



FINNISH agriculture AND RURAL INDUSTRIES 2011



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Preface

The MTT Economic Research publishes annually a report on Finnish agriculture and rural industries. The report provides an account of the state and trends in agri-food sector and in rural areas in general in light of the most recent information available. It also takes us to the future by looking into the current challenges and development prospects of the sectors. Like before, the report offers an up-to-date information package to all those who work in the field or are interested in it.

In recent years we have become used to rapid fluctuations in the market situation of both inputs and agriculture and food products. The rapid rise in cereal prices in autumn 2010 close to the peak level in early 2008 continued the discussion on the highly vulnerable food markets, where various factors repeatedly lead to serious instability. The functioning of the food market and a more sustainable management of price variations have become increasingly important. The topics discussed both in Finland and globally include access to food, food safety, climate change mitigation and adaptation, environmental load, and objectives relating to renewable energy.

Variations in the input and product prices on the agricultural and food market pose a very challenging equation to farmers. At the same time the new technologies and rapid structural change in agriculture require new kinds of entrepreneurial skills. Production processes, technology choices, impacts of changes in market prices on the economy of farms, and policy impacts should all be managed in a comprehensive way. Growth in the farm size also leads to greater risks in the business activity.

In agricultural policy the focus was on the more detailed preparation of the content and especially the frameworks of the future policy launched on the basis of the Commission communication released at the end of 2010. The preparation is further complicated by the aim in the agricultural policy reform for even more comprehensive social effectiveness. It is to be expected that the regional, environmental, rural, climate, trade, and energy policy issues receive even more weight than before, both in the policy discussion and in the content of the future policy. Managing such a complex entity is very challenging also as regards the schedule in which the reform can be prepared and put to practice. The most eagerly expected element, the structure and amount of the budget for the next programming period to be applied as from 2014, is yet to come. The earliest time when the legislative proposal of the Commission, with the relevant parliamentary proceedings, on the content and financial frameworks of the future policy could be available for discussion is in summer 2011.

The special themes of this report deal with the highly topical agricultural policy reform, success of rural enterprises and promoting entrepreneurship, national strategy for invasive species published recently, possibilities to increase protein self-sufficiency in Finland, and the new total calculation of agriculture.

On behalf of the MTT I wish to thank Professor Jyrki Niemi and Research Secretary Jaana Ahlstedt, who edited the publication, and all the experts involved in the writing process.

Helsinki 2 May 2011

Pasi Rikkonen
Director
MTT Economic Research

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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 € 20.2 billion. The share of food and non-alcoholic beverages consumed at home is a little over a half of this, € 11.6 billion.

The share of food and non-alcoholic beverages consumed at home in the consumer expenditure of households has decreased to about the same as in the old EU countries. From 2008 to 2009 there was a slight increase in this share from 12.4 to 13%, mainly due to the weaker economic situation of households. When alcoholic beverages and eating out are included, food represents 22.6% of the consumer expenditure of households. The share of food consumed outside home is 6%, which is lower than in the old EU countries (7.2%).

The total value of the annual money flows in the food sector is about € 24.3 billion, when food exports and agricultural support payments are taken into account, in addition to the total private and public consumer expenditure. This is 14% of the Finnish GDP.

Consumer expenditure on foodstuffs and beverages, € million.			
	2008	2009	% change
Total	20,052	20,221	1
Foodstuffs*	10,399	10,593	2
Non-alcoholic beverages*	984	988	0
Alcoholic beverages*	3,081	3,271	6
Catering services (eating out)	5,588	5,369	-4

*Food consumed at home
Source: Statistics Finland, National accounting.

Share of foodstuffs and non-alcoholic beverages in consumer expenditure of households, %.

	2008	2009
EU 27	13.0	13.1
EU 15	12.3	12.5
Denmark	11.4	11.3
Estonia	20.6	22.3
Finland	12.4	13.0
France	13.5	13.5
Germany	11.4	11.2
Sweden	12.3	12.6
United Kingdom	9.1	9.7

Source: Eurostat National accounts, Statistic Sweden.

5

Agriculture and horticulture

According to the national accounting, the gross value of agricultural and horticultural production in 2009 was about € 5.9 billion, when production support of 2.1 billion is taken into account. The gross value of the production fell by 4% from € 6.1 billion in 2008. In agriculture the value of production did not fall as much as in the economy as a whole, which is why the value added produced by agriculture and horticulture to the Finnish GDP increased from 1.9% in 2008 to 2.1% in 2009. Fluctuations in the value added of agriculture cannot be explained by the variations in volumes due to the weather conditions alone, but the changes in the product and input prices are also reflected in the sector more clearly than before.

Intermediate products such as fertilisers, feedingstuffs, energy, transport fuels and various kinds of services account for about a half of the gross value of agricultural production, € 2.7 billion in 2009. In 2008 this share was € 3.1 billion.

Agriculture is very capital intensive because of the various kinds of special machinery and buildings needed in the production. In 2009 the share of agriculture in the total investments of the national economy rose to 3.4% from 3.0% the year

before. The share of agriculture in total investments is clearly higher than its share in the GDP.

Food processing

In 2009 the gross value of the production of food industry fell to € 10.4 billion from € 10.6 billion the year before. The use of intermediate products fell from € 8.1 billion to 7.8 billion. The use of intermediate products decreased more than the gross value of the production, and thus the value added created in food industry rose from € 2.5 billion in 2008 to 2.6 billion in 2009.

The food sector produces indispensable goods, which is why it has coped better in the weakening economic situation than the other sectors. The GDP share of food industry rose from 1.5% in 2008 to 1.8% in 2009. During the same time the share of food industry in the value added of the manufacturing industries increased from 6.9% to 9.7%

Measured by both the gross value of the production and value added, food industry ranks the fifth largest sector in Finland, after the manufacture of electro-technical products, pulp and paper industry, machinery and equipment industry, and metal industry.

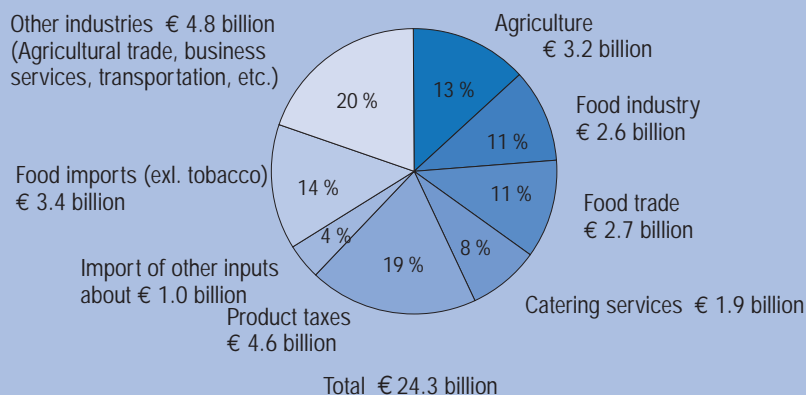
Food industry is more raw material intensive than agriculture: intermediate

products represent more than 70% of the gross value of the production. Food industry purchases most of its raw material from the domestic agriculture and horticulture. Because of the transportation costs, a significant share of the food industry depends on domestic raw material. The share of imported products in the gross value of the production is about 14% (€ 1.4 billion).

From 2008 to 2009 the tangible domestic investments of food industry fell from over € 0.4 billion to a little less than 0.4 billion. However, the share of investments in food industry of total investments stayed at the same level as before, 1.1%. The level of investments is still lower than the GDP share of the sector.

Domestic trade in foodstuffs

The trade sector sees to the final distribution of foodstuffs to the consumers. The value of production in the trade sector is more difficult to estimate than that of primary production and processing because, in addition to foodstuffs, the trade sector includes other perishable and durable goods. According to the financial statements on the trade sector of the Statistics Finland, in 2009 the turnover of the trade in perishables totalled € 15 billion, which was 4% higher than the year before. Foodstuffs account for about 80% of the trade



Estimated money flows in the Finnish food sector in 2009.

in perishables.

The value added of the wholesale and retail trade, i.e. their share in the GDP, is estimated at about € 2.7 billion. Foodstuffs require a great deal of handling, which is why wages and salaries constitute a significant item in the value added of the trade sector. Other major cost items are transportation and logistics and various kinds of business and real estate services.

The position of trade at the end of the food chain differs from primary production and processing. The trade sector is not dependent on domestic primary production in the same way as the food industry, and thus it is capable of taking advantage of competition, both within the domestic food industry and between the Finnish and foreign companies.

Food trade is still largely in the hands of domestic operators, founded on chains of wholesalers and retailers, where the buying-in operations both in Finland and abroad are highly centralised. Besides the German discount chain Lidl, which came to Finland in 2002, the small markets and high transportation costs have not attracted any other foreign food chains.

Foreign trade in foodstuffs

Because of the weakening economic situation, the value of food imports (CN 1–24) did not grow in 2009 but fell from € 3.6 billion in 2008 to € 3.5 billion in 2009. The value of food exports fell from € 1.4 billion in 2008 to 1.2 billion in 2009.

Total imports decreased even more than food imports, which is why the share of food imports increased from 5.8% in 2008 to 8.1% in 2009. Similarly, the share of food exports in the total value of exports rose from 2.1% to 2.6% as total exports fell by almost a third.

In 2010 the value of food imports started to grow again and reached the level of € 3.9 billion, which is 7.6% of total imports. The value of food exports increased as well to € 1.3 billion, which represents 2.5% of total exports.

The most significant imported food commodities are beverages, including alcohol, and fruits. Some of the imported foods are primary products which cannot be produced in Finland (coffee, cocoa, tea) or the quantities produced are not sufficient (fruit, vegetables). However, the

GDP share of agriculture¹ and food industry (at basic price) and investments (at current prices).

Year	010, 014	DA	010, 014	DA	Share in investments	
	Agriculture and related services	Manufacture of foodstuffs, beverages and tobacco	Agriculture and related services	Manufacture of foodstuffs, beverages and tobacco	Agriculture and related services	Manufacture of foodstuffs, beverages and tobacco
	million €	million €	%	%	%	%
2009	3,196	2,632	2.1	1.8	3.4	1.1
2008	3,057	2,478	1.9	1.5	3.0	1.1
2007	3,254	2,439	2.0	1.6	3.3	1.2
2006	2,892	2,276	2.0	1.6	3.3	1.1
2005	2,918	2,350	2.1	1.7	3.4	1.3
2004	2,827	2,318	2.1	1.7	3.4	1.1
2003	2,875	2,395	2.3	1.9	3.9	1.5
2002	2,935	2,384	2.3	1.9	4.3	1.6
2001	2,924	2,231	2.4	1.8	3.8	1.4

¹Agriculture at factor price, including subsidies on products and subsidies on production.

Source: National accounting 2000–2009e, Statistics Finland.

export and import of products representing the same product categories, such as cheeses, beverages and confectionary, has increased as well.

Besides the finished food products the food sector imports various inputs needed in the production, such as raw materials for processed foods and feedingstuffs, fuels and various kinds of chemicals, and most of the machinery and implements.

Taxes and support in the food sector

The State functions in the food chain as it collects taxes and allocates financial support to agriculture. In addition to the value added tax, the consumers pay excise duties in the prices of foodstuffs and beverages, as well as energy taxes included in the production inputs. Income tax is collected in the food chain on wages and salaries and on capital income.

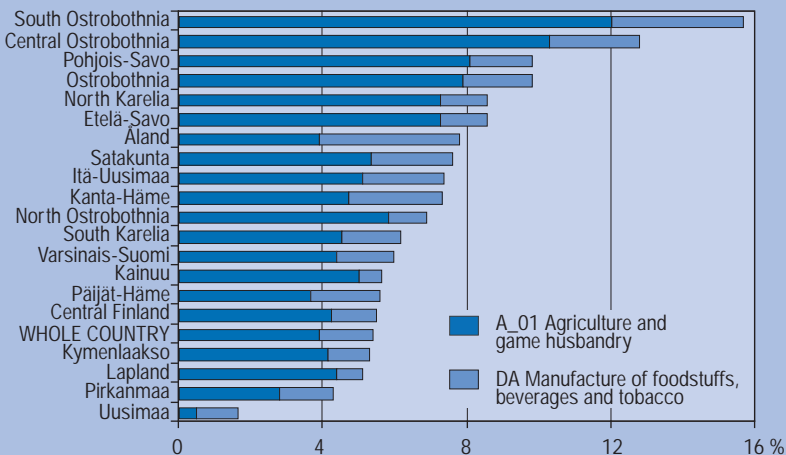
In 2009 the value added tax and excise duties on foodstuffs and beverages totalled about the same as the year before, € 4.6 billion. In 2010 the tax revenue fell to € 4.3 billion, but it is expected to rise again in 2011. The value added tax revenue from food decreased slightly from the

year before to € 1.7 billion. In 2010 the value added tax revenue from food was € 1.3 billion, while some increase is again expected for 2011.

The value added tax revenue from restaurant services was about the same in 2009 as the year before, € 1.2 billion. In 2010 it fell to € 1.1 billion and some decrease is also expected for 2011. The value added tax revenue from alcoholic beverages stayed at the level of about € 0.5 billion in 2009 and in 2010 it rose to € 0.6 billion. The excise duties on alcoholic beverages rose to € 1.2 billion in 2009 and 1.3 billion in 2010.

The VAT on food was lowered from 17% to 12% in the autumn of 2009 and raised to 13% in July 2010. The VAT on restaurant services was lowered from 22% to the same 13% in July 2010. The value added tax revenue from food represents about 10% of the total value added tax revenue. When restaurant services and alcohol are included, the share of food commodities in the total value added tax revenue rises to almost 20%.

The various types of support, a total of about € 2.1, billion, are funded by the EU, co-funded by the EU and from national



Employed of agriculture and food industry (%) in different regions in 2008. Source: Regional accounting, Statistics Finland.

funds or paid from the national funds only. The EU contributions total about € 0.8 billion.

Economy-wide effects of the food sector

Besides agriculture, food industry and the trade sector, many other sectors are involved in the food chain and serve food production in various ways. These include, for example, trade in agricultural implements, transport and storage, and various kinds of business and real estate services. In practice the effects of food production extend all through the economy, also to the chemical and energy sectors and water and waste management.

Indirect effects of food production are also created in households through the use of income earned in food production for purchasing goods and services. In the rural areas the economic impact of household consumption may be greater than that of input demand.

Part of the investment effects flow abroad, especially through the purchase of machinery. The effects of building are more directly directed to the regions themselves than investments in machinery. Besides agriculture and the processing industry, in recent years building investments have also been made in food trade.

Employment effects of the food chain

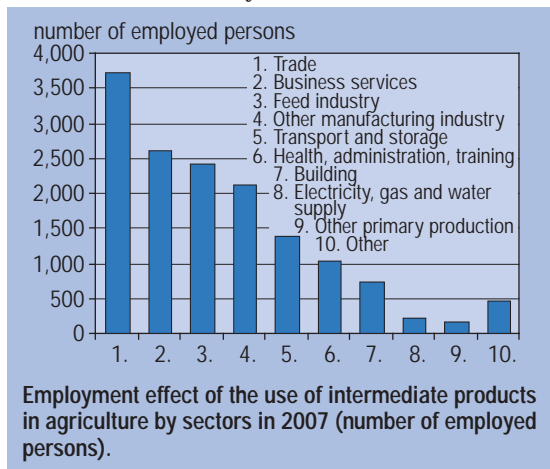
In 2010 the number of people employed in agriculture was about 84,000, which is 3.4% of the employed labour force. This is 4,000 persons less than the year before. The share of agriculture in the employed labour force is greater than its share in the GDP. The number of people employed in agriculture has fallen in all regions along with the number of farms and increased substitution of machines for labour.

In absolute terms the number of people employed in agriculture is the greatest in the regions of South Ostrobothnia, Southwest Finland, North Karelia and North Savo. Proportionally the share of agriculture in the employed labour force is still the highest in Ostrobothnia.

By purchasing production inputs agriculture also employs people in other sectors, such as manufacturing industry, trade, logistics and energy production about 15,000 persons. Most of these jobs are, however, located in urban areas and population centres, not in the rural areas.

Food industry employs about 38,000 persons. Its share in the total employed labour force is 1.5%, which is about the same as its GDP share. Almost a quarter of the jobs in food industry are in Uusimaa. Proportionally food industry is the greatest employer in South Ostrobothnia, where it employs 3.6% of the employed labour force.

While the number of jobs in primary production and processing are decreasing, more people find employment in restaurants and catering services and in food trade. Because of the weaker economic situation the number of people employed in restaurants fell by 500 persons from 2008 to a total of 65,700 in 2009. The trade in daily consumer goods employed 46,766 persons, which was almost 1,400 persons more than the year before.



1.2. Rural enterprises

The Finnish countryside has changed quite dramatically, with strong differentiation in the development trends in different types of rural areas. In many sparsely populated areas the population is decreasing and ageing rapidly, while the number of rural residents and enterprises has been growing in urban-adjacent rural areas.

Small rural enterprises can be divided into three groups: farms engaged in basic agricultural production and farm forestry, diversified farms with other business activities besides agriculture and farm forestry, and small rural enterprises with no connection to farms.

In 2007 the total number of enterprises in Finland was about 309,000. The number of small rural enterprises was estimated at about 137,600, of which 33% were engaged in basic agriculture, 17% were diversified farms and 50% were other small enterprises.

Agriculture and farm forestry still constitute the most significant single rural industry. The Finnish farm structure and changes which have taken place in this are presented in more detail in Chapter 1.3.

Diversified farms in Finland and Europe

In 2007 the number of farms practising other gainful activities besides agriculture was 23,200, which means that about 34%

of the Finnish farms were diversified. New information on the number of diversified farms will be available when the results for 2010 are published. Starting other gainful activities is often connected to changes in the operating environment of farms, creating new demand for the products and services, while new challenges to agriculture may have encouraged the farm families to seek new sources of livelihood.

In 2007 the number of diversified farms was the greatest in South Ostrobothnia and Southwest Finland. Proportionally the number of diversified farms was the highest in Uusimaa (southernmost Finland), Lapland and the Province of Åland and the smallest in North Savo and North Ostrobothnia.

Diversified farms operate in various sectors, but the majority of them, 70% in 2007, are engaged in services such as rural tourism, contracting and transport and real estate services. Other types of tourism and various other services are also quite common. In recent years especially the number of diversified farms engaged in the production of renewable energy has grown rapidly and energy production has become the largest industrial sector.

More than a third of the diversified farms practice more than one gainful activity besides agriculture. These are often connected to agriculture so that the farm equipment, buildings, land or products are used and the owner of the farm, the spouse, other family member or a partner in a farm

Rural enterprises in Finland in 2000–2007.

Year	2000	2002/2003	2004/2005	2007	Change 2000–2007, %
Total	136,400	130,400	131,500	137,600	1
Basic agriculture farms	58,000	50,150	45,200	45,000*	–22
Diversified farms	21,800	23,550	24,300	23,200	6
Enterprises with no link	56,600	56,700	62,000	69,400 ^e	23

^e Preliminary estimate by MTT Economic Research, * incl. horticulture enterprises

Source: Information Centre of the Ministry of Agriculture and Forestry MMM/Tike. Register of small rural enterprises (www.mtt.fi/pienyriityrekisteri).

company is involved in the other business. Of the diversified farms in Finland 79% were engaged in this kind of activity, using the same resources as agriculture. Most of these activities (65% of farms) were also taxed together with agriculture under the Agricultural Tax Act.

Other gainful activities on farms are usually quite small in scale. In 2007 their turnover was less than € 10,000 on about 40% of the farms. However, on 15% of these farms the turnover of other gain-

ful activities was more than € 100,000. In 2007 employment in these other activities represented about 22,300 AWU. Most of the work is done by the farm families, but the role of hired labour has been growing.

On the European scale statistics on diversified farms have only been kept since 2003. The statistics only include farms where the agricultural resources and other gainful activities are closely linked to each other. In 2007 there were a total of 1.35 million diversified farms in Europe.

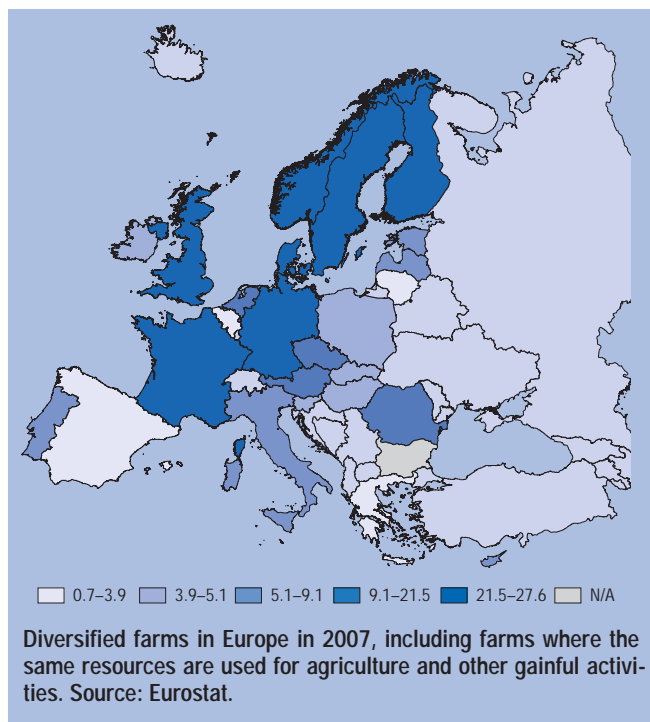
Number of diversified farms in 2000, 2003, 2005 and 2007.

Sector	2000	2003	2005	2007
Diversified farms, total	21,838	23,551	24,295	23,179
<i>Primary production other than agriculture and forestry</i>	<i>744</i>	<i>1,328</i>	<i>1,815</i>	<i>1,505</i>
Fish, crayfish etc. farming on farms	112	102	64	120
Fur farming	632	647	510	505
Reindeer husbandry	*	423	574	471
Fishing	*	156	144	191
Other primary production	*	*	523	218
<i>Industry</i>	<i>4,786</i>	<i>4,140</i>	<i>3,753</i>	<i>4,774</i>
Food processing	1,065	846	684	620
Other further processing	134	78	152	140
Wood processing	1,349	1,134	889	1,122
Handicraft	274	337	277	413
Production of renewable energy	648	701	820	1,286
Peat production	311	267	217	286
Manufacturing of metal products	625	580	541	700
Other manufacturing	380	197	173	207
<i>Construction**</i>	<i>*</i>	<i>697</i>	<i>881</i>	<i>1,043</i>
<i>Trade</i>	<i>1,056</i>	<i>1,234</i>	<i>1,299</i>	<i>1,299</i>
<i>Services</i>	<i>15,019</i>	<i>16,143</i>	<i>16,547</i>	<i>14,470</i>
Tourism, accommodation, recreation services	2,272	2,041	1,865	1,627
Contracting	8,880	9,039	10,013	8,539
Care services	263	249	234	309
Transportation	1,055	1,083	833	782
Services to business	*	736	680	661
Horse husbandry services (renting of stables, horse training)	*	717	734	882
Real estate maintenance, cleaning and environmental management services	*	*	264	190
Other services	2,549	2,278	1,924	1,480
Other	233	*	*	88

* Different classification of sectors, this sector not accounted for in the year concerned.

** Clearing, demolition and groundwork building included in machine contracting.

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



In recent years the relative share of diversified farms has grown in all parts of Europe. Within the EU about 10% of the farms are diversified. In absolute terms the number of diversified farms is the greatest in Rumania, France and Italy. Relative to the total number of farms diversification is the most common in Northern and Western Europe, in particular, in Finland, Norway France and Great Britain. Except in Rumania and Cyprus the farmers who run diversified farms are younger than farmers on average. Measured by the economic size the diversified farms are a little larger than other farms both in Finland and in the EU as a whole. The Netherlands is the only EU country where the diversified farms are smaller in size than other farms.

Other rural enterprises

There are regional differences in the number of small rural enterprises, which usually follows the general trends in the economy, and in their structural development. The number of enterprises has grown in rural

heartland areas and urban-adjacent rural areas, while in the sparsely populated rural areas it has stayed about the same. The following chapters present some of the most important rural industries and trends in these.

Energy production and bioenergy

The resources available in the countryside have an increasingly important role especially in the production of bioenergy and other renewable energy. Bioenergy is derived from biomass growing in forests, mires and fields as well as from organic solid, liquid and gaseous biowaste suitable

for energy production from communities, agriculture and industry. The share of bioenergy in the total energy consumption in Finland is about 25%, and it represents almost 90% of our renewable energy sources.

Most of the bioenergy produced and used on farms consists of chips or fuelwood from forests. The most important energy crop in agriculture is reed canary grass, most of this sold to be used as fuel in large power plants. In 2007 about 200 farms were engaged in bioenergy contracting, which comprises the production of biodiesel, ethanol and biogas. In 2009 the total number of SMEs that practised bioenergy production was 502. In 2008 the total turnover of the enterprises in the field was € 775 million, which was 5.7% higher than the year before. The number of people employed in the field is expected to grow from the 4,000 persons in 2008.

According to the long-term Climate and Energy Strategy, the use of bioenergy in Finland should increase by 28 TWh by 2020. In 2009 energy consumption in Fin-

land totalled about 368.7 TWh (1,326,236 TJ), which was 6% lower than the year before. The main sources of energy are oil, nuclear power, coal and natural gas.

