Finnish Agriculture and Rural Industries 2005

- Ten Years in the European Union

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Cover picture: Magnus von Wright, Winter Landscape (1840s), the picture has been cropped at the top.
The painting belongs to the Ateneum Art Museum, photo by the Central Art Archives/Hannu Aaltonen.

The painter and graphic artist *Magnus von Wright* (1805–1868) was the eldest of the three artistic brothers from Haminalahti. He started his career by painting bird aquarelles, but later on he shifted to oil painting. He also painted landscapes and urban pictures from different parts of Helsinki. He was the pioneer in portraying Finnish winter landscapes. *Winter Landscape* (aquarelle, gouache, lead pencil) shows rural people on a beautiful late-winter day.

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Edited by
Jyrki Niemi and Jaana Ahlstedt

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Preface

This annual report presents the statistics and events concerning Finnish agriculture and rural industries, not only in 2004, but also more generally over Finland's first ten years in the EU.

For the Finnish agriculture and food sector the accession to the European Union in 1995 was an initiative for successive policy reforms, rather than a transition from one set of established policies to another. The major reforms of the Common Agricultural Policy of the EU (CAP) have taken place during the past ten years, when Finland has also been involved. The most significant reforms are the so-called Agenda 2000, enlargement of the EU with ten new Member States, and the most recent CAP reform, where direct payments are more than ever before decoupled from agricultural production. One common feature in the reforms has been the effort to trim the market support and intervention programmes. Because of the pressure by the Commission, Finland's national aid has also been revised several times.

So far there are no signals that the Common Agricultural Policy would be entering smooth waters or that the reform processes would be slowing down. During the next decade there is very likely to be further need to lower market support and rationalise farming, while even stronger inputs will be made to the environment. However, the present reform signals that the future reforms may involve more nationally chosen policy options than the previous reforms. Allowing more national choice makes the policy more readily acceptable and improves its efficiency, because the climate, social and economic conditions obviously vary even more than before between the Member States of the enlarged EU.

Even if the changes in the policy and operating environment have been large, the Finnish agricultural sector has been able to deal with the challenges it has faced quite well. Structural development of agriculture has progressed as expected, and new production capacity has been built to increasingly competitive units. The supply of domestic foodstuffs is still strong. Finland has managed to improve the productivity of livestock production in accordance with the CAP objectives. Instead, where Finland has failed is that it has not been able to use policy measures to create an economic environment which would have provided strong incentives to invest in land improvements and increase productivity of crop production. Thanks to the growth in the farm size and income support schemes the income level of farmers has still been satisfactory.

The past decade has been a period of strong adjustment and development for Finnish agriculture and the whole countryside, and there is a need to continue this work in the future as well.

The Agrifood Research Finland MTT wishes to thank Professor Jyrki Niemi and Research Secretary Jaana Ahlstedt for compiling and editing this publication, as well as all the researchers who took part in the writing process.

Helsinki 22 April 2005

Kyösti Pietola
Director of Economic Research
Agrifood Research Finland MTT

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SUMMARY

The operating environmental of Finnish agriculture and food economy changed radically in 1995 when Finland joined the EU. The commitment to the Common Agricultural Policy (CAP) of the EU led to unprecedented upheaval of the economic environment of Finnish agriculture and food sector. It was no longer possible to regulate the market price level of agricultural products through national border protection and export subsidies.

The minimum prices of agricultural products guaranteed by the EU are much lower than the producer prices paid in Finland before the EU membership, and the prices also vary more than before.

Competitiveness of Finnish agriculture tested

The change in the operating environment drew increased attention to the need to improve the competitiveness of Finnish agriculture and food industry. The rapid shift from closed markets to open and competitive markets was not an easy task for agriculture and the food economy.

The conditions for agricultural production are much weaker in Finland than in the more southern European countries. The growing season is shorter and the effective temperature sum is lower than in the other parts of the European Union.

Unfavourable natural conditions are reflected in the yield levels. The yields of cereals in Finland are only about half of the yields in Central Europe. The competitiveness of Finnish agriculture also suffers from the unfavourable structure of agriculture. Finland is a large country with very sparse population, which makes it difficult to maintain the population and viability of the rural areas.

Yet, the market environment faced by Finnish agriculture as a Community member is not fully open to free competition. Farming in adverse conditions is supported in the EU as well, partly due to rural and social policy reasons. There is a special support scheme for maintaining production in mountain and other unfavourable regions. Keeping the rural areas populated is an important objective, both in the EU and in Finland.

The national objectives of Finnish agricultural policy are founded on the view that permanent competitive disadvantage due to the natural conditions must be compensated so that Finnish production could succeed on the common EU market. Efforts have been made to achieve this by developing the CAP to take the Finnish needs better into account and through national measures allowed by the conditions of accession to the EU.

Income development has been negative

The membership in the EU lowered the producer price level in Finland by 40–50% right in the beginning of 1995. The prices of production inputs did not fall enough to compensate for the decrease in the total return, and it has been necessary to apply various forms of support to compensate for the decrease in the producer prices and northern conditions.

In Finland the support for agriculture, both in terms of its nature and amount, has played a central role in ensuring the conditions for competitiveness in different parts of the country and types of production. The share of support payments in the income formation of the producers is also greater than in the other EU countries.

In 2004 the support payments rose to € 1.8 billion, which is 45% of the total return on agriculture and horticulture (€ 3.97 billion). In 1994 direct payments represented less than a fifth of the total return.

Because the Common Agricultural Policy of the EU was not designed to meet the needs of a northern country whose agriculture is dominated by small farms, Finland must pay 56% of the support needed for agriculture from national funds, while only 44% of the support comes from the agricultural budget of the EU.

Agricultural income has been falling despite the growth in the support payments. Calculated in fixed prices, agricultural income was almost 34% lower in 2004 than in 1994. In 2004 agricultural income totalled a little over € 1,075 million, which is 4.3% less than the year before.

Instead, in horticulture the total return and income of the entrepreneurs have grown. The total return on horticulture has grown by over a quarter since 1995. During the EU membership the value of the production has risen especially due to the increased supply of Finnish greenhouse vegetables and ornamental plants in wintertime. The value of vegetable production in the open has also been growing steadily.

Rapid progress in structural development

The structure of Finnish agriculture has changed rapidly in recent years. Before the EU membership there were over 100,000 farms in Finland, now ten years later there are about 71,000 left. The number of farms has fallen by more than 3% a year. In livestock production the decrease has been even more rapid, for example, the number of farms specialised in dairy husbandry has decreased by almost 7% a year. Proportionally the number of farms has decreased the most rapidly in eastern Finland and the least in northern Finland.

The average size of farms has grown as their number has decreased. In 1995–2004 the average size of active farms grew by 38% from 23 ha of arable land to over 31 ha. About two-thirds of this has taken place through leasing land. In 2004 the total cultivated area of farms receiving agricultural support was 2.24 million ha, and about 33% (746,000 ha) of this was leased. The number of milk producers was only a little over 17,000, only about half of their number in 1994, while the average

Agricultural support in Finland, million euros.

	2003	2004 preliminary	2005 estimate
EU support			
Support for arable crops	345	362	351
Other area payments	10	10	10
CAP support for animals	101	130	154
Support co-financed by EU			
LFA support	423	423	423
Environmental support	306	312	322
National support			
Northern support	358	387	333
National support for Southern Finland	131	127	100
National support for arable crops	99		
National supplement to environmental support		60	55
National supplement to the LFA support			120
Other national support	14	15	15
Total	1,787	1,826	1,883
EU contribution	760	810	829
National financing	1,027	1,016	1,054

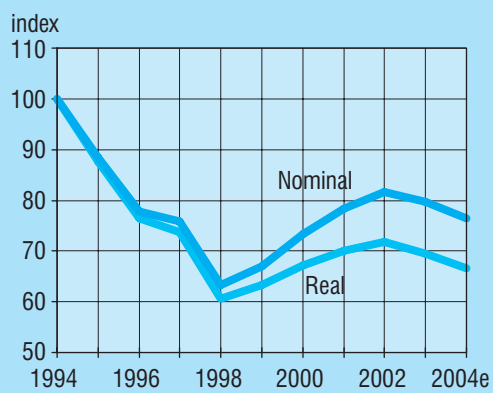
Number of active farms and agricultural income in 1994–2004.

	Number of farms	Change from previous year %	Change from 1994 %	Agricultural income at 2004 prices, € million	Index 1992–94 average: 100
2004	71,100	-1.3	-31	1,175	73
2003	72,000	-1.9	-30	1,126	76
2002	73,386	-2.7	-29	1,161	78
2001	75,384	-3.2	-27	1,131	76
2000	77,896	-5.2	-24	1,086	73
1999	82,142	-4.1	-20	1,024	64
1998	85,690	-3.0	-17	980	69
1997	88,370	-3.2	-14	1,191	80
1996	91,281	-4.5	-11	1,236	84
1995	95,562	-7.2	-7	1,415	96
1994	103,000 [1]			1,615	109

[1] Estimate of the MTT Economic Research, Agrifood Research Finland
Sources: Total calculation of the Economic Research, Agrifood Research Finland, Support register of the Ministry of Agriculture and Forestry (MMM).

herd size had grown from 12 to 19 cows.

Even if the structure has changed quite rapidly, the development of the productivity of agriculture has been relatively slow. In 2004 the same use of production inputs yielded about 12% more than in 1992. Productivity grew by a little under 1% a year. The new economic environment did not promote the profitability development of agriculture as was expected.



Development of agricultural income in 1994–2004.

Cereal area has grown

Changes in the production structure of agriculture are reflected in the use of arable land. The decrease in the number of cattle farms has led to a reduction in the grass area. In 1995 the grass area was 754,600 ha; by 2004 this had fallen to 620,000 ha. Another reason for the decrease was the change in the relative prices of different types of feedingstuffs to the advantage of artificial feedingstuffs.

The cereal area has grown during the EU membership almost to the same level as it was in the latter part of the 1980s. In 1995 the cereal area was 978,000 ha and in 2004 it was 1,221,000 ha. The production area of especially bread cereals has grown steadily during the whole EU membership. The area under spring wheat has doubled since 1995. The growth has been due to changes in the support for crop production, development of the market prices and change in the production structure of farms.

The ten years in the EU have also changed the cereal trade quite dramatically. Market orientation has become more and more important and the farmers also follow the market trends in quite a different way than before. In the beginning of 1995, when Finland joined the EU, the market prices for cereals fell by 50–60%, and since then the prices of all cereals have been on the decrease.

The agricultural reforms that are currently under way bring the internal market prices of the EU closer to the world market prices and it may become necessary to abolish the export refunds as a result of the WTO negotiations. In the future the prices on the domestic market will be even more dependent on the world market prices and fluctuations in the price during the crop season are going to increase.

Milk products are exported and imported

In the first years in the EU the production volume of dairy milk fell by 1–2% a year. However, the production volume began to grow again in 1997–98 and reached its peak in 2001. During the EU membership the average yield of dairy cows has grown by about a fifth.

The amount of milk delivered to dairies in 2004 totalled 2,304 million litres, which was 20 million litres less than in 2003 but 8 million litres more than in 1995. The price paid to the Finnish milk producers is still slightly above the EU average.

During the past ten years the consumption of dairy products has shifted towards the low-fat products. The per capita consumption of liquid milk has fallen by 7% but cheese consumption has grown by 13% and the consumption of yoghurt by a little under 20%. Butter consumption has decreased by about a third, and now only about a quarter of the butter produced in Finland is consumed here.

In the foreign trade, the import of cheese to Finland and export of butter from Finland have increased the most during the EU membership. Cheeses are imported mainly from Denmark and Germany, and the import of low-priced cheeses from the new Member States has also increased. In 2004 the share of cheeses imported from Poland rose to 6% of the total cheese imports.

Record levels in meat production

Finland's self-sufficiency in beef has fallen from 100 to 94% in the past ten years. In 2004 beef production totalled almost 91 million kg, which is about 5 million kg less than in 1995. The per capita consumption of beef has decreased by about 5% during the EU membership, partly as a result of the BSE crisis. The consumption has shifted to poultry and game meat as well as meat preservatives and processed meats, whose consumption has been on the increase for the past 20 years.

Pigmeat production has increased by 18% during Finland's membership in the EU. In recent years the annual growth has been 3–6%. In 2004 pigmeat production rose to 198 million kg and the consumption was almost 176 million kg, which is 11 million kg less than in 1995. Pigmeat exports hit a new record, over 38 million kg in 2004, and since 1995 the export volume has grown about five-fold.

The average annual growth in poultry meat production during the EU membership has been 9%. In 2004 the production totalled 87 million kg, which was twice the amount produced in 1994 and 1995. The production of turkey meat has grown the most: it has almost quadrupled in the past five years.

Poultry meat consumption has also been increasing rapidly and in 2004 the per capita consumption was 83% higher than in 1995. The value added has also risen and the share of poultry meat in the consumer expenditure has increased by 3–

4%. Instead, both the production and consumption of eggs have decreased by over 20% in the past ten years.

Concentration of food industry and trade

When Finland joined the EU ten years ago the food prices fell, on average, by 11%, even if the value added tax was raised from 12 to 17%. The price reduction was caused by the decrease of the producer prices of agriculture to the same level as in the other Member States and liberalisation of imports from the other EU countries. The prices of especially cereal and meat products fell quite dramatically.

Between 1995 and 2004 the food prices have increased in nominal terms by 11%, while the consumer price index has risen by 13.4%, which means that the real food prices are still lower than in 1995. A larger share of the food prices remains in the trade sector, whose position relatively to the domestic raw material production and food industry was considerably reinforced when Finland joined the EU. The trade sector takes advantage of the competition, both between the domestic food and companies and domestic and foreign companies.

The internationalisation and concentration of the wholesale and retail trade have increased the competition between food companies. In recent years international mergers and other arrangements aimed at enlarging the companies have increased considerably among the actors, suppliers and stores operating on the food market.

The strong concentration of food production and trade is going to continue in the near future. At the same time the product ranges available at the stores are growing, technology improves, value added increases and the clientele become increasingly fragmented. The growth in the product range has been breathtaking in recent years, from 4,000 product labels available at supermarkets in 1995 to almost 10,000. The products are also replaced by new ones more and more rapidly.

Great challenges for environmental policy

The most significant change in the agri-environmental policy due to the EU membership was that the steering which used to be founded on advice, training and voluntary action was replaced by administrative and financial guidance. Today agri-environmental support constitutes the greatest expenditure item for environmental protection in Finland (€ 312 million in 2004).

The main themes in environmental matters relating to farming have stayed about the same for the past ten years. Around 1995 the main concerns were phosphorus and nitrogen loading of waters, ammonia, rural landscape, use of pesticides and food quality. The key issues today relate to these same themes and the challenges are just as great. Current topics include water protection, diversity of the natural environments of farming and farming landscapes, climate change and coexistence of conventional, organic and GMO production.

Pressures for change in agri-environmental policy are caused by both social and environmental changes and processes. EU membership, environmental support scheme and growth in the general awareness on environmental issues have changed the attitudes of farmers to more environmentally-friendly direction. Consumer awareness increased rapidly during the 1990s, causing pressures to the EU to reform its agricultural policy according to the public opinion. New support schemes, tightening environmental legislation and trends in the state of the environment ensure that new challenges continue to appear for harmonising the different positions and pursuits.

1. OPERATING ENVIRONMENT OF AGRICULTURE

1.1. Agriculture and food sector in the national economy

In Finland the total annual consumer expenditure on food and beverages is about € 16.6 billion, which is about 11% of the GDP. When alcoholic beverages and eating out are included, food represents about 23% of the consumer expenditure of households.

Without alcoholic beverages, the food consumed at home represents 13% of the consumer expenditure. During the EU membership the share of food in consumer expenditure has fallen by 3%.

The total value of the annual money flows in the food sector is almost € 20 billion, when food exports and the supports directly related to the food chain are taken into account, in addition to the total consumer expenditure. The money flows in the food sector include agricultural and horticultural production, food processing, margins of trade, restaurant and catering services, food imports, taxes collected by the State and supports paid to the food chain.

Agriculture and horticulture

According to the national accounting, the gross value of the domestic agricultural and horticultural production is about € 4.3 billion. The share of various kinds of support payments is considerable. The production is largely based on the use of inputs purchased from outside the farms. Of the total return about € 2.7 billion is used for purchasing inputs manufactured in the other sectors of the national economy.

In 2003 the value added produced by agriculture and horticulture to the Finnish GDP totalled about € 1.6 billion, which is 1.3% of the total GDP of all sectors. Since 1995, when Finland joined the EU, the share of agriculture in the GDP has decreased by 0.8%, because production has grown more in sectors other than primary production.

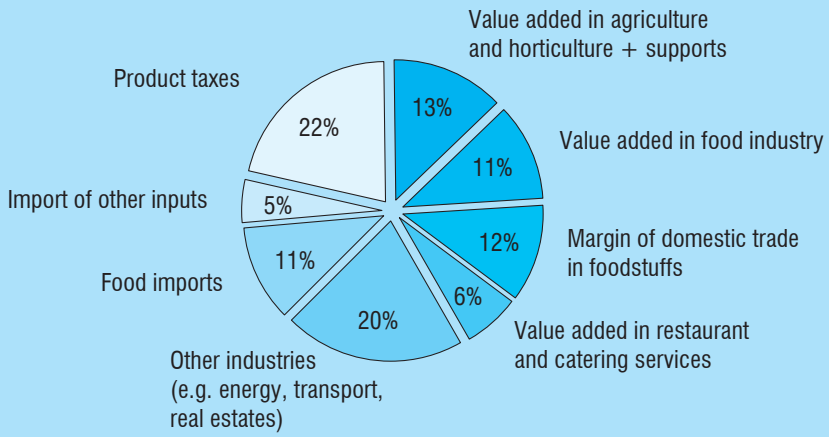
Agriculture and horticulture are closely linked to the domestic industry processing agricultural and horticultural products. Most of the output of agriculture and horticulture goes to the processing industries. Food processing is already highly concentrated and due to the tightening competition even more concentration is needed, which means that the number of alternative marketing channels for the producers continues to fall.

Food processing

In 2003 the value added of the food industry was € 2.2 billion, which in nominal terms is almost the same as in 1995. During this period the share of food industry in the GDP fell from 2.5% to 1.7%, while its share of the domestic industrial production fell from 10% to 7%.

Finnish food processing industry still purchases most of its raw material from the domestic agriculture and horticulture, even if raw materials may also be imported. In practice food industry is largely dependent on the domestic raw material due to the high transportation costs. In the dairy and meat processing industries most of the raw material is domestic, and thus the link to the domestic basic production is almost seamless.

Food industry has traditionally functioned mainly on the domestic market, but the opening of the markets in recent years has forced it to quite rapid internationalisation. Before 1995 very few Finnish food companies had any operations abroad, but now the situation has changed



Estimated money flows in the Finnish food sector in 2003.

radically. Finnish companies, especially in the meat and bakery industries, have expanded to the Baltic States, Sweden, Russia and Poland. At the same time parts of the food industry have left Finland as companies have been transferred to foreign ownership.

Domestic trade in foodstuffs

In addition to the primary production and processing sectors, the role of the wholesale and retail trade is also highly significant in the domestic food chain. The functions of trade include the sale of raw materials and other inputs to agriculture, horticulture and the food industry as well as selling the finished products to the consumers. However, the domestic wholesale and retail trade is far less dependent on the domestic primary production than most of the food industry.

The share of wholesale and retail trade of the food expenditure of consumers is about € 2.4 billion. The EU membership clearly reinforced the position of trade in the food chain relative to the domestic raw material production and food industry. The trade sector is able to take advantage of the competition between the domestic food companies and between the domestic companies and foreign ones.

Structural changes in the trade have directly influenced the market opportunities of food producers in four ways: through concentration, chaining, discount stores and private labels. As a result of the concentration in the trade sector, very large units, hypermarkets, have conquered market shares from smaller units. The introduction of euro in 2002 speeded up the disappearance of village and local shops.

At the same time the largest food trade companies have rapidly become organised into chains, i.e. concentrated their purchasing. Today the purchases of about 80% of foodstuffs are concentrated to certain major suppliers and distributed through national logistic channels, while only 20% of the foodstuffs are purchased locally. The appearance of discount chains has changed the market structure, and the position of private labels of food store chains is strengthening.

Like the food industry, the Finnish food trade companies have also expanded to the Baltic States to secure their competitive position.

Foreign trade in foodstuffs

The membership in the EU and common internal market have tightened the international competition on the agricultural and food markets in Finland.

Free import and export between the Member States of the EU has made it necessary to adjust the operations in agriculture, processing and trade according to the market demand. The value of food imports has grown by about 2% a year from the nominal value of € 1.3 billion in 1995 to 2.3 billion in 2004. The imports of processed foods have grown the most. Food exports have been about the same for a number of years.

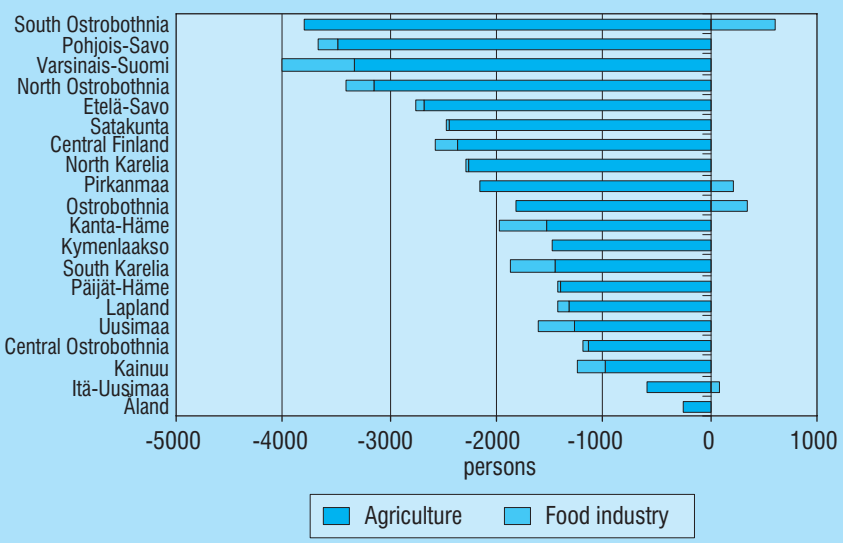
Imports consist partly of primary products that cannot be produced in Finland or the domestic production volumes are not adequate. Part of the foreign trade is cross trading, i.e. the same products are exported and imported. During the EU membership in 1995–2004 the share of foreign foods in food sales have increased by a few percentage units, and in 2004 they represented 15% of the food sales.

Support and taxes in the food sector

The State supports the food chain, but it also collects various kinds of taxes from the different operators involved. Tax funds are used to support the food sector in order to secure its competitiveness.

In 2004 the support payments to the Finnish agriculture and horticulture rose to € 1.8 billion. The support paid under the common agricultural policy of the EU totalled € 1.2 billion. Some of the supports are financed by the EU alone, some are co-financed. The national aids complementing the EU measures totalled about € 0.6 billion.

At the same time, however, the State collects value added, excise and energy taxes. The value added tax on staple foodstuffs of 17% is quite high compared to the EU average. The State revenue from the value added tax on food totals about € 1.4 billion per year. The revenue from the excise tax on alcoholic beverages fell from € 1.4 to 1.1 billion as the tax rate was lowered in 2004.



Change in the number of jobs in agriculture and food industry according to regions in 1995–2003. Source: Alueellinen työssäkäyntitilasto (Regional employment statistics) 2003 (preliminary), Statistics Finland.

Economic linkages in the food sector

The input demand in agriculture and processing of the agricultural raw material create a network of economic linkages within the food sector. The use of income produced in agriculture, food industry and industries producing inputs for these expand the linkages to the other sectors of the national economy. This means that any changes in agricultural production will be reflected in the whole economy.

The demand induced by agriculture is highly significant for maintaining various kinds of services in the rural areas, such as shops, traffic and public services. The use of income created in agriculture maintains the local production activities in many ways. Similarly, part of the processing of agricultural products is linked to the local raw material production.

Even if there have been no major changes in the production volumes during the EU membership, the tightening competition has led to regional concentration of the production in agriculture, food industry and the input industries. This is going to continue in the near future.

Direct and indirect employment effects of the food chain

The food chain employs both directly in agriculture and food industry and indirectly in sectors producing inputs for the food chain and in transportation and delivery services.

From 1995 the employment in agriculture and food industry has fallen by over 40,000 persons, which is more than a quarter. The reduction has been the greatest in certain northeast and southeast regions (South Karelia, Kainuu) and some parts of central Finland (Satakunta, southern Häme).

The total employment in the food economy is almost 300,000 AWU, when the domestic use and export of foodstuffs are taken into account. This represents about 13% of the employed labour force.

In 2003 the number of people employed in agriculture was almost 99,000 persons, which is 4.2% of the employed labour force. Food processing industry employs about 40,000 people, restaurants and catering services a little over 59,000 people, and the share of food trade is estimated at about 50,000 people.

The GDP share of agriculture and the food sector, at basic price (current prices).

Year	GDP Total € million	GDP Agriculture € million	GDP Food industry € million	Share in GDP Agriculture %	Share in GDP Food industry %
2003	123,963	1,595	2,144	1.3	1.7
2002	122,025	1,738	2,111	1.4	1.7
2001	118,106	1,664	2,015	1.4	1.7
2000	113,055	1,676	1,780	1.5	1.6
1999	103,441	1,398	1,936	1.4	1.9
1998	100,564	1,226	2,048	1.2	2.0
1997	92,311	1,636	2,016	1.8	2.2
1996	85,732	1,669	2,040	1.9	2.4
1995	83,028	1,764	2,097	2.1	2.5
1994	76,564	2,222	2,048	2.9	2.7

Source: National Accounts 1994–2003, Statistics Finland.

Future images of Finnish agriculture until 2025

Pasi Rikkonen

In the next decades the operating environment of agriculture, rural areas and food production will be shaped by various kinds of changes and trends, such as globalisation of the food market, EU enlargement process, the changes in future agricultural policy, stronger consumer and environmental demands and development of agricultural technology (especially biotechnology and genetic engineering).

Operating environment of agriculture is changing

According to experts in the food chain, the most significant national changes are the depopulation of the rural areas especially in eastern and northern Finland and challenges caused by the structural change in agriculture. The greatest challenges in structural change are the concentration of production, industrialisation of agriculture, changes in the number and size of farms and changes concerning the cultivated area. The trends in these are determined primarily by the common agricultural policy of the EU, how strict the policy guidance of the EU will be in relation to how much freedom to national action is allowed, what form the supports will take, and how the profitability of agriculture develops. The management of environmental impacts for the part of the soil, climate change and nutrient loading and development of food safety impose further challenges to the future agriculture and the food economy.

The main challenges to the Finnish agriculture and food economy (on a scale from one to five):

1. Depopulation of rural areas (4.59)
2. Profitability of farms (4.41)
3. Demand for domestic foodstuffs (4.40)
4. Policy guidance of the EU in agricultural and rural policy issues (4.23)
5. Amount of national aid after the Central and Eastern European countries have joined the EU (4.19)

To prepare for the challenges presented above we should consider the future prospects of Finnish agriculture, which help to clarify the foundations of a common vision of agriculture and the food economy and how this could be achieved.

The alternative future images presented in this article are based on the assessments concerning the desirable and the probable future. The future views were examined by the expert based Delphi method within the food chain.

The probable future image

It is anticipated that the regional concentration of agricultural production will continue. In southern and western Finland the cultivated arable area will decrease only slightly, while in eastern and northern Finland the change is more radical. Even the most realistic (median) view of the future sees that the cultivated area in eastern and northern Finland decreases by half, to about 400,000 ha, in the next 20 years. Rural depopulation progresses and as a result of this the number of skilled rural population is also going to diminish. In spite of the prevailing depopulation trend there are certain, local areas that will succeed quite well.

Food is produced on fewer and fewer farms: the number of farms decreases by half from the level of 2000 to about 39,000 farms in 2016. Farming is becoming a secondary activity, especially on crop farms. Employment of farm families outside the farm increases steadily from 43% to 60% in 2001–2025. Those who stay on farms invest in the most recent technology. For example, in energy production the share of renewable energy sources rises to 33%. The demand for domestic foodstuffs remains stable, because the majority of the consumers continue to prefer the domestic alternative, but food imports will be growing as well.

The introduction of genetically modified plant varieties in commercial farming will take place by 2012. After the principles of coexistence are clarified, the share of gm plant varieties in commercial farming increases to 20% by 2025.

Even if the changes in the production structure will be considerable, their impacts on the production volumes will remain quite small in the main production sectors. The milk production volume is expected to fall by about 200 million litres by 2025. Some decrease from the current levels is also expected in the production volumes of bread and feed cereals and beef and pigmeat. The nutrient loading from agriculture will be reduced by half by 2018.

The desirable future image

The driving force in the desirable future image is innovative technology. Strong faith in technology and its development help to respond to the challenges faced by agriculture in terms of both production efficiency and the environment.

Farmers are taking action to minimise the environmental impacts on a voluntary basis. Profitability has improved and domestic foodstuffs dominate the market. The common agricultural policy of the EU has been renationalised and together with supports directed at the environment and rural development it contributes to balanced regional development in Finland. The regional concentration of agriculture was just a threat and even the cultivated arable area increases to about 2.6 million ha, partly as a result of the strong growth in organic farming. The number of farms is about the same as in 2005. This means that small farms have also succeeded by investing in organic production and local food. The significance of agriculture has grown in the countryside and local economies as the consumers' preference for domestic food has strengthened. The commercial cultivation of genetically modified crops has remained marginal. Nutrient loading from agriculture has been cut by half in ten years. Renewable energy sources and technology develop for their utilisation cover 70% of the need for energy on farms.

What kind of information on the future do we need?

The purpose of the future images presented above and futures studies in general is to concretise the alternative directions the future may take on the basis of information and knowledge available today. The importance of foresight in strategic planning depends on how the gathered information is used as the basis for strategic decisions. This means that the future information must be plausible, logical, internally consistent and relevant for planning purposes. Alternative future paths allow us to prepare for the future better, taking account of the relevant realisation possibilities as widely as possible.

1.2. Rural enterprises

About a third of the Finnish population live in rural areas, i.e. postal code areas where the population density is less than 50 persons/km^2. This means that the income of the rural population and rural industries are highly significant for the national economy. The concept "rural area" can be defined in a number of ways, depending on the perspective.

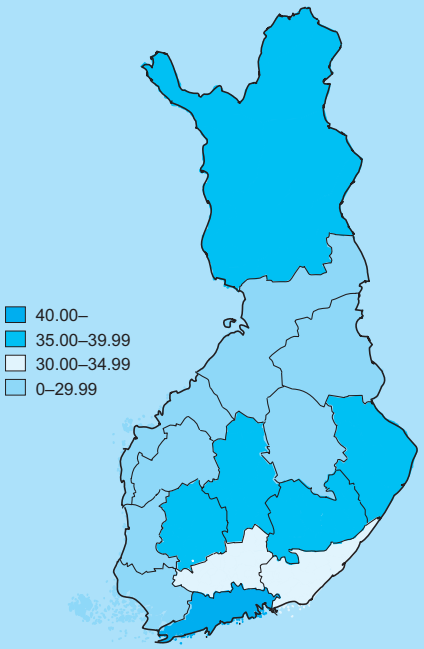
Small rural enterprises can be divided into three groups: farms engaged in basic agricultural production, diversified farms and other rural enterprises. In basic agricultural production, farms are engaged in agriculture and farm forestry. Diversified farms practise both agriculture and forestry and non-agricultural entrepreneurial activity. The third category comprises small rural enterprises with no connection to farms.

