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Norwegian Agriculture Status and Trends 2024

«Norwegian Agriculture – Status and Trends 2024» provides a brief overview of major aspects of agriculture in Norway and summarizes some of the information that is annually published within the sector.

Of Norway's total land area (excluding Svalbard and Jan Mayen), only 3 percent is farmland and 39 percent is covered by forests. In comparison, urban and industrial areas amount to 0.5 percent of Norway's land area (Kartverket, 2024).

The climate determines the types of crops that can be grown and their expected yields. Norway is a marginal growing area for many important crops and is one of few European countries that cannot grow sugar crops. Due to Norway's climate, grain yields per hectare are lower than in most other countries in Europe. In many parts of Norway, growing fodder

crops, mainly grass, is more or less the only alternative. Grass-based livestock production is therefore the backbone of Norwegian agriculture. The country's cool climate limits the spread of plant diseases and pests.

AGRICULTURAL RESOURCES

Agricultural area

According to the Budget Committee for Agriculture (2024a), the total agricultural area in Norway in 2018 was 0.984 million ha, of which about 0.807 million ha were arable land. Between 2001 and 2023, the total agricultural area in Norway

THE «NORWEGIAN MODEL»: THE BASIC AGRICULTURAL AGREEMENT AND ANNUAL AGRICULTURAL NEGOTIATIONS

- The Basic Agricultural Agreement provides the mandate for the annual negotiations and specifies the scope and the parties of the negotiations
- The Budget Committee for Agriculture prepares the parties' joint background material for the negotiations (ca. 10th of April)
- Demands put forth by the farmers' associations (late April)
- Offer made by the Government (early May)
- Negotiations
- Agreement (or breach of negotiations) before ca. 15th of May
- The Storting (Parliament) approves the agreement in June

decreased by 6 percent. The acreage of land used to grow cereals decreased by 14 percent from the peak year of 2001 to 2023. The area of temporary grassland peaked in 2002 and was reduced by 3 percent until 2024. The area of surface-cultivated grassland has increased by 8 percent since 2002.

Cereals are mainly grown in the lowlands of eastern and central Norway, whereas grass and other roughage are the main crops throughout the remainder of the country. However, the geographical distribution of the various crops is not only the result of climate and topography. The prevailing agricultural policies since the early 1950s have helped to “channel” grain produc-

tion to the mentioned lowland areas. These areas have the best cereal growing conditions, but also allow relatively easy access to non-farming employment (urban regions of Oslo and Trondheim). Accordingly, roughage-based livestock production, which is more labour-intensive and more profitable per area unit than grain production, was channelled to areas with poor growing conditions for grain, and where the chances for finding off-farm employment are much slimmer.

Livestock

Between 1980 and 2024, Norway's dairy cow population has declined from 375,750 to 203,000 (Budsjettnemnda for jordbruket 2024a). This development is linked to declining milk consumption and thus total production. Since 2000, milk yields per cow have been increasing, whereas the total milk production in the same period has been fairly stable, with an annual output of ca. 1,500 million litres.

The average dairy herd size increased from 11.7 cows in 1989 to 31.8 in 2023 (Budsjettnemnda for jordbruket 2024a). Norwegian dairy herds are small in a European context.

The pig population varies somewhat from year to year. In periods of market imbalance of pork, various measures are implemented in an attempt to stabilize the market.

Norway's sheep population increased by 9 percent from 2014 to 2017, following measures to stimulate production. This resulted in overproduction, reduced profitability and a decline of the sheep population by 18 percent in the years after 2017. Many smaller sheep farms have gone out of business in connection with farm succession.

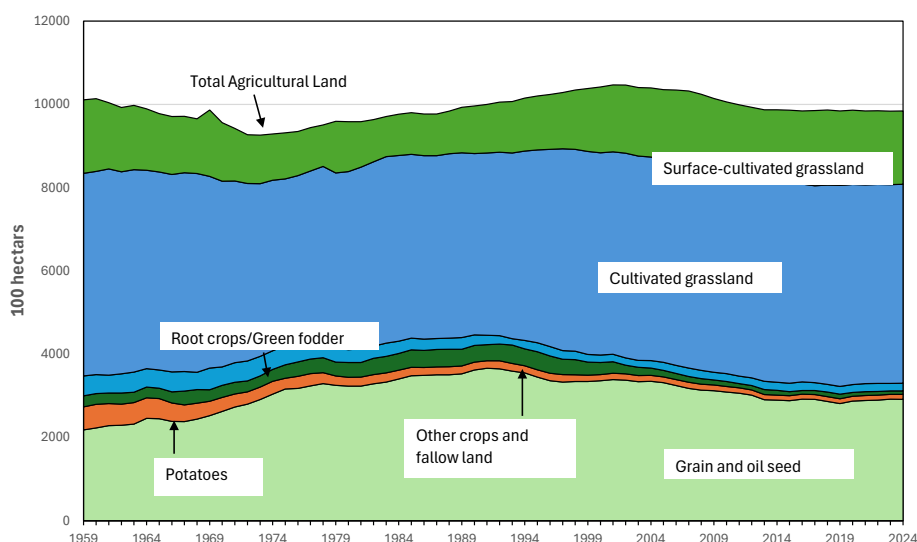


Figure 1 Agricultural area in Norway, total and by main crops. Source: Budsjettnemnda for jordbruket (2024a)

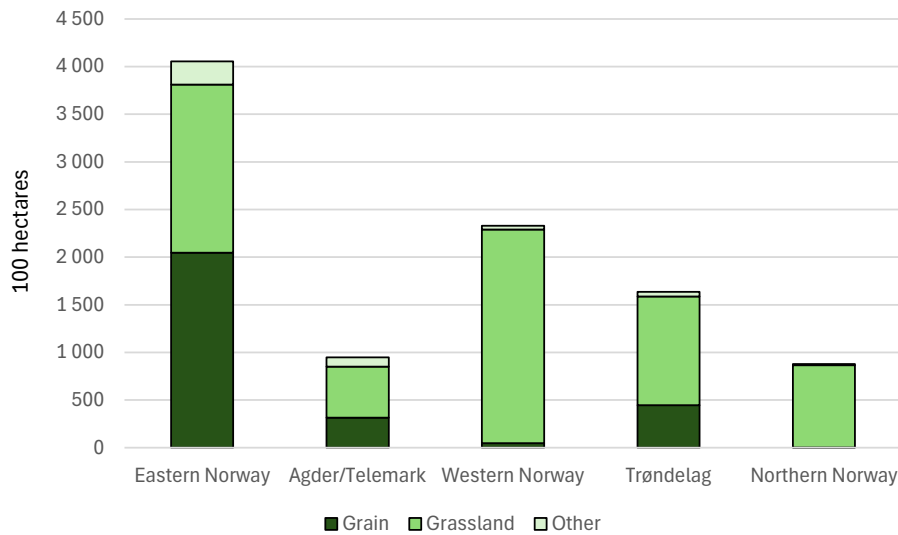


Figure 2 Distribution of main crops in various regions in Norway. Source: Statistisk sentralbyrå (2023a), preliminary figures