Food processing

In 2010 there were about 2,900 food companies in Finland. The majority of food processing enterprises are in the rural areas. The field is strongly polarised into few large companies and numerous small enterprises. Most of the enterprises (71%) employed fewer than 5 persons. The most common sectors are the manufacture of bakery products and further processing of meat. In 2007 almost 800 farms engaged in further processing of foodstuffs and this was the main business activity on 600 of these. The most common types of food processing on farms are further processing of vegetables and berries, manufacture of bakery products, and slaughtering and further processing the meat.

Rural tourism

Rural tourism is the part of the tourism industry where the opportunities largely derive from resources characteristic to the countryside. The total number of rural tourism enterprises is estimated at 4,900 and their total turnover is about € 510 million. According to the follow-up of the occupancy of accommodation facilities by the theme group on rural tourism, the field is doing quite well. The long-term development prospects should also be quite favourable.

Equine industry

In this context equine industry comprises the breeding and rearing of horses and care services for them, training, riding schools and horse-related tourism. Equine industry is one of the most rapidly growing businesses in the rural areas: about 75% of the

enterprise in equine industry takes place on farms and 17% otherwise in the countryside. The estimated number of horses in 2009 was about 75,000. The total number of stables in Finland is about 15,000, of which about a quarter are companies. The annual money flows in the industry are estimated at more than € 830 million and it is estimated to employ 15,000–16,000 persons.

Trotting is a very popular sport in Finland. Almost 9,000 horses start off each year at trotting races and the annual turnover of betting in horse races is over € 200 million. The number of riding schools and leisure riding stables approved by the Equestrian Federation of Finland is about 300. There are a total of about one thousand riding stables, of which about a half are enterprises that may be considered riding schools. About 150,000 people enjoy riding as a hobby, the majority of them adults.

Reindeer herding

Reindeer herding is a highly significant business in the sparsely populated rural areas in northern Finland. It is a source of livelihood as such, and it is also significant in terms of the image of tourism and the Lappish culture.

The number of reindeer has stayed about the same during the past decade, but in the very recent years there has been some decrease. In 2009/2010 the number of reindeer totalled about 196,500, of which 100,000 were slaughtered. In recent years the production of reindeer meat has totalled 2.3–2.8 million kg.

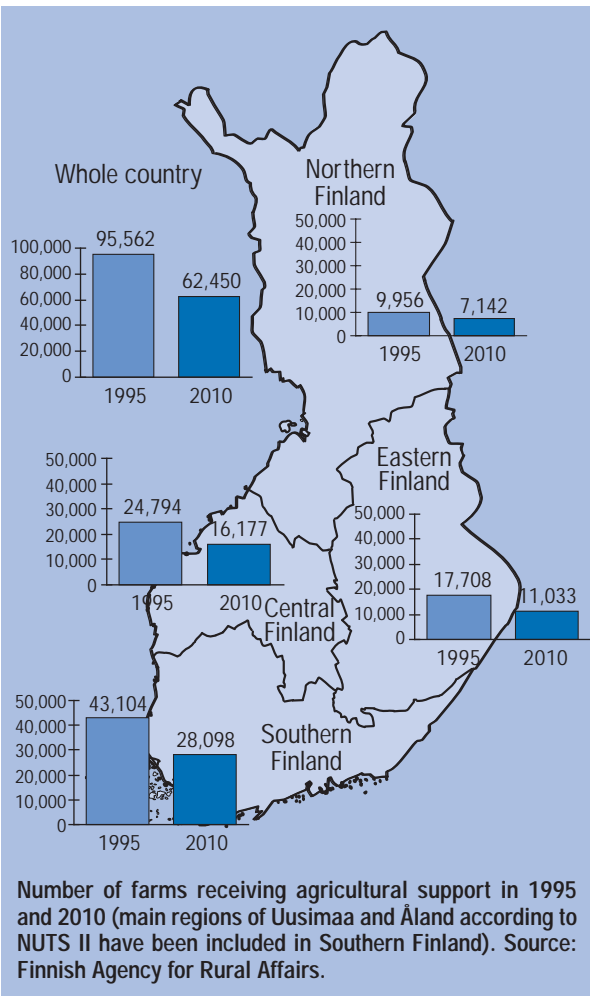
In the reindeer herding year 2008/2009 the average turnover of reindeer farms was about € 17,000 and the profitability coefficient was 0.33. On the largest reindeer farms with more than 230 reindeer the average turnover was € 33,000 and the profitability coefficient was 0.78.

1.3. Finnish farm

Number and size distribution of farms

In 2010 the total number of farms (over 1 ha) which had applied for agricultural support was a little under 62,500. This was about 1,300 farms (2.0%) less than in 2009. In both absolute and relative terms the decrease in the number of farms was close to the long-term average. During the fifteen years in the EU (1995–2010) the number of Finnish farms has fallen by almost 35% from 95,562 farms in 1995 by a total of about 33,112 farms. On average the number of farms has decreased at a rate of 2.8% a year. Proportionally the decrease has been the greatest in eastern Finland (38%) and the smallest in northern Finland (28%). In both southern and central Finland (33%) the number of farms has fallen less than in eastern Finland.

While the number of farms is decreasing, the average farm size has been growing. The average size of farms receiving agricultural support in 1995–2010 has grown by more than 60% from 22.8 ha of arable land to almost 36.5 ha. The annual growth in the average size has varied from 0.5 ha to 1.5 ha. The



growth is due to both the decrease in the number of small farms and increase in the number of large farms.

The structural change is reflected in the proportional share of the different size cat-

Number of farms receiving agricultural support in 2000–2010.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Whole country	77,896	75,384	73,386	72,000	71,100	69,088	68,766	66,821	65,292	63,716	62,450
Southern Finland ¹	35,319	34,192	33,375	32,771	32,245	31,272	30,967	29,945	29,368	28,694	28,098
Eastern Finland	13,675	13,219	12,935	12,630	12,498	12,121	12,173	11,812	11,501	11,218	11,033
Central Finland	20,019	19,443	19,023	18,656	18,458	17,986	17,947	17,574	17,119	16,650	16,177
Northern Finland	8,883	8,530	8,053	7,943	7,899	7,709	7,679	7,490	7,304	7,154	7,142

¹ Main regions of Uusimaa and Åland according to NUTS II have been included in Southern Finland. Source: Finnish Agency for Rural Affairs.

Size class distribution and average arable area of farms receiving agricultural support in 2010¹.

Arable land	Southern Finland ²		Eastern Finland		Central Finland		Northern Finland		Whole country			
	Number of farms	%	Number of farms	%	Number of farms	%	Number of farms	%	1995 Number of farms	2010 Number of farms	%	
< 10 ha	5,206	19	2,663	24	3,339	21	1,547	22	22,850	24	12,755	20
10–20 ha	5,558	20	2,617	24	3,744	23	1,359	19	30,698	32	13,278	21
20–30 ha	4,274	15	1,791	16	2,623	16	1,001	14	19,669	21	9,689	16
30–50 ha	5,467	20	1,981	18	3,079	19	1,400	20	15,414	16	11,927	19
50–100 ha	5,313	19	1,547	14	2,587	16	1,348	19	5,706	6	10,795	17
> 100 ha	2,083	8	397	4	727	5	466	7	784	1	3,777	6
Number of farms	28,005		10,996		16,099		7,121		95,121		62,221	
Average arable area, ha/farm	39.03		30.28		34.02		33.42		22.77		36.48	

¹ The figures do not include horticultural enterprises if they have no fields under cultivation.

² Main regions of Uusimaa and Åland according to NUTS II have been included in Southern Finland.

Source: Finnish Agency for Rural Affairs.

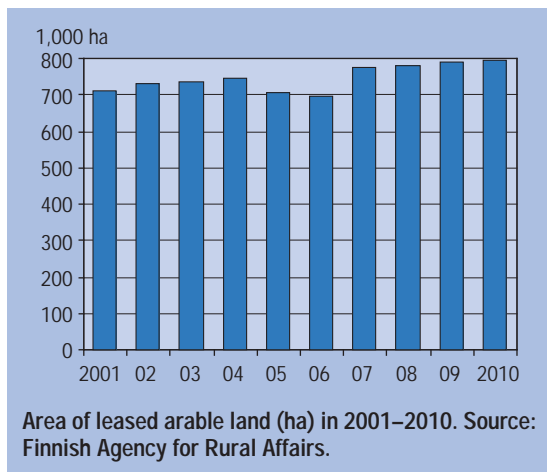
egories: in the past fifteen years the share of farms with less than 20 ha has fallen from 56% to 42% and the share of farms with more than 50 ha has more than tripled from 7% to 23%. Despite the growth in the average size, however, the share of small farms is still high in Finland. Very large farms with more than 100 ha of arable land represent about 6% of the Finnish farms.

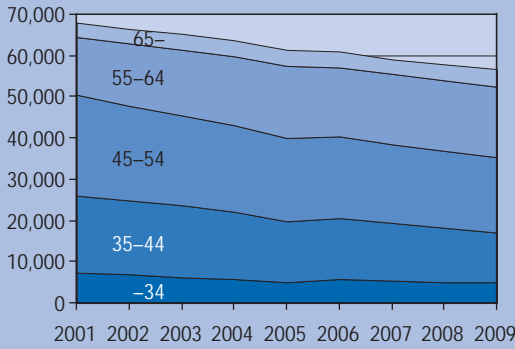
About two-thirds of the growth in the farm size in 1995–2010 has occurred through leasing. In 2010 the total cultivated arable area of farms receiving agricultural support was 2.278 million ha, and about 797,000 ha (35%) of this was leased. In 1995 the share of leased area was 22%. In the 2000s the leased arable area has grown by about 12%. There is considerable regional variation in the leased area: in Lapland and the Province of Åland more than 45% of the arable area is leased, while in some regions in southern and central Finland and Ostrobothnia the share of the leased area is less than 33%.

Despite the growth in the farm size, the small size of parcels is still a problem as regards, for example, the efficient utilisation of machinery. In

2010 the average size of base parcels was 2.43 ha, varying from over 3 ha in southern Finland to less than 2 ha in eastern and northern Finland. There has been hardly any growth in the average size of parcels.

Finnish agriculture is almost exclusively based on family farms: in 2010 88.4% of farms receiving support were privately owned and 10.4% were owned by heirs and family companies and corporations. Cooperatives and limited companies owned 1.0%, general and limited partnerships 0.2%, and the State, municipalities, schools and parishes 0.3% of the farms.





Number of farmers by age categories in 2001–2009. Source: Information Centre of the Ministry of Agriculture and Forestry.

The average age of farmers on farms receiving agricultural support is 51.4 years. Since 1995 the average age of farmers has risen by about three years. The farm population has been ageing so that in 2009 only 62% of the farmers were under 55 years of age while in 2001 their share was still 74%. The share of the under 40-year-olds has fallen the most, by about 40%.

Production structure of farms

Measured by the number of farms, the production structure of Finnish agriculture has changed considerably since 1995. The share of livestock farms has fallen while the share of crop farms has increased clearly. In 2010 28% of the farms which applied for support were livestock farms and 66% were crop farms, while in 1995 the share of livestock farms was 52% and that of crop farms was 39%. However, livestock production still represents almost four-fifths of the return on agricultural production at market price, with a 79% share in 2010.

In 2010 about 11,000 farms practised dairy husbandry as their main activity. This is 18% of the farms that applied for agricultural support. In 1995–2010 the number of dairy farms fell by more than 21,000 farms, at a rate of about 6.8% a year. Measured by the total value of the production, dairy husbandry is still the most significant agricultural production sector in Finland.

In recent years milk has accounted for about half of the return on agricultural production at market price (46% in 2010). Proportionally the share of dairy farms is the greatest in eastern and northern Finland (30% of all farms). Dairy farms are more evenly distributed to all regions of Finland than the other sectors.

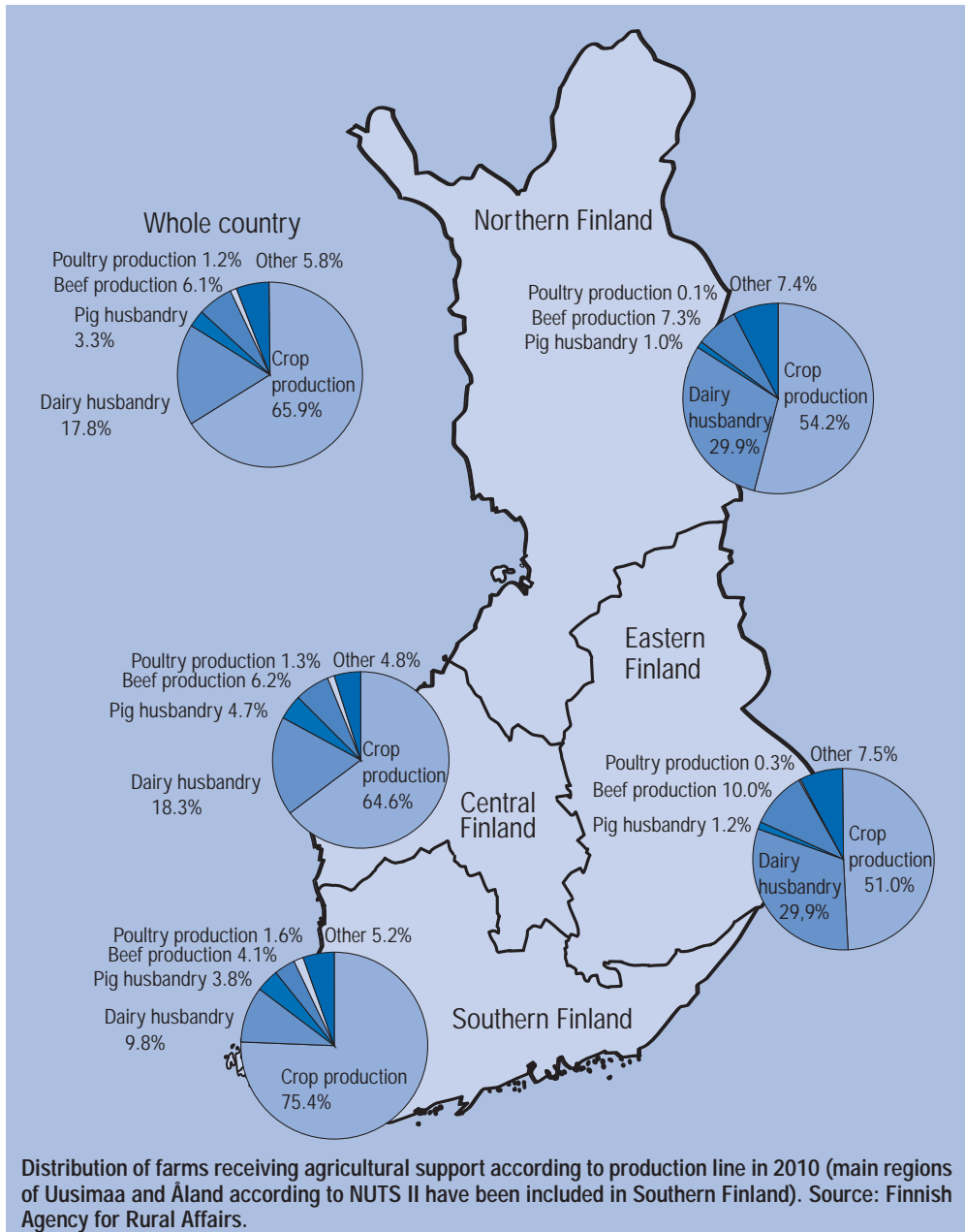
In 2010 the number of farms specialising in pig husbandry was about 2,040, which is about 3.3% of farms that applied for support. Of the pig farms 615 specialised in piglet production, 705 farms specialised in pigmeat and 716 farms practised combined pig production. In 1995–2010 the number of pig farms fell by 67%, i.e. 7.2% per year. Most of the pigmeat production is located in southern and western Finland. Pigmeat represents about 14% of the return on agricultural production at market price. In terms of the value of the production it is the second most important agricultural product after milk.

In 2010 about 3,790 farms (6.1% of all farms) specialised in beef production, and the share of beef in the value of agricultural production was about 10%. In 1995–2010 the number of these farms fell by about 5,300, at a rate of about 5.6% per year. The distribution of beef farms across the country is quite similar to the regional distribution of dairy farms.

The number of poultry farms was 724, which is about 1.2% of the farms that applied for support. During the EU period the number of poultry farms has decreased by a total of 67%, i.e. about 7.1% per year. The number of farms specialised in egg production has decreased the most, which is why the share of poultry meat farms of all poultry farms has grown. In 2010 about 56% of poultry farms specialised in egg production, 31% in poultry meat production and 13% were breeding units. In 2000 the respective shares were 68%, 21% and 12%. Most of the poultry farms are located in southern and western Finland.

In 2010 there were about 41,100 crop farms, which is almost 3,900 more than in 1995. In the very recent years, however, the number of crop farms has decreased as well. After years of growth the number of crop farms has turned to a decrease especially in southern Finland, with about a half of the crop farms, and in central Fin-

land, where about a quarter of the Finnish crop farms are located. Instead, in eastern and northern Finland the number and share of crop farms has increased in recent years as well. In 2010 return on crop production represented almost 21% of the return on agricultural production at market price.



2. AGRICULTURAL AND FOOD MARKET

2.1. Trends on the world market

In the past few years we have seen quite dramatic and rapid changes on the international agricultural product market. The great and sudden fluctuations in agricultural product prices have taken all market participants by surprise. The variations in cereal prices on the world market in 2007–2008 were almost unforeseeable. The world cereal prices were almost double the prices in the past few years. The world market prices of dairy products were also much higher than in the previous years.

The dramatic rise in the prices was followed by a rapid fall during the latter part of 2008. In summer 2010 the world prices for cereals started to rise again at a fast rate.

The changes are founded on both random and structural causes. A major share of the sudden and dramatic changes was due to variations in the yields caused by exceptional weather conditions in important agricultural regions and the global economic crisis.

In 2007–2008 the world economy was overheated and the price for crude oil was very high. Besides this, the stocks of both wheat and rice were record low.

Furthermore, the growth of speculation on the commodity exchange market impacts on price formation. In the United States, for example, the fall in stock prices in autumn 2007 steered growing amounts of money to agricultural commodities.

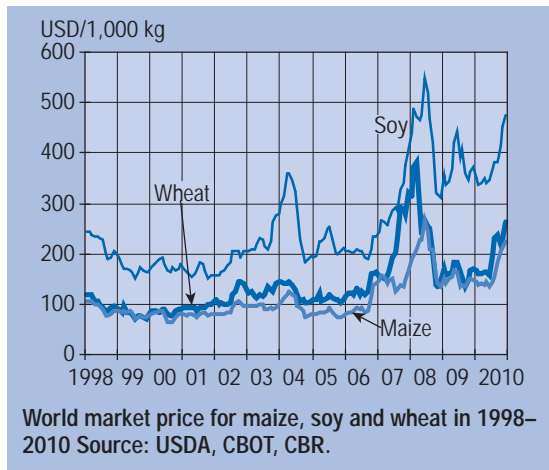
The fall in cereal prices in 2008 was much steeper and the prices ended up at a lower level than had been expected. The world cereal crop was very good and the stocks grew. The world economy ran into a recession and the money invested in the agricultural commodity market disappeared just as quickly as it had gone

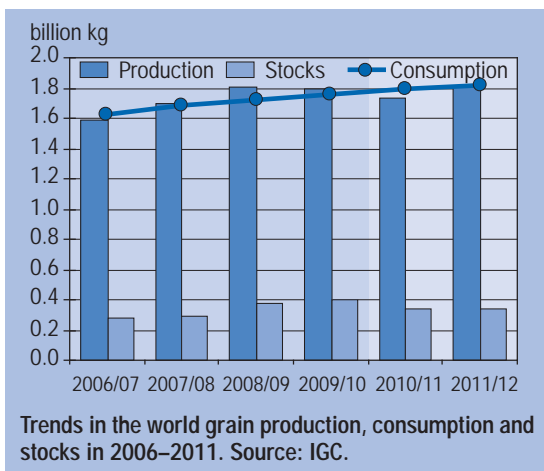
there. Very likely the prices would not have collapsed as drastically had it not been for the recession.

The rapid rise in cereal prices in summer 2010 started from the news about drought in the Black Sea region and the consequent yield losses. In recent years the Black Sea region (Russia, Ukraine and Kazakhstan) has been among the greatest cereal exporters on the world market.

The ban on cereal exports in Russia in August 2010 caused growing anxiety among the importing countries and accelerated the rise in prices. The heavy rains in Australia at the turn of the year 2010/2011 weakened the quality of the wheat crop, while floods completely destroyed part of the crop. Argentina suffered from drought caused by the La Nina weather pattern.

Cereal production in both the current and the next period is expected to remain below the next consumption, which means that the stocks will again diminish. In April 2011 the International Grain Council (IGC) estimated the production volume of the market period 2010/11 at 1,730 million tonnes and the consumption at 1,790 million tonnes. This means that the production would be 60 million tonnes, more than 3%, smaller than the consumption. The IGC estimates the world wheat





production at 650 million tonnes and consumption at 662 million tonnes.

Mainly because of the higher prices, the cereal production is expected to increase in all the main production regions in the next crop year. Based on estimates by the IGC, the grain area will grow in the market period 2011/12 by about 4%, which would imply a total output of 1,800 million tonnes. The production would be higher than the year before, but it would still remain slightly below the consumption, which continues to grow.

World demand for dairy products is growing largely because of the economic growth in Asia, especially in China. Because of the growing demand the prices started to rise towards the end of 2010. The prices of cheeses, milk powders and butter increased considerably between the beginning and end of 2010. The butter prices rose by as much as 30–40% and the prices for cheeses and milk powder by 15–20%.

The world market prices for meat have also risen due to the growing demand, but the changes on the meat market have been smaller than on the cereal and milk market. According to FAO statistics, in 2010 the prices for meat rose by a little more than 10%.

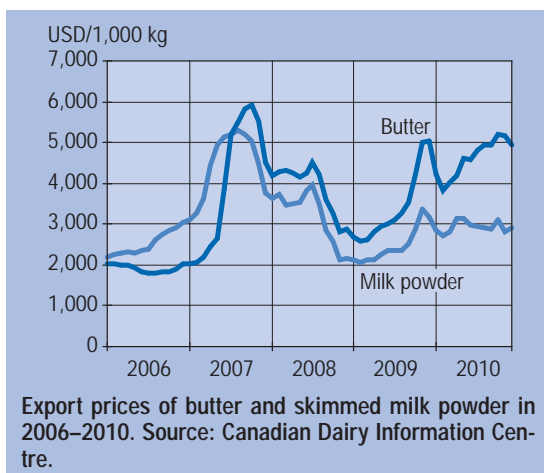
In the future growing pressures on world prices will be caused by the population growth and growth

in prosperity. The world population increases by about 80 million people a year. The competition for higher standard of living in the population-rich Asian countries means that growing numbers of people are consuming more meat and dairy products. Rearing livestock consumes large quantities of cereal, which means that larger arable areas now used for food production will be needed for growing animal feed. This leads to higher prices for both cereals and meat.

The prices and price outlook are also influenced by the growing demand for cereal and raw material for biofuels. The increase in biofuel production inevitably takes over part of the arable area which otherwise would be used for food or fodder cereal production.

Very likely the great fluctuations in the supply of agricultural products and the related considerable variations in the prices have come to stay. Today even quite small indications of changes in crop outlook are rapidly reflected in the world market prices.

Some of the reasons behind the fluctuations in agricultural commodity prices are not directly linked to the balance between the supply of and demand for food. Like in the case of credit crisis, expectations, speculation and suspicion have their role to play in price variations.



2.2. Arable crops

The year 2010 was characterised by great variations in both the weather conditions and on the cereal market. The Finnish cereal crop was the smallest of the decade. The total cereal crop remained at about 3 billion kg, which is 30% lower than in 2009. The main cause for this was the decrease in the cereal area by 16% from the year before. The total grass yield was 8% lower than in 2009 in spite of the growth in the cultivation area. The prices of cereal crops peaked at the turn of July/August.

Weather conditions

The year 2010 will be remembered for the extreme weather events. Record temperatures were hit many times during the exceptionally warm summer. The year also remains in history because of the heavy storms and quite long heat waves. However, because of the cold temperatures in both the early and late part of the year the average annual temperature in the whole country remained 0.6 degrees below the long-term average. The average temperature of the year varied from 5 degrees in south-west Finland to -3 degrees in northern Lapland.

The lowest temperature of the year, -41.3 °C, was measured on 20 February in Kuhmo in north-east Finland. The highest temperature, +37.2 °C, which was also a national all-time record, was measured at Joensuu airport in eastern Finland on 29 July.

The length of the thermal growing period was quite normal. In the south the growing period started on 25–26 April and ended on 11 October. In southern Finland the growing period was 169 days long, in central and western Finland it was about 160 days and in the north it was 135 days, which is a little longer than normally.

Because of the very warm summer the effective temperature sum was also higher than the average. In Jokioinen in south-

central Finland the temperature sum accumulated was 1,500 °C (long-term average 1,245 °C), in Jyväskylä in central Finland it was 1,402 °C (1,134 °C) and in Rovaniemi in the north it was 966 °C (879 °C).

The average total precipitation in the whole country was about 560 mm, which was about 30 mm below normal. During the summer, however, there was considerable regional variation in the rainfall. In some locations within a zone from south-western Finland to Kainuu in the north-east it rained more than 650 mm. In some places it rained almost twice as much as usually in the spring, while during the summer the precipitation was less than half of the average. The highest rainfall during one day, 69.5 mm, was measured in Simpele in eastern Finland on 4 August.