In 2003 there were over 130,000 small rural enterprises, of which 39% were engaged in basic agriculture, 18% were diversified farms and 43% were other small enterprises. During the EU membership the total number of small rural enterprises has fallen as the number of basic farms has decreased very strongly. The relative share of diversified farms and other small enterprises has increased slightly.

Agriculture and farm forestry constitute by far the most significant rural industry. In 2003 the number of farms engaged in basic agriculture was 50,200. In the near future the volumes of agricultural production should stay at about the current level: productivity is growing, while the number of farms is on the decrease. Chapter 1.3 presents a more detailed account of the main features and structure of Finnish agriculture.

Diversified farms

The practising of various activities has traditionally been common among farmers, but in the 1990s new kinds of operations



Share of diversified farms (%). Source: Information Centre of the Ministry of Agriculture and Forestry.

were started more than ever before. Starting other business activities is often connected to changes in the operating environment of farms, creating new demand for the rural products and services, while new challenges to agriculture may have encouraged the farm families to seek new sources of livelihood. New operations have been started especially in the service sector. Of the new enterprises 45% engaged in machine contracting, 6% in tourism and 11% in the class "other services".

In 2003 the number of farms practising another industry besides agriculture was 23,550, which is 32% of the Finnish farms. The number of diversified farms grew by 8% from 2000. However, the group of farms engaged in non-agricultural entrepreneurship varies considerably. In 2003 about 30% of farms engaged in other business had started this after 2000, while 27% of farms which had

engaged in other business in 2000 had stopped this by 2003.

In 2003 the number of diversified farms was the greatest in Varsinais-Suomi and South Ostrobothnia, but in proportion to the number of farms in different regions their share was the highest in Uusimaa.

The farms engage in various kinds of activities. The most common ones are machine contracting (38% of diversified farms), tourism, other services, and wood and food processing.

About a third of the diversified farms practice more than one business activity besides agriculture. These are often connected to agriculture so that the farm equipment, buildings, land or products are used and the owner of the farm, the spouse, other family member or a partner in a farm company is involved in the other business. Most of these activities (65% of farms) were also taxed together with agriculture under the Agricultural Tax Act.

Entrepreneurial activities on farms are usually quite small in scale. In 2003 on

Number of diversified farms in 2000 and 2003.

Sector	2000	2003
Diversified farms, total	21,838	23,551
Industry	*4,786*	*4,141*
Food processing	1,065	846
Other further processing	134	78
Wood processing	1,349	1,134
Handicraft	274	337
Energy production	959	969
Manufacturing of metal products	625	580
Other manufacturing	380	197
*Construction***	*	*697*
Trade	*1,056*	*1,234*
Services	*15,019*	*16,143*
Tourism, accommodation, recreation services	2,272	2,041
Contracting	8,880	9,039
Care services	263	249
Transportation	1,055	1,083
Services to business	*	736
Horse husbandry services (renting of stables, horse training)	*	717
Other services	2,549	2,278
Primary production other than agriculture and forestry		*1,328*
Fish, crayfish etc. farming on farms	112	102
Fur farming	632	647
Reindeer husbandry	*	423
Fishing	*	156
Other	233	*

** Different classification of sectors, this sector not accounted for in the year concerned.*
*** Clearing, demolition and groundwork building included in machine contracting.*
Source: Information Centre of the Ministry of Agriculture and Forestry

39% of the farms their turnover was less than € 10,000. However, on about 7% of these farms the turnover of other business activity was more than € 200,000. In recent years the share of farms with the highest turnover has been on the increase while the share of farms with the lowest turnover has been decreasing. In 2003 the total employment of the other business activities on farms corresponded to 21,400 AWU, i.e. the average of 0.95 persons per farm.

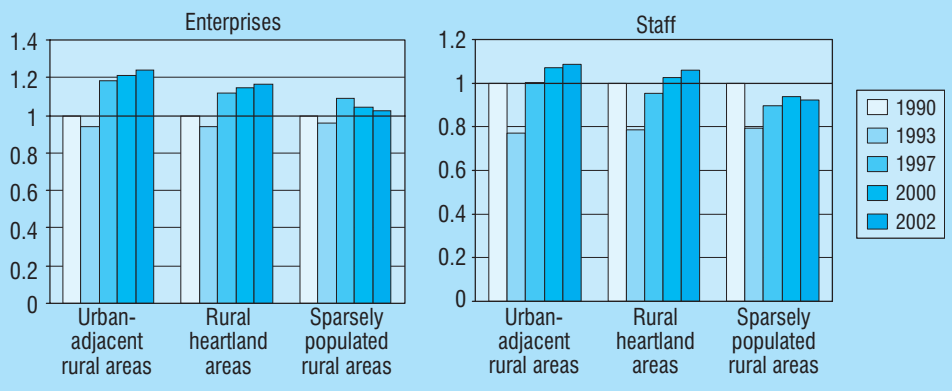
About a third of the other business activities practised on diversified farms are included in the business register of the Statistics Finland. The number of diversified farms included in the statistics and their size has been growing steadily over the past few years. In 1997 their use of labour corresponded to 6,500 AWU, but in 2002 this was 10,100 AWU, which is a little under half of the total use of labour in other business activities.

In 1997–2002 the number of diversified farms included in the register grew by 1,400 and their turnover by € 441 million. Part of the diversified farms are not shown in the register because their turnover is less than € 8,409 or the activity is taxed under the Agricultural Tax Act.

Other small rural enterprises

A small enterprise is one with a single place of business with a turnover of at least € 8,409 but which employs less than 20 persons. Of the small enterprises included in the business register of Statistics Finland about a third are located in the countryside. In 2002 the number of small rural enterprises was 65,400. Their turnover totalled € 12.4 billion and they employed 107,300 persons (entrepreneur + staff). In 1997–2002 the number of small enterprises grew by 2%, staff 9% and turnover by as much as 15%.

In the whole country the number, staff and turnover of small rural enterprises have grown steadily, but the regional variation is considerable. Migration from remote regions to population centres has been very strong, and in the remote regions the number of enterprises turned into a decrease in 2000. Within the remote areas new enterprises were also set up close to population centres or have moved there. In certain remote regions the number of enterprises has been falling close to the centres as well. Instead, in urban-adjacent rural areas the number of both enterprises and people they employ is growing strongly. Every tenth rural en-



Trends in the number and staff of small rural enterprises in different types of rural areas (1990=1). Sources: Rural business register, Agrifood Research Finland, Information Centre of the Ministry of Agriculture and Forestry, Statistics Finland.

terprise operates in primary production other than agriculture. In 2003 about 14% engaged in manufacturing industry, 17% in construction and trade and 40% in services. The most important sectors of other primary production were wood harvesting services, fur farming and peat production

Reindeer husbandry is highly significant in northern Finland, also in terms of other activities such as tourism. In the reindeer herding year 2003/2004 the number of reindeer owners was 5,243, which is almost a fifth less than 10 years earlier, but the number of reindeer has stayed about the same. In 2003/2004 the number of reindeer totalled about 201,000, of which 106,300 were slaughtered. Meat production rose to about 2.55 million kg.

Manufacturing industry is also important in the countryside, employing about a fifth of the people working in small rural enterprises, while in the whole country 14% of the staff of small enterprises work in manufacturing industry. In recent years the number of industrial plants has decreased slightly in the rural areas, but their average size and total staff have grown.

Maintaining and increasing the number of jobs in manufacturing industry is considered important for the countryside. The key sectors in terms of the rural policy are food and wood processing, which are characteristically located to the countryside: 55% of the small food companies and 67% of small wood processing plants are in the countryside. During the first years in the EU the number of companies in both sectors grew rapidly, but the growth stopped around the year 2000.

Service sector is the largest indivudual sector in rural areas as well, and it has grown further in recent years. Between 1997 and 2002 the number of enterprises increased by 7%, staff by 15% and turnover by 26%. The development of the private service sector and regional strengths receive considerable emphasis in the new Special Rural Policy Programme.

In recent years rural tourism has received considerable emphasis as a significant industry with good development prospects. Rural tourism is based on the natural conditions and resources of the rural areas and practised by families and other small-scale entrepreneurs. Rural tourism is well established in Finland, but further development of this know-how is still needed.

According to the rural business register, there are about 3,200 enterprises offering tourism, accommodation and recreation services in the countryside which are not linked to a farm and about 2,100 diversified farms engaged in tourism. A considerable number of enterprises are excluded from the official statistics, and the year-round accommodation capacity of these is estimated at 30,000 bed places.

Equine industry is a rapidly growing activity, which relies heavily on the rural resources and local strengths. Equine industries comprise the raising of horses, care services for horses, training, riding schools and related tourism. The sector employs about 3,500 people full-time and 6,000 part-time. The number of horses has grown by over a fifth since 1995. In 2004 there were about 61,000 horses in Finland, of which about 42% were owned by farmers.

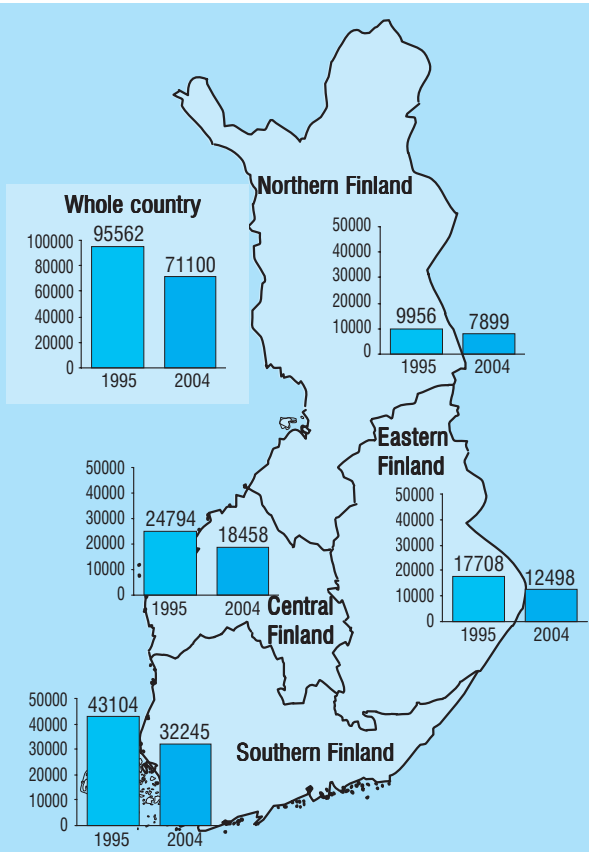
Estimated according to the total costs, the money flows in equine industries are about € 0.34 million. Trotting is a very popular sport in Finland. Altogether 8,000 horses start off each year at trotting races and the annual turnover of betting in horse races totals over € 200 million. The number of riding schools and stables offering horse activities approved by the Equestrian Federation of Finland is more than 200 and about 102,000 Finns enjoy riding as a hobby.

1.3. Finnish farm

Number and size distribution of farms

In 2004 the total number of farms (over 1 ha) which had applied for agricultural support was about 71,000. During the EU membership (1995–2004) the number of Finnish farms has fallen by 26% (3.2% annually) from 95,562 by 24,467 farms. Proportionally the decrease has been the greatest in eastern Finland (29%) and the smallest in northern Finland (21%), while in central and southern Finland the number of farms has fallen by 26% and 25%, respectively.

Between 2003 and 2004 the number of farms which applied for support fell by about 900 (1.3%). In both absolute and relative terms the number of farms decreased less than in any other year during the EU membership. During this period the decrease was the greatest in 1995–1996 and 1999–2000, when the number of farms fell by about 4,000, which is about 5% of the total number of farms.



Number of farms receiving agricultural support in 1995 and 2004 (main regions of Uusimaa and Åland according to NUTS II have been included in Southern Finland). Source: Support register of the Ministry of Agriculture and Forestry/ Information Centre.

While the number of farms is decreasing rapidly, the average farm size is on the increase. In 1995–2004 the average size of farms receiving agricultural support grew by 38.2% from 22.8 ha of arable land to 31.5 ha. The annual growth in the

Number of farms receiving agricultural support in 1995–2004.

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Whole country	95,562	91,281	88,370	85,690	82,142	77,896	75,384	73,386	72,000	71,000
Southern Finland[1]	43,104	41,351	39,998	38,623	37,037	35,319	34,192	33,375	32,771	32,245
Eastern Finland	17,708	16,652	16,067	15,446	14,658	13,675	13,219	12,935	12,630	12,498
Central Finland	24,794	23,694	22,914	22,072	21,108	20,019	19,443	19,023	18,656	18,458
Northern Finland	9,956	9,584	9,391	9,549	9,339	8,883	8,530	8,053	7,943	7,899

[1] Main regions of Uusimaa and Åland according to NUTS II have been included in Southern Finland.
Source: Support register of the Ministry of Agriculture and Forestry/Information Centre.

Size class distribution and average arable area of farms receiving agricultural support in 2004[1].

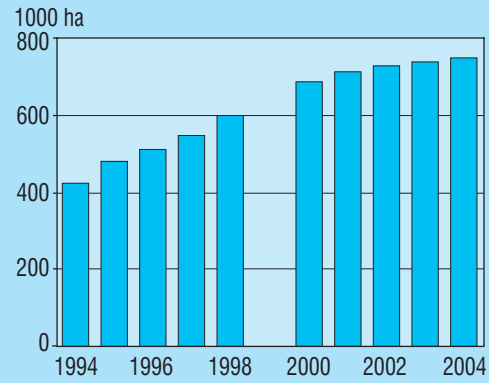
	Southern Finland[2]		Eastern Finland		Central Finland		Northern Finland		Whole country 1995		Whole country 2004	
	Number of farms	%	Number of farms	%	Number of farms	%	Number of farms	%	Number of farms	%	Number of farms	%
Arable area												
<10 ha	5,786	18	2,768	22	3,593	19	1,645	21	22,850	24	13,792	19
10–20 ha	7,141	22	3,304	26	4,737	26	1,624	21	30,698	32	16,806	24
20–30 ha	5,437	17	2,284	18	3,505	19	1,311	17	19,669	21	12,537	18
30–50 ha	6,662	21	2,461	20	3,763	20	1,694	21	15,414	16	14,580	21
50–100 ha	5,412	17	1,331	11	2,277	12	1,271	16	5,706	6	10,291	14
>100 ha	1,575	5	188	2	408	2	251	3	784	1	2,422	3
Number of farms	32,245		12,498		18,458		7,899		95,121		71,100	
Average arable area, ha/farm	34.99		26.64		28.60		31.89		22.77		31.52	

[1] The figures do not include horticultural enterprises if they have no fields under cultivation.
[2] Main regions of Uusimaa and Åland according to NUTS II have been included in Southern Finland.
Source: Support register of the Ministry of Agriculture and Forestry/Information Centre.

average farm size has varied from 0.5 ha to 1.5 ha. The growth is due to both the decrease in the number of small farms and increase in the number of large farms.

The magnitude of the structural change is reflected in the proportional share of the different size categories: in the past nine years the share of farms with less than 20 ha has fallen from 56% to 43% and the share of farms with more than 50 ha has more than doubled from 7% to 17%. However, the share of small farms is still high in Finland, and the very large farms with more than 100 ha arable land represent about 3% of the Finnish farms.

About two-thirds of the growth in the farm size has occurred through leasing. In 2004 the total cultivated arable area of farms receiving agricultural support was 2.24 million ha, and about 746,000 ha (33%) of this was leased. There is considerable regional variation in the leased area: in the territory of the Lapland and Åland Employment and Economic Development Centres almost 45% of the arable area is leased, while in central Finland the leased area is about 30%. The rapid growth in land leasing can be considered to have accelerated the structural development. The possibility to lease land has released capital of active farmers to production investments to, for example, buildings, machinery and animals. However, research results have shown some indications that the trend in the land improvement situation of leased land may not be as positive as that of land cultivated by the owner.



Area of leased arable land (ha) in 1994–2004.

The machine capacity needed for arable farming is very high relative to the average cultivated area. Besides the small farm size, this is due to the short growing season and uncertain cultivation conditions. Cooperation in the use of machinery is difficult due to the short optimal periods for arable farming operations and small size of the parcels, which does not allow farmers to take the full advantage of efficient machines. In 2004 the average size of arable land parcels was 2.38 ha. It varied from over 3 ha in southern Finland to less than 2 ha in eastern and northern Finland. However, cooperation between farms has increased, partly as a result of the agricultural investment aid which has also been directed at joint investments.

Finnish agriculture is based on family farms: 88.6% of farms receiving support are privately owned and 10.4% are owned by heirs and family companies and corporations. Cooperatives, limited companies and production rings own 0.8% of the farms and 0.1% are owned by the State, municipalities, schools and parishes.

The average age of farmers is 49 years. Since 1995 the average age of farmers has risen by almost three years, partly as a result of the small number of farms transferred to the next generation. The average age of farmers decreases when we go from the north to the south

According to the statistics on the credit portfolio, in autumn 2004 the debts of agricultural entrepreneurs totalled about € 3.5 billion. In 1994 the debts totalled about € 4.8 billion. The average amount of debt per farm was about the same in 1994 and 2004.

The Agricultural Enterprise and Income Statistics show that, on the average, there was no major change in the relationship between the turnover and result of agriculture and the debts between 1996 and 2001. However, the data of these statistics involve certain problems, for example, the value of leased land, which is comparable to loan capital, is not taken into account when considering the debts and obligations. Depending on the valuation of leased land, its capital value may even have exceeded the sum of the other debts, both because of the rapid increase in leasing and the increase in land prices.

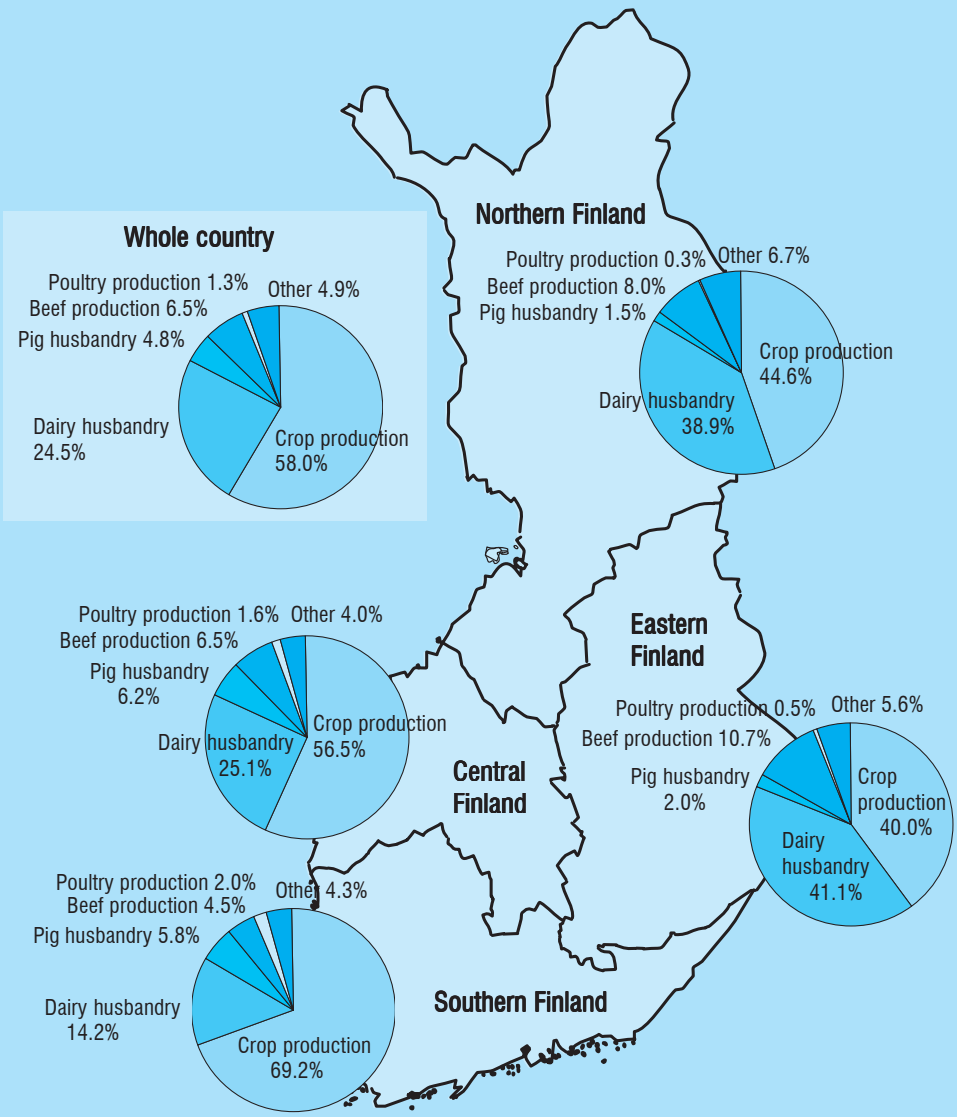
The loan capital derived from financial institutions is quite unevenly distributed. About 15% of dairy and pig farms and 40% of cereal farms were free from debt. The share of farms where the debts exceed the annual turnover was 18% in dairy and pig farming and 22% in cereal farming. In 1995 almost 40% of farms were free from debt.

Production structure of farms

Measured by the number of farms, the production structure of Finnish agriculture has changed considerably during the EU membership. The share of livestock farms has fallen while the share of crop farms has increased clearly. In 2004 37% of the farms which applied for support were livestock farms and 58% were crop farms, while in 1995 the share of livestock farms was 52% and that of crop farms was 39%. However, no major change has occurred in the share of livestock production in the return at market price, which was 79% in 2004.

In 2004 about 17,400 farms practised dairy husbandry as their main production line. This is almost 25% of the farms that received agricultural support. In 1995–2004 the number of dairy farms fell by about 14,600, by about 6.5% a year. Based on the total value of the production dairy husbandry is still the most significant type of agricultural production in Finland. In recent years it has accounted for about half of the return on agricultural production at market price (47% in 2004). Proportionally the share of dairy farms is the greatest in eastern and northern Finland (41%).

The number of farms specialising in pig husbandry was about 3,400, and these represent about 5% of the farms that applied for support. In 1995–2004 the number of pig farms fell by 46%, i.e. 7% per year. Of the pig farms 1,270 (38%) specialised in piglet production, 1,000 farms (29%) specialised in pigmeat and 1,120 farms (33%) practised combined pig production. Most of the piglet and pigmeat farms are located in southern and western Finland. Pigmeat represents about 13% of the return on agricultural production at market price, and in terms



Distribution of farms receiving agricultural support according to production line in 2004 (main regions of Uusimaa and Åland according to NUTS II have been included in Southern Finland). Source: Support register of the Ministry of Agriculture and Forestry/Information Centre.

of the value of the production it is the second most important agricultural product after milk.

In 2004 about 4,640 farms (6.5% of all farms), specialised in beef production, and the share of beef in the value of agricultural production was about 10%. In 1995–2004 the number of these farms fell by about 4,400, which is about 7% per year. The decrease in the number of farms fell much more rapidly during the first years in the EU than in 2001–2004.

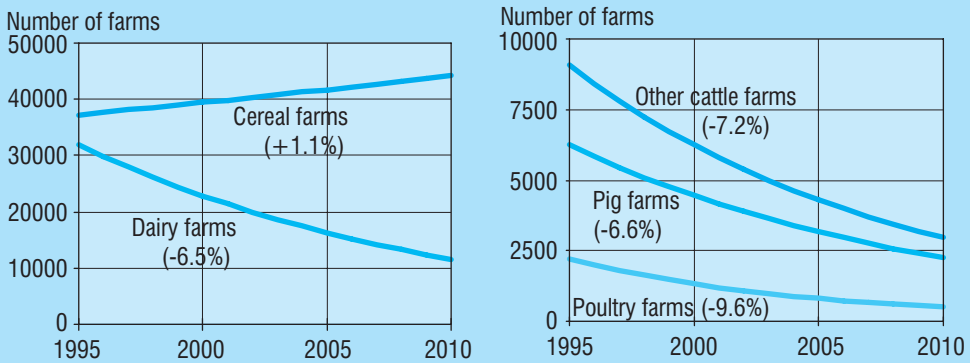
The number of poultry farms was a little over 900, which is about 1% of the farms that applied for support. During the EU membership the number of poultry farms has decreased the most, by about 10% per year. In 2004 about 62% of these specialised in egg production, 25% in poultry meat production and 12% were breeding units. The regional distribution is similar to that of pig husbandry, i.e. the production is concentrated to southern and western Finland

More than half of the farms that receive agricultural support specialise in crop production (58%). This is the only main agricultural sector where the number of farms has been growing in recent years. In 2004 there were about 4,000 crop farms more than in 1995. More than half of the crop farms are located in southern Finland and about a quarter are in central Finland. In 2004 the share of crop production in the return on agricultural production at market price was about 16%.

About 4,800 of the farms that applied for support practised organic production. In 1996–2004 the number of organic farms grew by about 1.1% a year.

Forest is an integral part of Finnish farms. In 2004 the average forest area of farms receiving agricultural support was 46 ha. Regional variation is great: in central Finland the average forest area of farms is about 30 ha, while in Lapland it is over 100 ha. The income from forestry per farm is the highest in Etelä-Savo and lowest in Åland.

The preconditions for agriculture, its current structure and development prospects vary considerably in the different parts of Finland. During the EU membership agriculture has concentrated both regionally and on the farm level. The production is falling rapidly in the remote areas, both nationally and regionally. The production is concentrating to large farms, which means that the share of the large units in the total production is growing.



Number of farms in different production sectors in 1995–2004 (Information Centre of the Ministry of Agriculture and Forestry) and number of farms in 2010 according to the trend.

Structural development of agriculture is inevitable

Jyrki Niemi and Kyösti Pietola

Finnish agriculture has faced an exceptionally dramatic structural transition in the past few decades. The number of farms and agricultural labour force have decreased, mechanisation and efficiency of the production have increased, production has specialised both regionally and on the farm level, and farms are no longer self-sufficient. All these trends still continue.

Since 1995 the number of farms has fallen by about 3% a year, in livestock production even more. For example, the number of farms specialised in milk production has decreased by almost 7% a year. So far there are no indications that the structural change would be slowing down in the long term, on the contrary, the liberalising agricultural and food trade will continue to call for further concentration in the sector.

If the decrease in the number of farms continues at the current rate, by 2020 there would be less than 40,000 farms left, while before Finland joined the EU the number of Finnish farms was over 100,000. The number of farms specialising in milk production would fall to about 6,000, while in 1994 this was still 35,000. The competitiveness of Finnish agriculture and food sector calls for the present kind of quite rapid structural development and increase in the size of farms, and it would hardly be possible to put an end to this through any policy measures. The development of technology alone inevitably leads to growth in the farm size. New technology helps to improve the productivity, lower the production costs and improve the efficiency of planning and use of labour.

Increasing the unit size to the level allowed by the available technology obviously involves certain problems as well. Strong growth in production capital increases the costs of managing this capital and decrease in own financing makes the farms more heavily indebted. Strong concentration of agriculture and food production in general may increase the vulnerability of the European food economy, and it may also have negative impacts on the environment.

However, any efforts to stop or essentially slow down structural development would be both costly to the society and, eventually, fatal to the sector itself. Considering the social value of agriculture it is important that food is produced efficiently so that the other requirements (objectives) set for agriculture by the multi-value society are taken into account. The state and growth of the national economy and the concentration trend prevailing in the society influence the structural development of agriculture in a significant way. If there are other employment opportunities available outside agriculture, there is also more willingness to give up farming and move to other occupations. This in turn makes it possible for farms which continue agricultural production to increase their size. Instead, when the growth in the national economy slows down, there is less willingness to give up farming, which reduces the supply of arable land and makes it more difficult to obtain additional land to increase the farm size.

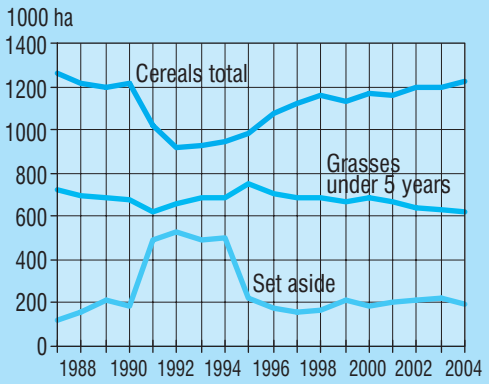
Structural change in agriculture inevitably leaves irreversible traces to the Finnish countryside. Structural change is a very complicated problem especially in terms of the labour and regional policy. The number of farms decreases the most rapidly in eastern Finland and in Kainuu region, which means that agriculture is not capable of compensating for the other concentrating trends in the society particularly in regions where the preservation of businesses and jobs is the most difficult.

2. AGRICULTURAL AND FOOD MARKET

2.1. Arable crops

Areas and yields

The utilised agricultural area in Finland is 2,253,300 ha, which is 6.7% of the total surface area and 7.4% of the land area. In 2004 the total cultivated area (including set-aside) was 2,218,800 ha. Since 1995 the cultivated area has grown by altogether 77,500 ha at a rate of 3.6% a year. One reason for the growth has been the use of area payments, i.e. when support is paid on the basis of the arable area, less productive parcels are also used for cultivation and more land has also been cleared.



Use of arable land in Finland in 1987–2004, 1000 ha.

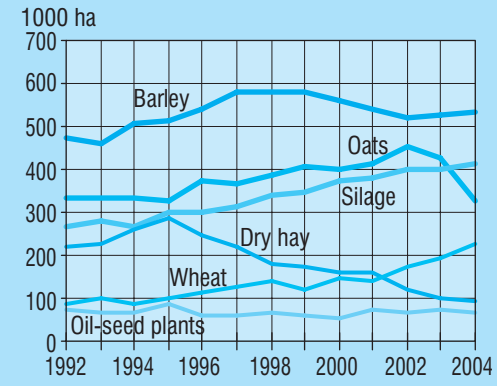
The structural changes in agriculture are also reflected in the use of arable land. The decrease in cattle husbandry has reduced the grass area: in 1995 this was 754,600 ha, but by 2004 it had fallen to 620,000 ha. Another reason for the decrease is the turn of the relative prices of fodder to the advantage of fodder based on cereal.

During the EU membership the cereal area has increased to about the same level as after the mid-1980s. In 1995 the cereal area was 978,000 ha and in 2004 it was 1,221,000 ha. In the early 1990s the cereal area decreased as a result of the changes in the rules for set-aside, and in 1991–1994 the set-aside area rose to almost 500,000 ha. No major changes have occurred since 1995, but the set-aside area has stayed around 200,000 ha, which is less than 10% of the arable area.

The area under wheat has grown the most in the past ten years: from 100,700 ha in 1995 to 225,200 in 2004. The area under spring wheat has grown the most, and this has doubled since 1995. In 2004 the spring wheat area was 178,500 ha. Another factor contributing to this trend is that since 2000 the wheat area has also been eligible for the LFA support.

During the EU membership the average annual hectarage yield of spring wheat has been 3,363 kg, varying between 2,110 and 4,020 kg.

The area under winter wheat has also grown during the EU membership, but the variation from one year to another has been considerable. In 2004 winter wheat was cultivated on 46,700 ha. In 1995–2004 the aver-



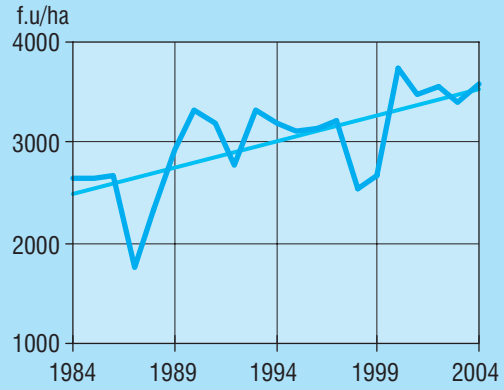
Harvested areas in 1992–2004, 1000 ha.

age annual hectarage yield was 3,563 kg.