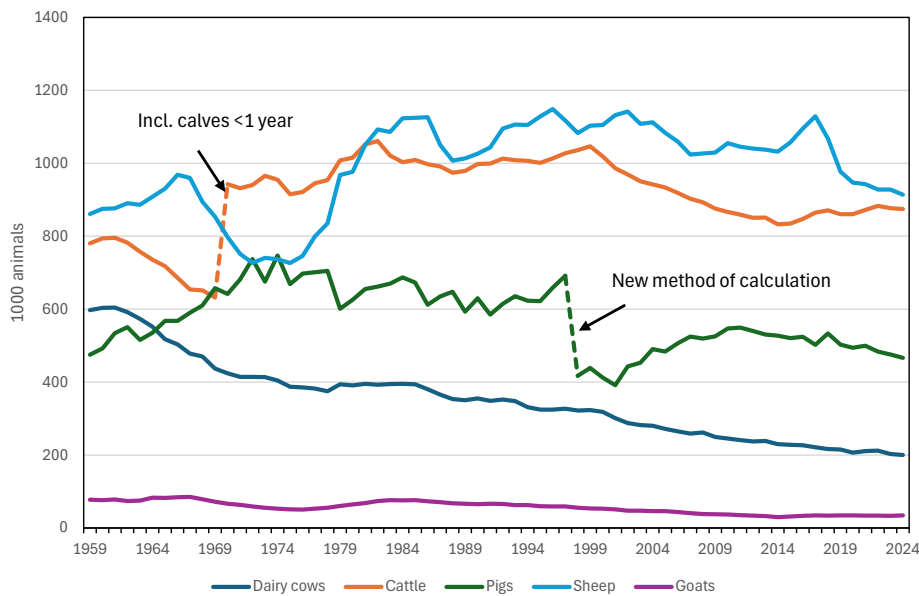


Figure 3 Livestock populations in Norway. Source: Budsjettnemnda for jordbruket (2024a)

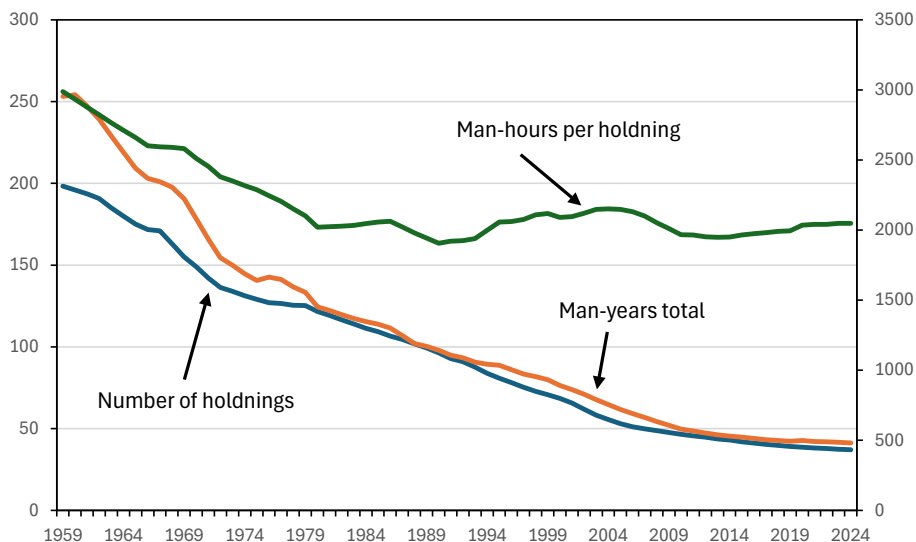


Figure 4 Number of holdings in operation, total labour input in agriculture and working hours per holding for the agricultural sector. Source: Budsjettnemnda for jordbruket (2024a)

Farm size, structural development and labour expenditure

The number of agricultural holdings declined from 99,400 in 1989 to around 37 000 in 2023. At the same time, the average farmland acreage on those farms still in operation is constantly increasing. The average farm size in 1999 was 14.8 acres but has increased to 26.1 acres in 2024. Of the latter figure, approximately 48 percent was rented land. For the past 75 years or so, the share of rented land of the total farmland in operation has been steadily increasing.

Another important structural development in Norwegian agriculture is the substantial decline in the number of livestock farms. The trend is a concentration of livestock production on fewer holdings, without a decrease in the total production volume.

Technological developments as well as farm management considerations can help to explain the current concentration and specialization of crop and livestock farming. Since 1975, concession regulations have limited the number of animals that can be kept when establishing new or expanding existing poultry and pig operations. Due to these restrictions, the authorities can maintain a certain control of the structural development within concentrate-intensive livestock operations. In dairy farming, a milk quota system limits herd size.

The structural development changes with politics. For example, the concession limit for broilers was doubled to 280,000 slaughtered animals per year in 2020 and for roughage and cereals. A single subsidy rate for all acreage on which these crops are grown were also introduced.

The number of owners of agricultural real estate in Norway has declined much less than the number of agricultural holdings. In 2023, there were 182,526 agricultural properties in total, about 3,600 fewer properties than in 2013 (Statistisk sentralbyrå, 2023b). Approximately 78,7 percent of all agricultural properties with a dwelling are inhabited.

Most Norwegian farms are run by the family owning the enterprise, often with the help of some hired labour. A total of 41 500 man-years were carried out in Norwegian agriculture in 2024. Of this, 31 300 hours were worked by the families owning the farms (Budsjettnemnda for jordbruket, 2024a).

Agricultural economy

Measured as farm gate prices, the total value of agricultural primary production in Norway was NOK 59,5 billion in 2023, including all subsidies. Annual total income varies, depending on weather and market conditions, as well as changes in price and support policies. Grain yield in 2023 were significantly reduced (ca 40 percent below average) due to the extreme weather “Hans”.

Figure 5 shows the distribution of agriculture’s total gross output of NOK 41,6 billion, excluding direct subsidies, between various farm commodities as normalized earnings for 2023. Sales of milk and meat are the two largest sources of income.