Areas and yields

The utilised agricultural area in Finland is about 2.3 million ha, which is 6.8% of the total surface area and 7.5% of the land area. Compared to the average in the European Union, 46.7%, the share of agricultural area is very small in Finland.

In 2010 cereals were cultivated on about 951,500 ha in Finland, which is 16% less than the year before. Instead, the area under grass grew from 2009. The total cereal output fell by 30% from the year before to about 2,989 million kg.

The area under fodder cereals was about 715,100 ha in 2010 and the yield totalled 2,196 million kg. The decrease in the total fodder cereal yield by 34% from 2009 was mainly due to the fall in the cultivation area by 21% from the year before. The quality of fodder cereals suffered from the low hectolitre weight and small grain size of oats.

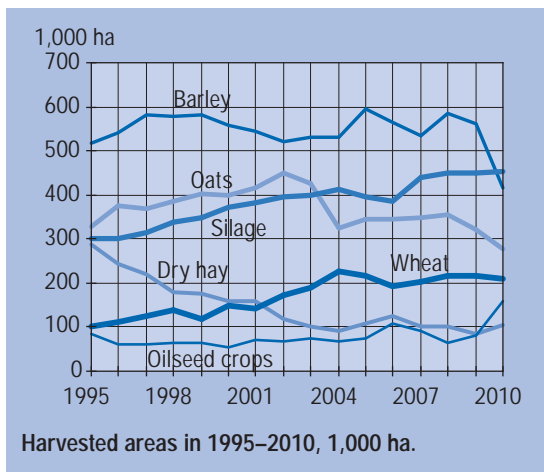
Only 49% of the fodder barley crop reached a hectolitre weight of more than 64 kg, while in the previous year this share was more than 80%. The hectolitre weight of oats was the lowest in more than 20 years. Of the oats crop 71% was above the

hectolitre weight of 52 kg, which is the minimum requirement commonly used by the feedingstuffs industry. Only 3% of the oats crop was above the hectolitre weight of 58 kg usually required for grits, while in 2009 this figure was 27%.

The yield of malting barley in 2010 was 61% lower than the year before. The total yield was 244 million kg, of which was almost a quarter, about 55 million kg, was fit for malting. The main reason why part of the crop was not suitable for malting was the too high protein content.

The total area under bread cereals in 2010 was 236,400 ha and the total yield harvested was about 793 million kg. The total yield was 15% smaller than in 2009, mainly due to the lower hectare yield of spring wheat.

The total yield of winter and spring



wheat was 724 million kg, of which about 485 million kg fulfilled the quality criteria for bread wheat. The yield of spring wheat was about 636 million kg and that of winter wheat about 88 million kg. The hectare yield of winter wheat was higher than in 2009 as well as above the long-

Harvested areas and yields of main crops in 2009 and 2010.

	2009			2010		
	Area 1,000 ha	Yield kg/ha	Total million kg	Area 1,000 ha	Yield kg/ha	Total million kg
Winter wheat	16.4	3,890	63.7	22.3	3,970	88.5
Spring wheat	199.8	4,120	823.3	188.9	3,370	635.9
Rye	16.4	2,550	41.7	25.2	2,720	68.5
Barley	561.8	3,860	2,171.0	417.4	3,210	1,340.2
Oats	322.0	3,460	1,114.7	278.3	2,910	809.7
Mixed cereals	15.0	3,020	45.3	19.4	2,380	46.5
Peas	4.2	2,660	11.2	6.1	2,190	13.4
Potatoes	26.4	28,610	755.3	25.2	26,210	659.1
Sugar beets	14.8	37,710	559.0	14.6	37,120	542.1
Dry hay	86.1	3,370	289.7	106.1	3,600	382.4
Silage	450.3	17,690	7,964.7	451.6	17,890	8,081.3
Green fodder	14.7	7,870	115.7	13.6	8,820	120.3
Cereals harvested green	69.8	4,970	346.9	57.5	4,180	245.0
Turnip rape	69.9	1,690	118.0	141.5	1,120	158.6
Rape	11.0	1,980	21.9	16.2	1,230	19.9
Pasture	78.7			77.3		
Other crops	47.1			55.1		
Total	2,004.4			1,916.3		
Set aside and managed uncultivated arable land	229.8			307.0		

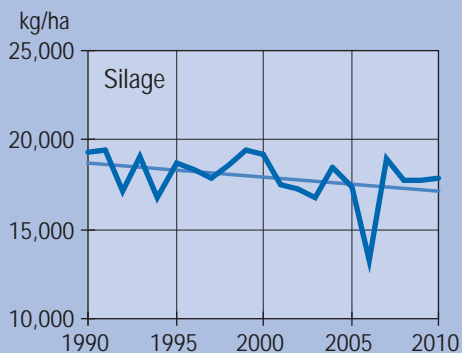
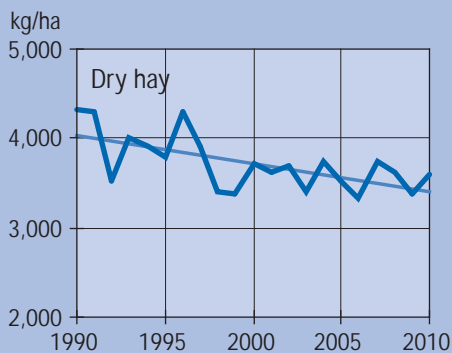
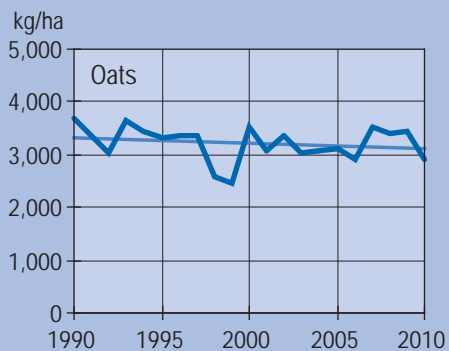
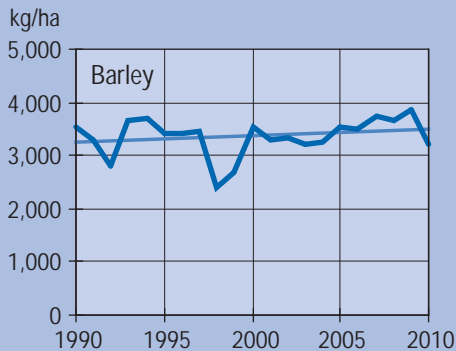
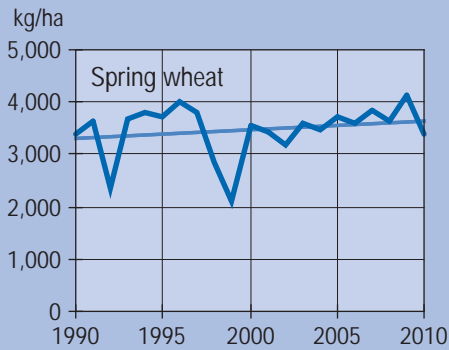
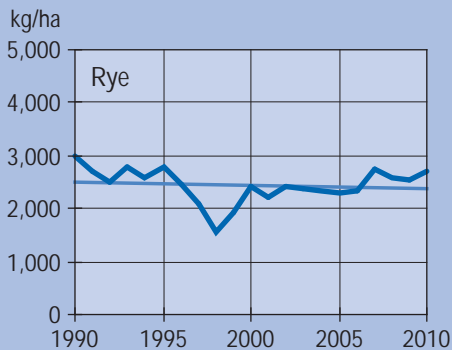
Source: Information Centre of the Ministry of Agriculture and Forestry.

term average. Of the spring wheat 70% was fit to be used as bread cereal, the protein content of the crop was high and, on average, the hectolitre weight was good. However, regional variations were great in wheat production.

The total yield of rye, about 68 million kg, was 64% higher than in 2009. More than 90% of the crop was fit to be used as bread cereal, while the year before less than half of the crop fulfilled the criteria for this.

The area sown with rye in autumn 2010 was about 29,000 ha, which was as much as 43% larger than in autumn 2009.

The silage area was about 452,000 ha, which is 2% more than in 2009. The total yield was 8% higher, about 7,400 million kg. The average silage yield was about 17,890 kg/ha, which is slightly above the average. The dry hay area grew from the previous year to 106,600 ha. The yield of dry hay totalled 382 million kg, which is



Yields of main crops in Finland from 1990 to 2010. Source: Information Centre of the Ministry of Agriculture and Forestry.

32% higher than in 2009. The hectare yield of 3,600 kg/ha was close to the ten-year average. The pasture area was 77,200 ha, which is a little less than the year before. The area under green fodder decreased slightly to 13,600 ha.

The potato yield of 2010 totalled about 659 million kg, of which 291 million kg were ware potatoes. The total yield was 13% smaller than in 2009, when the hectare yield of potato was clearly above the average.

The yield of sugar beets totalled 542 million kg, which is 3% less than in 2009. The cultivation area stayed about the same, at 14,600 ha. The hectare yield of 37,120 kg/ha was about the same as in 2009 and 3% higher than the average yield of sugar beets over the past ten years. The Finnish sugar quota of 81 million kg was exceeded slightly in 2010.

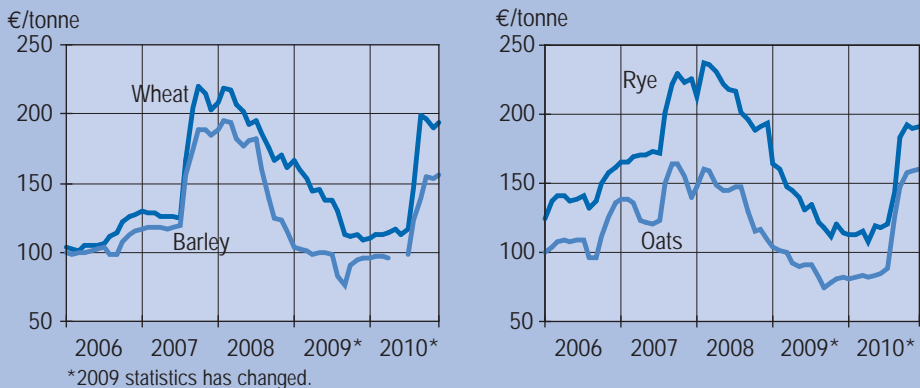
The cultivation area of oilseed crops totalled 158,000 ha in 2010, which is as much as 95% larger than the year before. The total yield of turnip rape was about 159 million kg and that of oilseed rape was about 20 million kg. The total yield of turnip rape was 35% higher than the year before but the hectare yield fell by 44% to 1,120 kg/ha, which is also lower than the average hectare yield. The hectare yield of oilseed rape, 1,220 kg/ha, was also lower than in 2009.

Market prices for arable crops

In 2010 we again saw a quite dramatic rise in the market prices of cereals. In the early part of the year the prices were at a very low level, but in August and after that news from drought in Russia and the Black Sea region kept pushing the prices up. The ban on cereal exports imposed by Russia raised the world market prices even further. The domestic cereal prices followed the trend in world market prices after a certain lag. The last time when the prices peaked in the same way was in 2007/2008. It seems that quite strong fluctuations in cereal prices have come to stay, both on the world market and in Finland.

The prices continued to rise until October, and this was the level on which the Finnish prices also stayed for some time. Another rise took place in December, caused by the uncertainty relating to the quality of the wheat crop and the news that the total production of the year would not be sufficient to meet the total demand on the world market. Cereal prices rose on the domestic market as well so that at the end of the year 2010 the price level was much higher than in the beginning.

The price level of fodder barley was also low in the early part of 2010. After the increase, which started in August, the average price for fodder barley had risen



Market prices of cereals in Finland from 2006 to 2010. Source: Information Centre of the Ministry of Agriculture and Forestry.

Market prices of cereals in Finland from 2000 to 2010, €/1,000 kg.

	Rye	Wheat	Barley	Oats
2010	142.24	143.62	120.51	104.32
2009 ¹	134.15	131.95	93.93	86.41
2008	207.02	189.14	160.71	137.80
2007	192.19	159.90	145.80	149.73
2006	139.81	110.50	102.00	107.26
2005	118.41	106.20	99.51	87.13
2004	120.90	119.80	106.51	87.32
2003	124.88	126.66	105.57	92.21
2002	126.57	131.79	106.00	104.38
2001	131.31	132.36	109.66	111.37
2000	131.19	134.55	119.41	117.73

¹ Statistics has changed. Basic price paid to farmers on delivery to first customer

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

to more than 150 €/tonne from the level of about 98 €/tonne in July. A similar rise took place in the price for malting barley so that in December 2010 the average price, 168 €/tonne, was about 65% higher than in January 2010.

The average price of oats in 2010 was about 104 €/tonne. At its lowest in January the price was 81 €/tonne, but at the turn of July/August the average price rose by about 42%. Oats prices continued to rise all through the autumn so that in December the average price of oats was 160 €/tonne.

The average price of wheat in 2010 was 143 €/tonne, which is slightly higher than the average price in the previous year. Of the cereals the price of wheat rose the most during the year: the average price of 193 €/tonne in December was as much as 75% higher than the monthly average in January. The price of rye also rose all through the year to the highest level of 190 €/tonne in December. At its lowest in April the price was 108 €/tonne, and the average price of rye for the whole year was 142 €/tonne.

The prices for oilseed crops did not rise

as much as the cereal prices, even though the prices of both turnip rape and oilseed rape kept rising quite steadily all through the year. The average price of the year was about 325 €/tonne, which is 19% higher than the year before. The price was at its lowest, 285 €/tonne, in January 2010, but after the steady increase from one month to another the average price at the end of the year was 386 €/tonne.

The average price of ware potato in 2010 was 117.5 €/tonne. Until July the price varied between € 90 and 100, but from August the average price of ware potato started to rise as well so that in October it was 150 €/tonne. In December the price was as high as 190 €/tonne, which was more than double the price in the early part of the year. The low price level in the early part of the year was due to the record yield of ware potato in 2009. One of the reasons for the rapid rise in the price in the autumn was the growing demand for potato especially in Russia, where the potato crop was weak because of the drought.

The Finnish cereal market reacts to changes on the world market quite slowly. The price of, for example, bread wheat stayed lower in Finland than in the rest of Europe all through the year. The prices on the Finnish market follow the price trends in Western Europe after a certain lag, and the price level reached at the end of the year was not as high as in the other West-European countries.

Market prices of cereals in 2009, €/1,000 kg.

	Rye	Wheat	Barley	Oats
Finland	134.2	132.0	-	86.4
Sweden	75.3	107.4	85.7	71.6
Denmark	-	120.9	126.2	100.7
Estonia	73.7	104.4	98.2	69.5
Austria	132.5	83.2	-	77.9
England	-	122.9	103.7	103.3
Spain	121.8	142.4	124.7	126.9

Source: Eurostat.

2.3. Livestock production

Milk

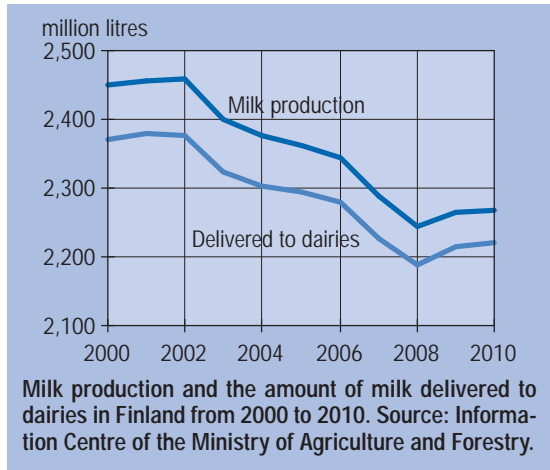
The amount of milk delivered to dairies in 2010 totalled 2,222 million litres, which was 7 million litres (0.3%) more than in 2009. The production of organic milk totalled 30 million litres (+2.2%). The total volume of milk produced grew for the second year in a row. However, from 2001 the volume has decreased by 7%, and today it is less than the domestic consumption. The production of organic milk has increased five-fold during the 2000s.

In the quota period 2009/2010 milk production in Finland fell 216 million litres short of the national quota. In the period 2010/2011 the shortage was 242 million litres (10%). Gallup Food and Farm facts has forecast the milk output in 2010 to total 2,240 million litres.

Milk was produced on 10,920 farms (-5%), of which 117 were organic farms. The average dairy herd size grew by 1.3 cows to 26.3 cows. The number of dairy cows decreased by 0.4% and the number of calves born by 1%. The average yield of dairy cows rose by 0.7%.

In 2010 the production of butter totalled 44.5 million kg (-8% from the year before) and a total of 17 million kg (+8%) was consumed. The consumption of fat blends grew from the previous year to 15 million kg. The production of liquid milk products totalled 709 million litres (-0.3%) and the consumption was 688 million litres (-1.5%). The production of buttermilk totalled 68 million litres (-0.6%).

In 2010 a total of 117 million kg of yoghurt was produced (+0.4%) and the consumption was about 125 million kg (+4%). Cheese production totalled 101 million kg (+3.6%) and consumption 115 million kg (+3.4%). The production of open texture cheeses and processed cheese increased the most. The production of



soured milk products increased by 4% and that of soured whole milk “viili” by 2%.

There is a great need to both export and import items representing specific dairy products. Approximately half of the milk’s fat produced in Finland is used to manufacture export products. Instead, the protein fractions in milk find use in Finland.

In 2009, yoghurt exports totalled 29 million kg (+14%) and imports 37 million kg (+27%). The import of liquid milk rose to 50 million kg. Cheese exports totalled 51 million kg (+3.4%) and imports 44 million kg (+0.4%). Of the cheeses produced in Finland almost a half are exported, while imports represents 37% of the cheese consumption. Butter exports fell by 13% to 31 million kg. The export of powders grew, with fat-free milk powder as the most important export product.

Beef

In 2010 a total of 82 million kg of beef was produced in Finland, which is one million kg (+1%) more than the year before. Beef consumption totalled 99 million kg (+5%), of which 17.5% was imported meat. Gallup Food and Farm Facts has forecast that in 2011 beef consumption stays at 99 million kg and production rises to 83 million kg.

In recent years beef production has varied between 80 and 87 million kg and consumption between 95 and 99 million kg. When pigmeat and poultry meat are included, Finland became a net importer of meat in 2010 as the total production of all types of meat was 1.7% lower than their consumption.

The number of bovines slaughtered was almost 265,000 (-1% from 2009), of which 54% were bulls, 32% cows and 14% heifers. The number of bulls slaughtered fell by 1% and that of cows by 2%. The number of heifers slaughtered increased by 4%. Since 1996 the average slaughter weight of bulls has increased by 73 kg. In 2010 the average slaughter weight of bulls was 346 kg, (+9 kg from 2009), that of cows was 280 kg (+5 kg) and heifers 250 kg (+6 kg).

The number of suckler cows has increased in recent years. In May 2010 there were 55,400 suckler cows in Finland, which is 7% more than in 2009. The number of farms specialised in beef production was about 3,700, of which 40% specialised in suckler cow production.

The average weight of calves sold rose slightly and their number fell by 3%. The number of calves born decreased by 1%.

In 2010 a total of 17.3 million kg of beef was imported, which is 2.1 million kg more than the year before. Most of the

imports came from Poland, Denmark and Germany. Processed meat was imported primarily from Sweden, where Finnish meat companies are also operate. Beef exports totalled 1.7 million kg (2% of production). Finnish beef is exported almost exclusively to Sweden and Norway.

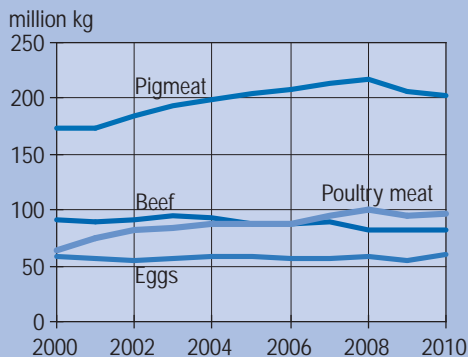
Pigmeat

Pigmeat production totalled 203 million kg, which is 1% less than in 2009. Pigmeat consumption grew by 1% to 189 million kg. The production fell for the second year in a row. One reason for this has been the decoupling of national aids from the volumes produced. The Gallup Food and Farm Facts has forecast that pigmeat production falls to 201 million kg in 2011 and consumption stays at 189 million kg.

The number of pigs slaughtered in 2010 was about 2.2 million (-4%). The average slaughter weight of fattening pigs rose to 88.4 kg (+2.6 kg). One reason for the increase was the strike at the Finnish slaughterhouses, which delayed the slaughtering so that in April 2010 the average slaughter weight was as high as 92.7 kg. The number of sows slaughtered decreased by 8% and the number of piglets sold for fattening by 2%.

In December 2010 there were 146,000 sows in Finland (-6%) and 526,000 fattening pigs (≥ 50 kg, -2%). By the end of the year the number of pig farms fell below 2,000. Most of the production is located in south-western Finland and Ostrobothnia, where almost 75% of the pigs are kept.

In 2010 a total of 36.6 million kg of pigmeat was exported (-19%) and imports totalled 28.4 million kg (+21%). About 18% of the production was exported. Exports to Russia fell strongly and Estonia became the most significant export destination. Other important export destinations were Sweden, New Zealand, South



Production of beef, pigmeat, poultry meat and eggs in Finland from 2000 to 2010. Source: Information Centre of the Ministry of Agriculture and Forestry.

Livestock production in Finland from 2000 to 2010.

	Dairy milk million litres	Beef million kg	Pigmeat million kg	Eggs million kg	Poultry meat million kg
2010	2,222	82	203	62	96
2009	2,215	81	206	54	95
2008	2,188	80	217	58	101
2007	2,226	87	213	57	95
2006	2,279	85	208	57	88
2005	2,293	84	203	58	87
2004	2,304	91	198	58	87
2003	2,323	94	193	56	84
2002	2,376	91	184	55	83
2001	2,378	90	174	57	76
2000	2,371	91	173	59	64

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

Korea and Japan. Of the pigmeat consumed 15% was imported, mainly from Germany, Denmark and Poland. Half of the processed meats came from Sweden.

Poultry meat

In 2010 poultry meat production in Finland totalled 96 million kg and consumption 98 million kg. The production grew by 2% from the year before. About 90% of the poultry meat produced in Finland is broiler.

Broiler meat production totalled 88 million kg (+2% from 2009) and that of turkey meat 9 million kg. At total of 88 million kg of broiler meat (+5%) and 9 million kg of turkey meat (+4%) was consumed. Besides these, small amounts of other poultry meats were produced and consumed. The production of broiler meat has been approximately 90 million kg in the past few years, but the production of turkey meat has decreased by 37% from 2005.

According to the forecast of the Gallup Food and Farm Facts, in 2011 the consumption of poultry meat rises to 101 million kg, of which 91 million kg is broiler meat and less than 10 million kg is turkey meat. The production volume is forecast

at 99 million kg of which 90 million kg is broiler meat and less than 9 million kg is turkey meat.

The number of broilers slaughtered increased by 5% from the year before, but the average slaughter weight fell by 3% to 1.6 kg. The number of turkeys slaughtered and their average slaughter weight (9.2 kg) were about the same as the year before.

A total of 12 million kg broiler meat (+18%) and 2.5 million kg turkey meat (+15%) was imported to Finland. Most of the broiler meat imports came from Brazil and Denmark. Processed meats came mainly from Thailand, Germany, Denmark and Brazil. Turkey meat was imported mainly from Germany, where turkeys from several neighbouring countries are also slaughtered, and from Poland. Today meat preparations represent well over half of the imports. A major share of the carcass meat imports is boneless meat or breast fillets with bones. Imports account for 13.5% of broiler meat and 26.5% of turkey meat consumption.

Broiler meat exports from Finland totalled 14 million kg (+4% from 2009) and turkey meat exports 1.8 million kg (+24% from 2009). The exports went mainly to Estonia, Russia, Hong Kong, Sweden and Latvia.

Eggs

The amount of eggs delivered to packaging in 2010 totalled 61.5 million kg. Besides this, about 1% of the production has gone to direct sale or farm household use. Egg production was 14% higher than the year before. It was the first time since 1998 that egg production was this high. The production of organic eggs rose by 20% and production in barn systems by 23%. Egg production in battery cages increased as well, but only by 11%. Thus the sector seems to have recovered from the salmonella epidemic which removed 440,000 hens from production in 2009.

Of the eggs produced 3% came from organic production, 23% from barn systems and 68% from battery cage systems. About 30% of the production still takes place in battery cages, which will become prohibited in 2012. Thus farms need to invest in new production facilities if they intend to continue in the sector. If such investments are not made, egg production is likely to fall, at least temporarily.

Egg consumption totalled 52 million kg, which is 3.2% more than in 2009. The consumption of shell eggs increased a little more, by 3.7%. The growth in the production led to a growth in exports by 10.7 million kg (+55%).

According to the forecast by the Gallup Food and Farm Facts, in 2011 egg production should stay at about 60 million kg. The number of hens is expected to be about 3.4 million, which is the same as in 2010 but more than in 2009.

Producer prices

The market prices of livestock products in the EU influence their prices in Finland, but the Finnish prices also have special characteristics. The market prices for pigmeat and milk, for example, usually vary less in Finland than in many other EU countries. In Finland there is oversupply in eggs, and their producer price is low com-

The producer prices of the most important livestock products in Finland from 2000 to 2010 including production support (€/100 kg, milk €/100 l)¹.