Both the cultivation area and total yield of rye have varied considerable, but the variation has decreased in recent years. In 2004 the rye area was 26,900 ha, but reaching self-sufficiency would require a rye area of 40,000 ha. This means that rye has been imported to meet the domestic demand.

During the EU membership the average hectarage yield of rye has been 2,274 kg, which is a little lower than before 1995.

The cultivation areas of both oats and barley increased by about 50,000 ha between 1995 and 2004, but in 1990 the area of barley was even larger than today. During the EU membership the average hectarage yield of barley has been 3,195 and that of oats 3,119 kg.



Total yield without straw in 1984–2004, f.u./ha.

The cultivation areas of both dry hay and fresh fodder have decreased rapidly during the EU membership, while the silage area has grown. The production of both dry hay and fresh fodder has fallen by almost 70%.

Harvested areas and yields of main crops in 2003 and 2004.

	2003			2004		
	Area 1000 ha	Yield 100 kg/ha	Total million kg	Area 1000 ha	Yield 100 kg/ha	Total million kg
Winter wheat	34.4	34.2	118	46.7	35.0	165
Spring wheat	156.8	35.8	561	178.5	34.6	617
Rye	30.5	23.9	73	26.9	23.2	62
Barley	529.5	32.1	1,697	531.8	32.4	1,725
Oats	424.5	30.5	1,295	325.8	30.8	1,002
Mixed cereals	15.8	27.7	44	16.2	27.3	44
Peas	4.1	25.1	10	2.7	20.5	6
Potatoes	28.7	215.4	617	27.3	227.0	619
Sugar beets	28.8	309.5	892	30.3	350.9	1,064
Dry hay	101.2	34.1	345	91.1	37.3	339
Green fodder	16.2	96.1	155	16.4	99.7	163
Silage	398.8	167.3	6,670	412.4	184.5	7,611
Oil-seed plants	74.6	12.6	94	67.8	11.0	75
Other crops	35.4			45.4		
Pasture	102.2			86.9		
Total	1,981.5	3,404 [1]	6,291 [2]	1,906.3	3,592 [1]	6,388 [2]
Set aside	220.4			195.9		

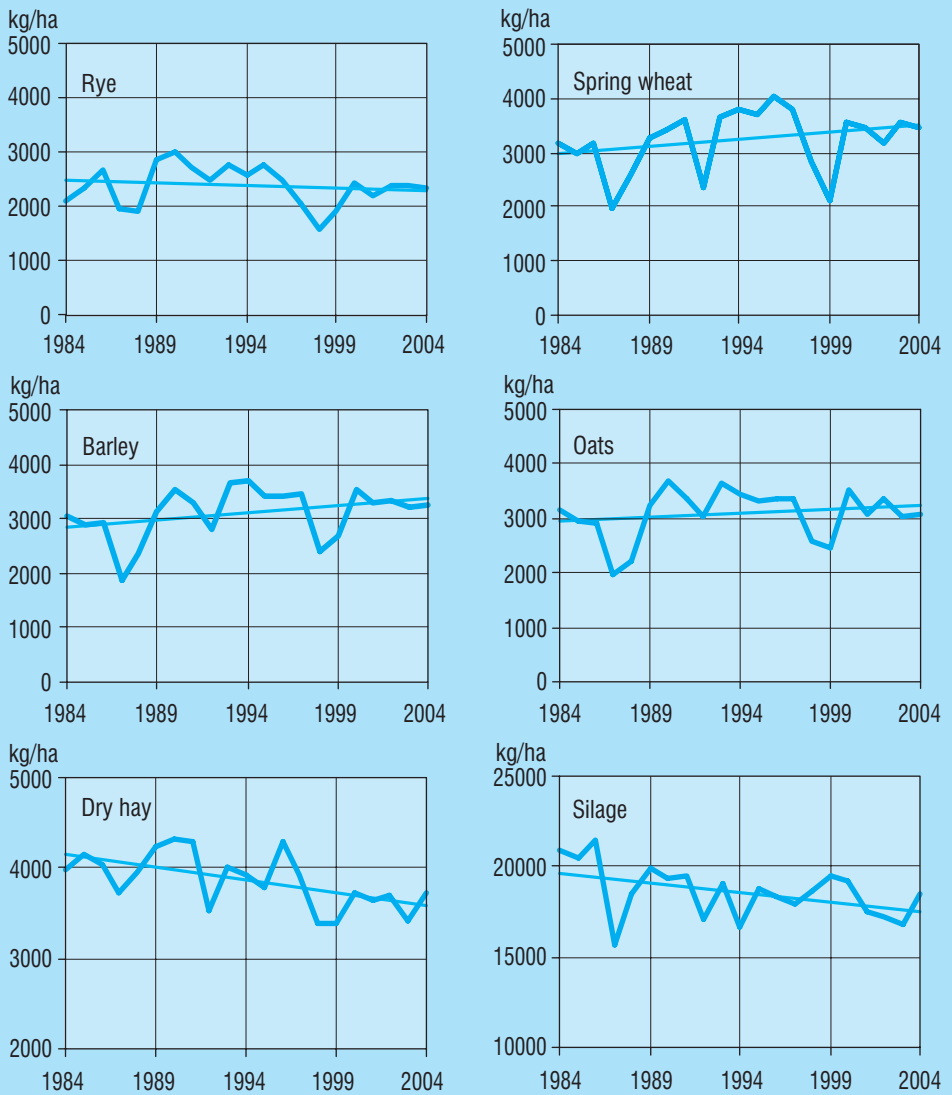
[1] f.u./ha without straw, [2] million f.u. without straw, [1, 2] new feed unit coefficients.
Source: Information Centre of the Ministry of Agriculture and Forestry.

In 1995 dry hay was still grown on 287,000 ha altogether 1,086 million kg, but in 2004 the dry hay area was only 91,000 and the production had dropped to 339 million kg. In 1995 the area of fresh fodder was almost 32,000 ha and the production totalled 434 million kg, but in 2004 only 163 million kg was produced on 16,400 ha.

The production of silage grew from 5,633 million kg to 7,611 million kg and the area from 301,000 ha to 412,400 between 1995 and 2004.

The area used for grazing has also been decreasing during the EU membership: in 1995 the pasture area was still 127,800 ha, but in 2004 it was only 86,900 ha.

In 1995 potatoes were still cultivated on 36,100 ha, but by 2004 the potato area had fallen to 27,300 ha. However, the hectarage yields have increased and



Yields of main crops in Finland from 1984 to 2004.

thus the production volumes are about the same as earlier. The hectarage yields have varied from 18,630 to 26,210 kg.

The area under sugar beets has also been decreasing steadily, while the hectarage yields have grown. In 1995 sugar beets were cultivated on 34,800 ha altogether 1,110 million kg, and in 2004 the area was 30,300 ha and this yielded 1,064 million kg. The hectarage yield was 31,900 kg in 1995 and 35,090 in 2004.

The cultivation areas and hectarage yields of oilseed crops have varied considerably from one year to another. During the EU membership the average area under oilseed crops has been 65,840 ha and the average hectarage yield 1,371 kg.

Market prices of cereals in Finland from 1994 to 2004, €/1000 kg[1].

	Rye	Wheat	Barley	Oats
2004	120.91	119.81	106.51	87.32
2003	124.88	126.66	105.57	92.21
2002	126.57	131.79	106.00	104.38
2001	131.31	132.36	109.66	111.37
2000	131.19	134.55	119.41	117.73
1999	142.96	137.91	122.78	114.37
1998	146.32	142.96	122.78	111.00
1997	149.69	148.01	124.46	117.73
1996	151.37	153.05	126.14	124.46
1995	149.69	146.32	122.78	117.73
1994	423.83	358.24	264.06	248.92

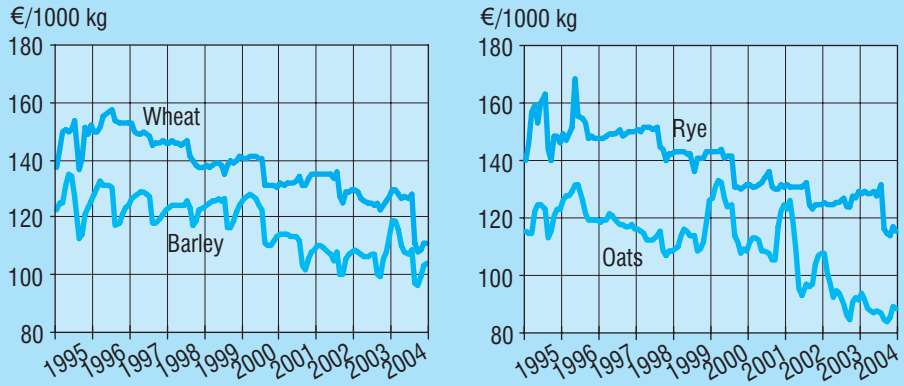
[1]Producer prices until 1994.
Source: Grain bulletin and Monthly Review of Agricultural Statistics, Information Centre of the Ministry of Agriculture and Forestry.

Market prices for arable crops

The first ten years in the EU have changed the Finnish cereal trade dramatically. Market-orientation has grown and the farmers follow the market trends more than ever before.

The market prices of cereals fell by 50–60% in 1995, when Finland joined the EU, and since then the prices of all cereals have been decreasing. This has partly been due to the Agenda 2000 reform, which cut the intervention price of cereals by altogether 15%. The first 7.5% cut was made in July 2000 and the second in July 2001.

The price of barley has not changed much during the EU membership. Before the Agenda 2000 reform the average price of barley was 124.6 €/t and since then the average price has been 108 €/t. Instead, the price of oats has varied considerably. The price was the highest in the early part of 2000 and end of 2001, when the average monthly price rose to 133.20 €/t.



Market prices of cereals in Finland from 1995 to 2004.

Average market prices of cereals in certain EU countries in 2000–2004, €/1000 kg[1].

	Rye	Wheat	Barley	Oats
Finland	126.0	126.9	107.7	103.8
Sweden	102.1	113.4	99.1	95.2
Denmark	101.2	115.8	120.2	112.1
Germany	97.8	110.5	97.1	97.8
France	102.4	113.6	105.1	103.2
England	121.5	119.6	102.2	95.2
Spain	123.7	135.8	120.3	122.6

[1]Unweighted averages.
Source: Eurostat.

In the beginning of 2002 the oats prices started to fall rapidly and during 2003 the average price dropped below 100 €/t. There is no intervention for oats, which is why the price fluctuates strongly, following the world market price.

The prices of bread cereals have been quite stable. Before the Agenda 2000 reform the average wheat price was 146 €/t. The reform lowered the price by 6.8% in July 2000, but there was no reduction in July 2001. The price for rye has followed the wheat prices quite closely.

The prices of oilseed crops have varied strongly. The prices were the lowest in 1999–2000, but after this the prices in Finland began to rise despite the reduction in the intervention price as a result of the Agenda 2000 reform.

There are several reasons for the increase in the prices of oilseed crops. Because of the BSE crisis the meat-and-bone meal was replaced by rape and colza and the world market prices of vegetable oils have been high. At the same time the area under oilseed crops and production volumes have fallen and the total yield has not met the domestic need.

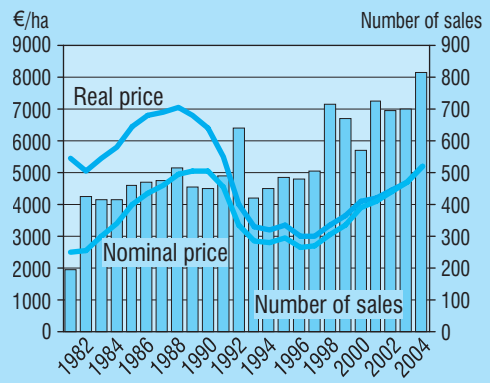
The potato prices have varied according to the quantities produced. In 1998, when the yield was very weak and the volumes low, the average price for potatoes rose to 259.7 €/t, while the average price during the EU membership has been 132.7 €/t. In the first years in the EU the average price for the early potatoes was 371 €/t, but now their production has become increasingly common and in recent years the price has been about 257 €/t.

Price of arable land

The arable land prices rose strongly all through the 1980s, reaching the peak levels at the end of the 1980s and early 1990s. After this the prices fell sharply due to the general economic situation and threat to agriculture caused by the possible EU membership. In 1993–1997 the price of arable land was about 3,000 €/ha. Since then the price has been rising again, and according to preliminary data the rise was considerable in 2004 as well.

Arable land prices vary a great deal between the different parts of the country. The price is the highest in certain parts of central Finland and Ostrobothnia and the lowest in eastern and northern parts of the country.

Property sales consisting only of arable land increased in 1981–2004. In this respect the trend has been the same before and during the EU membership.



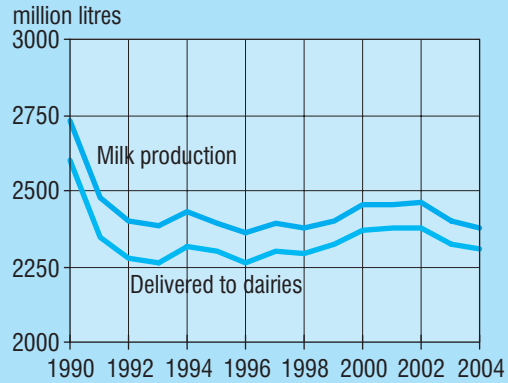
Development of the real and nominal price of arable land and number of land sales per year in 1981–2004.

2.2. Livestock production

Milk

In 2004 the amount of milk delivered to dairies totalled 2,304 million litres, which was 20 million litres less than the year before but 8 million litres more than in 1995. In the first years of Finland in the EU the production of dairy milk fell by 1–2% a year, but in 1997–1998 the volumes started to increase and the peak was reached in 2001.

The production of organic milk has doubled in five years, and in 2004 this totalled about 32,000 litres.



Milk production and the amount of milk delivered to dairies in Finland from 1990 to 2004.

Milk production exceeded the national quota of Finland in the quota periods which ended in 1999–2002. In recent years, however, the production has been on the decrease and the volumes have stayed below the quota. In the quota period 2002/2003 milk production was about million litres smaller than the national quota. According to a forecast by the Gallup Food and Farms Facts, in the quota period 2003/2004 the production will remain as much as 35–50 million litres below the quota.

In 2004 the production of dairy milk followed the trend in the number of cows, which fell by 3.9%. During the EU membership the total number of cows has fallen from 389,500 to 322,900 (about 2.3% a year). The number of dairy farms has decreased by 6–7% annually. The average yield of dairy cows has increased by about a fifth during the EU membership. At the turn of the millennium the average yield rose by as much as 5% a year, but in 2004 the yield was the same as in 2003.

In the past decade the trend in milk consumption has been towards the low-fat products. The consumption of liquid milk has decreased by 7%, while cheese consumption has grown by 13% and the consumption of yoghurt by almost 20%. Butter consumption has decreased by about a third, and today only a little over a quarter of the butter produced in Finland goes to domestic consumption.

In the foreign trade the import of cheeses to Finland and export of butter have grown the most during the EU membership. Cheeses are imported from Denmark and Germany, and the import of low-priced cheeses from the new Member States has also grown. In 2004 the share of cheeses imported from Poland rose to 6% of the total cheese imports.

Beef

Beef production in Finland totalled 91 million kg in 2004, which is 3 million kg (3%) less than in 2003. The annual beef production has been quite stable since 1998, totalling 90–94 million kg. This is about 5 million kg less than in 1995. In the past decade the self-sufficiency in beef has fallen from 100% to 94%. The main reason has been the decrease in the number of animals slaughtered, while the average slaughter weights of bovines have increased in recent years. The slaughter weight of, for example, bulls increased from 268 kg in 1998 to about 318 kg in 2004.

The increase in suckler cow production has slowed down the decrease in beef production. Since 2001 the number of

suckler cows has risen to 30,800, but their number is still 5–7% smaller than in the peak years in 1993–1994.

Towards the end of the 1990s beef consumption rose to 99 million kg, but then it fell to 92–93 million kg. In 2004 beef consumption rose to 96.9 million kg. During the EU membership the per capita consumption of beef has fallen by about 5%, partly as a result of the BSE crisis in Europe. Consumption has shifted to poultry meat and game, as well as meat preservatives and prepared foods, whose consumption has been increasing over the past 20 years. According to a forecast by the Gallup Food and Farm Facts, beef consumption will fall to 96 million kg in 2005, and the production will decrease to 88.7 million kg.

Variation in beef imports and exports from one year to another has been quite strong. In 2004 beef exports fell to 4.9 million kg, which is 2.2 million kg less than in 1995. Beef imports rose to 9.7 million kg, which is 4 million kg more than in 1995. The need to import beef has grown as the production has decreased below the consumption. Finnish beef exports go almost solely to the Nordic countries, mainly Sweden and Norway. Most of the beef imports come from Sweden, Brazil and Germany. Some meat products, such as sausages, are also imported from Sweden and Germany.

Pigmeat

Pigmeat production has grown by 18% during Finland's membership in the EU. In 1998 pigmeat production rose to 184 million kg, but in 2000 it fell to 173 million kg, partly as a result of the shortage of piglets. In recent years the production has grown by 3 to 6% a year. In 2004 pigmeat production totalled 198 million kg. The Gallup Food and Farm Facts estimates that in 2005 pigmeat production may be close to 199 million kg.

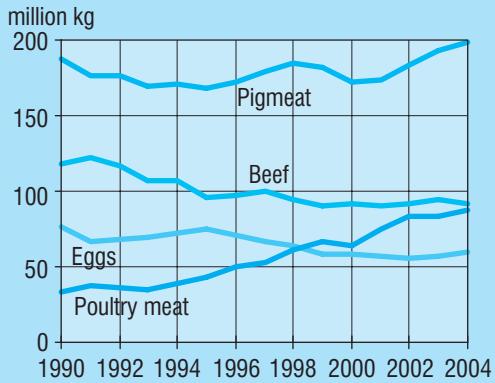
The increase in pigmeat production since 1995 has been due to increase in both the number of pigs slaughtered to over 2.3 million (by 18%) and average slaughter weights from under 78 kg to over 82 kg. The increase in the number of piglets per sow has also increased the meat production per sow.

No great changes have occurred in pigmeat consumption during the EU

Livestock production in Finland from 1994 to 2004[1].

	Dairy milk million l	Beef million kg	Pigmeat million kg	Eggs million kg	Poultry meat million kg
2004	2,304	91	198	57	87
2003	2,323	94	193	56	84
2002	2,376	91	184	55	83
2001	2,378	90	174	57	76
2000	2,371	91	173	59	64
1999	2,325	90	182	59	66
1998	2,300	93	184	64	61
1997	2,301	99	180	67	53
1996	2,261	96	171	71	49
1995	2,296	96	168	75	43
1994	2,316	107	171	72	39

[1] The hot weight reduction of meat was abolished at 1995. Starting from July 1, 1995 the hot weight reduction is 2%.
Source: Information Centre of the Ministry of Agricultural and Forestry, Gallup Food and Farm Facts.



Production of beef, pigmeat, poultry meat and eggs in Finland from 1990 to 2004.

membership. In 2004 the consumption totalled 175.6 million kg, which is 11 million kg less than in 1995. Most of the increase in the production has been exported, and pigmeat exports hit a new record again in 2004, totalling 38.5 million kg. The exports have grown five-fold since 1995.

The role of Russia as the destination of Finnish pigmeat exports is no longer as prominent as in the 1990s. Today Russia represents less than 20% of Finnish pigmeat exports, while in the late 1990s its share was about 50%. New export destinations include South Korea and Japan. Pigmeat exports to Estonia and the other new Member States also grew in 2003–2004. More than 50% of the pigmeat exports go to the EU countries. In the new Member States the fattier parts of the carcass are still more popular than in the old ones.

In 2004 altogether 15.5 million kg of pigmeat was imported to Finland. This represents 7.5% of the domestic consumption. Pigmeat imports have doubled between 1995 and 2004. Fresh meat is imported especially from Denmark and Germany, while about half of the imported meat products come from Germany.

Poultry meat

During Finland's EU membership the average increase in the production of poultry meat has been 9% a year. The production volume of 87 million kg in 2004 was double the volume in 1994–1995. Turkey meat production has grown the most; this has almost quadrupled in five years. The production of broiler meat has grown by 3–4% a year.

Broiler meat production totalled 71.4 million kg in 2004. Turkey meat production increased especially in the autumn and it totalled 14.5 million kg. The production volumes in 2005 should be about the same as in 2004.

The consumption of poultry meat has grown rapidly: in 2004 the per capita consumption of poultry meat was 83% higher than in 1995. The value added of consumed meat has also grown and the share of poultry meat in consumer expenditure has risen by 3–4%. In 2004 broiler meat consumption totalled 68.1 million kg and turkey meat consumption 14.1 million kg. Broiler meat consumption is forecast to rise to 70 million kg in 2005.

Before the EU membership Finland imported and exported very small amounts of poultry meat, but both imports and exports have grown in recent years. In 2004 3.5 million kg of broiler meat and 2.4 million kg of turkey meat was imported to Finland from e.g. France, Denmark, Thailand and Brazil. The value added of imported meat has also risen, because now more processed poultry meat products and boneless parts are imported than before.

Poultry meat exports rose to 9.8 million kg in 2004. Of this about 7 million kg was broiler meat and 2.7 million kg was turkey meat. The most important export destinations are Estonia, Russia, Lithuania and Denmark.

Eggs

The production volumes and consumption of eggs have decreased by over 20% in the past ten years. In 2004 egg production totalled 57 million kg, which is 12 million kg less than in 1995. In the first years in the EU the total egg production fell by about 6% a year. The decrease slowed down towards the end of the 1990s and in 2003–2004 the production started to rise again. In 2004 the increase was due to the increase in the packaging on farms by over 10%. The egg yield per hen is about the same as in 1995.

In the first two years in the EU egg consumption in Finland fell by about 6% a year. Since 1998 the annual consumption has been 51–52 million kg. The per capita consumption of eggs in Finland is below the EU average.

Egg exports have varied from one year to another, depending on the oversupply. The increase in the production in the past two years has increased egg exports and use of eggs as raw material in the processing industry. In 2004 egg exports totalled 11 million kg, which is 20.7% of the production. The producers have made several efforts to restrict the production by means of mutual contracts to bring it closer to the consumption.

Market prices of livestock products in 2004[1], €/100 kg.

	Milk	Pigmeat	Beef	Poultry meat	Eggs
Finland	34.99	127.14	230.62	122.46	75.93
Sweden	33.29	90.19	86.59	105.69	103.73
Denmark	31.94	121.21	179.76	81.85	116.84
Germany	28.99	102.34	115.27	86.25	150.53
France	30.07	122.00	324.65	145.25	70.17

[1]January–September average prices
Source: Eurostat.

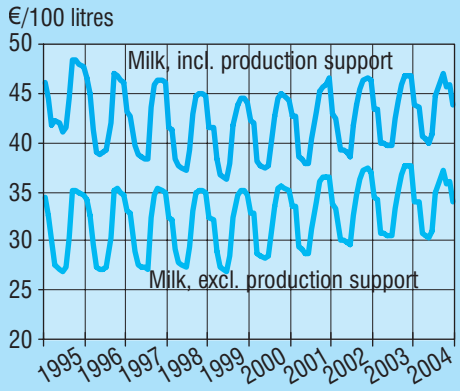
The producer prices of the most important livestock products in Finland from 1994 to 2004 including production support, €/100 kg, milk €/100 l.

Year	Milk[1]	Beef	Pigmeat	Eggs
2004	46.02	190.12	120.10	74.00
2003	45.81	185.65	115.06	80.21
2002	45.99	186.10	137.00	78.30
2001	45.45	208.00	150.00	69.00
2000	44.21	206.05	129.18	81.58
1999	43.76	215.97	112.53	74.34
1998	44.71	223.71	126.15	64.59
1997	45.84	209.24	139.94	60.89
1996	44.88	222.87	133.89	70.31
1995	47.04	348.68	177.62	89.48
1994	53.24	512.17	271.47	187.54

[1] Producer price for milk is that for standard milk and it does not include quota payments. Price for 2004 includes an estimated retroactive payment of 1.81 €/kg. Milk price in 1994–1996 has been converted into euros by a fixed exchange rate.
Source: Information Centre of the Ministry of Agricultural and Forestry.

Producer prices in 2004

One of the greatest changes in Finnish agriculture caused by the membership in the EU was that the use of price support decreased and direct income payments became increasingly common. This led to a strong decrease in the producer prices of several livestock products in 1995. Of the most significant livestock products the reduction was the greatest in egg prices (65%) and the smallest in milk (28%). There are certain special characteristics in the market prices of livestock products in Finland, even if they are dependent on the market prices in the other Member States. For example, the producer price of milk is slightly higher and more stable in Finland than in the EU on average, and the changes in pigmeat prices are reflected in Finland after a lag and the price volatility is smaller than in many other Member States.



Producer price of milk in Finland from 1995 to 2004.

The variation in the producer price of milk from one year to another has been quite small, even if the seasonal variation within the year is considerable. During the EU membership the nominal price of milk has risen by 8%, but after the increase in the first years the real price has returned to the level where it was in 1995.

In 2004 the average producer price of milk with average fat content, with quality supplements, was 33.54 €/l00 litres (1.5% less than in 2003). In addition to this, 9.81 €/100 litres was paid as production support. The final price of milk is known only after the closing of the accounts at the dairies, when the retroactive payments paid on the basis of the result are made. In 2003 the average retroactive payments were 1.81 €/100 litres.

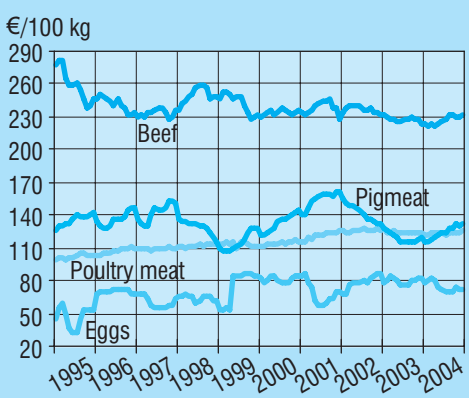
The average beef price rose in three and fell in seven of the first ten years in the EU. In 2004 the nominal price for beef was 20–25% lower than in 1995. The trend has been the same in all EU countries. In 1998–2004 the price paid for bull's meat in Finland was 1.1% higher than the EU average.

In 2004 the average producer price for bull's meat was 2.27 €/kg, which is almost the same as the year before. However, the increase in the price for cow's meat raised the average beef price to 1.90 €/kg (2%)

Pigmeat prices have varied strongly since 1997. The two last times the price depression has also lasted for quite long. Variations in piglet prices have also been considerable. Often the variations seem to have been caused by disturbances on the EU's pig market, such as the classical swine fever epidemic in the Netherlands in 1997–1998.

At the end of 2004 the price for pigmeat was at about the same level as where it was during the first months in the EU in 1995, but the real price of the whole year was 10–15% higher than in 1995. Compared to the previous year the producer price for pigmeat was 4% higher in 2004; in January-February the average price was 1.12 €/kg, while by December it was 1.29 €/kg. The average price for a fattening pig was 1.24 €/kg. However, the increase in the price for pigmeat was slower in Finland than in the EU on average.

The producer price for poultry meat has been quite stable in the past ten years. Unlike in the case of other meats, the real and nominal prices of poultry meat have risen by a few per-



Producer prices of beef, pigmeat, poultry meat and eggs in Finland from 1995 to 2004.

centages. In 2004 the producer price for broilers stayed around 1.16–1.17 €/kg, but the price for turkey, 1.56 €/kg, was almost 2% lower than in 2003.

The producer price for eggs rose strongly in the first years in the EU, but after the peak reached in 2000 the price has fallen by a few percentages. In real terms the egg prices in 2004 were on about the same level as in 1996. During almost the whole EU membership the egg prices in Finland have been lower in Finland than in most other Member States. In 2004 the producer price for eggs fell to about 0.74 €/kg (by 7%). Most of the decrease occurred towards the end of the year, when the price for a kilogram of eggs remained as much as 12 cents lower than the year before.

2.3. Horticultural production

The membership in the EU signified a dramatic change of the operation environment for Finnish horticulture as well. The greatest changes have occurred in the structure and number of horticulture enterprises and in the producer prices. The number of horticultural enterprises has fallen in both open cultivation and in greenhouse production. The average size of enterprises has grown, and thus the total cultivated areas are about the same as before. Also the production volumes of greenhouse vegetables have grown.

According to the Horticultural Enterprise Register, the number of enterprises was 6,910 in 2003. Their number has fallen by about 3,000 (30%) since 1995.

In 2004 the value of horticultural production totalled about € 359 million. Since 1995 the value has grown by as much as € 74 million, i.e. 26%. The growth in the value during the EU membership has been due to the increased domestic supply of greenhouse vegetables during winter, positive development in the producer prices and growing popularity of especially the hanging pots of summer flowers. The value of vegetable production in the open has also been growing steadily.

Horticultural production comprises the production of vegetables and cultivated berries in the open and apple, nursery and greenhouse production. Often the cultivation of mushrooms is also included in horticulture.

Greenhouse production represents about 60% of the value of horticultural production and the share of production in the open is about 40%.

Horticultural production in the open is often practised in connection with basic agriculture. Vegetable production in the open is mainly located in south-western Finland, berry production in the eastern parts of the country and apple production on the Åland Islands and in south-western Finland. Almost half of the greenhouse area is located in Ostrobothnia. The production of ornamental plants is more evenly distributed in the different parts of Finland.

Greenhouse production

The greenhouse production area eligible for support has been about the same in 2000–2004. In the first years in the EU the cultivated area grew by 23 ha (6%), but since 2001 the area has settled to about 400 ha.

The number of enterprises receiving aid for greenhouse production fell by 14% in 1995–2004. In 2004 their number was 1,566, which is 260 less than in 1995. The average size of the enterprises has grown considerably: in 2004 the average size was 2,550 m^2, which is 500 m^2 (24%) larger than in 1995.

About 60% of the greenhouse area is used for the production of vegetables and 40% for ornamental plants. Tomatoes account for about half of the area under

Areas under horticultural production in 1995–2004, ha.

	1995	1998	2002	2004	ha	%
Production in the open, total	17,486	17,514	16,466	16,025	-1,461	-8
Vegetables grown in the open	10,167	9,689	8,918	8,837	-1,330	-13
Berries	6,911	7,362	7,004	6,552	-359	-5
Fruits	408	464	544	636	228	56
Greenhouse production, total	376	388	400	399	23	6
Vegetable production	218	225	237	239	21	9
Ornamental plants	158	163	164	161	3	2

Source: Ministry of Agriculture and Forestry, Support Register.

vegetables and cucumber for a third. Tomato and cucumber represent 96% of the total output.

The tomato area has been about the same during the past decade, 120 ha. The cultivation of tomatoes round the year by means of supplemental lighting has increased rapidly in recent years. Now lights are used on a little over 17% (20 ha) of the tomato area. Because of more efficient production the total yield grew from 31 million kg to 36 million kg in 1995–2003.

The area under cucumber fell slightly, by about 5%, in 1995–2003. The average yields per square metre have increased from about 30 to 40 kg/m^2 (35%) due to more advanced cultivation methods. The total yields have grown by 28% to 36 million kg. Supplemental lighting is used round the year on more than a third of the cucumber area.

In 2003 the number of potted vegetables produced in Finland was about 55 million. The cultivation of potted vegetables has almost doubled during the EU membership; in 1995 their number was only about 30 million.