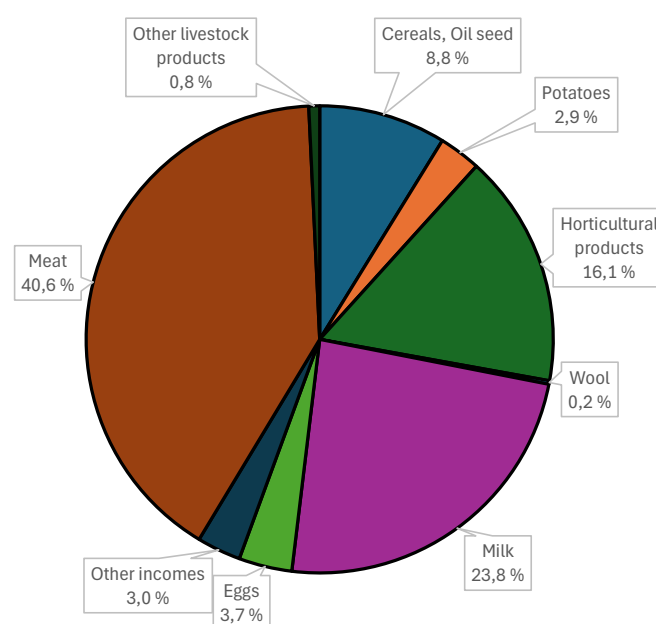


Figure 5 Gross output at basic prices by commodities 2023, expected value. Source: Budsjettnemnda for jordbruket (2024a)

Figure 6 shows the distribution of agriculture’s total income between sales income and major subsidy categories. Price subsidies are shown separately.

Agriculture’s total costs are presented by different cost categories in Figure 7. For 2023, total costs are calculated to amount to NOK 39,4 billion. The main cost categories include depreciation (of buildings, machinery, etc.), purchased feed and “other costs”. The latter category includes a number of different costs, such as silage additives, packaging, freight costs, veterinary expenses and insurance.

The financial results at the national level are based on the Economic Accounts for Agriculture. In these, a registered (for the whole sector) and a normalized

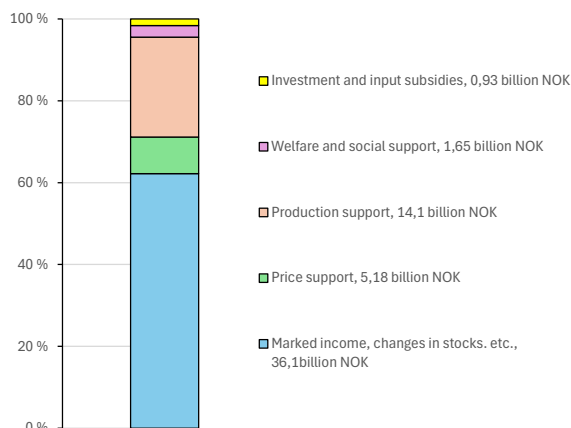


Figure 6 Agriculture's total income in 2023 was NOK 45,3 billion – shown divided between sales income and major subsidy categories. Source: Budsjettnemnda for jordbruket (2024a)

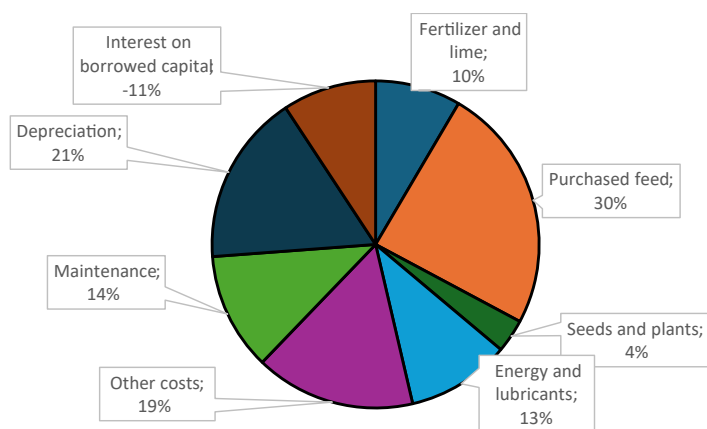


Figure 7 Costs in agriculture by categories 2023 Source: Budsjettnemnda for jordbruket (2024a)

(for active agricultural enterprises) series of accounts are presented. The accounts for the whole sector show the actual accounts for agriculture in each year. The account series for active agriculture enterprises shows the accounts under “normal” conditions. In addition, there are some differences in the calculation principles of the two series. For example, working hours performed by people other than the user family are deducted and expensed in the Economic Accounts for active agriculture. In the sectoral accounts, all working hours belong to the agricultural sector. This results in fewer hours worked, but higher costs in the Economic Accounts for active agriculture enterprises.

The financial results for 2021-2024 according to the two series in the Economic Accounts for Agriculture are presented in Table 1. The results are expressed as return to labour and equity capital for the sector accounts. The results are expressed in total (million

NOK) and as NOK per man-year, i.e. payment for labour input and own capital after having covered all remaining costs, including interest paid on loaned capital.

For the accounts related to the active agricultural enterprisers, results are shown in annual results (expressed as million NOK) and annual result per family man-year including the effect of agricultural tax deduction.

When assessing income developments in agriculture, the annual farm negotiations focus on the trend in farmers' return to labour and own capital per man-year (annual results) in the accounts for active agricultural enterprises. Income trends in the agricultural sector are thus compared to those of other employment groups, such as industrial workers.

Farm income and industrial wages shown in Table 1 are not directly comparable, but the figures nevertheless indicate the differences in income level and income trends (per man-year) between the two groups. There are substantial farm income fluctuations between years, even in the normalized series. These are due to market fluctuations for livestock products and annual cost variations. The effect of the income tax allowance is included in one of the series in Table 1. The results per man-year show lesser decreases and greater increases than the total figures. This is because the total returns are distributed among increasingly fewer man-hours. For the period as a whole, the income level per man-year in agricul-

	21	22	23	24
The whole sector				
million NOK	15 815	18 480	15 979	19 892
Change %		17 %	-14 %	24 %
NOK per man-year	371 244	440 524	383 189	479 325
change %		19 %	-13 %	25 %
Active agricultural enterprises				
million NOK	10 283	12 827	11 533	14 784
Change %		25 %	-10 %	28 %
Annual result	358 700	453 700	412 200	522 000
Change %		26 %	-9 %	27 %
Comparative wages				
Annual salary	569 500	591 800	624 700	657 200
Change %		4 %	6 %	5 %

Table 1 Return to labour and own capital for Norwegian farmers, according to registered and normalized accounts. Million NOK and NOK per man-year. Yearly wages in industry. Source: Budsjettnemnda for jordbruket (2024a)

ture has improved, mainly due to increased production efficiency.

