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TALOUDELLINEN
TUTKIMUSLAITOS

Finnish Agriculture
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Cover picture: Hugo Simberg, Spring Feeling
The painting belongs to the Museum of Finnish Art Ateneum, photo by the Central Art Archives/Antti Kuivalainen

Hugo Simberg (1873–1917) is one of the most important painters of the golden age in the Finnish art. In his paintings Simberg used intense, pure colour surfaces typical of symbolists. The models for the ordinary men and women in his paintings can be found in the rural environments where he spent his childhood summers. The watercolour *Spring Feeling* from 1895 reflects his rural experiences. The bustling farmwife of Paikkala busy with a cow, her husband Manne looking on, and their flaxen-haired children barefoot on the spring lawn; the muzzle of a cow sniffing the spring air in the doorway.

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Preface

The Agricultural Economics Research Institute has compiled a report of the most important issues in the agricultural sector since 1985. The objective has been to provide a general view of the most important agricultural policy issues and their impacts on agriculture and forestry. The report also contains an extensive statistical section.

Efforts have been made to present a clear and accurate account in an easily accessible form. The issues are viewed from the perspective of the rural areas, where the economic activities have become increasingly diversified. The main emphasis, however, is in agriculture and agricultural policy.

The publication contains brief introductions into current topics as well as estimates of future trends. All the articles have been written by researchers working at the Institute, who are experts in their own special fields. I hope that this publication will prove useful for both Finnish and foreign readers.

Helsinki, February 2001

Jouko Sirén
Director General

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Special topics

EXECUTIVE SUMMARY

The year 2001 will be a kind of transitional year in agriculture in the sense that there should be no major changes in agricultural policy issues. In the early part of the year it seems that measures will be needed on the EU beef market to cut the supply due to the fall in the demand. Further agricultural policy reforms are expected in 2002 and 2003, and the decisions on national measures will be in force until the end of 2003.

In 2000 the new kind of agricultural policy became fully effective in Finland as the five-year transitional period granted when Finland joined the EU came to an end in 1999, together with the special transitional aids for agriculture. However, the new support measures do not differ from the transitional arrangements in any essential way, but agriculture will continue to receive support basically in the same way as so far. According to the Accession Treaty, most of the national income support is long-term support, and the EU Commission has authorised Finland to pay national aids for livestock production and horticulture in Southern Finland as well as raised investment aid until the end of 2003. The support for Southern Finland is degressive, which will eventually lead to difficulties.

From the Finnish perspective the agricultural policy reform of the EU under Agenda 2000 did not bring along any dramatic changes in the support policy. The key issue in the programme was the gradual reduction in the institutional prices for cereals, beef and milk. The first cut in the cereal prices by 7.5% was made in July 2000 and the second cut will be made in July 2001. Mandatory set-aside will stay at 10% until 2006.

The market prices for beef will be cut in three equal steps by altogether 20%. In July 2002 intervention price will be replaced by a basic price for private storage. If the support for private storage is not enough to stabilise the beef prices, intervention system can be used as a safety net. Due to the BSE crisis additional measures may be necessary in the market arrangements for the beef sector.

Agricultural support in Finland.

	2000 preliminary		2001 estimate	
	FIM mill.	€ mill.	FIM mill.	€ mill.
EU support				
Support for arable crops	1,947	327	1,980	333
Other area payments	55	9	55	9
CAP support for animals	273	46	328	55
Support co-financed by EU				
LFA support	2,464	414	2,513	423
Environmental support	1,642	276	1,679	282
National support				
National support for Southern Finland	841	141	802	135
Northern support	2,103	354	2,117	356
National support for arable crops	450	76	492	83
Other national support	115	19	88	15
Total	9,890	1,663	10,054	1,691
EU contribution	3,968	667	4,056	682
National financing	5,922	996	5,998	1,009

In the milk and milk products sectors the Agenda 2000 reform will become effective from the marketing year 2005/2006. The intervention prices for butter and skimmed milk powder will be reduced by altogether 15% in three stages. However, the proposals will be reviewed in 2003 on the basis of the Commission report, when the decision on the fate of the quotas will also be made. Pig, egg and broiler production and horticulture are still largely outside the scope of the CAP.

Based on the payer, there are three kinds of agricultural support. CAP support for arable crops and animals are closely linked to the market arrangements of the CAP, and these are financed in full from the EU budget. These account for 24% of all agricultural support available for Finland in 2001 (€ 1.7 bill.). The share of support for rural development co-financed by Finland and the EU is 42%. The third type is national aid, and in 2001 the share of this in the total support package is 35%.

No major changes in environmental support

The outlines for environmental support in 2000–2006 were completed at the end of June 2000, when the EU Commission approved the Finnish proposal for the Horizontal Rural Development Programme. Both the old and new environmental support have encouraged farmers to introduce more environmentally-friendly production practices. However, visible results take a relatively long time to manifest, and agriculture is still considered the main cause of e.g. eutrophication of surface waters.

Like in 1995, due to the delays in the processing of environmental support farmers had to make environmental support contracts before the exact terms were fully known. This had no effect on the willingness of farmers to participate in the programme, and by the end of 2000 more than 90% of farmers had made contracts concerning the basic and additional measures, covering over 95% of the arable area. Thus the participation of farmers in the measures stayed at least on the earlier level despite the changes in the criteria and levels of support.

In the new environmental support, too, the main emphasis is on the protection of waters. Efforts are also made to restrict emissions into the air, reduce risks due to pesticides, and take care of rural landscapes and biodiversity. One objective is to increase the amount of humus in the soil as well as maintain or improve the productive capacity of land. Most of the environmental contracts are made for five years. Increase in organic farming will continue during the new environmental programme: in October the arable area under organic farming or conversion into this was about 146,000 ha (6.7% of the arable area), which is 10,000 ha more than at the end of 1999.

The new environmental programme suffers from shortage of funding. The number of new environmental contracts made in 2001 has to be limited, and no new areas can be included in the existing contracts. Contracts concerning special measures will probably be made only for organic production, establishment and management of riparian zones, efficient use of manure, management of traditional biotopes and cultivation of local crops as well as enhancing biodiversity.

High level of food safety in Finland

The quality of the environment is closely linked to the quality of foodstuffs and, through this, to food safety. Food safety also comprises a number of factors that are not directly dependent on the production environment of agriculture. All parts of the food chain from farm to the table contrib-

[1] *Exchange rates: FIM 1 = € 0.168 = US$ 0.155 (Year 2000 average).*

ute to food safety. According to the National Food Administration, the EU membership has increased the food-related risks in Finland, while the control has become increasingly difficult. However, food safety in Finland has not fallen in any significant way. The number of cases of food poisoning is at about the same level, but the epidemics tend to be more serious than earlier.

Instead of the traditional food safety problems, BSE disease caused serious concerns among both the consumers and decision-makers in 2000 and in the spring of 2001. Each week new cases of the disease are being found in Central and Southern Europe as the testing of bovines has been intensified in the whole EU area. The only countries where BSE has not been found are Finland, Sweden and Austria. Beef consumption has fallen dramatically in most EU countries. In Finland the demand has not decreased, but it is mainly directed to domestic beef. The crisis has activated all the alert systems in the food supply chain as the mistake made in the regulations and control have caused serious damage to the whole beef chain. In order to restore the consumer confidence in the EU, the labelling of beef products has been improved, the use of meat and bone meal has been prohibited in all edible production animals, and extensive testing of bovines has been started. Certain countries have also banned beef imports and do not allow certain risk groups to donate blood. The EU ministers of agriculture are trying to find ways to reduce beef supply as the storage capacity will soon be inadequate. The recent food scandals have increased the need for a European authority to control food safety, and during the spring of 2001 Finland is going to work hard to have the European Food Authority based in Finland.

In January 2000 the EU Commission presented a plan concerning food safety to the Agriculture Council. The so-called White Paper of the Commission lays down the objective of the EU to implement extensive and efficient policies in food safety issues. The role of gene technology and biotechnology in general in food production will be one of the major topics relating to agriculture in 2001. Production-oriented biotechnology industry has advocated the use of biotechnology very strongly, while the consumers have been more cautious. In the USA the area under gm-maize fell when the farmers saw that finding enough demand for the products might be problematic. Finns were surprised to find out in May 2000 that genetically modified rape had been cultivated in Finland, probably by accident. Another practical example raised in Finland has been the production of transgenic cows and cow milk in Pohjois-Savo. The authorities have assumed quite a neutral position, taking into account the unpredictable social aspects relating to the technologies involved and the possible irrevocability of biological risks. Public discussion suffers from lack of information.

During 2000 the importance of food safety was recognised in the EU far better than ever before. In addition to the decision-makers, the Finnish consumers have also internalised food safety issues as part of their purchase decision process. If this trend continues and the opinions of the consumers are realised as practical choices, the food production chain will have even more incentive to maintain a high level of food safety. In the trade policy food safety issues will be raised by the EU in the WTO negotiations, which should start in November 2001.

National outlines for rural and regional policy

The Rural Policy Committee presented the third Rural Policy Programme for 2001–2004 in November 2000. The most important objective put forward in the programme was that that the rural perspective and

assessment of the regional impacts should be taken into account in all the policy and administrative sectors in order to make sure that the specific rural policy measures will be effective. The Rural Policy Programme is based on the idea that in the rural areas the sources of livelihood are diverse and they occur in different combinations, with considerable variation between the rural areas. Many of the detailed proposals of the programme concern changes in the provisions and practices that were considered inappropriate in terms of the everyday life in the countryside, as well as finding and promoting new opportunities for living, employment, studying and entrepreneurship. Particular emphasis is laid on the fact that the new economic activities in the rural areas based on projects and local initiative will not survive without permanent structures and area-specific development.

The Rural Policy Programme presents 108 proposals, where level of detail ranges from exempting berry juices from the tax on soft drinks to extending the work based on local action groups to the whole country. Most of the proposals have very little impact on the State economy. In monetary terms the most extensive proposal (maximum annual cost € 286 mill.) concerns a deduction for remote rural areas in the State taxation for the areas suffering from population loss. The Programme emphasises the importance of so-called broad rural policy, which refers to actions in the different administrative and policy sectors that are not primarily targeted at rural development but that will have major impacts on the rural areas.

The regional concentration of economic activities has increased in recent years. The most rapidly growing sub-regional units are those of Helsinki, Porvoo, Lohja, Oulu, Tampere, Kaakkois-Pirkanmaa, Turku and Jyväskylä. From the regional policy perspective the problems in the development of sub-regional units located in Eastern and Northern Finland are not a result of economic cycles only, but they are of a structural nature.

The contents of regional policy were also specified in the Government target programme presented in autumn 2000, which provides the guidelines and directions for regional development in 2000–2003. The leading idea in the Government programme is that more balanced regional development can be achieved only by strengthening the network of regional centres covering the whole country, in addition to a few growing centres which develop largely on their own. Programme work concerning such regional centres was started towards the end of 2000 in order to set up a network of regional centres located in different parts of Finland. In rural areas this means that village centres should be reinforced, and strengthening the existing centres of expertise serves the same basic idea.

The future model of regional policy is based on regional centres, and national regional policy measures will be directed at strengthening the network of regional centres. Regional centres must function as the driving force of the region concerned, contributing to strengthening the viability and coherence of the sub-regional units. Cooperation between municipalities should also be deepened. The Regional Centre Programme will be based on 30–40 economic areas or groups of municipalities where the preconditions for cooperation exist.

A good year in crop production

The summer of 2000 was quite favourable for crop production. The total cereal yield was exceptionally high, about 4 bill. kg, and the yield of bread cereals was close to the domestic consumption. The yield of fodder cereals was 3.4 bill. kg, which was about a third higher than in the previous year, and the quality was also good. The total yield of silage was more than 7 bill. kg for the first time ever, and the total dry hay yield was 0.6 bill. kg. The harvested area

and total yield of dry hay fell in the 1990s, while the area under silage grass has grown, which means that less dry hay is used in the feeding of cattle than earlier. Rains hampered the harvesting of dry hay.

In the early part of 2000 the market prices of cereals were higher than in 1999, but due to the record high yield and changes in agricultural policy the prices paid for cereals towards the end of the year were lower than in the previous year. The total cereal yield in the EU grew by 5% in 2000. Wheat yield was estimated at 104 bill. kg, which means that wheat production in the EU is at the same level as in the world's largest producer, China. For the third year in a row wheat consumption exceeded the production, which increases the pressures to raise the world market price for wheat.

The value of horticultural production grew by 10% in 2000 owing to the high yields as well as higher prices paid for some products. The most important vegetables grown in the open were garden pea, carrot, white cabbage and onion, which in 2000 accounted for more than 60% of the total area under commercial production. A quarter of this area is covered by production contracts with the processing industry. Strawberry accounts for two-thirds of the area under berries and 80% of the production volume. Of the greenhouse area about 60% is under vegetables and 40% under ornamental plants. 54% of the vegetable area is under tomatoes and cucumber is cultivated in about a third of this area. In 2000 the producer prices for greenhouse products were slightly higher than in the previous year, but the producer price of especially tomato was still extremely low.

Milk production continued to grow

In 2000 farms delivered altogether 2,371 mill. litres of milk to dairies, which is 2% more than in 1999. The average yield was 6,700 litres/cow, which is more than 250 litres (4%) higher than in the previous year. It is estimated that in the quota year 2000/2001 the national quota for milk production will be exceeded by about 30 million litres, i.e. by the quantity produced in about four days. At the end of the year the number of milk producers was about 21,600, i.e. 8% less than in 1999. There were altogether about 370,000 dairy cows and the average herd size was about 17 cows, which is about one cow more than in 1999.

Beef production grew by a little less than 1% to 91 mill. kg. The total consumption is around 96 mill. kg, and thus in 2000 about 9% of this was covered by imports. Beef exports from Finland totalled 6 mill. kg. Pigmeat production fell by almost 6% to 173 mill. kg as the production suffered from a shortage of piglets. The share of combined pig production increased, while the share of piglets sold to finishing production fell accordingly. The market situation for pigmeat in the EU was good, export markets were easy to find and the stocks stayed almost empty. Poultry meat production fell by about 4% to 64 mill. kg. Egg production has suffered from oversupply, and this continued in 2000. Production volume stayed at the earlier level of 59 mill. kg, which exceeded the consumption of 51 mill. kg clearly. The joint project of producers and packaging plants aimed at controlling the oversupply continued under the so-called Laitila-contract.

The average producer price for milk was almost € 8.15/ton higher than the year before. This is above the average price in the EU, but there were differences between the dairies. The average producer price for milk without retroactive payments was € 310/ton, and the average production support was € 90/ton. However, the final producer price is known after the closing of the accounts at the dairies, when the amounts of retroactive payments are determined based on the results. In 1999 the retroactive payments were, on average, € 19/ton.

In 2000 the food prices in Finland rose by about 2.7%, which was less than the overall rate of inflation, 3.5%. In December 2000 the consumer prices for dairy products were 1.2% higher than the year before, mainly due to the increase in the prices of cheeses. The consumption of dairy products was at about the same level as earlier. The prices of meat products rose, on average, by 1.8% during 2000. Total meat consumption has stayed around the level of 66 kg/capita, and about half of this is pigmeat. Unlike in the other European countries, there was no major change in beef consumption compared to the previous year. The consumer price for eggs rose by more than 10%, but the consumption stayed at about the earlier level.

Number of farms and development of production

The weak profitability of farming and uncertainty relating to the future policies have been reflected in the willingness to work in the agricultural sector. In 1994 the number of active producing farms that meet the criteria for EU support was about 103,000. By 2000 the number of farms had fallen to about 78,000, which means that about 25,000 farms had quit farming (25%). However, apart from annual variation the production volumes have stayed at about the earlier level.

In 2000 agricultural income (entrepreneurial income) was about 20% lower than before the EU membership. Compared to the previous two years, when there were serious crop damages, agricultural income was clearly higher, but it was still very low compared to the years before that. The total return on agriculture was € 3,753 mill., which is 7% higher than in 1999. Market return grew by 3% to € 2,025 mill. The share of support in the total return was 44%.

In 2000 the same agricultural inputs yielded 1.14 times the production of 1999. In Finland the development of productivity has been clearly slower than in the most important competing countries. During the first six years in the EU, productivity has grown, on average, by only 1.18%. However, in the past couple of years there have been some indications that the development of productivity might be accelerating.

Number of active farms and agricultural income in 1994–2000.

	Number of farms	Change from previous year %	Change from 1994 %	Agricultural income FIM bill.	Index 1992–94 average: 100
2000	78,000	–4	–25	6.1	80
1999	82,000	–5	–21	5.6	73
1998	86,000	–3	–17	5.3	69
1997	88,000	–3	–15	6.3	82
1996	91,000	–4	–12	6.5	85
1995	96,000	–8	–8	7.4	96
1994	103,000 [1)]			8.4	109

[1)] Estimate of the Agricultural Economics Research Institute (MTTL)
Sources: Total calculation of the Agricultural Economics Research Institute (MTTL), support register of the Ministry of Agriculture and Forestry (MMM)

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 FIM 76 bill. (€ 12.8 bill.), which is a little under 11% of the GDP. The food bill accounts for about 23% of the consumer expenditure of households when alcoholic beverages and eating out are taken into account. The share of foodstuffs consumed at home in the consumer expenditure, excluding alcoholic beverages, is about 13%.

When the supports directly related to the food chain are taken into account, in addition to the total consumer expenditure, in recent years the total value of the money flows in the food sector have been almost FIM 85 bill. (€ 14.3 bill.). In this case the money flows in the food sector include agricultural and horticultural production, food processing, margins of trade, restaurant and catering services, VAT and support payments to the food chain.

Basic production

The operations of the food sector are based on agriculture. In recent year the gross value of the domestic agricultural and horticultural production has been about FIM 21 bill. (€ 3.5 bill.). The production is largely based on the use of production inputs purchased from outside the enterprises. Almost 70% of the total return, i.e. FIM 14 bill. (€ 2.3 bill.), is used for purchasing inputs manufactured in several other sectors.

In 1999 the value added produced by agriculture and horticulture to the Finnish national economy totalled about FIM 7 bill. (€ 1.2 bill.), which is 1.2% of the total GDP of all sectors. The share of agriculture in the GDP has been on the decrease, because production has grown more in sectors other than primary production. Despite the record high cereal yield in 2000 the GDP share of agriculture and horticulture did not rise in 2000, either.

Agriculture and horticulture are more and more closely linked to the industries processing agricultural and horticultural products. In recent years more than 80% of the output on agriculture and horticulture has gone 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.

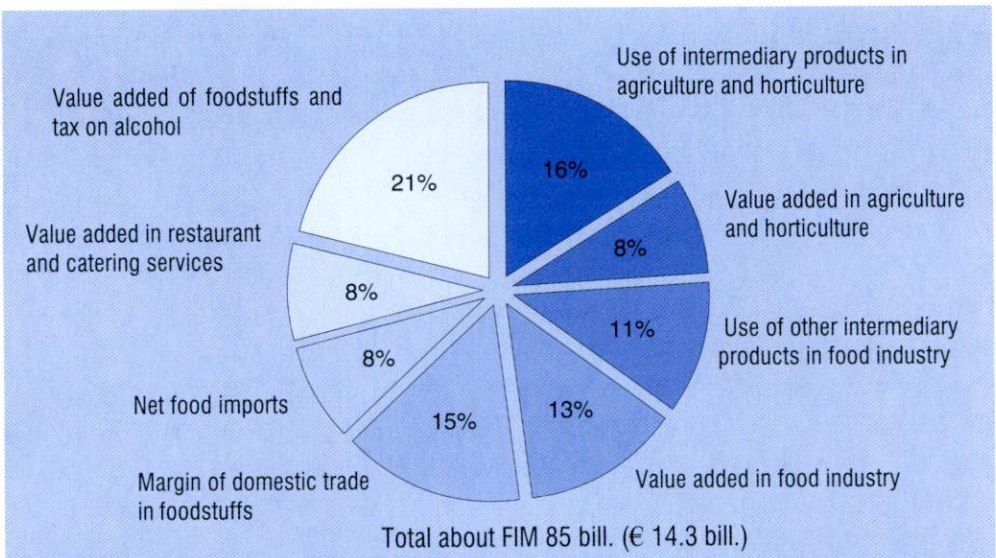
Food processing

In 1999 the gross value of food industry was almost FIM 49 bill. (€ 8.2 bill.), which is more than 9% of the gross value of all industrial production. Total production has grown in recent years, mainly due to the growing demand on the domestic market.

The value added produced by the food industry was FIM 11.5 bill. (€ 1.9 bill.), which is 1.8% of the value added produced in the whole national economy.

Measured by the value added of the production, food industry is the fourth largest industrial sector in Finland, after the metal, forest and chemical industries. The main food processing sectors are meat processing, bakery industry and dairy industry.

Finnish food processing industry still purchases most of its raw materials 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 logistic and image reasons. In the dairy and meat processing industries the share of domestic raw material is particularly high, and thus the link to the domestic basic production is very tight.



Estimated money flows in the Finnish food sector in 1999.

A prominent share of the dairy and meat processing industries belong to cooperative organisations, owned by agricultual producers.

Domestic trade in foodstuffs

The role of wholesale and retail trade is highly significant in the domestic food chain, besides primary production and the food industry. The functions of trade include the sale of purchased inputs to agriculture and horticulture and the food industry as well as selling the finished products to the final users. However, the domestic wholesale and retail trade is far less dependent on the domestic basic production than the food industry.

The share of wholesale and retail trade in the use of intermediary products in agriculture is 15%. In the use of intermediary products in the food industry the share of trade is smaller, because the industry purchases most of the raw material directly from the producers and other inputs from the other industrial sectors.

However, in the food expenditure of the consumers the share of wholesale and retail trade is considerable, totalling about FIM 13 bill. (€ 2.2 bill.).

The share of trade in the consumer price of food, including tax, has increased by a few percentage points in the past few years. In the case of meat and dairy products the share of trade has grown considerably in proportion to the sales prices of the food industry.

It is quite difficult to estimate the share of trade in the money flows of the food chain, because the statistics available do not distinguish the sale of foodstuffs from the sales of other perishable goods, and there are no accurate data on the margins of trade for the part of foodstuffs.

Relative to the domestic raw material production and food industry the position of trade in the food chain has strengthened as a result of the EU membership. The trade is able to take advantage of the competition between the domestic food companies and between the domestic companies and the foreign ones. In the retail trade there are no foreign competitors as the large foreign food trade chains have not yet entered the Finnish market.

Foreign trade in foodstuffs

Foreign trade occupies a significant position in the food chain, even if it does not constitute an independent actor in the chain. In the case of exports the main operators are processors and manufacturers of the products, while import is mainly carried out by the major wholesale chains.

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 needs. In 2000 the value of imports totalled FIM 12.1 bill. (€ 2.0 bill.) and that of exports FIM 4.9 bill. (€ 0.8 bill.).

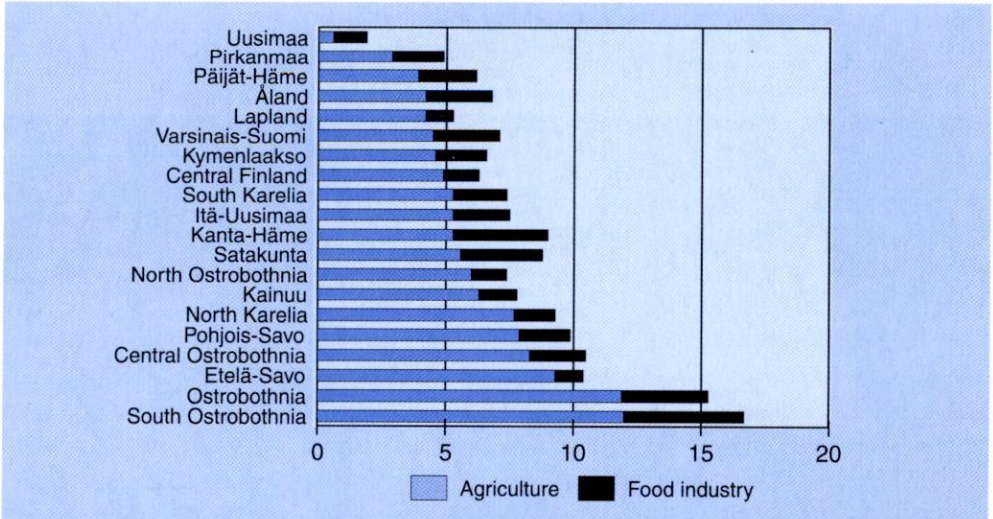
Part of the imports consist of primary products that cannot be produced in Finland or the domestic production volumes are not adequate. Part of the foreign trade is cross trading, i.e. the same products are exported and imported.

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 2000 the CAP support to the Finnish agriculture and horticulture totalled FIM 6.4 bill. (€ 1.1 bill.) and the total national support was about FIM 3.5 bill. (€ 0.6 bill.). At the same time, however, the State collects a value added tax of 17% on the staple foodstuffs, which is quite high compared to the EU average. The State revenue from the value added tax on food totals about FIM 11 bill. (€ 1.8 bill.) per year, and the excise taxes on alcoholic beverages collected each year amount to about FIM 7 bill. (€ 1.2 bill.).

Economic linkages in the food sector

The use of production inputs in agriculture and food processing industry as well as the multiplier impacts of these in the other sectors create a complex network of interdependencies between the different sectors of the national economy. Through these the impacts of changes in the different parts of the food chain (production,



Employment shares of agriculture and food industry (%) in different regions. Source: Alueellinen työssäkäyntitilasto (Regional employment statistics) 1999 (preliminary), Statistics Finland.

income and employment effects) are reflected in the whole national economy and regional economies. The magnitude of the impacts depends on the proportional share of the sectors in the regions concerned.

The effect of agriculture in the consumption is highly significant for maintaining various kinds of services in the rural areas, such as trade, traffic and public services. Similarly, a major part of the processing of agricultural products is linked to the local raw material production at the regional level, where the role of small food sector enterprises in the food chain may also be very important.

In rural areas a strong reduction in agricultural production, with its multiplier impacts, may lead to a recession cycle, resulting in a fall in both economic activity and the number of jobs. In a large, thinly populated country, where there are few alternative sources of income this is a threat to the vitality of certain regions.

The share of agriculture in the GDP is the highest in South and Central Ostrobothnia (7–8%) and the lowest in Uusimaa (0.2%). The GDP share of food industry is the highest in Kanta-Häme (7%) and South Ostrobothnia (5%).

Direct and indirect employment effects of the food chain

The food chain is also a very significant employer, both directly in agriculture and food industry and indirectly in sectors producing agricultural inputs as well as transportation and delivery services. According to calculations based on input-output studies, employment in the food sector corresponds to more than 300,000 annual working unit (AWU) when both the domestic use and export of food products are taken into account. This is about 13% of the total employed labour force.

In 2000 the number of people employed in agriculture was almost 118,000 persons, i.e. a little over 5% of the employed labour force. The number of people working in food processing industry is more than 40,000 and 150,000 people work elsewhere in the food sector.

The direct employment effect of food industry is smaller than that of agriculture, but due to the high share of raw materials in the costs the indirect employment effect is much greater. There is considerable regional variation in the impact of the food chain on employment.

Share of agriculture and food industry in the GDP (at basic price, FIM bill.).

Year	GDP Total FIM bill.	GDP Agriculture FIM bill.	GDP Food industry FIM bill.	Share in GDP Agriculture %	Share in GDP Food industry %
1999[e]	623,223	7,186	11,516	1.2	1.8
1998	595,275	7,191	12,040	1.2	2.0
1997	547,864	8,801	11,695	1.6	2.1
1996	509,727	8,982	12,074	1.8	2.4
1995	490,656	9,717	12,181	2.0	2.5
1994	455,234	13,176	12,170	2.9	2.7
1993	428,542	12,244	12,807	2.9	3.0
1992	422,368	11,234	12,217	2.7	2.9
1991	432,148	14,228	12,180	3.3	2.8

[e] *preliminary.*
Source: National Accounts 1991–1999, Statistics Finland.

1.2. Rural enterprises

About a third of the Finnish population live in rural areas. In this connection postal code areas where the population density is less than 50 persons/km^2 are defined as rural. Thus in Finland the rural areas and economic activities are highly significant for the whole national economy. The concept "rural area" can be defined in a number of ways, depending on the perspective.

Enterprises practising rural industries can be divided into three groups: farms engaged in basic agricultural production, rural enterprises and pluriactive farms. In the case of basic agricultural production, farms are engaged in the traditional forms of agriculture, forestry and, possibly, small-scale special agriculture. Special agriculture may be e.g. horticulture, fur farming and aquaculture as well as small-scale processing connected to the primary production. Small enterprises located in rural areas are called rural enterprises. Pluriactive farms practise both agriculture and small-scale entrepreneurial activity.

Small enterprises refer to companies with the turnover of at least FIM 49,000 (€ 8,200) but no more than 20 employees. According to this classification, small-scale entrepreneurial activity of farms includes both the processing of the farm products and entrepreneurial activity that is not linked to farming. However, if the small-scale business activity is taxed according to the Income Tax Act of Agriculture, the information on this is not included in the Statistics Finland's Business Register, which contain data on activities subject to the Act on Business Tax only. It is estimated that the total number of enterprises subject to the Income Tax Act of Agriculture and Act on Business Tax is three times the number of small enterprises operating on farms included in the Register.

Agriculture, often combined with forestry, is by far the most important rural industry. Agricultural production is expected to stay at about the same level in the next few years due to the growth in the productivity, while the number of farms and people engaged in agriculture will continue to fall. In 1980 the share of agriculture in the employed labour force was 11%, i.e. 251,000 persons. In 2000 the number of people employed in agriculture was 118,000, and the share of agriculture in the employed labour force was 5.1%. In 1990–2000 the number of active farms fell from a little over 129,100 farms to less than 78,000 farms. During this period of time the total turnover of agriculture, including support, fell from FIM 27.5 bill. to 22.3 bill. A more detailed account of the main characteristics and structure of Finnish agriculture is presented in Chapter 1.3.

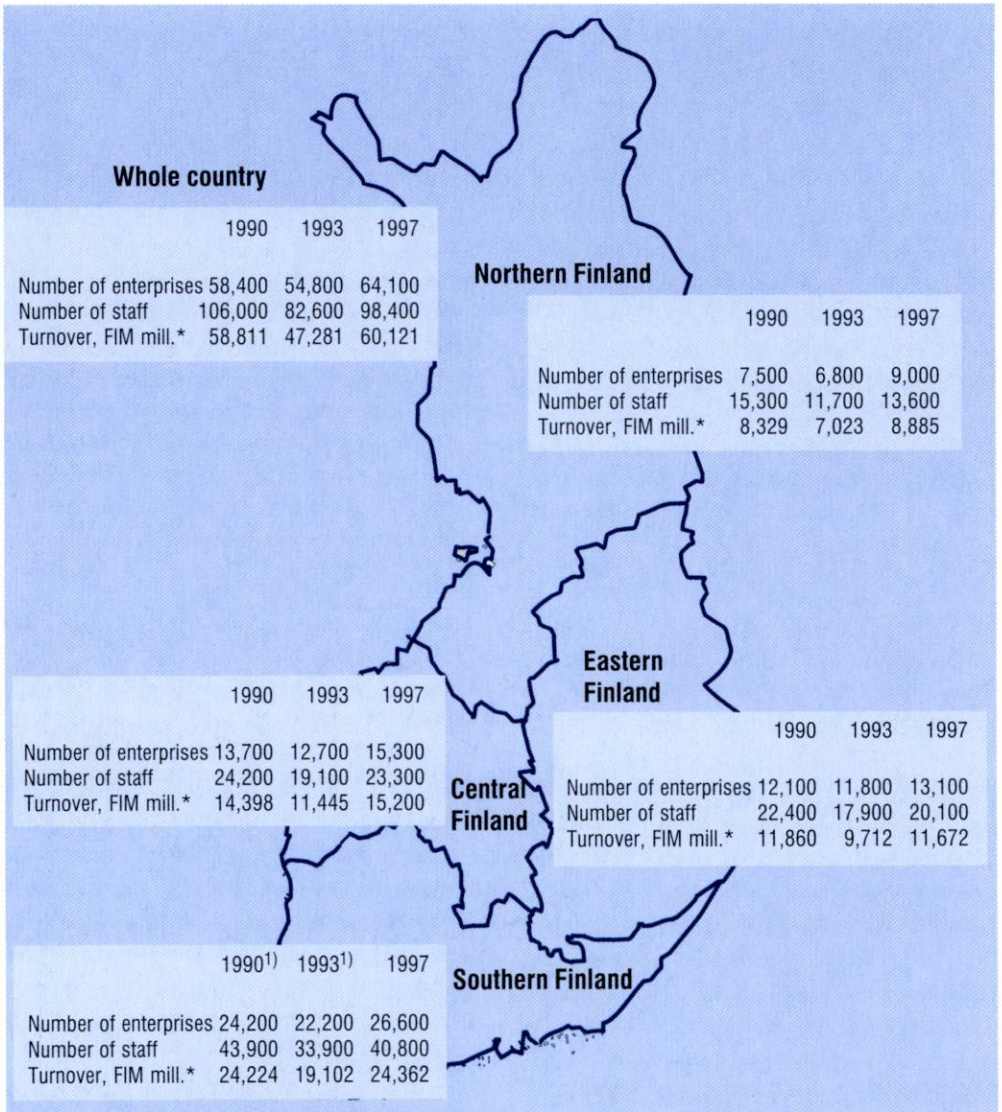
In 1997 about 30%, i.e. 64,100, of small enterprises included in the Statistics Finland's Business Register were located in the rural areas. Most of these, 56,700, were rural enterprises and the number of pluriactive farms was about 7,400. The total turnover of small rural enterprises was FIM 60.1 bill. and the number of staff (entrepreneurs + employees) totalled about 98,400. Enterprises located in rural regions are relatively small, and the average number of staff is 1.5, while enterprises of about the same size operating in population centres employ, on average, 1.9 persons. In proportion to the population the number of enterprises was the greatest in Ostrobothnia (coastal regions near Vaasa), Åland and Uusimaa.

