luke.

as other freshly harvested feed, and the production of potato and sugar beet.

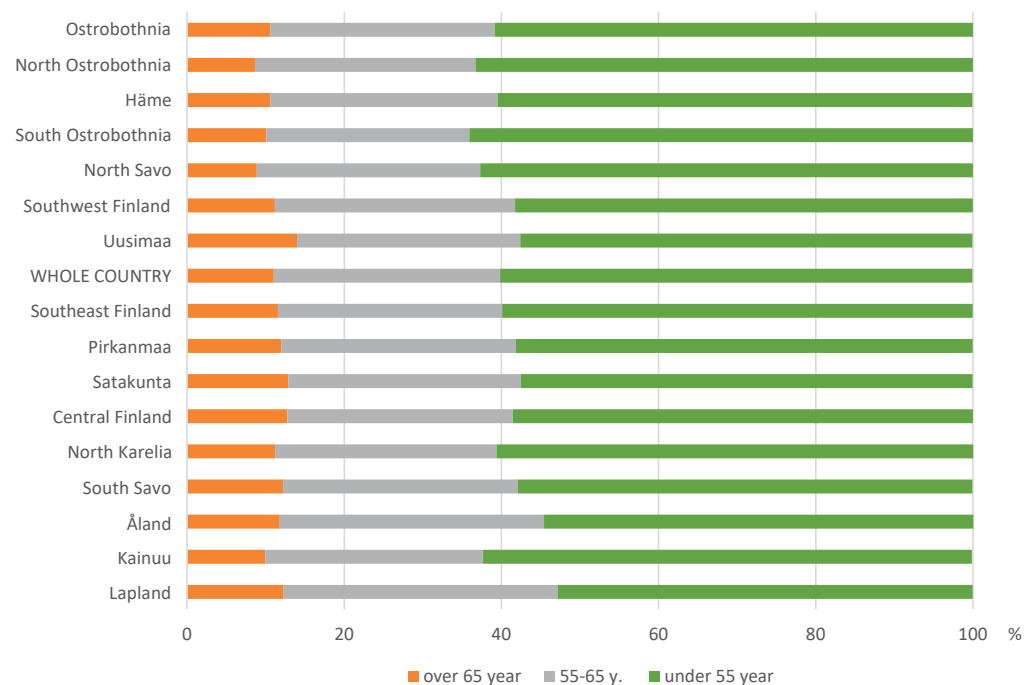
Farms that discontinue livestock production either switch to crop production or lease or sell their fields to other farms. As a result of this trend, the number of livestock farms roughly halved between 2010 and 2022, while the percentage of crop production farms of all farms increased. When 32% of all farms were still engaged in livestock production and 64% in crop production in 2012, the corresponding figures in 2022 were 21% and 75%. The remaining farms were engaged in mixed production.

Farmers becoming older

Most farms in Finland (85%) are privately owned. Farming syndicates own just under 9% and heirs some 2% of all farms. The number of limited companies has increased, already accounting for 3% of all farms in 2022.

The average age of farmers has continued to increase. The average age of farmers (primary farmers) was 54 years in 2022, while it was only 51 years in 2015.

Percentage of the utilised agricultural area of farms (fields) by the farmer's age



Farmers engaged in other crop production, greenhouse and outdoor production, and cereal production as the primary production line were the oldest, with their average age being more than 54 years. In contrast, farmers engaged in poultry, pig or cattle farming and beef production as the primary production line were the youngest with an average age of under 50 years.

A fifth of farmers are of retirement age

The number of farmers has decreased in all age groups except for the oldest group. At the same time, the percentage of farmers past the retirement

age of all farmers has increased. In 2022, more than a fifth of all farmers were already over 65 years of age. In contrast, only 14% of all farmers were under 40 years.

The percentage of elderly farmers has increased in all farm sizes, not merely on small farms. In 2022, farmers of more than 65 years of age held 11% of the total utilised agricultural area.

The percentage of farmers of over 65 years is the highest in Southern Savonia (24%) and the smallest in Northern Savonia and Ostrobothnia (18%). Farmers of retirement age hold the largest part of utilised agricultural area in Uusimaa (14%) and the smallest part in Northern Savonia and Northern Ostrobothnia (9%). However, there are only minor regional differences.