Agriculture and the food industry in a regional perspective

Gross product (GP) and employment are here used as indicators for the regional importance of agriculture and the food industry. The national gross product for agriculture and the food, beverage and tobacco industry in 2021 was NOK 16.5 billion and NOK 48.5 billion, respectively.

Total agricultural employment in Norway in 2021 was 37,150 persons, compared to 48,809 persons in the food, beverage and tobacco industry. The gross product for agriculture accounted for 0.4 percent of Norway's total national gross product, whereas the agricultural sector employed 1.3 percent of employed persons in Norway.

Regional data for 2021 show that Innlandet was Norway's main farming county, both in terms of gross product (NOK 3.3 billion) and employment (6,543 employees).

Regarding the food, beverage and tobacco industry, Rogaland had the highest gross product of all counties in 2021, with NOK 6.60 billion, whereas employment was highest in Trøndelag, with 6,319 employees.

Farm-level economics

The Economic Accounts for Agriculture show the total financial result for Norwegian agriculture, but do not distinguish between results on the varying types of holdings, in different regions, with varying sizes and productions. However, this is the case in the Account Statistics for Agriculture, which are prepared by NIBIO (formerly NILF). These statistics are based on the

accounts of about 900 holdings from throughout Norway on which a significant share of the family's total income is generated on-farm. The data are classified according to region, farm size and production.

Return to labour and own capital is defined as farm income minus all costs except the cost of hired labour. The costs also include agriculture's share of the farm family's interests on debts. The return to labour and own capital shall thus cover all labour input and the farm family's return on assets. Figure 8 shows return to labour and own capital per holding for different farm types during the past 10-year period.

However, there are significant fluctuations, due to yield variations and changing market conditions. Dairy and beef production are less affected by yield fluctuations, and price variations are rather small.

The results on farms growing cereals in monoculture are extremely influenced by annual yield variations, although prices also play a role. The results in sheep farming depend on such factors as grazing conditions and the prices of mutton and lamb.

Average labour input varies considerably between the different farm types. Average labour input for 2022 per farm was 2 994 hours. This is an increase in 60 hours from the previous year. 69 percent of the hours worked is registered by the family owning the farm.

In 2022, the share of farm income of total net family net income amounted to 35 percent. Forty-seven percent of total net family income was derived from the farm's overall resources. Thus, 12 percent of total net family income stems from farm resources such as forestry, additional farm enterprises and the value of family labour investments. Remaining income sources

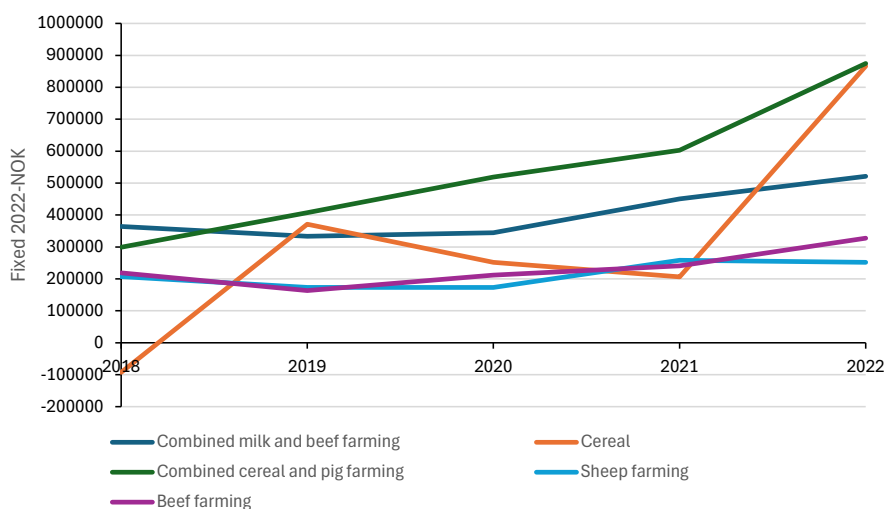


Figure 8 Return to labour and own capital per holding for different farm types, in 2022 kroner. Source: Norsk institutt for bioøkonomi (2022).

are off-farm employment and enterprises, pensions and capital income.

PRODUCTION, MARKETING AND CONSUMPTION OF AGRICULTURAL COMMODITIES

Grain, cereal products and feed concentrates

Most grain grown in Norway is used in animal feed concentrates. Of an average annual production of slightly more than 1.0 million metric tons, approximately 80 percent is used in feed concentrates. The share of domestically grown bread grain of the total national consumption varies considerably from year to year, because of weather conditions on yields and grain quality, see figure 9. In 2021, the figure was 65,6 percent, whereas it increased to 75,7 percent in 2022.

Potatoes and horticultural products

Figure 9 shows a decline in potato consumption, especially ware potatoes for direct consumption. The consumption of vegetables, fruit and berries is generally increasing. Due to the climatic limitations for fruit production, most of the fruit and berries consumed in Norway are imported. The figure also shows a considerable import of potatoes.

Milk and dairy products

After declining rather significantly since the mid-1980s, the total consumption of milk has levelled off

since about 2000. With few exceptions, annual consumption has been slightly above 1,500 million litres milk delivered to dairy. However, as Norway's population is increasing, milk consumption per capita is decreasing.

Whereas liquid milk consumption has been steadily declining, the consumption of cheese has increased. These long-term trends can be largely explained by competition from other products, prices, focus on food-related health issues and changing eating habits. Since liquid milk gives the highest profits, the negative consumption trend has adverse economic effects for Norwegian dairy farmers.

Meat and eggs

The production and consumption of meat in Norway has been steadily increasing for the past 30-40 years, especially due to an increase in poultry meat consumption. Consumption of poultry peaked in 2013, and has declined slightly since, reaching about the same level as beef consumption in 2018. Consumption is highest for pork, at 20.2 kg per capita. The focus on nutrition and food safety issues can potentially cause considerable variations in meat demand. For example, publicity about the use of antibiotics (Narasin) in poultry feed led to a sharp decline in chicken consumption in 2014 and 2015.