The number of small rural enterprises and structural development in different types of rural areas follows quite closely the general trends in the economy. In the remote rural areas the growth has been slower in terms of the number of both enterprises and staff as well as turnover, but there has been some growth. In all types of rural areas there were more enterprises in 1997 than in 1990.

Most of the small rural enterprises operate in traditional sectors. For example, the share of rural enterprises in all food processing enterprises in Finland is 47%, while

only a marginal share of high technology companies are located in rural areas. The share of activities linked to primary production has increased slightly, and the most important lines of business are machine contracting, tourism and recreation services and special agriculture. The most important lines of business that are not connected to primary production are road transportation, wholesale and retail trade and building.

Measured by the number of enterprises, the most rapidly growing lines of business linked to primary production were e.g. special agriculture, tourism and recreation services, food processing, wholesale and



*Turnover given at 1997 prices (wholesale index used as the deflator).
[1]The figures for Åland are not available in 1990 and 1993.

Regional distribution of small rural enterprises (Main regions of Uusimaa and Åland according to NUTS 2 have been included in Southern Finland). Sources: Statistics Finland and Agricultural Economics Research Institute.

retail trade in farm products and machine contracting. The proportional share of enterprises has grown, in particular, in private health care and social services, while the retail trade in perishables has decreased by a fifth.

There are no major differences in the estimates concerning the threats and opportunities due to the operating environment between enterprises operating in the same line of business in different types of rural areas – remote rural areas, rural heartland areas or urban-adjacent rural areas. The majority of rural entrepreneurs in all rural areas share the same problem: enterprises suffer from a shortage of skilled labour.

On average, every tenth of the farms that applied for support in 1998 had a small enterprise included in the Statistics Finland's Business Register. The total number of such pluriactive farms was 7,400. The turnover of small enterprises operating on farms totalled FIM 3.1 bill. and they employed 6,500 persons. Small enterprises operating on farms are in general smaller than other small rural enterprises. The share of enterprises on farms was 12% of all enterprises located in rural areas, but their turnover was only 5% and number of staff 7% of those of all rural enterprises. On average, a small enterprise operating on a farm employed 0.9 persons.

The decision to diversify the farm activities to fields other than agriculture was often linked to the transfer of a farm to a descendant as the young farmer starts a new kind of entrepreneurial activity or, in some cases, takes over a family business. New business activities are seldom based on purchased companies. Almost half of the pluriactive farms operate in sectors that are linked to primary production. The most common lines of business are machine contracting, special agriculture (e.g. horticulture and fur farming) as well as wood processing. The most common lines of business not linked to primary production are building and road transportation.

There is a lot of entrepreneurial activity subject to the Act on Income Tax of Agriculture on farms, which is not included in the figures on small enterprises presented above. In 2000 about 25% of the farms

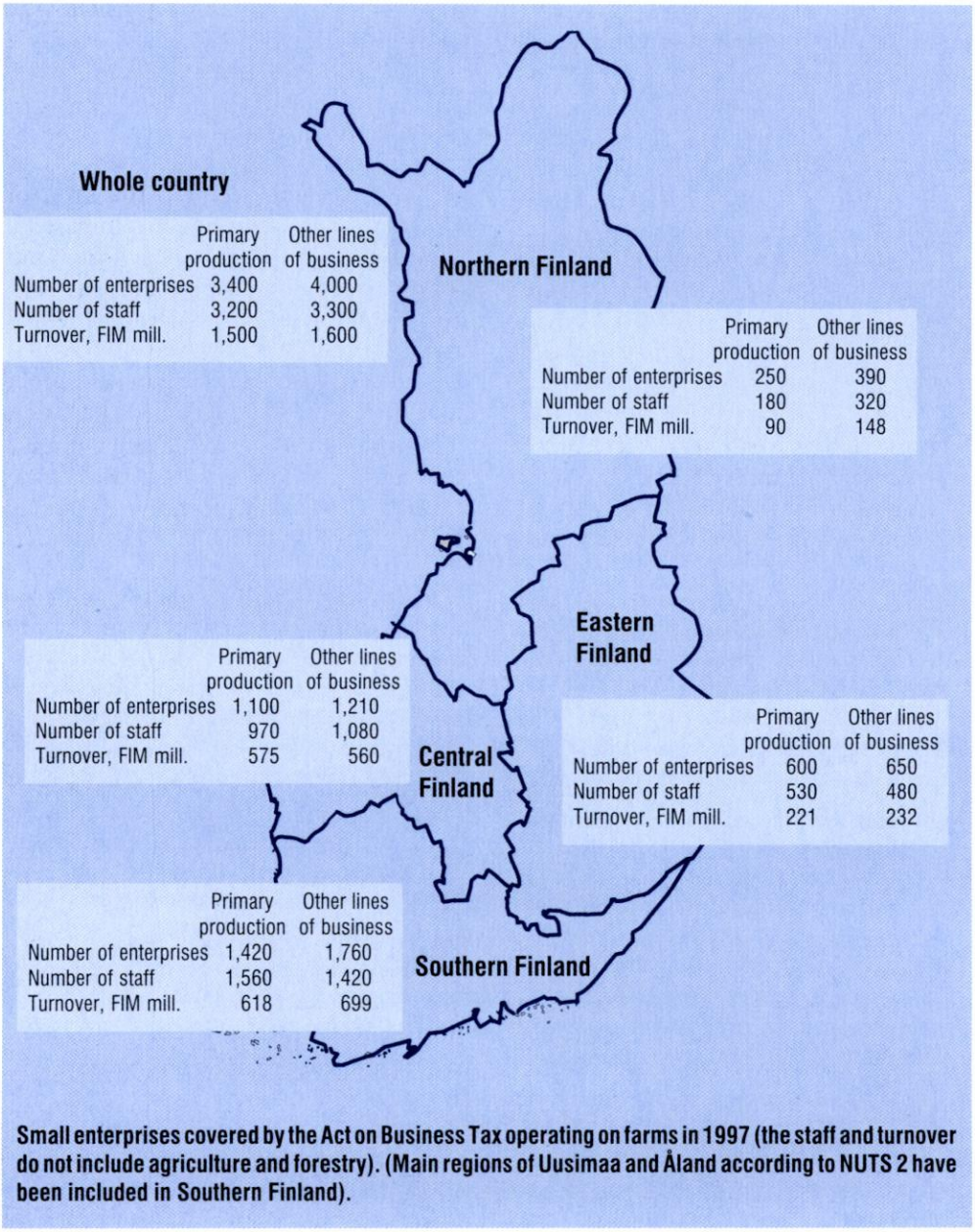
Small rural enterprises according to line of business in 1993 and 1997 (including both pluriactive farm enterprises and other small rural enterprises).

Line of business	Number of small enterprises		Turnover[1)], FIM mill.		Number of staff	
	1993	1997	1993	1997	1993	1997
Total	54,700	64,100	47,281	60,120	82,600	98,400
Lines of business linked to primary production	13,500	17,200	11,388	15,324	21,300	25,700
Agriculture, special agriculture, fishing industry	2,300	3,500	1,680	2,282	3,300	4,700
Food processing	800	900	1,116	1,448	2,000	2,000
Processing of wool and furs	80	60	45	41	100	100
Tourism	2,800	3,300	2,046	2,215	4,700	5,200
Wholesale and retail trade in farm products	700	900	2,258	2,678	1,100	1,100
Agricultural and forestry services	400	400	28	38	1,700	1,300
Manufacturing of timber and wood products	1,700	2,000	1,516	2,269	3,200	3,400
Machine contracting	3,900	5,100	2,229	3,644	4,300	6,400
Lifting of peat	800	1,000	471	709	800	1,400
Other lines of business	41,200	46,900	38,893	44,796	61,300	72,700

[1)]Turnover given at 1997 prices (wholesale index used as the deflator).

included in the profitability bookkeeping reported small-scale entrepreneurial activities, and almost 80% of these activities were subject to the Act on Income Tax of Agriculture. The most common lines of business were machine contracting, rural tourism, food processing as well as manufacturing of timber and wood products. Some information on the most important rural industries is given below, while Chapter 1.3 describes the structure of agriculture.

There are about 2,000 enterprises offering rural holiday services in Finland. In 1998 the number of people who used the services of rural holiday enterprises was estimated at 670,000, and the employment effect was about 2,000 AWU.



Small enterprises covered by the Act on Business Tax operating on farms in 1997 (the staff and turnover do not include agriculture and forestry). (Main regions of Uusimaa and Åland according to NUTS 2 have been included in Southern Finland).

Fur farming is practised both on farms and as an industry of its own. In 2000 the number of fur farms was about 2,000. Four out of five fur farms are located in the Province of Western Finland. In terms of numbers the most important fur animals are blue fox and mink, but silver fox, finraccoon and fitchew are also raised.

According to the Association of Fur Farmers, fur farming employs 6,000–7,000 persons, and when the indirect employment effect is taken into account the number of people employed in fur industry rises to 10,000 people. 98% of fur production is exported, mainly to Russia, China, Italy, Greece and South Korea. Finland is the leading producer of fox pelts, with a market share of about 60%, and the Finnish fur farmers are highly competitive on the world market. After the early 1990s there has been a boom in fur industry and the export income has been about FIM 1.5 bill. (€ 250 mill.) per year.

At the end of 1999 there were 3,800 professional fishermen in Finland, and 40% of these practised their trade full-time. According to estimates of the Game and Fisheries Research Institute, the total catch of professional fishing from the sea was about 107 million kg and the value of this was FIM 134 mill. (€ 22.5 mill.) in 1999. The catch of professional fishing from inland waters in 1998 totalled 4.6 mill. kg, and the value of this was FIM 34 mill. (€ 5.7 mill.). Aquaculture produced 16 million kg fish for human consumption, most of this rainbow trout, and the value of this was FIM 263 mill. (€ 44.2 mill.). Fish processing and trade employ about 1,200 persons and aquaculture about 2000. The exports of fish for human consumption totalled 21 mill. kg (value € 20 mill.) and 35 mill. kg of fish and fish products were imported (€ 100 mill.).

In the reindeer herding year 1999/2000 reindeer husbandry was the main source of livelihood for 680 households in Lapland, and full-time reindeer producers own about 81% of the reindeer. About 840 households practised reindeer husbandry as a secondary occupation. In the 1999/2000 the number of reindeer totalled 195,800. Each year 100,000–125,000 reindeer are slaughtered, more than 70% of these calves. Meat production totalled about 2.1 million kg and the value of this was about FIM 69 million (€ 11.6 mill.). 830,000 kg of reindeer meat was exported, 413,000 kg of this to Norway. Other important countries for reindeer meat exports are Germany and Sweden.

1.3. Finnish farm

The area of Finland is 338,100 km^2, of which 8% (27,500 km^2) is agricultural land. 68% of the area of Finland is forest and other area covered by trees, 3% is constructed area, 11% is open land and 10% is under inland waters. Finland is located between the 60th and 70th parallels. From south to north Finland is almost 1,100 km long, which means that the differences in the climatic conditions are considerable. The length of the thermal growing season, i.e. the season in which the average temperature during the day is over +5°C, varies from a little less than 6 months in the south to 2–3 months in the north. In Southern Finland the growing season begins in late April and continues until mid-October. The effective temperature sum varies between 500 and 1,300°C. The average precipitation during the summer months is 180–220 mm.

In Central Europe the growing season is 260 and in Southern Europe 300 days, which means that the varieties cultivated in these areas are not capable of producing a yield during the growing season of less than 170 days. It has been necessary to breed varieties of arable crops suited to the northern conditions, which utilise the short growing period with a lot of light to the maximum and are highly resistant to frost. Due to the short growing season the varieties cultivated in Finland do not produce as high yields as the varieties used in Central and Southern Europe, and another factor

affecting the yields is the long winter, which restricts the cultivation of winter cereals in Finland.

The differences in the amount of daylight balance the growing conditions in the different parts of the country to some extent. During the summer months the time of daylight is longer in Central and Northern Finland than in the south. However, the location of crop production is largely determined by the climatic conditions. Bread cereals and oil-seed crops are cultivated in Southern Finland only, while fodder cereals, grass fodder crops and potatoes can be cultivated in the whole country, except for the very northernmost parts.

In 2000 the area under cultivation and set-aside in Finland totalled 2.18 mill. ha, and the share of the set-aside area was 0.18 mill. ha. Oats and barley account for about a half of the area under arable crops, and the share of grass fodder crops is about a third. In recent years the area under bread cereals, i.e. rye and wheat, has been 5–10% of the cultivated area and the shares of oil-seed crops, potatoes and sugar beets have been 2–3% each.

The geographical location of the different production lines has been determined by the climatic conditions as well agricultural policy. Most of the crop producing farms are located in Southern Finland, while cattle farms are mainly located in the central, eastern and northern parts of the country. Pig and poultry husbandry is concentrated to the western and southern parts of Finland. The climate and the location of cattle husbandry are clearly reflected in the distribution of the use of arable land in different parts of the country. In 2000 about a fifth of the area under arable crops in Southern Finland was under grass and 18% of the area was under bread cereals. In the other parts of the country the share of grass is about 60% and less than 1% is under bread cereals. In the Province of Lapland the share of the grass area is as high as 90%.

When discussing the number of farms there are three different concepts to be considered: farms, active farms and farms receiving agricultural support. Farm refers to a unit that possesses at least 1 ha of arable land. Active farms are farms with more than 1 ha arable land that practise agriculture or other entrepreneurial activity. However, farms receiving agricultural support constitute a very important category, because income support accounts for a major share of farmers' income, and almost all farms practising agricultural production receive support. These groups of farms may be further delimited on the basis of the arable area they cultivate or possess, for example, into farms with more than 3 or 5 ha of arable land. This results in a number of different figures, each of them describing the farm structure quite correctly, but from a slightly different perspective.

Number of farms receiving agricultural support in 1995–2000.

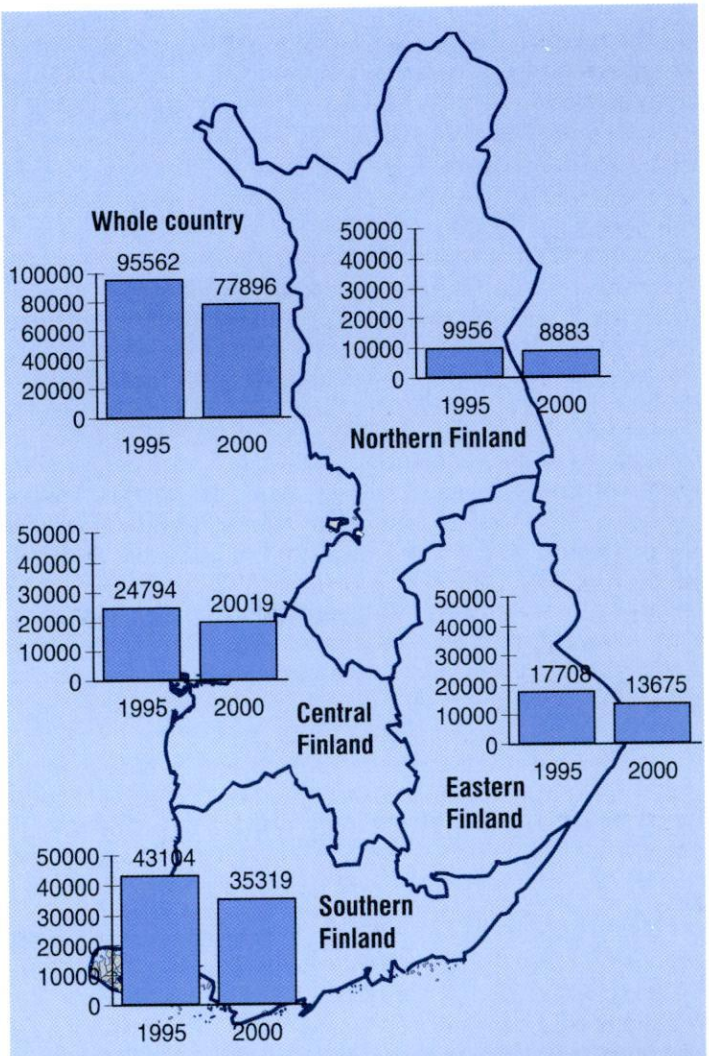
	1995	1996	1997	1998	1999	2000
Whole country	95,562	91,281	88,370	85,690	82,142	77,896
Southern Finland[1)]	43,104	41,351	39,998	38,623	37,037	35,319
Eastern Finland	17,708	16,652	16,067	15,446	14,658	13,675
Central Finland	24,794	23,694	22,914	22,072	21,108	20,019
Northern Finland	9,956	9,584	9,391	9,549	9,339	8,883

[1)]Main regions of Uusimaa and Åland according to NUTS 2 have been included in Southern Finland.
Source: Support register of the Ministry of Agriculture and Forestry/Information Centre.

In the following paragraphs the changes in the number of farms and farm structure are examined based on the farms receiving agricultural support, because there is more recent data available on these than on active farms. In other respects these two categories do not differ from each other in any essential way. The data on the structure of all farms describe the ownership of the farms rather than the production structure, and the statistics on these suffer from the same time lag as the data on all farms.

In 2000 the total number of producing farms that received income support was 77,896. During the EU membership 1995–2000, from which statistics on farms receiving support are available the number of farms fell from 95,562 by 17,666 farms. The number of farms has fallen at a rate of 3–5% per year by altogether 18%. Proportionally the decrease has been the greatest in Eastern Finland (23%) and the smallest in Northern Finland (11%), while in Central and Southern Finland the number of farms has fallen at about the same rate (19% and 18%, respectively).

While the number of farms is decreasing rapidly, the average farm size is on the increase. In 1995–2000 the average size of farms receiving agricultural support grew from 22.8 ha of arable land to 28.3 ha. The annual growth in the average farm size has increased from a little over 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 farm size class of 30–50 ha seems to have become an important watershed, where the number of farms has stayed about the same. The number of farms smaller than this is falling, while the number of larger farms is on the increase. However, the share of small farms is still considerable



Number of farms receiving agricultural support in 1995 and 2000 (main regions of Uusimaa and Åland according to NUTS 2 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 2000.

	Southern Finland[1)]		Eastern Finland		Central Finland		Northern Finland		Whole country			
	Number of farms	%	Number of farms	%	Number of farms	%	Number of farms	%	1995 Number of farms	%	2000 Number of farms	%
Arable area												
<10 ha	6,635	19	3,152	23	4,151	21	1,776	21	22,850	24	15,714	20
10–20 ha	8,548	24	4,048	30	5,543	28	1,956	23	30,698	32	20,095	26
20–30 ha	6,397	18	2,704	20	4,091	21	1,529	18	19,669	21	14,721	19
30–50 ha	7,197	20	2,527	19	3,997	20	1,891	23	15,414	16	15,612	20
50–100 ha	5,187	15	1,060	8	1,911	10	1,076	13	5,706	6	9,234	12
>100 ha	1,210	3	87	1	227	1	138	2	784	1	1,662	2
Number of farms	35,319		13,675		20,019		8,883		95,562		77,896	
Average arable area, ha/farm	31.79		23.66		25.77		26.96		22.77		28.26	

[1)]Main regions of Uusimaa and Åland according to NUTS 2 have been included in Southern Finland.

in Finland, and the share very large farms of more than 100 ha is still very small. The speed of the structural change is reflected in the changes in the proportional share of the different size classes: in the past six years the share of farms with less than 20 ha has fallen from 56% to 46% and the share of farms with more than 50 ha has doubled from 7% to 14%.

The increase in the cultivated area has mainly occurred through leasing rather than purchasing additional land. In 2000 690,000 ha, i.e. almost a third of the total cultivated arable area of farms receiving agricultural support, 2.20 mill. ha, was leased.

About half of the farms receiving agricultural support practise crop production as their main production line. Most of these produce cereals (72%), a little over a fifth (22%) cultivate other crops and the rest (6%) practise horticulture. Dairy production was the main production line on almost 30% of the farms. About 7% of the farms specialised in beef production and 6% in pig husbandry. 30% of the pig farms specialised in raising finishing pigs, 31% in combined production and 39% in piglet production. The shares of both poultry and organic farms were around 2%. Of the poultry farms 74% specialised in egg production, 13% in poultry meat production, and 13% in breeding. About 2% of the farms practise horse husbandry, and the shares of sheep husbandry, forestry and reindeer herding are about 1% each.

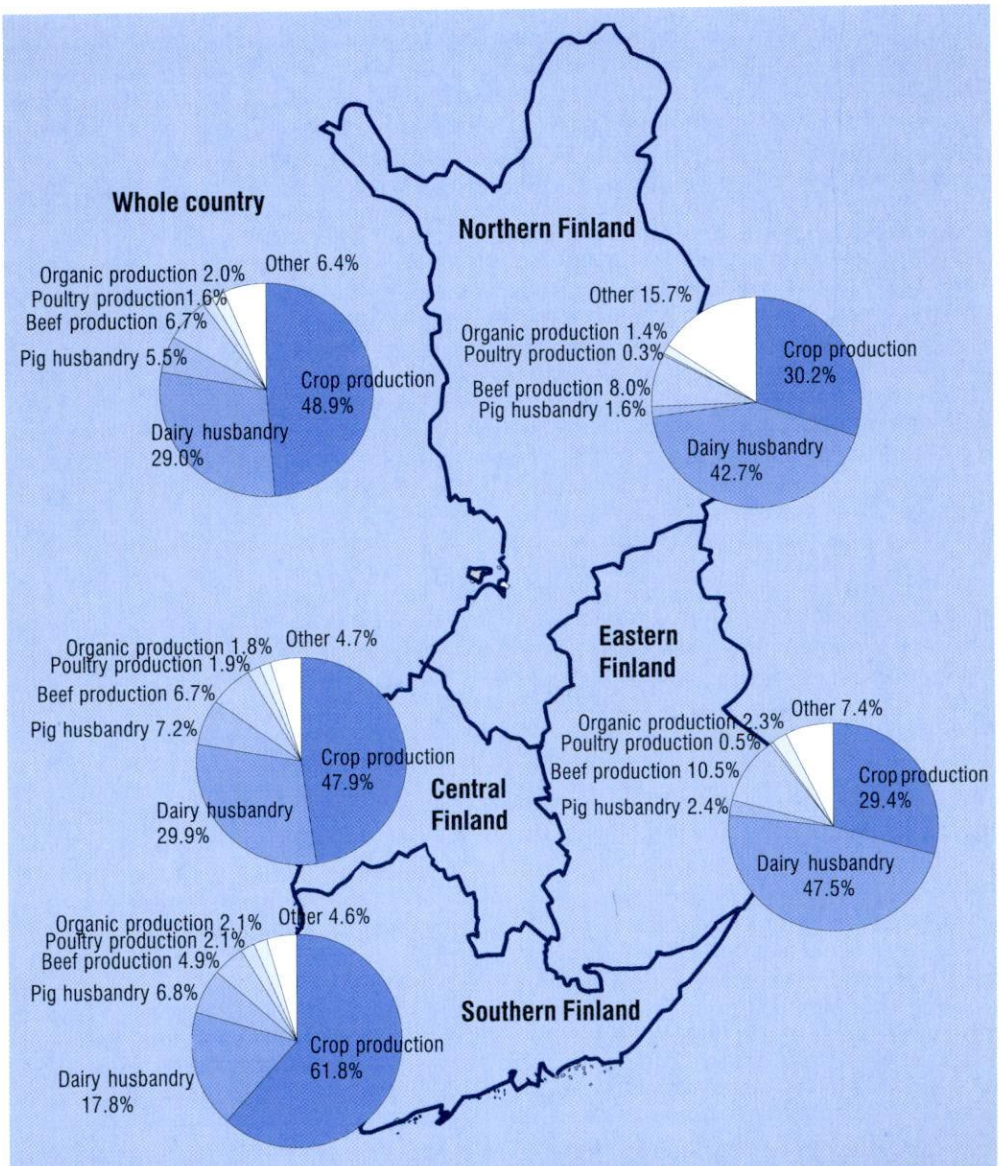
Finnish agriculture is based on family farms. 88% of farms receiving support are privately owned and 11% are owned by heirs and family companies. Cooperatives, coalitions and limited companies own 0.5% of the farms and 0.1% are owned by the state, municipalities and parishes. The average age of farmers was 48 years.

According to the statistics on the credit portfolio, in autumn 2000 the debts of agricultural entrepreneurs totalled about FIM 22 billion (€ 3.7 bill.). The debt is quite unevenly distributed among the farms. Almost 30% of the farms have no debt, and three quarters of the debts are concentrated to the 20% of farms with the highest debt. Farms with no debt are usually quite small and owned by elderly farmers.

On Finnish farms the machine capacity of arable farming is relatively high in proportion to the average cultivated area. Besides the small farm size, the need for high machine capacity is due to the short growing season and uncertain cultivation conditions. Cooperation in the use of machinery between farms has increased in recent years

despite the difficulties caused by the short optimal harvesting period and long distances between farms. One reason for the increased cooperation is investment aid to agriculture, which is directed, among other things, at joint investments of farms.

Forest is an integral part of the Finnish farm, and only 5% of active farms have no forest. Of the forest area in Finland 62% is privately owned, the state owns 25%, companies 9% and other owner groups 5%. Most of the state forests are located in Northern Finland, where the forests are less productive than in the south. The share of privately owned forests of the growth in the standing crop is 72%. In 1998 the average forest area of active farms was 46 ha.



Distribution of farms receiving agricultural support according to production line in 2000 (main regions of Uusimaa and Åland according to NUTS 2 have been included in Southern Finland). Source: Support register of the Ministry of Agriculture and Forestry/Information Centre.

Future prospects of Finnish agriculture

Hilkka Vihinen and Ilkka P. Laurila

Today a wide range of different interests are directed at agriculture, many of these not directly related to food production. Agriculture must constitute a sustainable part of the society and respond to its needs. This article maps out the different recognisable trends which form the basis for outlining alternative states of agriculture corresponding to the future needs of the society.

Non-material product properties (quality, production method, safety of foodstuffs) receive more and more weight in consumer decisions. The consumers desire more highly processed products differentiated in terms of their origin, properties and production practices. It is important to secure the central position of raw material in the value chains created by means of product development and marketing.

The global food markets are growing at the expense of the national markets. However, there is also room for alternative food systems, such as organic or local food markets, where the control of the production chain and winning the consumer confidence is easier than on the global market.

The EU membership was a change from agricultural support paid by the consumers to support funded by the taxpayers. Direct payments are more transparent and dependent on politics than price support. In the future the ecological, social, cultural and economic sustainability will receive increasing emphasis in the policy. The public goods produced as externalities of agriculture (attractive environments, animal welfare, biodiversity, cultural landscapes, viable rural areas and food safety) have no market price, but they are included in political decision making.

Biotechnology and other new technologies provide new production methods which improve the productivity, while the wishes and opinions of the society concerning the acceptability of the production practices influence their utilization. The relationship between humans and the bioprocesses is changing. Artificiality, technicality and manipulation are considered more and more acceptable. Yet, there is also demand for natural, authentic, pure and honest production practices – for the principle of sustainability in the broad sense. The objectives and guidance of the agricultural and food sector are also influenced by global processes, such as the WTO negotiations, measures to preserve biodiversity, slow down the climate change and promote sustainable development, as well as the world food situation.

Alternative futures of agriculture

The trends presented above enable outlining alternative visions of the future agriculture that will respond to the wishes of the society. The alternatives may exist simultaneously. The futures have been constructed on two dimension. The vertical dimension describes the choices made by the society in terms of the use of the "green area". Agriculture may be either as independent as possible of the surface area or part of the pluriactive and multifunctional use of the "green area". The horizontal axis describes the relationship of the society to biological processes. One extreme represents the efforts to gain a full control over these processes while the other stands for agriculture which is adjusted to them.

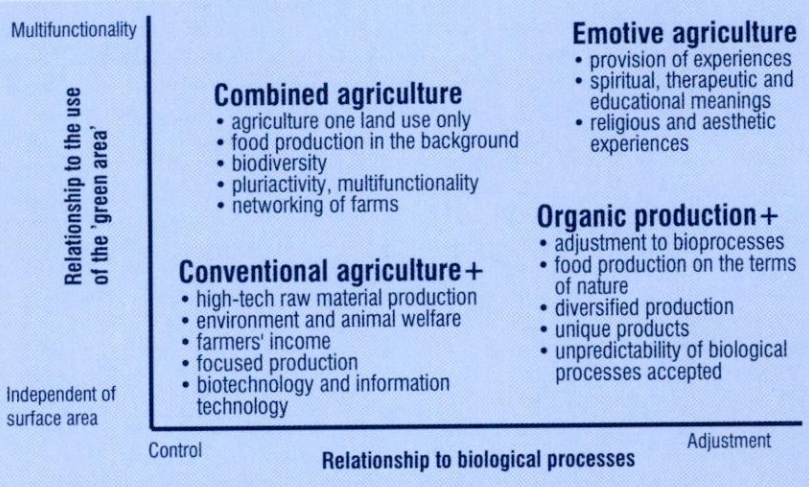
Conventional agriculture+ has evolved on the basis of the current agriculture. Biotechnology and information technology are used to produce low-priced, standardised raw materials for the food industry and other sectors by means of full control over the bioprocesses. Animal welfare and the production, environmental and health risks are controlled by means of technologies, without neglecting the profitability and farmers' income. The production is consumer-oriented, and the objective is to produce exactly the desired raw materials in appropriate quantities at the right time, taking full advantage of all the materials produced.

Organic production+ has been developed from the current organic farming. Food production is the main objective of agriculture, but this is adjusted to the natural processes and conditions. Production is tied to the surface area and diversified. The value of the products is based on their uniqueness and nonmaterial properties. The unpredictability involved in biological processes is accepted.

In combined agriculture, or *combined land*, agriculture and food production constitute one of the many activities in the "green area", together with e.g. recreation services and wildlife management. The land is cultivated and livestock is reared with special emphasis on restoring biodiversity, such as natural meadows and wetlands. What is essential is the combination of different production activities on the farm as well as networking and cooperation, which reinforces the pluriactivity of farms and the rural areas and multifunctionality of agriculture.