	Milk	Beef	Pigmeat	Poultry meat	Eggs
2010	36.92	240	137	120	88
2009	39.74	247	141	124	87
2008	44.05	241	144	130	92
2007	38.25	221	132	114	77
2006	36.39	212	126	109	62
2005	35.22	205	128	114	60
2004	35.75	190	120	117	74
2003	36.68	186	115	117	80
2002	36.83	190	137	120	79
2001	36.26	208	150	117	69
2000	34.97	206	129	111	82

¹ The figures include estimated retroactive payments. Producer price for milk with standard protein and fat content, does not include quota levies. The price for 2010 includes estimated retroactive payment of 1.29 cents/l. Source: Information Centre of the Ministry of Agriculture and Forestry.

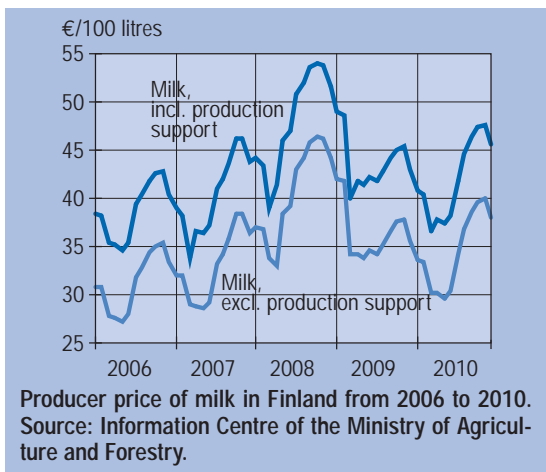
pared to the other parts of the EU. Instead, the prices paid to the Finnish milk producers are slightly higher than in the EU on average, and in Finland the seasonal variation in prices is also greater. Studies show that the price changes observed on the European meat market are transmitted to the Finnish prices quite slowly.

In 2010 the average producer price for

Market prices for livestock products in selected EU countries in 2010, €/100 kg¹.

	Milk	Pigmeat	Beef (bull)	Poultry meat ²	Eggs ³
Finland	37.15	141.7	289.5	240.9	107.2
Sweden	33.68	145.8	296.2	202.4	174.1
Denmark	31.94	126.3	307.0	197.7	178.3
Estonia	27.74	142.5	226.4	-	108.2
Germany	30.97	144.4	313.9	245.6	121.0
France	30.92	129.9	318.6	194.9	94.7

¹ Average prices of January–December, - information not available. ² Sale price at slaughterhouse, ³ Sale price at packaging plant. Source: European Commission.



standard milk with quality premiums was 36.85 €/100 l (-5% from 2009). In addition, the average of 7.48 €/100 l was paid as production aid. The share of quality premiums in the price was 2.28 €/100 l. The final price for milk is determined when the dairies complete their financial statements and the retroactive payments based on the result are decided. In 2009 the average retroactive payment was 1.29 €/100 l.

The price of milk varies from one month to another and according to the ability of dairy to pay to the producers. The average price paid by the three dairies with the lowest price was 2.73 €/100 l less than the average price paid by the three dairies with the highest producer price.

The average price paid to the producers for bull meat was 2.78 €/kg, which was 2% lower than the year before. The average price for all types of beef was 2.40 €/kg (-3%). The price of cow meat fell by 5%. The prices paid for calves rose by 2–4% from 2009. The average price paid for a male colostrum calf was € 154 and that paid for a female calf was € 82.

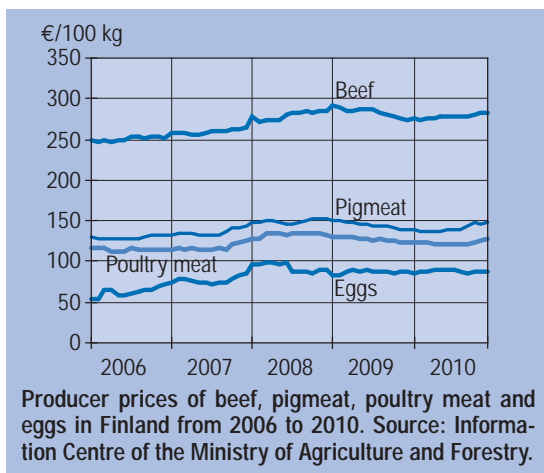
In 2010 the average price paid for pigmeat was 1.37 €/kg, which is 2.5% less than the year before. The average price paid for fattening pigs was 1.41 €/kg (-3%). The average price paid for piglets (30 kg) was

€ 60. In Finland the pigmeat prices were slightly above the EU average. The price for piglets was clearly higher than in the EU but much lower than in Sweden.

The average producer price for poultry meat, 1.23 €/kg, was 3% lower than the year before. The price for broiler meat was 1.20 €/kg. In the EU price statistics broiler prices in Finland were lower than the EU average, but the product concerned here (whole broiler) is poorly representative of the Finnish market.

The average producer price for eggs was 0.88 €/kg, which was 1% higher than in 2009. In the EU statistics the sale price of packaging plants fell by 12% to a level below the EU average. The price for eggs produced in barn systems was a tenth higher than the price of eggs from battery cage systems, and the price of organic eggs was three times higher.

At the end of 2010 the prospects on the pigmeat and poultry meat markets weakened due to the news about dioxin contaminated feed which had been fed to the animals in Germany, as well as the rapid increase in feed prices. The meat and egg sales in Central Europe suffered from the dioxin scandal simultaneously when the soaring feed prices led to a strong increase in the meat and egg production costs.



Protein self-sufficiency – Feasible or not?

Jarkko Niemi, Timo Sipiläinen and Timo Karhula

Almost two-thirds of the plant-based feed protein consumed in the EU is obtained from soybean, 12% is from rape seed meal, 5% from sunflower and 4% from leguminous plants. The EU imports approximately 70% of the plant-based feed protein and as much as 98% of the soybean. The situation is forecast not to change much in the current decade. Hence, our pig and poultry production is heavily dependent on imports of feed protein. Every year thousands of tonnes of protein-rich feed ingredients are imported to Finland. More than half of this is soybean and soya products. The value of the soya imports alone totals tens of millions of euros a year. In recent years, however, imported soybean has become less important as the production and import of turnip rape have grown (see figures). The need for protein is increasing on the global scale due to the growth in the world population and rise in the standard of living. According to the OECD, meat consumption in the current decade increases by 2.4% in the developing countries and 1.1% in the rest of the world.

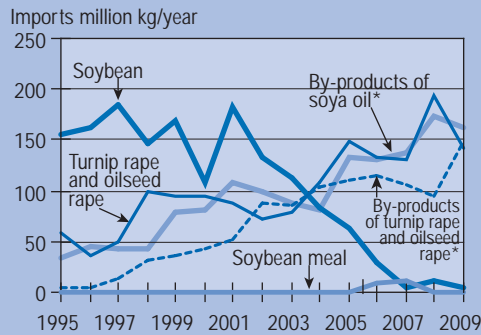
Amino acid composition of protein important

Feed is one of the main cost items in livestock production. In the pig fattening, for example, protein feed represents approximately a third of the feed cost.

Domestic vegetable protein should not cost too much and its composition should meet the animal's needs. The most important source of protein for pigs and poultry is protein-rich soybean. Its amino acid composition is also well suited for the needs of the animals. For example, the metionin content of field bean is 75% lower and that of pea is 70% lower than the metionin content of soybean meal. With respect to milk and beef production the situation is better: The main source of protein for ruminants is high-quality grass feed.

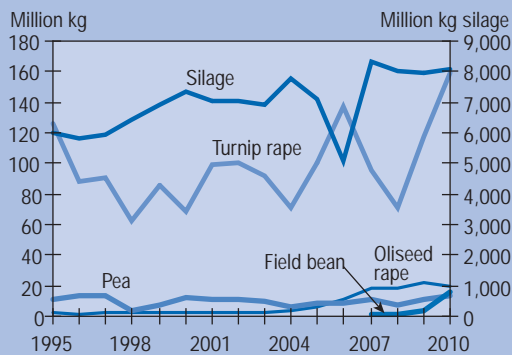
Besides the price and the protein content, the availability of feed also matters. The availability of organic protein feed, in particular, is scarce in Finland. There are very limited amounts of pulses (pea, field bean, lupin) on the market. The supply of non-GMO soybean has also declined.

The most important protein crops to be cultivated in Finland are pulses, turnip rape and oilseed rape. Grasses and clovers with high protein content are suitable to be used as cattle feed. The amount of soya in the ruminant's feed is typically small and even this can be substituted by, for example, turnip rape or pulses. Whole grain silage containing pulses could also be utilised as cattle feed. In the feeding of pigs soya could be replaced by, for example, a pea-field bean-turnip rape



*Products created in separation of oil such as oil cakes, pellets and groats.

Imports of soybean, turnip rape and oilseed rape to Finland in 1995–2010. Source: Eurostat.



Total yield of turnip rape, oilseed rape, pea, field bean and silage (mill. kg) in Finland in 1995–2010. Source: Information Centre of the Ministry of Agriculture and Forestry Tike.

mixture. In the case of poultry replacing the soya completely by domestic protein is challenging. The most important domestic sources of protein for poultry are pea, field bean and turnip rape.

In pig husbandry pea purchased from the market seems a competitive alternative as its price has been low relative to its nutritive value as feed. More turnip rape and field bean could also be used in feeding pigs, if their prices were low enough. If, for example, pea or field beans is used to substitute for soybean meal in the pigs' feed, the share of barley in the feed must be reduced.

Cultivation costs are of primary interest

Field bean contains about 30% of protein. The protein content of pea and turnip rape is approximately 23% and that of barley is 11–14%. Hence, barley should yield 2–3 times the crop of field bean to produce the same amount of protein per hectare. In grass silage the protein content is 12–23%.

In order to increase the production of protein-rich crops, their cultivation should be profitable when compared to other crops. According to studies at the Agrifood Research Finland (MTT), with a sufficiently high hectare yields pea, field bean and turnip rape could provide a higher profit margin than feed barley. In addition, the risk associated with cultivation should not be greater than in other arable crops, because farmers are risk-averse.

Pulses are valuable in crop rotation, because they reduce the need for nitrogen fertiliser in the subsequent year. A problem with pulses is that the risk of a poor yield is higher than in cereals. The seed cost is also high: In the cultivation of pea, purchased seed can represent as much as 70% of the variable costs. Fortunately, plant breeders have managed to increase water and drought-tolerance of pea, and to increase its protein content while reducing the tannin content. The length of the growing season restricts the cultivation of field bean in central and northern Finland. The cultivation of turnip rape in turn suffers from the high fertilisation cost. The cultivation areas are limited because pulses and turnip rape are recommended to be cultivated on the same parcel maximum once every 3–5 years. Besides aforementioned aspects, the production costs also depend on the costs of labour, machinery, land and land improvements, but in this respect the differences in comparison to cereals are minor.

Public support, collaboration and plant breeding as the means

Reducing the unit costs of production is one of the key issues in the efforts to increase protein self-sufficiency, because affordable price of protein is vital to livestock producers and food industry. The incentive to farm protein-rich crops probably cannot be increased by providing farmers with a price premium, because this would only shift the demand to other protein sources such as imported protein, whose price is determined on the world market.

Improving protein self-sufficiency calls for comprehensive solutions on the farms and through the production chain. Crop rotation and composition of feedingstuffs should be redesigned based on the domestic protein production. Specialisation and economies of scale could be utilised more efficiently by ensuring the functioning of the market for the yields of protein-rich crops and by increasing collaboration between farms. Protein self-sufficiency could also be improved if the mixing of feeds at farm became more common. Improved availability of complementary feed ingredients on the market would ensure that it is possible to mix the feed based on several different feed ingredients.

The prerequisites for arable farming in Finland depend a great deal on the EU policies. The use of arable land can be steered, for example, by targeting product development and arable payments to protein crops or by offering protection against crop damages to protein crops that are susceptible to these. Plant breeding should be targeted to high-yielding plants and varieties of cereals, turnip rape and pulses. The amounts of processed turnip rape could also be increased in order to increase protein-rich feed originating from it. As the production of biofuels has been estimated to increase, its by-products may also become an important source of protein.

2.4. Horticultural production

Cultivation areas and horticulture enterprises

In 2010 the area of horticultural production in the open was about 16,000 ha, which is 300 ha more than the year before. There was some growth in the area of both outdoor vegetables and fruits, while the berry production area decreased slightly. In terms of the cultivation area vegetable production in the open is the most significant horticultural production sector, with a 54% share of the total area. The share of berries is 39% and that of fruits 4% of the total area. Nursery and ornamental plants are cultivated on about 500 ha.

The total greenhouse production area was about the same as the year before, about 400 ha. Vegetables account for 63% and ornamental plants for 37% of the greenhouse production area.

In 2009 there were a total of 4,700 horticulture enterprises of Finland, of which 3,600 were engaged in production in the open and a little more than 1,700 were greenhouse enterprises. Some of the enterprises practice both outdoor and greenhouse production. From 2008 the number of horticulture farms fell by about 5%, about 230 enterprises. The total horticultural production area stayed the same, which means that the remaining enterprises grew in size.

The most significant horticultural production area in Finland is Southwest Finland, with 18% of the enterprises practising production in the open and 21% of greenhouses. North Savo is an important berry production region. More than half of the greenhouse production is located in support area C.

Weather conditions

The winter 2009–2010 was very cold, with a lot of snow. Berry plants benefit from abundant snow cover, which provides them with good overwintering conditions. Instead, for the greenhouses which are empty in winter the heavy snow load was a problem, even causing some greenhouse to collapse.

Even if the winter was cold, there was no more ground frost than usually and plantings were not delayed. The abundant snow cover melted quite early and the planting and sowing of vegetables got started at the normal time. In some locations heavy rains delayed the sowing or even destroyed plantations, but in the country as a whole the weather conditions for planting and sowing were quite normal.

The summer was very hot and dry. For most outdoor vegetables, berries and fruits a good crop cannot be achieved without efficient irrigation. The majority of horticulture crops suffered from the heat and

Areas under horticultural production in 2004–2010, ha.

	2004	2005	2006	2007	2008	2009	2010
Production in the open, total	16,025	15,417	15,468	15,357	15,533	15,734	16,032
Vegetables grown in the open	8,837	8,254	8,327	8,405	8,146	8,378	8,731
Berries	6,552	6,495	6,470	6,283	6,300	6,278	6,206
Fruits	636	667	671	669	690	685	696
Greenhouse production, total	399	405	404	399	392	375	369
Vegetable production	239	245	243	242	240	231	231
Ornamental plants	161	160	161	157	152	143	138

Source: Ministry of Agriculture and Forestry, Support Register.

the yields of, for example, onion, leek, carrot, lettuce and black currant were lower than the year before. Greenhouse plants suffered from excessive heat as well. The quantities of vegetables grown in the open stored for the winter were also smaller than the year before.

Production in the open

In terms of the area garden pea is the most common vegetable, with a cultivation area of about 2,500 ha in 2009. The second most common is carrot, which was cultivated on 1,600 ha. The carrot crop of 2009, 70 million kg (13 kg/capita), was the highest ever. The two main crops represent almost half of the vegetable production area in the open. Other important outdoor vegetables are onion (920 ha) and white cabbage (620 ha). The main crops cultivated under production contracts with the processing industry are garden pea, carrot, beetroot and gherkin. About 2% of the vegetable production area in the open was under organic production. In terms of the areas the most significant organic vegetables are carrot (50 ha), garden pea (22 ha) and onion (34 ha).

Strawberry is by far the most significant berry plant in terms of both the area and the crop yield. In 2009 it was cultivated on almost 2,900 ha and the total yield was almost 12 million kg. The cultivation area of strawberries as well as the number of strawberry farms has decreased over the past decade, while the crop yields have stayed about the same, with some annual variations due to the weather conditions. The second most important berries are black and green

currants, which were cultivated on about 1,600 ha. These are also by far the most significant berries cultivated under production contracts with the processing industry as they represent 73% of the contract production area. About 10% (600 ha) of the berry production area is under organic production, most of this under currants (360 ha) strawberry (130 ha) and raspberry (30 ha).

The cultivation area of apples has been growing for the past ten years. The total yield has also been growing but not as steadily as the area due to the annual variations. In 2009 apple production totalled 4.3 million kg.

Areas under the most important horticultural products grown in the open and yields in 2009.

	Area ha	Yield kg/ha	Total 1,000 kg
<i>Vegetables grown in the open</i>			
Garden pea	2,546	2,401	6,114
Carrot	1,626	43,293	70,411
Onion	917	23,613	21,663
White cabbage	615	38,730	23,819
Cauliflower	280	13,201	3,691
Beetroot	405	31,080	12,591
Swede	356	39,280	13,964
Gherkin	212	43,748	9,279
Chinese cabbage	193	19,294	3,732
Other plants	1,196	11,364	13,588
Total	8,346	21,429	178,850
– share of contract production	1,816	27,002	49,036
<i>Berries and apples¹</i>			
Strawberry	2,881	4,019	11,578
Black and green currant	1,571	1,094	1,718
Raspberries and raspberry- arctic bramble cross bred	386	1,471	567
Other berries	575	1,139	655
Total	5,413	2,682	14,518
– share of contract production	842	1,977	1,665
Apple	565	7,557	4,268

¹ Crop yielding area

Source: Information Centre of the Ministry of Agriculture and Forestry, Register of Horticulture Enterprises 2009.

Greenhouse production

In 2009 the total greenhouse area in Finland was 440 ha. Of this 60% was used for vegetable production and 35% for the production of ornamental plants. The other greenhouse plants include seedlings, cuttings and berries. Measured by both the cultivation area (114 ha in 2009) and total yield (38 million kg), tomato is by far the most important greenhouse vegetable. Cucumber was produced on about 68 ha with a total yield of 29 million kg. Artificial lighting is used on about 25% of the cucumber area and 20% of the tomato area. Potted vegetables, most of these lettuces, were cultivated on 20 ha.

The area under ornamental plants was 150 ha. In most cases various ornamental plants are cultivated in the same greenhouse. Measured by the number of enterprises the production of bedding plants is the most common type of production, with 680 enterprises. Potted plants were grown in 380 enterprises, bulbous flowers in 220 and cut flowers in 130.

Violet was the most common bedding plant in 2009, with a total production of 13 million, which is about two violets for each Finn. Violet accounts for 28% of the production of bedding plants. The second most common is petunia. Of the potted plants by far the most common is the popular Christmas flower poinsettia, with a total of 2.2 million produced. About 80% of the poinsettias are red.

Areas under greenhouse vegetables (m²) and yields (kg/m²) in 2009.

	Area 1,000 m ²	Yield kg/m ²	Total 1,000 kg
Total ¹	2,460	29	71,524
Tomato	1,137	34	38,383
Cucumber	680	43	29,443
Other vegetables	1,550	2	3,698

¹ Does not include potted vegetables.

Source: Information Centre of the Ministry of Agriculture and Forestry, Register of Horticulture Enterprises 2009.

The cultivation area of roses, 140 ha, represents 66% of the total area of cut flowers. Rose is by far the most important of the cut flowers, but its cultivation area, as well as the area of most other cut flowers, has decreased considerably over the past decade. The cultivation area of cut roses has fallen to a third since the beginning of the millennium. Instead, the production of bulbous flowers has grown rapidly. In 2009 a record number of 80 million bulbs were produced, of which 75% were tulips. The second most important bulbous flower is narcissus, with a total number of 16 million bulbs produced.

Horticultural product market

Strong seasonal and annual variations are characteristic to the producer prices of horticultural products grown in the open.

Producer prices for the most important horticultural products in 2004–2010, €/kg.

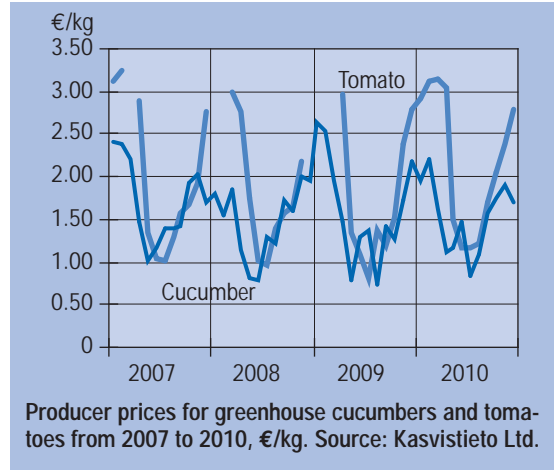
	2004	2005	2006	2007	2008	2009	2010
<i>Greenhouse production</i>							
Rose (€/unit)	0.40	0.41	0.41	0.45	0.47	0.46	0.47
Tomato	1.16	1.15	1.17	1.32	1.40	1.32	1.58
Cucumber	1.08	0.99	1.04	1.34	1.21	1.21	1.27
<i>Production in the open</i>							
White cabbage	0.33	0.27	0.37	0.58	0.56	0.42	0.49
Onion	0.47	0.33	0.44	0.60	0.48	0.43	0.56
Carrot	0.45	0.37	0.40	0.47	0.48	0.47	0.49
Strawberry	3.05	2.68	2.25	3.58	3.90	3.52	3.24

Sources: Kasvistiето Ltd., Glasshouse Growers Association.

Usually the producer price is low during the main crop season, when the domestic supply is high. The supply decreases during the storage period, which usually raises the prices.

In the early winter the vegetable stocks were quite good and, for example, there was a fifth more of white cabbage in stock than at the same time in the previous year. Early vegetables came to the market at about the usual time. Towards the summer of 2010 the heat and drought weakened the quality of most vegetables grown in the open so that at times e.g. high-quality iceberg lettuce was in short supply. The supply was quite low in both the spring and summer, which is why the price level stayed good all through the growing season. The output stored in the autumn was smaller than usually, which kept the prices during the storage period higher than in the previous year.

The hot and dry conditions ripened the berries very quickly, but some berries remained smaller in size than normally. For example, the black currant crop was smaller than the year before, which in turn kept the producer prices higher. The crop season of raspberries was short as the berries ripened at the same time. However, the demand on the market was also high so that the price level stayed good during the crop

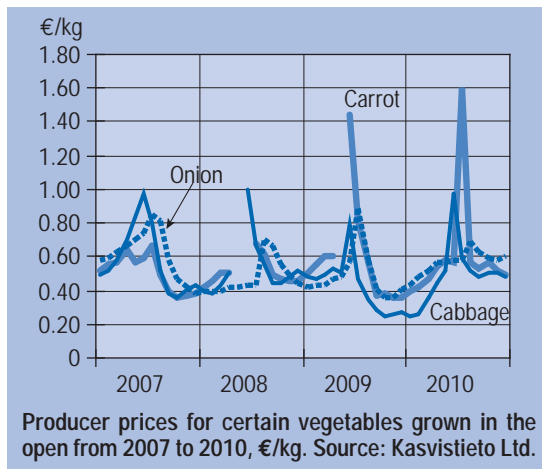


season even if the supply was very high for a quite short period of time.

The yield of apples was quite normal. The fruits of summer varieties remained small, but the autumn and winter varieties were normal in size. The apple crop did not suffer from the heat and, with successful irrigation, the apples turned excellent as regards both the quality and taste. The prices of apples stayed higher in 2010 than the year before. The producer price of apples excluding VAT was 1.48 €/kg.

Greenhouse vegetables have two clearly distinct price seasons. In winter, i.e. October-March, the crop comes from lighted, year-round production. Due to the additional costs the price is higher than during the summer season, when vegetables are produced in the whole greenhouse area, also without artificial lighting. Thus the supply is much greater in summer, production costs are lower and thus the prices are also lower.

At times there is some oversupply in greenhouse vegetables, especially cucumber. In 2010 the situation was the worst in spring towards the end of April, when the oversupply led to a fall in the prices almost to the same level as in the summer season. The supply of tomatoes was more balanced and the price stayed reasonably good all through the year.



2.5. Food market

Consumer prices

In 2010 the food prices in Finland were, on average, 3.6% lower than the year before. The main reason was the reduction in the value added tax on food from 17%, which in European comparison was very high indeed, to 12% in October 2009. In July 2010 the VAT on food was raised to the present 13%.

In fact the food prices fell a little more than what the reduction in the VAT alone would have caused. The prices of fruit, vegetables and fish fell the most. In 2010 the food prices in Finland excluding tax were, on average, 0.5% lower than the year before.

Towards the end of 2010 the food prices started to rise again and in the beginning of 2011 they were already clearly higher than in the previous year. The main reasons for the increase were the new agreements between the food industry and trade, which entered into force in January 2011. The processing industry managed to transfer part of the increased costs to the product prices.

In February 2011 the consumer prices of foodstuffs were almost 7% higher than

Average consumer prices of some foodstuffs in January from 2009 to 2011, €/kg.

	2009 January	2010 January	2011 January
Wheat flour	1.23	1.11	1.10
Rye bread	3.71	3.55	3.74
Beef roast	12.36	12.40	12.75
Pork fillet	12.69	11.75	..
Chicken breast fillet	11.66	11.08	11.86
Light milk, €/litre	0.90	0.85	0.80
Emmenthal cheese	12.97	12.43	12.70
Eggs	3.03	2.91	3.11
Butter	2.52	2.01	2.00
Margarine	1.60	1.41	1.44
Tomato	5.21	4.73	4.68
Potato	0.79	0.65	0.80

Source: Statistics Finland, consumer price statistics.