A third of Finland's farms and utilised agricultural area is held by farmers aged 55-64 years. This will have a significant impact on the structure of Finland's agriculture in the near future. The percentage of farms and utilised agricultural area held by farmers aged 55-64 years is the highest in Lapland (35%) and the smallest in Southern Ostrobothnia (30% of farms and 26% of utilised agricultural area).

Farm succession in a key position

The aging of the farmer population and the decrease in the number of farms are affected, above all, by the low number of farm successions. According to the data of agricultural census 2020, an average of 800 farms passed on to the next generation per year in 2010-2020.

Young people are attracted to engage in agriculture through start-up support paid to new farmers aged under 40 years of age. Start-up support paid as aid or interest subsidy loans were granted for 2,147 farms in 2015-2022. The most subsidies were granted in Ostrobothnia and the fewest in Kainuu.

If the number of farm succession does not increase, the percentage of elderly farmers will only increase, and the number of farms will continue to decrease.

Statistics

Luke, structure of agricultural and horticultural enterprises



Economic development in agriculture

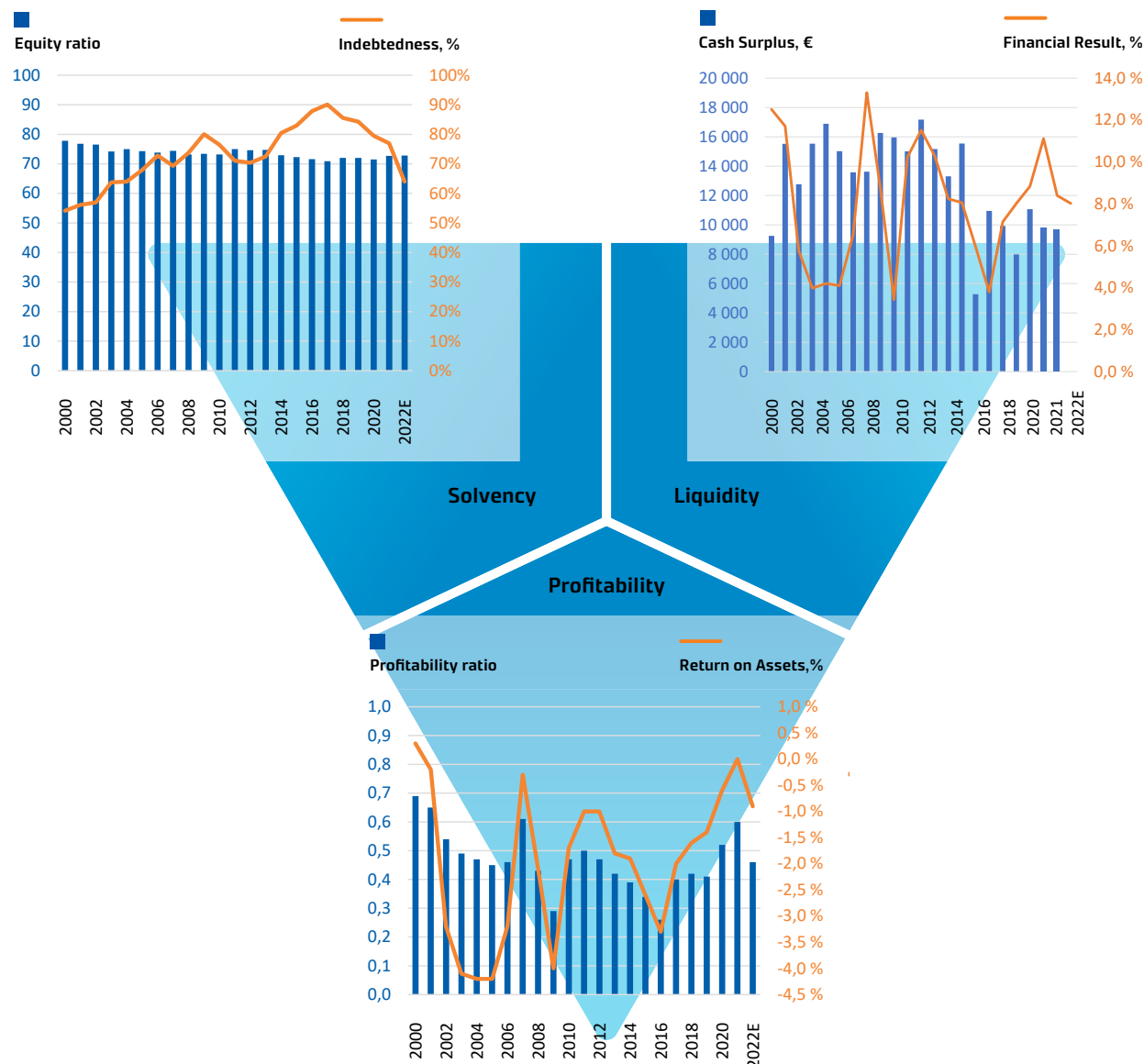
Jukka Tauriainen

The price turbulence in 2022 had a significant impact on the economy of farms. According to estimates, profitability in agriculture in 2022 was almost as low as in the previous year. Costs on farms first increased steeply, while producer prices followed with a delay. Cost pressures were especially reflected in the low profitability of livestock farming. The profitability of cereal and oilseed and protein crop farming improved from the previous year.

Profitability

Rapid changes in agri-food product and agricultural input markets have a significant impact on the economic position of farms. Not all production lines were able to compensate for the rising costs through producer prices, and support packages were required.

The total return on investment in the Finnish agriculture has been lower than interest on long-term state loans throughout the 2000s. As a result, agricultural enterprises have been unable to produce added value for the capital invested in them. In calculating the return on assets, the labour costs of the entrepreneur family have been deducted as an expense.



In 2022, the average profitability ratio in agriculture was around 0.46. Therefore, agricultural entrepreneurs received on average EUR 7.5 per working hour, with a return on equity of 1.5%.

Cost pressures in 2022 were especially reflected in the low profitability of livestock farming. High cereal prices affected meat production, in particular. The profitability of cereal and oilseed and protein crop farming improved from the previous year. In 2023, costs are expected to increase in all production lines. The profitability of arable farming also appears to be decreasing as a result of lower producer prices.

Return on = net result + interest) ÷ average total assets