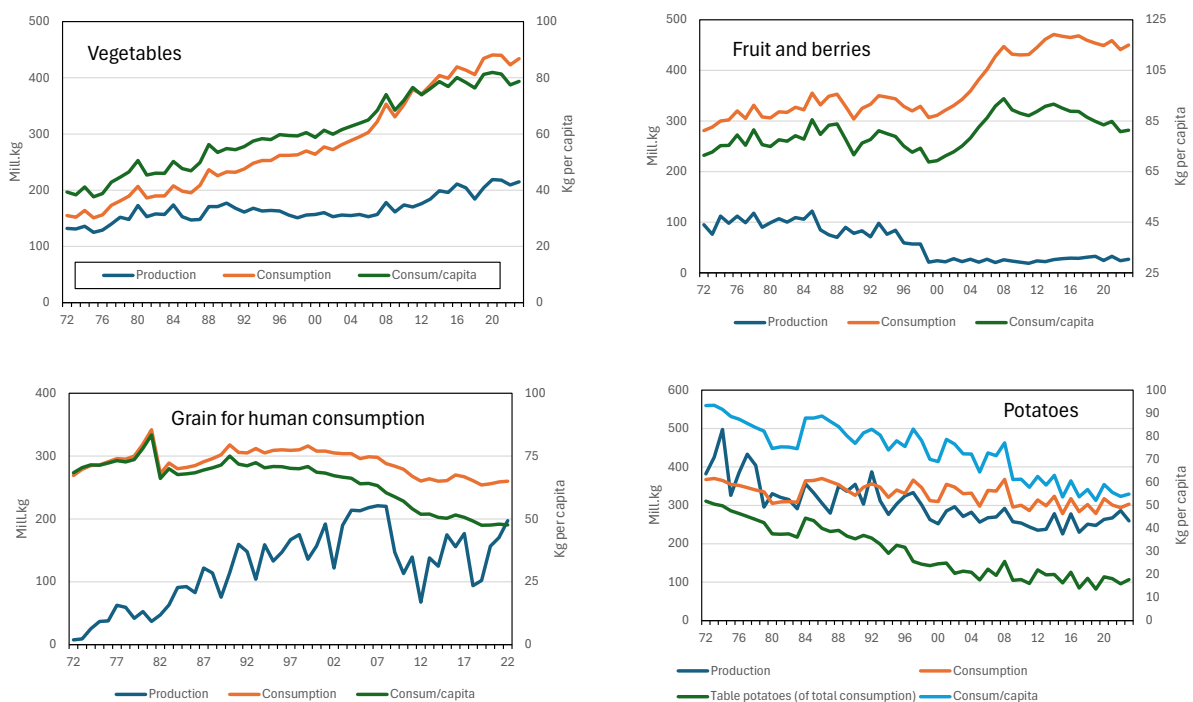


Figure 9 Production and consumption of bread grain, potatoes and horticultural products. Source: Helsedirektoratet (2024) and Budjsettnemnda for jordbruket (2024a)

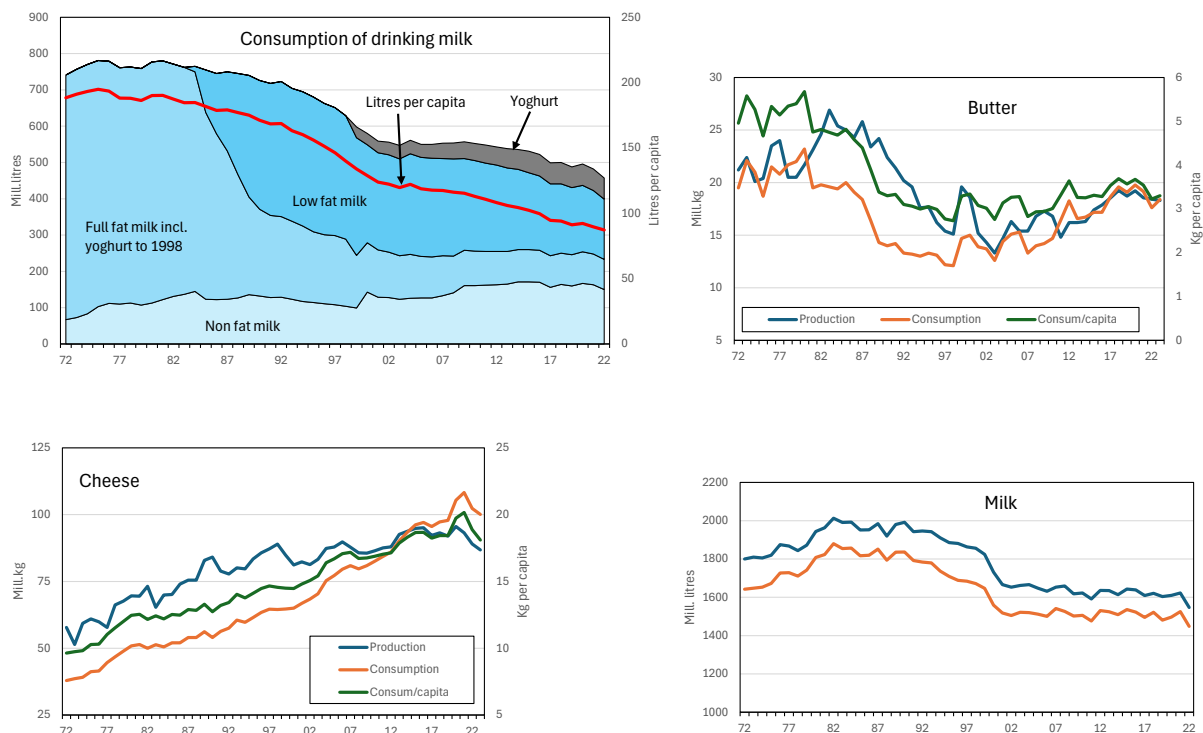


Figure 10 Production and consumption of milk and dairy products. Source: Helsedirektoratet (2024) and Budjsettnemnda for jordbruket (2024a)

The annual consumption of beef, veal, lamb, mutton, pork and poultry was at an all-time high in 2021 at about 407,000 tons in total. This is about twice the amount consumed in the early 1980s, although the increase per capita is somewhat lower. There has been some import of meat, especially beef. This is due to the declining cattle population as a result of reduced milk consumption and production. There has been an increase in egg production and consumption in recent years, after several years of relatively stable consumption.

Organic production

The number of organic farms in Norway has been declining for some years. In 2023, there were 1,939 certified organic farms, 603 fewer than in 2013. The Viken region has most organic farms, but the Vestland region experienced the greatest decline. Of the major agricultural regions in Norway, Rogaland has the fewest organically run farms (Debio, 2023).