Farming based on personal experience (emotive agriculture) highlights the need for the "green area" to provide special experiences to the members of the society. Thus the society takes advantage of the spiritual, therapeutic and educational aspects of farming and the care of nature and animals. Cultivation and farms may also be a source of religious or aesthetic experiences. This type of farming gets the furthest away from the objective of food production, offering surprises, spontaneity, beauty and meanings related to existence.

There are already farms representing all these four types in Finland. What is decisive is the kind of agriculture we want, and the ways to achieve this. The agricultural sector should seriously consider the necessary measures to respond to the trends of the society – now and in the future.



Future of agriculture (modified from Ketelaar-de Lauwere et al. 2000, 16).

2. MARKET SURVEY

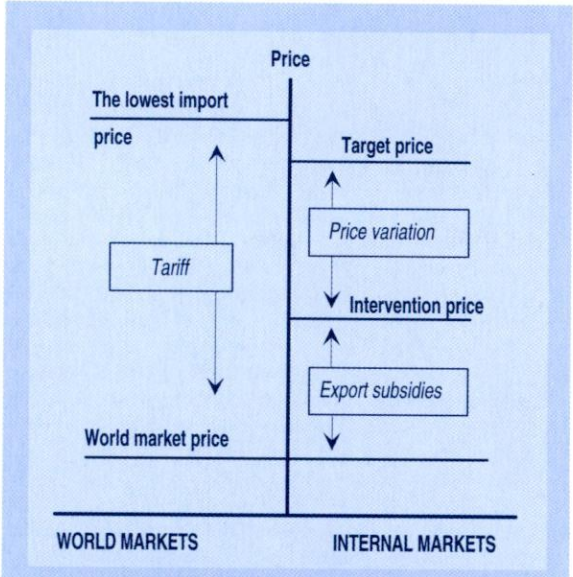
2.1. Market organisation

The common organisation of the market is an important means for reaching the objectives of the common agricultural policy of the EU (CAP). The organisation of the market includes, among other things, intervention, i.e. national storage, in order to balance the disparities and timing between the supply and demand. Another objective of the intervention activity is to maintain the price level on the single market and through this to influence the income level of the producers. The market organisation covers 19 agricultural products or product groups, whose institutional prices are decided annually by the Commission and the Member States. The common organisation of the market in milk and sugar also includes quota systems restricting the production, i.e. price support is paid only for a certain production quantity established for each farm.

The market organisation consists of institutional prices, border controls, export subsidies and storage of surpluses. The prices on the single market are kept above a certain level by means of public intervention purchases as well as import levies, through which the prices of products coming from outside the EU are raised to the level prevailing on the single market, and exports are subsidised. The common organisation of the market is financed from the Guarantee Section of the European Agricultural Guidance and Guarantee Fund (EAGGF).

Institutional prices play the central role in the organisation of the EU market. The Council of Ministers ratifies the prices annually on the submission of the Commission, and these stay in force for a market year, which in the case of the most important products is from July till June (the market year for sheepmeat starts from the first Monday of each year). Institutional price is, however, not a guarantee price, but a theoretical price that influences the decisions concerning the export subsidies and intervention actions. The factors influencing the price level set as the target include e.g. income development of producers, overall cost development, market situation and financial situation of the Community.

Different titles are used for the institutional prices of the different products, but the principle is the same. Intervention price is applied for cereals (except oats) and beef. A target price is set for milk, and to realise this intervention prices are set for butter and skimmed milk powder. National intervention bodies are obliged to purchase all products offered at this price, provided that certain quality requirements are fulfilled. Intervention purchases of beef are launched if the market price is clearly below the intervention price. Intervention purchases may also be discontinued should this be considered appropriate due to the market situation. Private storage is also



The price system of the EU.

supported. In the case of pigmeat and sheepmeat a basic price is applied, but the prices fluctuate according to the market, and in practice the basic price has no effect on the price formation.

As a result of the CAP reform of 1992 the institutional prices for cereals and beef were lowered closer to the world prices. The producers were compensated for the reduction by means of direct support, and thus these have gained a central position in the organisation of the prices and markets. According to the Agenda 2000 reform approved at the European Council in Berlin in March 1999, the reduction of the institutional prices will be continued and extended to the dairy products, too. This increases the significance of the support based on the area or number of animals. The decisions of Agenda 2000 provide the outlines for the common agricultural policy until 2006.

Prices based on Agenda 2000

The prices and support based on Agenda 2000 were applied for the first time during the year 2000. The most important reform concerned the reduction of the institutional prices for cereals, beef and milk.

The intervention price for cereals falls by altogether 15% in two equal amounts. The first 7.5% cut was made in July 2000 and the second will be made in July 2001. Thus the intervention price for cereals will decrease from € 119.19/ton to € 101.31/ton. The share of set-aside during the whole period is 10%, and it was agreed that for the part of arable crops a mid-term review will be made in 2002.

The market support price of beef will be lowered by altogether 20% in three equal amounts. According to the new Regulation, from 1 July 2002 the intervention price for beef will be replaced by a basic price for private storage. Support for private storage may be granted – as in the pigmeat sector – when the average of the market prices in the Community is less than 103% of the basic price. In July 2002 the basic price for beef will be € 2,224/ton, which is 20% lower than the trigger price for intervention in 1999/2000 (€ 2,780/ton). If the support for private storage does not prove adequate for stabilising the beef prices, an intervention system may be used as a safety net. Purchases of beef to the intervention stocks of the EU are launched if the average market price of bulls or oxen falls to the trigger level for intervention. In July 2002 this level will decrease to € 1,560/ton, which is 44% lower than the trigger level for intervention purchases in the marketing year 1999/2000.

The reform of the milk and dairy regime will be implemented from the market year 2005/2006. The intervention prices for butter and skimmed milk powder will be cut by altogether 15% in three stages. Milk quotas will be continued until 2008. A mid-term assessment of the situation will

Institutional prices for the market year 2000/2001 and 2001/2002, €/kg.

	2000/2001	2001/2002
Cereals		
- intervention price	110.25	101.31
- monthly raise	1.00	0.93
Sugar		
- basic price for sugar beet	47.67	47.67
- intervention price for white sugar	631.90	631.90
Milk		
- target price	309.80	309.80
Butter		
- intervention price	3,282.00	3,282.00
Skimmed milk powder		
- intervention price	2,055.20	2,055.20
Beef		
- support price (R3)	2,595.00	2,409.00
Pigmeat		
- basic price	1,509.39	1,509.39
Sheepmeat		
- basic price	5,040.70	5,040.70

be made in 2003 based on a Commission report, when the decision on milk quotas after 2008 will also be made.

Organisation of the market in 2000

The organisation of the market concerning e.g. the institutional prices and set-aside percentages is decided in the annual price package of the Agriculture Council. After Agenda 2000, however, this concerns relatively few products, i.e. the price package comprises only the prices for sheepmeat, pigmeat and sugar as well as the monthly raises in the intervention prices for cereals and rice. The prices applied in 2000 were the same as in the previous marketing year. In addition to the price package, the Agriculture Council made decisions concerning the new labelling system for beef, reform of the fibre crop scheme and revision of the support scheme for school milk.

The new labelling system for beef will enter into force in two stages, because in many of the Member States the identification and registration systems for animals are not adequate for tracing the origin of the meat. Thus during the first stage starting 1 September 2000 the labels have to contain only certain types of information available at slaughter. The labelling according to the second stage will become effective 1 January 2002, when all beef on the EU markets must be labelled to show the country of origin. In Finland it is already mandatory to indicate the origin of beef.

The support systems for fibre flax and hemp were revised so that the support levels were harmonised with those of cereals, and enterprises processing fibre will be eligible for processing support based on the quantities. Processing support is based on quotas set according to the earlier production volumes in each Member State. The demand presented by Finland to extend the special support for arable crops (drying support) to fibre flax, oil flax and hemp was approved, which will guarantee the equal treatment of fibre crops and cereals in Finland.

The revision of the support scheme for school milk was in accordance with the wishes expressed by Finland as both skimmed milk and butter milk were included in the support scheme from 1 January 2001. Finland had been striving to include skimmed milk into the scheme during the whole EU membership. In the future the EU support will be 75% of the target price for milk instead of the earlier 95%. Each Member State may decide whether they wish to pay the difference. Finland is not going to do this, because unlike in many other Member States the State supports school meals in any case.

Future market arrangements

During 2000 the Agriculture Council also discussed the revision of the organisation of the market in fruits and vegetables, reform of the organisation of the market for rice and sugar, promoting the EU label for organic products as well as the upcoming round of WTO negotiations.

In the discussions concerning the organisation of the fruit and vegetable market the southern producer states proposed that the support and processing quotas for the sector should be increased, while the northern Member States considered it important not to increase the expenditure on this sector. However, the majority of the Member States were willing to raise the financial assistance to the operational funds of producer organisations more than the Commission had proposed.

All Member States considered a rapid reform of the market organisation for rice necessary in order to restore the market balance. The intervention stocks have been growing rapidly and the market price is very low. However, no agreement could be reached on the means for balancing the market. The producing countries oppose the Commission proposal to abolish the

intervention system and introduce fixed import levies because they fear that this might lead to a fall in the income of the producers. Northern Member States wish to avoid disputes in the WTO, and they do not want the consumer prices for rice to increase.

Discussions on the reform of the market organisation for sugar were also launched at the Council. The current organisation ends 30 June 2001. The majority of the Member States hope that the validity of the current organisation could be continued by five years instead of the two years proposed by the Commission. Most Member States also oppose the abolition of the compensation system for storage and permanent cut of the production quotas by 115,000 tonnes. Finland supported the longer application period for the organisation and put forward the special conditions relating to the Finnish sugar production as well as a proposal according to which the cut should be direct at the B quota concerning exports.

Several Member States, including Finland, supported the idea that the label for organic products approved in the EU some time ago should be made more widely recognised by means of a special promotion campaign.

Agriculture Council also dealt with the agricultural issues to be included in the upcoming trade negotiations of the World Trade Organization WTO. During the previous, so-called Uruguay round the EU committed itself to cut the export subsidies and lower the import protection, but in the negotiation round that came to an end in 1993 no agreements were made concerning the situation after the marketing year 2000/2001. The preparations for the next round of negotiations have progressed very slowly, because the carefully prepared meeting of the Ministerial Conference failed after barely getting started in December 1999 in Seattle, USA.

The EU Commission will have to take account of the pressures due to the upcoming WTO round when preparing further market reforms. The Commission examined the state of the negotiations during 2000 and Agriculture Council discussed issues to be taken into account when drafting the common negotiation position of the EU. The EU position on agriculture is based on the view that the cuts and support arrangements according to Agenda 2000 should be adequate to constitute the EU contribution to further liberalisation of the world trade during the upcoming negotiation round. This matter will be dealt with after further preparation at the meetings of the Agriculture Council during 2001.

2.2. Arable crops

Weather conditions

The first crop year of the new millennium was excellent. The cereal yield was more than 4.0 bill. kg, which is 43% more than in 1999, when there were serious crop damages. The increase in the total yield was mainly due to the growth in the area under bread cereals as well as higher hectarage yields. The year 2000 was exceptionally warm in all parts of Finland, and the average temperature was higher due to the warm early part of the year as well as autumn. The winter was favourable for the winter cereals. The weather turned warm already in April, and spring sowing was started about a week earlier than usual. According to the Finnish Meteorological Institute, the summer temperatures were close to the average in the whole country, and the daily temperatures were quite close to the long-term averages. In the southern and central parts of the country the number of very hot days was less than half of the average, but in the north there were more really hot days than usually. The number of rainy days was above the average in June and July, but precipitation was close to normal. The variable weather and humid-

ity hampered the harvesting of dry hay, the quality suffered from the rains and part of the hay got spoiled. In the summer of 2000 there were also local whirlwinds and heavy thunderstorms towards the end of the summer. The weather was dominated by low pressure during the first weeks in August, but despite the rains it was quite warm. In places cereals were beaten down by the rain, and this together with leaf spot affected the grain size and hectolitre weight especially in Ostrobothnia, Satakunta and Etelä-Savo. The rains in August hampered the harvesting of winter cereals, but spring cereals were harvested in ideal conditions later in the autumn. The warm autumn favoured the growing winter cereal crop.

Due to the rainy period that coincided with the sowing of rye and the fall in the producer prices the area under rye decreased by 40% to 26,000 ha. If the wintering succeeds this year and the hectarage yield next autumn is close to the average, the rye yield in 2001 will be about 56 mill. kg, which covers about 60% of the need in the processing industry. The area sown with winter wheat decreased to 31,000 ha, which is 20% less than in the previous year.

Areas and yields

In 2000 the cultivated area (incl. set-aside) was 2,179,100 ha, which is about the same as in the previous year (6.5% of area of Finland). Of the cultivated area 92% was under crops and 8% was set-aside. The set-aside area fell by 14% from the previous year, and the areas under cereals and grasses grew correspondingly. In relative terms the area under rye grew the most: the total rye area of 44,600 ha was the largest in the past five years and it was almost four times the rye area in 1999. The area under barley fell the most in both quantitative and relative terms (-3%), while grass area grew by 1%. The silage area increased through the 1990s, but the area under dry hay decreased. Today silage accounts for more than half of the grass area.

Compared to the previous two years, the conditions for crop production were excellent in 2000. The total cereal yield was 4,044 bill. kg, and the previous time when the yield exceeded 4 bill. kg was in 1995. The hectarage yields exceeded the 10-year averages. 95% of the crop was of good quality. The total yield of bread cereals was more than double that in 1999, due to increase in both the cultivated area and hectarage yield. The rye yield totalled 108.2 mill. kg, which was the highest in 10 years. The processing industry uses about 90 mill. kg rye per year, and thus there would be enough domestic rye to make all the rye bread needed. However, imports will also be needed because the quality suffered from the rains during harvesting. The wheat yield should be adequate to cover the domestic consumption.

The yield of fodder cereals totalled 3,398 mill. kg, which is 33% more than in 1999. The increase was due to the higher hectarage yields, because the area under fodder cereals was smaller than the year before. The hectarage yield of barley grew from 2,700 kg to 3,550 kg and that of oats from 2,450 kg to 3,540 kg. The quality was very good. The supply of barley exceeds the domestic consumption, and about 150–200 mill. kg will have to be placed in intervention stocks or exported. There is hardly any market for fodder barley, but there is demand for malting barley both in Europe and in the neighbouring regions. More than 500 mill. kg of oats has to be exported, which is double the exports in 1999.

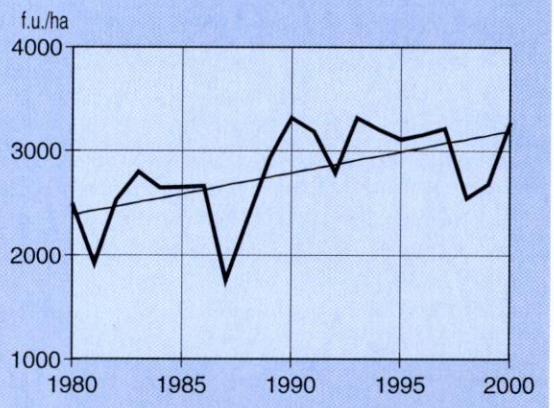
Silage yield exceeded 7,000 mill. kg for the first time ever. The yield of dry hay totalled 586 mill. kg, which is less than 10% of the silage yield. The harvested area and total yield of dry hay fell during the 1990s, while the area under silage grew as less and less of dry hay is being used in the feeding of cattle. Rainy weather hampered the harvesting of dry hay, and thus in 2000

only 84% of the crop was of good quality. In 1999 95% of the dry hay was of high quality. The hectarage yield was quite high, 3,720 kg.

The total yield of potatoes fell by 6 mill. kg to 785 mill. kg as a result of the reduction in the area under potatoes. The hectarage yields were at the same level as the year before. In the most important production region, Ostrobothnia, the yield was quite normal and the quality was also good. Instead, the household plots and organic production suffered from potato blight.

The total sugar beet yield decreased by 126 mill. kg (11%) to 1,046 mill. kg due to the poorer hectarage yields.

The area under oilseed crops, i.e. rape and turnip rape, has been on the decrease in recent years. The cultivated area of oilseed crops fell from 62,500 ha to 52,500 ha. In 2000 the area decreased due to the uncertainty concerning the national aid for crop production, low contract prices and unfa-



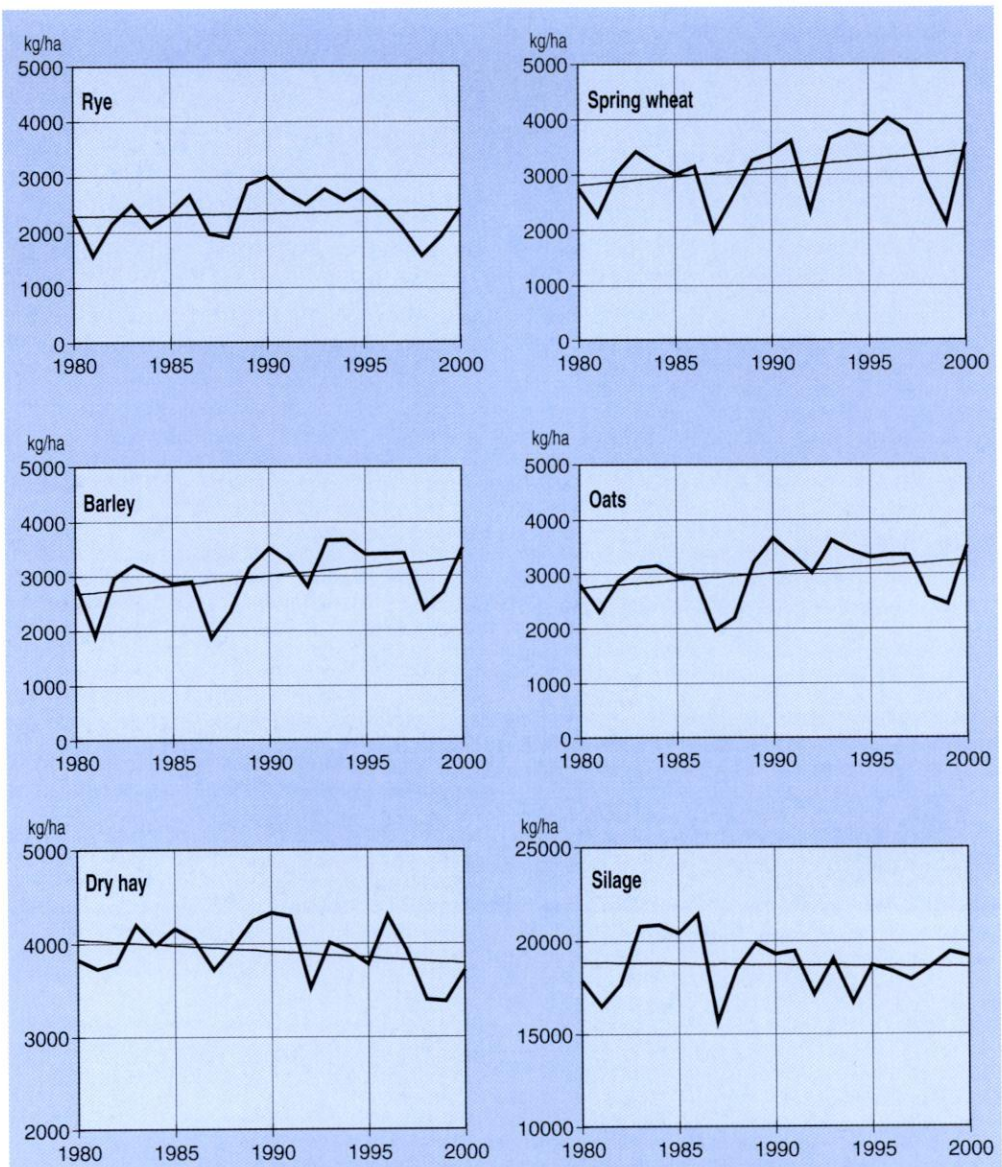
Total yield without straw in 1980–2000, f.u./ha.

Harvested areas and yields of main crops in 1999 and 2000.

	1999			2000		
	Area 1,000 ha	Yield 100 kg/ha	Total mill. kg	Area 1,000 ha	Yield 100 kg/ha	Total mill. kg
Winter wheat	11.9	25.8	31	40.0	37.0	148
Spring wheat	105.8	21.1	223	109.5	35.7	391
Rye	12.3	19.2	24	44.6	24.3	108
Barley	581.0	27.0	1,568	559.0	35.5	1,985
Oats	403.9	24.5	990	400.0	35.4	1,413
Mixed cereals	17.9	24.4	44	16.7	30.5	51
Peas	4.8	14.8	7	5.2	22.5	12
Potatoes	32.3	235.1	791	32.3	244.6	785
Sugar beets	34.8	336.7	1,172	32.1	325.5	1,046
Hay	175.1	33.8	593	157.6	37.2	586
Green fodder	23.3	118.2	276	23.1	121.1	280
Silage	350.2	194.2	6,799	372.3	191.5	7,129
Oil-seed plants	62.5	14.1	88	52.5	13.5	71
Other crops	35.9			36.2		
Pasture	113.5			116.4		
Total	1,965.2	2,680 [1)]	4,883 [2)]	1,997.5	3,273 [1)]	6,065 [2)]
Set-aside	211.4			181.6		

[1)]f.u./ha without straw, [2)]mill. f.u. without straw.
Source: Information Centre of the Ministry of Agriculture and Forestry.

vourable pricing or turnip rape. The total yield fell by 17.4 mill. kg to 70.9 mill. kg. The hectarage yield of oilseed crops of 1,350 kg was close to the average of the past few years, but considerably lower than in the early part of the 1990s. The domestic production is not adequate to meet the consumption, and at least 100 mill. kg of this raw material has to be imported. The BSE crisis has brought along new opportunities for the cultivation of rape and turnip rape, because these may be used to replace meat-and-bone meal in animal feed. The domestic production of plant-based protein is likely to grow in the future, and the increase in the demand should also be reflected in the prices.



Yields of main crops in Finland from 1980 to 2000.

Market prices for cereals

In the early part of 2000 the Finnish market prices for cereals were higher than in 1999, but towards the end of 2000 the prices were lower than in the previous year due to the record yields. The market price for barley was also higher than in the previous year in the early part of 2000, but in June it was lower than in 1999. The average price of the year was € 119/ton, which is € 3/ton lower than in 1999. The market price for barley was higher than the intervention price for cereals, except in June and October.

The market prices for cereals refer to the cereal prices at the buyers stock, and due to the handling and transportation costs the prices paid to the producers are lower than the market prices.

The market price for oats has been on the increase since October 1999, owing to the favourable export market. There was a lot of demand for oats and the price stayed close to € 118/ton until the new crop. Except for the last three months of 2000 the market price for oats was higher than that of barley. In spring 2001 the oats prices are not expected to rise in the same way as the year before, because the yields were high in the other countries as well: the total yield of the four main producers was 10% higher than in 1999.

Market prices of cereals in 2000, €/ton[1)].

	Rye	Wheat	Barley	Oats
Finland	131	135	119	118
Sweden	117	119	109	110
Denmark	109	119	125	126
Germany	109	118	108	110
France	98	113	113	92
England	-	113	110	112
Spain	108	133	120	121

1)January-December, preliminary.
Source: Eurostat.

Market prices of cereals in Finland from 1990 to 2000, FIM/kg[1)].

	Rye	Wheat	Barley	Oats
2000	0.78	0.80	0.71	0.70
1999	0.85	0.82	0.73	0.68
1998	0.87	0.85	0.73	0.66
1997	0.89	0.88	0.74	0.70
1996	0.90	0.91	0.75	0.74
1995	0.89	0.87	0.73	0.70
1994	2.52	2.13	1.57	1.48
1993	2.26	2.19	1.63	1.54
1992	2.72	2.19	1.65	1.55
1991	2.88	2.22	1.58	1.55
1990	3.03	2.54	1.76	1.72

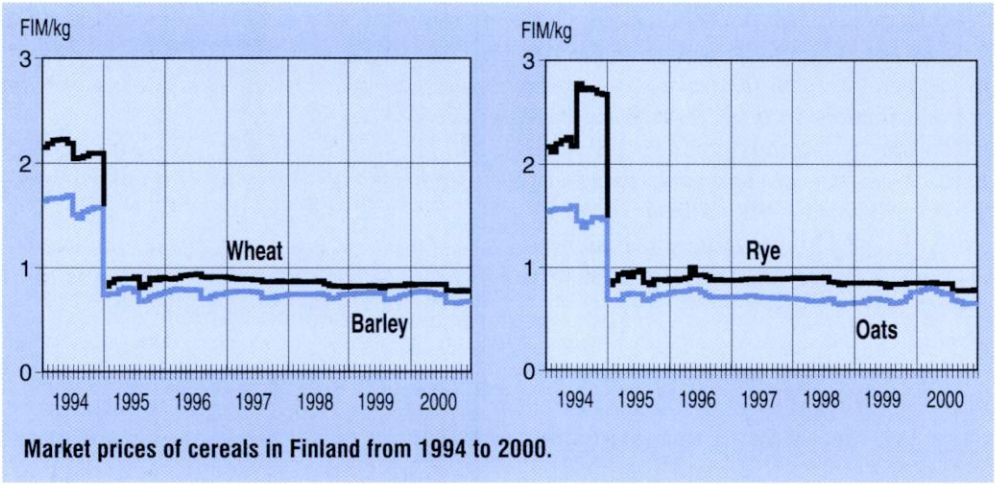
1)Exchange rates: FIM 1 = €0.168 = US$0.155 (Year 2000 average).
Source: Grain bulletin, Information Centre of the Ministry of Agriculture and Forestry.

In the early part of 2000 the market price for wheat was higher than in the early part of 1999, but the price fell when the new crop entered the market.

In the early part of the year the trade in rye was slow due to the small supply, and in the spring the quoted price was € 141/ton. When the new crop entered the market in August the price fell under € 130/ton.

The total cereal yield in the EU grew by 5% in 2000. In France, which is the largest producer within the single market, the cereal yield grew by 2%, but the quality was poorer than the year before. In Germany the cereal yield increased by 2% and in Great Britain by 10%. Of the main producers in the EU the cereal crop fell only in Italy.

The total wheat yield of the EU was estimated at 104 bill. kg which equals to the production of China which has been the world's largest producer (103 bill. kg). In the USA and Canada the combined production was 88 bill. kg. The amount of cereal traded on the world market was estimated at 105 bill. kg. Even if the EU



Market prices of cereals in Finland from 1994 to 2000.

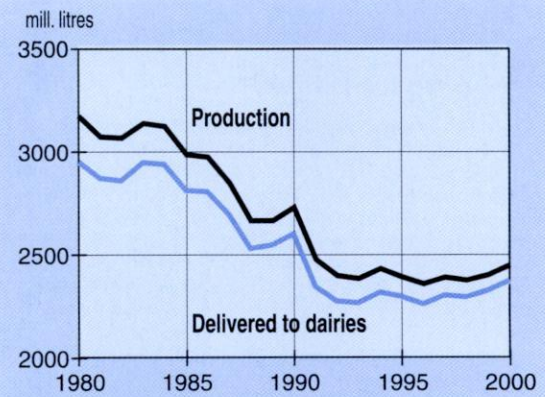
produces much more wheat than the USA, the quantities exported are only about half of the U.S. exports, mainly because about a quarter of the wheat produced in the EU is used as fodder. The world wheat consumption exceeds the production for the third year in a row, and the stocks of the exporting countries were used to cover the shortage. Wheat stocks have diminished by 30% in four years, which increases the pressures to raise the world market prices for wheat.

2.3. Livestock production

Milk

Milk production continued to grow in 2000. The amount of milk delivered to dairies totalled 2,371 million litres, which is 2% more than in 1999. The growth was due to the increase in average yields, decrease in the number of animals slaughtered as a result of the good fodder supply, and changes in the support systems. The average milk yield was about 6,700 litres/cow, which is about 250 litres (4%) higher than the year before. It is estimated that the national quota for milk production set by the EU will be exceeded by about 30 million litres in the quota year 2000/2001, which is two times the excess over the national quota in 1999 and corresponds to the output of about four days. The awareness of the situation towards the end of the year and the expiration of the obligation to keep the animal on the farm for six months relating to the extensification premium for dairy cows in support area C increased the numbers of cows slaughtered and reduced the milk output at the very end of the quota period.

The number of milk producers fell by 1,800. At the end of the year the number of



Milk production and the amount of milk delivered to dairies in Finland from 1980 to 2000.

producers was 21,600, which is about 8% smaller than the year before. The number of farmers quitting the production was a little smaller than in 1999, and the decrease in the number of dairy cows slowed down from 3% in the early part of the year to less than 1%. At the end of 2000 there were altogether 370,000 dairy cows and the average herd size was 17 cows. Herd size grew by about 1 cow/farm from the year before.

The most important dairy production regions in Finland are Ostrobothnia, North Savo and North Karelia, and these account for an increasing share of the total milk output. Milk is produced in all parts of Finland, including Lapland.

Beef

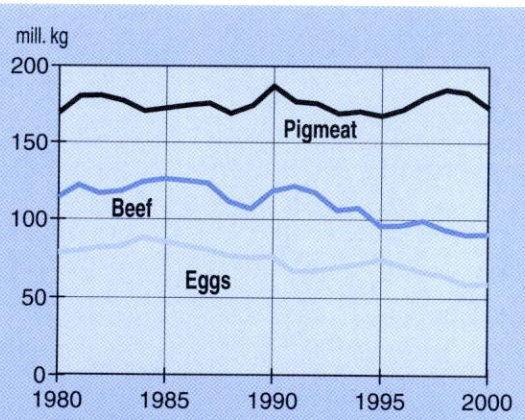
In 2000 beef production grew by a little less than 1% to 90.9 mill. kg, and the supply was quite stable throughout the year. The production increased rapidly in the early part of the year due to the slaughters postponed in the previous year, which also increased the slaughter weights. In the summer the numbers of animals brought in for slaughter grew as the obligation to keep the animals on the farm expired. The autumn was slow on the beef market, owing to the long pasture season, good crop and changes in support. In 2000 premiums were applied for 27,100 suckler cows and about 183,000 bulls.

About 10% of the beef consumption of 96.4 mill. kg was covered by imports, while Finnish beef exports totalled 6 mill. kg in 2000. Exports grew by 30% from the level of 1999. The EU beef market was quite stable before the latest cases of BSE, which led to a collapse in beef consumption in Central Europe. Intervention stocks had been almost empty, but they started to fill up rapidly. In order to prevent the spread of BSE the European ministers of agriculture prohibited the use of meat-and-bone meal suspected as the source of infection in the feeding of all domestic animals raised for human consumption between January and July 2001. Extensive testing of animals for BSE was also started. No cases of BSE have been found in Finland.

Pigmeat

Pigmeat production fell by almost 6% to 173 mill. kg in 2000. The production suffered from a shortage of piglets, due to which the existing production buildings could not be fully utilised. The share of combined pig production grew, while the trade in piglets decreased. The market situation in the EU was good and there was demand for exports, and no stocks piled up. The weakness of euro promoted the export to third countries, and there was keen demand for pigmeat in Russia as well.

The decrease in the consumption by 3% from 1999 reduced the consumption per capita to 33 kg, which is below the EU average. About 9% of the consumption was covered by imports. The sales of Christmas ham were estimated to total 6.5 mill. kg. Ham is being replaced by turkey to some extent.



Production of beef, pigmeat and eggs in Finland from 1980 to 2000.

Poultry meat

Poultry meat production decreased by 4% to 64 mill. kg from 1999. Broiler production fell to 57 mill. kg, while the production of turkey meat grew from 4 mill. kg in 1999 to 5 mill. kg. At present turkey accounts for almost 8% of the poultry meat production, but the growing demand is likely to be reflected in the domestic production as well. The consumption of poultry meat grew by 5% from the year before, but turkey meat consumption grew as much as 45% to 7 mill. kg, and imports were also needed. The market situation for poultry meat is quite stable owing to the steady growth in the consumption and cuts in broiler production both in Finland and in the whole EU area. However, the profitability was weakened by the rapid increase in the fodder and energy costs.