The area under ornamental plants has been about the same since 1995, and in 2004 it was about 161 ha. However, during the EU membership the area used for the production of cut flowers has fallen by almost 40% (24 ha), and the cultivation of many species of flowers, such as cut chrysanthemums and carnations, has stopped almost completely.

In 2004 the area under cut flowers and green cuttings eligible for support was 36 ha, of which 78% was used for the production of cut roses.

Instead, the area used for the production of both cut flowers and potted and bedding plants has grown by 22 ha to about 32 ha in 2004. Cultivation area under potted and bedding plants was 92 ha.

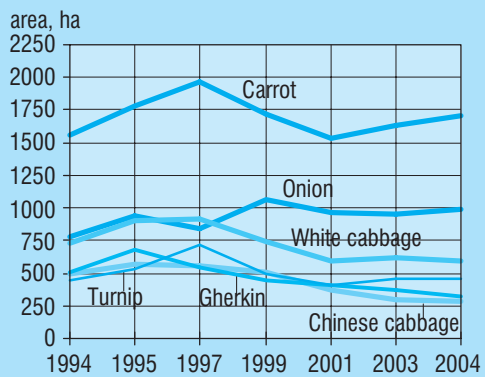
The number of bedding plants produced in 2003 was more than 44 million and the number of flowering potted plants was about 12 million. The production of bedding plants has grown by about 6 million (16%) since 1995, while the production of flowering potted plants is about the same as before. The most common bedding plants are violet, petunia, lobelia and geranium, and the most popular flowering potted plants are poinsettia, begonia and saintpaulia. Hanging pots of summer flowers have become increasingly popular in recent years. In 2003 about 2.1 million of these were sold, while in 1997 their production totalled only 1.1 million.

Production in the open

In 2004 the area under horticultural production in the open was about 16,000 ha. During the EU membership this has decreased by 400 ha (8%). The area under vegetables has decreased the most, by about 1,300 ha (13%).

Because of the decrease in the vegetable area their relative share in the total horticultural production area has decreased and the share of fruit (apples) has increased. In 2004 vegetables represented 55% of horticultural production area in the open, berries 41% and apples 4%. In 2004 support for horticultural production in the open was paid for 11,000 ha. The area of nursery production, which is not included in the support register, was about 620 ha. In 1995 the area of nursery was still about 800 ha, which means that it has fallen by over a fifth.

The most common vegetables grown in the open in Finland are garden pea, carrot, onion and white cabbage. Before the EU membership the cultivation areas of many vegetables were growing, but after a few years they turned into a decrease. During the past ten years the areas under cabbages, gherkin and red beet have decreased the most. The area of white cabbage has fallen by 35%, that of red beet by 24% and the areas of Chinese cabbage and gherkin by 50%. Instead, the area of iceberg lettuce has grown by 38% and onions by 5%.



Cultivation areas of the most important vegetables grown in the open in 1994–2004. Source: Ministry of Agriculture and Forestry, Support Register.

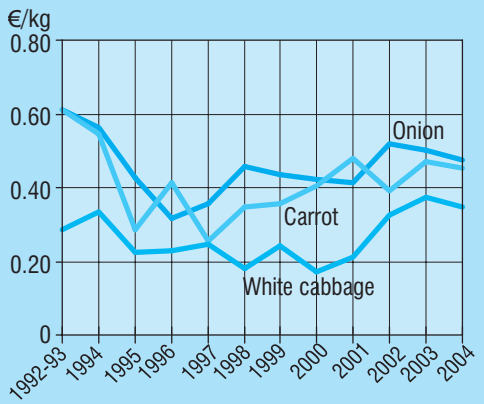
In 2003 production contracts with the processing industry covered about 27% of the total area used for commercial vegetable production in the open. The most important crops covered by these contracts are garden pea, gherkin, red beet and carrot. The area of contract production has fallen by about 12% (330 ha) during the EU membership. The number of companies producing under contracts with the processing industry has fallen to less than 40% of their number in 1995, but the production quantities have stayed at about the same level as before.

Strawberry production accounts for 53% (3,500 ha) of berry production area and 80% of the output. In 1995–2004 the area under strawberries fell by 24% (1,200 ha). More efficient cultivation methods have increased the yield levels, and thus the decrease in the cultivation area has not reduced the total output. However, the variations in the yield may be considerable, depending on the wintering of the plants and weather conditions during the growing season.

During the EU membership the area under raspberries has doubled to 460 ha in 2004. The area of black currants has grown to over 2,000 ha (over 40%). In 2003 about 20% of the total yield of berry production was covered by production contracts. Most of the contracts concerned the production of currants.

Horticultural product market

Strong seasonal variation in the producer prices is one main characteristic of the horticultural product markets. This is caused by harvest of the domestic crop and entry to the market, conditions during the growing season and the volume of domestic supply as a result of these. The price



Price development of vegetables grown in the open in 1992/93–2004. Source: Kasvistieto Ltd.

level is also influenced by imports.

During the EU membership the variation in the prices of vegetables grown in the open have been very strong. The prices of the most significant vegetables grown for storage, carrot, white cabbage, onion, turnip and red beet, fell considerably in the beginning of 1995 when Finland joined the EU. The producer price of carrots fell by 50%, onion by 27% and white cabbage by 28%.

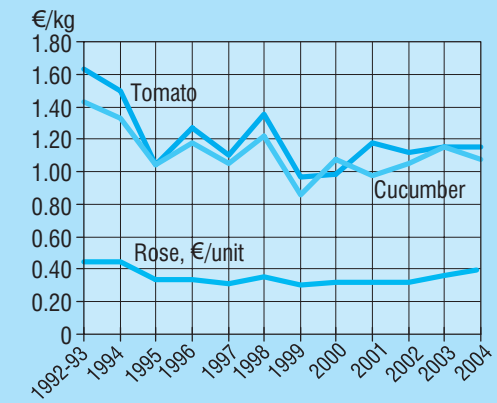
The producer prices were the lowest in 1996–1997, but since then they have been rising steadily closer to the price level in 1992–1994. The producer price for carrots was the lowest, 0.25 €/kg, in 1997, but by 2004 it had risen to 0.45 €/kg. The price for onion reached the bottom of 0.32 €/kg in 1996, but now it has risen close to the level before the EU membership. The producer price for white cabbage was the weakest in 2000, 0.17 €/kg, but in 2004 it was 0.36 €/kg.

The variation in the prices of greenhouse vegetables, especially cucumber and tomato, has also been great during the EU membership. In 1995 the prices of both fell by 30% from the average of 1992–1994. Since then the prices have both risen and fallen by tens of percentage points from one year to another. The prices were the lowest in 1999, when the tomato price fell to 0.97 €/kg and the price for cucumber to 0.86 €/kg.

Since 2000 the development of the prices has been more stable, and in 2004 the average price for cucumber was 1.08 €/kg and that for tomato 1.16 €/kg. The producer prices for greenhouse cucumber and tomato are typically the highest in winter, when the production volumes are the lowest and costs are high. The increase in the cultivation of cucumbers and tomatoes round the year by means of artificial lighting lowers the price level earlier in the spring closer to the prices in the summer.

The average producer price for cut roses has been about the same, 30–40 cents per rose, all through the EU membership.

The average producer price of strawberries was 2.44/kg in 1995, and it was falling steadily until 2001. The summer of 2001 was particularly warm and the strawberry yield was abundant, which was reflected in a record low producer price of 1.66 €/kg. In the following years the yields have been smaller and thus the producer prices higher. In 2004 the average producer price was 3.05 €/kg.



Price development of greenhouse vegetables in 1992/93–2004. Sources: Kasvistieto Ltd., Glasshouse Growers Association.

Corporate responsibility as part of quality work in the food chain

Sari Forsman-Hugg

Quality work is an integral element of the Finnish food economy, and serious efforts have been made to promote this work especially during Finland's EU membership. In 1999 the national quality strategy and quality objectives were declared as the foundation of the quality work. All actors in the food economy have committed to realising these objectives. The quality strategy and objectives were updated in 2004. The mission of the National Quality Strategy for the Food Sector is that the Finnish food chain offers the consumers safe and high-quality products and services, utilising the national strengths. The food chain carries out systematic quality work and the operations are customer-oriented and competitive, with due respect for humans, animals and the nature.

Food quality is a multi-dimensional concept. Quality involves sensory and measurable quality, product safety, traceability, ethical considerations, etc. In the quality strategy quality is viewed from the perspective of comprehensive quality thinking. In the food chain quality is seen to take shape on three steps. The first step, and the foundation for the quality work, is the statutory quality. The second step consists of the actions taken by the food economy as a whole and the different sectors separately to develop and ensure quality. The third step is the so-called special quality which the companies may take advantage of as a competition factor.

Responsibility is part of quality

In recent years the concept of corporate responsibility has been raised in both public discussion and operations of the companies, alongside with the quality of the products and operations. Corporate responsibility means active responsibility of the companies – good company citizenship – which is founded on the company's own situation, vales and strategies. Carrying corporate responsibility means that the company fulfils the expectations set by various interest groups. Corporate responsibility is often seen to comprise three different dimensions: economic, environmental and social responsibility. Responsible business activity supports sustainable development of the society and international commerce: in addition to the economic values also values relating to the environment and welfare of the people are taken into account.

Finnish food economy is also committed to the implementation of responsible business operations. In the quality strategy responsible action is one of the key values steering the quality work, together with customer satisfaction and profitability. One objective of the quality strategy is to reinforce the responsible operating patterns in the food economy. Incentives to the implementation and reporting of responsible actions have been strengthened, for example, by drawing up instructions for environmental reporting by the companies in the food sector. Companies in both food industry and trade have been active in reporting not only environmental issues but also issues relating to economic and social aspects. Serious inputs in corporate responsibility are also reflected in the participation of food companies in various kinds of projects targeted at, for example, children and the young, as well as organisation and sponsoring of various kinds of campaigns and events.

Responsible action as such can be seen as one dimension of quality, which means that the development of responsibility is an integral part of quality work in the food chain. However, the relationship between quality and responsibility can also be viewed through the ownership and limits of responsibility: who is responsible for producing certain quality and how extensive is this responsibility? How transparent are the actions of the food chain in this respect? Is each actor in the food chain aware of the responsibility of the other actors for the part of quality work? Does the whole food chain have a joint responsibility for quality – also in practice?

Responsibility is interaction and transparency in the food chain

Corporate responsibility is largely concerned with interaction between the company and its customers and interest groups. Communication on the quality and responsibility must be watertight all through the chain and in both directions. Ultimately it is the consumers, other actors in the food chain and interest groups who make the assessment of how responsible the actions of a certain company are. However, so far there are no commensurable indicators or signs for assessing the responsibility of company actions. If the consumers and other actors in the food chain are capable of making sustainable choices in terms of the corporate responsibility, responsibility should also be concretised and indicators should be created to study the impacts of these choices. This is a serious challenge to the companies in the sector, as well as the authorities and research.

The challenges of responsible actions by companies are even greater when we operate on the global market. During the EU membership the Finnish food economy has been faced with almost continuous pressures for change. The EU enlargement in 2004 and gradual liberalisation of world trade have increased the price competition in the food sector, which increases the import of foreign raw materials and foodstuffs to Finland. The growing role of price as a competition factor may place the foundations of the national quality work at risk. Increasingly international food market may obscure many self-evident quality dimensions, such as the origin of the product, production history and ownership of the companies. This increases the responsibility of the sector itself for the quality work, if we wish to reach the objective of consumers' good awareness of the quality work in the Finnish food economy.

In terms of the future of the Finnish food chain the key question is to what extent the use of domestic raw material and employment effect of the Finnish food economy are seen as parts of the social responsibility in the food chain. Another theme relating to responsible action which has also been widely discussed in the media is the promotion of healthy eating habits to prevent certain national diseases with strong impacts on the society. What is the responsibility and where are its limits considering, for example, the price policy applied to foodstuffs?

In many ways the realisation of corporate responsibility as part of the quality work in the food sector is only getting started. This issue is common to the whole food economy, and it calls for joint efforts and commitment of all actors. One special challenge is the communication on the work on quality and responsibility on the interfaces of the food chain. Corporate responsibility brings new dimensions and challenges to the management and development of food companies. In addition to ensuring profitability in the long term the development of corporate responsibility may help the companies to improve and manage their company and product images.

2.4. Food market

Consumer prices

When Finland joined the EU in 1995 the food prices fell, on average, by 11% even if the value added tax was raised from 12 to 17%. The reduction was caused by the decrease in the producer prices to the same level as in the other Member States and liberalisation of imports from the EU countries. The prices of cereal and meat products fell the most dramatically.

In 2004 the food prices in Finland rose by 0.7%. The annual change in the consumer price index was 0.2%, which means that the rise in the food prices exceeded the average rate of inflation. During the whole EU membership the food prices have risen less than the other prices. Between 1995 and 2004 the food prices in nominal terms rose by 11%, while the general consumer price index rose by 13.4%, which means that the real food prices are below the level in 1995.

A comparison of the development in the consumer price levels of foodstuffs between eight EU countries from 1996 to July 2004 shows that no major changes have occurred in the differences between the countries. The price level in Finland is lower than in Sweden and Denmark but higher than in the other countries in both 1996 and July 2004.

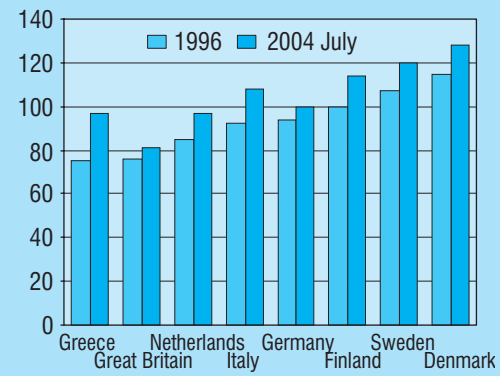
Average consumer price index and development of the consumer price index of foodstuffs in Finland in 1995–2004, 1995=100.

	Consumer price index	Price index of foodstuffs
2004	113.4	111.0
2003	113.1	110.2
2002	112.5	109.5
2001	110.8	106.5
2000	108.0	102.0
1999	104.4	101.0
1998	103.2	101.3
1997	101.8	99.6
1996	100.6	98.2
1995	100.0	100.0

Source: Statistics Finland.

In addition to the raw material prices and margins of processing and trade, differences in the prices are caused by considerable variation in indirect taxes between the countries and products. For example, in Finland the value added tax (VAT) on foodstuffs is 17%, which is about 10% higher than the average in the countries using the euro, and this obviously increases the Finnish prices by the same percentage. The share of trade in the consumer price of food (incl. VAT) has increased by a few percentage points during the EU membership. The tightening competition has strengthened the position of the wholesale and retail trade sector, which has managed to stimulate strong competition among suppliers, both within the domestic food industry and between the Finnish and foreign companies.

The share of the processing sector in the food prices is still about the same as before, while the share of primary producers has diminished.



Consumer price index level of foodstuffs in certain EU countries 1996 (Finland=100) and July 2004. Source: Statistics Finland.

Consumption of milk products, margarine, meat and eggs per capita in 1995–2004, kg.

	Liquid milk[1]	Butter	Marga-rine	Cheese	Ice-cream	Beef[2]	Pig-meat[2]	Poultry meat	Eggs
2004	186.2	2.6	6.6	18.4	13.4	18.6	33.8	16.0	9.7
2003	185.1	2.4	6.8	16.7	13.8	18.0	33.5	15.8	10.4
2002	190.0	3.0	7.6	16.6	13.5	17.9	31.9	15.4	10.0
2001	191.7	3.5	7.8	16.5	13.3	17.9	32.7	14.5	10.3
2000	193.9	3.8	7.7	16.5	13.5	19.0	33.0	13.2	10.1
1999	195.8	3.9	8.1	16.6	13.9	18.8	34.3	12.6	10.0
1998	198.5	4.3	8.4	15.9	13.2	19.2	34.1	11.9	10.3
1997	199.4	4.5	8.5	14.8	13.8	19.3	32.2	10.7	10.4
1996	203.8	4.9	8.6	14.8	13.4	19.1	32.9	9.9	11.0
1995	203.2	5.3	8.3	14.8	14.1	19.4	33.3	8.7	11.8

[1] Including liquid milk, sour milk products and cream.
[2] Hot weight reduction of 2% has been made in slaughter weights from July 1995. This was not the case in 1990–1995, and the consumption figures are thus somewhat higher.
Sources: Gallup Food and Farm Facts, Information Centre of the Ministry of Agriculture and Forestry.

In recent years international mergers and other arrangements to increase the size of companies have become increasingly common among the actors on the food market, suppliers and trade. The strong concentration of food production and trade will continue in the near future. The range of products expands, technology improves, value added is rising and the customer groups will be more and more fragmented. The growth in the product range has been breathtaking in recent years: in 1995 there were about 4,000 product names at supermarkets, but now their number is almost 10,000. The goods are also being replaced by others more and more rapidly.

Average consumer prices of some foodstuffs in 1994–2004, €/kg.

	1994	1997	2000	2003	2004	Change % 1994–2004
Light milk, €/l	0.66	0.66	0.63	0.72	0.72	8.6
Butter	5.28	4.50	4.68	4.87	4.92	-7.0
Margarine	3.01	2.28	2.28	2.37	2.37	-21.3
Emmental cheese	8.34	8.12	8.97	10.35	10.59	27.0
Beef joint	11.57	8.32	8.44	8.26	8.38	-27.9
Pork chops	8.02	5.88	6.23	7.64	7.69	-4.1
Legs of broiler	..	2.79	2.37	2.47	2.47	..
Eggs	2.79	1.78	2.28	2.24	2.35	-15.7
Wheat flour	0.90	0.60	0.64	0.62	0.61	-32.3
Rye bread	2.79	2.37	2.65	2.97	3.06	9.6
Tomato	..	2.13	2.37	3.03	2.96	..
Potato	0.61	0.52	0.54	0.58	0.71	15.9

Source: Statistics Finland, consumer price statistics.

Adjustment of food industry to the EU membership

Finland's accession to the European Union was a significant turning point for the Finnish food industry, because it changed the operating environment all through the food chain. Finnish agricultural policy became part of the common agricultural policy of the EU, and the first concrete consequence of this was the dramatic decrease in the raw material prices. At the same time the border protection enjoyed by the processing companies, which consisted of tariffs, quotas and licences, was abolished. The wholesale and retail businesses benefited from the liberalised import opportunities.

The positive development of companies before the EU membership, improved competitiveness and increased exports offered a solid basis for facing the challenges of the common market area. The feared wave of bankruptcies was avoided (except for some small companies) and the growth in the import of processed foods was quite moderate.

Conscious efforts to improve the competitiveness of Finnish food industry were started in individual companies already in the 1980s. The results of an extensive survey made in the early 1990s revealed obvious shortcomings in certain sub-sectors, which finally made the Finnish companies aware of the need to improve their competitiveness. Excess capacity was removed, production costs were reduced, inefficient production plants were closed down and investments were directed at creating new, modern processing capacity. The market structure was rationalised through mergers and acquisitions.

During the economic depression in the early 1990s exports suffered from the disappearance of bartering with Russia and cuts in exports subsidies due to the difficulties in the national economy. Because of the permanent nature of the domestic consumption of foodstuffs the losses suffered by food manufacturing companies were less severe than in the other sectors. In the worst years the real value of the production fell by 2–3% but it returned to the earlier level quite rapidly as, for example, the trade to the east continued on the new, different grounds.

During the first ten years in the EU three clear general trends have been observed on the markets of processed food products: (1) tightening competition, (2) continuous improvement in production efficiency and (3) internationalisation.

Tightening competition

Internationalisation and concentration of wholesale and retail trade have led to increased competition between the food companies, especially in the past few years. Structural changes in the trade have directly influenced the market opportunities of food processors in four ways: through concentration, chaining, discount stores and private labels.

As a result of the concentration in the trade sector, very large units, hypermarkets, have conquered market shares from smaller units. The introduction of euro in 2002 speeded up the disappearance of village and local shops.

The largest food trade companies have rapidly become organised into chains, i.e. concentrated their purchasing. Today the purchases of about 80% of foodstuffs are concentrated to certain major suppliers and distributed through national logistic channels, while only 20% of the foodstuffs are purchased locally.

The position of private labels of food store chains is strengthening, and the appearance of discount chains has changed the market structure.

To respond to these trends the food producers need to supply larger volumes more and more cost-efficiently. Only the largest companies with nationally significant market shares are capable of benefiting from the economies of scale.

Key figures on the Finnish food industry in 1995–2003.

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Turnover (at current price, bill. €)	7.7	7.8	8.0	7.8	7.5	7.9	8.3	8.4	8.5
Turnover (at 2003 price, bill. €)	8.8	8.8	9.0	8.6	8.2	8.4	8.5	8.5	8.5
Personnel (thousands)	44.9	44.6	44.2	42.8	40.7	39.9	38.6	38.0	38.2
Real turnover per person (thousand €)	195	198	203	201	201	208	220	222	222

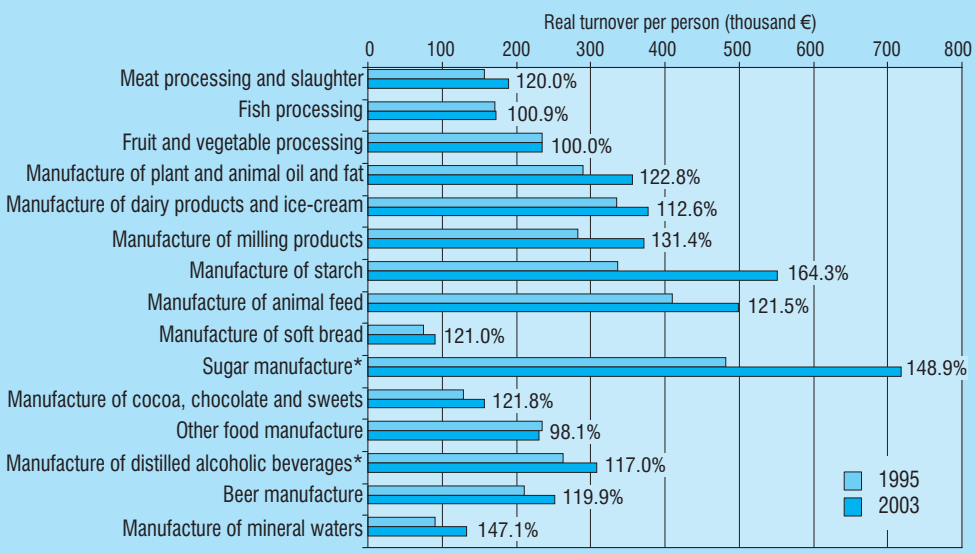
Sources: Statistics Finland, Finnish Enterprises 1995-2003.

Small companies may be able to take advantage of the market niches by manufacturing special products and by supplying fresh products to the local markets. Medium-sized companies are the most vulnerable, because their product range is often the same as that offered by the large competitors. The companies representing this size category may be in serious difficulties, as certain examples in the meat industry have shown.

Production efficiency

The trend towards increasingly efficient production which started at the end of the 1980s has continued, mainly through investments in more efficient processing technology, leading to considerable savings in labour costs. The value of the production has increased steadily from one year to another with the concurrent decrease in labour input. The productivity of labour has improved both in the whole food industry and in individual sub-sectors.

The labour force in food industry decreased rapidly in the early 1990s, but since then the reduction has been slower. In 2003 food industry employed 38,000 persons. At the same time the total turnover of food companies has been growing, except for the slight downswing due to the export markets towards the end of the



Development of the productivity of labour in the sub-sectors of food industry. Sources: Statistics Finland, Finnish Enterprises 1995–2003.

1990s, and in 2003 the gross value of the production totalled almost € 8.5 billion, which at current prices is € 0.8 billion higher than in 1995.

The value of the production per capita of the whole food industry in real prices rose from € 195,000 in 1995 to € 222,000 in 2003, i.e. 14%. Productivity improvement exceeded the average in the milling, starch, feedingstuffs, vegetable oil, confectionary and brewery industries, as well as in meat processing and even in the labour intensive bakery industry.

Improved efficiency is also reflected in the reduction in the number of plants as especially the very large companies with nation-wide networks of processing plants have started to concentrate their operations regionally and to larger units, while smaller units are being closed down.

Internationalisation

Globalisation of the world market became a dominating trend in the 1990s, and in the food industry the process reached its peak at the turn of the millennium when the value of mergers and acquisitions was record high. Finnish food companies have been both initiators and targets of the investments across the national borders.

The first steps in establishing operations abroad were taken already in the early 1990s, but the major steps were taken after Finland joined the EU in 1995. The main causes were the limited domestic markets in Finland and the opportunities available in the neighbouring countries. Both in the globalisation process and in the competition within the EU the necessary growth potential has been searched for from the neighbouring regions, mainly around the Baltic Sea. The Finnish investments have been targeted primarily to the Baltic States, Sweden, Russia and Poland. These target areas are the best suited for the internationalisation efforts of Finnish companies, both geographically and in terms of the size of the markets.

After the year 2000 the outward foreign direct investment stock exceeded one billion euros. The brewing and bakery companies as well as dairies and meat processors have been the most active in establishing operations abroad. Some investments have also been made in the milling, vegetable oil, coffee, snack and malting industries.

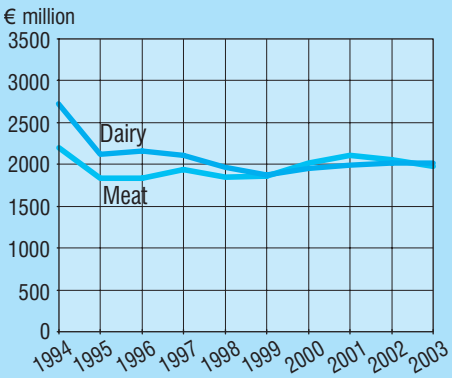
At the same time a growing number of foreign investors have shown interest in Finnish food industry. The amount of inward foreign direct investment stock in Finland began to rise rapidly in 1998 and in 2003 it totalled € 2.6 billion. The number of companies in foreign ownership was 23, including small or medium-sized companies. This means that the foreign investments in food industry are mainly concentrated to a few large units.

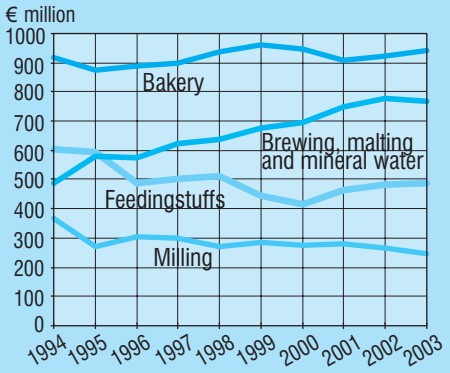
In 2002 the number of companies in foreign ownership was 22, which is 1.1% of the number of food companies, but they represented 19.2% of the total turnover of the food industry, 25.3% of the value added and 29.7% of the profit, and they employed 19% of the labour force.

Most of the foreign investments have been made in the brewery, sugar and confectionary industries, as well as processing of fruits and vegetables and other foods. The largest investments have originated mainly from the Nordic countries, especially Sweden and Denmark.

Structural development of sub-sectors during the EU membership

During the EU membership the turnover of Finnish food industry has been characterised by great variations in the economic cycles. The consumer prices of foodstuffs fell by 11% when Finland joined the EU in 1995, but the differences between sub-sectors were considerable.





Turnover of Finnish meat and dairy industry and certain other sub-sectors of food industry at 2003 prices.

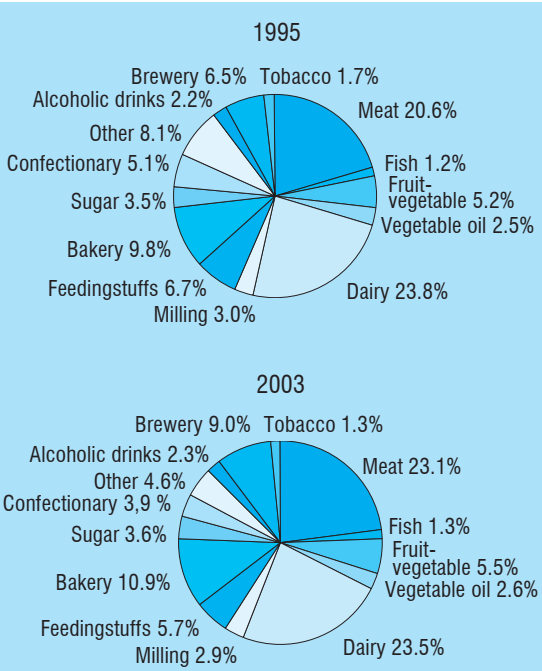
In the first year in the EU the turnover of food industry at real prices fell by 4.7%, largely as a result of the decrease in the prices. The decrease would have been greater without the growth in the consumption volumes due to the price reduction.

The market-based trade with Russia recovered quickly after the economic depression in Finland in the early 1990s. The turnover of food companies started to grow thanks to the good export prospects and changes in the domestic consumption.

However, the exports suffered again from the devaluation of the Russian rouble and the real value of the turnover of the whole food industry decreased by 5.6% in 1998 and 4.5% in 1999. In the next two years it increased by 2% a year, while in 2002 and 2003 the value of the production in real prices stayed on about the same level as in the previous years.

During the EU membership there have been considerable changes within and between the different sub-sectors of the food industry. Between 1994 and 1995 the value of the production decreased the most in the meat, dairy and milling industries, where raw material is a significant cost factor.

The two largest sub-sectors in the Finnish food industry are the dairy and meat processing industries. The changes in the trade with Russia have influenced the turnover of the dairy industry very strongly. The crisis of the Russian rouble in 1998 and 1999 reduced the turnover of



Structural change among sub-sectors of Finnish food industry.

the dairy industry considerably. The development of the meat processing industry has been steadier, after having recovered from the dramatic price reduction when Finland joined the EU. The growing popularity of products of higher value added, such as prepared foods, and tripling of broiler consumption have supported the growth in the turnover.

Of the other main sub-sectors bakery industry, including the production of soft breads and crisp bread, and brewery industry including the production of beer, malt and soft drinks have managed to increase their turnover during the EU membership.

The bakery culture and consumer habits have been changing as the earlier consumption of simple dark or white bread has become diversified into the consumption of hundreds of different kinds of products, including special types of breads, frozen bakery products and various kinds of coffee breads. The process has continued during the EU membership and consumption has shifted towards more highly priced products.

The growth of companies in the brewery industry has been primarily attributed to the expanding consumption of mineral waters and soft drinks.

The trends in the main sub-sectors are also reflected in the relative structural change in the food industry. During the EU membership the shares of brewery and soft drink industries and meat processing have grown the most, both by 2.5 percentage points.

The share of the bakery industry has also grown, while the share of feedingstuffs industry has decreased by 1 percentage point. The share of the heterogeneous group of other foodstuffs has decreased the most, by 3.5 percentage points, and the share of confectionary industry has diminished by 1.2 percentage points. Most of the other sub-sectors have kept their relative share within the total turnover of the food industry.

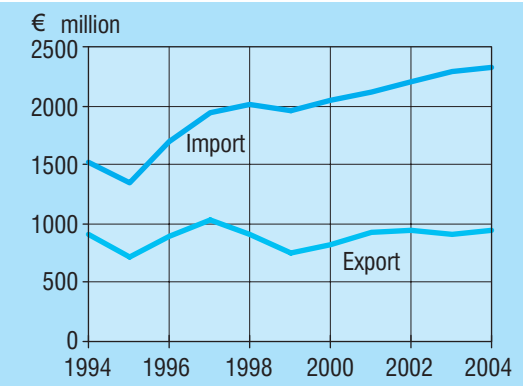
Foreign trade

In 2004 the value of the Finnish food exports totalled € 940 million, which is almost 3% more than in 2003. Finnish food exports reflect the economic booms and recessions. After certain difficulties in the first couple of years, Finnish food exports have grown during the EU membership. A record level was reached in 1997, but the devaluation of the rouble led to a dramatic decline in the exports to Russia in 1998. The exports started to grow again in 1999.