The total area under organic farming has decreased by 13 percent since 2013. The organic area increased somewhat from 2019 to 2020 but continued to decrease again after 2020. From 2020 to 2023, the decline in organically farmed area was 9,854 ha. As of 2023, about 41,100 ha were farmed organically, equivalent to 4.2 percent of Norway's total farmland.

The sales value of organic foods in the food retail trade has increased steadily since 2010, with a slight decrease in recent years. From 2022 to 2023, sales of organic goods through food retailers increased by 0,5 percent. There was a large increase in sales of dairy products, beverages and fresh fish/shellfish. Measured in value, dry goods have the largest turnover with NOK 857 million.

Total sales of organic food amounted to a value of NOK 2.5 billion in 2023. Due to price increases, it is not possible to know for sure whether increased value in sales are due to increased consumption or increased prices. In sales channels other than groceries, there has been a small increase in sales of organic products (Landbruksdirektoratet, 2024).

FOOD PRICE TRENDS

Domestic production and domestic food consumption is expressed as the sum of domestic production and import, minus exports. The degree of self-sufficiency is often used to express the share of Norwegian production of domestic food consumption on an energy basis. Self-sufficiency is defined as the percentage of domestically produced food of the total food consumption. However, the degree of self-sufficiency does not take the origin of agricultural inputs into account, e.g., if the concentrates used in meat production are domestically grown or imported. Further-

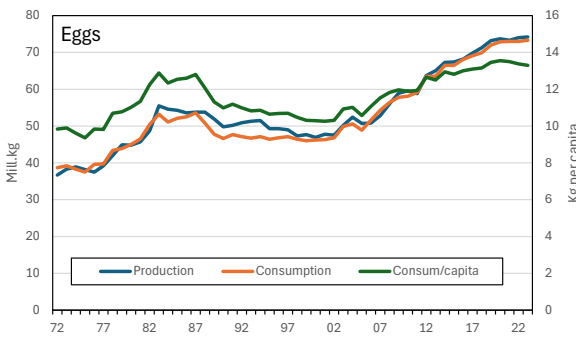
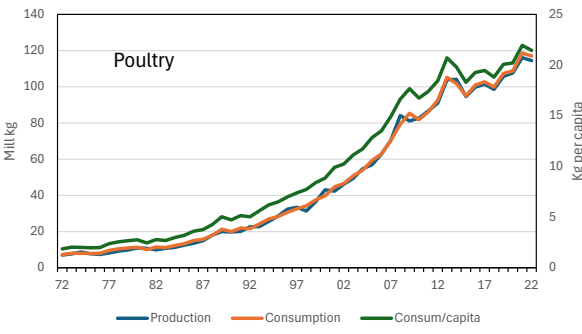
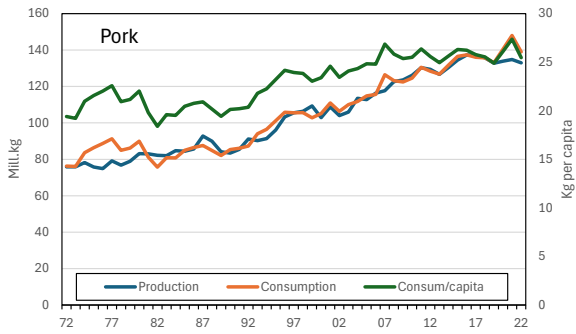
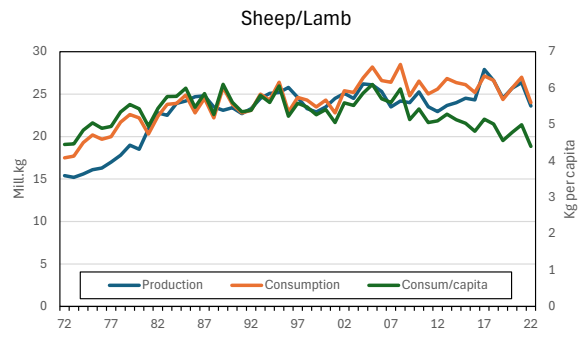
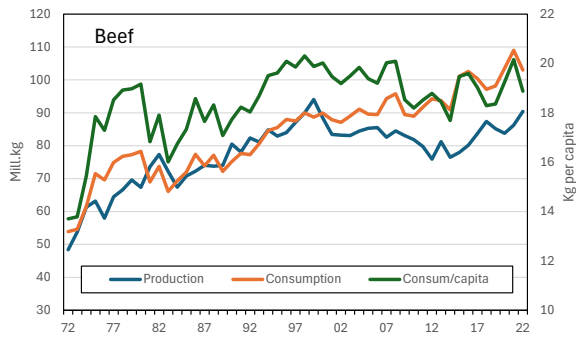


Figure 11 Production and consumption of meat and eggs. Source: Helsedirektoratet (2024) and Budjsettnemnda for jordbruket (2024a).

more, the degree of self-sufficiency does not include Norwegian food exports, such as the considerable export of fish. In a crisis, diets could be changed to including more fish, which thus would increase the degree of self-sufficiency. The degree of self-sufficiency is illustrated in figure 15. From 1970 to 2022, self-sufficiency varied between 45 and 55 percent.

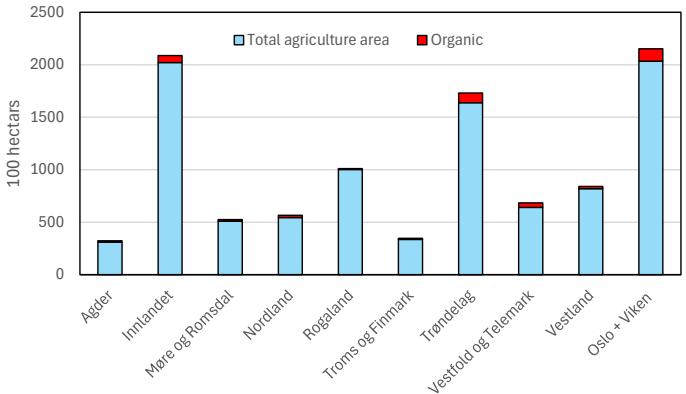


Figure 12 Organic agriculture in Norway, area in percentage of total agricultural area. Source: Debio (2023)

In years with low grain yields like 2012 and 2018, the degree of self-sufficiency fell below 45 percent.

Import and export

Figure 16 shows tentative results for 2023 regarding the relationship between production, import and export of some typical farm commodities. Export is insignificant for all products. This illustrates that Norwegian food production is aimed at the domestic market. Imports are highest for commodities that cannot be produced in sufficient quantities due to the natural conditions (climate or farmland availability) in Norway. These are primarily fruits and berries.