Eggs

The problems due to the oversupply in eggs continued in 2000. The production volume stayed at around 59 mill. kg, which clearly exceeded the consumption of 51 mill. kg. The consumption fell in the early part of the year, but towards the end of the year it returned almost to the same level as in the previous year, partly thanks to a sales promotion campaign. Central packaging units account for about 80% of the packaging activity. The efforts of egg producers and packers to find solutions to overproduction continued under the so-called "Laitila" contract. Export was necessary, and thus marketing charges were collected from the producers included in the contract in order to maintain the desired price level. However, all producers do not participate in the scheme, and thus its future is uncertain. The producer prices might fall considerably if the scheme were discontinued.

In 2000 fewer farmers quitted egg production than the year before, and those who continued increased their production. The numbers of hens and hatching of chicks grew rapidly towards the end of the year, which means that the production may start to increase again. Egg consumption in Finland is less than 10 kg/capita, which is more than 2 kg below the EU average.

Livestock production in Finland from 1990 to 2000[1)].

	Dairy milk mill. l	Beef mill. kg	Pigmeat mill. kg	Eggs mill. kg	Poultry meat mill. kg
2000	2,371	91	173	59	64
1999	2,325	90	183	59	66
1998	2,300	93	186	63	61
1997	2,301	99	180	67	53
1996	2,261	97	172	71	49
1995	2,296	96	168	75	42
1994	2,316	107	171	72	39
1993	2,264	106	169	70	35
1992	2,274	117	176	67	36
1991	2,345	122	177	67	37
1990	2,600	118	187	76	33

[1)] The hot weight reduction of meat was abolished at the beginning of March 1990. As a result, the quantities are 3% bigger than earlier. The prices were also dropped by 3%. Starting from July 1, 1995 the hot weight reduction is 2%.

Sheepmeat

The weak economic situation in sheep husbandry continued in 2000 and sheepmeat production fell to 0.7 mill. kg. Imports accounted for 70% (1.5 mill. kg) of the total consumption of 2 mill. kg. The profitability of sheep production is very weak in Finland. The producer price was clearly lower than the EU average. The market situation for wool was also quite unstable. Efforts have been made to support the production of sheepmeat by means of storage compensations to balance the entry of the meat to the market, but this has had very little effect.

Producer prices

The prices of livestock products on the domestic market depend on the prices in the other Member States of the EU. In 2000 the prices of many products in Finland were lower than the EU average, and thus there was no serious competition on the domestic market. The prices and functioning of the single market of the EU benefited from keen export demand, supported by the competitive advantage due to the weak value of the euro in relation to the U.S. dollar as well as the favourable economic situation in the most important export regions. However, towards the end of the year the uncertainty augmented as a result of the BSE crisis, which seriously affected the consumption, prices and production of beef in many Member States.

The competition and structural reorganisation between the Finnish dairies continued in 2000 as the contracts concerning the lease of the production plants and marketing of the products between Valio, Kainuu Dairy Cooperative, Maito-Pirkka and Aito-Maito Fin Ltd. were approved by the Finnish Competition Authority in the summer and the business activities and production were transferred to Valio from the beginning of September 2000. The average price paid to the producers was almost € 8.15/ton higher than the year before due to e.g. the increase in the protein content. On the average the price was above the EU average, but there were differences between the dairies. For example, in September and October the difference between the highest and lowest price was € 31/ton. The main reason for the variation was the differentiation of the prices according to the season. The difference between the highest and

The producer prices of the most important livestock products in Finland from 1990 to 2000 including production support (export cost fees and milk quota payments have been subtracted).

Year	Milk FIM/l	Beef FIM/kg	Pigmeat FIM/kg	Eggs FIM/kg
2000	2.45	12.25	7.68	4.85
1999	2.41	12.84	6.69	4.42
1998	2.58	13.30	7.50	3.84
1997	2.72	12.44	8.32	3.62
1996	2.73	13.25	7.96	4.18
1995	2.85	20.73	10.56	5.32
1994	3.27	30.45	16.14	11.15
1993	3.28	29.32	16.25	11.58
1992	3.17	30.04	16.30	11.95
1991	3.21	29.44	16.62	11.86
1990	3.17	32.11	17.66	11.81

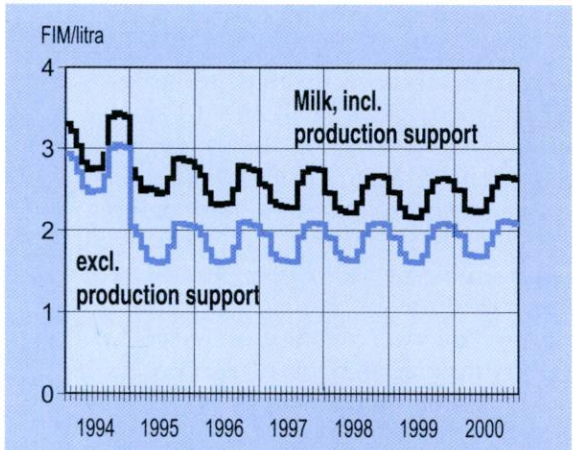
Source: Information Centre of the Ministry of Agriculture and Forestry.

Market prices of livestock products in 2000, €/kg[1)].

	Milk[2)]	Beef[3)]	Pigmeat[4)]	Eggs[5)]
Finland	0.32	2.45	1.31	0.82
Sweden	0.34	2.58	1.44	0.95
Denmark	0.31	2.68	1.29	..
Germany	0.29	2.51	1.38	1.09
France	0.29	2.64	1.36	0.72

[1)]January-October [2)]Cow's milk; 3.7% fat content [3)]O2-class [4)]Grade I [5)]Prices converted into these per kilo according to average weight of 62 g.
Source: Eurostat.

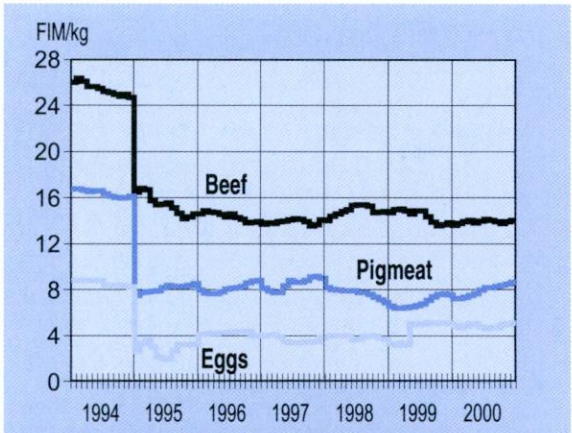
lowest seasonal prices of milk with average content was € 68/ton. The average producer price of milk without retroactive payments was about € 310/ton, and the production support was, on average, € 90/ton. The final price for milk is established after the financial statements are completed at the dairies, when the decision on retroactive payments is made based on the result. In 1999 the retroactive payments were, on average, € 19/ton.



Producer price of milk in Finland from 1994 to 2000.

The market situation of pigmeat was quite good in the EU, despite the difficulties in the early part of the year. The prices rose all through the year; towards the end of this as a result of the decrease in the demand for beef due to the BSE crisis. The reduction in the production and export supported by the strong dollar also contributed to the market equilibrium, and less export subsidies were needed than had been expected. The competitiveness of pig husbandry improved as a result of the decrease in cereal prices according to Agenda 2000, which reduced the fodder costs. However, the ban on the use of meat-and-bone meal at the end of the year increased the fodder prices. In Finland, too, the development of pigmeat prices favoured the producers, and the producer prices rose by 15% to € 1.29/kg. However, in the other EU countries the market situation was even more favourable, and the price level in Finland remained clearly below the EU average. Finnish pigmeat production suffered from disequilibrium in the production chain, i.e. there was a continuous shortage of piglets. The prices paid for piglets rose by more than € 17 from the previous year.

The EU beef market was quite stable, the price trend was increasing, the supply and demand were well in balance and exports benefited from the weak euro before the expansion of the BSE crisis at the end of 2000. The crisis led to a collapse in the demand, prices as well as production of beef. This affected, in particular, cow meat, whose consumption and prices fell dramatically. The impacts of the BSE crisis remained quite small in Finland and the consumer confidence in domestic beef stayed at a high level. Beef market was well in balance and the price of e.g. bull meat was more than € 2.35/kg all through the year. The pressures on beef prices increased towards the end of the year when the slaughterhouses told that they were going



Producer prices of beef, pigmeat and eggs in Finland from 1994 to 2000.

to transfer the additional costs due to the BSE control to the prices.

The producer price of poultry meat stayed at the same level as in 1999, € 1.14/kg. The average price was quite stable due to the shift from broilers to turkeys, whose price is higher. Finnish turkey production benefited from the increase in the producer prices caused by the avian influenza epidemic in Northern Italy and the growing demand for turkey meat products. The poultry meat market of the EU was quite stable in 2000.

In Finland the producer price for sheepmeat was € 1.63/kg, which is about 40% lower than in the other EU countries. Due to the low prices for both sheepmeat and wool the profitability of the production is weak, and sheepmeat production has decreased considerably after Finland joined the EU. Before the EU membership the prices paid to the producers for meat and wool were twice the current prices.

The average producer price for eggs rose by 10% to € 0.82/kg. The decrease in the consumption in the early part of the year raised fears of growing overproduction, which would lead to a decrease in the producer prices. However, towards the end of the year the consumption started to increase, and this together with the balance due to the "Laitila" model made it possible to keep the producer prices close to the target level. Hatching increased at the end of the year, and this may lead to growing pressures and oversupply in 2001.

2.4. Horticultural production

In 2000 the value of horticultural production totalled about € 321 mill. Due to the higher output as well as higher prices paid for certain products, the value of production grew by as much as 10% from the year before. There was considerable variation in the weather conditions during the growing season. The early part of the summer was warm, but in July and August it rained a lot. However, the yields of horticultural production in the open were quite good.

Horticultural production comprises vegetable production in the open, cultivation of berries and apple production as well as nursery and greenhouse production. Greenhouse production accounts for about 60% of the value of horticultural production and the share of production in the open is 40%. Greenhouse production is quite evenly divided into the cultivation of ornamental plants and vegetables. The share of vegetables in the production in the open is 58%, that of berries 28%, nursery production 13% and apples less than 2%.

Areas under horticultural production in 1997–2000, ha.

	1997	1998	1999	2000
Production in the open, total	18,054	17,514	17,576	16,948
Vegetables grown in the open	10,330	9,689	9,736	9,107
Berries	7,285	7,362	7,361	7,355
Fruits	439	464	479	479
Greenhouse production, total	383	388	397	398
Vegetable production	223	225	232	234
Ornamental plants	161	163	164	164

Source: Ministry of Agriculture and Forestry, Support Register.

According to the register on horticulture enterprises, in 1999 the total number of enterprises operating in this field was 8,400, and about 1,500 of these specialised in greenhouse production. The number of enterprises practising vegetable or berry production as their main production line is about 2,400. Production in the open is often practised in connection with basic agriculture. Vegetable production in the open is mainly located in the southwest, berry production in the eastern parts of Finland, and most of the apples are produced in Åland and Southwestern Finland. Half of the area under greenhouse vegetables is located in Ostrobothnia, but the production of ornamental plants is more evenly distributed in different parts of the country.

Areas and yields

The area receiving production aid for greenhouse production has increased by 1–2% per year during the time Finland has been in the EU, but the number of enterprises receiving the aid has fallen annually by 1–3%. In 2000 the greenhouse area grew only by a couple of hectares, while the number of greenhouse enterprises was the same as last year, 1,708. The average size of enterprises receiving greenhouse aid was 2,300 m^2.

The area under horticultural production in the open decreased slightly in 2000. The total area was about 17,000 ha, and 9,960 ha of this received aid for horticultural production in the open. The area under vegetables fell by 10% from the year before, while the areas under berries and apples were about the same as earlier.

In 2000 the most common vegetables grown in the open in Finland were garden pea, carrot, white cabbage and onion, which accounted for almost 60% of the total cultivated area under vegetable production in the open. In 1998–2000 there was no change in the area under garden pea, and the area under carrots has also stayed at the level of 1998. The area under onion grew by 6% and that of beetroot by 10%. Instead, the area under white cabbage fell by 8%, Chinese cabbage by 27% and outdoor cucumber by 11%.

Areas under the most important horticultural products grown in the open and yields in 1999.

	Area ha	Yield kg/ha	Total 1,000 kg
Vegetables grown in the open			
Garden pea	2,076	3,178	6,598
Carrot	1,707	36,207	61,799
Onion	1,074	14,466	15,539
White cabbage	748	29,920	22,392
Outdoor cucumber	444	29,996	13,312
Chinese cabbage	505	14,809	7,480
Swede	490	30,077	14,742
Beetroot	507	26,788	13,575
Cauliflower	448	10,405	4,663
Other plants	1,471		
Total	9,470	18,423	174,472
- share of contract production	2,392	21,167	50,640
Berries and apples			
Strawberry	4,208	2,499	10,516
Black currant	1,251	826	1,033
Raspberry	300	1,025	307
Other berries	410		
Total	6,168	2,013	12,414
- share of contract production	1,055	1,100	1,161
Apple	479	5,064	2,427

Source: Information Centre of the Ministry of Agriculture and Forestry, Register of Horticulture Enterprises 1999.

In 1999 about 25% of the total area of commercial vegetable production in the open was covered by contracts with the processing industry, and the most important crops covered by these contracts are garden pea, outdoor cucumber, red beet and carrot. The area under production contracts has fallen steadily during the EU membership altogether by about 13%, i.e. 390 ha, but the contract production area of garden pea, swede and especially carrots grew all through the 1990s.

Strawberry production accounts for two-thirds of the cultivated area in berry production and 80% of the output. In 1998–2000 the area under strawberries fell by 6%, while the areas under both raspberries and black currants grew by 15%. In 1999 about 9% of the total output in berry production was covered by production contracts.

In 1999 the area under nursery production, which is included in horticultural production in the open, was 700 ha. This is about 60 ha smaller than in 1998.

About 60% of the greenhouse area is used for the production of vegetables and 40% for ornamental plants. Tomatoes account for 54% of the area under vegetables and cucumber for almost a third. The share of tomato and cucumber in the total output is 96%. In recent years there has been hardly any change in the cultivated areas. In 2000 the tomato area grew by about 4% and the area under cucumber fell accordingly.

The average yields per square metre have increased due to more efficient cultivation methods. The cultivation of cucumber round the year by means of supplemental lighting has continued to increase, and now lights are used in 25% of the area. The yield levels are about twice those without the lights. Lights are used in about 22% of the cucumber area, and this produces about double the yield that could be reached without using the lights.

The cultivation of potted vegetables increased in Finland in the 1990s. In 1995 the number of potted vegetables produced in Finland was about 30 mill., but by 1999 this had increased to 41 mill.

Areas under greenhouse vegetables (m^2) and yields (kg/m^2) in 1999.

	Area 1,000 m^2	Yield kg/m^2	Total 1,000 kg
Total	2,626	26	68,622
Tomato	1,226	29	35,560
Cucumber	816	37	30,273
Other vegetables	584		

Source: Information Centre of the Ministry of Agriculture and Forestry, Register of Horticulture Enterprises 1999.

The area under ornamental plants has increased by about 4% during the EU membership, and in 2000 it was 164 ha. The area under cut flowers has fallen by 18% since 1995. In 2000 it was 49 ha, and 73% of this was used for rose production. The cultivation of carnations has stopped almost completely on the Finnish horticultural enterprises during the EU membership, and the production of cut chrysanthemums has fallen to less than a fifth.

Instead, the cultivated area of potted and bedding plants has grown to 115 ha, i.e. by almost 33% from 1995. The most important potted plants are bedding plants and flowering potted plants, and the numbers of these cultivated in 1999 were 43 million and 12 million, respectively. The most common cultivated bedding plants were violet, petunia, lobelia and geranium, and the most popular flowering potted plants were poinsettia, begonia and saintpaulia.

Horticultural product market

In 2000 the prices for greenhouse products were slightly higher than in 1999, when the prices were at the lowest level during the EU membership. Despite the rise in the general price level the producer price of

Producer prices for the most important horticultural products in 1996–2000, FIM/kg[1)].

	1996	1997	1998	1999	2000
Greenhouse production					
Rose (FIM/unit)	1.99	1.85	2.09	1.79	1.91
Tomato	7.56	6.54	8.04	5.75	5.86
Cucumber	6.99	6.24	7.23	5.12	6.41
Production in the open					
White cabbage	1.36	1.46	1.08	1.45	1.03
Onion	1.89	2.11	2.71	2.60	2.52
Carrot	2.46	1.51	2.07	2.13	2.41
Strawberry	13.69	13.33	14.95	11.70	11.97

[1)]Exchange rates: FIM 1 = € 0.168 = US$ 0.155 (Year 2000 average).
Sources: Food Facts Ltd., Finnish Association of Fruit and Berry Growers, Kasvistieto Ltd., Glasshouse Growers Association

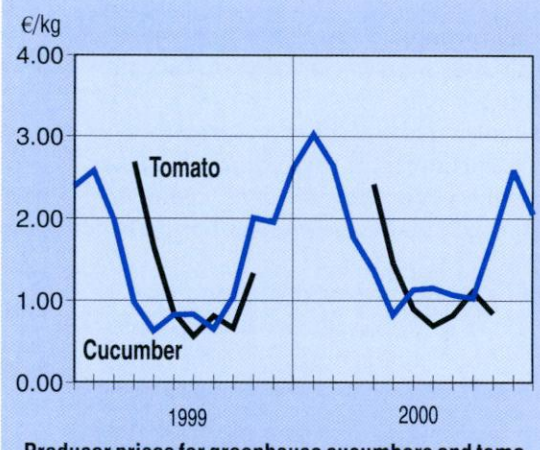
especially tomatoes was very low, and during the peak season in the summer the price fell to € 0.65/kg. The average price of cucumber was higher than the year before.

The ornamental plant markets were quite favourable from the producers' perspective due to the variable weather conditions, i.e. there were now high peaks in the sales. The sales of greenhouse products stayed at about the same level as earlier despite the fall e.g. in the area under cut roses. The demand for horticultural products is quite inelastic, and thus oversupply is strongly reflected in the price level.

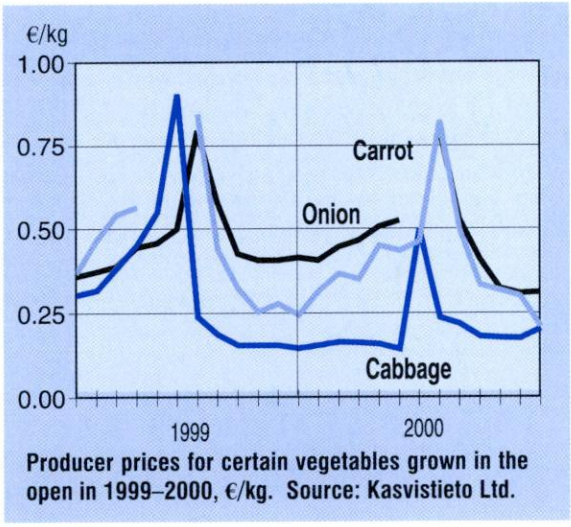
The average price level of vegetables grown in the open was also quite high, except for white cabbage, whose price fell by 29% from the year before. The average price of strawberries decreased due to the very short main crop season, when the price was very low.

In 2000 there was enough water available for production in the open, which contributed to the good crop, but the abundant rainfall also hampered the harvesting of e.g. carrots. Wet conditions during harvesting also weaken the durability of vegetables, and during the storage period extending to the spring the losses are considerable.

The yields of both strawberry and currants were good. Data on the total output are not yet available, but it is obvious that the production volumes were higher than in 1999. Strong variation in the producer price during the year is typical of most horticultural products, owing to the new domestic crop, conditions during the growing season and the resulting domestic supply, as well as the price level of imports. Towards the end of 2000 the prices were



Producer prices for greenhouse cucumbers and tomatoes in 1999–2000, €/kg. Source: Kasvistieto Ltd.



Producer prices for certain vegetables grown in the open in 1999–2000, €/kg. Source: Kasvistieto Ltd.

somewhat lower than in the early part of the year, which indicates that the yield level in 2000 was better than the year before.

It should be noted that the annual averages of the prices of vegetables grown in the open comprise the production from two crop years. For example, the producer price of onion was higher in the early than in the latter part of the year, when most of the crop of 2000 was sold. The trend in the producer price of cabbage was the opposite: in the early part of the year the price was lower than towards the end of the year, when the crop of 2000 was being sold. However, the price of cabbage was quite low all through the year.

The season for the early crop is very significant in terms of the average price of vegetables. The producer prices for greenhouse cucumber and tomato are typically the highest in winter when the production volumes are low and the costs are high.

2.5. Food market

In the past three decades no major changes have occurred in the domestic food consumption measured as energy. In 1999 the energy consumption per capita was about 2,700 kcal/day (11.4 MJ), when in 1970 it was about 3,000 kcal/day. The structure of the production has changed, i.e. the share of more highly processed products has increased. The consumption of meat, many dairy products as well as fruit and vegetables has grown, while the consumption of milk, cereals, potatoes and spreads has fallen. Eating outside the home is also becoming increasingly common.

The changes in the consumption are due to economic factors as well as changes in the lifestyles. The economic environment has been characterised by a steady growth in the income level and small changes in the price relations. The rise in the standard of living has led to an increase in the consumption of more expensive products. The main factors influencing the demand for food are the prices and disposable income, and the consumption also depends on the trends in the structure and values of consumer groups. Nutrition information, product development and advertising influence the attitudes related to lifestyles and food and, through this, the purchase decisions.

The competitiveness of food products is to an increasing extent based on factors other than price. Quality, production methods and safety receive more and more emphasis in the decision-making of consumers, whose interest in the composition, nutritional value and wholesomeness of food has grown along with the rise in the standard of living and increased awareness of food issues. Interest in the origin of the raw material used in foodstuffs is also growing.

Even if the amount of money spent on food grew in real terms between 1970 and 1999, the share of foodstuffs in the consumer expenditure has decreased rapidly. In the early 1970s food and beverages accounted for 30% of the expenditure of

households, but in 1999 the share of these was only 23%. If alcoholic beverages and eating outside are excluded, the share of food consumption in the total consumer expenditure has fallen from 25% to 13%.

Consumer prices and consumption

In 2000 the food prices in Finland rose by 2.7%. The annual change in the consumer price index, i.e. inflation, was 3.5%, and thus the rise in the food prices was slower than the average. The share of foodstuffs in the consumer price index was 15.8%, and they were the second largest commodity group. The studies on food prices show that in Finland the prices of foodstuffs are quite low compared to the other EU countries. Among the dairy products milk and butter, in particular, are relatively cheap staple foodstuffs, even if their prices started to rise in 2000. The prices of broiler and beef are also relatively low in Finland. Pigmeat prices are close to the EU average, but these began to rise in 2000 as well. The consumer prices for sugar and fruits are still quite high.

The consumer prices of foodstuffs depend on the raw material prices, margins of processing and trade as well as taxation. The value added tax on staple foodstuffs is 17%, calculated from the tax-free price.

In December 2000 the consumer prices of dairy products were 1.2% higher than the year before. The increase in the prices was possible as the competition between dairies for market shares, which heated the price competition, settled down during 2000.

Cheese prices increased the most. The average price for Emmental was 2.6% higher than in 1999. The price of butter rose by a little under 1% and that of butter-vegetable oil mixes by almost 3%. Unlike the most dairy products, the prices for milk fell slightly.

Cheese consumption grew by 1%, butter consumption fell by 2.4%, and the consumption of butter-vegetable oil mixes increased by almost 6% from 1999.

The prices of meat products rose on average by 1.8% in 2000, and the total consumption stayed at about the same level as earlier. Finns consumed almost 340 mill.

Consumption of milk products, margarine, meat and eggs per capita in 1990–2000, kg/l.

	Liquid milk[1)]	Butter	Butter mixes	Marga-rine	Cheese	Beef[2)]	Pig-meat[2)]	Poultry meat	Eggs
2000[e]	195.6	4.1	3.0	7.8	16.7	18.8	33.3	13.2	10.0
1999	195.8	4.2	2.8	8.1	16.6	18.8	34.3	12.6	10.0
1998	198.5	4.3	2.8	8.4	15.9	19.2	34.1	11.9	10.3
1997	199.4	4.5	2.6	8.5	14.8	19.3	32.2	10.7	10.4
1996	203.8	4.9	2.7	8.6	14.8	19.1	32.9	9.9	11.0
1995	203.2	5.3	2.6	8.3	14.8	19.4	33.3	8.7	11.8
1994	207.5	5.4	2.8	8.2	13.5	19.0	29.7	7.8	10.4
1993	211.9	5.6	2.9	8.7	13.5	18.9	30.8	7.3	10.7
1992	214.6	5.8	2.8	8.6	13.1	21.1	32.6	7.4	11.0
1991	215.7	6.1	2.6	7.9	12.8	21.3	32.9	7.2	10.7
1990	222.9	5.5	2.2	7.6	12.7	21.8	33.0	6.8	11.1

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: Food Facts Ltd., Information Centre of the Ministry of Agriculture and Forestry.

Average consumer prices of some foodstuffs in 1997–2000, FIM/kg[1)].

	1997	1998	1999	2000	Change % 1999–2000
Light milk, FIM/l	3.91	3.87	3.78	3.75	–0.8
Sour milk, FIM/l	4.27	4.37	4.37	4.39	0.5
Butter	26.77	27.48	27.56	27.86	0.9
Emmenthaler cheese	48.77	50.69	51.84	53.34	2.9
Beef joint	49.49	49.25	49.72	50.17	0.9
Pork chops	34.99	34.62	33.20	37.02	11.5
Eggs	10.60	11.12	12.23	13.54	10.7
Wheat flour	3.58	3.86	3.80	3.76	–1.1
French bread	11.44	11.66	11.80	11.80	0.0
Rye bread	14.64	14.75	15.35	15.73	2.5

1)Exchange rates: FIM 1 = € 0.168 = US$ 0.155 (Year 2000 average).
Source: Statistics Finland, consumer price statistics.

kg meat, which is 66 kg/capita. The consumer prices for beef rose slightly from the previous year. Unlike in the other European countries there was hardly any change in beef consumption.

In 1999 the consumer prices for pigmeat were on the decrease, but in 2000 these rose by almost 7%. This, combined with the smaller supply, reduced the consumption by 3%. In Finland the per capita consumption of pigmeat was around 33 kg, while in the other EU countries the average consumption is more than 10 kg higher.

The consumer prices for poultry meat were at about the same level as in 1999, and the share of poultry meat in total meat consumption rose to more than 20%. The increase was mainly due to the growth in turkey meat consumption by more than 40% from 1999.

The increased popularity of white meat is a global phenomenon, and the processing industry has responded to the needs of health-conscious consumers by developing new low-fat and easy-to-use poultry meat products. In Finland, however, poultry meat production is on the decrease, and the share of imports in poultry meat consumption has risen to 6%.

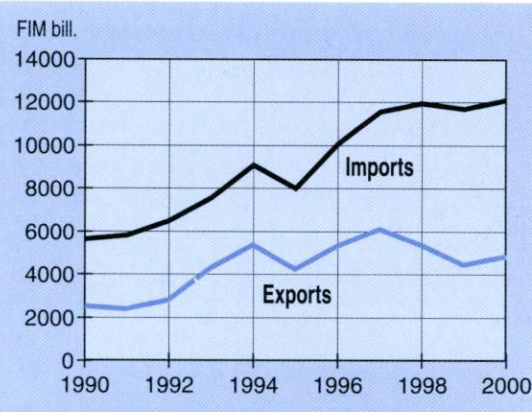
The average consumer price for eggs rose by more than 10% from the level of 1999. The consumer price of wheat flour were about the same as the year before, but the prices for bread and cereal products were about 1.7% higher than in 1999. The consumer prices for vegetables and root crops fell by a little under 1%.

Foreign trade

The weakening of the exchange rate of euro relative to the U.S. dollar improved the competitiveness of the EU, including Finland, on the export market in 2000, and certain products could actually be exported without any subsidies. During 2001, however, the exchange rate of euro is expected to strengthen considerably, and the use of export subsidies is likely to increase again.

In 2000 the value of the Finnish food exports totalled € 0.8 bill., which is almost 9% higher than in 1999. The growth was negative in the first quarter, but then the exports grew rapidly. Like before, the most important product group in exports were cheeses, followed by butter, chocolate, sugar products, milk powder, alcoholic beverages and pigmeat.

Food imports to Finland started to grow again in 2000. The value of imports was about € 2.0 bill., which is almost 4% more than in 1999. The deficit in the food trade balance was about the same as in 1999, € 1.2 bill. The deficit is mainly due to the extensive import of fruits, coffee, beverages and tobacco, which accounted for about a third of the total food imports in both 1999 and 2000, but e.g. vegetables, cheeses and cereals are also significant import articles.



Exports and imports of agricultural products (CN 01–24) in 1990–2000[e], FIM mill. Source: National Board of Customs, Foreign trade statistics.

Russia remains the largest export market for Finnish food products, accounting for about a fifth of total Finnish food exports. Sweden and Estonia are the next-largest export destinations for Finnish food products. Recently, the EU countries have become increasingly important destinations for Finnish food export.

Finland's food exports to Russia turned into an increase in 2000 owing to the more stable economic and political situation in this country. The value of these exports totalled almost € 168 million, but this is still only about half of the level in 1997. Food exports to Russia grew by about 13%, but the export of beverages fell by almost a fifth. The value of the dairy and cereal product exports increased the most, and the exports of dairy products to Russia grew by more than 40%.

Finnish cheese has been an important item for export, and it continues to do well. In 2000 cheese exports grew as much as 50%. The most important export markets were Russia, the USA and Belgium. At the

Exports of some agricultural products in 1990–2000, mill. kg.

	Butter	Cheese	Milk powder	Pigmeat	Beef	Eggs	Cereals
2000[e]	35.5	34.5	20.3	18.2	5.8	6.4	170 [1)]
1999	30.2	23.0	19.0	21.9	4.7	7.0	337
1998	26.3	28.5	20.1	19.7	5.0	10.7	473
1997	26.8	31.6	19.8	22.8	9.0	12.9	621
1996	21.9	28.6	6.7	13.4	5.8	14.1	380
1995	18.3	29.5	5.7	7.3	4.1	13.8	385
1994	22.6	27.0	2.8	20.5	12.4	18.3	991
1993	16.6	24.9	3.3	15.0	14.5	15.1	762
1992	17.3	24.9	7.8	13.4	16.2	11.9	718
1991	22.7	27.8	16.5	14.5	18.5	12.9	1,114
1990	35.9	28.9	25.9	22.7	10.0	20.4	514

[1)] January-November

Sources: Food Facts Ltd., Information Centre of the Ministry of Agriculture and Forestry and National Board of Customs.

Imports of some agricultural products in 1998–2000, mill. kg.

	1998	1999	2000[e]
Beef	11.5	11.9	9.5
Pigmeat	12.7	15.2	15.8
Poultry meat	2.5	3.2	4.0
Cheese	17.9	18.1	19.7
Wheat	245.7	228.5	172.1 [1)]
Rye	77.0	63.4	40.9 [1)]

[1)] January-November 2000.
Sources: Food Facts Ltd., National Board of Customs.

same token, Finland's cheese imports grew by 9%. Most of the cheese imports came from Denmark and Sweden.

Finnish butter exports grew by 17% in 2000, and the share of Russia in butter exports was about half. The exports of fresh products increased by almost 3%. Yoghurt is the most important fresh product in exports. Milk was the only export product where the exports fell compared to 1999, while the export of milk powder grew by almost 7%.

Finland remains a net importer in meat. In 2000 there were still net exports in pigmeat, even though the excess supply in 1999 turned into inadequate supply due to the decrease in the production. The producer prices for pigmeat rose by 20% and the exports fell by almost the same amount. However, the value of exports grew by more than 40%. Pigmeat imports grew by 5% and the value of these by 15% from 1999.