Exports to Russia still represent more than a fifth of the Finnish food exports. Exports to the second most important destination, Sweden, have been growing steadily.

The single most important product group in Finnish food exports is cheese. Other important export articles are butter, sugar products, pigmeat, cereals and alcoholic drinks.

In 2004 the value of food imports to Finland was € 2,330 million, which is 2% more than in 2003. Fruits, raw coffee, alcoholic drinks and tobacco represent about a third of the food imports.



Exports and imports of agricultural products (CN 01–24) in 1994–2004[e], € million. Source: National Board of Customs, Foreign trade statistics.

3. AGRICULTURAL POLICY

The national objectives of Finnish agricultural policy are founded on the view that the permanent competitive disadvantage due to adverse natural conditions must be compensated for so that Finnish agriculture could succeed on the common EU market. Efforts to reach these objectives have been made by developing the common agricultural policy of the EU to take better into account the special needs of Finland as well as through national measures allowed by the Accession Treaty.

3.1. Common agricultural policy of the EU

The EU markets of agricultural products are steered by administrative means in the same way as in most other industrialised countries. The price level on the internal market is kept above the world market prices mainly through price policy instruments. Common policy is implemented through common organisations of the markets for specific products. The basic idea is that the fall of the prices within the EU below a certain level is prevented by means of public intervention while the prices of imported foodstuffs are raised to the EU level through import duties. Exports are subsidised by export refunds.

The EU markets are also regulated through production quotas and support entitlements. Production quotas are applied in the milk and sugar sectors and support entitlements are used for suckler cows, bulls, ewes, and the area under cereals, oilseed crops and potato starch. The Finnish quotas and support entitlements are determined in the Accession Treaty.

As a result of the policy reforms of 1992 and 1999, the intervention prices of cereals and beef were lowered closer to the world market prices. The price reductions were compensated for by means of direct payments, which is why support based on the area or number of animals (headage and area related payments) have gained a central position in the product-specific price and market organisations.

Agricultural policy reform

An agreement on a further reform of the common agricultural policy was reached in summer 2004. This is the most radical reform during its 40-year long history. In this reform most of the supports for arable crops and livestock are decoupled from the production and a new Single Farm Payment Scheme (SFP) is set up in the Member States. Most of the supports financed by the EU alone will be included in the SFP, and new conditions relating to the environment, maintaining the productivity of the land, food safety, animal welfare and occupational safety will be incorporated into the scheme (cross-compliance).

The implementation of the reform may be started in 2005 and the new scheme must be effective in 2007. In Finland the new scheme will be introduced in the beginning of 2006.

The reform includes so-called modulation, through which a gradually increasing share of the CAP support is transferred to rural development measures through the EU budget. Modulation does not apply to the first € 5,000 of each farm. The cut for the share exceeding this is 3% in 2005, 4% in 2006 and 5% from 2007 onwards.

The dairy policy is reformed by lowering the intervention price for butter by altogether 25% and that for skimmed-milk powder by 15% in 2004–2007. This means that the prices for butter and milk fat are going to decrease considerably in the EU.

To compensate for the quite radical cuts, the milk quota system will continue until 2015. The reduction in the producer price for milk due to the cuts in the intervention prices is compensated for through a dairy cow premium, which must be decoupled from the production by 2007 and incorporated into the Single Farm Payment Scheme. In Finland this will take place in 2006.

Agricultural policy in Finland

Because of the adverse natural conditions, the role of support in the income formation of agriculture is much more important in Finland than in the other EU countries. In 2004 the support payments totalled about € 1.8 billion, which represents 45% of the total return of agriculture and horticulture.

The agricultural policy of the EU does not accommodate the interests of northern farming dominated by small farm too well, and thus Finland pays 56% of the necessary support from national funds and only 44% comes from the agricultural budget of the EU.

In 2005 the support under the common agricultural policy to the Finnish agriculture will total € 1,260 million. This consists of the CAP support for arable crops and livestock (€ 515 million), compensatory allowances for less-favoured farming areas (€ 423 million) and environmental support (€ 322 million). The supports are funded either by the EU alone or co-financed by the EU and Finland.

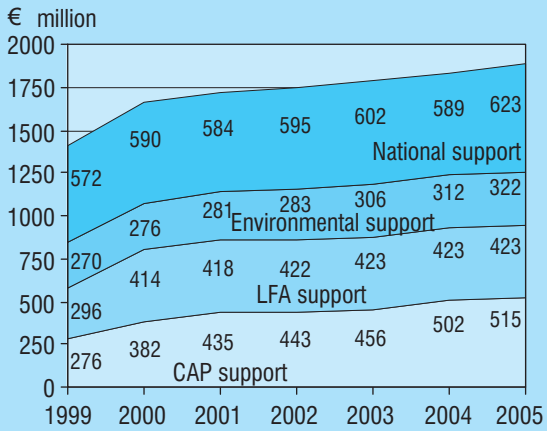
CAP support is funded in full from the EU budget, and the EU contributes about 32% of the compensatory allowances and 55% of the environmental supports. The rest is paid from national funds.

CAP support

The CAP supports paid on the basis of the arable area and number of animals constitute a central element in the common agricultural policy. The CAP supports consist of the special premium, suckler cow premium, ewe premium, extensification premium and slaughter premium. Crops eligible for the area-based CAP support are cereals, protein crops, oilseed crops and oil flax. Since

Agricultural support based on the CAP in Finland (financed in full and part-financed by the EU), € million.

	2000	2001	2002	2003	2004 prelim.	2005 estimate
Total	1,072	1,134	1,148	1,185	1,237	1,260
CAP income support	382	435	443	456	502	515
Support for arable crops	327	345	345	345	362	351
Other area-based support	9	10	10	10	10	10
CAP support for animals	46	80	88	101	130	154
Compensatory allowances	414	418	422	423	423	423
EU contribution	*128*	*130*	*131*	*137*	*137*	*137*
National financing	*286*	*288*	*291*	*286*	*286*	*286*
Environmental support	276	281	283	306	312	322
EU contribution	*155*	*157*	*158*	*167*	*171*	*177*
National financing	*121*	*124*	*125*	*139*	*141*	*145*
EU financing, total	665	722	732	760	810	829
National financing, total	407	412	416	425	427	431



Agricultural support in 1999–2005, € million.

2000 support has also been granted to silage grass in Member States where maize is not a traditional crop. In 2001 the CAP support was extended to fibre flax and hemp

The area payment for arable crops is determined according to historical reference yields. The support is 63 €/t multiplied by the corresponding reference yield of the region. In Finland and northern Sweden 24 €/t is paid as so-called drying aid for cereals and oilseed crops. When this additional compensation is taken into account, in 2005 the area payment for cereals will be 295 €/ha in support area A, 243 €/ha in areas B and C1 and 200 €/ha in areas C2–C4. Because the support for arable crops is based on regional yield levels, in Finland the area payments remain clearly below the EU average. When implementing of agricultural policy reform approved in summer 2004 the Member States may either decouple all CAP support from the production or continue to apply coupled support to certain set quantities.

Compensatory allowances (LFA support)

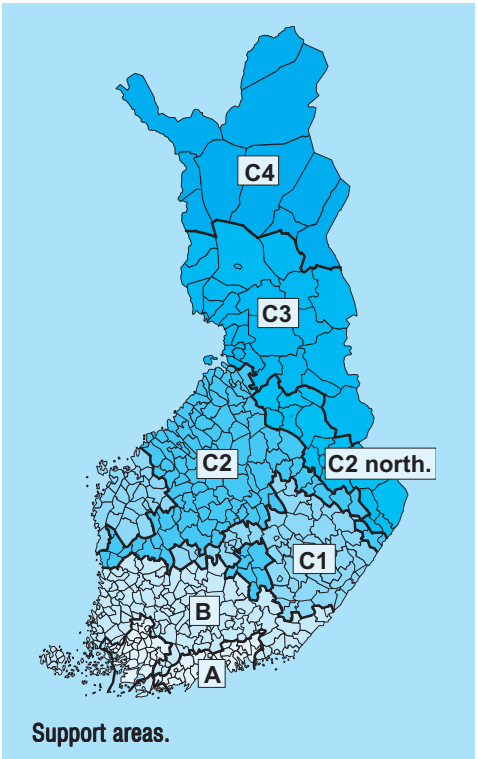
Certain rural regions in the EU have been defined as less favoured areas. The purpose of compensatory allowances, or LFA support, is to ensure the continuation of farming in these regions and keep them populated. In the accession negotiations it was agreed that 85% of the arable area in Finland (support areas B and C) were to be covered by the LFA support, but in June 2000 the Commission approved the Finnish proposal to extend the support to area A. Thus Finland became the first EU country where all farmers in all parts of the country may be eligible for LFA support, provided that the conditions for the support are met. Support covers the whole cultivated area of 2.16 million ha.

In 2004 the LFA support paid to Finnish farmers totalled € 423 million. In Finland the EU contributes 50% of the compensatory allowances in Objective 1 areas and 25% in the other parts of Finland. The average EU contribution is 32%. The support was 150 €/ha in area A, 200 €/ha in areas B and C1 and 210 €/ha in areas C2–C4.

Environmental support

The Agri-Environmental Support Scheme is part of the Agri-Environmental Programme of the EU drawn up in connection with the CAP reform of 1992. Environmental support was an important element in the decisions on agriculture in the accession negotiations of the new Member States which joined the EU in 1995.

Environmental support compensates the farmers for income losses resulting from the reduction in the production and increased costs as the farmers give a commitment to undertake measures aimed to reduce environmental loading caused by agriculture. The support consists of basic measures, additional measures and contracts concerning special measures. In



Support areas.

terms of the environment the main emphasis is on water protection, but efforts are also made to reduce emissions into the air, reduce risks due to the use of pesticides and take care of the rural landscape and biological diversity.

In 2004 environmental support paid to Finnish farmers totalled € 312 million. On average, the EU contributes 55% of the environmental support.

3.2. National support policy

The national support scheme, which comprises the northern aid, national aid for southern Finland, national supplements to environmental support and compensatory allowances and certain other forms of support, aims to ensure the preconditions for Finnish agriculture in different parts of the country and types of farming. The principles of national aid to be applied in determining the level and regional distribution of the aid were agreed in the membership negotiations. The aid may not increase production, nor may the total amount of support exceed the level before the EU membership.

In 2004 the national aid for agriculture and horticulture totalled € 589 million. Aid is paid on the basis of the area and number of animals and as additional price for milk. The aid for horticulture is paid as storage aid, area payments for horticultural production in the open and aid for greenhouse production.

Finland has been divided into seven support areas for the allocation of the support. Northern aid is paid only in support area C. This has been divided into five areas for the differentiation of the aid. National aid for southern Finland (so-called aid for serious difficulties) is paid in areas A and B under Article 141 of the Accession Treaty.

Northern aid

The Accession Treaty of Finland (Article 142) allows the payment of national northern aid to areas north of the 62nd parallel and adjacent areas, i.e. support area C. A little over 1.4 million ha, which is 55.5% of the cultivable arable area in Finland, is eligible for this aid. Northern aid paid in 2004 totalled about € 387 million.

National aid for southern Finland

The national aid for southern Finland, i.e. support areas A and B, is based on Article 141 of the Accession Treaty. This article has allowed the payment of aid due to serious difficulties resulting from the accession to the EU, but it does not define the concept of serious difficulties in any more detail or limit the duration of the measure.

The Finns have interpreted that the article gives the authorisation to the payment of the aid in the long term, while the Commission has seen it as a tempo-

rary solution. The Commission considers that Finland should increase the farm size to improve competitiveness so that eventually national aids would no longer be needed.

Finland must negotiate with the Commission on the continuation of the aid based on Article 141 every few years. According to the outcome of the negotiations reached in October 2003, Finland may grant both national direct aids and raised investment aid for livestock production and horticulture in southern Finland until the end of 2007.

However, when the Commission approved the continuation of the aid under Article 141 the Commission insisted that by 2007 the aids must be reduced gradually by 30% from the level of 2003. On the other hand, Finland is allowed to pay higher compensatory allowances (LFA support) to farmers in southern Finland as of 2005.

The decisions made in October 2003 means that no final solution was found to the interpretation of Article 141. The aid scheme will be reviewed on the basis of information that Finland will deliver to the Commission in 2006.

National supplement to environmental aid

The national supplement to crop production was paid from 1997 until 2003, and during this time the total amount paid per year grew from € 21 million to about € 100 million. This area-based aid was paid mainly for the most significant arable crops and vegetables grown in the open in support areas A and B, as well as for silage grass in the whole country.

From 2004 the aid for crop production has been paid as national supplement to environmental support. The supplement is determined relative to the environmental support for the crop concerned (%). The supplement is also paid in areas A and B, while in the north a corresponding amount is paid as northern aid.

National supplement to compensatory allowances

The national supplement to compensatory allowances is paid in the whole country starting in 2005. A preliminary agreement on this supplement was reached in the negotiations between Finland and the Commission on the aid based on Article 141. The supplement is paid on the basis of hectares no more than 20 €/ha in areas A, B and C1 and no more than 25 €/ha in areas C2–C4. A raise for livestock not exceeding 80 €/ha is paid for the arable area of livestock farms. The total amount of the compensatory allowances part-financed by the EU and the national supplement in the whole country may not exceed the average of 250 €/ha.

National aid for agriculture in Finland, € million (aid per production year).

	2000	2001	2002	2003	2004 prelim.	2004 estimate
Total	590	583.5	594.7	601.8	588.7	622.5
Northern aid	354	354.9	353.8	357.6	387.0	332.5
National aid for Southern Finland	141	134.9	133.6	130.8	127.0	100.0
National aid for crop production	76	80.5	93.0	98.7		
National supplement to environmental support					60.0	55.0
National supplement to the LFA support						120.3
Other national aid	19	13.2	14.3	14.7	14.7	14.7

4. ECONOMIC SITUATION OF AGRICULTURE

4.1. Agricultural income

Finland's membership in the EU increased the support payments to the Finnish farmers, but agricultural income has been falling. Between 1994 and 2004 the nominal agricultural income decreased by about 24%, while at fixed prices the agricultural income in 2004 was almost 34% lower than ten years ago.

The returns and costs of agriculture and horticulture as well as the economic result are followed by means of a total calculation made at MTT Economic Research. Income development is assessed through the concept of agricultural income, which indicates the compensation for farm family's labour and own capital invested in agriculture.

Agricultural income fell sharply when Finland joined the EU. In 1994 the nominal agricultural income was € 1,407 million, and by 1998 it fell by 40%. The decrease ended in 1999 and after this there was some increase. In 2002 agricultural income totalled € 1,148 million, after which it has again been falling slightly as the total costs have grown. In 2004 agricultural income totalled a little over € 1,075 million, which was 4.1%, € 46 million, lower than the year before.

The development of the real and nominal value of agricultural income was similar in 1994–1998, but after this the development of real agricultural income has been lagging behind the development of the general cost level. For example, in 2000 the level of real agricultural income was 10% lower than the general cost development would have required.

The membership in the EU lowered the producer price level in Finland by 40–50% right from the beginning of 1995. The decrease in input prices was not sufficient to compensate for the decrease in the total return, and thus it has been necessary to compensate the producers for the decrease in the producer prices and northern conditions by means of various kinds of support.

In the past ten years the share of direct income payments based on the cultivated area or number of animals in the total return on agriculture has increased considerably. In 2004 various kinds of direct

Agricultural income at nominal and 2004 prices in 1994–2004, € million.

	Total return at nominal prices	Total cost at nominal prices	Agricultural income at nominal prices	Agricultural income at 2004 prices	Annual change, %
2004prelim.	3,970	2,895	1,075	1,075	-4.3
2003	3,932	2,811	1,121	1,123	-3.3
2002	3,960	2,812	1,148	1,161	2.6
2001	3,900	2,798	1,102	1,131	4.2
2000	3,753	2,722	1,031	1,086	6.0
1999	3,520	2,579	941	1,024	4.4
1998	3,484	2,594	890	980	-17.7
1997	3,609	2,542	1,067	1,191	-3.6
1996	3,650	2,556	1,093	1,236	-12.7
1995	3,759	2,515	1,245	1,415	-12.4
1994	4,270	2,864	1,407	1,615	26.4

payments represented 45% of the total return, while in 1994 their share was less than a fifth.

Thus the membership in the EU has influenced both the level and structure of the total return on agriculture. In 1995 the nominal total return fell from € 4.3 billion to € 3.8 billion, mainly as a result of the decrease of market return by about 50%. In the latter part of the 1990s the total return stayed around this level, but since then there has been some increase.

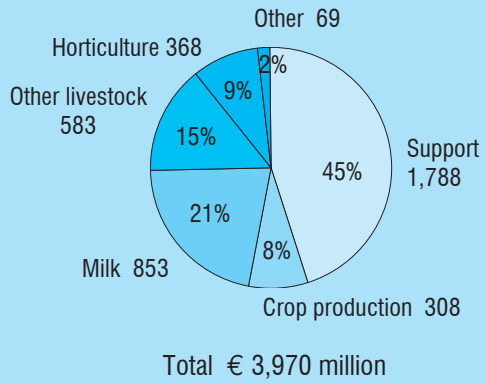
In 2004 the nominal total return on agriculture and horticulture was almost € 4 billion. The sales income totalled € 2.1 billion and supports € 1.8 billion. Most of the sales income of agriculture and horticulture, € 1.4 billion, comes from livestock production. Sales income from crop production totals € 0.3 billion and that of horticulture € 0.4 billion.

There are two main types of agricultural support: support paid under the common agricultural policy of the EU and national aid. Support funded completely or in part by the EU has been increasing since 2000, and in 2004 the EU payments to Finnish agriculture totalled € 1.2 billion, while the national aids paid to farms totalled € 0.6 billion.

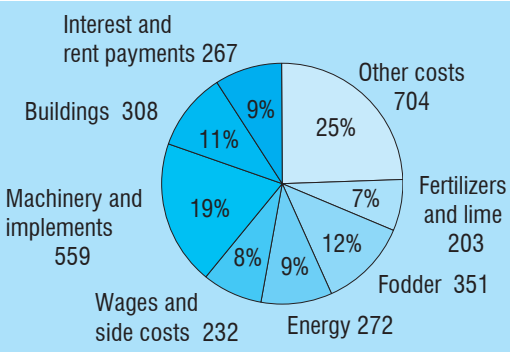
In 1995 when Finland joined the EU the total costs of agriculture and horticulture decreased from € 2.9 billion to € 2.5 billion as the prices of production inputs fell. After this the costs of agriculture and horticulture have risen more rapidly than the general cost level. In 2004 the costs totalled € 2.9 billion, which at nominal prices is the same as the cost level in 1994.

The costs of machinery and implements represent about a third of the total costs and depreciation costs about a quarter. No significant changes have occurred in the cost structure during the EU membership.

When assessing the development of agricultural income, we need to take the strong structural development in Finnish agriculture and horticulture into account. The number of farms has decreased considerably during the EU membership, which means that agricultural income per farm may have increased. On the other hand, the farms have invested more capital and labour of the farm family to the production operations. Thus the increase (decrease) in total agricultural income does not necessarily mean that the result per farm improves (deteriorates).



Return on agriculture in 2004, € million.



Costs of agriculture in 2004, € million.

4.2. Productivity development in agriculture

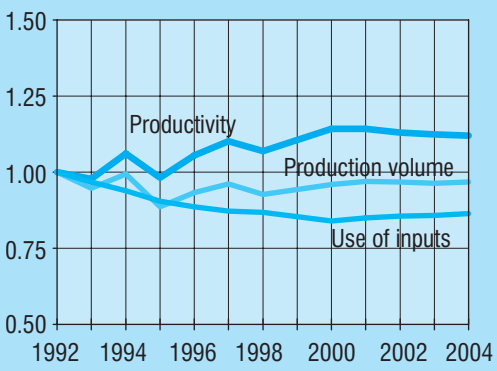
Positive development in the productivity of agriculture is one of the main objectives of the common agricultural policy of the EU. Productivity means the ratio between the volumes produced and the use of inputs. Productivity improves if the same use of inputs, such as labour and capital, yields larger volumes of output or if the same volumes of output are achieved by means of less input.

Positive productivity development is an important objective and precondition for the growth of the national economy, which also determines largely how the competitiveness of Finnish agriculture develops on the common EU markets and what kind of income level the farmers may reach.

Productivity development is also considered positive in terms of the environment, because higher productivity makes it possible to produce the same amount of foodstuffs by using fewer natural resources. When measuring productivity we need to draw attention to the basic year as well as how accurately the costs and returns have been allocated to each year. This is why the cash-based total calculation of agriculture and horticulture does not allow the direct assessment of the productivity development during the EU membership using either 1994 or 1995 as the basic year, because the productivity figures are inaccurate due to the quite extensive changes in farm stocks. The total calculation cannot be converted into a performance-based one, and thus the assessment is made using 1992 as the basic year, i.e. the year when the membership negotiations had started but they had not yet influenced agriculture very much.

In the whole Finnish agriculture, in 2004 about 12% of more output was reached by means of the same use of inputs than in 1992. The total production volume was 96.8% and use of inputs 86.4% of the levels in 1992. During this period the productivity of agriculture rose, on average, by 0.95% a year. Thus the new economic environment cannot be observed to have immediately accelerated the productivity development as had been hoped for, but the improvement of the competitiveness of Finnish agriculture on the common market would call for faster growth in the productivity. From 1992 to 2004 the total quantities of inputs used for the production decreased until 2000. In recent years the use of inputs has increased, even if the average of 2,800 employees leave the sector each year. Since 2000 the production volumes have been about the same, which means that productivity has started to decrease.

From the perspective of productivity development the substitution ratio between labour and capital has been too weak. In the total calculation the amount of capital tied to the machinery, implements and buildings to substitute for the exiting labour force has risen by about € 560 million since 2000. As the volumes have not changed, substituting for one worker has called for new investments of € 50,000, in addition to the maintenance investments.



Productivity, production volumes and use of inputs in 1992–2004, when the year 1992 is indicated by 1.

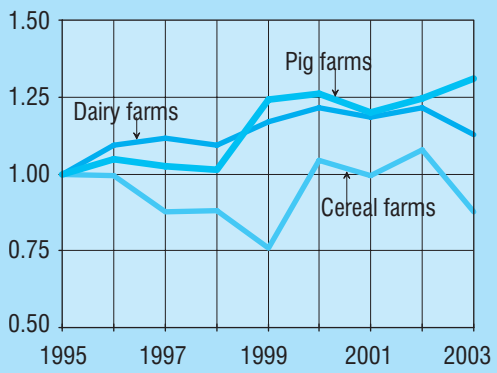
The examination of the productivity development according to types of farming has been carried out using the performance-based profitability bookkeeping data, which is why 1995 can be used as the basic year. During the EU membership the average productivity development has been positive on livestock farms and negative on crop farms. In 2003 on dairy farms the same use of inputs yielded, on average, 13% more production than in 1995, while on pig farms the productivity grew by 30%. On livestock farms the relative prices of the products and inputs have provided an incentive to improve efficiency. Instead, on cereal farms the same use of inputs yielded only 88% of the production volumes of 1995.

The slower growth in the yields of the cultivated crops has been the main reason for the weakening productivity on crop farms. The cultivation has become more extensive and the amount of land improvement work, such as liming, has decreased. In addition to the lower producer prices this has been due to the increase in land leasing and the inefficiency of the Finnish land leasing practices in providing the incentive to invest in land improvement measures.

The productivity development in agriculture presented here is restricted to the products and inputs which can be traded on the market. The calculation does not take account of the externalities of agriculture, such as decrease in nutrient loading. The figures indicating the production volumes and use of inputs have been calculated by means of the Divisia index.

4.3. Development of the economic results and profitability of agriculture and horticulture

The profitability of Finnish agriculture and horticulture deteriorated in all main types of farming immediately when Finland joined the EU. This trend has continued since then, as indicated by the profitability bookkeeping results for agriculture and horticulture calculated from the profitability bookkeeping data maintained by the MTT Economic Research. The profitability of cereal production has decreased the most and that of dairy husbandry the least. The profitability of pig husbandry varies a great according to the prices. The income level of the producers fell when Finland joined the EU, but since then it has been about the same. The figures presented in the text below are at the price level of 2003.



Productivity development in different types of farming in 1995–2003.

Development of return and costs

The gross return, which is the sum of the sale proceeds and support payments received by the farms, fell from € 110,000 to € 80,000 (by 25%) when Finland joined the EU, but by 2003 it had risen to about € 100,000. Before 1995 sale proceeds represented over 90% and support less than 10% of the gross return. The EU membership decreased the sale proceeds immediately by about € 40,000 and this has stayed on about this level since then, repre-

senting a little over 60% of the gross return, while the share of support has risen to the current level of almost 40%.

The costs of farm production, other than those due to labour and net worth of the farm family, were about € 83,000 before the EU membership and in 1995 they decreased to about € 62,000. Since then the costs have been growing steadily and in 2003 they were about € 76,000 per farm.

Income development

Finland's accession to the EU lowered the family farm income from about € 28,000 to € 22,000, and in 1998 and 1999, which were years of crop failure, the income was only about € 19,000. Since then it has stayed around € 23,000. In 2003 family farm income was € 5,000 lower than before the EU membership. Family farm income shows the compensation to farm family's own labour and net worth (own capital). It does not indicate the profitability of farming, because the costs due to the use of own labour and net worth have not been deducted from it, nor does it show the trends in profitability as the costs of own labour and net worth vary from one year to another.

During the EU membership interest claim for net worth calculated by 5% interest rate have increased from € 6,000 to about € 9,700 at present. The growth is partly due to the increase in the farm size, but the main reason is the raise in the level of depreciable property values in 1998, when taxation values were replaced by current values.

The wage claim indicating the cost of the labour input of the farm family was about € 26,000 in 1994–2001. In 2002 and 2003 the wage claim was close to € 36,000. On average the hours of labour of the farm family have decreased among other things as a result of giving up livestock production and technology which substitutes for labour.

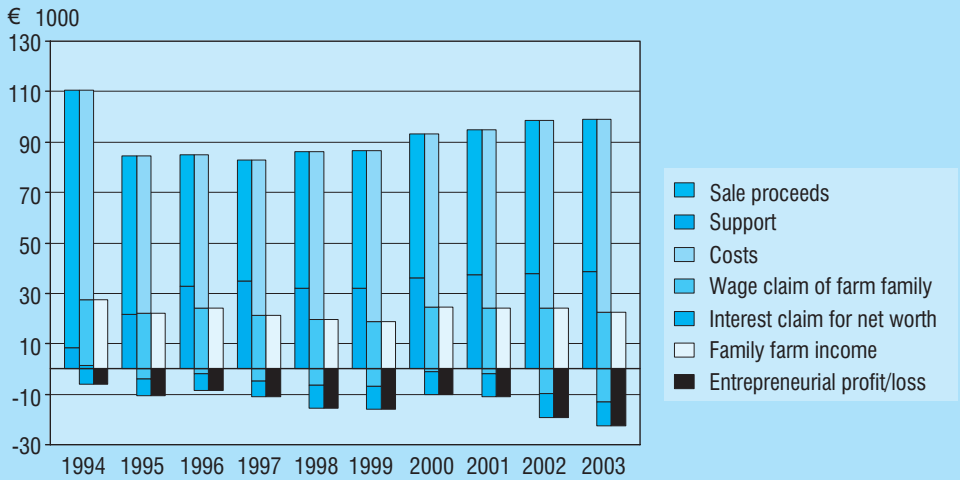
When calculating the wage claim of the farm family the labour input of the farm family obtained from the bookkeeping of the hours of labour is priced using the hourly wages of agricultural workers. The growth in the cost of labour from 2002 is largely due to the revision of the calculation method so that an item corresponding to the wages of holidays, sick leave and other days-off was added to the wage claim.

During the EU membership the wage claim and interest claim for net worth increased from € 33,000 to € 45,000. When these are deducted from family farm income we get the entrepreneurial profit, which has been negative during the whole period concerned. In the first years the average annual losses were about € 6,000 and in 2003 they exceeded € 22,000. The returns should be this much higher or the costs lower if the farmers were to receive a compensation for hour of labour in accordance with the wage claim and the 5% return on net worth. The average total losses per farm during the period concerned amount to about € 130,000.

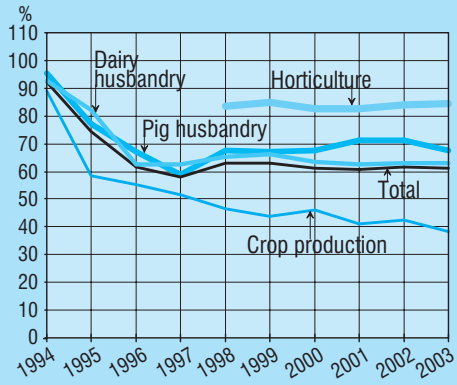
Profitability development

The profitability of agriculture can also be measures by means of the profitability coefficient, which is calculated by dividing family farm income by the sum of the wage claim and interest claim for net worth. As a relative concept this can be used for the comparison of different years, farms of different sizes and the types of farming. The profitability coefficient has fallen from about 0.8 in 1994 to about 0.5 in 2002–2003. In 2003 50% of the wage claim and interest claim for net worth was reached, which means that the average hourly wages of farmers were € 6.65 (return on labour) and the interest on net worth was 2.5% (return on net worth).

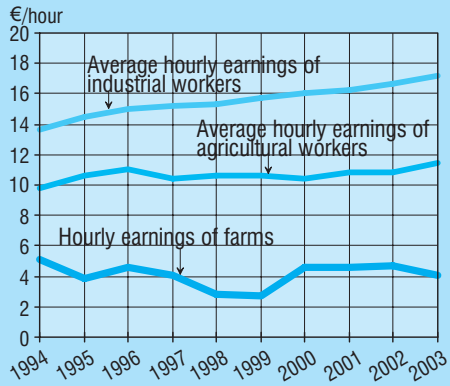
During the first years in the EU the picture of profitability given by the book-



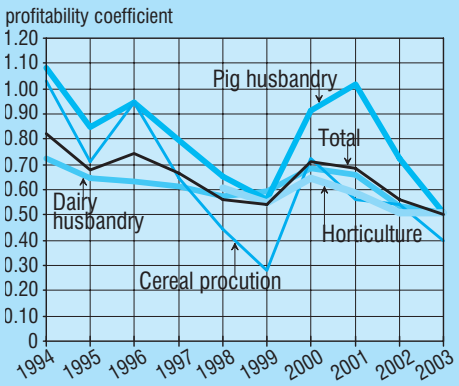
Development of the result and profitability on full-time agriculture and horticulture enterprises.



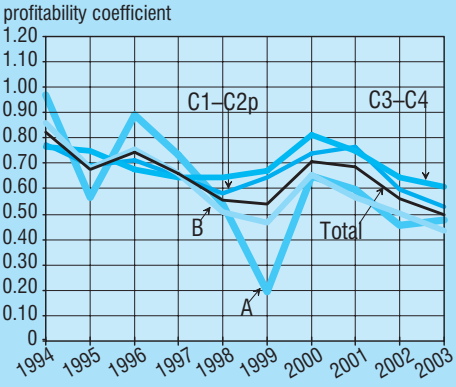
Share of sale proceeds in gross return in different types of farming and on average.



Hourly earnings of farmers compared to hourly wages of industrial and agricultural workers.



Profitability development in different types of farming and on average.