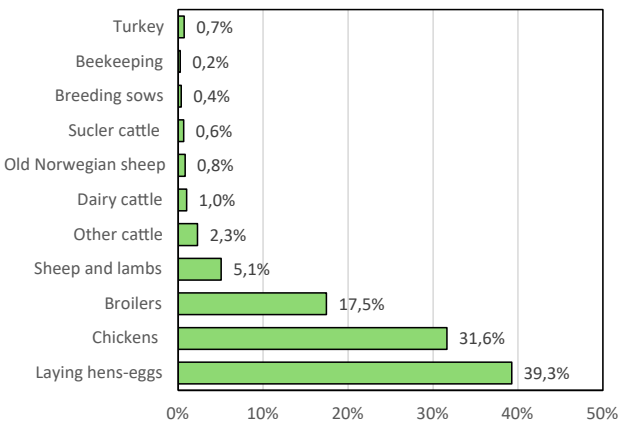


Figure 13 Share of livestock in organic production. Source: Debio (2023)

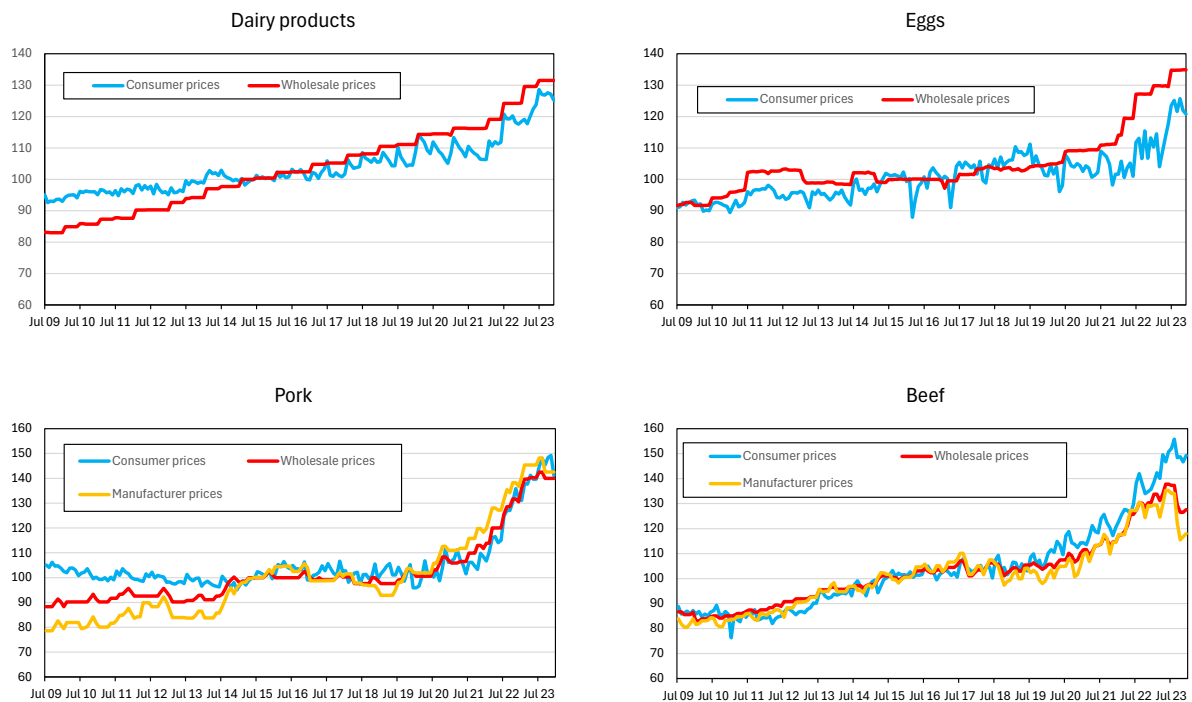


Figure 14 Price trends for dairy products, eggs, beef and pork at the farm gate, wholesale and retail level. Index 2015=100
Source: Norsk institutt for bioøkonomi (2024b)

FORESTRY IN NORWAY

Natural resources

Forests cover 12.7 million hectares, or about 39 per cent of Norway's land area. The forest area includes forests both above and below the coniferous forest line. Approximately 8.2 million hectares, corresponding to about 25 per cent of the country's land area, are covered by productive forest. Productive forest is defined as forest producing more than 1 m³ per hectare per year. The most recent figures from the national forest inventory show a growing stock of 998 million m³, of which 879 million m³ are on productive forest land. The total annual increment in 2022 was 23.9 million m³, of which 21.8 million m³ was on productive forest land (Statistisk sentralbyrå 2023c).

Of the growing stock in Norwegian forests in 2022, 44 per cent consisted of spruce (*Picea* spp.), 31 per cent of pine (*Pinus* spp.) and 25 per cent of deciduous tree species, compared to 53, 28 and 19 per cent, respectively, in 1933.

Big game resources

Game hunting is a good source of income for owners of forests and other non-cultivated areas. In the 2023/2024 hunting season, 26,003 elks, 52,503 red deer and 3,493 wild reindeer were felled (Statistisk sentralbyrå 2024d–f). Most elks were felled in Innlandet, whereas most red deer were felled in Vestland. Most wild reindeer were felled in the Reinheimen/Breheimen mountain region, followed by Hardanger-

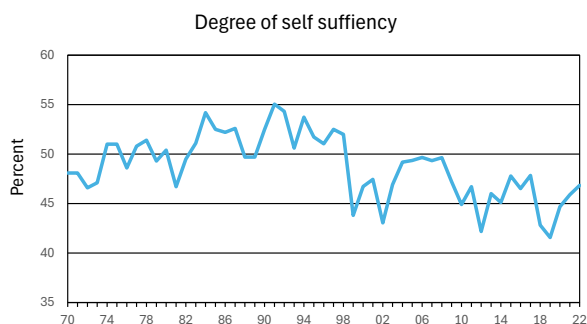


Figure 15 Degree of self-sufficiency measured on an energy basis.
Source: Helsedirektoratet (2024)

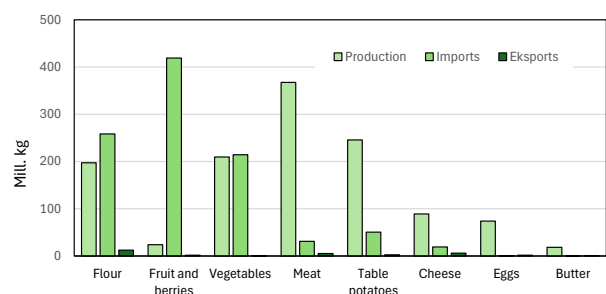


Figure 16 Production, import and export of major farm commodities. mill. kg. Source: Helsedirektoratet (2024)

vidda. The hunting quotas and numbers of felled animals are shown in Figure 17.