Beef exports grew by almost a quarter as the BSE crisis affecting the European market and increase in the supply contributed to the positive development of highly appreciated Finnish beef. In 1999 the ratio of exports to imports was 42%, but in 2000 this rose to 60%, and the value of exports rose by 30% from the level of 1999. Imports, which mainly consist of the more valuable parts of the carcass, fell by about a fifth from the year before, and the value of imports decreased by about the same amount.

The popularity of poultry meat continued to increase in the consumers' diet, which resulted in an increase in imports by almost a quarter from 1999. However, 93% of the poultry meat consumed in Finland is still of domestic origin. Poultry meat exports doubled in 1999, but in 2000 the exports fell by 9% due to the strong domestic demand for broiler and especially turkey meat.

Hardly any sheepmeat was exported. Sheepmeat imports were almost 30% larger than in 1999 and the share of imports in the consumption rose to 70%.

In January-November 2000 cereal exports from Finland were more than 40% smaller than during the same period in 1999. Imports fell by about 15% from the previous year. Cereal exports consisted almost solely of oats as the share of other cereals was less than 3%.

A number of contracts concerning increased trade liberalisation between the EU and the Central and East European Countries became effective in the beginning of July 2000. These so-called zero-zero contracts pave the way for the eastern enlargement of the EU. Contracts are made with the different countries separately, because the preconditions for trade liberalisation vary considerably in the applicant countries.

The trade in agricultural products between the EU and the applicant countries is going to increase considerably, because based on the trade figures of 1996–1998 the share of duty-free products in the agricultural exports of the applicant countries to the EU is expected to rise from 37% to 77%. The EU benefits less from these contracts, and the share of duty-free agricultural exports from the EU to the applicant countries is expected to increase from 20% to 37%.

Gene technologies are coming – what is changing?

Meri Virolainen

The past decade witnessed the appearance of gene technologies and transgenic foodstuffs. The pioneer in this was the United States, where transgenic varieties of maize, cotton and soya seem to be pushing aside the traditional varieties, at least for the time being. In Europe the development has been more cautious and the consumers have even rejected the new technologies. In the EU the cultivation and sale of genetically modified crops is strictly regulated and in practice hardly any gm-products can be found on the shelves. In the long term, however, Europe will very likely not be able to remain a gm-free fortress.

Genetic modification is the latest form of plant breeding, where efforts are made to improve the cultivation properties of plants by changing the genotype. Most gm-varieties have been developed to improve the resistance to plant diseases and pests or to make the crops resistant to pesticides. In the future the main objective of genetic modification will not be to improve the agronomic properties but to develop the quality characteristics. Improvement in the quality may lead to technically easier and less expensive breeding, better taste of the final products or more wholesome composition.

In the Finnish agriculture and food chain gene technologies and transgenic foods are used very little, and genetically modified varieties are cultivated only in test plots. However, in the future gene technologies will have to be introduced in order to maintain the competitiveness on the international market. Those in favour of gene technologies believe that through these the costs can be reduced and the yields will be higher. It may even be possible to develop varieties that are highly resistant to frost and able to assimilate in low temperatures, which would be well suited to the Finnish conditions. Those who are against gene technologies fear that the benefits from new technologies would go to plant breeders while farmers would be left outside. They also highlight the unpredictability of the technologies and the risks to the environment.

Farmer – a master or a servant?

Genetic modification is more expensive than traditional plant breeding, and thus the seed prices will also be higher. The use of gm-seed involves fees for the plant breeders' rights, which the operators in the food chain have to pay to the breeders. Farmers will undoubtedly benefit from higher yields produced by gm-seed, but the seed will also be more expensive.

The development of food processing as a result of gene technologies is likely to cause changes in the food chain. Genetically modified crops have certain special properties, and thus they have to be kept separate from other products. The separation of the products and traceability (identity preservation) can be realised by means of contract farming, where a farm produces only a certain gm-crop using a certain method. This guarantees that no mixing will occur at the farm level and the quality characteristics are exactly as desired. The separation of the products requires a great deal of care in order to keep the products separate in the trade as well. In the future when contract farming becomes increasingly common a farmer will become a subcontractor rather than an

independent actor, and thus the farmer is more and more closely linked to the food chain. Parties at the beginning of the chain who sell the seed and pesticides may demand that the seed from the yield be collected back to them. It is also possible that a farmer has to commit himself to selling the crop at a certain price and time to a certain company, which is part of the company selling the seed and pesticides. We may end up in a situation where the farmer does not possess the product at any stage of the production but only performs the measures required in the contract. The role of public control over the food chain may also alter the position of farmers, and mandatory testing or reporting obligations may be introduced.

The loss of the autonomy of farmers is a contradictory issue. It may be possible that the new high-quality products differ from the bulk products and are free from the problems related to these, i.e. the products would become increasingly differentiated, the prices for the final product would be higher and farmer's welfare would increase. Contract farming also secures a steady income for farmers, and if the product range of the plant breeder is wide, the farmer would have a number of different options to choose from within the main lines of conventional farming, organic farming and gm-production.

Challenges for gene technology in Finland

In Finland the small size and scattered location of farms poses additional challenges to the cultivation of genetically modified crops. The ability of small farms to adopt new technologies has traditionally been considered weaker than that of large farms due to e.g. the required investments, information advantage and lack of adequate skills. In Finland such problems are not very likely. For example, the cultivation of genetically modified potatoes or oilseed crops requires no special skills, and technically the cultivation is actually easier than in the case of conventional varieties. No investments are needed, and only the more expensive seed causes extra costs. If both conventional and genetically modified crops are cultivated on the same farm, keeping these separate requires extra work and e.g. the machinery has to be carefully cleaned. In Finland all farmers have access to information on cultivation techniques, and farmers who have made contracts also get information from their contract partner in whose interest it is to improve the quality of the products. Rather than investments and lack of information problems may be caused by the lack of domestic gm-varieties, because the varieties development abroad cannot usually be cultivated in Finland due to the climatic conditions. Finnish firms have been reluctant to develop gm-varieties due to the resistance by the consumers, and the public sector has invested very little in the research on gene technologies. Thus it may not be possible to introduce any gm-varieties in Finland even if the willingness to do this would increase.

The challenges relating to gene technologies and transgenic foodstuffs and, for example, keeping the gm-products and conventional products separate are not restricted to the control of operations in the Finnish food chain. The trade in foodstuffs, seeds and feedingstuffs is extensive, and the control of this requires knowledge and skills as well as economic resources. At present the control of imports seems to pose a far greater challenge than controlling the domestic food chain.

3. AGRICULTURAL SUPPORT

The national objectives for the Finnish agricultural policy are based on the view that the permanent competitive handicap due to the natural conditions of Finnish agriculture must be compensated for in order for the domestic production to succeed on the common EU market. The means to reach the objective include the development of the common agricultural policy of the EU to meet the special needs of Finland as well as national measures allowed by the conditions of accession.

Agricultural support, its nature and amount play a significant role in securing the preconditions for agriculture in the different production lines in different parts of the country. It would be highly important for Finland to incorporate additional elements to the CAP so that the support would efficiently reduce the disparities caused by natural conditions. The current EU support mainly compensates for income losses accumulated in the course of time, which means that most of the support goes to the best farming regions of the EU.

However, the differences in the circumstances and needs of citizens within the EU are growing. In terms of the Finnish objectives it would be important to reform the CAP gradually by shifting away from policies promoting the area with the best production conditions as well as directing the support measures to take the northern areas better into account.

The role of support in the income formation of agriculture is much more significant in Finland than in other parts of the EU owing to the unfavourable natural conditions. The support consists of two main elements: support based on the rules of the common agricultural policy and national aid funded by the state.

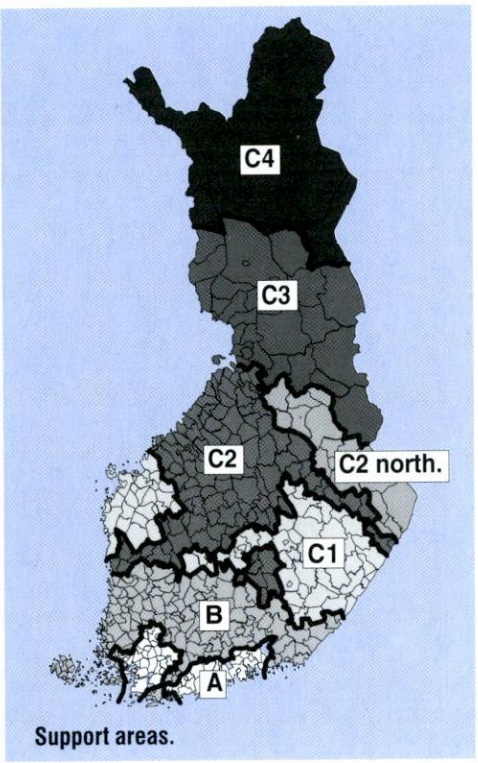
In 2001 the support based on the CAP in Finland totals € 1,102 mill. The support consists of the so-called CAP support for arable crops and livestock (€ 397 mill.) compensatory allowances for less-favoured farming areas (€ 423 mill.) and agri-environmental support (€ 282 mill.). These measures are either financed by the EU alone or co-financed by the EU and Finland. CAP support is closely linked to the common market arrangements of the EU, and these are funded from the EU budget. The EU contributes about 30% of the compensatory allowances and half of the environmental support. The rest is paid from national funds.

The national aids paid to farms in addition to EU support total about € 589 mill. in 2001. National aids comprise the northern aid (€ 356 mill.), national aid for Southern Finland (€ 135 mill.), national aid for crops production (€ 83 mill.) and certain other aids. The aid is paid on the basis of hectares and number of animals and as additional price for milk. The aid for horticulture is paid as storage aids, hectarage-based aid for horticultural production in the open and greenhouse aid.

Structure of the support

Finland has been divided into three main areas for the allocation of agricultural support. Support paid in the whole country consists of the CAP support, compensatory allowances for less-favoured areas, environmental support and part of the national aid for crop production. A little over 1.4 mill. ha, i.e. 55.5% of the cultivable arable area in Finland is eligible for agricultural support. Northern aid is paid in area C. For further differentiation of the aid the area eligible for northern aid has been divided into five areas.

Since Southern Finland was excluded from northern aid, support areas A and B received the so-called aid for serious difficulties from the beginning of 1997, which was agreed on the basis of Article 141 of the



Support areas.

Accession Treaty. For the part of animal products, greenhouse production and storage of horticultural products the aid was paid as a raised transitional aid in 1997–1999. From 2000 the raised transitional aid was replaced by national aid for Southern Finland based on Article 141. The national aid for crop production is also included in the support measures concerning the so-called serious difficulties.

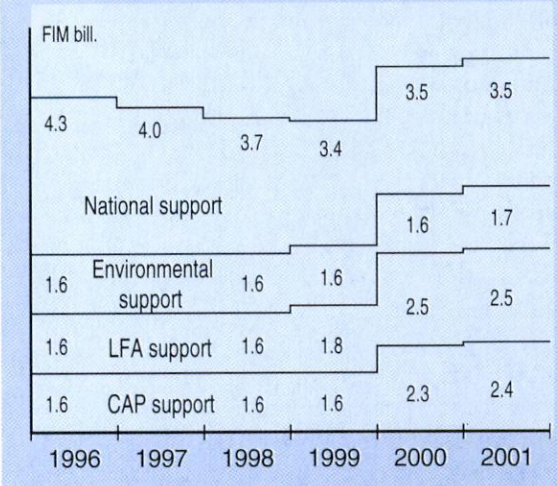
The total amount of support financed in full or partly by the EU paid in Finland stayed at about the same level from 1995 until 1999. As a result of Agenda 2000 the significance of the EU support is going to increase as the producer prices are falling. The amount of national aid paid each year decreased gradually during the transitional period.

The following chapters present a brief account of the general criteria for support. More detailed data on the level and regional differentiation of the different measures can be found in the annex.

3.1. Common support measures of the EU

Support based on the arable area or head of animal occupies a central position in the common agricultural policy. Most of the area payments are paid for cereals, and the other common area payments include e.g. compensatory payments for the producers of starch potato and aid for grass seed production. The CAP support for animals consists of the suckler cow premium, special premium and ewe premium. The purpose of compensatory allowances is to promote agriculture in less favoured areas, and in environmental support the objective is pro-environmental farming.

Price support is going to fall as a result of the Agenda 2000 reform. The producers are compensated for the income losses due to the fall in the producer prices as raises in income support, but at the EU level the



Agricultural support in 1996–2001, FIM bill.

losses are not compensated for in full, because according to estimates this would have led to disproportionate expansion of agricultural expenditure from the perspective of the budget policy.

Finnish farmers, however, will receive almost full compensation for the losses due to Agenda 2000. The special characteristics of Finnish agriculture and difficult farming conditions were acknowledged in the negotiations, and Finland was granted special supplementary compensation for the drying costs of cereals and oilseed plants, which at the negotiation stage was called drying aid. This aid may also be applied in the northernmost parts of Sweden. In addition, Finland and Sweden may apply the support for arable crops to silage grass. Both support measures were based on proposals made by Finland. In 2000 the demand of Finland to extend the additional compensation for arable crops to oil flax, fibre flax and hemp was approved.

The shift in the emphasis of the support measures from price support to direct payments follows the trend started by the reform of 1992. The objective is to prevent oversupplies, which are very costly. The reduction in price support brings the EU prices closer to the world prices, which reduces the need for export subsidies.

In the beef regime the criteria for the additional payment for extensive production were revised in the direction proposed by Finland, which takes the northern conditions better into account. Support for extensive production may also be paid for dairy cows in the mountain areas established by Regulation 1257/99. Finland is again entitled to pay the same amounts of suckler cow and special premiums as provided by the Accession Treaty.

Support for arable crops

Crops eligible for the support for arable crops based on hectares are cereals, oilseed plants, protein crops, and oil flax. From 2000 onwards area payment for arable crops may also be applied to silage grass in Member States where maize is traditionally not cultivated, and in 2001 CAP support is extended to fibre flax and hemp.

Support for arable crops is paid as a compensation for the cuts in institutional prices in the 1990s. Agenda 2000 cuts the intervention price for cereals by 15% in

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

	1999		2000 preliminary		2001 estimate	
	FIM mill.	€ mill.	FIM mill.	€ mill.	FIM mill.	€ mill.
Total	5,005	842	6,381	1,073	6,555	1,102
Support for arable crops	1,371	231	1,947	327	1,980	333
Other aid based on area	49	8	55	9	55	9
CAP support for animals	220	37	273	46	328	55
LFA support	1,760	296	2,464	414	2,513	423
EU contribution	*603*	*101*	*772*	*130*	*765*	*129*
National financing	1,157	195	1,692	284	1,748	294
Environmental support	1,605	270	1,642	276	1,679	282
EU contribution	*800*	*135*	*921*	*155*	*928*	*156*
National financing	805	135	721	121	751	126
EU financing, total	3,043	512	3,968	667	4,056	682
National financing, total	1,962	330	2,413	406	2,499	420

two equal amounts. The first 7.5% reduction was made in July 2000 and the second will become effective in July 2001. Thus the intervention price for cereals falls to € 101.31/t (FIM 0.60/kg), while hectarage support rises to € 63/t multiplied by the regional reference yield used for calculating the area payment. The so-called drying support paid in Finland and Sweden north of the 62nd parallel for cereals and oilseed plants is also based on the regional reference yields, and thus in Finland and Northern Sweden the area payments are € 19/t higher. When the additional compensation is taken into account, in 2001 the hectarage support for cereals is € 279/ha (FIM 1,658/ha) in support area A, € 230/ha (FIM 1,365/ha) in areas B and C1 and € 188/ha (FIM 1,120/ha) in areas C2–C4. The support for arable crops is based on regional yield levels, which means that in Finland the amounts of support are clearly below the EU average.

In order to be eligible for area payments the farmer has to set aside at least 10% of the arable area. The area of mandatory set-aside may vary according to the market situation. Set-aside area may be used for non-food production. Farmers are also entitled to compensation for set-aside area exceeding the obligation. The maximum set-aside area is half of the area eligible for area payments.

Farms producing less than 92 tons are exempt from the set-aside obligation. The minimum set-aside area is established on the basis of the location of the farm as well as the crops. Earlier optional set-aside eligible for premiums was not possible, but this was introduced by the Agenda 2000 reform.

The support for oilseed crops used to be a kind of a deficit payment, because it was possible to vary the amounts according to changes in the world prices. However, the reference price system for oilseed crops was abolished in the market year 2000–2001, and after a two-year transitional period in 2002–2003 the hectarage payments will be the same as for cereals. During the transitional period the support for oilseed crops is € 91/t, and the reference yield of 3.1 tons/ha is used for the whole country.

The maximum area eligible for the support for arable crops has been established for each Member State. In the case of Finland this base area is 1.59 mill. ha. According to Agenda 2000, a specific base area of 200,000 ha was also established for silage grass, and the area under the other crops was reduced accordingly. The area exceeding and falling short of the base area may balance each other, and the support per unit has to be cut if the base area is exceeded after the balancing is made.

There is also a limit for the area eligible for the support for oilseed crops. In Finland the reference area is 70,000 ha, from which the set-aside area of 10% is deducted. If the cultivated area exceeds the maximum area eligible for support established for Finland and the EU, the Commission cuts the amount of area payments.

CAP livestock premiums

The institutional prices for beef were lowered in connection with the 1992 CAP reform, and the suckler cow premium and special premium for bulls were introduced to compensate the producers for the income losses. The ewe premium system was also revised. The Agenda 2000 reform of 1999 contains a number of changes through which the amounts of the payments will be further increased during a period of three years. A direct slaughtering premium for farmers was introduced, together with supplementary aid to be paid from funds allocated for each Member State.

In 2000 the suckler cow premium was € 163 (FIM 969). In 2001 the basic amount of the suckler cow premium will rise to € 182/animal and in 2002 and after that it will be € 200/animal. The national additional aid is € 50 (FIM 297) per animal.

Suckler cow premiums are based on producer-specific maximum numbers of animals, and in Finland the maximum total number of animals eligible for the aid (55,000) was established in the Accession Treaty. This has been quite adequate as the number of premiums applied for in recent years has been around 30,000.

Special premium for bulls rises to € 185/bull (FIM 1,100) in 2001 and further to € 210 in 2002. The special premium quota of Finland was returned to the number of premiums according to the Accession Treaty, i.e. 250,000. The number of premiums applied for has been around 185,000.

In order for a farm to be eligible for the special premium and suckler cow premium the forage area has to be at least 1 ha/2 LU (bull over 2 year=1 LU, bull 6–24 months =0.6 LU and ewe=0.15 LU). Stocking density includes dairy and suckler cows, bulls and ewes, and in the case of dairy cows the stocking density is based on the milk quota of the farm.

Ewe premium is paid annually, and its purpose is to compensate the producers for income losses, should the average price in the EU fall below a certain base price. The premium is paid as two advance instalments, and the final instalment is paid in the autumn of the following year. In 2000 the ewe premium was about FIM 104/animal. An additional premium of FIM 40/animal is paid in the LFA area.

Premium for extensive production may be paid for suckler cows, bulls and dairy cows in mountain regions in countries where more than half of the milk comes from mountain regions. Limits for extensive production are set as livestock units per hectare of forage area. In 2000 and 2001 the premium is € 33/animal if the stocking density is 2.0–1.6 LU/ha of forage. The additional premium is EUR 66 if the stocking density is less than 1.6 LU/ha. From 2002 the premium will rise, and the criteria will be tightened.

Slaughter premium for all bovine animals was introduced as a new measure in the Agenda 2000 reform. In 2000 the premium was € 27 per a slaughtered bull, ox, dairy cow, suckler cow and heifer and € 17 for calves. In 2002 the premiums will rise to € 80 and € 50. For each Member State two maximum amounts for slaughter premiums are established, one for full-grown animals and one for calves.

Supplementary aid may be granted as funds specifically allocated to different the Member States to equalise disparities due to the production practices and farming conditions. In Finland the aid is paid as raised slaughter premiums for heifers and bulls weighing more than 270 kg. The so-called "national envelope" for Finland was € 2.1 million in 2000 and it will rise to € 4.1 million in 2001. In the following years the amount available will be € 6.2 million.

In the dairy regime the reform will be implemented starting in 2005–2006. In order to secure farmers' income, a support scheme will be introduced where the amount of the payments increases along with the cuts in the prices during a period of three years. The producers are eligible for dairy cow premiums granted on the basis of reference quantities eligible for the premium (milk quota) established for each producer. The compensation paid for the farm quota is € 5.75/ton (FIM 0.034/kg) in 2005, € 11.49/ton (FIM 0.068/kg) in 2006 and € 17.24/ton (FIM 0.102/kg) in 2007.

From 2005 the Member States may also pay supplementary aids to their producers. This so-called "national envelope" for Finland will rise along with the price reductions from € 6.2 mill. to € 18.6 mill. in 2007. This amounts to a little more than FIM 0.05/kg of milk.

Compensatory allowances (LFA)

Certain farming areas in the EU have been classified as less favoured areas, and compensatory allowances are intended to secure the continuation of agriculture in these areas and maintain the rural population. In the membership negotiations it was agreed that 85% of the arable area in Finland (support areas B and C) are covered by LFA support, but in May 2000 the Commission approved the Finnish proposal to extend the support to all Finnish producers who meet the eligibility criteria, and thus the measure covers all the cultivated area in Finland (2.17 mill. ha).

In 2000 compensatory allowances were paid according to the revised system based on the arable area only, while earlier it was based on either the livestock units or hectares. The requirements concerning lists of animals and requirement to keep animals on the farm for a certain period of time were also abolished.

In 2000 the amount of payments was € 150/ha in area A, € 200/ha in areas B and C1 and € 210/ha in areas C2–C4. The average EU contributions were 54% in Objective 1 areas and 26% in the other parts of Finland.

In 2000 some changes were made in the eligibility criteria for the compensatory allowances. The farmer no longer has to reside in the immediate vicinity of the farm, but within a distance from which the farm can be appropriately run. The support may also be granted for arable land that was not cultivated in the previous year.

Environmental support

The environmental support scheme part-financed by the EU is part of the environmental programme of the EU drawn up in connection with the 1992 CAP reform. When the new members entered the Union in 1995, environmental support was a very important element in the membership negotiations concerning agriculture

The main purpose of the environmental support is to compensate the producers for the increase in the production costs and income losses on farms that undertake measures that reduce the environmental load due to agriculture. From 2000 environmental support consists of basic measures, additional measures and special measures.

The main emphasis is on water protection, but efforts are also made to reduce the emissions into the air and risks due to the use of pesticides as well as take care of rural landscapes and biodiversity. One objective is to increase the amount of humus in the soil and maintain or improve the productive capacity of the land.

In 2000 environmental support totalled € 276 mill., and the funds allocated in the budget for 2001 total € 282 mill. Agri-environmental support is dealt with in more detail in Chapter 4.

3.2. National aid

The aids paid from the national funds, northern aid, national aid for Southern Finland and crop production and certain other measures constitute a support system aimed at securing the preconditions for Finnish agriculture in the different production lines and regions. The decisions on national aid, together with the criteria to be applied in establishing the level and regional distribution of the aid, were made in connection with the membership negotiations with the EU. The aid may not be used to increase the production and the amount of aid may not exceed the total support level before the EU membership. The aid was degressive during the transitional period as the competitiveness of the Finnish

farms was expected to improve as a result of the increase in the farm size and other adjustment.

The national aid for agriculture and horticulture paid to the production of 2000 totalled € 590 mill., and in the budget for 2001 € 572 mill. were allocated to national aid. To compensate for the rise in the costs of agriculture the Government decided to propose that the funds be increased by € 17 mill. in the first supplementary budget proposal for 2001. In the allocation of the national aid for 2001 the main emphasis will be in milk and beef production, both directly and through the aid for grass. Beef production based on suckler cows is promoted by raising the northern aid by € 101/LU and by applying the maximum amount of aid for forage grass allowed by the EU, € 202/ha, on suckler cow farms in Southern Finland. Investment aid is also available for the purchase of animals.

The aid for pig husbandry had to be lowered as the authorisation to pay national aid in Southern Finland was reduced. The aid per livestock unit falls by 5.2% to € 308. The difference between the amounts of aid in Southern and Northern Finland will remain the same.

The proposal for the allocation of national aid in 2001 was prepared in close cooperation between the State and the Central Union of Agricultural Producers and Forest Owners. Agreement was reached in all other issues except for the proposed aid for pig husbandry.

Northern aid

According to the Accession Treaty (Article 142), Finland is allowed to pay national northern aid north of the 62nd parallel and in adjacent areas, i.e. support areas C. Northern aid consists of milk production aid, aid based on the number of animals, aid for slaughtered cattle, and aid based on the cultivated area. Northern aid also includes the aid for greenhouse production and storage aid for horticultural products, wild berries and mushrooms.

Northern aid increased by degrees towards the end of the transitional period, partly compensating for the reduction in the transitional aid. Northern aid for the production of 2000 totalled a little under € 354 mill., and the most important measures were northern milk production aid (€ 181 mill.) and northern aid per livestock unit (€ 97 mill.).

In 2001 the milk production aid is € 86/ton in support area C1 and in the northernmost Finland it is € 310/ton. The northern aid per livestock unit for e.g. bulls varies between € 412 and € 757/LU. In pig husbandry there is less regional differentiation, and the aid varies between € 320 and € 400/LU. The most significant aids based on the cultivated area are the hectarage payments for rye, starch potato and vegetables grown in the open. In horticulture the aid for greenhouse production is based on the area used in the production, and the storage of vegetables grown in the open is

National aid for agriculture in Finland, aid per production year.

	1999		2000 preliminary		2001 estimate	
	FIM mill.	€ mill.	FIM mill.	€ mill.	FIM mill.	€ mill.
Total	3,402	572	3,509	590	3,499	589
Transitional aid	1,268	213				
National aid for Southern Finland			841	141	802	135
Northern aid	1,665	280	2,103	354	2,117	356
National aid for crop production	351	59	450	76	492	83
Other national aid	118	20	115	19	88	15

also supported. The storage aid is based on the quantities stored, and the aid per unit is considerably higher for fresh products than for the raw materials of the processing industry.

National aid for Southern Finland

During the membership negotiations it became obvious that Finland would not be entitled to permanent northern aid for the whole country. However, based on article 141 of the Accession Treaty it is possible to apply national aid should there be serious difficulties after the full application of the northern aid, transitional aid and the measures included in the common agricultural policy. Article 141 does not specify the serious difficulties in any more detail, nor does it set any time limits. Finland has interpreted this so that the article entitles Finland to apply permanent or at least long-term aid measures, while the Commission has seen it mainly as referring to a transitional stage.

Finland has to negotiate with the Commission on the application of measures based on article 141. The authorisation to apply the aid came to an end in 1999, and thus decisions on the future measures had to be made during 1999 so that the aid for Southern Finland would not fall dramatically in 2000. Finland suggested a long-term degressive national aid, but according to the Commission Finland is authorised to these payments only for the period necessary for the EU adjustment. According to a decision made in December 1999 Finland may grant both direct national aid and raised investment aid for the livestock and horticultural production in Southern Finland until the end of 2003.

The calculation of the level of the new aid measures starts from the maximum amounts paid in 1999, and the reduction in 2000-2003 will be, on average, 3.5%/year in the milk and beef regimes and 4.5% in the other sectors. Finland wished to keep the payments at about the current level, with a reduction of about 1%/year.

The payments applied to livestock production in Southern Finland in 2001 are quite similar to those in the northern aid. The production aid for milk in Southern Finland is € 60/ton, except in the archipelago and Åland. In the case of other livestock the aid is based on the number of animals, including slaughtered heifers, as well as bulls in the early part of 2000. The aid for greenhouse production and storage aid for horticultural products are based on the same criteria as in Northern Finland.

The outcome of the negotiations on Article 141 reached in December 1999 means that the final interpretation of this article is still open. The aid measures will be reassessed in 2003 based on data supplied by Finland to the Commission. At that time it has to be decided to what extent the serious difficulties in Finland call for permanent support arrangements to be incorporated in the common agricultural policy.

National aid for crop production

The national aid for crop production starting from 1997 was introduced as part of the aid for serious difficulties. The farmer has to fulfil the criteria for environmental support.

In 2001 this area-based aid is paid for the most important arable crops and vegetables grown in the open. Aid for forage grass may also be paid in the whole country, and the aid for forage cereals reported as forage area was introduced as a new measure. The aid for wheat, rye, malting barley and forage grass as well as certain CAP crops (e.g. oilseed and protein plants) will be raised.

The share of the national aid for crop production in the gross return of agriculture has increased year by year. Between 1997 and 2000 the amount of aid grew from about € 20 million to € 76 million. The aid for the production of 2001 is estimated to total € 83 million.

Nationalised common agricultural policy

Jari Pentinmäki

The liberalisation of the world trade is going to proceed despite the problems in the WTO negotiations on the liberalisation of international trade, and the pressures towards the EU concerning the abolition of export subsidies and support linked to production volumes will be growing. In the trade negotiations the CAP and LFA support based on the area or livestock units may also be jeopardised, because strictly speaking these may also be considered production-linked supports.

In almost all parts of the EU farming is highly dependent on support payments, but these are particularly important in areas such as Finland where farming suffers from permanent competitive handicap owing to the adverse natural conditions. The agricultural support system of the EU calls for further reform where agricultural support can be justified by criteria approved by the international trade negotiations, consumers and taxpayers, as well as the producers.

One main alternative put forward is a support system where the payments are based on the production of public goods relating to the environment and welfare of the rural areas. Traditionally the public goods produced by agriculture have been derived indirectly through the joint production process: open farming landscape has evolved as a result of cereal production without any special compensation for producing this public good. The production has also contributed to employment and enhancement of biodiversity, secured the availability of foodstuffs and transferred the farming skills from one generation to another.

The public goods and services produced by agriculture are strongly linked to the local conditions and, unlike foodstuffs, these cannot be imported. In a product- and price-oriented agricultural policy it has been relatively easy to realise the production, income and environmental objectives through, for example, area payments. Replacing agricultural support by premiums for public goods and services would make it impossible to apply the current, highly detailed system based on rules and control. What would be needed is nationalisation of the common agricultural policy and increase in the regional decision-making power.

Land use contracts (CTE) introduced in France

In 2000 France, which is the leading agricultural country in the European Union, introduced a so-called land use contract (Contract territorial d'Exploitation, CTE). This is the first nationally based programme linked to the European model of agriculture aimed at guiding the economic, environmental and social impacts of agriculture to reach an optimal range of public goods from the perspective of the society.

The voluntary contract made between the State and the farmer is based on measures according to the Regulation on support for rural development, and the contract must include a socio-economic as well as an environmental measure. Half of the funding needed for the contracts in 2000–2006 (€ 3.5 bill.) comes from the European Agricultural Guidance and Guarantee Fund, partly through cuts in the support for the largest farms (modulation) and partly from the funds allocated to Regulation No 1257/1999, and the second half is national.

What is new in the contract system is the emphasis on the societies. In practice this means that the contents of the regional contracts are formulated by the consumer, producer and environmental organisations, organisations for hunting and fishing as well as the authorities. This is believed to improve the relationship between the farming population and the other population groups and to show to the taxpayers that, besides food, agriculture produces environmental and rural goods, employment and various kinds of services. Due to the collective implementation the farm-level contracts contribute to the production of non-tradable public goods desired by the society.

One example of the CTE contracts is a farm with 50 dairy cows and 90 slaughter bulls located in the northeast of France. The farm has improved the efficiency of the production by increasing the number of beef animals, which has led to a reduction in the grass area and increased the area under maize, i.e. arable farming has become less diverse and the need for labour has increased. By means of the contract the farm will reduce the number of beef cattle and compensate for the income losses by increasing the grass area as the environmental measure included in the contract. This also makes it possible to direct more attention at animal hygiene and invest in improving the quality of milk, which constitutes the economic aspect of the contract.