Profitability development in different support areas and on average.

keeping results may have been somewhat too positive, which is why the profitability seems to have declined strongly during the EU membership. The extension of the revised calculation retroactively to the first years in the EU shows that the profitability weakened when Finland joined the EU, then stayed about the same for some time and started to decrease again towards the end of the period concerned.

Of the main types of farming the profitability of dairy husbandry has varied the least. In 1994 the profitability coefficient was about 0.7 and by 2003 it had fallen to 0.5. The profitability of pig husbandry depends a great deal on the changes in the prices of both piglets and pigmeat. At its highest the profitability coefficient was 1.1 in 1994, while in 2003 this was also 0.5.

The profitability of cereal farming has declined the most, from about 1.0 in 1994 to only 0.4 in 2003. The main reason for the decrease is the reduction in producer prices, while poor years during the period concerned increased the annual variation.

In 1994–1997 there were no major differences in the profitability between the support areas, except for support area A. In all support areas the trend in the profitability has been decreasing. Since 1998 the profitability of the agricultural and horticulture enterprises in the northern support areas has been better than in the south.

In support area A the profitability coefficient has varied between 1.0 and 0.2. The main reason for the great variation is the fact that most of the farms in this area practice cereal production, which depends very strongly on the natural conditions. In support area B the profitability has fallen from 0.85 in 1994 to 0.4 in 2003 and in support areas C1–C2north from 0.8 to 0.5. In areas C3 and C4 the profitability coefficient has varied between 0.8 and 0.5. When comparing the profitability in different support areas the differences between the distribution of types of farming and farm size classes between these must be taken into account.

Development of solvency

The losses of business activity reduce the net worth of an enterprise, which means that additional financing is needed in order to continue the operations in the same extent as before. When Finland joined the EU the amount of foreign capital (debt) first decreased from around € 60,000 to € 50,000, but in recent years it has been growing again, reaching the level of over € 63,000 in 2003.

Farmers have also financed agriculture with forest and wage incomes, investment aids etc. as well as left even the quite small compensations to own labour and net worth to the enterprise. Before the EU membership the net worth of agriculture and horticulture was about € 150,000, but as a result of the membership the values of especially the inventories decreased and net worth fell to about € 130,000. Because of the growth in the farm size and change in the value of depreciable property, net worth increased to about € 196,000. The average total capital of agriculture, which is the sum of foreign capital and net worth, was almost € 260,000 in 2003.

The equity ratio which measures solvency, i.e. the share of net worth in the total capital, has stayed high, around 70–75%, partly as a result of the other own financing invested in agriculture. The capital turnover rate is very low, which means that capital is tied to the production for long periods of time. This is why production cannot be founded on foreign capital whose interest and repayment costs must be managed during a short repayment period relative to the time during which the capital to be managed is committed to the enterprise.

Profitability of agriculture compared to other enterprises

The profitability coefficient and return on labour and net worth derived from the profitability bookkeeping results are suited to comparisons within agriculture, but the profitability of agriculture and horticulture should also be compared to other types of enterprises.

When the wage claim is deducted from family farm income, we arrive at the economic net result which remains as interest on net worth. In 1994 this was about € 1,600, but during the EU membership it has been some thousands of euros on the negative side each year.

Mainly as a result of the change in the calculation of the wage claim, the net result has been under € -10,000 since 2002. When the net result is divided by net worth, we get the return on equity, which has been negative during the whole EU membership, varying between -1 and -4%. Towards the end of the period concerned it fell below -6%.

Hourly earnings of farmers compared to incomes in other occupations

Farmers' incomes may also be compared to those of the wage earners. If the interest claim for net worth is deducted from family farm income and the earnings obtained through this are divided by the hours of labour we arrive at hourly earnings, which have been around € 4 during the nine-year period between 1995 to 2003.

At the beginning of the EU membership period the hourly earnings of farmers were about half and towards the end of it only about a third of the hourly wages of agricultural workers. Compared with industrial workers the hourly earnings of farmers were about a third at the beginning of the period and only a quarter at the end.

Representativeness of the profitability bookkeeping results

The profitability bookkeeping of agriculture and horticulture follows the development in the economic result and profitability of Finnish agriculture and horticulture on the basis of the financial statements of about 900 profitability bookkeeping farms. In the calculation the individual income and expenditure items are allocated in accordance with the accrual principle as returns and costs of the year when the production has been derived. This means that changes in the yields, returns, prices and support are reflected immediately in the annual economic results and profitability figures.

The most significant elements during the EU membership to be considered are the levels of results and profitability and their long-term development. New farms joining the profitability bookkeeping represent only 5% of the number of bookkeeping farms, while a slightly larger number of farms exit the scheme. Because of the low turnover of farms the results are highly reliable and the observed trends describe the real development in the profits of the farm group represented by the bookkeeping farms quite well.

The results indicate the profitability of agriculture and horticulture on full time farms whose standard gross margin is at least € 9,600. The bookkeeping farms are larger than the average in Finland in other respects as well. In 2003 their average cultivated area was about 45 ha, while the average of all Finnish farms was about 30 ha. The average profitability bookkeeping results of the farms are calculated from the results of the bookkeeping farms by weighting them by the region, type of farming and farm size class. Because of that the results give a more accurate picture of the economic results in Finnish agriculture enterprises. More detailed results are available on the Internet at http://www.mtt.fi/mttl/kirjanpitotilat.html.

4.4. Production costs of agriculture

High production costs per unit produced have always been one of the main problems in Finnish agriculture. Success on the common European market, where the competition is tightening and producer prices are on the decrease, calls for more attention to the unit costs of farm products and possibilities to reduce them. During the EU membership the farms have increased in size with the aim of lowering the unit costs and improving their profitability. The production costs of milk and cereals from 1995–2003 presented below are based on the profitability bookkeeping data of the Agrifood Research Finland. The costs have been deflated to the price level of 2003 by means of the costs of living index.

Milk

In 2003 the average milk production cost was 58.8 cents/kg of milk. The producer price without support was 34.9 cents/kg and the average production support in the whole country was 9.1 cents/kg. In 2003 the unit cost of milk was about a fifth lower than in the beginning of the EU membership, mainly as a result of the increase in the farm size and milk yield of dairy cows.

The average arable area of dairy farms included in the calculation was 47 ha and the average number of cows was 24. The average annual milk yield per cow was 8,000 kg. The size of farms has grown strongly during the EU membership: in 2003 the arable area was almost 18 ha larger than in 1995 and the number of cows had increased by seven. The annual milk yield per cow had risen, on average, by 1,100 kg.

The unit cost of milk decreases as the farm size grows. The labour cost of the farm family, which is one of the fixed costs, is the most important factor explaining the differences in the costs in different farm size classes. On farms with over 30 cows it represented a little over a quarter of the unit costs and on these farms it was 49% lower than on farms with 10–20 cows. Relative to the production volumes the use of human labour is higher than on large farms, where capital is substituted for labour.

Cereals

In 2003 the average production cost of cereals on the bookkeeping farms was 45.7 cents/kg. The average market price for all cereals was 11.7 cents/kg. In 2003 the unit cost of cereals was about the same as in the beginning of the EU membership. In 1998 and 1999 the crop was poor and the unit costs were high. The year 2000 was again a

Milk production costs in 2003, cents/kg.

	Number of cows/farm				Average
	under 10	10–20	20–30	over 30	
Variable costs	26.0	23.5	23.1	22.7	23.2
– purchased feed	5.0	5.5	6.1	6.5	5.9
– other livestock expenses	2.8	2.4	2.5	2.3	2.4
– energy	2.5	2.2	2.0	1.8	2.0
– maintenance	3.8	3.1	3.2	2.8	3.1
– other	11.9	10.3	9.3	9.3	9.8
Fixed costs	56.5	39.8	33.1	27.7	35.6
– cost of farm family labour	45.6	27.4	20.0	13.9	22.6
– depreciations	5.2	7.1	7.9	8.7	7.7
– interest on capital	5.7	5.3	5.2	5.1	5.3
Production costs, total	82.5	63.3	56.2	50.4	58.8

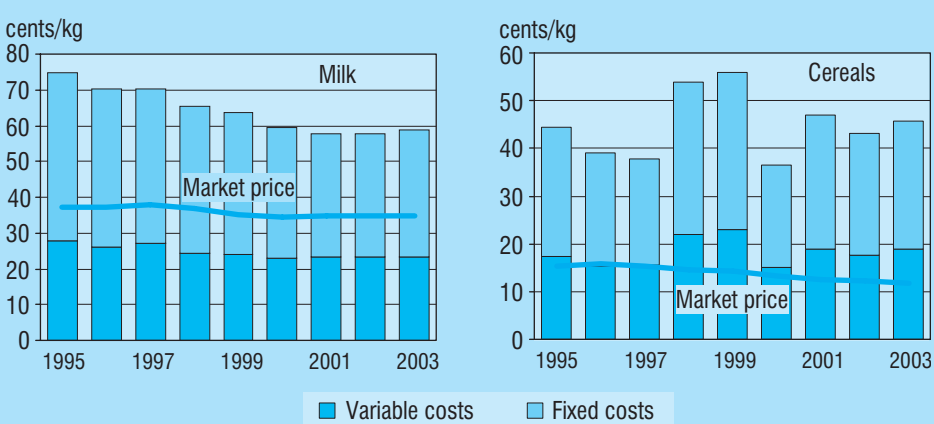
Production costs of cereals in 2003, cents/kg.

	Arable area, ha/farm under 30	30–50	50–100	over 100	Average
Variable costs	23.8	18.6	15.0	16.2	18.8
– purchased fertilisers	2.5	3.0	2.2	2.5	2.5
– other expenses of crop production	2.4	1.8	1.8	1.8	2.0
– energy	3.7	2.9	2.0	1.8	2.7
– maintenance	4.4	2.9	2.4	2.6	3.2
– other	10.8	8.0	6.6	7.5	8.4
Fixed costs	35.2	27.6	22.1	18.0	26.9
– cost of farm family labour	15.8	10.5	7.8	5.4	10.6
– depreciations	10.1	9.1	7.6	7.3	8.7
– interest on capital	9.3	8.0	6.7	5.3	7.6
Production costs, total	59.0	46.2	37.1	34.2	45.7

good year and the unit costs were the lowest during Finland's EU membership.

The average arable area on the farms included in the calculation in 2003 was 59 ha, of which cereals were cultivated on the average of 42 ha. The average cereal crop was 3,300 kg/ha. The arable area of cereal farms has grown by only 10 ha during the EU membership. The data did not allow the calculation of the production costs for the different cereals, because the costs could not be divided between these in a reliable way, and thus the costs indicate the average cost of both bread and fodder cereals.

The unit cost of cereals decreases as the farm size grows. On cereals farms, too, the differences between farm size classes were the greatest in the labour cost of the farm family. In 2003 the labour cost on large cereals farms with over 100 ha were about half of the costs on farms with 30–50 ha. The variable costs of cereal production were, on average, about the same in the farm size classes of 50–100 and over 100 ha of arable land. In farm size classes with under 50 ha both the fixed and variable costs per unit produced were higher than in the other size classes. In cereal production the share of depreciations and interest on capital in the unit cost is quite high, while labour cost is a more significant cost item.

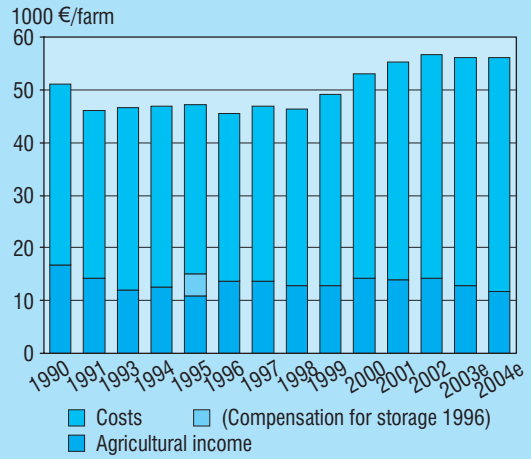


Unit costs of milk and cereals and prices in 1995–2003 (at 2003 prices).

Income development of farmers based on taxation

Maija Puurunen and Risto A. Seppälä

All through the 1990s and after that as well the real income development of the farming population has been relatively slow despite the rapid structural change in agriculture. Agricultural income, which is the compensation for farm family's agricultural labour and own capital, has stayed the same or decreased slightly during Finland's EU membership in all the main production lines, except for the largest pig farms. In 1994–2004 agricultural income decreased, on average, by 0.5% a year, while the size of the farms grew from 20.4 ha of arable land to almost 32 ha, i.e. by about 4.6% a year.



Total return and costs of agriculture and agricultural income (€/farm) according to the Enterprise and Income Statistics of Agriculture and Forestry in 1990–2004e at the level of 2001. Sources: Agrifood Research Finland, Statistics Finland.

The results are based on the taxation data on farms of over 2 ha of arable land owned by natural persons. To find out the real income development, the consumer price index has been used to convert the income data into the price level of 2001. The most recent statistics on income in taxation are from 2002, and the forecasts for 2003 and 2004 have been made by means of the price indices and bookkeeping data of the Agrifood Research Finland.

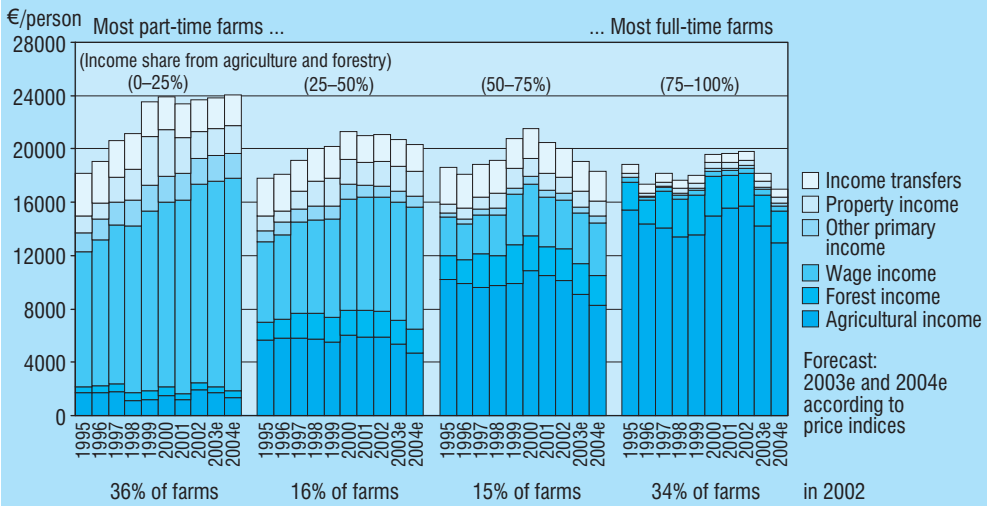
Full-time and part-time farms

The farms have been classified into four groups in order to study the incomes of full-time and part-time farms separately. The classification is based on the share of income from agriculture and farm forestry in the total income of the farmer and spouse.

On the most full-time farms income from agriculture and forestry represents over 75% and on the most part-time farms less than 25% of the total income. In 2002 34% of the farms belonged to the class of the most full-time farms and 36% to the most part-time farms, while altogether 30% belonged to the two other classes.

Of the most full-time farms almost 70% were livestock farms, whose arable area had grown by over 40% and number of animals by over 25% in 1994–2002. In 2002 their arable area was 30.4 ha and number of animals 17.3 LU/farm. The majority of the most part-time farms were crop farms, whose arable area had grown by about a third during the same period to 17.8 ha in 2002.

The number of farms decreased in all farm groups, in the group of the most part-time farms by about 18% and in that of the most full-time farms by over 30%. Thus



Total income of farmer and spouse (€/person) according to the income share of agriculture and forestry in 1995–2004e (at the level of 2001). On the most part-time farms the income share of agriculture and forestry is under 25% and on the most full-time farms over 75% of the total income of farmer and spouse. Sources: Agrifood Research Finland, Statistics Finland.

the share of the most part-time farms has grown and the share of full-time farms has been decreasing.

In 2002 the average total income of farms was 37,500 €/farm and 21,800 €/person. In 1994–2004 the total income increased by 1.9% a year, mainly as a result of the increase in wage income. The trend in agricultural income has been slightly decreasing, even if the average farm size has grown by about 12 ha (57%) in the past decade. The income data of taxation include the total income of the farmer and spouse classified under the following headings: Income from agriculture and forestry, wage income, other primary income (e.g. from other business activity), property income (return on shares and dividends, etc.) and income transfers (pensions, etc.). The data in the taxation is cash-based and no direct taxes have been deducted from them. The average number of persons per farm (farmer or farmer and spouse) was 1.7.

Income of the most full-time and part-time farms

In the first years of the period concerned the total income per person was about the same in all farm groups, but after that the income development became differentiated. In 1994–2004 the total income of the most part-time farms increased, on average, by 3.7% a year, while on the most full-time farms the total income increased by only 0.5% a year.

On the most part-time farms the wage income grew by 5.7% a year, and in 2002 this represented 63% of the total income. Especially plant producers have searched for employment outside farming, and positive development of the wages has increased the wage income. On the most part-time farms the property income has also grown more than in the other farm groups.

On the most full-time farms agricultural income accounted for almost 80% of the total income in 2002. In 1994–2004 the agricultural income decreased slightly, by 0.2% a year, while the farms increased by 14.5 ha of arable land and the number of animals by 6.5 LU. The most full-time farms are the largest, most of them livestock farms, and they have invested in agriculture the most.

On the most full-time farms forest income has to some extent balanced the annual variations in agricultural income. In 2002 the average forest area of the most full-time farms was 55 ha and it had increased by 5 ha. The forest area of the most part-time farms was 30 ha and forest income was less significant.

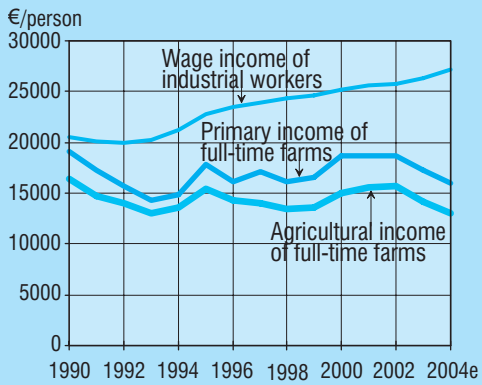
Relative to agricultural income and capital the debts are the highest on the most part-time farms. However, if the whole taxable property and total income of the farmer and spouse are taken into account, the most full-time farms are the most heavily indebted.

Income comparison between farmers and wage earners

In this chapter the income of the most full-time farms and all farms are compared to the average wage income of industrial workers. In the early 1990s the per capita agricultural income of full-time farms was 65–80% of the wage income of industrial workers. Since then the rising trend has continued in the industry, but the incomes of agriculture have varied according to the production conditions. In 1994–2002 the ratio varied between 54 and 67, and in 2004 the agricultural income of full-time farms is estimated to be only 48% of the wage income of industrial workers. The total agricultural, forest, other entrepreneurial income and wage income of full-time farms was only 60% of the reference income, while in the first years of the new millennium they still reached 70% of this.

The average agricultural income of all farms owned by natural persons used to be about a third of the reference income, but in recent years it has been only 25%. Since 2000 the entrepreneurial and wage income of all farms has been on the same level as on full-time farms. In 2004 the income of full-time farms is estimated to remain below the average of all farms.

In the comparison of incomes between farmers and wage earners the reference income of agriculture should indicate labour income only, calculated per hour of labour. However, in income statistics based on taxation such income concept is not available, but the reference income contains, apart from labour income, the share of agricultural income that is in fact interest on own capital invested in agriculture.



Agricultural income and primary income of full-time farms (agricultural and forest income, other entrepreneurial income, wage income) (€/person) and wage income of industrial workers (€/person) in 1990–2004e (at the level of 2001).

5. AGRICULTURE AND THE ENVIRONMENT

Modern societies direct various kinds of expectations to farming. Apart from producing staple foodstuffs, agriculture should contribute to, for instance, beautiful landscapes, biological diversity and rural viability. This so-called multifunctional agriculture as such is not a new concept. After World War II secure food supply received considerable emphasis, while since the 1970s ensuring the viability of the rural areas has been in the discussions. During the past decade the role of environmental amenities has become increasingly important.

Environmental policy related to agriculture is closely linked to other trends in the society. Since 1995, when Finland joined the EU, agricultural production has been influenced by the agricultural and environmental policy of the Community. The main EU instrument for harmonising these two policy sectors is the Agri-Environmental Scheme adopted in 1992. The scheme provides the general framework, but allows the Members States to create their own support programmes in accordance with national and local interests.

The current environmental support scheme in Finland, the second one applied here, covers the programming period 2000–2006. The Finnish scheme consists of basic and additional measures as well as special measures which call for more efficient environmental protection and management measures. The aim has been that the basic measures would be adopted by as many farmers as possible, and this has also succeeded: in 2004 the scheme covered 91% of the Finnish farms and 96% of the arable area. The role of special measures has been smaller than expected, accounting for less than 10% of the funding. Agri-environmental support is the largest item in the state expenditure on environmental protection. In 2004, € 940 million was used for environmental protection and agri-environmental support accounted for about a third of this, € 312 million.

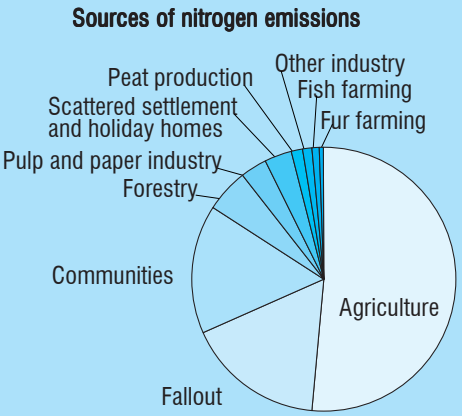
The main themes in agri-environmental issues have remained relatively unaltered in the past ten years. In 1995 the main concerns were the phosphorus and nitrogen loading of waters, ammonia gases, rural landscape, use of pesticides and food quality. Today's challenges are related to the same themes and are at least equally challenging. These include water protection, diversity of agricultural environment and landscape, climate change and coexistence of conventional, organic and genetically modified (GM) production.

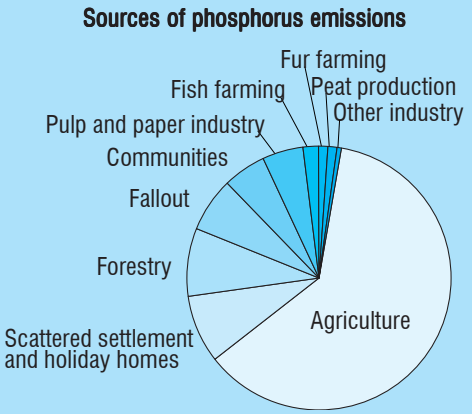
5.1. Water protection in agriculture

Discussion on water protection related to farming began in the 1970s, when the actual environmental protection tasks concerned only advice on pesticide use. In the 1980s the negative environmental impacts of agriculture were for the first time put forward as environmental problems which called for action. According to the target programme for water protection, agriculture had to reduce the loading of waters proportionately to the same extent as other activities causing water contamination.

Loading of waters from agriculture

Agriculture is a significant source of non-point source pollution. Load on waters is caused by both arable farming and livestock production. Nutrients, mainly phosphorus and nitrogen, leach to rivers, lakes and the sea from arable land, causing eutrophication. This can be seen as turbidity of the water, increase in algae and blooming of the toxic blue-green al-





Loading of waters. Source: Ministry of the Environment.

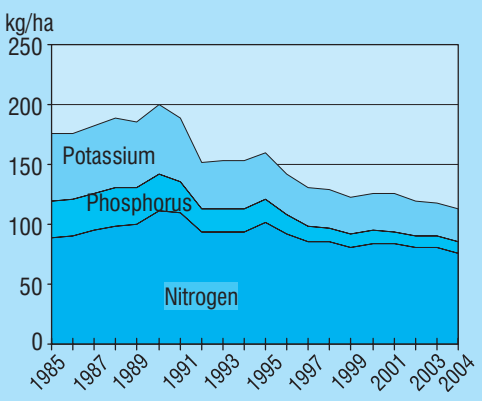
gae, which has drawn a great deal of attention in recent years.

The total use of fertilisers and the use per hectare have decreased considerably from the levels in the early 1990s. However, the relative nutrient loading of waters from agriculture has grown, because the amounts of nutrients in the wastewater of industrial plants and communities have decreased as a result of efficient purification. The Finnish Environment Institute estimates that at present about 50% of the nitrogen loading and 60% of phosphorus loading comes from agricultural sources.

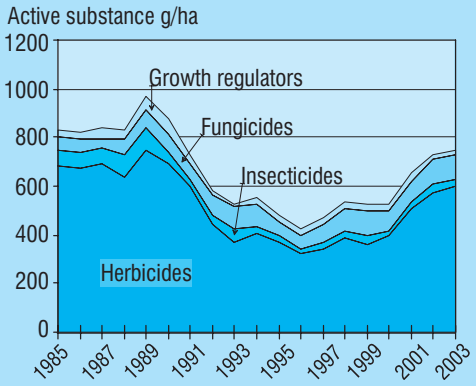
Water protection measures in agriculture

Before Finland joined the EU the environmental policy of agriculture was based on advice, training and voluntary action to follow good farming practices, but the farmers were not bound by any obligations. However, measures targeted at reducing the loading of waters had been introduced already before the environmental support scheme. Thanks to advisory projects, farmers have been aware of issues such as fertilisation reduction, green fallow, riparian zones, efficient utilisation of animal manure and various kinds of cultivation techniques since the 1980s.

The first Environmental Support Programme, implemented in 1995–1999, changed the farming practices clearly to a more environmentally responsible direction. The conditions of the support restricted the use of fertilisers, aimed at more accurate use of pesticides and required environmental planning and monitoring and establishment of headlands and filter strips. During the first programming period fertilisation decreased, use of manure became more accurate, organic production increased, fil-



Use of fertilizers (kg/ha). Source: Information Centre of the Ministry of Agriculture and Forestry.



Use of pesticides (active substance g/ha). Source: Information Centre of the Ministry of Agriculture and Forestry.

ter strips were left along waters, winter plant cover increased, and wetlands, sedimentation ponds and riparian zones were set up more than ever before.

Despite all these measures, the objectives set for the reduction of water loading caused by agriculture were not reached. Environmental support had been expected to reduce the amount of total phosphorus entering the waters from agricultural sources by 40% and the amount of total nitrogen by 30%, but the amount of nitrogen fell by only 4–15% and that of phosphorus by 5–13%.

Current environmental instruments in agriculture

The basic structure of the present Environmental Support Scheme, implemented in 2000–2006, is similar to the earlier scheme. Local conditions can be accounted for to some extent in the present scheme. Measures which reduce environmental loading the most in each region may be selected as additional measures. Despite the increased freedom of choice, the cultivation practices are largely the same in the current programming period as before.

In the water section of the follow-up study on the impacts of agri-environmental support (MYTVAS 1 and 2) it was noted that the agri-environmental support implemented in the current programming period has mainly maintained the positive levels of environmental impacts reached already during the previous programming period. To improve the efficiency of the programme, it should be developed further to better take into account the differences between regions and even between individual farms.

In addition to the Agri-Environmental Programme, environmental protection in agriculture is influenced by the environmental legislation of the EU, where water protection has been one of the priority areas.

The Nitrates Regulation, based on the Nitrates Directive, entered into force in 1998. The Regulation aims to protect waters from nitrate contamination of agricultural origin, and it lays down provisions concerning e.g. storage and spreading of manure, fertilisation levels and location and management of livestock buildings and exercise areas. All farmers must comply with the Regulation independent of whether they participate in the environmental support scheme or not.

The Act on the organisation of the management of waters, passed in December 2004, implements the Water Framework Directive of the EU in Finland. The general objective of the Directive is to protect, improve and restore waters so that their status no longer deteriorates and by 2015 the state of waters is at least good in the whole EU.

Water protection will be based on the assessment of the state of waters, where the current state is compared with the estimated natural state. A management plan together with an action programme is drawn up for each water management area. Reduction of non-point source loading will be emphasised in the implementation, implying considerable impacts on the agricultural sector in the near future.

5.2. Biological and landscape diversity

Agricultural production is based on utilising biological diversity. Similarly, many wild plant and animal species have over centuries adjusted to utilising agricultural environments created by man. However, after the Second World War, the production methods of agriculture were intensified. For some wild species, the resulting changes in their habitats have been too great and rapid, and they have not been able to readjust to the new conditions. For this reason, the diversity in agricultural environments has declined in the past five decades. Particularly the living organisms which depend on meadows and forest pastures have become endangered because of the decrease in grazing and animal husbandry.

In the past fifty years, the small-scale features of agricultural landscape have diminished. Headlands of open ditches and hay barns located in the fields have decreased. Especially subsurface drainage, regional differentiation of plant and animal production, and concentration of animal husbandry to larger units have affected agricultural land use and landscapes. Studies have shown that the decrease in the landscape diversity has continued during Finland's EU membership.

Agreements and programmes concerning biological diversity

Agricultural landscapes have special cultural value as such. In addition, the variability of the landscape structure and the diversity of species correlate with each other. There are fewer species in areas with intensive crop production and monotonous landscape structure than in areas with extensive cultivation and cattle husbandry, where the landscape structure is also more varied.

Biological diversity is a public good which also involves considerable economic values. Diversity lays the foundation for the functioning of the living nature. Without diversity, the ecosystems are not capable of adapting to environmental changes. This is why decline in biodiversity is considered a serious problem, and a number of national and international programmes and strategies have been drafted and international agreements have been concluded concerning the protection and management of biological diversity. The most important one is the Convention on Biological Diversity (CBD) signed in Rio de Janeiro in 1992. The CBD aims to conserve the diversity of world's ecosystems, plant and animal species and the genes contained in these, promote the sustainable use of natural resources and distribute the benefits derived from biological natural resources in a fair and equitable way.

Diversity effects of agri-environmental support

Agri-environmental support is the most significant economic instrument of the agricultural and environmental administration in promoting the diversity in agricultural environments. The measures of the environmental support scheme have mainly been targeted at water protection, while in 2002 only about 2–3% of the total payments under environmental support were used for measures which are primarily targeted at promoting biodiversity. However, the role of environmental support in this is greater, because many of the measures whose main purpose is to promote water protection, such as headlands and filter strips, also increase biological diversity.

According to the follow-up studies on the impacts of agri-environmental support (MYTVAS 1 and 2), the agri-environmental measures have contributed to the preservation of biodiversity and open agricultural landscapes. Based on the results, the current measures are not, how-

ever, sufficient to stop the impoverishment of agricultural nature which has continued for some time.

Experts consider the special support on traditional rural biotopes as the most important single measure in terms of biodiversity conservation. Traditional rural biotopes are sites shaped by mowing and grazing, and very few of them are left in Finland today. Many endangered plants exist on these sites, and as habitats, they are among the richest in the variety of species in agricultural areas. The most valuable traditional rural biotopes for biodiversity are luxurious meadows and certain types of shore meadows with low vegetation.

Support for organic production has been the most popular special measure. Because no pesticides are used in lands cultivated organically, there are more weeds than in conventional farming. This is why organic farming would seem to promote the diversity of pollinating insects in field margins as well as the abundance of certain bird species.

Also other measures to reduce the use of fertilisers and pesticides or ones aimed at their more accurate use increase the diversity of arable areas in general. The impacts of such measures in promoting the species which commonly occur in arable lands and field margins may be considerable if the reductions in input use relate to extensive arable areas.

The establishment of headlands and filter strips along main ditches and waters as one of the basic environmental support measures and setting up riparian zones as a special support have partly compensated for the negative changes in farming landscapes.