Development of average consumer price index and the consumer price index of foodstuffs in Finland in 1995–2010, 1995=100.

	Consumer price index	Price index of foodstuffs
2010	124.5	123.1
2009	124.5	127.7
2008	124.4	125.2
2007	119.6	115.3
2006	116.7	112.9
2005	114.7	111.4
2004	113.7	111.1
2003	113.5	110.3
2002	112.5	109.6
2001	110.8	106.5
2000	108.0	102.0
1999	104.4	101.0
1998	103.2	101.3
1997	101.8	99.6
1996	100.6	98.2
1995	100	100

Source: Statistics Finland.

the year before. The prices of fruit, berries, fish, pigmeat and poultry meat were raised the most. The price of fruits rose by as much as 15% from the year before.

In the long-term perspective the rise in the food prices has been a little more rapid than the trend in the general consumer price index. From 2000 until 2010 the price of food in nominal terms rose by almost 21% while during the same period the general consumer price index rose by a little over 15%.

Relative to the level of earnings, however, food has become much cheaper as the wages and salaries have increased by more than 45% since 2000.

The share of food and non-alcoholic beverages consumed at home in the consumer expenditure of households has fallen to less than 13%, which is close to the EU average.

The comparison of trends in food prices in different EU countries in 2000–2010 shows that there have been hardly any changes in the relative positions of

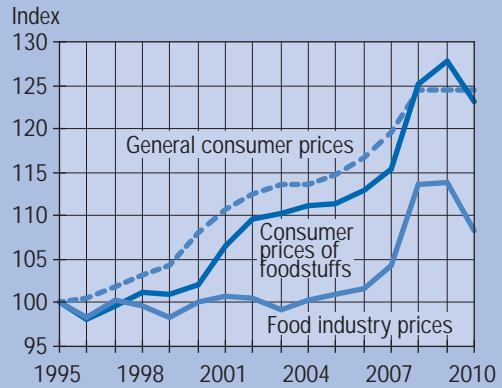
countries. The price level in Finland is lower than in Denmark but higher than in the other EU countries in both 2000 and 2010.

The main reason for the difference compared to the rest of the EU is VAT, which even after the reduction is the second highest in the EU. Only in Denmark is the tax on food higher than in Finland.

Besides the trends in food prices, in recent years there has been discussion on the distribution of the price paid by the consumer within the food chain. Studies have shown that the share of the retail sector in the consumer price of food including tax has increased since 1995.

The position of the retail sector has strengthened as it is capable of taking advantage of the competition within the processing industry and, through this, in primary production with even stricter terms. The share of primary producers in the consumer price of foodstuffs has diminished.

In the long term the rapid growth in productivity has been the main reason for the decrease in the share in the food prices which goes to the primary producer. Over the past decades the average growth in the total productivity of agriculture has been



Trends in the food industry prices, consumer prices for food and general consumer prices in 1995–2010.

more rapid than in other sectors involved in the food chain.

The productivity growth in agriculture has been transferred in full to the producer prices: growth in productivity by 1% has on average led to a decrease of the producer price by the same 1%. A similar trend can be observed in the retail sector, but the impact on the price is smaller: a 1% productivity growth has on average led to a 0.6% decrease in the consumer prices. This means that the retail sector has managed to transfer part of the benefit from productivity growth to the profit margins of the companies.

Average consumer prices of some foodstuffs in 2006–2010, €/kg.

	2006	2007	2008	2009	2010	Change % 2009–2010
Light milk, €/litre	0.73	0.72	0.87	0.89	0.79	-10.6
Butter	4.87	4.79	5.78	4.59	3.86	-15.9
Margarine	2.35	2.53	2.98	3.11	2.76	-11.3
Emmenthal cheese	10.86	10.82	12.13	12.86	12.57	-2.3
Beef roast	9.92	10.04	11.79	12.62	12.10	-4.1
Pork fillet	10.64	11.40	12.23	12.27	11.80	-3.8
Chicken breast fillet	10.46	10.67	11.32	11.68	11.28	-3.5
Eggs	2.44	2.74	3.01	2.99	3.00	0.5
Wheat flour	0.41	0.41	0.60	0.60	0.52	-14.4
Rye bread	3.18	3.15	3.51	3.65	3.52	-3.5
Tomato	3.21	3.51	3.63	3.58	3.67	2.7
Potato	0.60	0.74	0.76	0.76	0.68	-10.9

Source: Statistics Finland, consumer price statistics.

Consumption of milk products, margarine, meat and eggs per capita in 2000–2009, kg.

	Liquid milk ¹	Butter	Margarine	Cheese	Ice cream (litres)	Beef	Pigmeat	Poultry meat	Eggs
2009 ^e	184.0	3.7	7.5	18.7	12.9	17.8	34.4	17.5	9.5
2008	186.0	3.3	7.5	18.4	12.6	18.2	35.3	17.2	9.4
2007	189.9	2.5	7.5	17.5	13.3	18.7	34.9	17.6	9.5
2006	183.9	2.8	7.5	19.1	13.7	18.5	34.3	15.8	9.3
2005	184.0	2.7	6.6	18.6	14.0	18.6	33.5	16.1	9.4
2004	186.2	2.6	6.6	18.4	13.2	18.6	33.8	16.0	9.4
2003	185.1	2.4	6.8	16.7	13.7	18.0	33.5	15.8	9.3
2002	190.0	3.0	7.6	16.6	13.5	17.9	31.9	15.4	9.7
2001	191.7	3.5	7.8	16.5	13.3	17.9	32.7	14.5	9.7
2000	193.9	3.8	7.7	16.5	13.5	19.0	33.0	13.2	10.1

¹ Including liquid milk, sour milk products and cream.

Sources: Gallup Food and Farm Facts, Information Centre of the Ministry of Agriculture and Forestry.

Retail trade

Before the accession to the EU in 1995 the concentration of market structure of the Finnish retail sector progressed at quite a moderate pace. In 2000 the market share of the two leading retail chains was 66% and by 2008 this had risen to almost 76%. In recent years the concentration has accelerated even more so that in 2010 their share of the market was more than 79%.

The competition situation in the retail trade of daily consumer goods is more and more clearly a case between two big ones. In 2010 both the S Group and K Group increased their market share by almost one percentage unit, S Group by expanding its

network, K Group by increasing the sales volumes in the existing units.

The share of Suomen lähikauppa, which ranks the third, fell to 9%, mainly due to the reductions in the Euromarket and Siwa chains. In 2010 even the market share of the German chain Lidl, which seemed to have found a steady growth path, diminished for the first time since its entry to the Finnish market in 2003.

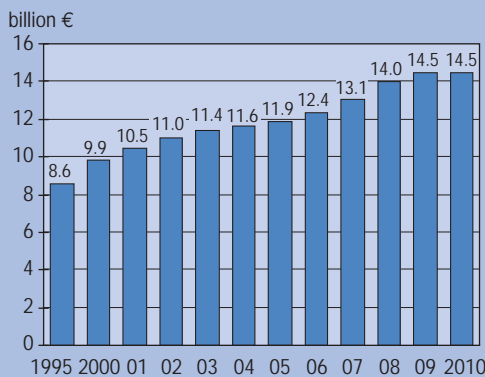
The structural change is also reflected in that the Finns are concentrating their food purchases to large retail units which manage an ever growing share of the grocery sales. Between 1995 and 2010 the share of the sales of hypermarkets rose from 15 to almost 27% and that of large

Market shares of retail companies in 2001–2010.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
S Group	30.5	31.1	31.1	34.3	35.9	39.9	41.0	42.4	43.2	44.1
K Group	36.5	36.0	35.8	35.3	35.9	33.4	33.9	33.7	34.2	35.0
Suomen lähikauppa*	12.6	12.9	12.7	10.0	10.8	11.9	11.9	11.3	10.2	9.0
Spar**	8.7	8.1	7.4	6.8	6.2	0.5	-	-	-	-
Lidl	-	-	1.8	2.8	3.7	4.1	4.7	5.0	5.1	4.8
Other companies	11.7	11.9	11.2	10.8	9.5	10.2	8.4	7.6	7.3	7.1
Total	100	100	100	100	100	100	100	100	100	100

*Earlier Tradeka. **From 2006 M Group; in 2007–2008 included in "Other".

Source: AC Nielsen.



Value of retail sales in Finland from 1995 to 2010. Source: AC Nielsen.

supermarkets from 20 to as high as 34%. In the beginning of 2011 there were only 3,283 retail outlets left and 50% of the sales took place in about 10% of the outlets.

In 2010 the sales volumes of daily consumer goods were about the same as the year before, which shows that the economic depression was reflected in the daily purchases of households as well. The year 2009 was the first time since Finland joined the EU in 1995 when the sales volumes decreased.

Food industry

Structural changes in the retail sector have created serious challenges to the domestic food industry. It is difficult for the processing sector to preserve its negotiation power against the concentrating retail chains. As

they aim for higher efficiency in logistics, the retail chains concentrate their purchases to large processors, but the structural changes in the trade sector are a great challenge to the large food companies as well.

The domestic food producers should produce higher volumes through more cost-efficient means. Only the largest companies with significant nation-wide market shares are able to take full advantage of the economies of scale. Instead, small enterprises have the opportunity to respond to consumer needs through special products and supply of fresh products on the local market. Medium-sized enterprises are the most vulnerable ones, because the product range they offer is usually very similar to the range offered by the large competitors.

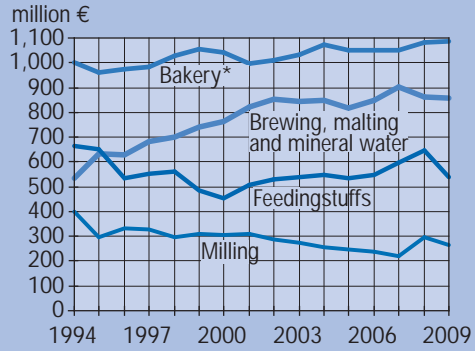
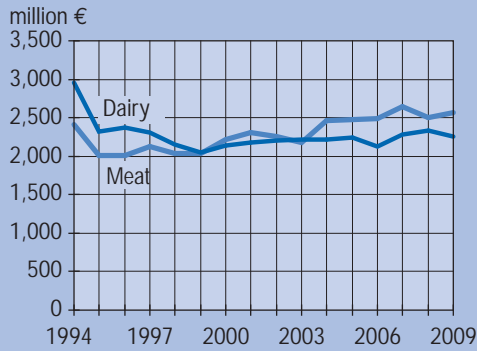
Among the main reasons for the low price level of foodstuffs are private labels and spreading of hard discounters. Competitive tendering for private label products, threat of imports and low price level and narrow product range of hard discounters tighten the competition among the domestic suppliers and push down the profit margins of the production. The processors have responded to the challenges through higher production efficiency, outsourcing of production stages and specialisation.

In 2009 the turnover of the food industry fell by € 259 million to 10.3 billion. The main cause was the decline on the export market.

Key figures on the Finnish food industry in 1995–2009.

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Turnover (at current price, billion €)	7.7	7.9	8.3	8.4	8.5	8.9	8.9	9.2	9.7	10.5	10.3
Turnover (at 2009 price, billion €)	9.6	9.1	9.3	9.3	9.3	9.7	9.6	9.9	10.1	10.5	10.3
Personnel (thousands)	44.9	39.9	38.6	38.0	38.2	37.5	36.7	35.9	35.7	34.6	33.5
Real turnover per person (at 2009 price thousand €)	214	228	241	244	244	259	262	275	283	304	307

Source: Statistics Finland, Finnish Enterprises 1995–2009, calculations by MTT.



*Includes soft bread, crispbread and biscuit manufacture.

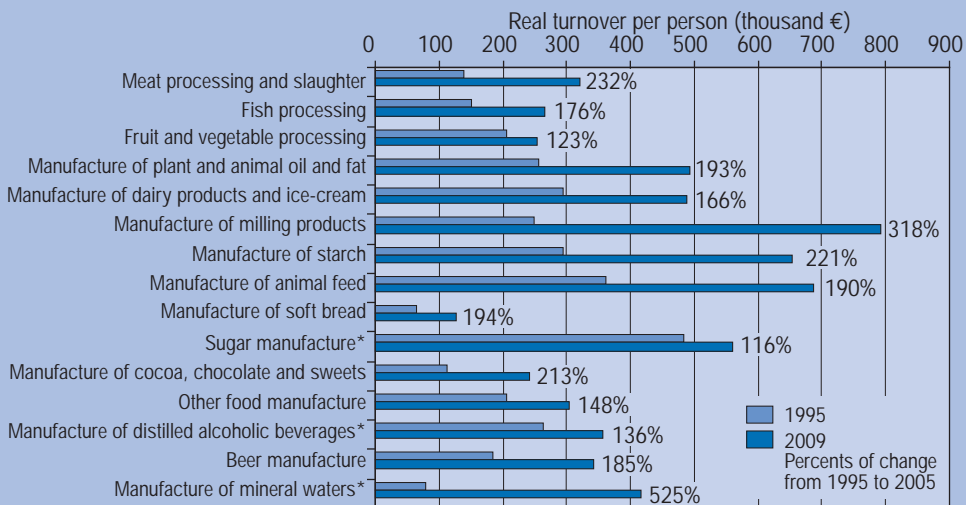
Turnover of Finnish meat and dairy industry and certain other sub-sectors of food industry at 2009 prices.

The rapid decrease in the number of people employed in food industry continues. In 2009 the number of staff fell by a record of 1,150 to 33,500. The decrease in staff by more than 3% combined with only a light reduction in turnover raised the real turnover per person to € 307,000 in 2009. However, compared to the trend in the previous years this growth of 0.9% was quite modest.

There is considerable variation in the

development of the turnover per person by sectors, but when compared to 1995 the figures show some growth in all sectors. In 1995–2009 the turnover of food industry per employee rose from € 214,000 to 307,000, i.e. by 43%. The growth exceeded the average in milling, feed and meat industries.

Higher efficiency was also reflected in a decrease in the number of places of business, especially as the large companies



*1997 instead of 1995.

Trend in the real turnover per labour in food industry by sectors. Sources: Statistics Finland, Finnish Enterprises 1995–2009, calculations by MTT.

with nation-wide networks of plants have in recent years started to concentrate their operations geographically to larger plants while closing down smaller units.

There have been significant structural changes among the sectors since 1995. The shares of, for example, sugar and confectionary industry in the total turnover of food industry decreased, while the shares of bakery and brewery industries grew. The two main sectors in the Finnish food industry are dairy industry and meat processing. In 1995 a fifth of the turnover of food industry came from meat processing, while by 2009 its share had increased to a quarter. During the same period the share of dairy industry fell by a couple of percentage points to 22%.

The changes in the traditional trade with Russia had great impacts on the turnover of the dairy industry, and especially the crisis of the Russian rouble led to quite a dramatic fall in the turnover in 1998–1999 and 2009.

In meat processing the development has been more stable, after having recovered from the steep decrease in the prices that followed the accession to the EU. The growing popularity of high-value added products such as prepared meals and dishes and the tripling of broiler consumption have boosted the growth of the turnover in the meat sector.

On the export market the year 2009 was another year of success for the meat industry, while problems continued in dairy industry. The most recent foreign trade statistics show that the situation changed in 2010. Growth in exports to Russia should significantly improve the situation in the dairy sector, while the decrease in meat products exports tell about problems in meat industry.

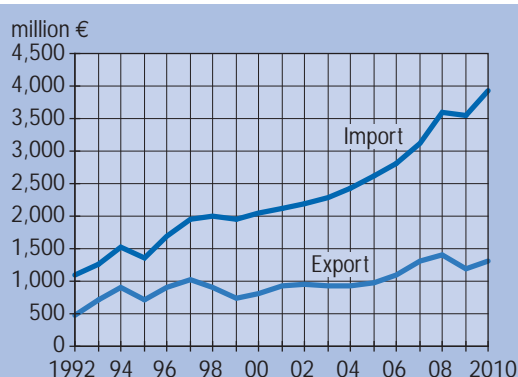
Besides the export market the operations depend on the relative prices of final products and feed raw material. Cereal prices peaked again in

autumn 2010. Milk production is less dependent on cereal than meat production, but in meat industry the high cereal and feed prices reduced the business profit considerably in 2010.

In 2009 the low cereal prices lowered the value of production in cereal processing sectors, in feed industry by as much as 17%. Of the other main sectors the turnover decreased in the brewery and soft drinks industry, while there was some growth in the turnover of the bakery industry.

Foreign trade

In 2010 the value of agricultural product and food exports from Finland totalled € 1,309 million, which is 10% higher than the year before but almost 7% less than in 2008. After having been stagnated in the early part of the 2000s the Finnish food exports rose to a new level towards the end of the decade. The fluctuations in recent years show, however, that exports are still highly sensitive to market changes in the neighbouring regions. The rapid growth in exports which started in 2006 ended in 2009 as a result of the global economic crisis. In 2010 the exports again recovered thanks to the high demand on the Russian market.



Exports and imports of agricultural and food products (CN 01–24) in 1992–2010. Source: National Board of Customs, ULJAS database.

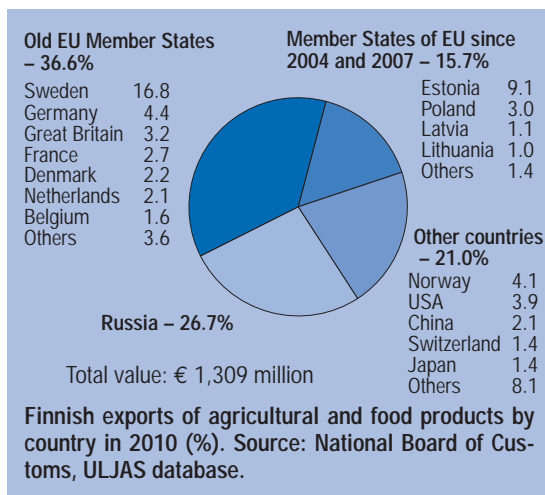
Food imports increased again more than exports. In 2010 the value of agricultural product and food imports to Finland totalled € 3,934 million, which was more than 12% higher than in the previous year. Because of the rapid growth in imports the trade deficit rose by € 314 million from 2,311 million to 2,625 million.

Traditionally the deficit has mainly been due to the high import volumes of fruit, vegetables, raw coffee, alcoholic beverages and tobacco. Quite a lot of cheeses and cereal products are also imported. In recent years the Finnish food industry is also faced with competition in product groups that used to be dominated by the domestic production, such as meat and fish.

The statistics on foreign trade in agricultural products and food include raw materials of plant origin which never end up on the plate. Import of palm oil for the production of biofuel was eight times more in 2010 than in 2007 so that in 2010 its share was 6.3% of the total imports of agricultural and food products.

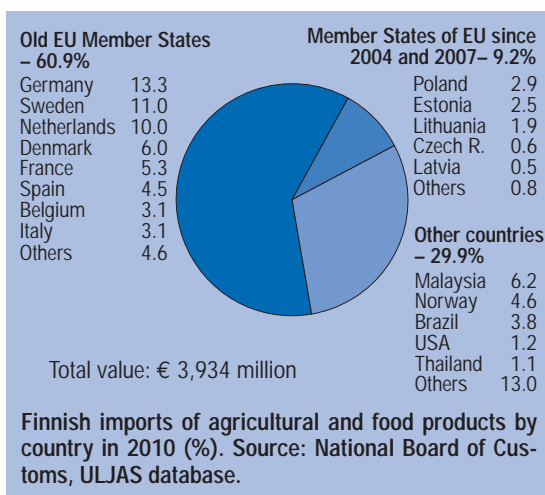
Palm oil is also the main reason why the geographical distribution of imports has changed in the past two years. In 2008 non-EU countries represented only 26% of the imports to Finland, but in 2010 this share was close to 30%. Malaysia ranked first with an over 6% share. The change took place at the cost of imports from the old EU Member States, although these still account for 60% of the imports. In 2010 the share of food imports from the old EU countries fell by one percentage point to 9%.

The recovery of the Russian market was the key to the growth in exports. In 2010 the value of food exports to Russia totalled € 350 million, which is 23% higher than the year before. Russia has for a long time been the main destination for Finnish



food exports. Its share has varied between 20 and 25%, but in 2010 it was as high as 26.7%. Traditionally more than half of the Finnish food exports have gone to the neighbouring countries, and in 2010 their share was about 57% (Sweden 16.8%, Estonia 9.1% and Norway 4.1%).

The most significant single product group in food exports is dairy products. In 2010 the value of butter exports totalled € 102 million and the value of cheese exports was € 174 million. These two represent 21% of the food exports. Other important export articles are sugar industry products, pigmeat, cereals and alcoholic beverages.



3. AGRICULTURAL POLICY

Finnish agricultural policy is founded on the support schemes set down in the common agricultural policy of the EU, i.e. direct payments funded by the EU and the co-funded less favoured area (LFA) and agri-environment payments.

These are supplemented by national aids, which comprise the northern aid, national aid for southern Finland, national top-ups to the LFA payments and certain other aids.

3.1. Common agricultural policy of the EU

The common agricultural policy has been implemented since the 1960s through common organisations of the markets for specific products. The basic idea is that the fall of the prices within the EU below a certain level is prevented by means of public intervention, while the prices of imported foodstuffs are raised to the EU level through import duties. Oversupplies are exported to third countries by means of the EU export refunds.

The share of expenditure which arises from the common agricultural policy in the EU budget is very high indeed, more than 40% of the total budget in 2011. It should be born in mind, however, that in the other sectors the integration does not go as wide and deep and there is no common policy in the same way as is being implemented in the agriculture sector through the CAP.

At present the common agricultural policy is comprised of the so-called first and second pillar. Most of the funding (73%) is allocated to the first pillar, mainly market support and single farm payments. The rest of the funding (23%) is used for rural development measures under the second pillar (Rural Development Pro-

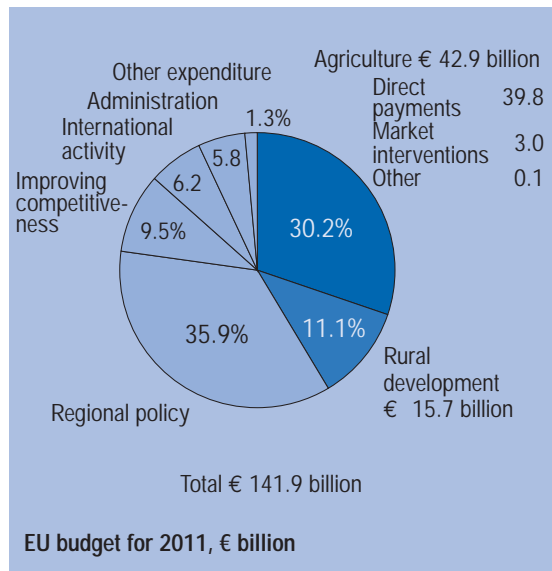
grammes).

In the early 1990s most of the CAP funds were still used for export refunds of agricultural products and other market interventions. Since then, however, the common agricultural policy has been reformed several times and piloted into a more market-oriented direction.

CAP reforms since 1992

As a result of the policy reforms of 1992 and 1999 the intervention prices of cereals, beef and milk in the EU were lowered closer to the world market prices. The price reductions were compensated for by means of direct payments, which is why support payments based on the arable area and livestock numbers have gained a central position in the EU policy.

In the policy reform of 2003 most of the EU payments for arable crops and livestock were transferred to the decoupled single payment scheme (SPS). At the same time new conditions relating to the environment, maintaining the productivity of the land, food safety, animal welfare



and occupational safety were incorporated into the scheme.

In November 2008 the EU agriculture ministers decided on the latest reform of the common agricultural policy, also called the health check. The decision continues the earlier reforms and strategic outlines, aimed to increase the market orientation of EU agriculture. Decoupled payments will be applied even more widely and some of the remaining production restrictions are abolished to allow the farmers to respond better to the market demand.

The latest CAP reforms include also

the so-called modulation, in which a gradually increasing share of the CAP support is redirected to rural development measures through the EU budget. In 2009 7% of the support payments to farmers who receive more than € 5,000 in direct payments a year was cut, in 2010 the percentage rose to 8%, 2011 to 9% and 2012 to 10%. The cut does not apply to the first € 5,000 of each farm. The modulation funds are used for responding to climate change mitigation and adaptation, promoting renewable energies, improving water supply and protecting biodiversity.

Distribution of agricultural support in different Member States in 2010.