The CTE contract has not won the unreserved approval among the producers, and especially the inspections by authorities and need for extensive advisory services have reduced their willingness to participate in the scheme. The relationship between the CTE contract and the other support measures is ambiguous, and there is also overlap between the different systems. By the beginning of 2001 about 4,000 contracts had been made, which is less than a third of the objective set by the authorities.

Is the contract suited for Finland?

The land use contract is a good example of efforts to find ways of reforming the common agricultural policy of the EU. When implemented appropriately, increase in the national decision-making power within the limits of the Community directives would also be in the interest of Finland. The CTE contract as such may not be the best suited solution for Finland, but what is needed is a scheme designed specifically for the Finnish conditions. It should be kept in mind that in France, for example, the public goods related to the rural environment have received much less attention than in Finland.

What would be needed is careful reconsideration of the position and role of agriculture in the Finnish society. The needs of the society are changing, and the current agricultural policy obviously cannot fully satisfy the needs of the people consuming the public goods and services produced by agriculture. One current example of this is the food safety in Europe. Food safety is one of the public goods produced by agriculture, which so far has evolved as a by-product of food production without any additional payments through the market mechanism or any other system.

In this connection nationalised agricultural policy should be understood as increasing the decision-making power of the Member States in issues with high social impacts but little effect relating to distortions in international trade or common agricultural budget. These issues include the public goods and services concerning the environment, employment and rural areas.

4. AGRICULTURE, FOOD SAFETY AND THE ENVIRONMENT

One of the most important positive environmental impacts of agriculture are the open rural landscapes with fields. These are highly valuable in the Finnish nature, which is largely dominated by forests. In the course of time agriculture has also created unique farming ecosystems, traditional biotopes, with very different sets of living organisms from the wild ecosystems. These are also important for the enhancement of biodiversity.

Unfortunately agriculture also has various kinds of negative impacts on the environment, because certain production inputs used in farming become harmful to the environment when they exit the cultivation system. Nutrients leaching from the arable land, nitrogen and phosphorus, cause eutrophication of waters, while pesticides also destroy species other than those that cause problems in agricultural production.

Since 1995 agri-environmental support has been the most important environmental measure in agriculture, and the second agri-environmental support scheme became fully effective in 2000. Both the old and the current agri-environmental support schemes have promoted the introduction of more environmentally-friendly production techniques in agriculture. However, it takes several years for the results to materialise, and agriculture is still considered the main cause of e.g. eutrophication in Finland.

Environmental quality is closely linked to the quality of foodstuffs and, through this, to food safety, but food safety comprises a number of elements that may not be related to the production environment. Food safety depends on work done at all stages of the food chain, from farm to fork.

4.1. Food safety in Finland

According to the National Food Authority, the EU membership has considerably increased the food-related risks and complicated the control in Finland, but this has not led to any notable deterioration in food safety. The numbers of cases of food poisoning are about the same as before, but the epidemics tend to be more serious.

In 2000 salmonella and listeria infections were not in the foreground in the Finnish media. Very few cases of salmonella were found and the sensitivity of the salmonella strains to medicines has stayed at a high level. Instead, in Denmark there was a salmonella infection that killed two people. Central European countries are beginning to take salmonella more seriously, and e.g. in Denmark efforts are made to reduce the incidence of salmonella in the production chain and in Great Britain a method for pasteurising eggs has been developed.

In terms of listeria, too, the situation was good in Finland. In studies made in spring 2000 the Veterinary and Food Research Institute found fewer Listeria monocytogenes bacteria in vacuum-packed fish products than earlier. Some cases of listeria infections were found, most of them in September-November. Listeria are most commonly found in fish products, but in recent years they have also been found in frozen vegetables imported to Finland. The EU Commission has planned to introduce a maximum limit for the Listeria monocytogenes bacteria in convenience foods. In addition to salmonella and listeria, campylobacter has also become increasingly common in both Finland and the other European countries.

Instead of the traditional food safety problems, BSE disease was the main topic in 2000 among both the consumers and decision-makers. BSE was found in cattle in several Central European countries, which has led to a fall in beef consumption in many countries. The costs due to the decrease in the demand as well as testing of animals and other preventive measures are mounting. In Finland the demand for beef has not fallen, but it is even more clearly directed at domestic beef.

The EU has introduced a number of measures to restore the consumer confidence in beef, such as testing of cattle for BSE and ban on the use of meat-and-bone meal in animal feeding. Many countries have introduced bans on beef imports, and in certain cases the risk groups are not allowed to donate blood. CWD disease (chronic wasting disease), which is related to BSE, has been found in farmed moose in Canada. In Finland less extensive BSE testing is required than in the other countries owing to the good situation, but meat-and-bone meal was collected from the farms and trade. In January 2000 the EU Commission presented the so-called White Paper on food safety, which ratifies the efforts of the EU to the enforcement of efficient policy in food safety issues. The document also ratifies three principles for the development of the legislation: 1) the responsibility of all parties involved (e.g. agricultural producers, feed and food industry, trade) 2) watertight control from the farm to the consumers' table and 3) traceability.

The White Paper highlights the objective to guarantee a high level of health protection to the consumers of European food. The Paper contains 80 separate measures aimed at developing and harmonising the Community food legislation, and it also officially proposes the establishment of the European Food Authority. The decision on the location of this will be made during the Swedish Presidency, and the candidates are Helsinki, Barcelona, Lille and Parma as well as possibly Luxembourg. Besides the EU, the World Health Organization WHO has also considered setting up a unit to deal with food safety issues.

The role of biotechnology and genetic engineering in food production was high on the agenda in 2000 as well. Both in Finland and abroad the production-oriented biotechnology industry has strongly promoted the introduction of biotechnological methods, while the consumers have been very cautious. In the USA the area under genetically modified maize decreased when the farmers began to anticipate problems in finding demand for these products.

The Finns were stunned by the information made public in May that genetically modified rape had been cultivated in Finland, probably by accident. Another practical example of these technologies in Finland is the production of transgenic cows and cow's milk in North Karelia. The authorities have assumed a neutral position, taking into account the potential unpredictable social aspects related to the technologies and the possible irrevocability of biological risks. Public discussion on these issues suffers from lack of information.

In general the importance of food safety was more widely acknowledged in the EU than earlier. In addition to the decision-makers, Finnish consumers have accepted food safety as an important factor influencing their purchase decisions. If this trend continues and the opinions of consumers are reflected as concrete choices at retail outlets, the food production chain will have an obvious incentive to maintain a high level of food safety.

4.2. Agri-environmental support

The agri-environmental support for the programming period 2000–2006 following the agri-environmental support scheme for 1995–1999 was completed at the end of June 2000 when the EU Commission approved the Finnish proposal for the Horizontal Rural Development Programme, which also contains the agri-environmental support. The Commission suggested very few changes in the Finnish proposal: the additional measure concerning the diversification of production was abolished and the special support contract concerning the raising of local breeds was restricted to breeds listed as endangered by the FAO.

Like in 1995 farmers had to make agri-environmental support contracts before the criteria were fully known due to the delays in the decisions on agri-environmental support. This did not affect the farmers' willingness to participate, and by the end of 2000 the contracts concerning basic and additional measures covered more than 90% of the farmers and 95% of arable land. This was at least the same as in the earlier scheme in spite of the changes in the terms and support levels. Farmers' interest in agri-environmental support exceeded the official target of 75% of the arable area.

Farmers who had made a contract based on the earlier agri-environmental support programme which came to an end at the end of 2000 (or later) could notify their willingness to shift to the new scheme and give the commitment to this in connection with the application period of spring 2000. In these cases the old commitment to agri-environmental support lapsed and the terms and support levels of the new scheme became effective. This concerned the majority of farmers.

According to the Horizontal Rural Development Programme approved by the EU Commission, the EU contributes 75% of the financing of agri-environmental support in the Objective 1 area and 50% in the other parts of the country. Based on the approved financial framework, the funding for agri-environmental support during the programming period 2000–2006 totals € 1.7 bill., and the EU contributes € 0.9 bill., i.e. 56% of this. This may, however, not be enough. The area objective of 75% was exceeded, and thus the financial framework for 2000 was exceeded by more than € 47 mill., and agri-environmental support totalled € 276 mill. In the budget € 282 mill. were allocated for the agri-environmental support to be paid in 2001, which is almost € 50 mill. more than according to the original financial framework, and the need to exceed the framework by roughly the same amount will persist in 2002–2004.

Both in the old and new scheme the main emphasis is on water protection. Efforts are also made to reduce emissions into the air, reduce the use of pesticides as well as preserve the rural landscapes and biodiversity. The objective is also to increase the amount of humus in the soil and maintain or improve the productive capacity of the land. The age criterion for agri-environmental support is the same as earlier: in most cases only farmers who are under 65 years of age are eligible for the support for the basic and additional measures.

The measures of the current scheme do not significantly differ from the old one. The most important difference in terms of the structure of the scheme is that the measures according to the General Agricultural Environment Protection Scheme (GAEPS, the so-called basic measures) were replaced by the basic and additional measures. Instead, the structure of the special measures is about the same as earlier. The introduction of additional measures increases the possibility for the selection of the most appropriate measures at the farm level. Another significant revision compared to the earlier support was the change in the payment criteria. The support is still

paid on the basis of the area, but the amount of support no longer depends on the support area or cultivated crops, except that set-aside area is not eligible for agri-environmental support. The support varies according to the production line, but this involves only two of these, crop production or animal husbandry. In addition to these, horticultural production is eligible for specific agri-environmental support of its own. The farm is engaged in livestock production if there are production animals corresponding to at least 0.4 livestock units per hectare of arable land or at least 10 livestock units during the whole contract period. Other farms are regarded as crop farms. When making the commitment to agri-environmental support for the first time farms have to select the measures for either crop producing or livestock farms.

There are five basic mandatory-to-all measures for farms. These concern 1. environmental planning and monitoring of farming, 2. fertilization base levels for arable crops, 3. plant protection, 4. headlands and filter strips, and 5. maintenance of biodiversity and landscape management. In addition to these, there is a sixth basic measure for livestock farms concerning the handling of animal manure, which establishes e.g. the conditions for storage of manure, taking into account the nutrients in manure in fertilization as well as following detailed instructions for manure spreading.

The support for the mandatory basic measures is € 93.34/ha on crop producing farms and € 116.89/ha on livestock farms. The higher support per hectare on livestock farms is due to the mandatory basic measure concerning these farms. In the case of horticulture area (which must be at least 0.5 ha) the support for basic measures is € 333/ha for vegetables grown in the open, ornamental plants, aromatic herbs and medicinal plants and € 484/ha for berry and fruit plants and nursery production. A farmer has to implement all basic measures for five years after making the commitment.

In addition to the mandatory basic measures, each farmer has to select one additional measure. The measures available for crop producing farms are more accurate fertilization, diversification of farming, plant cover during winter and reduced tillage on arable land, as well as farm biodiversity. Livestock farms have to select either one of these, or one of the following measures: reducing ammonia emissions from manure stores, collection of gases from manure, promoting the welfare of production animals and treatment of washing water from the milking room. Farms raising cattle, horses or sheep may not select plant cover during winter and reduced tillage as the additional measure.

Additional measures for horticulture are more accurate monitoring of nutrients, more accurate nitrogen fertilization through measurement of liquid nitrogen and use of covering in the weed prevention of perennial horticultural crops. The additional measure for horticulture is voluntary, and a farm may select only one of these measures.

On livestock and crop producing farms the support for additional measures varies between € 13.46 and 23.55/ha, and in horticulture from € 13.46 to 243.87/ha. Farmers have to implement the additional measure selected in the first year after making the commitment to agri-environmental support for five years. Additional measures may be changed only in cases where the farm starts up or quits animal husbandry or the cultivation of horticultural crops.

Special support contracts may concern the following measures: establishment and management of riparian zones, establishment and management of wetlands and sedimentation ponds, other methods for treating run-off water (regulating subsurface drainage, regulation of irrigation and circulation of drainage water), organic production, arable farming in groundwater

areas, increased efficiency in the use of animal manure, traditional biotopes, promotion of biodiversity, development and management of landscapes, raising of local breeds, cultivation of local crops and regional reduction in acidity. Depending on the contract, the amounts of special support may be € 65.59–449.90/ha. For raising local breeds the support is € 168.19/LU. Special support contracts are made for five or ten years, and a farmer has to implement the basic measures as well in order to be eligible for special support. This means that the age limit of 65 years also concerns the special support contracts, except for contracts concerning development and management of landscapes, biodiversity and traditional biotopes, which can be made with farmers who are over 65 provided that they commit to implement the basic measures without any compensation.

Like in the earlier agri-environmental support, the support for both the basic and additional measures and special measures is compensation for the costs and income losses due to the required measures. In addition, the basic and additional measures and in most cases also the special measures include an incentive of 20%. In the case of contracts concerning the establishment and management of riparian zones, which are highly significant in terms of water protection, the incentive is as high as 30%.

The total support per hectare paid for the basic, additional and special measures may not exceed the maximum level of € 600/ha for the cultivation of annual crops, € 900/ha for the certain of perennial crops and € 450/ha in the case of other crops.

Assessment of the environmental impacts

The current agri-environmental support is estimated to reduce both erosion and phosphorus and nitrogen load on waters due to agriculture in the long run (5–10 years) by about 30–40%, together with a significant reduction in the load due to organic matter as well as entry of excrement bacteria to waters. The risk due to the leaching of pesticides into waters is estimated to fall by 20%, ammonia emissions into the air would fall by about 15–20%, and there should be some reduction in methane emissions. In the long run the old and the new schemes combined should reduce the phosphorus

Total amounts of the earlier (1999) and new (2001) agri-environmental support and compensatory allowances (LFA) for different types of farms.

	1999			2001		
	Agri-environmental support, FIM	LFA FIM	Total FIM	Agri-environmental support, FIM	LFA FIM	Total FIM
Cereal farm in area A 50 ha	51,505	0	51,505	27,616	44,475	72,091
Pigmeat producing farm in area B 46 pig places, 42 ha	24,244	39,139	63,383	29,148	49,415	78,563
Beef producing farm in area C1 55 animal places, 33 ha	18,220	32,741	50,961	25,126	39,546	64,672
Dairy farm in area C2 14 dairy cows, 27 ha	17,507	27,400	44,907	19,925	33,323	53,248

and nitrogen load on waters by about 50% from the levels in the beginning of the 1990s. There are not yet adequate monitoring data available, and thus it is difficult to assess whether the estimated environmental impacts will be realised. It seems, however, that e.g. the goals set for the reduction in nutrient load from agriculture have not been reached.

Comparison between the earlier and new scheme reveals that the possible positive trends in the state of the environment will not be reinforced by the new support and, in particular, for the part of biodiversity the situation is quite critical. The current scheme will probably only maintain the level of environmental management reached during the old scheme, as the basic measures of the current scheme are largely the same as the terms for basic support in the old one. The only major difference for the part of crop producing farms is that plant cover during winter and reduced tillage have been transferred to the additional measures.

The basic measure concerning livestock farms does not differ in any significant way from the provisions of the earlier agri-environmental support and current legislation, such as the "nitrate directive". The additional measure for livestock farms was selected mainly by farms were the manure stores and handling of washing water from milking rooms were already in order.

In the case of special measures, too, only minor changes were made. Compared to the old scheme, in fact the only new contract types were the contracts concerning local crops. As a special measure arable farming in groundwater areas is also new, but it simply replaces the contract concerning the extensification of agricultural production in the earlier special protection scheme. The measures for the treatment of runoff water that are eligible for support include, in addition to regulating subsurface drainage, regulation of irrigation and recycling of drainage water.

Compared to the old agri-environmental support, the contract concerning more efficient use of manure has now been far more successful, and the area covered by this special measure has increased considerably. There has also been some growth in the area under riparian zones, but there has been very little interest in the establishment and management of wetlands and sedimentation ponds. Organic production continues to grow, and in October 2000 the area approved as organic or being converted into organic production was about 146,000 ha, which is 10,000 ha more than at the end of 1999.

The positive environmental impacts of the current agri-environmental support would be much greater had the possibility to select several additional measures put forward at the planning stage been approved. This was not possible due to the shortage of funding, which will also be reflected in agri-environmental support available in 2001. Only a limited number of new agri-environmental support contracts can be made, and no new areas can be incorporated into the existing contracts. Special support contracts can be made only for organic production, establishment and management of riparian zones, efficient use of manure, management of traditional biotopes, cultivation of local crops and enhancement of biodiversity.

The funding of the basic and additional measures was based on the assumption that agri-environmental support would cover only 75% of the arable area, even if the farmers could be expected to find the new agri-environmental support scheme at least as attractive as the old one. An obvious risk was taken in agricultural policy, and the repercussions of this are not yet known. From the farmers' perspective, at its best taking this risk will increase the agricultural support in 2000–2006 by € 336 mill. in the form of agri-environmental support from the amount according to Agenda 2000. At its worst, however, the amount

available for agri-environmental support in the last years when Agenda 2000 is in force, 2005 and 2006, would be only 40% of the current level. The main reason for the decision to allocate such a small amount of funds to agri-environmental support is that the decision-makers in agricultural policy considered the raise of the compensatory allowances (LFA support) and extending this to the whole country the primary objective of the Horizontal Rural Development Programme. Thus it was considered justified to cut the total amount of funds available for agri-environmental support as now farms located in support area A are also eligible for the compensatory allowances.

The proposal for the current agri-environmental support, with the payments per hectare, had been made public before the Horizontal Rural Development Programme and its financial framework were completed, and thus lowering the payments per hectare would have been difficult, both in terms of marketing the support scheme to farmers and agricultural policy in general. Thus it was decided to take the risk that the need for financing for agri-environmental support might exceed the financial framework approved by the Commission. Now the funds used for agri-environmental support in 2000–2004 will total about € 1,430 mill., and the funds available for 2005 and 2006 will be about € 235 mill., i.e. the funds available for these two years are smaller than the funds used in one year at present.

What could be the solution to this obvious shortage of funds? There are three options. From the Finnish perspective the best option would be that the European Commission would approve the excess over the financial framework and would be prepared to pay the same share of the excess as it currently contributes to agri-environmental support (56%). The Commission could also approve the excess provided that this would be paid from the national funds. The third option is that Finland would save on some other support measures and use these funds to pay for agri-environmental support. In practice this could probably be done as transfer of funds between the rural development measures approved by the EU included in the financial framework of the Guarantee Section of the European Agricultural Guidance and Guarantee Fund (EAGGF).

It is very likely that agri-environmental support will have to be renegotiated in connection with the negotiations on the revisions to Agenda 2000 in 2003, if not sooner. This matter will coincide with the negotiations on the continuation on the aid for serious difficulties based on Article 141 of the Accession Treaty.

4.3. Future prospects of agri-environmental policy

The Agenda 2000 programme contains a number of measures highlighting the significance of the environment. The aim is to develop a so-called European model of agriculture, whose principal objective is to develop "agriculture based on healthy and pro-environmental production practices and capable of producing high-quality products that meet the requirements of society". In other words, landscape management and preservation of the natural environment have to be taken into account in farming, which thus has to be pro-environmental, respecting the needs related to environmental protection.

One of the most important means of the environmental policy of agriculture for the programming period 2000–2006 is Regulation 1257/1999 on support for rural development, which, in addition to agri-environmental support and compensatory allowances, covers e.g. the measures promoting sustainable forestry and the adjustment and development of rural areas.

The current trend in the environmental policy of agriculture is that certain environmental requirements are included in other support measures, such as compensatory allowances and support for arable crops. The main purpose of the criteria involved is to promote the application of the most appropriate good farming practices that are not harmful to the environment in each region. The general principle is that if certain measures concerning environmental considerations are required by the other EU provisions (cf. nitrate directive and maximum quantities for nitrogen use), these measures are not eligible for compensations through agri-environmental or other support.

On a more general level the point is that the common agricultural policy must be based on the principle of sustainable development. This refers to the preservation of the balance and value of natural resources as well as taking account of the real long-term socio-economic costs and benefits of the consumption and protection. In sustainable agriculture, efforts are made to manage the environment and natural resources so that they would be available for the economic utilisation by future generations as well. This involves the protection of the cultural heritage relating to agriculture, and sustainable agriculture should also reflect the values related to the social position of agriculture, viability of the rural areas and balanced development of rural communities.

In practice sustainability is measured by means of environmental and other indicators. These have been developed for some time, but it will take a lot of work both in the Member States and on the EU level before the indicators will be fully operational as tools of an integrated agricultural, environmental and rural policy. The indicators should make it possible for those who are responsible for preparing and implementation of the policies and the public at large to: 1) define the most important environmental issues of European agriculture, 2) understand the relationship between agricultural practices and environmental impacts, 3) assess to what extent agricultural policy fulfils the need to promote pro-environmental agriculture, 4) follow the regional environmental impacts of Community programmes and 5) examine the biodiversity in agricultural ecosystems.

Obviously the emphasis on environmental issues does not concern agriculture alone. All industries and sectors of the society have to make their own contribution to environmental considerations, but the close operational link between agriculture and the environment highlights the role of agriculture in the utilisation, development and preservation of the environment and renewable natural resources.

EU rules for organic livestock production became effective

Kauko Koikkalainen

The Council Regulation concerning organic livestock production entered into force in August 2000 after years of preparation. The Regulation establishes the minimum standard for the production and marketing of organic products in the EU, and the Member States may issue their own rules for the application of the Regulation. The harmonisation of the rules for organic livestock production provides a solid basis for the development and increase in the production to meet the growing demand.

The EU Regulation differs in certain respects from the criteria for organic production set by the Finnish Union for Organic Farming. The criteria for reproductive material (calves, piglets, chicks, etc.) were tightened, i.e. these must of organic origin, all feedingstuffs must be organically produced and the animals may not be tethered. In some respects the EU rules are less strict than the criteria of the Union for Organic Production, for example, no reference is made to self-sufficiency in feed. The transitional periods granted for the application of the criteria are very long, up to 2010. In addition to the rules for organic production, the revised Regulation also prohibits the use of genetically modified organisms (GMOs) and products derived from these in organic production.

According to the Regulation, animals used in organic production should mainly be of organic origin, but for renewal and increasing the herd size adult animals may be purchased if organic animals are not available. Subject to certain terms, purchasing piglets and chicks from conventional production is allowed until the end of 2003, but the purchased calves must be of organic origin immediately after the entry into force of the Regulation. This requirement causes additional costs to organic production, estimated at FIM 0.02/l in milk production and about FIM 0.50/kg in beef production.

Organic feedingstuffs

According to the Regulation, organic livestock production may be practised only on farms which also have arable land under cultivation (i.e. the so-called landless production is prohibited). There are no requirements concerning self-sufficiency in feed or number of animals in proportion to the cultivated area. The total amount of animal manure has been set at 170 kg of nitrogen per hectare. Only organically produced feedingstuffs should be used, but due to the shortage of these conventional feed materials listed in the Regulation may account for no more than 10% of the annual feedingstuffs of ruminants and 20% of the feedingstuffs for other animals during a transitional period five years. In the feeding of ruminants the share of roughage must be at least 60% in the rations of feedingstuffs, or 50% in the lactation period. The feeding of young mammals must be based on natural milk. No synthetic amino acids or meat-and-bone meal may be used in feeding, and the use of chemically extracted groats is also prohibited. Instead, unlike by the criteria of the Union for Organic Production, the use of soya and fish meal is allowed.

The costs due to the new rules for animal feeding in organic production are the highest on pig farms, where especially the ban on the use of synthetic amino acids

reduces the daily growth considerably and thus increases feed consumption. Based on calculations the cost per kilo of meat amounts to FIM 1.5.

Animals allowed to move freely

According to the new Regulation, livestock may not be tethered and herbivores must have access to pastures or exercise areas. The derogations from this basic rule concern the existing buildings. In new buildings the animals must be grazed in the summer and in the winter they must be regularly allowed to open air runs or exercise areas. Pigs and poultry must have at least open air exercise areas. Bulls and finishing pigs may be indoors for the last fifth of their lives. The requirements for the indoor facilities are somewhat stricter than according to the criteria of the Union for Organic Production. In general the surface area of outdoor exercise pens must be 75% of the indoor area. Prior to the entry into force of the Regulation the buildings approved for organic production could apply for the approval of the EU concerning a transitional period extending until 2010. The open air runs and exercise areas cause additional costs to livestock production.

The ground of the outdoor pens must be such that manure, urine and run-off waters can be collected into watertight containers. Should the stocking density exceed certain limits, the bedding must be ferroconcrete, asphalt or soil cement. In addition to the hard bedding, in the outdoor pens for pigs and poultry there must be soft areas for rooting and other activities. The collection of wastewater can be arranged e.g. through subsurface drainage. In the outdoor pens for hens part of the pen has to be covered and the fence must be dug into the ground to keep the predators away, which also increases the costs. In Finland the requirement for access to outdoor areas has been interpreted so that the animals must be allowed outdoors when this is permitted by the weather conditions.

In some cases the costs due to the requirements for the new buildings may be considerable. In the new livestock buildings where animals are allowed to move freely there is no need for altering the indoor facilities, but only the requirement concerning the access to outdoor areas causes additional costs. If the conversion into organic production requires major building projects, the costs may be so high that the investments are not profitable without considerable increase in the production.

According to the criteria for environmental support and nitrates directive, livestock manure must be appropriately stored and the amounts of manure spread per hectare must follow the recommendations. The EU rules do not require the composting of livestock manure, which reduces the costs compared to the earlier rules applied in Finland.

At present there are about 5,200 organic farms in Finland, and about half of these raise livestock. The number of farms included in the organic production control for the part of livestock is only about 400. The reason for this is that only the conversion into organic crop production is required in order for the farm to be eligible for the support for organic production, and the markets do not yet provide an adequate incentive for organic livestock production (adequate producer price). The recent news relating to the BSE crisis show that the consumers have become increasingly interested in organic production, and e.g. in Germany it has been suggested that a quarter of agriculture should be organic. However, the conversion into organic production is a very slow process, because the arable land must first be converted into organic production and organic livestock production requires long-term adjustment of the activities.

5. ECONOMIC SITUATION IN AGRICULTURE

5.1. Agricultural income

The Agricultural Economics Research Institute monitors the income development of agricultural and horticultural producers by means of a total calculation, based on the money flows in these sectors each calendar year. Due to the cash-based calculation method e.g. the compensations for crop damages are included in the return of the following year if this is when the payments are made. Changes in the stocks of finished products or production inputs are taken into account.

Most of the data on quantities and prices concerning the return and costs are based on public statistics compiled, for example, by the Statistics Finland and the Information Centre of the Ministry of Agriculture and Forestry. Statistics are complemented by data obtained e.g. from companies purchasing agricultural and horticultural products and selling production inputs, and experts from different fields may also be requested to examine and comment on the accuracy of the data. The operating environment of agriculture and horticulture is changing rapidly, and thus the framework of the calculation and sources of data need continuous development and revision. Increasing challenges for the calculation are due to e.g. the emergence of new entrepreneurial activities on farms, such as farm holidays and other recreation services.

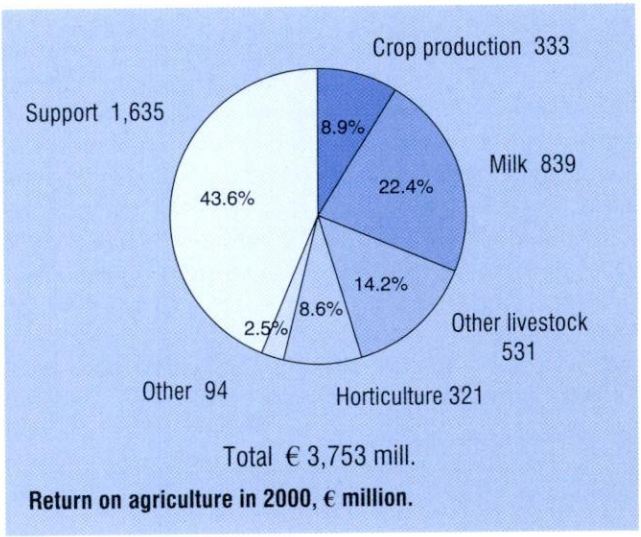
According to the calculation for 2000, the agricultural income indicating the compensation for farmers' labour and capital invested in agriculture was € 1,031 mill., which is 10% (€ 90 mill.) higher than the year before. Total return on agriculture was € 3,753 mill., which is 7% more than in 1999. Market return grew by 3% to € 2,025 mill. The share of support in the total return was € 1,635 mill. (44%).

The return on crop production fell by 5% (€ 17 mill.). The return on potatoes fell the most (43%) due to decrease in the producer price. The return on cereals grew by 15% (€ 24 mill.) as a result of the favourable conditions, even if most of the good crop was still in stores. The return on livestock production grew by 3%, i.e. by € 40 mill. from 1999 till 2000. The return on beef production was 4% (€ 8 mill.) lower than the year before due to the fall in the producer prices, while the average producer price for pigmeat increased by 15% and the return on pigmeat rose by 8%, i.e. € 17 mill. The return on milk production rose by almost 4% (€ 30 mill.) as a result of

Agricultural income at current prices in 1993–2000, FIM million and as an index.

	Gross return	Total cost	Agricultural income	Index
2000[e]	22,314	16,185	6,129	94
1999	20,930	15,335	5,595	86
1998	20,716	15,421	5,294	81
1997	21,458	15,117	6,342	97
1996	21,699	15,198	6,501	99
1995	22,351	14,951	7,400	113
1994	25,391	17,026	8,365	128
1993	24,497	17,953	6,544	100

the increase in both production volumes and prices. The higher prices were partly due to the positive development in the protein and fat content. In the poultry sector turkey production continued to grow, while broiler production fell slightly, and the return on poultry production decreased by 4% (€ 3 mill.). Egg production volume was about the same as earlier, but due to the higher prices the return grew by 8%, i.e. € 3 mill.



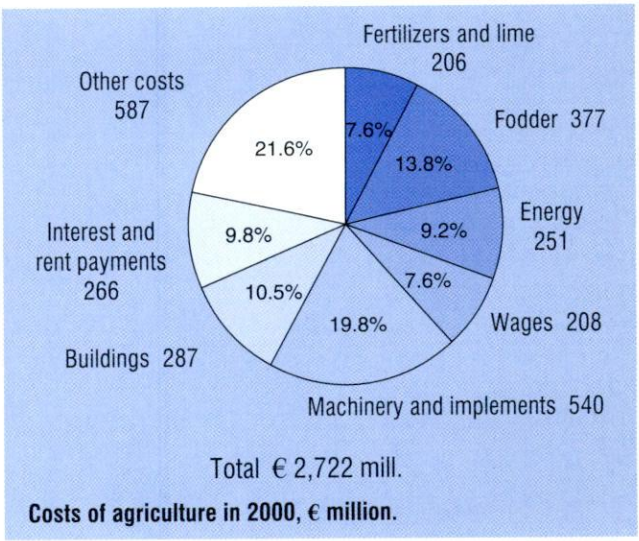
Return on agriculture in 2000, € million.

The return on horticultural production at market prices grew by 10% (€ 30 mill.) as a result of the good yield and increase in the prices of certain products. The trend in the producer price for greenhouse cucumber was quite positive, but the producer price for greenhouse tomato was low.

Support plays a major role in the income formation of agriculture. In 2000 the total amount of EU and national support was € 1,635 mill., while in 1999 this was € 1,436 mill. The total amount of support through the national measures fell slightly, but the amount of EU support grew mainly as a result of compensatory allowances. Agenda 2000 increased the significance of support in income formation, because the fall in the producer prices of cereals, oilseed crops and beef were compensated for by direct payments.

The costs of agriculture and horticulture totalled € 2,722 mill. in 2000, which is almost 6% more than the year before. The use of artificial feedingstuffs was at about the same level as in 1999, but due to the increase in the prices the cost rose by € 20 mill. Fertilizer cost rose by € 13 mill. as a result of an increase in both the sales and prices. Interest cost rose by about € 24 mill. mainly as a result of the rise in the interest-rate level, and fuel cost grew by € 47 mill. due to the increase in the prices.