The estimated total slaughter weights for big game animals felled in the 2023/2024 hunting season were 3,172 metric tons elk meat, 2,455 metric tons red deer meat and 126 metric tons reindeer meat. At an estimated first-hand price of NOK 100 per kg, this represents a total value of nearly NOK 575.3 million. In addition, one has to consider the recreational value, trophy value, income from guided tours and lodging, hunting license sales, added value from processing, and the value of felled roe deer and other small game.

Climate regulation

Besides being a source of timber and other raw materials, forests also have a considerable value for climate regulation, since the forest biomass has a significant impact on the content of CO₂ in the atmosphere. In 2022, the net assimilation of CO₂ by Norway's forests was 17.9 million tons (Miljødirektoratet 2024). This represents around 38 percent of the country's total greenhouse gas (GHG) emissions, which amounted to 46.6 million tons in 2023 (Statistisk sentralbyrå 2024g).

The standing stock in Norwegian forests has increased from 300 million m³ in 1919 to about 998 million m³ today. In 2020, the total amount of carbon sequestered by living biomass in Norway was 490 million tons of CO₂ (Norsk institutt for bioøkonomi 2024b). Through photosynthesis, CO₂ is stored as carbon in wood and wood products. In the common Norwegian tree species, carbon makes up about 50 percent of the dry weight. The increased use of wood materials

and products thus contributes to carbon sequestration throughout the lifetime of the wood product. In addition, the production of wood materials requires less energy and gives lower process emissions than the production of alternative materials such as concrete and steel. Waste products can be used as a source of bioenergy and thus replace fossil fuels.

Timber harvesting is included in greenhouse gas inventories as an emission in the year of harvest and timber removal. It is not taken into consideration whether much of the harvested timber is used for producing construction materials or other products that continue to bind carbon. The calculation method also entails that, e.g., emissions from burning biofuels are included in the forest's GHG accounts before the timber is used as fuel.

Forest economy

In 2023, 10.9 million m³ of timber were sold to the forest industry. The harvested volume was 496,000 m³ less than in 2022. Thirty-six percent of the total harvested volume in 2023 was exported, mostly to Sweden (73 percent of all exports). Forty-nine percent of the exported timber was pulpwood. A total of 229,309 m³ of timber was imported to Norway in 2023.

Saw timber accounts for about 54 percent of industrial timber. Of the total timber harvest (excluding firewood), ca. 74 percent was spruce, ca. 23 percent pine and the remaining 3 percent various hardwoods. The eastern (inland) counties Innlandet, Oslo and Viken accounted for about 66 percent of the commercial timber harvest in 2023. Innlandet alone supplies about 40 percent of Norwegian timber (Statistisk sentralbyrå 2024h).

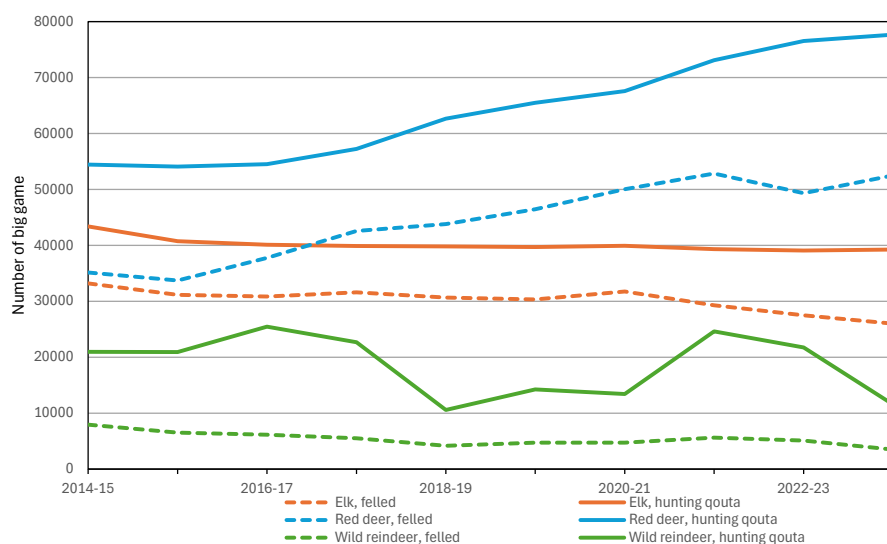


Figure 17 Hunting quota and felled big game Source: Statistisk sentralbyrå (2024d–f)

A number of paper mills have been closed down during the last fifteen years, among these was the Sødra Cells plant in Tofte. Due to this loss of several domestic pulpwood processors, more than half of the pulpwood harvested in Norway in 2018 was exported. The largest pulpwood processors in Norway are Norske Skog's plants in Halden and Skogn and Borregaard in Sarpsborg. Saw timber is increasingly being processed by domestic producers, of which Moelven and Bergene Holm are the largest.

The gross value of the sold timber was NOK 5.9 billion in 2023, an increase of 2.4 percent from the previous year. On average for all commercial timber, the log price per m³ rose from NOK 509 in 2022 to NOK 545 in 2023. In the past years, commercial timber harvesting was carried out on about 13,000 forest estates throughout Norway.

In addition to commercial timber harvesting, slightly more than 2 million m³ of firewood have been harvested per year in recent years. Of this, about 66 percent (by volume) was hardwood. Another 146 546 m³ of firewood has been imported to Norway, of which around 85 percent comes from the Baltic states (Statistisk sentralbyrå 2023i).

Norwegian forestry is increasingly becoming a pure source of capital income for forest owners. About 90 percent of the sold timber volume was cut and delimbed by logging machines. There are 126,125 forest estates in Norway. The average size of productive forest land per estate is about 55 ha in 2022. A little below 1,200 forest estates are larger than 500 ha, although these estates account for nearly one-third of Norway's total forest area. Another one-third of estates had between 2.5 and 10 ha of productive forest land. On 30 068 forest estates, forest operations were combined with farming activities in 2022. Ninety-six percent of all forest estates are privately owned (Statistisk sentralbyrå 2019j).

In 2021, forestry and forest-based services had a gross product of slightly more than NOK 7.2 billion and employed about 7,100 persons. Innlandet is the leading forest county, both in terms of gross product and employment. The sawmill, wood-processing, paper and pulp industries together generated a gross product of NOK 20.3 billion and employed 19,900 persons in 2021 (Statistisk sentralbyrå 2021).

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