Member State	Support received € million	Payments € million	Support received (%)	Payments (%)	Net- support € million	Net support € per inhabitant
Total	54,411	54,411	100	100		
The Netherlands		2,187	1.70	4.02	-1,264	-76
Belgium	672	1,687	1.23	3.10	-1,015	-94
Spain	6,105	5,223	11.22	9.60	881	19
Ireland	1,674	686	3.08	1.26	989	221
Great Britain	4,253	5,664	7.82	10.41	-1,412	-23
Italy	5,324	7,547	9.78	13.87	-2,223	-37
Austria	1,303	1,262	2.39	2.32	40	5
Greece	2,664	1,230	4.90	2.26	1,434	127
Luxembourg	51	147	0.09	0.27	-96	-191
Portugal	1,148	789	2.11	1.45	359	34
France	9,330	9,794	17.15	18.00	-464	-7
Sweden	1,023	1,186	1.88	2.18	-163	-17
Germany	6,928	10,659	12.73	19.59	-3,731	-46
Finland	862	898	1.58	1.65	-35	-7
Denmark	1,094	1,192	2.01	2.19	-97	-18
EU-15	43,354	50,151	79.68	92.17	-6,797	-18
Bulgaria	735	174	1.35	0.32	561	74
Cyprus	62	87	0.11	0.16	-25	-31
Malta	15	27	0.03	0.05	-13	-31
Latvia	253	87	0.46	0.16	166	74
Lithuania	516	136	0.95	0.25	380	114
Poland	4,059	1,453	7.46	2.67	2,606	68
Rumania	1,966	637	3.61	1.17	1,330	62
Slovakia	536	343	0.99	0.63	194	36
Slovenia	231	185	0.43	0.34	46	23
Czech Republic	1,055	647	1.94	1.19	407	39
Hungary	1,456	419	2.68	0.77	1,037	104
Estonia	173	65	0.32	0.12	108	80
EU-12	11,057	4,260	20.32	7.83	6,797	66

Source: European Parliament 2010, European Commission 2007, Eurostat

Distribution of EU support for agriculture

CAP payments are based on the historical support levels in the Member States and, thus, on historical production volumes. In the single payment scheme, dominated by the old Member States, the arable areas of different countries have a different value, depending on how much support they received in the reference years.

The differences between the Member States are considerable: in Greece, for example, the CAP support per hectare is more than € 550, while in Latvia it is less than € 90.

In absolute terms the greatest net recipients are Poland, Greece and Rumania, which all receive over a billion euros more than what they pay. These are followed by Hungary, Ireland and Spain. Obviously all these countries are strong advocates of the large agriculture budget.

The greatest payer of agricultural support is Germany, with net payments rising to more than € 3.7 billion. Other major net payers are Italy, Great Britain, the Netherlands and Belgium. In 2010 the estimated net payments of Finland totalled about € 35 million.

The payments per inhabitants are the highest in Luxembourg, Belgium and the Netherlands, while Ireland and Greece are again the greatest net recipients. The payment of Luxembourg to the EU rises to more than € 190 per inhabitant, while Ireland receives more than € 220 in net support. The net payment of Finland per inhabitant is € 7.

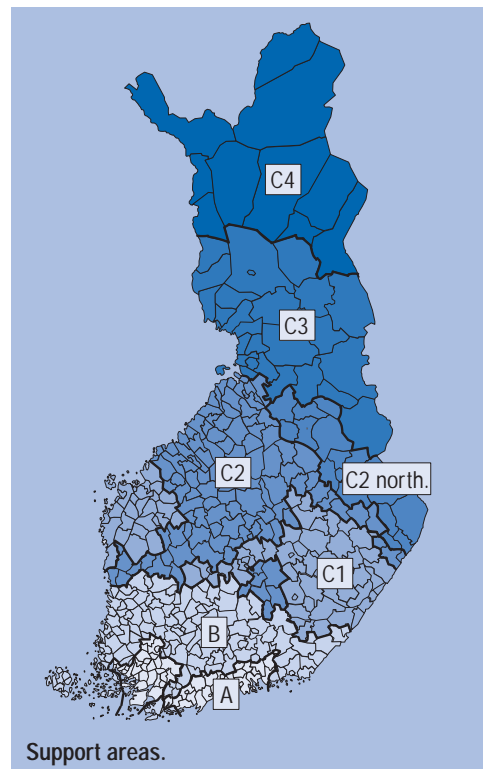
The picture is somewhat different if we measure how much different countries receive for each euro they pay to the CAP budget independent of the absolute size of the payment and support received by Member States. Luxembourg gets only 35 cents for each euro it pays to the budget, while Bulgaria gets more than four times more in support than what it pays to the EU budget.

Other major net payers include the Netherlands and Belgium, which get back less than half of the payments they make to the budget. Germany gets back about 65% of its payments and Finland more than 90%.

3.2 EU support payments in Finland

In 2011 the support under the common agricultural policy to the Finnish agriculture will total about € 1,335 million. This consists of the CAP support for arable crops and livestock (€ 541 million), less favoured area (LFA) payments (€ 422 million) and environmental support (€ 372 million). These are funded either by the EU alone or co-financed by the EU and Finland.

CAP payments are an integral element of the common market organisations and they are funded in full from the EU budget. The EU contributes a little more than



a quarter of the LFA payments and environmental support. The rest is paid from national funds.

In 2011 the national aid for Finnish agriculture and horticulture will total about € 561 million. The national aid scheme comprises the northern aid (€ 335 million), national aid for southern Finland (€ 84 million), national top-ups to LFA payments (€ 119 million), and certain other national aids (€ 23 million).

Finland has been divided into seven support areas for the allocation of the payments. CAP support, environmental support, LFA payments and the national top-ups to these are paid in the whole country.

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

CAP support

Most of the so-called CAP support financed in full by the EU is paid through the single payment scheme adopted in 2003. In Finland the single payment scheme is implemented as the so-called hybrid model. Former CAP payments were converted into

payment entitlements, which consist of a regional flat-rate payment and farm-specific top-ups.

CAP support has two main components: decoupled single payments and payments which continue to be coupled to the production. In Finland about 90% of the CAP support was decoupled from the production in 2006. The CAP support for arable crops was decoupled almost completely. Under the single payment scheme, however, coupled support is still paid up to € 5.8 million a year for certain arable crops. Coupled support also continues to be paid for suckler cows, male bovines and ewes and starch potato.

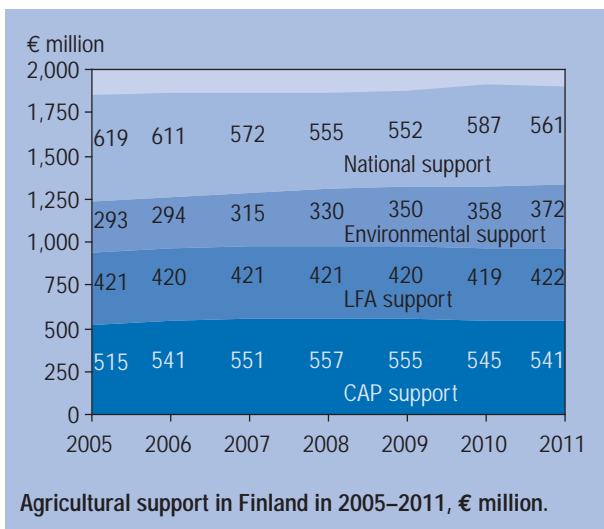
According to the cross-compliance conditions included in the CAP support, the arable lands must be kept in good farming condition and minimum requirements for animal welfare and state of the environment must be met. Based on a national decision, any area set aside in Finland as managed, uncultivated arable area must be covered with grass in order to be eligible.

Less favoured area payments (LFA)

Certain rural regions in the EU have been defined as less favoured areas (LFA). The purpose of LFA payments is to ensure the continuation of farming in these regions and keep the rural areas populated. In Finland LFA support is paid for the whole cultivated area of about 2.16 million ha.

The amount of LFA support in Finland budgeted for 2011 is € 422 million. The payment is 150 €/ha in area A, 200 €/ha in areas B and C1 and 210 €/ha in areas C2–C4.

A major overhaul of the LFA areas has been started in the EU. The objective of the reform, which should be completed for 2014, is to create a uni-



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

	2006	2007	2008	2009	2010 ^{prelim.}	2011 ^{estimate}
Total	1,255	1,287	1,308	1,323	1,322	1,335
CAP income support	541	551	557	552	545	541
Natural handicap payments	420	421	421	420	419	422
EU contribution	131	118	118	118	117	118
National financing	289	303	303	302	302	304
Environmental support*	294	315	330	351	358	372
EU contribution	102	88	92	98	101	107
National financing	192	227	238	253	257	265
EU financing, total	774	757	767	768	763	766
National financing, total	481	530	541	555	559	569

*Environmental support also includes payments relating to animal welfare and non-production investments.

form LFA scheme for all Member States that takes the special conditions of different countries better into account.

Environmental support

Agri-environmental support introduced in 1995 compensates for income losses resulting from the reduction in the production and increased costs as farmers commit to undertake measures aimed to reduce environmental loading caused by agriculture.

The support scheme is comprised of the basic and additional measures and contracts concerning special measures. The main goal is to reduce the load on waters. Besides this, the aim is to restrict emissions into the air, mitigate the risks due to the use of pesticides and protect and manage rural landscapes and biodiversity.

The environmental support scheme is presented in more detail in Chapter 5.3 (pp. 67–69).

3.3. National aid

The national aids paid in Finland comprise the northern aid, national aid for southern Finland, national top-ups to LFA payments and certain other payments. The aim is to ensure the preconditions for Finnish

agriculture in different parts of the country and production sectors. The principles to be applied in determining the level and regional distribution of national aid were agreed in the membership negotiations. The aid may not increase the production, nor may the amount of aid exceed the total payments before the accession.

Northern aid

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

Northern aid consists of milk production aid and aids based on the number of animals and cultivated area. The northern scheme also includes the aid for greenhouse production, storage aid for horticultural products and wild berries and mushrooms and headage-related payments for reindeer.

Northern aid paid in 2011 totals about € 335 million. The most significant types of aid are the northern aid for milk production (€ 155 million) and northern aid based on livestock units (€ 100 million).

The effectiveness of the northern aid is evaluated every five years. In 2007 the European Commission commissioned an evaluation of how well the objectives set for northern aid have been reached and whether the means applied are still feasible and justified. Based on the results the Commission and Finland discussed the future and development needs of the northern aid in 2008.

As a result of the agreement reached in December 2008, the aids for pig and poultry meat production were decoupled from the production in 2009, but coupled payments continue to be applied in cattle husbandry.

National aid for southern Finland

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

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

Finland must negotiate with the Commission on the continuation of the aid based on Article 141 every few years. According to the outcome of the negotiations

reached in November 2007, Finland may grant both national direct aids and raised investment aid for livestock production and horticulture in southern Finland until the end of 2013.

In 2011 the aid under Article 141 to southern Finland will total € 83.9 million, which is 3.7% less than the € 87.0 million paid in 2010. In the last two years of the period the total amount of aid under Article 141 will be reduced quite radically, with the greatest cuts in the aid for pig and poultry farms. In 2013 the total amount of this aid will be € 62.9 million.

The structure of the aid under Article 141 has also changed. From 2009 onwards decoupled farm payments have been applied in pig and poultry sectors, mainly according to production quantities of 2007. Instead, the aid for ruminants will continue to be coupled to the production all through the current aid period.

The aid under Article 141 also contains investment aids and start-up aid for young farmers. Finland may continue to apply higher investment aids in sectors which are eligible for direct income payments under Article 141 (in particular, investments in dairy and cattle sectors and pig and poultry production).

National top-ups to LFA payments

National top-ups to LFA payments have been paid in the whole country since 2005 based on a tentative agreement reached

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

	2006	2007	2008	2009	2010	2011 estimate
Total	611.4	571.6	554.7	552.0	587.0	560.8
Northern aid	327.3	328.8	327.4	327.5	335.8	335.2
National aid for Southern Finland	96.5	94.0	93.5	89.6	87.0	83.9
National supplement to environmental support	55.0					
National supplement to the LFA support	119.9	119.6	119.3	119.3	119.3	119.0
Other national aid	12.7	29.2	14.5	15.6	44.9	22.7

in the negotiations between Finland and the Commission in 2003. The basic top-up paid for the arable area may not exceed 20 €/ha in areas A, B and C1 and 25 €/ha in areas C2–C4. A raise for livestock not exceeding 80 €/ha is paid for the arable area of livestock farms. In 2009 the payments totalled about 95% of the maximum according to the hectares. The total of the co-financed LFA payments and the national top-ups may not exceed the average of 250 €/ha.

3.4. Structural support for agriculture and farm relief services

Investment aid and early retirement

The agricultural investment aid and early retirement arrangements aim to promote the growth in farm size and reduce production costs. In practice these forms of structural aid comprise subsidised interest-rates, subsidies and state guarantees. In 2011 interest-rate subsidy loans mainly for financing production buildings on farms and acquisition of real estate and movables relating to the setting-up aid for young farmers may be granted up to € 300 million. The interest-rate subsidy accounts for about € 41 million of this.

The investments in dairy and beef cattle buildings, setting-up aid for young farmers, building investments in green-

houses and building investments relating to renewable energy production are co-financed by the EU. Subsidies for other types of investments are financed nationally. The early retirement scheme offers the ageing farmers the opportunity to give up the farm or its production. In 2011 the national subsidies included in structural support total € 110 million.

Setting-up aid for young farmers supports the transfer of farms to the next generation. In 2010 aid was granted for 542 farm transfers, which is 47 more than in 2009. Before that, however, the number of farm transfers was on the decrease. The total number of farms is falling in Finland, which is also reflected as a decreasing trend in setting-up aid. As the farms are getting larger, however, the amount of individual aids and subsidies is also growing.

Farm relief services

Farmers practising livestock production on a full-time basis are entitled to 26 days off per year. The Ministry of Social Affairs and Health is responsible for the organisation, management and supervision of the farm relief services. The purpose of the services is to ensure that farming activities continue uninterrupted during the holidays, as well as the availability of substitute help in case of illnesses or accidents. In 2011 the funds used for the relief services to farmers and fur producers totalled about € 219 million.

Number of objects of structural support and funds committed to these in 2006–2010.

	2006	2007	2008	2009	2010
Number of decisions on subsidies	11,200	8,900	3,473	3,289	2,771
– building in dairy husbandry	455	565	224	415	292
– building in beef cattle production	247	316	131	151	106
– horticulture investments	231	330	121	92	67
Number of setting-up aids	845	661	644	495	542
Funds committed, € million	192.5	207.3	124.7	115.3	113.0
– of which subsidies	141.6	187.1	108.5	98.1	95.7

Source: Ministry of Agriculture and Forestry

Finnish perspectives on the CAP 2013 reform

Jyrki Niemi

In recent years the EU has been eager to reform its common agricultural policy (CAP) by reducing the coupled payments and other safety nets of agriculture. The next CAP reform, at present under preparation in the EU, will become applicable after 2013. The discussion on the focus and content of agricultural policy is in turn closely linked to the negotiations on the future financial frameworks of the EU. The outcome of these negotiations is expected to influence the level and form of the EU support to be paid as well as the distribution of CAP payments across the EU member states.

For the Finnish agriculture the main issues in the CAP 2013 reform are the total level of the EU funded support payments, possibilities for co-financing allowed to the Member States and the right to apply certain coupled payments after 2013. A challenge for Finnish agriculture is how to maintain competitiveness and supply of domestic food at a sufficiently strong level when the policy guidance is reduced and market and price fluctuations are becoming more and more intense.

Further dose of reform

A serious debate on the outlines and content of the agricultural policy to be applied as from 2014 really got started with the Commission Communication of 18 November 2010 on the challenges and needs for change in the food and agriculture sector. The communication does not contain any assessments or positions on the total funding for the CAP or allocation of the financing or amounts of aid for individual types of support. Instead the main focus is on presenting the principles to be followed in the future agricultural policy.

The communication aims, among other things, for more equitable distribution of the direct CAP payments between the East and West European countries in a way that, according to the Commission, must be “pragmatic and politically feasible”. In Finland the CAP payment per hectare is close of the average in the Union (about 250 €/ha), which means that no significant change is to be expected in the amount of support paid in Finland. The position of Finland in the distribution of direct support payment seems favourable, if maintaining the current levels of CAP payments is considered desirable.

The future CAP payments also involve the question of the form of support. In the CAP health check of 2008 Finland was allowed to continue to pay part of the support as coupled payments until 2013. The possibility to apply coupled support in certain sectors also after 2013 is vital for Finnish agriculture. Coupled CAP payments are particularly important for beef production and the volumes of milk produced in southern Finland.

The levels and forms of CAP support are also reflected, at least to some extent, in the national aids paid in Finland. If the EU payments are reduced or decoupled, this causes pressures to make similar changes in the national aids (under Articles 141 and 142 of the Accession Treaty). The negotiations on the future of the national aids in Finland will be held in 2013–2014. The present decision on aid under Article 141 is in force until the end of 2013 and the authority to aid payments under Article 142 will be reviewed in 2014.

LFA and environment payments important for Finnish farms

One of the crucial issues for Finland is how the reform of the support scheme for less-favoured areas (LFA) impacts on the right granted to Finland to apply LFA payments in the whole country. It is also important that the present possibilities for national co-financing in the second pillar policies are retained, because these payments account for a major share of the income formation of Finnish farmers. At the moment Finland contributes about 72% of the LFA and agri-environmental schemes from the national budget.

Any changes to the maximum share of national financing in these schemes would lead to significant changes in the amount of support paid to farmers. Limiting the national contribution to, for example, 50% without increasing the funding from the EU would reduce the total amount of second pillar payments by 44%. Such a considerable reduction would have the greatest impact on beef and crop production, where the LFA and agri-environment payments are particularly important for the income formation of farms.

Expanding the market toolbox

At present it does not seem likely that the changes to be made in the CAP would lead to any dramatic consequences in Finnish agricultural market and production. Those more radical plans to reform the CAP which have been touched upon during the negotiations are not going to be realised, because the majority of the EU Member States are still very strongly in favour of maintaining the old, familiar kind of CAP.

The changes to the CAP proposed in the Commission Communication of November 2010 are mainly fine-tuning, as well as follow-up to the previous reforms and efforts aiming to turn the CAP into a more market-oriented direction. However, what is obvious is that the amount of support is not going to increase, which means that a growing share of the incomes will have to come from the market. Therefore the markets will have an increasingly prominent role in steering what happens in the agriculture and food sectors.

In recent years we have seen sudden and dramatic changes on the agricultural product market. Strong fluctuations in the supply and the resulting great price variations have almost become part of the daily routines on the agricultural market. Even slight indications of changes in crop outlook are rapidly reflected in the world market prices and, through these, the prices paid in Finland. Within Europe one reason for the greater price variation is that the market interventions which used to function as a safety net have been reduced. In view of the changing markets, the farmers will have to develop their operations so that more attention is paid to protecting themselves against market and price risks. This is the only way they can ensure the continuation of profitable business operations. In the Communication the Commission proposes the creation of a risk management toolkit to deal with income uncertainties and market volatility, ranging from income stabilization to mutual funds of farmers.

The Commission also considers it important to improve the negotiation position of primary producers and increasing the transparency of the food chain. Studies have shown that primary producers and small enterprises are in the weakest position in the food chain. The position of primary producers could be improved by, for example, giving producer associations more extensive opportunities to negotiate with the buyers on contract terms, such as volumes and prices.

4. ECONOMIC SITUATION OF AGRICULTURE

4.1. Development of results and profitability of agriculture and horticulture

The MTT Economic Research calculates annually the result and profitability development of Finnish agriculture and horticulture. The results are based on the data of the about 1,000 bookkeeping farms which are weighted so that they indicate the average results of the 38,000 largest agricultural and horticultural enterprises. These account for more than 90% of the output of Finnish agriculture. The individual revenue and expense items and support payments are allocated as returns and costs to the year of production in accordance with the accrual principle. Annual variations in the yields and returns and changes in prices and support payments are directly reflected in the annual profitability figures.

Growing uncertainty

In recent years agriculture and horticulture have faced market uncertainty more strongly than before. The rapid rise in raw material prices which started in autumn 2007 led to an increase in the producer prices, especially for cereals and milk. The fall in the prices as a consequence of the economic depression in 2008 and 2009 was equally dramatic. Cereal prices, along with the other raw material prices, started to rise again towards the end of 2010. Milk prices have also been restored to the earlier level and meat prices have been more stable.

Despite the fluctuations in the input prices the dominating trend has been upwards, which has increased the costs and weakened profitability. Variation in the prices of especially energy, fertilisers and feedingstuffs has been considerable. In recent years the share of direct payments in

the return has been 37% on average and 50% on cereal farms, which means that the markets and prices still have a great impact on the income of farmers and profitability of enterprises. In recent years there has been considerable variation in the yields as well. After two quite good years a record cereal yield was harvested in 2009, but this was then followed by the smallest cereal yield of the decade in 2010.

Return on cereals collapsed in 2009

In 2007 the good yields and favourable price relations led to a positive income and profitability situation in agriculture. Entrepreneurial income rose to the average of € 27,700, which was the highest during the 2000s. The average profitability coefficient was 0.64. The results for 2008 and 2009 were then quite weak due to the poor market situation and unfavourable price relations. The financial situation tightened especially on cereal and pig farms.

In 2009 the average gross return of agricultural and horticultural enterprises was € 126,400, which is about 1% lower than the year before. The decrease in producer prices and especially cereal prices reduced the sales proceeds by 5.5%. The share of support payments rose by 2% to € 47,800 and they represented 38% of the gross return. The support payments also include investment subsidies allocated to the years of service.

Rise in costs slowed down

The rise in the costs slowed down during 2009 as the prices of the main supplies turned into a decrease. The production costs increased by less than 2% to the average of € 156,100. The rise was due to high fertiliser and electricity prices and growth in the cost of services and rent expenses.

Lower prices again reduced the costs of fuels and feedingstuffs on livestock farms.

The entrepreneurial income of agricultural and horticultural enterprises fell by 17% from the year before to € 16,100. This was the compensation left to the 2,360 hours' labour input and own capital of € 246,600 invested in agriculture and horticulture. When these costs are also deducted from entrepreneurial income we obtain the entrepreneurial profit, which was negative, € -29,200. The costs overran the returns by an average of 23%. The wage cost of own labour has been calculated using hourly wages of € 13.5 and interest cost on equity on the basis of an interest rate of 5%.

Profitability depressed

In 2009 the profitability of agriculture and horticulture was the weakest during the whole 2000s. In the previous year the cost pressures already pushed the results below the average and the downward trend continued in 2009. The profitability coefficient fell from 0.44 to 0.35. Profitability coefficient is obtained by dividing entrepreneurial income by the sum of the wage and interest claims. The figure for 2009 means that the entrepreneurs received only 35% of the wages and interest set as the target, i.e. hourly wages of € 4.8 and 1.8% interest on equity.

On dairy farms the profitability coefficient fell from 0.62 to 0.53 and the entrepreneurial income decreased by 11% when the producer price for milk fell by almost 10% from the peak level in the previous year. The increase in support payments compensated for the 4% reduction in sales proceeds, but the rise in costs by 5% reduced the income and profitability. On other cattle farms the profitability coefficient rose to 0.48, which is close to the average of the 2000s. The results of pig farms were bottom low in 2008 and despite the improvement they were still well below the long-term average in 2009. The

real entrepreneurial income of pig farms has fallen by a fifth since the beginning of the decade.

The market prices of cereals fell by almost 40% in 2009, which led to a dramatic fall in the results of cereal and other crop farms. The profitability coefficient of cereal farms fell from the already low level of 0.26 in 2008 to 0.04 in 2009 and that of other crop farms from 0.45 to 0.27. The income left per cereal farm was as low as € 1,100 and that of other crop farms was € 7,600. The world market prices for cereals started to rise again in late summer 2010.

Differences in profitability

The differences in profitability between support areas are partly due to the production structure of the regions. Most of the crop production takes place in areas A and B, where the income and profitability are thus lower than in the whole country on average and in support areas C. In the past three years the profitability coefficient has been 0.28 in area A and 0.39 in area B. In support area C1 the coefficient has been 0.45 and in areas C2–C4 it has been 0.53. However, there are not much differences in the profitability between farms which have the same production type but are located in different support areas.

In 2009 the profitability coefficient of the most successful farms (the group 'strong') was 0.72 and the entrepreneurial income reached the average of € 39,700, which also does not meet the wage and interest claim set as the objective. In the poorest quarter of the farms (the group 'weak') the entrepreneurial income was negative, € -7,800 per farm, and the profitability coefficient was 0.22.

On dairy farms the profitability coefficient was also not reached even in the 'strong' group, where the coefficient was 0.83. In the group 'weak' the coefficient was 0.24. On 'strong' group of cereal farms the profitability coefficient was 0.44

and on 'weak' group it was -0.55 . In 2009 the profitability was negative on 28% of the farms, meaning that there was no compensation left for own labour and capital. However, on 9% of the farms the profitability coefficient was above 1.0.

Hourly earnings and return on assets

When the interest claim on equity is deducted from the entrepreneurial income, only € 2,700 euros are left as annual earnings. When this is divided by the 2,360 hours of labour of the farm family, the hourly earnings comparable to the hourly wage of employees are as low as € 1.2. In 2005–2009 the average hourly earnings in agriculture and horticulture were € 3.4. According to the forecast for 2010, the earnings would rise to the average of € 10,300 and hourly earnings to € 4.4.

When the cost of own labour is deducted from the entrepreneurial income we obtain the net result left as return on equity, which in 2009 was $-15,800$. When the net result is divided by the amount of own capital, the return on equity is -6.0% . The income tax on agriculture and horticulture has not been deducted as expense from the net result.

In 2009 the return on assets of agriculture and horticulture was € $-12,300$. This is obtained by adding the interest paid to the net result. The average capital during the accounting period was € 368,000, and thus the return on assets was -3.3% . Among the main production sectors the return percentage varied from 0.3% on pig farms to -6.2% in horticulture enterprises.

Solvency

In 2009 the total assets of the enterprises were, on average, € 369,700 of which € 264,600 (72%) was own capital. The growth in the farm size and increased capital intensity has increased the amount of capital. The amount of debt has grown even faster than the capital, which has led

to some decrease in solvency. Because of the weak profitability the financing of investments largely depends on liabilities and investment subsidies. The amount of debt has doubled since 2000 so that in 2009 it was more than € 100,000.