Depreciation cost, which measures the decrease in the value of fixed assets, rose by € 13 mill. Investments in machinery grew by about 10%, building investments were at about the same level as in 1999 and land improvement investments (mainly subsurface drainage) fell. During the EU mem-



Costs of agriculture in 2000, € million.

bership the investments have largely depended on the support available for these.

Agricultural income was still quite low in 2000. There was some increase from the past two years when agriculture suffered from crop damages, but compared to the earlier years the income level is low, and the compensation for the farmers' labour and capital invested in agriculture is not at the same level as earlier.

5.2. Productivity growth in agriculture

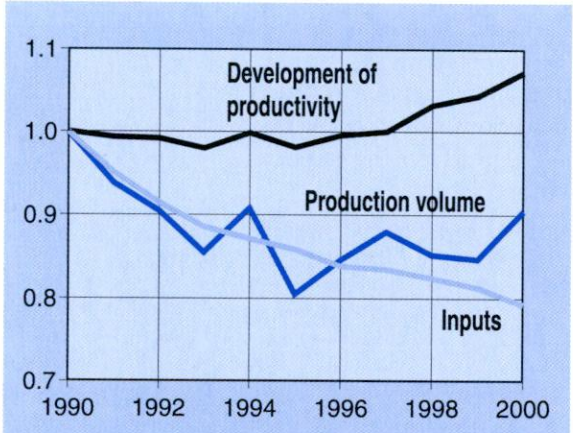
In 2000 the production volume in agriculture reached by the same amount of inputs was 1.14 times that in 1990. This can also be expressed the other way round, i.e. in 2000 the same production volume was achieved by means of 0.88 times the inputs used in 1990 as the production volume fell by about 10% and the use of inputs by 20%. Decrease in the labour input constitutes a significant share of the reduction in input use: in 1990–2000 the labour input fell from 156,800 AWU to 106,000 AWU.

In the early part of the 1990s the development in the productivity was quite modest, even slightly negative, and during this time the difference in the productivity of agriculture in Finland and in the leading agricultural countries in Europe grew considerably. One reason for this were the production restrictions measures applied in Finland, which limited the growth of the livestock production units and technology choices that would have improved the productivity. Investments were also postponed due to the uncertainty concerning the future agricultural policies and producer prices.

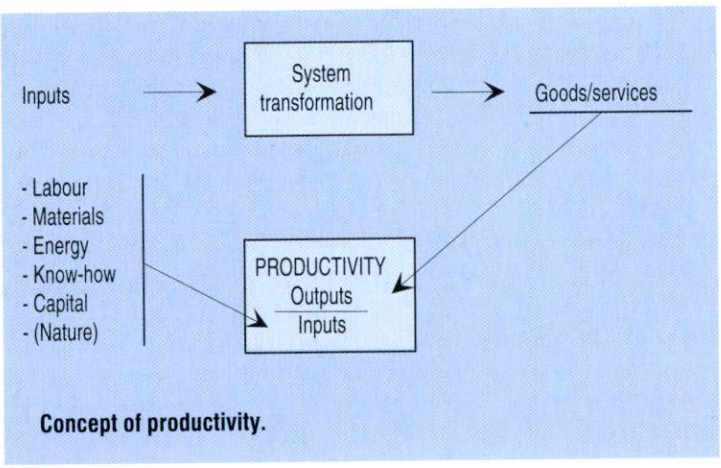
Study of the development of productivity where annual variation is balanced, shows that in the early part of the 1990s there was no growth, but the development was more positive towards the end of the decade due to the changes in the economic environment. In the first years in the EU productivity growth probably suffered from the adjustment costs resulting from new investments. Obviously Finnish agriculture is far from catching up with the leading agricultural countries in Northern Europe in terms of productivity, even if the difference is not due to the natural conditions alone.

The EU membership seems to have accelerated the productivity growth. As a result of structural development and abolition of the production restriction measures the production volumes have not fallen despite the rapid decrease in the number of farms. The reduction in the number of active farms has led to a reduction in the use of labour input as other inputs have been substituted for labour.

Productivity is a physical concept which refers to the ability of the economic activity to convert production inputs into products, such as foodstuffs. Productivity is the ratio between the production and the inputs used (see the figure). Inputs used in production activity include labour, capital, energy, material and know-how. Total productivity can be calculated by taking



Productivity development in agriculture in 1990–2000.



Concept of productivity.

into account the total production volume and all the inputs used to produce this.

Productivity as such does not measure the profit of an enterprise or sector but it is a major factor influencing this, in addition to prices. In other words, the productivity of an enterprise may be good, even if profit would remain weak due to unfavourable price relations. On the other hand, high profitability may be achieved even if the productivity may be low, should the price relations between the inputs and products be favourable.

There are a number of different methods for estimating the development of the productivity of an enterprise or sector. The figures presented in this chapter have been estimated by means of the Divisia technique and its Törnquist-Theil approximation. These indices do not impose severe restrictions on the production technology whose productivity is being estimated.

Average development of the productivity of Finnish agriculture, % per year.

1990–1994	1994–2000	1990–2000
-0.03	1.18	0.69

The development of productivity in Finnish agriculture has been much slower than in the leading agricultural countries in Northern Europe. In the first six years in the EU the index showed an annual productivity growth of only 1.18%. However, in the past couple of years there have been indications that the growth in the productivity might be somewhat more rapid compared to the long-term average.

5.3. Agricultural income on bookkeeping farms

About 1,000 Finnish farms are included in the Farm Accountancy Data Network of the EU. The latest results are from 1998, when also a reassessment of the depreciable fixed assets was made on the bookkeeping farms. The fixed assets were evaluated based on the replacement value, instead of taxation values, as earlier. Depreciation according to the taxation practices was replaced by depreciation based on plans. This complicates the comparison between the data from 1998 and the years preceding this.

Under the new depreciation system the average agricultural income in 1998 was FIM 121,800/farm, while according to the earlier system the agricultural income in 1997 was FIM 130,400/farm. On the bookkeeping farms agricultural income was a little higher in 1998 than in 1997, if the changes in the valuation of fixed assets and depreciation are taken into account. In 1998 the average arable area of bookkeeping farms was 43 ha.

Cereal production

On cereal farms in support areas A and B in Southern Finland agricultural income was FIM 73,000/farm in 1998. There were serious crop damages in 1998, and the fall in the yield levels affects the result of cereal farms the most. In support areas A and B the average arable area of bookkeeping farms specialising in cereal production was 63 ha, which is 10 ha larger than the average in 1993–94.

On cereal farms in support area C in Central and Northern Finland, agricultural income has been decreasing year by year during the EU membership. In 1998 the average agricultural income was FIM 36,000/farm. In area C the average arable area of cereal farms was 48 ha, and it had increased by only 4 ha from the average of 1993–94.

Pig husbandry

In 1998 the agricultural income of farms specialising in pig husbandry was FIM 143,000/farm. The sales return fell due to the decrease in the prices towards the end of the year and poor cereal crop. The results are the averages from bookkeeping farms specialised in pigmeat, piglet and combined pig production. The distribution between the production lines was about the same in areas A and B, but in area C the number of pigs/farm was much smaller and the number of sows/farm was about the same as on farms located in areas A and B. In Central and Northern Finland the average area of pig farms was 17 ha smaller than in Southern Finland.

Pig farms have made considerable investments since 1996. In support areas A and B in Southern Finland the investments in machinery and implements grew by almost 40% and building investments more than doubled between 1997 and 1998. In support area C the machinery investments of farms fell by a third from 1997, while building investments doubled between 1997 and 1998. Growing investments increased the depreciation costs, which was also reflected in the economic result.

Milk production

In 1998 the average agricultural income on dairy farms was FIM 151,000/farm. The variation in agricultural income from one year to another is smaller in milk production than on cereal and pig farms. The poor yield level in 1998 increased the cost of purchased feed in milk production by 9%.

The average size of dairy farms was 34 ha and 19 cows. The number of cows had grown by 3 from the average in 1993–94, and the farms in Southern Finland had about two cows more than the farms in Central and Northern Finland. In the very beginning of the EU membership the farms concentrated on paying their debts and few investments were made, but the investment aid introduced in 1996 and 1997 increased the investments. In 1998 the investments in machinery had fallen slightly, while building investments had grown by a third from 1997. The amount of debt had decreased, and investments were financed through surplus of the cash flow financing as well as forest income.

Rapid increase in the costs of agriculture and horticulture in 2000

Ahti Hirvonen

Inflation was record high in 2000. In October the annual change in the consumer price index was 4.1%, which was more than ever before during the EU membership. The rise in the price and cost level was largely due to the increase in the world market price for crude oil and weak value of the euro.

In agriculture and horticulture the input prices rose even more rapidly than the consumer price index, and according to the input price index of the Statistics Finland, the annual price change in October was as high as 8.3%. Among the production inputs the prices of fuel oil, pesticides, compound feedingstuffs and building increased the most., and the interest-rate level rose as well.

The cost effect of the higher prices

The VAT-free consumer price of the fuel most commonly used in agriculture and horticulture rose by about 50% in 2000, the price of diesel oil rose by 25% and that of fuel oil used mainly in greenhouse enterprises increased by 45%. The difference between the heating oil and fuel oil compared to the diesel oil is due to different price formation, i.e. in the former the share of the crude oil and processing cost is higher, and thus the rise in the crude oil price caused a more dramatic increase in the prices. The increase in the costs due to the higher prices was estimated at FIM 305 mill., and the increase due to the rise in the heating oil price accounted for FIM 280 mill. of this. The average increase in the cost per farm was estimated at FIM 3,200, but in enterprises consuming a lot of energy the costs obviously grew much more. For example, on an average-sized farm specialising in tomato production the increase in the fuel cost was estimated at more than FIM 60,000.

The average price of compound feedingstuffs rose by 5% as a result of the increase in the prices of protein raw material and crude oil. The consumption of feedingstuffs also grew slightly, and thus the increase in the feed cost was estimated at 8%, i.e. about FIM 160 mill. The interest-rate level rose, on average, by about 1 percentage point, which increased the interest cost of agriculture and horticulture by FIM 140 mill. There was also some increase in the wage, maintenance and overhead costs. The total increase in the costs from the year before was estimated at more than 5%, i.e. about FIM 800 mill. The costs of agriculture grew by almost FIM 750 mill., which means that the costs per farm rose by more than FIM 9,000. The costs of horticulture rose over FIM 50 mill.

Increase in the costs a major concern to producers

Agricultural and horticultural producers were seriously concerned about the rise in the costs. The gravity of the situation was also noted among the decision-makers, and the matter was discussed at the Parliament in connection with the interpellation concerning a reduction of the fuel prices by the Centre Party of Finland. The producer organisations

also reacted to the situation by demanding that the Government consider ways of compensating the producers for the higher costs. During the discussion on the interpellation the Prime Minister noted that the Government was prepared to take steps to contain the excessive cost pressures.

In the autumn the representatives of agricultural administration and producer organisations began discussions on the increase in the costs in connection with the negotiations on national support for agriculture, after the Minister of Agriculture and Forestry and the Central Union of Agricultural Producers and Forest Owners had agreed on the need for compensation. A survey of the structure of the most important cost items and development of the input prices was ordered from the Agricultural Economics Research Institute, and the compensations were discussed in connection with the negotiations on agricultural income.

Compensations for increase in the costs

The decisions on agricultural income and national aids for 2001 were made at the end of 2000. The funds for national aids were raised by FIM 100 mill., and certain improvements were made in the social security and taxation systems of agricultural producers. Most of the increase in the costs remained to be covered by the producers themselves. Both the administration and producer organisations emphasised the need for more efficient food chain, because in the current model agriculture cannot transfer the increased costs to the other end of the food chain to the final consumers.

New costs towards the end of the year

The BSE disease caused problems in Finland, too, even if no cases have been found. The EU classified Finland as a low-risk country, and thus we avoided the extensive testing of all bovines that are over 30 months old. The ban on the use of meat-and-bone meal for six months and other restrictions concerning cattle products cause additional costs to slaughterhouses, manufacturers of feedingstuffs and farms. The costs to farms are mainly due to the increase in the prices of feedingstuffs as a result of the ban on meat-and-bone meal, and the additional costs to slaughterhouses cause pressures to lower the prices paid to the producers. The Finnish Government decided to cover part of the costs by purchasing the feedingstuffs containing meat-and-bone meal from the farms.

6. RURAL AND REGIONAL POLICY

Based on criteria relating to the population density and size of the population centres, Finland is a very rural country. According to the OECD indicators, the most rural countries in Europe are Norway, Finland and Turkey. The Finnish rural areas are being developed through various kinds of means of the rural and regional policy, some of them national and some based on the rural and regional policy of the EU. The most important aspect of these development policies is that they are programme-based in order to guarantee long-term actions based on planning as well as more efficient allocation of the measures.

During 2000 important national decisions were made concerning both the rural and regional policy, aimed at new kinds of approaches to the regional development work. The following chapters present the new Rural Policy Programme and deal with other nationally important aspects of regional development. The third Rural Policy Programme as well as the programme concerning regional centres and support for sub-regional units – project will be highly significant in the development of the rural areas in the next few years. Promoting the so-called Centres of Excellence constitutes another important aspect of the national regional policy thinking closely linked to the regional centre programme.

6.1. National programme for rural policy

Compared to the other EU countries, the rapid depopulation of the rural areas is a very serious problem in Finland. Owing to the low population density and long distances, the organisation of the basic services requires considerable efforts especially by the municipalities, which carry the main responsibility for the public services. In the national rural policy special attention has been directed at the fact that the changes made in both the private and public sector in the name of increased efficiency often seriously affect the ability of municipalities and other regional entities to meet their obligations and maintain their viability.

Rural policy started in Finland already before the EU membership, while within the EU the development of the rural areas as a second pillar of the common agricultural policy was officially introduced by the Agenda 2000 programme. In Finland the first rural policy programme was made in 1991 and the second in 1996, and in November 2000 the Rural Policy Committee submitted the third Rural Policy Programme for 2001–2004 to the Minister of Agriculture and Forestry.

The rural policy of the EU has evolved from agricultural policy and it is still closely linked to the idea of rural areas dominated by agriculture, whereas in Finland the concept of rural policy is much broader and more independent. Today the largest professional group in the Finnish rural areas are those commuting to population centres to work, while on more than half of the Finnish farms, a considerable share of the livelihood comes from sources other than agriculture. In the modern world the number of occupations that can be practised only in the rural or urban areas is falling rapidly.

Rural policy programme

The most important demand put forward in the rural policy programme is that the rural perspective and regional impacts should be taken into account across all administrative and policy sectors. Without this the special rural policy measures cannot be fully effective, either. According

to the Rural Policy Programme, the sources of livelihood in the rural areas are diverse and they occur in various combinations, also within the rural regions. Many of the more detailed proposals of the programme concern amendments to rules or practices considered in appropriate in terms of the every-day life in the rural areas as well as finding new practical opportunities for living, work, study or entrepreneurship.

From the rural policy perspective the increasingly complex problems cannot be solved by any single approach, but solutions need to be found through diversification of activities, flexible arrangements and cooperation in economic activities, welfare services as well as day-to-day practices of the rural people. The programme lays particular emphasis on the fact that the new kind of activities based on local initiative started by means of the rural projects will not take anywhere without permanent structures and goal-oriented development work.

The programme contains 108 proposals, ranging from exempting berry juices from the national tax on soft drinks to consolidating the work based on the local action groups in the whole country. Many of the proposals have no impact on the State economy and in many cases the impacts are quite small, but they can be decisive for individual rural residents or entrepreneurs. In monetary terms the most extensive proposal (with an annual cost of no more than € 290 mill.) concerns a deduction for remote areas in State taxation granted to the areas the most seriously affected by population loss. The annual costs of the other measures are less than € 85 mill.

Need for broad rural policy

Rural areas as places of residence and work are shaped by the regional policy, organisation of the public welfare services, municipal economy, support systems for agriculture and rural areas as well as the structural policy of the EU. The Rural Policy Programme highlights the need for a so-called broad rural policy, which refers to decisions made in policy sectors where the primary objective is not rural development but which will have significant impacts on the countryside.

Changes in the objectives and practices of the public policy may quite unintentionally increase the inequality between the citizens, while equality and justice between the regions and people may no longer be a primary objective in regional development. Regional development and rural policy measures of the EU are based on the improvement of the regional competitiveness by emphasising the role of regional centres and reinforcing the existing strengths. In the Rural Policy Programme, however, the main objective is to improve the position of the weakest areas, which at present lack the necessary resources for implementing the means currently available for the development work, because they cannot even manage their statutory duties.

The Rural Policy Programme also deals with the problems that may be caused by changes in the roles and distribution of labour between certain important institutions (public sector, the market and the civil society). What would be the civil society that would take over the services in sparsely populated areas if the activities of the public sector will also be guided by profitability, and on which conditions could such a change take place?

Development on a human scale

The view of the future regions put forward in the Rural Policy Programme is based on differentiation and flexible solutions, starting from individual persons. The development measures are not based on the economy or industries, even if most of the proposals involve these as well. A rural resident is a different kind of actor at the

different stages of his or her life, both on the labour market and outside it. The conscious selection of the micro level as the starting point distinguishes the Rural Policy Programme from the national regional policy objectives. This is mainly reflected in whether the efforts to develop the growing population centres also increase the welfare in the surrounding regions, and whether this anticipated increase in welfare extends to all parts of the country.

6.2. Focus in national regional development

The objective of regional policy is to strive for a balanced development of the different regions within a country. The indicators for the state of development include such measures as the age and sex structure of the region, employment, migration and GDP per capita. Traditionally there have been serious problems, in particular, in Northern and Eastern Finland as well as municipalities dominated by primary production. In recent years not only the rural areas but also small and medium-sized towns have suffered from population loss, and especially the active population concentrates to an increasing extent to few major population centres. Thus, in addition to the rural areas, old and declining industrial areas, small and medium-sized town s and certain areas within large cities now face serious difficulties.

Economic activity of regions

Economic activities are becoming more and more concentrated to certain regions. The most rapidly growing sub-regional units are Helsinki, Porvoo, Lohja, Oulu, Tampere, Kaakkois-Pirkanmaa, Turku and Jyväskylä. From the regional policy perspective the problems faced by many sub-regional units in Eastern and Northern Finland are not due to economic fluctuations only, but they are structural. In areas where the economic development is weak the share of the older age groups is also larger, which implies lower tax revenues and more demand for welfare services.

Through regional policy efforts are made to influence the economic activity of regions, and in Finland regional policy measures are based on two main elements. One is the development of industries, i.e. what the people living in different regions need the most is employment and sources of livelihood, which in turn form the basis for other welfare, such as services and various kinds of communities and associations between the people. The other main element concerns the development of regional centres. The difference in the emphasis compared to rural policy is reflected in the practical policy measures. The following chapters present the most important measures in terms of their impact on future development.

At present it is assumed that the number of jobs in the public sector is not going to increase and the number of jobs in agriculture will continue to fall. Most of the new jobs will be created in the private sector, and traditionally efforts would have been made to support the private sector by means of regional support for enterprises. However, the EU Commission monitors the public aid for large businesses very closely, which is thus used to a lesser extent and the main emphasis in regional policy has shifted from aid to firms to support directed at the development of areas and regions as operating environments of enterprises. Traditional aid for businesses will still be needed, especially in order to reinforce the enterprises located in Eastern and Northern Finland.

Strengthening the regions

In the Finnish regional policy the main emphasis is in improving the competitiveness of the regions and enterprises. Re-

sources are being directed at factors reinforcing the competitiveness of regions in the long term. According to the regional policy thinking, what is decisive is where the companies are located and where they increase the number of jobs. The private sector is the most important element in the development of the tax revenue of areas and regions and, through this, in the financing available for welfare services.

According to the Regional Development Act (1135/1993), the State and the Finnish Regional Councils are responsible for regional development. In practice the responsibility of the regions themselves has increased during the EU membership as fewer policy measures are decided on the national level. The regional and structural policy of the EU is based on the active role of regions. Partly due to the EU membership, partly as a result of changes in the approach to regional development the significance of enterprises, associations and various kinds of interest groups has grown.

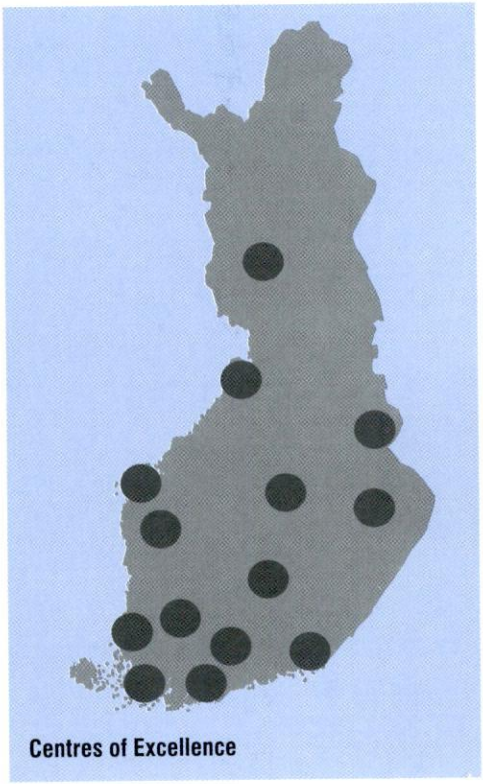
The changes in the emphasis of regional policy are reflected in the Government target programme of autumn 2000, which directs and harmonises the regional development work in 2000–2003. The leading idea of the programme is that more balanced regional development can be achieved only by strengthening the network of regional centres extending to the whole country instead of few centres growing on their own. To reach this objective, a regional centre programme aimed at creating a network of regional centres covering the whole country was launched at the end of 2000. In rural areas this implies reinforcing the village centres, and strengthening the existing Centres of Excellence also serves the same purpose.

Regional centres

The most important aspect of the future model for regional policy is the development of regional centres, and the national regional policy measures will be directed at reinforcing the regional centre network. Regional centres should act as the driving force of their own region, contributing to the efforts to strengthen the viability of the whole sub-regional unit and increase the coherence of the regions. Cooperation between the municipalities, which are numerous in Finland (448 in the beginning of 2001), should be deepened. The regional centre programme will cover 30–40 economic areas or other groupings of municipalities where the natural preconditions for cooperation exist, and the funds allocated for the regional centre programme in the State budget for 2001 total € 1.7 million. The development projects will mainly be financed through the regular forms of financing in the different administrative sectors as well as the structural fund programmes of the EU.

Support for sub-regional units

The support for sub-regional units -project implemented by the State and the Association of Finnish Local and Regional Authorities between 1 November 2000 and 30 June 2006 is another new policy measure for regional development based on cooperation between municipalities. In the project State measures are designed to promote voluntary cooperation between municipalities and strengthen the sub-regional units. The support measures to be implemented are based on the initiative and proposals of the sub-regional units. The project includes 4–6 municipalities representing different types of population trends and both urban and rural municipalities, some with experience in cooperation and some just getting started. The most important fields of cooperation are public services, industrial policy and land use planning as well as environmental management. The sub-regional units participating in the project will be given more



Centres of Excellence

power to make decisions on common issues which are usually decided by the municipalities or State.

Centres of Excellence programme

The programme concerning the Centres of Excellence was launched already in 1994, and the first stage was completed in 1998. The new programme is implemented in 1999–2006. The programme is based on the idea that in the future business activities producing welfare are to an increasing extent based on knowledge and skills as well as utilisation of innovation. Thus more and more resources are being directed at improving the skills, and the purpose of the Centres of Excellence is to support the efficient utilisation of these resources. As part of regional development the Centres of Expertise are based on seed money (mainly from the regional development funds), programmes and basic funding through competition, harmonising the regional and national innovation policy as well as cooperation in regional strategies and projects. The main objective of the Centres of Excellence is to strengthen the cooperation between the economic life and research, with special emphasis on the participation of enterprises, development of human resources as well as international and national cooperation.

During the current period the concept of excellence has been extended beyond the technical knowledge and skills. Institutions of higher education play a central role in regional development through Centres of Excellence. The national basic funding for the programme during the period 1999–2006 is € 5 million per year, and the programme comprises 14 regional Centres of Excellence (e.g. the Centre of Excellence of Jyväskylä region) and two national Centre of Excellence networks (in the wood product and food sectors). As in the case of regional centres, the projects of the Centres of Excellence are financed from regional and national sources of various administrative sectors as well as through EU funding.

Other national measures for regional development

The other national regional development policies are targeted at, for example, developing the interaction between urban and rural areas as well as the archipelago. The regional and structural policy measures of the EU are mainly concerned with promoting the economic and social cohesion. The weakest and declining regions are supported through various measures financed from the structural funds. The regional policy of the EU is programme-based, and during the current programming period it is implemented through three objective programmes and the so-called Community Initiatives.

New governance in regional policy

Hilkka Vihinen

During the past decade the roles of the public sector, market and civil society have changed in a way that we can talk about a governance. The changes have concerned, in particular, the public economy as well as the structures and functions of the public sector. Regional development has become programme-based, with special emphasis on the partnership between the private and public sector and various kinds of networks. Regional policy has also been influenced by the change in the division of tasks between the State and municipalities. Transferring decision-making power from one institution to another invariably alters the rules of the game.

This modernisation of policies or new governance is partly based on the need for adjusting to changes in the international economy and opening markets - the so-called requirements of the operating environment – and partly on the privatisation of the people's lives. Social and economic issues may no longer be restricted to the nation-state, but they are dealt with on the global scale or within regional economies. The borderline between the public and private sectors has also become obscured as efforts have been made to decentralise public power and the State regulation based on norms has to an increasing extent been replaced by steering and cooperation.

Most of the reforms in the public sector have been implemented in the name of improving the efficiency of public administration. The public sector is regarded as one element of the economic competition. As was noted in Chapter 6.2 above, in regional policy the public sector has assumed the responsibility for the development of the economic preconditions for activity in cooperation with the market forces.

In the public sector the efficiency has been improved by means of decentralisation and increased market-orientation. These reflect a significant change in the approach, which should be permanent. Decentralisation includes the introduction of guidance by objective and transfer of State functions to municipalities and regions as well as certain State duties to companies. In terms of the division of tasks between the municipalities and State it should be kept in mind that according to the Nordic administrative thinking which emphasises the local self-government the municipalities are not subject to State authorities in the hierarchical sense, but the right of the State to guide and control the municipalities is always based on specific acts.

Results-oriented management became established as the model for the guidance of the municipal economies and operations in the 1990s. The State transfer system for the municipalities was revised in 1993 and checked again in 1997. The cost-based subsidies were replaced by calculated payments, and the subsidies were also cut with serious effects on the possibilities of the poorest municipalities to manage their statutory duties. The cuts were, primarily, due to needs for savings in the State economy. The new criteria for State subsidies and the new Act on Municipalities from 1995 improved the possibilities of municipalities to allocate their resources and activities and reduced the detailed control by the central administration. However, at the same time the need for relevant data for the calculations increased. The suitability of the results-oriented management in certain sectors can also been questioned.

The new Regional Development Act, which became effective in 1994, changed the organisation of regional administration. Regional development was decentralised to the Finnish Regional Councils, which are joint municipal authorities, a combina-

tion of the former regional planning authorities and councils of regions. In the reform of 1997 the number of provinces was cut to six and their responsibilities were also reduced. The district administration of the State was collected into fifteen regional Employment and Economic Development Centres, which consist of the former Rural Business Districts, district offices of the company services of the Ministry of Trade and Industry, the domestic units of the National Technology Agency TEKES, regional offices of the Finnish Guarantee Board as well as labour districts.

In the 1990s State duties were transferred to companies, and in terms of regional policy the most important operation was the incorporation of the postal service. When a public service is transferred to the market, the financing of activities based on taxation is replaced by cash flow financing, which obviously makes economic profitability a more important objective than, for example, securing the availability of the services.

The results of the efforts to improve the efficiency of public services have been similar to those of the EU membership: the scope of activities of the nation-state is reduced, both internally and externally, as State functions are being transferred to other institutions. The reverse of the increased efficiency is increased unpredictability and instability as well as growing disparity between the regions. Under the State guidance various kinds of systems were implemented in the same way in the different parts of the country, and there were no dramatic changes in the quantity or quality of the available services. However, the differences between municipalities are considerable, some are wealthy while some are heavily indebted, and due to their power structures and values the emphasis on different issues may vary a great deal. Market operations, in turn, invariably involve the element of unpredictability.

In terms of regional development the increase in local freedom of action and responsibility is highly significant. In regions with adequate resources where the cooperation between the different actors (sectoral administration, municipalities, private sector and other local actors) works well the possibilities for development based on the needs and resources of the regions are far better than earlier. However, in areas suffering from population loss the lack of both spiritual and financial resources seriously affects the possibilities for development work. What is decisive is how rapidly the 'new actors', who in most cases are in fact the same municipal and district authorities that used to implement the statutory guidance, internalise the cooperation across the administrative and regional boundaries and perceive their new role in regional development.

The biggest question mark concerns the role of the civil society or the so-called third sector in the new governance and regional development based on own initiative. The principle of partnership means that the civil society should provide social services as the safety net of the public sector is declining. However, participation requires efficient organisation as well as own resources and skills for the implementation of e.g. project work. Securing these preconditions takes much more public effort and time than was expected. Even if such preconditions could be established in the course of time, in the new governance and division of tasks the third sector is likely to constitute a party complementing the work of the public sector rather than replacing it.

In practice administrative changes and establishment of new institutional structure occur at an uneven pace, with delays in certain regions and sectors. It is important to be aware of the impacts of the changes on the different regions and population groups as well as whether the changes will lead to the desired objectives.

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Producer price index and cost price index in agriculture with subsidies (1995=100).[1)]

	Producer price index of agriculture	The index of purchase prices of means of agricultural production			
		Total	Goods and services	Investments	Buildings
2000	98.7	107.4	107.3	107.9	110.6
1999	97.7	101.5	100.2	105.3	106.5
1998	99.4	101.8	101.4	103.1	105.1
1997	99.5	103.2	103.6	101.8	103.6
1996	99.9	101.4	101.8	100.3	99.2
1995	100.0	100.0	100.0	100.0	100.0

[1)]Indices are based on EU's classifications.
Sources: 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
2000	..	..	22	118	5.1
1999	149 e	16.8 e	24	121	5.3
1998	153	16.3	26	120	5.4
1997	160	15.8	28	130	6.0
1996	155	15.8	30	133	6.3
1995	170	14.9	32	141	6.7
1994	190	13.7	34	153	7.4
1993	192	13.5	35	154	7.4
1992	198	13.1	36	166	7.5
1991	200	12.9	40	177	7.5
1990	199	12.8	45	183	7.3
1989	..	..	48	192	7.7
1988	189	12.8	53	197	8.1
1987	192	12.6	58	206	8.5
1986	195	12.4	63	218	9.0
1985	201	12.1	66	228	9.4

[1)]over 1 hectare
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
2000[1)]	364	6,700	1,298	3,109
1999[1)]	374	6,443	1,493	3,390
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
1989	507	5,246	1,291	4,923
1988	551	4,990	1,305	5,238
1987	589	4,905	1,342	5,342
1986	607	4,935	1,323	5,532
1985	628	4,812	1,295	5,922

[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
1999-00	84.2	10.4	30.5	3,893 [1)]
1998-99	81.0	11.0	31.1	3,146 [1)]
1997-98	85.0	11.4	32.6	2,980 [1)]
1996-97	86.0	11.8	32.5	3,816 [1)]
1995-96	92.3	16.1	34.3	3,736 [1)]
1994-95	101.6	20.0	38.5	3,655 [1)]
1993-94	94.1	19.0	40.0	3,810 [1)]
1992-93	94.3	19.4	39.8	3,316 [1)]
1991-92	92.8	19.9	39.7	3,269 [1)]
1990-91	109.4	26.3	53.4	3,771 [1)]
1989-90	111.5	30.7	57.6	3,936
1988-89	100.3	29.7	56.1	3,554
1987-88	98.2	32.0	59.3	2,821
1986-87	94.4	31.0	56.5	2,100
1985-86	90.0	30.2	55.5	3,230

[1)]New calculations method, 2% higher than before.
Sources: Kemira, Information Centre of the Ministry of Agriculture and Forestry.