Needs for harmonisation in agricultural and environmental policy

In view of biological diversity, one problem in the area-based income support is that such support increases the costs of the environmental support scheme. The compensation paid, for example, for riparian-zone area must be higher than the return on crop production which is lost (including support). Area-based support also encourages farmers to start cultivating areas which earlier were not used for farming.

To reduce the negative incentives inherent in the area payments, the promotion of biological diversity should be more explicitly included in the objectives of the income support for agriculture (e.g. under the cross-compliance in CAP support). This would make it possible to target agri-environmental support at more carefully delimited but, in terms of biodiversity, more efficient measures. Economic instruments should also be used to ensure that the increased set-aside area, created as a result of the decoupling of CAP support from production, would be channelled to green fallow for the benefit of the environment.

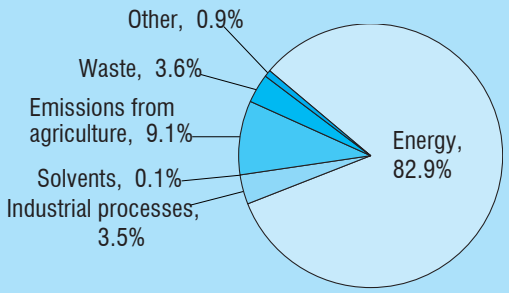
5.3. Agriculture and climate change

Climate change has become an environmental threat with serious political implications during Finland's EU membership. The UN Framework Convention on Climate Change was adopted in Rio de Janeiro in 1992 and entered into force in 1994. The signatory States acknowledge officially that climate change is a problem and commit themselves to action to prevent the warming of the atmosphere.

The Rio Convention was realised in practice in the Kyoto Protocol negotiated in 1997, laying down the concrete objectives for the States concerned for reducing the so-called greenhouse gas emissions which cause the warming. The Kyoto Protocol entered into force in 2005. The objective of Finland is to stabilise the emissions to the level of 1990 in 2008–2012. At present it seems that this objective will not be met without further measures to restrict the emissions.

Climate change imposes new challenges also to Finnish agriculture. The greenhouse gas emissions of the agricultural sector represent about 9% of the total emissions in Finland. Since 1990 emissions from agriculture have decreased by about a fifth as a result of the decrease in agricultural production. Proportionally the decrease has been even greater as the total emissions of the society have grown.

Even if the trend has been good in agriculture, it is obvious that agricultural production will continue to be considered as one source of loading on the environment. Pressures to control climate change are growing in all sectors of the society.



Greenhouse gas emissions in Finland. Source: Ministry of the Environment.

Emissions from agriculture

To stop climate change, the industrialised countries, including Finland, should reduce emissions by 50–60%, even 80% from the current levels by 2050. So far the progress has been quite slow, but in the future all possible ways of reducing the emissions will be taken for consideration. No activity will be able to continue as before, pretending that climate change does not exist.

Most of the greenhouse gas emissions from agriculture are created in the digestion of bovines, when organic matter decomposes in the soil and in the decomposing of manure. Minor emission sources include nitrogen fertilisation, liming of arable land and use of fossil energy in agriculture. However, the last one is not included in the direct emissions of agriculture. One common feature in all emissions from agriculture is that it is difficult to reduce them without directly influencing the amounts of agricultural production.

Through technical means the emissions from agriculture can be reduced by reducing the tillage of the soil, improving the structure of the soil and drainage, improving the handling of manure and more accurate fertilisation. Policy instruments could be restricting the cultivation of organic soil and favouring perennial instead of annual vegetation. In the Finnish conditions liming cannot be reduced without significant losses in both the quantity and quality of the crop.

The greenhouse gas emissions created in the reactions which take place in the soil are influenced by numerous factors. In the studies made so far the most important factors explaining the variations in the emissions are the soil type, water economy and structure of the soil, plant species and annual weather conditions. However, their role relative to each other cannot be assessed in a reliable way in field tests. The complexity of the emission mechanism prevents comprehensive assessment of the true significance and cost efficiency of the emission reductions.

New opportunities

The efforts to reduce emissions also offer new opportunities to agriculture. Most of the greenhouse gas emissions caused by human action originate in the use of non-renewable natural resources in energy production and traffic. These emissions must be reduced very strongly to prevent or slow down climate change.

Agriculture could have an important role to play as the producer of renewable energy when efforts are made to compensate for the use of imported fossil fuels. The cultivation of various kinds of arable biomass for heat and electricity production is an important alternative to the cultivation of, for example, feedingstuffs. Technically it is already possible to utilise manure and biomass for the production of biogas also for use in transportation and agriculture.

Another new opportunity is the management of the soil. So-called carbon sinks can be created by investing in the maintenance of the humus content in the soil. Carbon sink binds more carbon dioxide from the atmosphere than it emits into it. In the future such carbon sinks may become tradable goods, in which case they would offer new income opportunities for the agricultural sector. However, the realisation of these opportunities calls for the development of various kinds of emissions trading mechanisms, both nationally and internationally.

Benefits of warming questionable

Regardless of the possible policy actions and emission reductions, the climate change is going to have very concrete impacts on agriculture as the weather conditions will be changing. Even if warming is the most likely trend, changes in precipitation, timing of the rains and increase in different kinds of extreme weather phenomena may be a serious threat to the current crops and cultivation practices.

For example, in the clay soil in southern Finland erosion in the wintertime may increase considerably if the precipitation is higher and land is not frozen. Pests benefit from mild winters, which increases the need for pesticides. New invasive alien species may enter the country, in the same way as the Colorado potato beetle already seems to have done.

The warming of the climate would raise the temperature sum of the growing period, but the crops cultivated in Finland at present would not be able to take advantage of this. Frosty spells in spring and autumn would restrict the growing period, and the occurrence of frost is not likely to decrease from the present. The growing conditions would also suffer from the increasingly common droughts in summer.

Climate change should not have very dramatic impacts on livestock production. Outdoor feeding period may become longer and the costs of heating the livestock buildings would decrease. During the hot spells in summer even cooling the buildings might be necessary.

Research on the adaptation to climate change is only getting started, especially for the part of agriculture. However, it seems that the threats to agriculture caused by the change will be greater than the possible benefits.

5.4. Coexistence of conventional, organic and genetically modified production

According to a Commission Decision, the organisation of the coexistence of organic, conventional and genetically modified production in the EU is the responsibility of each Member State. The Finnish national strategies and best practices for the coexistence of different production systems are coordinated by the Finnish Ministry of Agriculture and Forestry. A working group was appointed in 2003 to examine the organisation of the coexistence.

The Commission recommendation is founded on the view that the producers and consumers must be allowed to choose the production system they prefer. This

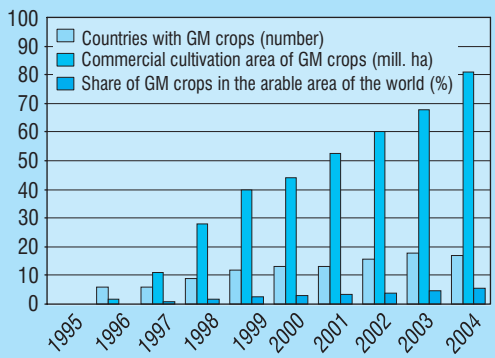
calls for cultivation, processing and marketing practices where the products can be kept separate at all stages of the food chain. This is especially difficult to organise for organic production because it aims at absolute purity from GM material at all production stages.

Genetically modified agricultural production

Agricultural production based on gene technology, especially crop production, has become increasingly common in the past decade. In the European Union genetically modified organisms occur in about 20 approved foodstuffs and about twenty maize varieties intended for cultivation. They are used for the production of both feedingstuffs and foodstuffs. At present the development of GM crops concerns mainly soya, maize, cotton and colza. Soya and maize represent as much as 84% of the cultivation area of GM crops. The crops which are now being cultivated are genetic varieties of the so-called first generation crops, i.e. they contain properties relating to plant production and protection. Within the EU the production of GM crops is still quite uncommon, the only crop is maize, and most of the cultivation takes place in Spain and Germany. In Spain the cultivation area of GM crops was about 100,000 ha in 2004, while in Germany it was quite minimal.

In Finland there are no genetically modified crops in commercial cultivation. The varieties cultivated in the other parts of the world are not suited to the Finnish conditions in the short term. One possible crop for Finland could be potato, on which hundreds of field tests have been carried out in different EU countries, including Finland.

First generation GM potatoes have been cultivated more extensively in North America but, for example, the cultivation of Bt potato has not won consumer approval. In Finland a field test has also been carried out on genetically modified forest trees, but opponents to gene technology destroyed the test site in summer 2004. At present turnip rape and sugar beet are, in addition to potato, the most likely crops to be introduced into commercial cultivation in Finland.



Commercial cultivation of genetically modified crops: cultivation area, countries and share in the world's arable area. Source: ISAAA.

Relationship between organic and genetically modified agricultural production

At present organic production rejects the use of genetic modification or its derivatives completely, except in veterinary medication. Gene technology is not considered consistent with the principles of organic farming. Gene technology is also considered to involve unpredictable risks to the functioning of the ecosystem, which means that at the present development stage the benefits of GM production do not make its use acceptable in organic production. The negative attitude of the majority of consumers to the use of gene technology in food production reinforces the totally negative positions adopted in organic production.

The freedom of organic products from GM material is written down in the EU Regulation on organic production, which all the operators producing and marketing organic products within the EU must comply with. When gene technology becomes increasingly common, the position of organic production as an absolutely pure production system may at some point become threatened due to e.g. unintended contamination, for example, through pollen spread in the air.

It seems that genetically modified production gains an even more important position in the world's food production, which means that the costs of separating the food and feed raw materials from different production systems are going to grow. It remains to be seen whether GM foods, conventional non-GM foods and organic foods or only two of these alternatives will be made available to the consumers in the future.

5.5. Pressures for change in environmental policy

Changes in both the society and the environment result in pressures to agri-environmental policy. The EU membership, environmental support scheme and general increase in environmental awareness have changed farmers' attitudes into a more environmentally conscious direction. Also consumer awareness regarding environmental matters grew rapidly during the 1990s, making it necessary to reform the EU's agricultural policy such that it takes this trend in public opinion into account. In the modern global society also meeting the obligations of international trade binds the EU to reform its production support.

In the context of the implementation of the CAP reform and preparation for the next programming period 'Agenda 2007', the concept of multifunctional agriculture has again gained in importance. The decoupling of support from production to single farm payments introduces the so-called cross-compliance, which requires that given environmental conditions must be met and also defines 'good farming practices'.

The majority (about 90%) of the five-year environmental contracts end during 2005. It was proposed that these should be continued by two-year contracts with the same terms as in the earlier contracts so that, when the new programming period begins, the majority of farmers would conclude new contracts in accordance with the conditions of the new support scheme.

The national preparation (LFA and environmental support) for the new programming period starting in 2007 begins during 2005. The new support schemes and tightening environmental legislation ensure that harmonising the different views will be truly challenging.

On the other hand, also the environment presents true challenges. In water protection there is still much to be done. The nutrients already stored in waters alone will deteriorate the state of waters for several years ahead. Preservation of biodiversity has not succeeded through the present environmental support scheme. Changes in the climate influence the relative profitability of different crops and increase the risk of new diseases and pests spreading to production areas. The obligations of the Convention on Climate Change cause pressures to the whole society.

The trends in organic and genetically modified production involve both threats and opportunities. A major challenge is to find out how the coexistence of different production systems can be organised in a way which satisfies the needs of the society. Even though solutions have been found to many environmental challenges over the years, the above-mentioned trends guarantee that most of the work is yet to be done.

Agriculture as energy producer

Esa Aro-Heinilä, Janne Helin and Marko Sinkkonen

The demand for domestic foodstuffs is no longer growing. Finnish consumers are not likely to increase their food consumption, and export is rather impossible without price subsidies at the current production cost level. However, there is another use for Finnish agricultural produce. Agriculture based bioenergy is one of the most significant new opportunities for the Finnish agriculture and countryside.

Biogas

The most promising sources of bioenergy in agriculture are animal manure and arable energy crops; reed canary grass, oilseed crops, straw and energy cereals. Especially, using manure for energy production is at interest. This results from the growth in the production units and their concentration to certain regions causing emissions into air and waters.

Manure can be utilised as a source of energy by putrefying it into biogas in oxygen-free conditions. In the production of biogas the methane evaporating from manure is collected and burned into carbon dioxide and water, which considerably reduces the emissions contributing to the climate change. The putrefaction waste is almost free from pathogens, while the nutrients remain in a form which the plants can utilise. This reduces the risks of both diseases and nutrient leaching.

Biogas can be used either in incineration plants for the production of heat and electricity or as fuel for transportation. Among the three alternatives, using biogas for transportation gives the best price for the producer. Also pure burning of biogas would bring environmental advantages. However, the theoretical production potential of biogas based on manure is less than 10% of the energy used in road transport in Finland. This share could be increased to about a third by utilising the biowaste of agriculture, communities and industry as well as sewage sludge. However, the true use potential is only a fraction of this. Extensive use of biogas for road transport would mean a need for several overlapping technologies and fuel distribution networks.

The most promising potential users of agricultural biogas may be found in the rural areas and on farms. Energy produced by means of biogas could replace purchased inputs for the part of electricity, heat, and use of agricultural machinery. In large-scale, centralised plants the joint production and sale of electricity and heat may also offer commercial opportunities.

Reed canary grass and energy cereals

Of the arable energy crops, reed canary grass has been studied and cultivated the most in Finland. In 2004 it was cultivated on almost 4,000 ha, while the potential cultivation area in Finland has been estimated at 170,000–220,000 ha. By means of the current support for energy crops (45 €/ha) the cultivation of reed canary grass is profitable at a distance of no more than 50 kilometres from the incineration plant. Thus the cultivation of reed canary grass can be expected to increase in areas surrounding major incineration plants in the near future.

Energy cereals are at interest, both in terms of their energy potential and the emotional reactions they give rise to. There are however a number of good arguments for using cereals in energy production. Energy cereals can be produced and used by means of the existing infrastructure without any new investments. No machinery or equipment, other than those used for other cereal farming, is needed and burning can be carried out in a regular heating boiler in the same way as wood chips. Cereal oversupply can be discharged by burning it. Each year a part of the cereal crop is of weak quality, and at the current price level it would be more profitable to burn it than sell it to the feedingstuffs industry. The key question is, whether more energy is expended in producing the cereal, than what it yields as energy when burned?

If cereals are cultivated for the normal uses for food or feedingstuffs, the energy yield is about four times (4/1) the fossil energy used for the production, while the corresponding yield ratio for reed canary grass is about fourteen times (14/1). However, the yield ratio of cereals can be improved. A development project to be launched in Satakunta aims to use sewage sludge as nutrient source and forced ripening of cereals by glyphosate treatment so that it dries standing on the field. This would raise the net energy yield considerably (13/1). However, the use of sewage sludge involves a problem that, as a result of the heavy metals it contains, the land used for energy production may be permanently withdrawn from food production. On the other hand, this procedure offers a solution for recycling the nutrients contained in sewage sludge to a useful purpose.

The oilseed crops have the weakest energy yield. For example, in the case of turnip rape, tree hectares out of four go in producing the energy needed for the cultivation. The potential for using oilseed crops for energy is the best in transportation, where they would fit into the existing diesel technology almost directly. However, in terms of the energy economy it is not rational to replace fossil energy sources by vegetable oil if the yield of the whole process is not clearly positive.

Bioenergy and food security

The main obstacle to the production of bioenergy in agriculture is the low level of energy prices on the competitive Finnish energy market. This weakens the profitability of the bioenergy production and diminishes the possible earnings to agriculture. At the current price level the arable energy crops cannot compete with other energy sources without production subsidies. A farm level biogas production is also subsidy dependent through the subsidies of livestock production.

When considering the profitability of the utilisation of agricultural bioenergy it should be kept in mind that energy production in agriculture is not the ultimate goal, but only a possible mean for maintaining viable agriculture, while contributing to the national energy supply in the future. Energy crops are reducing the oversupply in food, while maintaining to use the land for cultivation. Should it become necessary, these lands could be returned to food production. Thus, the production of energy crops contributes to the maintenance of both open rural landscapes and future's food security. Biogas offers evident environmental benefits as well as an unused energy reserve. Both energy crops and biogas bring business opportunities and jobs to the rural areas, founded on a product which will have a steadily growing demand in the future.

6. RURAL AND REGIONAL POLICY

6.1. Countryside in transition

Rural areas reflect the continuous process of change in the whole society, driven by the development of technology, political views on developing the society and changing global economy. The changes would probably have been quite similar, but perhaps not as deep, even if Finland had not joined the EU in 1995. The greatest change the membership in the EU has had on the Finnish countryside is the change in agricultural policy through CAP. The transformation covers both fundamental changes in economic environment and new modes of action.

Quantitatively the change in the rural areas is visible in the concentration of both people and capital to centres. Both financial and human capitals are moving away from northern and eastern Finland and concentrating in the south and west. In a way the settlement seems to be returning to the coastal regions, from where it originally started to spread to the inland, north and northeast. The population is concentrating at national scale on some growing urban areas and their rural surroundings, and locally in rural areas from remote villages to local centres. The internal differences in Finland as to the development and incomes are growing significantly. An indication of this is the regionally uneven distribution of new employment opportunities.

The position of Finland in the northeastern corner of the EU has influenced the development of especially eastern Finland a great deal. Most of eastern Finland is sparsely populated, and it is lagging behind the other parts of the country measured by almost all socio-economic indicators. Apart from the peripheral location in the EU, the poor development has been due to the collapse of the Soviet Union and slow recovery of the Russian economy. The development indicators for northern Finland are somewhat more positive; however, both the settlement and industrial basis are very thin. The table shows the regionally differentiating trends.

In the population numbers eastern Finland is clearly losing the most, while in northern Finland the population trend is more even. In eastern Finland the share of over 65-year-olds is clearly the highest (18%), while in northern Finland it is the lowest (14%) and below the average in the whole country (15.3%) The level in the employed labour force is the lowest in eastern Finland, while northern Finland is close to the national average. Economic development has been the poorest in eastern Finland, clearly below the average in

Development of main regions in Finland in 1995–2002 (1995=100).

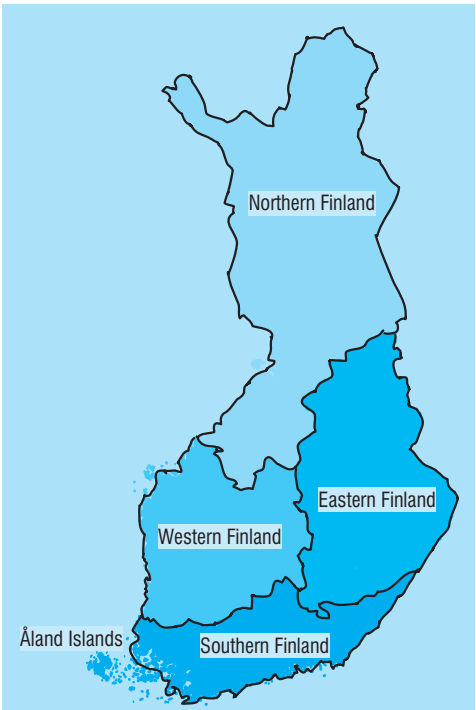
	Southern Finland	Western Finland	Eastern Finland	Northern Finland	Whole country
Population	105	100	96	100	102
Employed labour force	118	111	107	115	115
Value added at current prices	154	141	127	137	146
Share of all farms (%) in 2002	30.9%	35.0%	18.0%	13.6%	
Change in the number of farms 1995–2002	-24.2%	-25.6%	-28.6%	-23.6%	-25.5%
Share of over 65-year-olds in 2002	14.6%	16.8%	18.0%	14.1%	15.3%

Source: Statistics Finland

the whole country. Southern Finland is by far the leader in economic development, while both western and especially northern Finland are also below the national average.

The number of farms has decreased strongly in all parts of Finland: in 1995–2004 more than a quarter of Finnish farms quit production. The number of farms declined the most in eastern Finland (29%), while in northern Finland the number of farms that quit production (21%) was slightly below the national average. In western Finland, where 35% of Finnish farms are located, the change has been close to the national average and in southern Finland it has been slower. The spatial concentration of farming is demonstrated by the fact that only about 18% of Finnish farms are located in eastern Finland and 13.6% in northern Finland.

Measured by all indicators, the economic viability of eastern Finland is declining. The situation is more stable in northern Finland This is, however, mainly due to the growth of the Oulu region with its thriving IT-industry, which makes the statistics more positive, while the situation is much weaker in the other northern regions. Both eastern and northern Finland represent the large, sparsely populated rural regions faced with very difficult structural change. All in all about half of the surface area of Finland is sparsely populated and developing these areas is a very challenging task. There are sparsely populated regions in western and southern Finland as well.



Revised NUTS II division of main regions.

6.2. Rural policy during the EU membership

Finland joined the EU at a stage where national rural policy had been constructed for about a decade. The main elements of rural policy had already taken shape, but during the EU membership both the rural policy system and the policy instruments have developed further. National rural policy got started in the 1980s in a situation where the positive regional impacts of sectoral policies were running out and rural issues were in danger of being neglected in the development efforts. Rural policy evolved to highlight the rural aspects in all choices and decisions in the society which had direct or indirect impacts on the rural areas. Thus in the national policy the main emphasis was in the broad policy and rural policy was relatively independent of both regional and agricultural policy.

National rural policy is cross-sectoral, involving actors from different sectors. The Rural Policy Committee appointed by the Finnish Government has representatives from nine ministries and several public and private organisations. The Rural Policy Committee prepares rural policy and develops the policy system on the national level. Finnish rural policy is

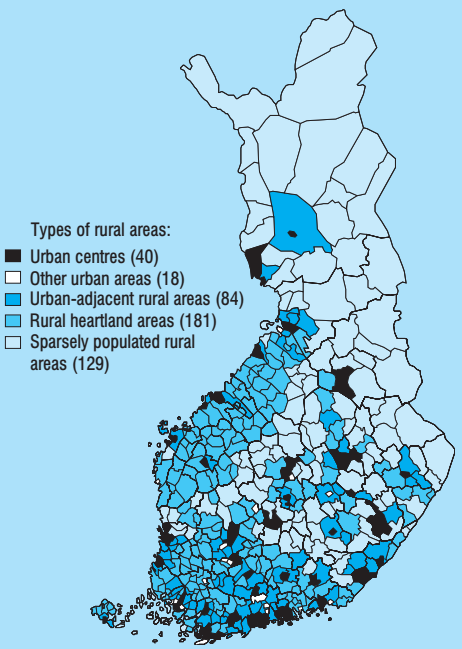
based on networking, and in international comparison the rural areas themselves have been exceptionally well mobilised to the development work. Rural policy has bodies and networks of its own, together with a network of well-established local action groups and village associations that focus on development work based on local initiative.

In the Finnish criteria for assessing the rural dimension low population density, adverse climate and location, rate of unemployment and periphery index are crucial. We are not only dealing with physical distances, even if this typical of the community structure in northern, sparsely populated areas. Attention is also directed to traffic connections, and telecommunications facilities and to cultural issues, such as the rare language, and to their impact on the experienced distance.

In the rural thinking in the EU there have been different kinds of phases. In practice it has been founded partly on agriculture, partly on a development concept based on regional economies. Most of the concrete EU measures directed at rural areas come from agricultural policy. Agriculture and farm orientation is very strong, because the rural criteria, grounds for the policy and money flows are all historically intertwined with agriculture. Within the EU most of the support for Finnish agriculture (especially environmental support and compensatory allowances for less-favoured areas) is channelled from the second, so-called rural pillar of the common agricultural policy.

The Structural Fund policy of the EU aims to reduce differences in the development through programme-based development. Programme-based regional development became established in Finland along with the EU membership, even if the Regional Development Act which allowed this change was issued already in 1994. The objective programmes of the EU influence both structural problems, such as unemployment, and regional problems proper and through this the rural areas. At least half of the funding for the programmes and projects implemented under these is national, and during the EU membership these have constituted a considerable share of the whole regional policy pursued in the country. The EU determines mainly the financing structure and implementation practices of the programme while the content of the projects is defined on the regional and local level.

Programme-based regional development has introduced new methodologies and increased cooperation between different actors. The Finnish sectoral administration culture has benefited from the challenge issued by the partnership and bottom-up approach in the preparation and decision-making processes. The best results have been achieved through the

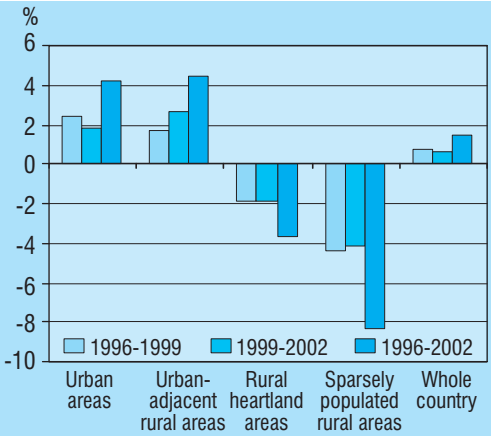


Distribution of different types of municipalities in Finland in 2000. Source: Kajaani Research and Development Centre of the University of Oulu and Finnish Area Research FAR.

LEADER+ Community initiative and the national Rural Programme Based on Local Initiative (POMO). In both of these the programme is drawn up and implemented by the local action groups, unlike other regional programmes, which are implemented by regional authorities.

There have also been problems in introducing new, different kinds of practices. One problem in the application has been the fragmentation of the programme areas, but this problem was solved in the second programming period. The programmes and projects bring money to the countryside, but all rural actors and areas have not been equally capable of taking advantage of the new instruments. The complex administration and decision-making procedures have also entangled the participation of the actors, and the division of the administration of funds between different ministries may not be the best way of implementing a regional programme.

From the perspective of the rural areas one problem is that the development measures are currently largely based on one single fund, the European Agricultural Guidance and Guarantee Fund. The rural areas need a diversified range of actions, where the tools and available resources of only one fund are not enough. The most serious problem in programme-based regional development is that the EU instruments are temporary in nature, which affects the creditability of the other rural development work as well.



Development of the number of people in different types of rural areas in 1996–2002. Source: Statistics Finland.

6.3. Finnish agriculture and the EU

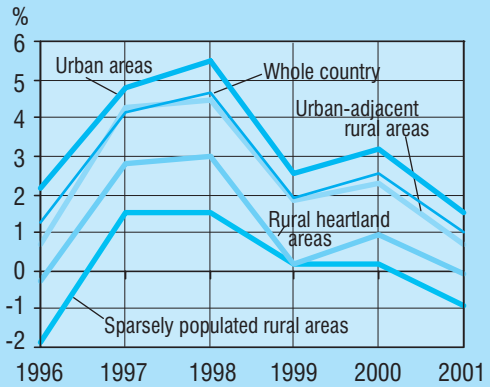
When Finland joined the EU in 1995, the Union got a northern Member State whose community and regional structure differed considerably from the EU average. In Central Europe the countryside is a space between dynamic urban centres dominated by farming. Instead, in Finland dynamic urban centres are few and scattered and farmers are not the largest population group in the rural areas but most of the rural people work in the population centres (45% of the employed labour force in the countryside in 1996). The EU membership has not made Finland less rural: in 2002 about 42% of the Finns were still living in the rural areas.

If the structure of Finnish settlement is compared to the time before the EU membership, in 1996–2002 the growing regions were smaller and depopulation affected larger regions than in the early part of the 1990s. The positive economic development in 1995–2000 was reflected as larger areas where the number of jobs was increasing while the number of jobs was decreasing in smaller areas than in the beginning of the 1990s. The total number of jobs in the countryside has stayed about the same during the EU membership.

There have been significant changes between the sectors. The number of jobs decreased the most in agriculture and forestry, but there has been some decrease in the manufacturing industry as well. Instead, the number of jobs has increased in services and building. What is important in terms of the whole picture is that the

population and jobs are not decreasing in all rural areas, and in most of them there is not much change, while in some rural areas the population is growing and new settlement is created.

The main problem is that the disappearance of jobs and decline in the industrial basis concentrates to the sparsely populated areas. The basic settlement created by farming in eastern Finland is weakening to the extent that it already constitutes a threat to the regional economies. On the EU level conclusions can be made concerning the living conditions in the other peripheral regions at the border of the union. The membership of Finland and Sweden in the EU should have made the Community increasingly aware of the socio-geographical diversity of the Member States. From the perspective of comprehensive rural policy the farm-oriented rural policy of the EU is completely insufficient for the majority of the Member States.



Number of jobs in different types of rural areas in 1996–2001. Source: Statistics Finland.

In addition to the scattered settlement, Finnish rural areas have also introduced an example of areas with long traditions in earning the living from various sources. In both agriculture and forestry and rural areas in general it has been quite common that both within the family and at different stages of life wage income has been combined with agriculture, forestry and other entrepreneurship. Pluriactivity has proven a functioning practical solution in areas where both settlement and resources are scarce and were the timing of different activities depends on the climate and great seasonal variation. It seems that when efforts have made to reinforce the economic competitiveness of the regions through policy measures on the EU level it has sometimes been difficult to understand the solutions and practices adopted in the north.

The membership in the EU and becoming part of its common policies has also been a great challenge to the Finnish countryside and rural actors. Sometimes the foundations of the common policies, especially the common agricultural policy, have been difficult to understand, because they have been designed for very different circumstances. Through the EU membership Finnish agriculture had to face the global competition situation more rapidly than otherwise would have been the case. The determination of the policy instrument far away from the Finnish conditions has complicated the situation and divided the agricultural sector, both regionally and according to the types of production.

One positive trend has certainly been that both the rural and agricultural population has become closer to these population groups in the other parts of Europe. International cooperation has increased and exchange of experiences and best practices have led to better practical solutions. Especially in issues which cannot be decided within one state or competence, such as environmental questions, ethical questions in food production or putting an end to climate warming, the membership in the EU has made it easier to find the relevant arena and given more efficiency to the actions.

Business support as a tool in rural development

Olli Voutilainen

The rural development programmes aim to ensure and improve the viability of the rural areas by creating new jobs and preserving the existing ones. One important means for achieving this objective is to create and develop business activity in the countryside. The Ministry of Agriculture and Forestry offers financial support to individual enterprises in the rural areas.

A farmer aiming to diversify the farm's activities may be eligible for aid for starting, developing or expanding the business. Aid may also be granted to the so-called chain enterprises which operate in the same production chain with farms or serve them directly. Through the LEADER+ Community initiative programme part-financed by the EU support is also made available to enterprises that are not connected to farms. About 10% of all aid for enterprises has been granted from the LEADER+ programme. There is no minimum size for the business activity that is eligible for support, but there are certain limits concerning the maximum size and types of activity. The level of aid varies according to the type of aid and rural area as well as the programme area. On average the aid covers about a third of the total costs of the projects which have received business support.

Regional differences in the allocation of aid

Since the beginning of the current programming period of the EU (2000–2006), by summer 2004 business support from the Ministry of Agriculture and Forestry had been granted to about 7,000 projects. The total costs of the projects which received business support where about € 350 million and the average costs of a single project about € 50,000. Half of the business support was allocated to western Finland, a quarter to eastern Finland, a little under a fifth to southern Finland and about 10% to northern Finland. Most of the business support (over four-fifths of the funds) has been allocated to the rural heartland areas and remote rural areas, which is also one principle of the rural development programmes. In terms of the number of projects, business support was granted to 0.12 farms in western and eastern Finland, 0.07 farms in northern Finland, 0.05 farms in southern Finland and 0.09 farms in the whole country on average.