The equity ratio of agricultural and horticultural enterprises, i.e. the share of equity of the total capital, is 72%. The equity ratio is the highest on cereal farms, 82%, and the lowest in horticulture enterprises, 38%. On pig farms the equity ratio is 68% and on other livestock farms, most of them poultry farms, it is 47%. On these farms the amounts of both capital and debts are above the average.

The amount of debts has grown more rapidly than returns, which is why the relative indebtedness has grown from the about 60% in 2000 to 83% in 2009. This ratio is indicative of the increased financial risk in enterprises, which has partly been reduced by the low interest rates. There are considerable differences in indebtedness between the production sectors, and on farms which have expanded their production the debts may be very high. On a little under 10% of the farms the amount of debts is more than double their income.

In the balance sheet the asset items have been valued at their current values and the investment subsidies or the provisions done have not been deducted from the values. The value of fixed assets is included in full in the depreciation base and in the result calculation the subsidies are allocated to returns alongside depreciations of the corresponding asset items. Thus the key figures calculated from the balance sheets give the true picture of both the amount of capital and solvency and profitability.

Liquidity

Even if the profitability figures of enterprises have fallen in recent years, their cash-based liquidity has not collapsed. In 2009 the cash returns from sales and sup-

port payments fell by a little more than 3% to € 126,500. As the short-term expenses of the production also decreased slightly, the cash from operating activities was € 44,500, which was 5% less than the year before. Financial expenses and taxes paid decreased considerably, which is why the cash after financial activities was almost the same as the year before, € 36,200. Financial surplus can be used for investments, reimbursement of loans and private household expenditure.

The net amount used for investments was € 22,100 per farm, which is a quarter less than in the previous two years. On cereal farms the decrease in cash flow financing reduced the investment expenditure to the lowest level during the 2000s. Instead, in pig husbandry the investments picked up from the year before. Due to the decrease in investments the amount of new loans taken out fell by about a fifth from the previous year and the net change in the debts remained at € 4,900. Cash surplus grew by 10% to the average of € 17,600 per farm. This is the amount left from the business to be used for the private consumption of the farm family.

Result and profitability forecasts

The result and profitability figures for 2010 presented here are based on the farm-specific forecasts calculated from the bookkeeping data. They take account of the changes in product and input prices and support payments as well as in average yields of different crops by region. The farm size and production and input structure is assumed to stay the same as the year before, which means that the impact of the farm size and productivity development on the results in 2010 is not taken into account in the calculation.

Farm-specific forecasts have been weighted by region, production sector and farm-size class to indicate the average results of the about 37,100 largest farms and horticulture enterprises. The structure

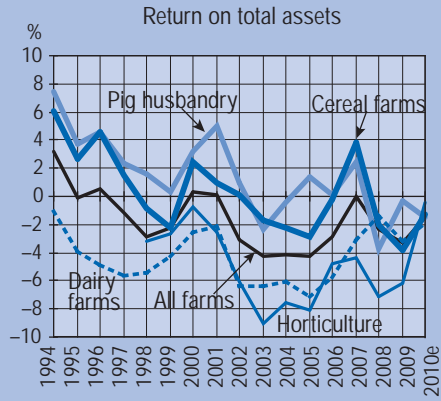
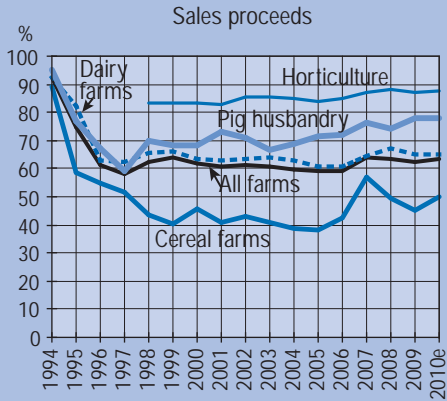
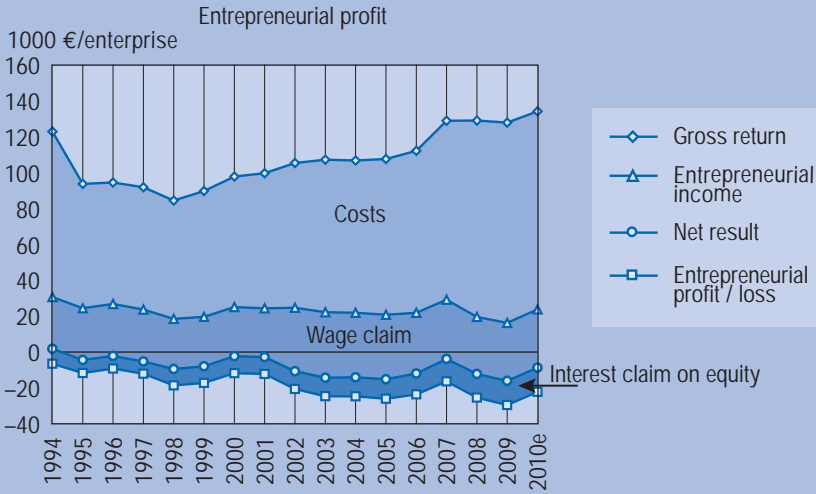
of farms used for the weighting is based on the forecast for the trend in farms structure calculated from the structural statistics of the Information Centre of the Ministry of Agriculture and Forestry. Thus the impact of each bookkeeping farm on the forecast results for the whole country is better in line with its share in the structure of enterprises in 2010.

Forecast results for 2010

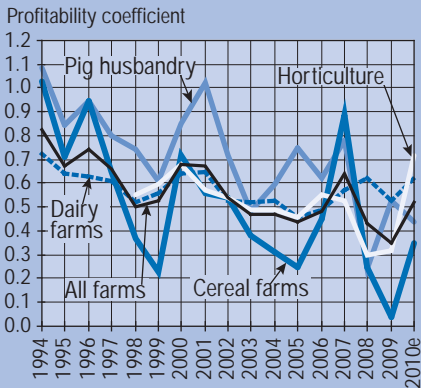
According to the forecast for 2010 the gross return of enterprises grew by 6% to € 134,200. Sales proceeds rose by almost 8% to € 82,200 and support payments by about 3% to € 49,100. The price trends have been more favourable than estimated earlier, which raised the forecast for sales proceeds. The rise in the costs from the previous year should stay at less than 1%. The decrease in fertiliser and cultivation costs reduced the supplies cost, even if the energy expenses continued to rise.

The results of enterprises improved from the bottom figures of the past couple of years. The average entrepreneurial income rose to € 23,800 and profitability coefficient to 0.52. When the costs of own labour and capital of € 46,000 are deducted from the entrepreneurial income, the resulting entrepreneurial profit is -22,200. The losses decreased by € 7,000 from the year before.

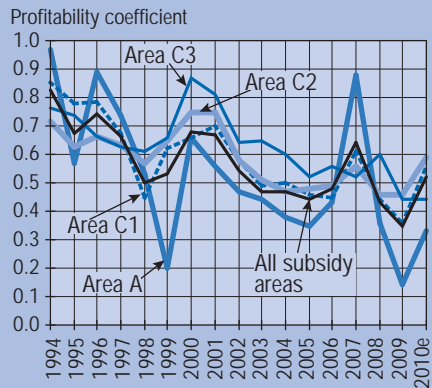
Profitability improved the most in crop and horticulture production. On cereal farms the rise remained insignificant despite the price increase because of the poor crop. On dairy farms the rise in the producer price improved the profitability, while in the other cattle farms, pig farms and other livestock farms the profitability trends showed no positive signs. The profitability coefficient calculated in the forecast was 0.62 on dairy farms, 0.43 on other cattle farms, 0.44 on pig farms, 0.72 on horticulture farms, 0.35 on cereal farms, and 0.61 on other crop farms.



Profitability coefficient by production types



Profitability coefficient by subsidy areas



Result and profitability development of agriculture and horticulture enterprises in 1994–2010e.

New method for calculating the sectoral economic result

Arto Latukka and Jyri Järvinen

The annual profitability figures for Finnish agricultural and horticultural enterprises showing the average results of the 38,000 largest enterprises are calculated from the profitability bookkeeping of the Agrifood Research Finland MTT. Now the utilisation of the bookkeeping data for economic calculation of Finnish agriculture has been expanded so that the results of the 26,500 smaller farms are also calculated from the data, thus providing the total results of the whole Finnish agriculture and horticulture sector. This new total calculation replaces the earlier calculation produced by the MTT.

Calculation principles and weighting

In the total calculation the results are calculated from the farm-level results by weighting and summing, instead of compiling the results from gross figures of the input and processing sectors obtained from various sources. The total results for the country's over 60,000 farms are calculated by summing up the weighted figures of the 1,000 bookkeeping farms.

Weighting coefficients are calculated annually for each bookkeeping farm by numeric optimisation so that when multiplied by the weighting coefficients and summed up the number of farms and cultivation areas correspond to the total number of farms and cultivation areas both in the whole country and in each support area. Within the support areas the weighting based on the number of farms is done according to farm size classes. By weighting according to the farm size classes the results can be made to correspond to the real farm size distribution in Finland.

The weighting is only based on the number of farms and total cultivation areas, aggregate information of which is available for the whole country. The number of farms is based on the numbers according the support areas and farm size classes in the structural data for agriculture of Tike, the Information Centre of the Ministry of Agriculture and Forestry. These statistics are available in the Structural Development service of the MTT EconomyDoctor (www.mtt.fi/taloustohtori). No financial variables were used in calculating the weighting coefficients, since no sufficiently reliable aggregate figures are available.

Weighting coefficients are also calculated to previous years starting from 2000, which means that the new total calculation method offers the results for economic development in Finnish agriculture over the whole past decade.

The weighting used in the total calculation differs from the weighting used when calculating the average results of profitability bookkeeping. There the sample farms are weighted by the real number of farms in the specific production sector, size class and region.

The results obtained by weighting also involve a degree of uncertainty, because the group of bookkeeping farms to which weighting is applied cannot fully reflect the highly varied population of Finnish farms and horticultural enterprises. However, the total calculation does give a comprehensive and coherent picture of the sector as whole. The weighting approach also enables the use of regularly updated forecasts, representa-

tive results according to regions and production sectors and alternative calculations based on simulations.

From cash based calculation to accrual basis

The earlier total calculation of the MTT was cash based, i.e. the income and expenditure were included in the calculation of the year when they were realised as cash revenue and expenditure. This means that on the annual level the results obtained when implementing the new calculation on an accrual basis may differ from the cash based results of the previous total calculation. Despite the different methods, however, the results for the decade as a whole are quite similar.

Because of the variations in input and product prices and the significance of individual revenue and expenditure items in different years, the change in the entrepreneurial income may even show a different direction in the two calculations, especially in recent years. However, the new total calculation of agriculture also enables the calculation of cash based results indicating liquidity. A comparison shows that in recent years the cash based entrepreneurial income has changed in the same direction as the cash based agricultural income in the previous total calculation results.

Result and profitability forecasts

The forecasts for 2010 are based on the bookkeeping data of 2009. The firm-level forecasts take into account the trends in input and product prices in 2009 according to product and cost items, changes in support payments by types of support and regional changes in average yields for different plants. The detailed forecast results are weighted to show the average results of all the 63,600 agricultural and horticultural enterprises in Finland.

In the forecast model the production structure and size of farms stay the same as in the previous year, except for changes in the crop yields, which are based on crop estimates according to regions and plants by Tike. The model itself does not allow one to forecast the changes in farm size and productivity of individual farms, but the trends in these variables is taken into account as the weighting for 2010 is based on the forecast for the farm structure of that same year. The forecast is calculated using the regression analysis based on the time span 1998–2009. The calculation shows that the number of farms is decreasing by more than 1,000 a year. Most of the farms shutting down/exiting are small, which is why in the forecast for 2010 larger bookkeeping farms receive slightly higher weighting coefficients so that they impact the results more. Through these procedures, the structural and productivity development are also being taken into account in the profitability forecasts of the total calculation.

Results at real prices

The calculation is presented both at annual nominal prices and as real prices, deflated to the price level of 2010. Real prices enable a better assessment of real trends in the sectoral development. The deflator chosen is the HICP (Harmonized Indices of Consumer Prices) published by Eurostat. HICP was chosen to allow the use of a single deflator both for Finnish and other EU countries. HICP as a consumer price index offers the household perspective into the development of income and purchasing power of agricultural and horticultural entrepreneurs.

4.2. Economic development of Finnish agriculture and horticulture

The trends in the return and cost items as well as assets of Finnish agriculture and horticulture on the total level are being followed by the new total calculation system introduced at the MTT Agrifood Research Finland in 2011. In this system the total results for Finnish agriculture and horticulture as a whole are calculated from the farm-specific profitability bookkeeping data by weighting and summing up. To obtain the trends, the results were calculated also for previous years since 2000. The system includes a forecast which can be updated on an ongoing basis. The central concepts are the entrepreneurial income, which is left as compensation for farmer's labour input and own capital investment, as well as the profitability coefficient.

Trends in the result

According to the forecast, in 2010 the gross return of agriculture and horticulture is about € 5.9 billion and the production costs total about € 7.2 billion. Thus the entrepreneurial profit obtained as the difference between the gross return and

production costs, which indicates absolute profitability, is negative, –€ 1.23 billion.

When the costs due to farm family's labour input and own capital are excluded from the production costs we arrive at the entrepreneurial income left for these inputs (agricultural income). According to the forecast for 2010, the entrepreneurial income is € 895 million, which is 58.5% higher than the € 556 million in 2009, which was the poorest year of the decade. At the price level of 2010, however, the entrepreneurial income of 2010 was still the third weakest of the decade after 2009 and 2008, and it was 25% lower than in 2007.

In recent years the entrepreneurial income has varied very strongly due to the considerable fluctuations in the product and input prices. However, despite the annual variation, the entrepreneurial income has been linearly declining in the 2000s.

Specification of returns

Support payments represent € 2.1 billion, i.e. 35%, of the gross return of agriculture and horticulture in 2010 (€ 5.9 billion). The share of support has stayed about the same all through the 2000s. Support payments also include the items of investment subsidies from earlier years allocated to the

Economic development of agriculture and horticulture at each year's prices and entrepreneurial income at 2010 prices (€ million) and annual change in this (%) as well as profitability coefficient.

Year	Total return	Production cost	Entrepreneurial profit	Entrepreneurial income	Annual change at 2010 prices	Annual change at 2010 prices, %	Profitability coefficient
2010e	5,915	7,159	-1,230	896	896	58.5	0.42
2009	5,676	7,238	-1,546	556	565	-24.0	0.26
2008	6,024	7,459	-1,415	720	744	-38.1	0.34
2007	5,987	7,020	-1,017	1,119	1,202	22.0	0.52
2006	5,392	6,639	-1,231	903	985	1.8	0.42
2005	5,219	6,616	-1,374	876	968	-4.0	0.39
2004	5,298	6,675	-1,356	905	1,008	-3.6	0.40
2003	5,163	6,474	-1,290	937	1,045	-16.2	0.42
2002	5,377	6,569	-1,170	1,104	1,248	3.1	0.49
2001	5,131	5,930	-779	1,050	1,210	-10.4	0.57
2000	5,091	5,847	-734	1,142	1,351	-	0.61

year 2010. These are allocated as returns alongside with the corresponding asset item depreciations.

The sales proceeds and other returns totalled € 3.8 billion in 2010. Return on livestock accounted for 33% and return on crop production for 10% of the gross return. Return on crop production does not include fodder produced on the farm which has been used as intermediate products. Return on horticulture represents 20% of the gross return. This includes sales proceeds from intermediate products as well. The return on crop production, livestock and horticulture also include the prices of products delivered outside the agricultural sector or used by the entrepreneur.

In the calculation of the result, the individual revenue and expense items and support payments are allocated as returns and costs to the year of production in accordance with the accrual principle. This means that annual variation of the yields and returns and changes in prices and support payments are directly reflected in the

annual results. Transfer of sales or support payments to the next accounting year has no impact on the results.

Specification of costs

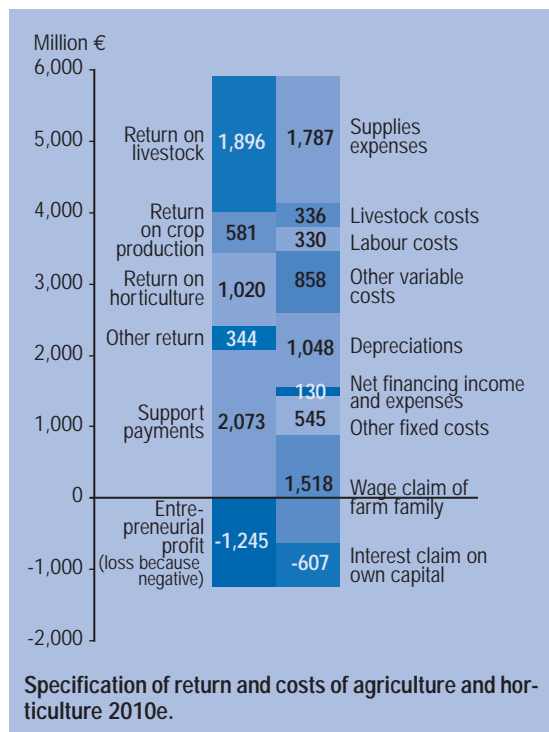
The production costs of agriculture and horticulture totalled about € 7.2 billion in 2010. In the classification of costs in this system the largest cost item, supplies cost of € 1.79 billion, accounted for 25% of the production costs. The share of the wage claim cost due to farm family's own work input was about 20%, i.e. € 1.05 billion. This would be the cost to the farmer if the work had been done by hired labour. A decade ago the wage claim cost still accounted for about 25% of the total costs. The third largest cost item, depreciation cost of € 1.05 billion, represents about 15% of the production costs.

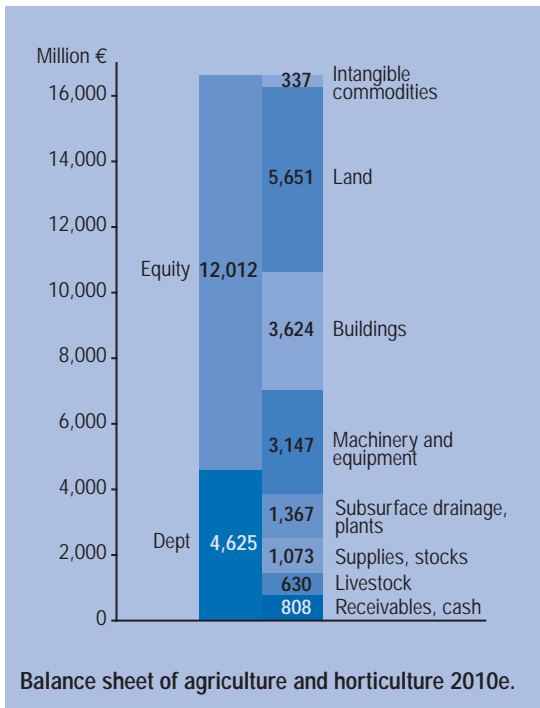
Profitability

The entrepreneurial income of about € 895 million in 2010 should cover the costs due to farm family's labour and own capital. The 109 million labour hours at an hourly wage of € 14 result in a wage claim cost of € 1.52 billion, while the own capital of € 12 billion at an interest rate of 5% gives an interest claim cost of € 607 million. The entrepreneurial income covers 42% of these costs.

The profitability coefficient of 0.42 is obtained by dividing the entrepreneurial income by the sum of the wage and interest claim cost. The fact that the profitability coefficient is less than one means that the entrepreneurial income does not cover the wage and interest claim, which is also shown by the negative entrepreneurial profit. The compensation left for an hour of work by the farm family is € 5.9 and the interest on own capital is 2.1%.

If the total wage claim of € 1.52





billion is deducted from the entrepreneurial income of € 895 million, the compensation left for own capital is negative and the return on own capital turns negative as well, to the level of -5%.

In recent years the average profitability coefficient of Finnish agriculture and horticulture as a whole has been around 0.4, with strong variations in the last couple of years. The profitability coefficient of Finnish agriculture as a whole has been about 0.1 percentage units lower than the average profitability of the 38,000 largest Finnish farms obtained from the book-keeping results.

Solvency

At the end of the accounting year 2010 the capital invested in agriculture and horticulture totalled € 16.6 billion. About 80% was invested in long-term objects such as farming land, machinery, buildings and subsurface drainage. On the balance sheet the asset items have been valued at the current values and the investment subsidies

or the investment reserves are not deducted from the value of assets. Fixed assets purchased by means of the investment subsidies are included in the depreciation base and in the calculation of the result the subsidies are allocated as returns alongside with the corresponding asset item depreciations.

Agriculture is a very capital intensive industry, where the capital turnover rate, i.e. the ratio of gross return to capital, is low (0.36). The capital turnover rate has stayed about the same during the 2000s.

Of the total capital of about € 12 billion, the average of 75%, is farmers' own capital. There has been some decrease in the equity ratio since 2000, but it is still good. Because of the slow capital turnover rate the production cannot be based on external capital due to the high frequency of reimbursements and interest payments.

By the end of 2010 the amount of external capital in agriculture and horticulture had risen to € 4.6 billion from less than € 3 billion in 2000. Over the past ten years the ratio of debts to gross return, i.e. relative indebtedness, has increased from less than 60% to 80%, which contributes to a higher financial risk.

Besides debts related to agriculture and horticulture the farm family may also have debts from forestry and other business as well as private household. In balance calculations these are not included in the debts of agriculture and horticulture.

Liquidity

The cash-based results from the total calculation indicate the trends in liquidity. The annual financing surplus left after agricultural production operations, interest expenses and taxes has been about € 1.5 billion. This is the amount available for investments, loan reimbursements and private consumption. Over the past dec-

ade the investment balance left after the deduction of the constantly growing investment expenses has decreased from about € 600 million to 300 million. The investment surplus has, however, stayed positive, which means that on average all the agricultural investments have been carried out by means of income from production activity, when the share of private consumption has not been deducted as expenses. The subsequent investment subsidies and loans taken out are added to the investment balance and the reimbursements of loans are deducted from it.

Calculations on the annual level show that, for example, in 2007, when the profitability was high, the investment pressure piled up before that was finally released and the investments grew by 50%. This pushed the investment balance down to its lowest level in the 2000s.

Results of the total calculation from EconomyDoctor internet service

The results of the total calculation of Finnish agriculture are available in the new online service published at the EconomyDoctor website of the Agrifood Research Finland (www.mtt.fi/taloustohtori). Various regional analysis will additionally be offered in the future.

At the moment EconomyDoctor offers the weighted average results and results for the groups good/poor in the online services for agriculture and horticulture and for reindeer husbandry. From the Production Type service the farmers may compare the results of their own farms to those of similar farms. The Cereal Information service shows the results of the cereal chains in Finland and the Baltic States, while Fur Farming service shows the results of that sector. The Structure Development service enables detailed, dynamic analysis of the farm count data. The basic results of agriculture and profitability indicators of the EU

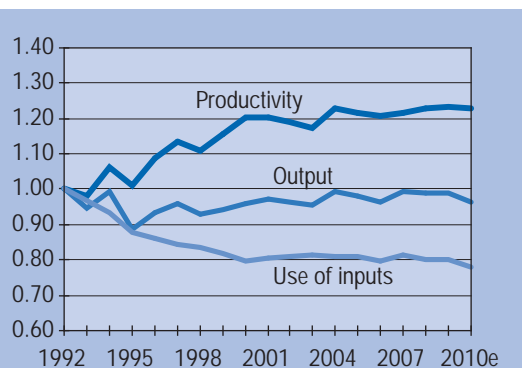
Member States are available in the FADN Standard Results and the FADN Advanced Results services, respectively.

4.3. Productivity development in agriculture

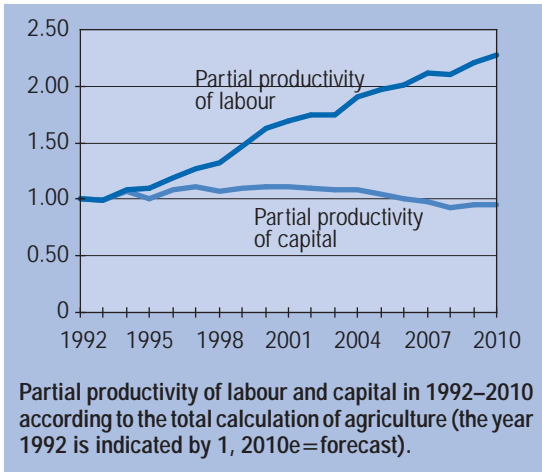
Productivity means the ratio between the volume produced and the use of inputs. Productivity improves if the same use of inputs, such as arable land, labour and capital, yields a larger volume of output or if the same volume of output is achieved by means of less input.

Improving productivity is important in terms of the competitiveness of the production, and together with input and output prices and support payments it is one of the main factors on which the profitability is founded. The predominant trend in Finnish agriculture has been that the production volume has been quite stable while the use of inputs has decreased mainly because of the rapid reduction in labour input.

Growth in total factor productivity of agriculture is desirable from the consumer perspective because higher profitability has been observed to move further in the food chain for the benefit of both the trade sector and consumers. From the global per-



Productivity, output and use of inputs in 1992–2010 based on the total calculation of agriculture (the year 1992 indicated by 1, 2010e=forecast).



spective investments which promote the productivity growth in agriculture, such as land improvement and research investments, are considered important to be able to feed the growing world population. In the national agricultural policy the objective for productivity development has been written as follows: “Agricultural policy creates the preconditions for efficient food production which meets the needs of the consumers and respects the nature.”