Total calculation of agriculture (excl. horticulture) at current prices, FIM mill.

	1994	1995	1996	1997	1998	1999	2000e
CROP PRODUCTION							
- Rye	98.1	10.7	51.5	39.1	26.8	20.9	41.4
- Wheat	820.6	148.0	373.2	324.6	308.2	236.3	262.5
- Barley	1,779.9	457.2	610.5	710.1	549.6	457.0	512.8
- Oats	935.8	169.4	276.8	327.2	229.4	249.6	287.3
- Potatoes	496.0	392.7	260.0	294.6	363.9	560.4	318.9
- Potatoes for processing	170.4	113.1	123.4	108.4	109.0	124.9	125.6
- Seed potatoes	5.7	5.8	6.7	6.1	6.2	7.4	7.4
- Sugar beet	509.5	423.1	371.1	390.6	358.3	315.2	313.4
- Oil plants	336.7	71.0	126.3	122.6	85.1	88.8	80.6
- Pea	17.0	9.8	15.1	17.3	10.9	6.6	11.6
- Grass seed	22.3	11.5	13.1	13.1	9.9	15.2	17.1
Total	**5,192.1**	**1,812.2**	**2,227.7**	**2,353.7**	**2,057.4**	**2,082.4**	**1,978.4**
ANIMAL PRODUCTION							
- Milk	6,947.3	4,674.1	4,656.9	4,834.3	4,764.2	4,803.9	4,991.0
- Beef	2,635.6	1,394.6	1,288.2	1,247.2	1,254.5	1,168.1	1,118.5
- Veal	0.3	0.2	0.4	0.7	0.3	0.0	0.1
- Pork	2,747.0	1,330.7	1,373.4	1,502.2	1,390.2	1,228.3	1,330.7
- Mutton	31.9	16.0	12.1	11.2	11.6	9.1	7.2
- Horse meat	13.9	3.3	3.6	3.0	3.4	2.4	1.9
- Poultry meat	476.1	259.1	316.0	343.8	409.6	450.2	432.5
- Eggs	622.4	211.4	295.9	241.5	245.4	246.0	265.5
- Wool	0.2	0.5	0.6	0.4	0.4	0.5	0.6
- Exports of animals	3.0	3.4	2.9	3.5	3.0	3.0	3.0
Total	**13,477,8**	**7,893.2**	**7,950.1**	**8,187.8**	**8,082.7**	**7,911.5**	**8,151.1**
Gross return at market prices	**18,669.8**	**9,705.4**	**10,177.8**	**10,541.5**	**10,140.0**	**9,993.9**	**10,129.5**
STOCK COMPENSATION	**0.0**	**2,281.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
COMPENSATIONS FOR CROP DAMAGES	**7.9**	**11.9**	**34.0**	**7.0**	**20.0**	**301.4**	**167.0**
INCOME FROM RENTS							
- Means of production	255.2	204.5	210.3	202.2	199.2	198.6	213.7
- Buildings and land	163.9	160.8	161.8	164.3	161.8	161.3	173.6
Total	**419.1**	**365.4**	**372.1**	**366.5**	**361.0**	**359.9**	**387.3**
SUBSIDIES							
- CAP-subsidy for field crops	0.0	1,153.7	1,361.9	1,364.7	1,347.0	1,369.0	2,040.4
- CAP-subsidy for livestock	0.0	98.3	280.3	235.6	234.7	226.7	238.0
- LFA	0.0	1,614.8	1,604.0	1,604.6	1,640.6	1,759.8	2,464.3
- Environmental subsidies	0.0	1,365.3	1,526.3	1,580.0	1,583.3	1,546.8	1,586.7
- Subsidy for animal units (nordic subsidy)	0.0	80.1	87.6	193.7	313.0	398.1	578.3
- Subsidy for animal units (subs. of tr.per.)	0.0	282.5	256.8	227.6	177.1	130.3	0.8
- Subs. for animals slaught. (- " -)	0.0	0.0	936.5	772.2	585.4	493.4	0.7
- Other national subsidies for animals	0.0	259.9	219.5	183.9	168.6	149.0	493.8
- Subsidy for field area (subs. of tr.period)	0.0	0.0	299.6	213.2	145.7	96.6	0.5
- Other national subsidies for field areas	0.0	0.9	473.6	408.4	559.9	748.6	675.6
- Production subsidies							
- milk	758.3	1,825.6	1,579.1	1,501.1	1,321.9	1,288.7	1,302.9
- cattle meat	640.7	616.1	4.6	0.0	0.0	0.0	0.0
- pork	6.1	410.4	3.1	0.0	0.0	0.0	0.0
- sheep meat	17.0	20.0	0.1	0.0	0.0	0.0	0.0
- poultry meat	0.0	88.4	0.7	0.0	0.0	0.0	0.0
- eggs	177.1	162.1	7.5	0.0	0.0	0.0	0.0
- wool	4.2	0.0	0.0	0.0	0.0	0.0	0.0
- rye	0.0	0.0	9.4	17.2	8.6	1.7	0.0
- wheat	0.0	0.0	77.7	106.2	50.8	2.0	0.0

	1994	1995	1996	1997	1998	1999	2000e
- barley (malt)	0.0	0.0	43.8	38.7	20.8	11.8	0.0
- sugar beet	5.1	7.1	52.3	40.8	35.4	24.6	12.5
- potatoes (starch)	8.1	0.0	7.5	7.7	4.7	2.8	1.1
- pulse	0.0	0.0	1.1	0.0	0.0	0.0	0.0
- Subsidies granted before 1995	2,479.2	18.2	0.0	0.0	0.0	0.0	0.0
Subsidy paid by the common measures of the EU	0.0	4,232.1	4,772.6	4,784.8	4,805.6	4,902.3	6,329.4
National subsidies	4,095.9	3,771.2	4,060.6	3,710.6	3,391.9	3,347.6	3,066.3
Total subsidies	**4,095.9**	**8,003.4**	**8,833.2**	**8,495.4**	**8,197.5**	**8,250.0**	**9,395.7**
GROSS RETURN TOTAL	**23,192.7**	**20,367.9**	**19,417.1**	**19,410.5**	**18,718.5**	**18,905.1**	**20,079.5**
COSTS							
- Fertilizers	1,483.0	1,108.1	1,115.9	993.6	1,020.0	923.6	998.7
- Lime	275.7	215.4	251.6	260.0	233.6	244.8	180.3
- Feed concentrates							
- mixture	2,722.3	1,927.7	1,988.8	2,092.0	2,142.5	2,089.2	2,208.8
- other	52.5	55.4	55.4	57.1	76.7	42.2	30.5
- Feed conserving chemicals	161.9	117.3	119.8	121.2	140.3	125.4	122.2
- Plant protection products	264.2	225.7	212.3	240.4	291.3	296.3	298.1
- Purchased seeds	336.7	258.7	172.7	225.3	210.3	240.6	232.3
- Fuel and lubricants	560.8	500.4	551.0	548.0	526.0	583.9	846.7
- Electricity	454.0	377.0	418.0	408.0	408.8	386.7	377.3
- Agricultural firewood and timber	61.1	60.3	58.8	59.5	60.0	59.7	65.0
- Delivery of calves and pigs	53.4	46.6	51.5	53.4	52.1	51.3	51.8
- Overhead costs	1,673.9	1,491.3	1,459.2	1,419.4	1,401.9	1,396.3	1,508.6
- Hired labor costs							
- wages	352.0	347.8	434.4	432.6	459.0	482.0	493.1
- social expenses	239.2	228.7	276.5	279.4	324.8	333.0	341.5
- Machinery and equipment expenses							
- depreciations	2,345.5	2,176.8	2,068.5	2,020.4	2,021.8	2,010.8	2,025.2
- maintenance	703.9	714.4	749.5	762.0	785.0	794.6	812.7
- Equipment	167.7	137.8	201.0	221.0	243.0	243.7	252.7
- Building expenses							
- depreciations	1,231.7	1,216.5	1,208.8	1,267.3	1,293.9	1,301.5	1,352.3
- maintenance	201.4	197.0	207.0	214.0	225.0	229.0	237.6
- Ditches, bridges, etc.							
- depreciations	368.3	403.1	388.3	385.5	380.1	373.5	386.2
- maintenance	108.2	97.0	100.0	99.0	112.0	113.2	120.9
- Interest payment	1,103.4	930.5	862.0	726.0	694.0	646.0	777.1
- Imports of animals	4.2	2.0	2.3	2.4	4.4	3.0	3.0
- Rent expenses							
- means of production	179.1	168.0	207.0	195.3	223.0	222.3	239.2
- buildings and land	340.3	399.2	413.1	388.7	439.0	439.7	474.1
- Farmers' share of cost from							
- accident insurance payment	61.3	55.7	63.0	63.0	57.6	57.6	54.5
- outside help	46.2	40.0	56.2	58.4	60.8	63.9	65.0
- day-off scheme	11.2	14.8	14.0	14.4	16.1	16.5	17.0
TOTAL COSTS	**15,563.2**	**13,513.1**	**13,706.6**	**13,606.8**	**13,902.3**	**13,770.4**	**14,572.3**
FARM INCOME	**7,629.5**	**6,854.8**	**5,710.5**	**5,803.7**	**4,816.2**	**5,134.7**	**5,507.2**

Gross return of horticulture at current prices, FIM mill.

	1994	1995	1996	1997	1998	1999	2000e
FIELD PRODUCTION							
- Vegetables	455.0	320.0	350.0	363.0	379.0	385.9	444.6
- Berries and fruits	238.0	217.0	246.0	178.0	157.0	169.3	227.2
- Others	112.0	116.0	111.0	107.0	107.0	108.1	99.2
Total	**805.0**	**653.0**	**707.0**	**648.0**	**643.0**	**663.3**	**771.0**
GREENHOUSE PRODUCTION							
- Ornamental plants	743.0	570.0	550.0	538.0	541.0	546.1	559.6
- Vegetables	650.0	470.0	546.0	511.0	511.0	524.8	580.8
Total	**1,393.0**	**1,040.0**	**1,096.0**	**1,049.0**	**1,052.0**	**1,070.9**	**1140.4**
Gross return at market prices	**2,198.0**	**1,693.0**	**1,803.0**	**1,697.0**	**1,695.0**	**1,734.2**	**1,911.4**
SUBSIDIES							
- Subsidies for greenhouses	0.0	244.2	358.6	238.4	202.9	206.0	241.9
- Subsidies for field production	0.0	0.0	55.5	47.8	34.6	22.3	14.6
- Other subsidies	0.0	45.9	64.8	64.7	64.6	61.9	66.4
Total	**0.0**	**290.1**	**478.9**	**350.9**	**302.1**	**290.2**	**322.9**
GROSS RETURN TOTAL	**2,198.0**	**1,983.1**	**2,281.9**	**2,047.9**	**1,997.1**	**2,024.4**	**2,234.3**
COSTS							
- Fertilizers, lime	44.0	40.0	40.0	39.3	37.0	46.5	46.5
- Plant protection products	37.0	28.0	27.0	25.2	25.0	27.8	30.3
- Seeds, seedlings, plants	80.2	80.2	80.2	80.2	80.0	83.4	85.9
- Other material	180.0	180.0	184.6	189.3	189.0	202.3	204.7
- Hired labor costs	309.0	324.0	346.0	359.7	381.0	386.6	403.1
- Fuel and lubricants	93.0	68.0	78.0	85.2	75.0	84.0	100.7
- Electricity	91.0	81.0	94.0	103.2	109.0	120.5	100.7
- Interests paid	106.0	104.0	101.0	88.0	85.0	78.3	91.4
- Depreciation of machinery	100.4	107.8	113.0	116.0	115.0	118.6	120.9
- Depreciation of buildings	115.7	116.9	117.4	111.0	110.0	112.4	117.0
- Depreciation of bridges, ditches, etc.	9.5	8.7	8.9	9.0	9.0	8.8	9.4
- Other costs	296.9	299.3	301.7	304.0	304.0	295.4	302.1
TOTAL COSTS	**1,462.7**	**1,437.9**	**1,491.8**	**1,510.1**	**1,519.0**	**1,564.6**	**1,612.7**
HORTICULTURAL INCOME	**735.3**	**545.2**	**790.1**	**537.8**	**478.1**	**459.8**	**621.6**

Total calculation of agriculture (incl. horticulture) at current prices, FIM mill.

RETURN ON AGRICULTURE	23,192.7	20,367.9	19,417.1	19,410.5	18,718.5	18,905.1	20,079.5
RETURN ON HORTICULTURE	2,198.0	1,983.1	2,281.9	2,047.9	1,997.1	2,024.4	2,234.3
RETURN, TOTAL	**25,390.7**	**22,351.0**	**21,699.0**	**21,458.4**	**20,715.6**	**20,929.6**	**22,313.7**
COSTS OF AGRICULTURE	15,563.2	13,513.1	13,706.6	13,606.8	13,902.3	13,770.4	14,572.3
COSTS OF HORTICULTURE	1,462.7	1,437.9	1,491.8	1,510.1	1,519.0	1,564.6	1,612.7
COSTS, TOTAL	**17,025.9**	**14,951.0**	**15,198.4**	**15,116.9**	**15,421.3**	**15,335.0**	**16,185.0**
AGRICULTURAL INCOME	**8,364.8**	**7,400.0**	**6,500.6**	**6,341.5**	**5,294.3**	**5,594.6**	**6,128.7**

Agricultural support*).

SUPPORT FINANCED COMPLETELY OR PARTLY BY THE EU IN 2000
FIM/ha or FIM/LU

Aid area	A	B	C1	C2	C2 North.	C3	C4
CAP ARABLE AREA PAYMENT							
Cereals	1,570	1,293	1,293	1,062	1,062	1,062	1,062
Oil seed plants	1,857	1,857	1,857	1,857	1,857	1,857	1,857
Protein crops	1,466	1,207	1,207	991	991	991	991
Set-aside	1,186	977	977	802	802	802	802
Drying aid for cereals and oil seed plants[1)]	384	316	316	259	259	259	259
Average regional cereal yield, tn/ha	3.4	2.8	2.8	2.3	2.3	2.3	2.3
Average regional oil seed plants yield, tn/ha	3.1	3.1	3.1	3.1	3.1	3.1	3.1
CAP SUPPORT							
Special beef premium	951	951	951	951	951	951	951
extensification premium							
- 1.6-2.0 LU/ha	196	196	196	196	196	196	196
- < 1.6 LU/ha	392	392	392	392	392	392	392
Suckler cow premium	969	969	969	969	969	969	969
extensification premium							
- 1.6-2.0 LU/ha	196	196	196	196	196	196	196
- < 1 LU/ha	392	392	392	392	392	392	392
LFA SUPPORT[2)]							
FIM/LU	891	1,189	1,189	1,248	1,248	1,248	1,248

ENVIRONMENTAL SUPPORT[2)]	Crop producing farm	Livestock farm
Cereals, oil seed plants, protein crops	555	695
Grass and other crops	555	695
Horticulture (vegetables grown in the open etc.)	1,980	1,980
Horticulture (berry and fruit plants etc.)	2,880	2,880
Set-aside	0	0

**)This appendix includes only the main agricultural products and therefore the list of various support measures is not complete.*
1)Drying aid is included in the CAP arable area payment
2)According to the proposal made by Finland to the Commission

	Unit	1996 FIM/unit	1997 FIM/unit	1998 FIM/unit	1999 FIM/unit
NATIONAL SUPPORT FOR AGRICULTURE AND HORTICULTURE					
A. TRANSITIONAL AID IN 1996-1999					
Production aid for animal husbandry					
A- and B-areas excl. Archipelago					
Milk	FIM/kg	0.52	0.45	0.42	0.39
Male bovines ,≥ 15 months	FIM/slaughtered animal	1,787	1,609	1,447	1,304
- " -, beef races and crossings	- " -	2,184	1,966	1,768	1,593
Heifers ≥ 12 months, bovines 11-14 months	- " -	1,024	922	830	746
Dairy cows	- " -	138	124	112	101
Ewes	- " -	226	203	183	164
Pigs	- " -	210	192	169	158.50
Broilers	FIM/100 slaughtered animals	240	213	169	133
Laying hens	FIM/animal	32	26	23	23
C-area excl. Archipelago					
Milk	FIM/kg	0.52	0.33	0.21	0.10
Male bovines, ≥ 15 months	FIM/slaughtered animal	1,787	1,279	793	510
- " -, beef races and crossings	- " -	2,184	1,564	970	623
Heifers ≥ 12 months, bovines 11-14 months	- " -	1,024	648	388	178
Dairy cows	- " -	138	46	0	-
Ewes	- " -	226	162	107	51
Pigs	- " -	210	163	104	56
Broilers	FIM/100 slaughtered animals	240	179	125	56
Laying hens	FIM/animal	32	21	14	8
Archipelago A- and B-areas					
Milk	FIM/kg	0.62	0.55	0.52	0.47
Male bovines, ≥ 15 months	FIM/slaughtered animal	2,864	2,578	2,319	2,087
- " -, beef races and crossings	- " -	3,501	3,151	2,834	2,550
Heifers ≥ 12 months, bovines 11-14 months	- " -	1,730	1,558	1,402	1,262
Dairy cows	- " -	138	124	0	0
Ewes	- " -	349	314	282	254
Pigs	- " -	246	215	180	170
Laying hens	FIM/animal	40	31	27	26
Archipelago, C-areas					
Milk	FIM/kg	0.62	0.44	0.27	0.11
Male bovines, ≥ 15 months	FIM/slaughtered animal	2,864	2,357	1,063	510
- " -, beef races and crossings	- " -	3,501	2,880	1,300	623
Heifers ≥ 12 months, bovines 11-14 months	- " -	1,730	1,354	700	178
Dairy cows	- " -	138	46	0	0
Ewes	- " -	349	278	169	90
Pigs	- " -	246	200	124	56
Laying hens	FIM/animal	40	26	18	8
Production aid for arable crops					
Starch potatoes	FIM/kg	0.027	0.018	0.013	0.005
Malting barley	FIM/kg	0.16	0.11	0.09	0.05
Wheat	FIM/kg	0.23	0.18	0.13	0.07
Rye	FIM/kg	0.25	0.19	0.13	0.07
Sugar beet	FIM/kg	0.046	0.032	0.024	0.012
Transitional aid per hectare					
Pea (for human consumption)	FIM/ha	600	415	310	156
Hectarage support for other crops excl. set-aside and pea (for human consumption)	FIM/ha	190	125	80	0

	Unit	1996 FIM/unit	1997 FIM/unit	1998 FIM/unit	1999 FIM/unit
Aid for horticultural products grown in the open (max.)					
Apples	FIM/ha	2,750	1,970	1,480	790
Vegetables, excl. onion, A	FIM/ha	4,800	3,450	2,410	1,200
Vegetables, excl. onion, B	FIM/ha	4,100	3,000	2,155	1,100
Vegetables, excl. onion, C	FIM/ha	4,100	2,600	1,835	800
Berries, A	FIM/ha	2,750	1,950	1,480	790
Berries, B and C	FIM/ha	1,900	1,350	1,000	500
Aid for young farmers, A- and B-areas	FIM/ha	200	150	100	50
Storage aid for horticultural products, AB-areas (max.)					
Storage with heating systems	FIM/m^3	114	108	100	93
Other storages	FIM/m^3	76	72	67	62
Aid for horticultural products, A- and B-areas (max.)					
> 7 months	FIM/m^2	100	72	65	61
2-7 months	FIM/m^2	50	36	33	31
Aid for horticultural products, C-area (max.)					
> 7 months	FIM/m^2	100	72	43	20
2-7 month	FIM/m^2	50	36	22	10
Transitional aid per headage or per livestock unit					
A- and B-areas					
Aid for animal husbandry, suckler cows	FIM/animal	570	540	486	437
- " -, sows	FIM/animal	1,540	1,380	1,214	1,140
- " -, hatching broiler	FIM/animal	58	52	45.8	41.80
- " -, hatching turkey and other hatching poultry	FIM/animal	85	75	60.2	47.30
- " -, goats incl. aid for milk	FIM/animal	1,500	1,386	1,275	1,142
Additional aids, Archipelago and some local authorities					
Cattle and ewes	FIM/LU	1,615	1,530	1,377	1,239
Dairy cows, area [1]	FIM/LU	380	360	324	292
Hartola, Mäntyharju	FIM/LU	285	270	243	219
Mail bovines, area [1]	FIM/LU	315	297	267	241
area [2]	FIM/LU	95	90	81	73
Ewes, Hartola, Mäntyharju, area [1] and area [2]	FIM/LU	650	585	527	474
Aid for animal husbandry, chickens	FIM/animal	2.46	1.50	1.0	-
- " -, horses	FIM/LU	2,900	2,250	1,800	1,650
C-areas					
Aid for animal husbandry, suckler cows	FIM/animal	570	450	350	200
- " -, sows	FIM/animal	1,540	1,132	625	207
- " -, hatching broiler	FIM/animal	58	42	30.6	15.30
- " -, hatching turkey and other hatching poultry	FIM/animal	85	65	45	20.90
- " -, goats incl. aid for milk	FIM/animal	1,500	1,157	821	485
- " -, chickens	FIM/animal	2.46	1.10	1.00	-
- " -, horses	FIM/LU	2,900	2,250	1,800	1,000

[1] *area= Ikaalinen, Jämijärvi, Kankaanpää, Pomarkku.*

[2] *area = Kiikoinen, Kullaa, Lavia, Mouhijärvi, Noormarkku, Pori, Suodenniemi, Juupajoki, Längelmäki, Kuhmalahti, Jämsä, Kuhmoinen, Hartola, Mäntyharju.*

	Unit	1997 FIM/unit	1998 FIM/unit	1999 FIM/unit	2000 FIM/unit	2001 FIM/unit
B. NATIONAL AID FOR SOUTHERN FINLAND, NORTHERN AID AND NATIONAL AID FOR CROP PRODUCTION						
Aid per livestock unit						
Aid for animal husbandry, suckler cows						
A and B[1)]	FIM/LU	0	0	0	420	400
C1	FIM/LU	495	680	850	1,000	1,600
C2	FIM/LU	540	730	900	1,000	1,600
C2 North.	FIM/LU	945	1,180	1,350	1,450	2,050
C3	FIM/LU	1,395	1,630	1,800	1,900	2,500
C4	FIM/LU	2,495	2,720	2,900	3,000	3,600
Aid for animal husbandry, male bovines >6 months						
A and B	FIM/LU	0	0	0	2,210	2,120
C1	FIM/LU	1,100	1,550	2,000	2,450	2,450
C2	FIM/LU	1,150	1,600	2,050	2,500	2,500
C2 North.	FIM/LU	1,600	2,050	2,500	2,950	2,950
C3	FIM/LU	2,050	2,500	2,950	3,400	3,400
C4	FIM/LU	3,150	3,600	4,050	4,500	4,500
Aid for animal husbandry, ewes and goats						
A and B	FIM/LU	0	0	0	2,260	2,140
C1	FIM/LU	1,100	1,430	2,000	2,450	2,450
C2	FIM/LU	1,150	1,538	2,050	2,500	2,500
C2 North.	FIM/LU	1,600	2,050	2,500	2,950	2,950
C3P1-P2	FIM/LU	3,550	4,000	4,450	4,900	4,900
C3P3-P4	FIM/LU	4,150	4,600	5,050	5,500	5,500
C4P4	FIM/LU	5,250	5,700	6,150	6,600	6,500
C4P5	FIM/LU	6,850	7,300	7,750	8,200	8,200
Aid for animal husbandry, pigs						
A and B	FIM/LU	0	0	0	1,930	1,830
C1	FIM/LU	355	841	1,346	2,000	1,900
C2	FIM/LU	370	862	1,366	2,000	1,900
C2 North.	FIM/LU	920	1,382	1,886	2,480	2,380
C3	FIM/LU	920	1,382	1,886	2,480	2,380
C4	FIM/LU	1,240	1,812	2,316	2,900	2,380
Aid for animal husbandry, hens						
A and B	FIM/LU	0	0	0	1,675	1,705
C1	FIM/LU	385	693	1,154	1,705	1,705
C2	FIM/LU	397	720	1,180	1,720	1,720
C2 North.	FIM/LU	952	1,240	1,700	2,230	2,230
C3	FIM/LU	1,272	1,650	2,110	2,630	2,630
C4	FIM/LU	2,672	2,850	3,310	3,800	2,630
Aid for animal husbandry, other poultry						
A ja B	FIM/LU	0	0	0	1,610	1,610
C1	FIM/LU	385	585	1,980	1,610	1,610
C2	FIM/LU	397	610	1,025	1,640	1,640
C2 North.	FIM/LU	952	1,150	1,585	2,180	2,180
C3	FIM/LU	1,272	1,550	1,985	2,580	2,180
C4	FIM/LU	2,672	2,750	3,185	3,780	2,180
Northern aid paid for slaughtered animals						
Male bovines C3-C4						
P1-P2	FIM/animal	780	780	780	780	780
P3-P4	FIM/animal	1,080	1,080	1,080	1,080	1,080
P5	FIM/animal	1,980	1,980	1,980	1,980	1,980

[1)]From 2000 onwards the aid is paid as national aid for Sourthern Finland

	Unit	1997 FIM/unit	1998 FIM/unit	1999 FIM/unit	2000 FIM/unit	2001 FIM/unit
Heifers						
A and B	FIM/animal	0	0	0	710	680
C1	FIM/animal	730	1,080	1,206	1,150	1,250
C2	FIM/animal	740	1,100	1,226	1,150	1,250
C2 North.	FIM/animal	1,050	1,400	1,526	1,440	1,540
C3	FIM/animal	1,310	1,650	1,776	1,690	1,790
C4	FIM/animal	1,840	2,160	2,286	2,200	2,300
Production aid for milk						
A and B[1)]	FIM/kg				0.37	0.355
C1	FIM/kg	0.26	0.32	0.41	0.51	0.51
C2	FIM/kg	0.28	0.35	0.44	0.54	0.54
C2 North.	FIM/kg	0.37	0.44	0.52	0.62	0.62
C3P1	FIM/kg	0.54	0.61	0.69	0.79	0.79
C3P2	FIM/kg	0.64	0.71	0.79	0.89	0.89
C3P3-P4	FIM/kg	0.79	0.86	0.94	1.04	1.04
C4P4	FIM/kg	1.06	1.13	1.21	1.31	1.31
C4P5	FIM/kg	1.58	1.65	1.74	1.84	1.84
Aid for crop production						
A-area[1)]						
Wheat	FIM/ha	260	870	594	485	550
Rye	FIM/ha	260	900	1,050	800	850
Malting barley	FIM/ha	110	200	250	350	400
Feed grains	FIM/ha	110	200	250	0	850
Grass	FIM/ha	330	460	550	685	1,050
Oil seed plants	FIM/ha	110	200	250	480	800
Sugar beet	FIM/ha	270	475	750	1,200	1,200
Starch potatoes	FIM/ha	135	135	400	850	850
Vegetables grown in the open	FIM/ha	900	1,340	2,200	2,650	2,650
Apples	FIM/ha	205	360	550	1,220	1,220
B-area[1)]						
Wheat	FIM/ha	200	790	514	485	550
Rye	FIM/ha	200	800	850	800	850
Malting barley	FIM/ha	70	120	75	350	400
Feed grains	FIM/ha	110	120	75	0	850
Grass	FIM/ha	330	460	550	585	1,050
Oil seed plants	FIM/ha	70	120	75	480	800
Sugar beets	FIM/ha	270	475	750	1,200	1,200
Starch potatoes	FIM/ha	135	240	300	850	850
Vegetables grown in the open	FIM/ha	450	790	1,500	2,350	2,350
Apples	FIM/ha	205	360	550	920	920
C1-area[1)]						
Wheat	FIM/ha	200	450	550	500	550
Rye	FIM/ha	200	400	600	800	800
Malting barley	FIM/ha	70	210	185	350	400
Feed grains	FIM/ha	70	210	225	0	500
Grass	FIM/ha	330	460	550	485	550
Oil seed plants	FIM/ha	70	210	225	480	800
Sugar beet	FIM/ha	785	990	1,150	1,200	1,200
Starch potatoes	FIM/ha	495	550	600	1,000	1,000

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

	Unit	1997 FIM/unit	1998 FIM/unit	1999 FIM/unit	2000 FIM/unit	2001 FIM/unit
C2 and C2 North. -areas[1)]						
Wheat	FIM/ha	200	450	550	500	550
Rye	FIM/ha	200	400	600	800	800
Malting barley	FIM/ha	70	210	185	350	400
Feed grains	FIM/ha	70	290	225	0	500
Grass	FIM/ha	330	460	550	485	550
Oil seed plants	FIM/ha	70	210	225	290	350
Sugar beet	FIM/ha	785	990	1,150	1,200	1,200
Starch potatoes	FIM/ha	495	550	600	1,000	1,000
C3-area						
Feed grains	FIM/ha	0	0	250	0	500
Grass	FIM/ha	330	460	550	485	550
C4-area						
Feed grains	FIM/ha	0	0	250	0	500
Grass	FIM/ha	330	460	550	485	550
General aid per hectare C2-C4						
C2, C2 North. and Archipelago	FIM/ha	200	160	160	200	200
C3	FIM/ha	360	320	285	300	300
C4	FIM/ha	720	630	595	600	600
Hectarage aid for young farmers C1-C4	FIM/ha	180	160	160	160	160
Aid for greenhouse products C-areas (max.)						
> 7 months	FIM/m^2	0	22	41	68	68
2-7 months	FIM/m^2	0	11	21	34	34
Northern storage aid for horticulture products (max.)						
Storages with heating systems	FIM/m^3	108	100	93	90	90
Other storage	FIM/m^3	72	67	62	60	60

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

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

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

Suckler cows	1	Laying hens	0.013
Male bovines >2 years	1	Broilers	0.0053
Male bovines, other bovines 0.5-2 years	0.6	Hatching broilers and other poultry	0.026
Ewes, goats	0.15	190/223 slaughtered turkey[2)]	1
Sows, boars	0.7	Horses >6 months	
Pigs >3 months	0.23	Mares for breeding, incl. ponies	1
13 slaughtered pigs[3)]	1	Finnish horses	0.85
		Other horses and ponies, 1-3 years	0.6

[1)]A- and B-area national aid for crop production, C-area northern aid
LU = livestock unit, [2)]1999/2000, [3)]since 1999

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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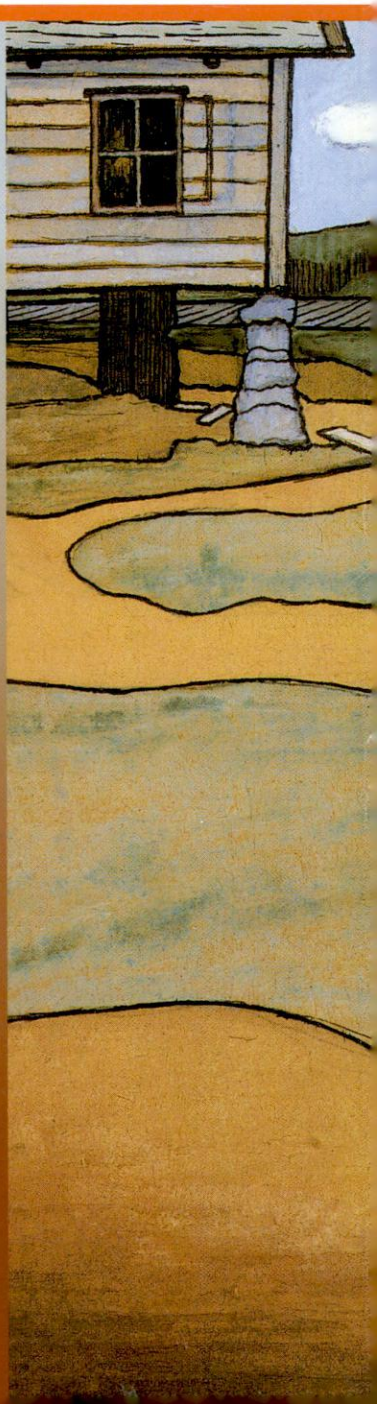

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