Profitability ratio = entrepreneurial income ÷ (pay adjustment for entrepreneur family + target return on equity)

Solvency

On average, Finnish farms have a high self-sufficiency rate, with more than 70% of capital committed to the enterprise as equity. Only largest farms in dairy, beef and greenhouse production have sufficiency rates only at satisfactory level (<40%).

Low profitability and the weak ability to produce income also affect the loan servicing ability. During

the 2000s, relative indebtedness reached a high of 90%, but has decreased since 2018. According to the estimate, relative indebtedness will continue the improvement started in 2018. Indebtedness in agriculture is associated with risks, as growing unit sizes take up more and more external capital. The ability to repay the loan will weaken or remain weak if producer prices do not rise at a faster pace and costs continue to rise.

In 2023, the ability to produce income will be tested by cost pressures which may also be reflected in an increase in relative indebtedness.

Self-sufficiency rate = equity on 31 December ÷ (total assets - received advance payments)

Debt ratio = total liabilities on 31 December ÷ gross revenue

Gross revenue = sales revenue + subsidies + other revenue

Liquidity

An enterprise must be able to cover all the ordinary expenses related to its operations. Luke's profitability accounting monitors the liquidity of agricultural enterprises with dynamic cash flow indicators.

In practice, a cash flow surplus is any amount left of a farm's cash flow that is available for private expenses. In determining cash flow surplus, all

expenses, including taxes and investments, are deducted from the income received and loans taken out by the enterprise. On average, farms can cover their liabilities, but the level of surplus is low. Combined with the large deviation in the key figure, it can be concluded that for some farms in some years, no cash flow surplus is accumulated at all.

According to the liquidity calculation, the average cash flow surplus of farms remained at EUR 8,000-11,000 between 2016 and 2021. In 2022, the increase in costs reduced the liquidity of many farms, while no large wave of discontinued operations was seen.

The financial result rate indicates how large a part of financial results remain available for repaying loans, making investments, and sharing profit to the entrepreneur. There has been considerable deviation in the 2000s, but the financial result rate has remained positive. In addition to ordinary expenses, entrepreneur families have been able to meet their targets for paying themselves income.

Cash flow surplus = income - expenses - net loans taken out - net investments - taxes

Financial result = (net result + depreciations) ÷ gross revenue

Agri-food sector outlook analyses the current situation and the near-term prospects of Finnish agri-food sector.

Description of development in the agri-food sector:

- food production
- food consumption and prices
- foreign trade in foodstuffs
- agricultural policy
- agricultural structures
- development of economic situation in agriculture

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