Allocation of business support is a sum of various factors

In terms of the sectors, about a fifth of the business support has been allocated to primary production and about 40% to both processing and services. However, there are regional differences in the distribution of the aid to different sectors. In the processing sector about a third of the business support was allocated to wood products industry, a quarter to food processing and a little under 20% to metal processing and metal products industry. In the service sector most of the aid went to accommodation, restaurant and catering services in all regions except for northern Finland, where transport, storage and communications received most of the aid. The popularity of the accommodation, restaurant and catering services is based on the fact that

they are highly suitable for farms, as well as the growth in the rural and farm tourism. The situation in northern Finland shows that it differs from the other parts of the country due to the remote location and long distances.

Primary production and certain other sectors mentioned above are significant partly as a result of the strict conditions concerning the connections of business activity to a farm. The differences in the volumes of the business support, both absolutely and in allocation to different sectors, can partly be explained by differences in the "physical conditions" of the regions, such as economic structure, employment opportunities, distance to markets, number of farms and type of rural area/business support level. One reason for the regional differences are the different key areas between the business support and resources of the development projects in the implementation of the programme work. Certain areas have made conscious efforts to concentrate their resources in support of companies, which is reflected in wider use of business support through the implementation of programme work. Important factors also include the objectives of the Employment and Economic Development Centres, which are linked to the other regional programmes, as well as practices in the selection and decision-making relating to the business support, because the decisions on the aid are made by the Employment and Economic Development Centre of each region.

Future considerations

There has been some discussion on whether the conditions of the business support of the Ministry of Agriculture and Forestry concerning the connection to a farm and size and growth of the enterprise should be eased. This would cause pressures to change the allocation of the business support to different sectors in a significant way. The allocation would become more dependent on the market forces, which means that, for example, there would be growth pressures in the service sector at the cost of primary production. In terms of rural development this is a highly significant choice with very strong consequences.

In addition to the business support allocated by the Ministry of Agriculture and Forestry, the Ministry of Trade and Industry has a financial instrument to support microenterprises. This aid may be available to microenterprises which have no connection to a farm or which due to some other condition are not eligible for the business support from the Ministry of Agriculture and Forestry. In practice obtaining financing other than the business support of the Ministry of Agriculture and Forestry has proven difficult especially in certain sectors, such as the service sector, and in cases where the entrepreneur is not considered to expand the activities sufficiently. The Ministry of Agriculture and Forestry and Ministry of Trade and Industry have recognised these problems and solutions are being searched for in working groups set up through the Government's policy programme for entrepreneurship.

In addition to monitoring the allocation of the resources available for the business support, the impacts of the aid must also be measured. It is essential that the inputs available are used so that they yield the maximum amount of positive influence in the rural areas.

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Producer price index and index of purchase prices of means of agricultural production (2000=100).[1]

	Producer price index of agriculture[2]	The index of purchase prices of means of agricultural production			
		Total index	Goods and services	Investments	Buildings
2004	102.0 e	107.1	105.1	111.8	109.5
2003	99.0	104.2	102.5	108.1	106.3
2002	103.7	102.8	101.5	105.5	104.6
2001	105.2	102.2	101.8	103.1	102.4
2000	100.0	100.0	100.0	100.0	100.0
1999	96.6	95.0	94.2	97.2	96.4
1998	101.3	96.2	96.4	95.1	95.1
1997	102.5	97.5	98.4	94.0	93.7
1996	108.1	95.6	96.4	92.5	89.7
1995	103.6	94.2	94.6	92.3	90.5

[1] Indices are based on EU's classifications.
[2] Incl. fur production
Source: Statistics Finland.

Some figures of the agricultural structure.

	Number[1] of farms 1,000	Average[1] size of farms, hectares	Number of milk suppliers 1,000	Employed in agriculture 1,000 persons	% of employed
2004			17	93	3.9
2003	74	30.6	18	99	4.2
2002	75	30.0	19	106	4.5
2001	77	29.0	21	112	4.7
2000	80	28.0	22	118	5.1
1999	..	..	24	121	5.3
1998	88	25.0	26	120	5.4
1997	90	24.0	28	130	6.0
1996	94	22.9	30	133	6.3
1995	100	21.7	32	141	6.7
1994	115	19.2	34	153	7.4
1993	116	18.8	35	154	7.4
1992	121	18.1	36	166	7.5
1991	126	17.7	40	177	7.5
1990	129	17.3	45	183	7.3

[1] A farm refers to a unit with more than 1 ha of arable land that practise agriculture or other entrepreneurial activity.
Sources: Information Centre of the Ministry of Agriculture and Forestry, Ministry of Labour.

Number of animals in June and the average yield per cow.

	Dairy cows 1,000	Yield per cow litres	Pigs 1,000	Hens 1,000
2004[1]	324 e	7,404	1,365 e	3,069 e
2003[1]	334	7,251	1,375	3,016
2002[1]	348	7,117	1,315	3,212
2001[1]	355	6,932	1,261	3,202
2000[1]	364	6,786	1,296	3,110
1999[1]	372	6,443	1,351	3,361
1998[1]	383	6,225	1,401	3,802
1997[1]	391	6,183	1,467	4,152
1996[1]	392	5,993	1,395	4,184
1995[1]	399	5,982	1,400	4,179
1994	417	5,869	1,298	4,090
1993	426	5,648	1,273	4,025
1992	428	5,613	1,298	3,969
1991	446	5,619	1,344	4,138
1990	490	5,547	1,394	4,845

[1] 1.5.

Sales of fertilizers, kg/ha and hectarage yield, f.u./ha.

	Nitrogen kg/ha	Phosphorus kg/ha	Potassium kg/ha	F.u. yield (incl. straw) f.u./ha
2003–04	76.5	9.3	26.4	4,630 [1]
2002–03	80.0	9.8	27.8	4,478 [1]
2001–02	80.5	10.1	28.3	4,692 [1]
2000–01	83.2	10.8	31.1	4,531 [1]
1999–00	84.2	10.4	30.5	4,900 [1]
1998–99	81.0	11.0	31.1	3,146
1997–98	85.0	11.4	32.6	2,980
1996–97	86.0	11.8	32.5	3,816
1995–96	92.3	16.1	34.3	3,736
1994–95	101.6	20.0	38.5	3,655
1993–94	94.1	19.0	40.0	3,810
1992–93	94.3	19.4	39.8	3,912
1991–92	92.8	19.9	39.7	3,269
1990–91	109.4	26.3	53.4	3,771

[1] New feed unit coefficients.
Sources: Kemira, Information Centre of the Ministry of Agriculture and Forestry.

Total calculation of agriculture (excl. horticulture) at current prices, million euros.

	1998	1999	2000	2001	2002	2003	2004e
CROP PRODUCTION							
- Rye	4.5	3.5	7.2	7.7	7.1	6.1	5.0
- Wheat	51.8	39.7	45.6	52.3	48.9	55.2	54.6
- Barley	92.4	76.9	87.7	99.2	80.4	69.3	67.1
- Oats	38.6	42.0	50.1	72.1	56.3	45.5	37.0
- Potatoes	61.2	94.3	54.2	43.1	50.3	38.5	38.1
- Potatoes for processing	18.3	21.0	21.1	19.5	22.7	18.2	21.5
- Sugar beet	60.3	53.0	52.7	61.6	47.8	56.8	60.9
- Oil plants	14.3	14.9	13.6	21.7	22.2	19.8	13.2
- Other crop production	4.5	4.9	6.1	5.8	6.1	10.5	10.9
Total	**346.0**	**350.2**	**338.3**	**383.0**	**342.0**	**319.9**	**308.3**
ANIMAL PRODUCTION							
- Milk	801.3	808.0	842.9	867.5	888.9	871.1	853.5
- Beef	211.0	196.5	189.0	185.5	168.7	185.5	184.7
- Pork	233.8	206.6	224.1	261.1	255.9	229.7	245.9
- Mutton	2.0	1.5	1.1	1.0	1.2	1.1	1.2
- Poultry meat	68.9	75.7	72.7	92.0	104.2	110.2	111.1
- Eggs	41.3	41.4	44.7	40.5	45.4	42.4	40.0
- Other animal production	0.7	0.5	0.4	0.3	0.3	0.2	0.2
Total	**1,359.4**	**1,330.6**	**1,375.5**	**1,447.9**	**1,464.6**	**1,440.2**	**1436.6**
Gross return at market prices	**1,705.4**	**1,680.9**	**1,713.8**	**1,830.9**	**1,806.6**	**1,760.1**	**1,744.9**
COMPENSATIONS FOR CROP DAMAGES	**3.4**	**50.7**	**28.1**	**1.2**	**4.0**	**2.7**	**2.7**
INCOME FROM RENTS							
- Means of production	33.5	33.4	35.9	36.0	36.0	36.4	36.5
- Buildings and land	27.2	27.1	29.2	29.3	29.3	29.6	29.7
Total	**60.7**	**60.5**	**65.1**	**65.3**	**65.3**	**66.0**	**66.2**
Subsidies							
- CAP-subsidy for fields crops	226.5	230.2	341.8	343.6	341.1	353.2	366.4
- CAP-subsidy for livestock	39.5	38.1	39.9	78.5	87.7	93.8	88.1
- LFA	275.9	296.0	414.5	418.4	422.1	419.4	420.2
- Environmental subsidies	266.3	260.2	266.9	274.6	277.4	283.8	290.3
- Subsidy for animal units (nordic subsidy)	52.6	67.0	97.3	100.5	102.0	105.3	114.1
- Subsidy for animal units (subs. of tr.per.)	29.8	21.9	0.1	0.0	0.0	0.0	0.0
- Subs. for animals slaught. (- " -)	98.5	83.0	0.1	0.0	0.0	0.0	0.0
- Other national subsidies for animals	28.4	25.1	83.1	78.8	79.6	80.0	78.9
- Subsidy for field area (subs. of tr.period)	24.5	16.2	0.1	0.0	0.0	0.0	0.0
- Other national subsidies for field areas	94.2	125.9	113.5	126.7	132.9	134.4	137.9
- Production subsidies							
- milk	222.3	216.7	219.1	215.5	230.4	221.9	238.2
- rye	1.4	0.3	0.0	0.0	0.0	0.0	0.0
- wheat	8.5	0.3	0.0	0.0	0.0	0.0	0.0
- barley(malt)	3.5	2.0	0.0	0.0	0.0	0.0	0.0
- sugar beet	6.0	4.1	2.1	0.0	0.0	0.0	0.0
- potatoes (starch)	0.8	0.5	0.2	0.0	0.0	0.0	0.0
Subsidy paid by the common measures of the EU	808.2	824.5	1,063.0	1,115.1	1,128.4	1,150.1	1,165.0
National subsidies	570.5	563.0	515.6	521.7	544.9	541.5	569.1
Total subsidies	**1,378.7**	**1,387.6**	**1,578.6**	**1,636.8**	**1,673.3**	**1,691.6**	**1,734.1**
GROSS RETURN TOTAL	**3,148.2**	**3,179.6**	**3,385.6**	**3,534.2**	**3,549.2**	**3,520.5**	**3,548.0**

	1998	1999	2000	2001	2002	2003	2004e
COSTS							
- Fertilizers	171.6	155.3	168.0	177.0	180.0	176.9	174.7
- Lime	39.3	41.2	30.3	29.4	32.5	22.8	20.0
- Feed concentrates							
- mixture	360.3	351.4	371.5	379.3	378.5	340.7	345.1
- other	12.9	7.1	5.1	5.2	5.4	5.3	5.4
- Feed conserving chemicals	23.6	21.1	20.6	21.0	21.0	20.8	21.6
- Plant protection products	49.0	49.8	44.5	51.8	49.8	59.2	60.7
- Purchased seeds	35.4	40.5	39.1	42.0	41.0	46.9	47.6
- Fuel and lubricants	88.5	98.2	142.4	145.2	145.2	135.6	153.7
- Electricity	68.6	65.0	63.5	65.4	66.4	79.0	80.0
- Agricultural firewood and timber	10.1	10.0	10.9	11.2	11.2	7.5	7.5
- Delivery of calves and pigs	8.8	8.6	8.7	8.7	5.1	5.1	5.4
- Overhead costs	235.8	234.8	253.7	271.5	272.0	273.1	280.8
- Hired labor costs							
- wages	77.2	81.1	82.9	81.0	81.0	90.0	94.7
- social expenses	54.6	56.0	57.4	56.1	54.6	60.8	64.9
- Machinery and equipment expenses							
- depreciations	340.0	338.2	340.6	344.8	354.8	366.1	381.3
- maintenance	132.0	133.6	136.7	139.4	146.4	149.8	155.0
- Equipment	40.9	41.0	42.5	43.9	44.0	43.9	45.8
- Building expenses							
- depreciations	217.6	218.9	227.4	231.9	232.0	235.9	243.1
- maintenance	37.8	38.5	40.0	40.8	41.6	42.6	43.5
- Ditches, bridges, etc.							
- depreciations	63.9	62.8	65.0	66.3	67.0	68.1	70.2
- maintenance	18.8	19.0	20.3	21.1	21.1	21.6	22.1
- Interest payment	116.7	108.6	130.7	138.6	137.3	126.8	128.4
- Imports of animals	0.7	0.5	0.5	0.5	0.5	0.6	0.6
- Rent expenses							
- means of production	37.5	37.4	40.2	40.7	41.0	41.5	41.5
- buildings and land	73.8	74.0	79.7	80.4	81.0	81.9	82.1
- Farmers' share of cost from							
- accident insurance payment	9.7	9.7	9.2	9.4	9.4	11.8	11.7
- outside help	10.2	10.7	10.9	12.1	13.0	15.2	15.6
- day-off scheme	2.7	2.8	2.9	3.5	3.8	4.4	4.5
TOTAL COSTS	**2,338.2**	**2,316.0**	**2,445.3**	**2,518.1**	**2,536.4**	**2,533.9**	**2,607.5**
FARM INCOME EXCL. HORTICULTURE	**810.0**	**863.6**	**940.3**	**1,016.1**	**1,012.8**	**986.6**	**940.5**

Gross return of horticulture at current prices, million euros.

	1998	1999	2000	2001	2002	2003	2004e
FIELD PRODUCTION							
- Vegetables	63.7	64.9	75.8	73.4	80.0	83.3	86.1
- Berries and fruits	26.4	28.5	32.3	28.5	37.0	39.2	37.6
- Others	18.0	18.2	18.5	18.5	20.2	20.2	21.2
Total	**108.1**	**111.6**	**126.6**	**120.4**	**137.2**	**142.7**	**144.9**
GREENHOUSE PRODUCTION							
- Ornamental plants	91.0	91.8	90.1	89.7	110.1	99.6	105.6
- Vegetables	85.9	88.3	96.6	101.6	112.9	115.2	118.0
Total	**176.9**	**180.1**	**186.7**	**191.3**	**223.1**	**214.8**	**223.5**
Gross return at market prices	**285.1**	**291.7**	**313.2**	**311.8**	**360.3**	**357.5**	**368.5**
SUBSIDIES							
- Subsidies for greenhouses	34.1	34.6	40.7	40.9	40.5	40.3	40.1
- Subsidies for field production	5.8	3.8	2.5	2.5	2.0	1.9	2.0
- Other subsidies	10.9	10.4	11.2	10.5	7.9	11.4	11.8
Total	**50.8**	**48.8**	**54.3**	**53.9**	**50.4**	**53.6**	**53.9**
GROSS RETURN TOTAL	**335.9**	**340.5**	**367.6**	**365.7**	**410.7**	**411.1**	**422.4**
COSTS							
- Fertilizers, lime	6.2	7.8	7.9	7.9	7.7	7.6	7.9
- Plant protection products	4.2	4.7	5.1	5.1	5.0	5.6	5.6
- Seeds, seedlings, plants	13.5	14.0	14.4	14.5	14.1	13.6	13.8
- Other material	31.8	34.0	34.4	34.7	34.8	34.8	34.9
- Hired labor costs	64.1	65.0	73.1	74.5	69.7	65.2	72.4
- Fuel and lubricants	12.6	14.1	16.9	15.4	14.6	15.7	16.9
- Electricity	18.3	20.3	16.9	17.1	17.8	21.5	21.9
- Interests paid	14.3	13.2	15.4	16.4	15.2	15.2	14.5
- Depreciation of machinery	19.3	19.9	20.3	20.9	21.9	22.3	23.0
- Depreciation of buildings	18.5	18.9	19.7	20.3	20.7	21.0	21.6
- Depreciation of ditches, etc.	1.5	1.5	1.6	1.6	1.7	1.7	1.8
- Other costs	51.1	49.7	50.8	51.3	52.0	52.7	53.8
TOTAL COSTS	**255.5**	**263.1**	**276.6**	**279.7**	**275.2**	**276.9**	**288.0**
HORTICULTURAL INCOME	**80.4**	**77.3**	**90.9**	**86.0**	**135.4**	**134.2**	**134.4**

Total calculation of agriculture (incl. horticulture) at current prices, million euros.

RETURN ON AGRICULTURE	3,148.2	3,179.6	3,385.6	3,534.2	3,549.3	3,520.5	3,548.0
RETURN ON HORTICULTURE	335.9	340.5	367.6	365.7	410.7	411.1	422.4
RETURN, TOTAL	**3,484.1**	**3,520.1**	**3,753.2**	**3,899.9**	**3,960.0**	**3,931.6**	**3,970.3**
COSTS OF AGRICULTURE	2,338.2	2,316.0	2,445.3	2,518.1	2,536.4	2,533.9	2,607.5
COSTS OF HORTICULTURE	255.5	263.1	276.6	279.7	275.2	276.9	288.0
COSTS, TOTAL	**2,593.7**	**2,579.2**	**2,721.9**	**2,797.8**	**2,811.6**	**2,810.8**	**2,895.5**
AGRICULTURAL INCOME	**890.4**	**940.9**	**1,031.3**	**1,102.1**	**1,148.3**	**1,120.7**	**1,074.9**

Agricultural support*.

SUPPORT FINANCED COMPLETELY OR PARTLY BY THE EU IN 2005
€/ha or €/LU

Aid area	A	B	C1	C2	C2 North.	C3	C4
CAP ARABLE AREA PAYMENT[1], €/ha							
Cereals[2]	295	243	243	200	200	200	200
Oil seed plants[2]	295	243	243	200	200	200	200
Protein crops	269	231	231	199	199	199	199
Silage grass	214	176	176	145	145	145	145
Starch potatoes[3]	707	707	707	707	707	707	707
Set-aside	214	176	176	145	145	145	145
Drying aid for cereals and oil seed plants	81.7	67.2	67.2	55.2	55.2	55.2	55.2
Average regional yields for cereals and oil seed plants, tn/ha	3.4	2.8	2.8	2.3	2.3	2.3	2.3
CAP SUPPORT, €/LU							
Special beef premium	210	210	210	210	210	210	210
extensification premium							
- 1.4–1.8 LU/feed ha	40	40	40	40	40	40	40
- under 1.4 LU/feed ha	80	80	80	80	80	80	80
Suckler cow premium	200	200	200	200	200	200	200
additional national payment	50	50	50	50	50	50	50
extensification premium							
- 1.4–1.8 LU/feed ha	40	40	40	40	40	40	40
- under 1.4 LU/feed ha	80	80	80	80	80	80	80
LFA SUPPORT, €/ha	150	200	200	210	210	210	210
LFA supplement							
- basic payment	20	20	20	25	25	25	25
- additional payment for livestock farms	80	80	80	80	80	80	80

ENVIRONMENTAL SUPPORT, €/ha	Crop producing farm	Livestock farm
Cereals, oil seed plants, protein crops, grass	107	130
Horticulture (vegetables grown in the open etc.)	333	333
Horticulture (berry and fruit plants etc.)	484	484
Set-aside	0	0

** This appendix includes only the main agricultural products and therefore the list of various support measures is not complete.*
[1] The cut due to exceeding the CAP base area has not been taken into account in the CAP support for arable crops. In 2004 the CAP support for cereals was cut by about 7% and that for silage by about 26%. In 2005 the cuts may be higher, because the cultivation requirement of CAP support changes from 1991 to 2003. In 2005 the 3% modulation of CAP support applies to farms receiving more than € 5,000 of CAP support.
[2] Drying aid is included in the CAP arable area payment.
[3] The area payment presented here is based on the yield level of 32 tonnes/hectare. The support is € 22.1/tonne.
- Support for protein crops includes the premium for protein crops.
- LFA support as proposed to the Commission.
- In LFA support a livestock farm is a farm with a minimum stocking density of 0.4 LU/ha or at least 10 LU during the whole commitment period and minimum stocking density of 0.2 LU/ha.
- Based on the data from 2003 it can be expected that the supplement to the LFA support will be cut by about 8%.
- In the new environmental support contracts all farms are considered crop farms.

	Unit	2000 €/unit	2001 €/unit	2002 €/unit	2003 €/unit	2004 €/unit	2005 €/unit
NATIONAL SUPPORT FOR AGRICULTURE AND HORTICULTURE							
NATIONAL AID FOR SOUTHERN FINLAND, NORTHERN AID AND AID FOR CROP PRODUCTION							
Aid per livestock unit							
Aid for animal husbandry, suckler cows							
A and B	€/LU	71	67	65	63	133	74
C1	€/LU	168	269	269	269	309	287
C2	€/LU	168	269	269	269	309	287
C2North. and Archipelago	€/LU	244	345	345	345	385	363
C3	€/LU	320	420	420	420	460	438
C4	€/LU	505	605	605	605	645	623
Aid for animal husbandry, male bovines >6 months							
A and B	€/LU	372	357	345	336	336	210
C1	€/LU	412	412	412	412	477	410
C2	€/LU	420	420	420	420	485	418
C2North. and Archipelago	€/LU	496	496	496	496	561	494
C3	€/LU	572	572	572	572	637	570
C4	€/LU	757	757	757	757	822	755
Aid for animal husbandry, ewes and goats							
A and B	€/LU	380	360	344	333	333	87
C1	€/LU	412	412	412	412	482	344
C2	€/LU	420	420	420	420	490	352
C2North. and Archipelago	€/LU	496	496	496	496	566	428
C3P1-P2	€/LU	824	824	824	824	894	756
C3P3-P4	€/LU	925	925	925	925	995	857
C4P4	€/LU	1,110	1,093	1,110	1,110	1,180	1,042
C4P5	€/LU	1,379	1,379	1,110	1,110	1,180	1,042
Aid for animal husbandry, pigs							
A and B	€/LU	325	308	294	285	266	215
C1	€/LU	336	320	306	297	278	304
C2	€/LU	336	320	306	297	278	293
C2North. and Archipelago	€/LU	417	400	387	378	359	315
C3	€/LU	417	400	387	378	359	315
C4	€/LU	488	400	387	378	359	315
Aid for animal husbandry, hens							
A and B	€/LU	282	287	283	275	257	204
C1	€/LU	287	287	283	275	257	265
C2	€/LU	289	289	286	278	260	259
C2North. and Archipelago	€/LU	375	375	372	364	348	293
C3	€/LU	442	442	439	431	413	360
C4	€/LU	639	442	439	431	413	360
Aid for animal husbandry, other poultry							
A and B	€/LU	271	271	260	252	234	196
C1	€/LU	271	271	260	252	234	255
C2	€/LU	276	276	265	257	239	251
C2North. and Archipelago	€/LU	367	367	352	344	326	288
C3	€/LU	434	367	352	344	326	288
C4	€/LU	636	367	352	344	326	288
Northern aid paid for slaughtered animals							
Male bovines C3-C4							
P1-P2	€/animal	131	131	131	131	131	131
P3-P4	€/animal	182	182	182	182	182	182
P5	€/animal	333	333	333	333	333	333

- In 2005 the livestock support for pig husbandry, chickens and other poultry is paid for 77% of the production in area C1 and 80% of the production in area C2.

	Unit	2000 €/unit	2001 €/unit	2002 €/unit	2003 €/unit	2004 €/unit	2005 €/unit
Heifers							
A and B	€/animal	119	114	111	108	150	119
C1	€/animal	193	210	210	210	210	210
C2	€/animal	193	210	210	210	210	210
C2North. and Archipelago	€/animal	242	259	259	259	259	259
C3	€/animal	284	301	301	301	301	301
C4	€/animal	370	387	387	387	387	387
Production aid for milk							
A and B	cents/l	6.41	6.15	6.0	5.8	5.6	3.0
C1	cents/l	8.83	8.83	8.8	8.8	10.0	7.4
C2	cents/l	9.35	9.35	9.4	9.4	10.6	8.0
C2North.	cents/l	10.74	10.74	10.7	10.7	11.9	9.3
C3P1	cents/l	13.68	13.68	13.7	13.7	14.9	12.3
C3P2	cents/l	15.42	15.42	15.4	15.4	16.6	14.0
C3P3-P4	cents/l	18.01	18.01	18.0	18.0	19.2	16.6
C4P4	cents/l	22.69	22.69	22.7	22.7	23.9	21.3
C4P5	cents/l	31.87	31.87	31.9	31.9	33.1	30.5
Aid for crop production							
A area[1]							
Wheat	€/ha	82	93	105	105	87.6–115.2[3]	87.6–115.2[3]
Rye	€/ha	135	143	160	160	110.0–144.7[3]	98.4–129.2[3]
Malting barley	€/ha	59	67	84	84	72.6–95.5[3]	72.6–95.5[3]
Feed grains[2]	€/ha	0	0	7	9	4.3–5.6[3]	4.3–5.6[3]
Grass[3]	€/ha	115	177	202	202	125.0–164.3[3]	98.4–129.2[3]
Oil seed plants	€/ha	81	135	143	143	107.9–141.8[3]	98.4–129.3[3]
Sugar beet	€/ha	202	202	202	202	125.0–164.3[3]	98.4–129.4[3]
Starch potatoes	€/ha	143	143	143	143	107.9–141.8[3]	98.4–129.5[3]
Vegetables grown in the open	€/ha	446	446	446	446	346.33–425.03[3]	332.6–392.3[3]
B area[1]							
Wheat	€/ha	82	93	105	105	87.6–115.2[3]	87.6–115.2[3]
Rye	€/ha	135	143	143	143	110.0–144.7[3]	98.4–129.2[3]
Malting barley	€/ha	59	67	84	84	72.6–95.5[3]	72.6–95.5[3]
Feed grains[2]	€/ha	0	0	7	9	4.3–5.6[3]	4.3–5.6[3]
Grass[3]	€/ha	98	177	202	202	125.0–164.3[3]	98.4–129.2[3]
Oil seed plants	€/ha	81	135	143	143	107.9–141.8[3]	98.4–129.3[3]
Sugar beet	€/ha	202	202	202	202	125.0–164.3[3]	98.4–129.4[3]
Starch potatoes	€/ha	143	143	143	143	107.9–141.8[3]	98.4–129.5[3]
Vegetables grown in the open	€/ha	395	395	395	395	346.33–425.03[3]	332.6–392.3[3]
C1 area[1]							
Wheat	€/ha	84	93	105	105	88	69
Rye	€/ha	135	135	135	135	112	112
Malting barley	€/ha	59	67	84	84	78	70
Feed grains[2]	€/ha	0	0	7	9	0	0
Grass[3]	€/ha	82	93	93	95	0	0
Oil seed plants	€/ha	81	135	140	140	115	100
Sugar beet	€/ha	202	202	202	250	197	185
Starch potatoes	€/ha	168	168	168	168	143	133

[1] A- and B-area national aid for crop production, C-area northern aid
[2] Aid for forage grass is paid for farms with cattle, sheeps, goats and horses.
[3] As of 2004 this aid is paid as a national supplement to environmental support. This supplement is established relative to the environmental support for the crop concerned.
- Support levels may be cut due to the ceilings set for the payments. In 2004 about 90% of the envisaged additional LFA support was paid. In 2005 the cuts are likely to be more than this.

	Unit	2000 €/unit	2001 €/unit	2002 €/unit	2003 €/unit	2004 €/unit	2005 €/unit
C2 and C2North. -areas[1]							
Wheat	€/ha	84	93	105	105	88	69
Rye	€/ha	135	135	135	135	112	112
Malting barley	€/ha	59	67	84	84	78	70
Feed grains[2]	€/ha	0	0	7	9	0	0
Grass	€/ha	82	93	93	95	0	0
Oil seed plants	€/ha	49	59	67	67	42	27
Sugar beet	€/ha	202	202	202	250	197	185
Starch potatoes	€/ha	168	168	168	168	143	133
C3 area							
Feed grains[2]	€/ha	0	0	7	9	0	0
Grass	€/ha	82	93	93	95	0	0
C4 area							
Feed grains[2]	€/ha	0	0	7	9	0	0
Grass	€/ha	82	93	93	95	0	0
General area payment C2-C4							
Cereals and other arable crops							
C2, C2North. and Archipelago	€/ha	34	34	34	34	34	30
C3	€/ha	50	50	50	50	50	46
C4	€/ha	101	101	101	101	101	97
Other crops							
C2, C2North. and Archipelago	€/ha	34	34	34	34	34	35
C3	€/ha	50	50	50	50	50	51
C4	€/ha	101	101	101	101	101	102
General area payment for young farmers C1-C4	€/ha	27	27	27	27	30	32
Aid for greenhouse products A, B, and C2P-C4							
over 7 months	€/m^2						11.4
2-7 months	€/m^2						5.3
Aid for greenhouse products C1 and C2							
over 7 months	€/m^2	11.4	11.4	11.4	11.4	12.0	12.8
2-7 months	€/m^2	5.7	5.7	5.7	5.7	6.0	5.9
Northern storage aid for horticulture products (max.)							
Storages with thermo-control system	€/m^3	15.1	15.1	15.0	14.5	14.2	14.2
Storages without thermo-control system	€/m^3	10.1	10.1	10.1	10.1	9.8	9.8

Aid during the transitional period: Conversion factors with which the average number of animals is multiplated

	LU		LU		LU
Dairy cows	1	Other bovines >2 years	1	Horses >6 months, Mares for breeding, incl. ponies	1
Suckler cows	1	Other bovines 0.5-2 years	0.6	Finnish horses	0.85
		Ewes, goats	0.15	Other horses and ponies, 1-3 years	0.6

Nordic aid: Conversion factors with which the average number of animals is multiplied

	LU		LU		LU
Suckler cows	1	Sows, boars	0.7	Hatching broilers and other poultry	0.025
Male bovines >2 years	1	Pigs >3 months	0.23	190/223 slaughtered turkey	1
Male bovines 0.5-2 years	0.6	13 slaughtered pigs	1	Horses >6 months, Mares for breeding, incl. ponies	1
Ewes, goats	0.15	Laying hens	0.013	Finnish horses	0.85
		Broilers	0.0053	Other horses and ponies, 1-3 years	0.6

[1] A- and B-area national aid for crop production, C-area northern aid.

[2] Aid for forage grass is paid for farms with cattle, sheeps, goats and horses.

The local authorities in different areas:

P1 = County of Oulu: Haukipudas, Kiiminki, Oulu, Utajärvi, Ylikiiminki, Parts of Oulunsalo.
P2 = County of Lapland: Kemi, Keminmaa, Simo, Tervola, Tornio.
County of Oulu: Hailuoto, Hyrynsalmi, Ii, Kuhmo, Kuivaniemi, Yli-Ii
P3 = County of Lapland: Kemijärvi, Pello, Ranua, Rovaniemen mlk, Rovaniemi, Ylitornio.
County of Oulu: Pudasjärvi, Puolanka, Suomussalmi, Taivalkoski
P4 = C3: County of Lapland: Posio, County of Oulu: Kuusamo.
C4: County of Lapland: Kolari, Pelkosenniemi, Salla, Savukoski; Parts of Kittilä and Sodankylä.
P5 = County of Lapland: Muonio, Enontekiö, Inari, Utsjoki; Parts of Sodankylä and Kittilä. Archipelago: Parts of areas C1 and C2.

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