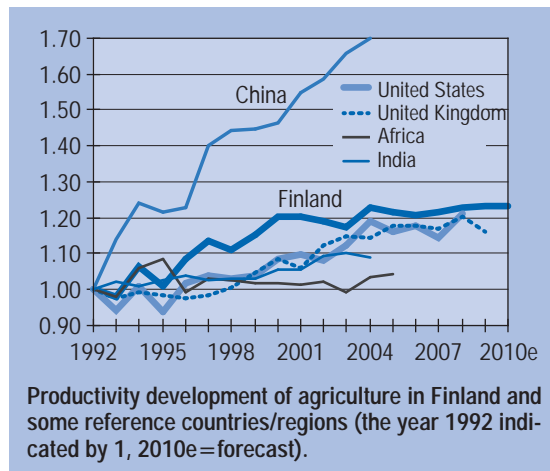
In this chapter the productivity development of agriculture is measured from the total calculation of agriculture by means of the Divisia index method. This is used to calculate the quantity indices for outputs and inputs, and the change in their ratio indicates the development of productivity, i.e. output-input ratio over the period concerned. In addition, the productivity development of Finnish agriculture is compared to the agricultural productivity trends in some other countries and continents in order to assess the rate of productivity growth in Finnish agriculture.

As defined on the basis of the total calculation, in 2010 the same use of inputs in Finnish agriculture yielded an about 23.1% higher output than in 1992. The total output was 96.2% and use of inputs 78.1% of the levels in 1992. During this period the average productivity growth

in agriculture was 1.2% per year.

The productivity of labour in Finnish agriculture has increased rapidly in the past 15 years, by the average of about 5% per year in 1992–2010e. In 2010e the output volume per unit of labour input was 2.3 times that in 1992. During this time the total labour input decreased from 160,000 AWU (annual work unit) to about 70,000 AWU. In the long run there have been no major changes in the productivity of capital in Finnish agriculture.

As yet the Statistical Office of the European Communities Eurostat has no statistics on productivity development in agriculture, even if this is one of the most important objectives of the common agricultural policy. One major problem in this is that productivity is measured by volumes instead of monetary indices. Statistics on the trends in the productivity of agriculture are published, for example, in the UK by the Department for Environment, Food and Rural Affairs Defra. The United States also has long traditions in following the productivity development of agriculture and the statistics on this are updated on a regular basis. The long-term development of productivity in the Finnish agriculture has been quite similar to that in the UK and USA.



5. AGRICULTURE AND THE ENVIRONMENT

Modern societies direct various kinds of expectations to farming. Apart from the production of staple foods to meet the domestic consumption, agriculture should contribute to, for instance, the maintenance of managed and open farming landscapes, biological diversity and rural viability. The significance of environmental commodities as the products of multifunctional agriculture has been growing since Finland's accession to the EU in 1995, while the income from producing staple foodstuffs has mainly been decreasing.

The third Rural Development Programme applied in Finland, which also contains the agri-environment scheme, is approaching its mid-term. The first follow-up report on the programme was published in the summer of 2010. The objectives of the scheme are to reduce loading on surface waters and groundwater and emissions to the air, protect the biodiversity of farming environments, and manage the cultural landscapes.

A total of one billion euros a year is used for environmental protection in Finland, of which the agri-environment payments represent about a third. Thus, it is no wonder that the agri-environment support arouses passions among actors outside agriculture as well.

The implementation of the water management plans under the EU's Water Framework Directive started during 2010. The aim of the Directive is to protect, improve and restore waters so that their chemical and ecological status is good in the whole EU area by 2015. In Finland, the agri-environment scheme is highly important in the implementation of measures required under the Water Framework Directive. However, it is not going to be possible to fulfil all the requirements of the Directive within the given schedule through the means available at present. In some water areas, it will take until the

2020s to reach the objectives of the Directive.

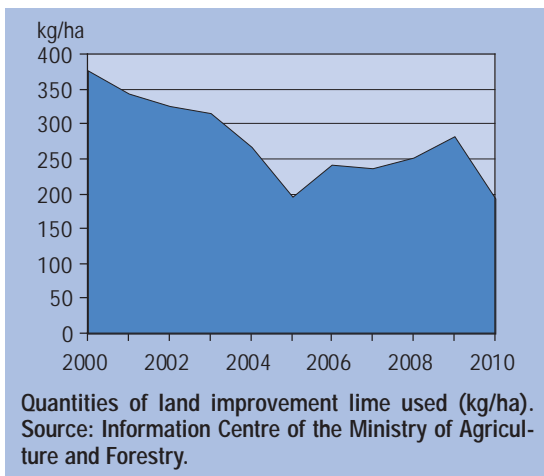
5.1. Environmental impacts of agriculture

Agriculture has an important role in maintaining biodiversity and rural landscape and provision of recreational services. In addition to the positive effects, agriculture also has negative impacts on the environment, i.e. the soil, waters and air.

Soil

Environmental loading from arable land depends on the soil type, cultivation properties and crop rotations. As regards the conditions for crop production, in the Finnish soil there are no heavy metals, average phosphorus levels are satisfactory, acidity is increasing, and the amount of organic matter is decreasing. Besides these mainly chemical indicators, there are a number of biological and physical phenomena to be considered when assessing the ability of the soil to mitigate environmental loading. They include the numbers of soil organisms, the activity of symbiotic microbes and the binding and release of nutrients in soil organic matter.

The widely discussed phosphorus level in arable land is an indicator of both productive capacity and environmental loading. The phosphorus levels of Finnish arable lands have been rising up to the present, even if phosphorus fertilisation has been considerably reduced through, for example, the agri-environment scheme. At present, the increase in phosphorus through purchased fertilisers is 6.5 kg/ha, which is only a quarter of the level in 1995. The amount of phosphorus entering the land in animal manure (about 8 kg/ha) is now higher than the amount of phosphorus contained in purchased fertiliser, and no



significant reduction has taken place since 1995. Studies have shown that some further reduction in total phosphorus fertilisation (purchased fertiliser + manure) would be possible without a decrease in yield levels, except in parcels where the phosphorus levels are particularly low. In the light of current knowledge, turning the phosphorus balance into a negative one is the most efficient way to achieve a permanent reduction in phosphorus loading.

The load on waters from arable farming is also influenced by the soil structure. Soil compaction reduces the permeability of the soil, which increases the risk of nutrient surface runoff and erosion. It also weakens the nutrient intake of plants, which lowers the utilisation rate of nutrients. Poor permeability may also increase the release of greenhouse gases.

Only about 7% of the surface area of Finland is arable land. The ownership of arable land is quite decisive in terms of the long-term productivity of the land. Studies have shown that much less land improvement work is being done on leased areas than on lands owned by the farmer. The use of, for example, agricultural lime has halved from the levels before Finland joined the EU. Since 2003, less than 300 kg/ha/year of lime has been used for land improvement, which is not enough to maintain the productive capacity of arable lands.

Loading of waters

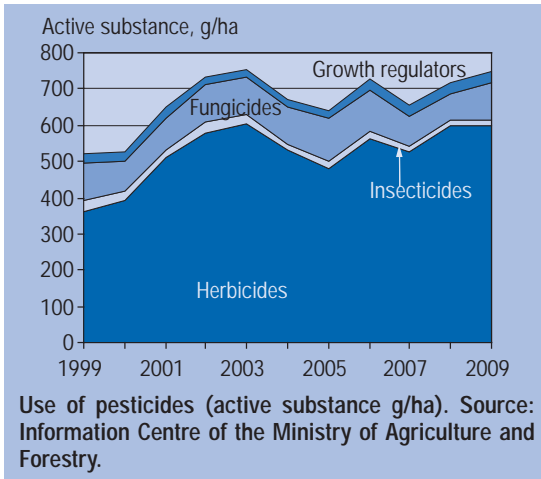
Nutrients leach to ditches, rivers, lakes and the sea from arable land, causing eutrophication. This can be seen from the turbidity of the water, the increase in the algae and the mass blooming of toxic blue-green algae in the summer. Even if the volumes of nutrients used per hectare have been significantly reduced, the eutrophication of waters continues and no improvement in the state of waters has been observed.

The Finnish Environment Institute estimates that about 50% of the nitrogen loading and 60% of phosphorus loading comes from agricultural sources. In the nutrient loading of the Baltic Sea, Finnish agriculture accounts for about 3.8% of the phosphorus and 3.7% of the nitrogen loading. In the loading on the Archipelago Sea and coastal waters, the share of Finnish agriculture is much greater.

Loading is caused by both arable farming and livestock production. Now that the direct discharges from livestock buildings have all but stopped, the focus in nutrient loading from agriculture has shifted to arable farming. Because of the concentration of livestock production, the amount of manure produced is excessive in many places relative to the utilised agricultural area and the needs of the crops cultivated. The phosphorus contained in manure, in particular, has become a problem.

Pesticides

The use of pesticides began to increase in Finland towards the end of the 1990s after a long downward trend, and the slight growth from one year to the next still continues. The main reason for this is increased cereal cultivation and wider use of non-tillage technology. Farmers have also switched over to pesticides which need to be used in larger doses. On the European scale, however, the quantities



of pesticides used in Finland are still quite moderate.

Emissions to the air

Climate change poses new challenges to Finnish agriculture. The measures to adapt to climate change are changing the prioritisation of species and varieties and the relative profitability of different crops and production methods. Climate change is also influenced by agriculture. Greenhouse gas emissions from the agricultural sector represent about 7% of the total emissions in Finland. The agriculture sector is excluded from emissions trading. The objective set for Finnish agriculture is that by 2020 the greenhouse gas emissions should be reduced by 13% from the emission levels in 2005.

Most of the greenhouse gas emissions from agriculture are due to the digestion of ruminant livestock, the decomposition of organic matter in the soil and the decomposition of manure. Minor emission sources include nitrogen fertilisation, the liming of arable lands and the use of fossil energy in agriculture. A common feature in all emissions from agriculture is that it is difficult to reduce them without significant impacts on the volume of agricultural production. Through agri-environment

measures, efforts are made to transfer peaty arable lands from continuous cereal production to the cultivation of grasses on a long-term basis. In other soil types, too, less intensive tillage practices or cultivation without tillage should be preferred.

Biodiversity of farming environments

Biological diversity comprises the abundance of species, the diversity of habitats and intra-species genetic diversity. The decline in biodiversity is considered a serious environmental problem as biological diversity is the foundation for the functioning of ecosystems and ecosystem services (i.e. benefits to humans derived from nature). Without biodiversity, the ecosystems are not capable of adjusting to changes in the environment, such as climate change.

Agricultural production is based on the utilisation of biological diversity. Similarly, many wild plant and animal species have over centuries adapted to utilising agricultural environments created by man. The positive impact of agriculture in enhancing biodiversity was the greatest at the time when animal feed was produced on meadows and natural pastures. The growth in the farm size since the 1950s together with increased input intensity and farm-specific and regional specialisation has led to a decline in the biodiversity of farming environments and increased the numbers of threatened species and habitats.

For some wild species, changes in their habitats due to new and more efficient production methods have been too rapid and they have not been able to adapt to the new conditions. Especially organisms which depend on meadows and forest pastures have declined and become endangered due to the decrease in grazing and cattle husbandry. According to an assessment of threatened habitats completed in 2008, the

highest share of threatened habitats in the total number of habitats of a certain type is found in traditional biotopes, of which 93% are threatened.

However, in habitats maintained by agriculture there are still numerous wild plant and animal species which benefit from farming activities, open arable areas and grazing livestock, as well as many of the measures relating to the agri-environment scheme and non-productive investments.

5.2. Agri-environment scheme

The Rural Development Programme for Mainland Finland 2007–2013 was approved by the European Commission in 2007. Rural development is funded from the European Agricultural Fund for Rural Development (EAFRD) and from national sources. The total public funding for the seven-year programming period is about €6.6 billion, of which a third comes from the EU. The programme has four axes, of which Axis 2 includes the agri-environment and natural handicap payments, non-productive investments and promoting the welfare of production animals. The funding for Axis 2 totals about €2.3 bill.

The measures of the third agri-environment scheme are very similar to those of the previous programmes. The scheme consists of basic, additional and special measures. There are certain changes from the previous programming period concerning e.g. the reference state from which the costs and income losses to be compensated for are calculated, minimum requirements for the use of pesticides and fertilisers, commitment periods and target beneficiary groups. Farms in support areas A and B must undertake the basic measures plus one to four additional measures. In area C, no additional measures are required, and no more than two may be selected. The most popular additional

measures have been the more accurate nitrogen fertilisation of arable crops, different forms of plant cover on arable land in winter and the calculation of nutrient balances. The number of farms included in the agri-environment scheme decreased slightly from the previous programming period, but it still covers more than 95% of the arable area.

The main objective of the agri-environment scheme is to reduce the load on waters. This is why most of the support is directed to measures which contribute to water protection, while only about 2–3% of the support is used for measures which are primarily targeted at enhancing biodiversity. The role of the agri-environment payments in enhancing biodiversity is, however, somewhat greater, because certain measures that are primarily targeted at water protection, such as field margins, filter strips, riparian zones and wetlands, also contribute to biodiversity.

After the approval of the Rural Development Programme for Mainland Finland, the revision and development of the agri-environment scheme continued in a working group on amending the agri-environment scheme. In 2008, three new special measures were included in the agri-environment scheme: incorporation of liquid manure into the soil, long-term grass cultivation on peaty arable lands and more efficient reduction in nutrient loading. The special measure concerning nature management fields was included in the programme in 2009. It was designed to compensate for the losses in nature and environmental values due to the abolition of compulsory set-aside from the single payment scheme. According to data from the Information Centre of the Ministry of Agriculture and Forestry, in 2010 the total area of nature management fields was 162,840 ha, of which almost 80% was under perennial grasses.

The changes to the special measures in 2010 include the following: The geo-

graphical area eligible for the contract concerning the management of multifunctional wetlands was extended to the catchment areas of rivers discharging into the Kvarken and Bothnian Bay. The annual site-specific support for the management of small valuable traditional biotopes (0.3–0.5 ha) was raised to 200 €/site from the earlier 135 €/site. The limits for the maximum acceptable costs of the contracts concerning special measures were revised.

In 2010, non-productive investments concerning the establishment of multifunctional wetlands was raised to 11,500 €/ha and the area covered by this measure was also extended to the catchment areas of rivers discharging into the Kvarken and Bothnian Bay. In small wetland sites (0.3–0.5 ha), the amount of investment aid is fixed at 3,226 €/site. Support for non-productive investments in the first clearing and fencing of valuable traditional biotopes was differentiated according to the surface area of the biotopes. The amount of the investment support is 1,179 €/ha for sites with the maximum area of 3 ha, 910 €/ha for sites of no more than 10 ha and 750 €/ha for sites of more than 10 ha.

In accordance with the Leader methodology, support for non-productive investments in the establishment of multifunctional wetlands and the first clearing and fencing of traditional biotopes and support for the special measures concerning the management of multifunctional wetlands and traditional biotopes may also be granted to beneficiaries other than farmers.

Winter cereals are approved to fulfil the condition concerning plant cover in winter as from the winter season 2010–2011. The possibility to transfer some of the requirements now included in the basic measures (such as field margins and filter strips) to the cross-compliance conditions has been discussed, but very likely no changes will be made before the new programming period starting in 2014.

Evaluation of the impacts of the agri-environment scheme

According to the mid-term report of the follow-up study on the impacts of the Finnish agri-environment scheme (MYTVAS 3) published in 2010, the nutrient loading potential of agriculture measured by nutrient balances has continued to decrease for both phosphorus and nitrogen during the terms of the agri-environment scheme, mainly due to the decrease in the use of artificial fertilisers. The decrease in the nutrient loading potential has not, however, been fully reflected in water loading from agriculture. Nitrogen loading has grown in almost all of the 22 catchment areas of rivers discharging into the Baltic Sea included in the modelling. The main reasons for this seem to be the growth in arable area, the concentration of livestock production, which implies large quantities of manure in certain locations, an increase in the land application of manure, and the increased use of concentrate feed for livestock, which raises nitrogen levels in manure. Instead, the phosphorus drift from the river catchment areas to the Baltic Sea decreased during the whole period covered by the analysis (1985–2006) except in the Archipelago Sea. The measures which have the greatest potential to reduce nutrient loading of waters are fertilisation of arable crops and nature management fields among the basic measures and the additional measures concerning plant cover and fertilisation.

The greatest threat to biodiversity is the decrease in open or semi-open areas which are excluded from the actual farming use. The measures with the best potential in terms of biodiversity are some of the special measures and non-productive investments. Basic and additional measures alone do not promote the preservation of biodiversity in agricultural environments very significantly.

The overall conclusion of the mid-term report is that more regional, sectoral and

farm-specific adjustment and customisation of the objectives, measures and support levels of the agri-environment scheme are needed due to the considerable regional differences in the state of agricultural environments and the needs of the society.

5.3. Water protection guidelines

According to the Government Resolution on guidelines for water protection issued in 2006, by 2015 nutrient loading from agriculture should be reduced by at least a third from the average in 2001–2005 (phosphorus by 3,000 t/a and nitrogen by about 30,000 t/a). In addition to the Government Resolution, the EU Water Framework Directive sets even more detailed quality standards for specific water areas.

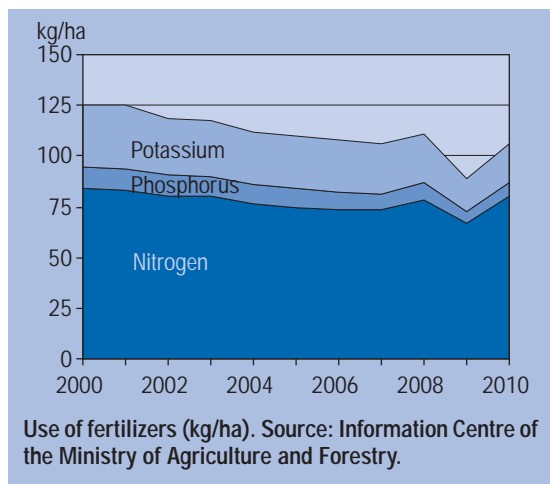
The objective of the Water Framework Directive is to prevent the decline in the status of surface waters and groundwater, guarantee a good status of waters by 2015, restrict the entry of harmful substances to waters, and reduce the damages caused by floods and drought. The Member States are obligated to ensure that these objectives are met in each water area. Finland is divided into eight water management areas, and detailed water management plans have been prepared for each of these.

What do the objectives mean for agriculture?

Nutrient loading from agriculture is non-point source loading from over a million agricultural parcels with highly varied characteristics. Besides the physical characteristics, such as slope and soil type, the water loading from parcels depends on the weather conditions and cultivation and tillage practices. In Finland, the calculation of loading is founded on a monitoring system established in 1957, which has since then been developed to make it better suited for the moni-

toring of nutrient loading. At present, the system covers 253 sites, 211 lakes and 5 artificial lakes, and it will be further developed to take the ecological properties better into account. According to the Directive, the assessment of the status of waters takes place by comparing the current status with an estimated natural state.

As fertilisation is one of the principal factors in nutrient loading, it is also used as an indicator of the loading potential. In 1995–2010, the fertiliser sales per hectare of cultivated land decreased from 92.3 kg to 80.3 kg for nitrogen and from 16.1 kg to 6.5 kg for phosphorus. During the same period, there was no decrease in the yields per hectare, which means that the nutrient balances improved considerably. The trend is correct considering both the efforts to reduce nutrient loading and the profitability of agriculture. However, we should bear in mind that certain risk areas load the waters much more than the average. In Finland, 90% of the loading occurs outside the growing season, which means that it is important to consider what happens between harvesting and sowing. The development is also going in the right direction in this respect, because the agri-environment scheme and legislation have increased plant cover in winter, which reduces erosion, and less manure is spread on the lands in the autumn.



Now that the agri-environment scheme as the most important environmental policy instrument for agriculture has been in place for 15 years and water protection targets are set for specific water bodies, we can see that the current trend in the loading potential will not be sufficient to reach a good status in water areas where the loading from agriculture is the strongest by 2015. Especially as regards phosphorus, the soil reacts very slowly to changes and even significant reductions in the annual nutrient balance are not immediately reflected in the loading. The concentration of livestock production and growing unit size make it difficult to meet the objectives in all regions. Transporting manure is costly and the decisions on spreading are often made based on the lowest cost or the need for nitrogen, which means that phosphorus levels may be too high for the plants and the loading potential increases. The pressure to improve the profitability of agriculture pushes towards more efficient production and larger units. A new threat to water quality is climate change, which is expected to increase precipitation especially outside the growing season.

5.4. Main topics and future perspectives

Natural values trading in agriculture

Natural values trading by competitive tendering has been suggested as an alternative to the present agri-environment scheme or to supplement it. Through natural values trading, the farmers or other agricultural operators would propose to undertake measures that have been proven good and are suited to the specific areas to promote water protection, biodiversity or other protection and conservation of agricultural environments and present a bid for the implementation of these measures to the competent environmental authority. The authority would process the bid

and accept or reject it based on commonly approved criteria and available funding. A similar system is already being applied in Finland in the environmental protection in forestry, and in some countries also in agriculture (e.g. USA).

Fourth assessment of threatened species in Finland

According to the assessment of threatened species in Finland conducted in 2010, the majority of the threatened species live in forests as well as semi-natural and other habitats altered by human activity. Of the species which have become extinct, the share of species that used to live in semi-natural and other habitats influenced by man is greater than that of forest species. The total number of species in our country is now estimated at about 45,000, of which about a half are known well enough to assess how threatened they are.

Manure, biogas and separation

Because of stricter environmental regulations, manure has become the most restrictive factor for the growth in the unit size of many farms. A research programme on manure financed by the Ministry of Agriculture and Forestry and completed at MTT Agrifood Research Finland in 2010 searched for solutions to problems related to manure. Fractioning manure by means of a separator into solid phosphorus fractions and liquid nitrogen fractions would allow fertilisation which is closer to the real nutrition needs of the plants. However, efficient separators are costly and investments in them are not profitable without large volumes of manure to be treated. Biogas production would also require a scale larger than individual farms and other support through, for example, feed-in tariffs. Another problem is that in the EU legislation animal manure has been defined as waste, which means that smoke gases from the incineration process must be analysed

and any impurities must be removed. This is why burning manure in farm-scale incineration plants is not an economically feasible option.

Cost-efficient emissions reduction in the Baltic Sea

Each year the blooming of blue-green algae makes headlines during the best swimming season. Based on the research results, the most efficient way of improving the state of the Gulf of Finland and the Archipelago Sea would be to improve the purification of the wastewater discharges in the major emissions sources, such as St. Petersburg and cities in Poland. Investments in the treatment of the unpurified wastewaters from St. Petersburg per kilo of nutrients removed would also be more cost-efficient than reducing the loading from Finnish agriculture in the coastal areas of the Gulf of Finland. However, local cuts in the load to the Gulf of Finland would be more rapidly reflected in the sea water quality than the impacts of the cuts in the catchment area of the Main Basin of the Baltic Sea. Thus, cutting the emissions in Finland is important especially for our own coastal waters. External nutrient loading to the Gulf of Finland relative to the surface area is two to three times the average loading of the Baltic Sea.

A study on the application of the so-called Stern model to managing the loading to the Baltic Sea started at MTT Agri-food Research Finland in 2009. According to the pre-study, it would be cost-efficient for Finland to reduce its own loading only if the other, large-scale polluters (Russia, Poland and Sweden) would act in the same way. Loading from the Finnish territory is significant enough, and the share of other polluters is small enough, to make any emissions reduction actions by Finland cost-efficient only in the loading of the Bothnian Bay.

Other topics related to load from agriculture

Extreme weather events have boosted the discussion on climate change mitigation and adaptation. Mitigating climate change in the whole agriculture and food sector calls for a completely new kind of thinking all through the food chain. Besides the changes in plant species and varieties, there is a need for more profound structural changes than in the present scenarios for adapting to the potential impacts of climate change. The carbon content of arable soils can be increased by direct sowing (non-tillage) and long-term grass cultivation as well as placing biocharcoal into the soil. Biocharcoal means wood or other biomass carbonised in high temperature in anoxic or near-anoxic conditions. Biocharcoal is produced, for example, in the production of wood-based biofuel as a by-product of the pyrolysis reaction.

In the report "Mission for Finland", the Country Brand Delegation envisaged that by 2030 at least half of the Finnish agricultural production should be organic. This is a very challenging target as it has taken 20 years to reach the present organic production area of about 8% of the total arable area. However, only 1 to 5% of the products placed on the market are organic, depending on the product group. A significant share of organic products sold in Finland is imported.

Changes to the wastewater treatment requirements in scattered settlement areas led to a heated debate. Wastewater from scattered settlement areas excluded from sewage networks is the greatest source of water loading after agriculture. The wastewater systems of real estates in such areas must fulfil the requirements for purification efficiency by 1 January 2014. After an intense political discussion, the Finnish Parliament approved the relaxation of the wastewater legislation concerning scattered settlement areas in February 2011.

Proposal for a national strategy on invasive alien species completed

Jaakko Heikkilä

Invasive alien species are species spread to the nature which originally were not part of the ecosystem and which could not have spread there on their own. Invasive species have circumvented natural barriers to spreading, such as a continent, sea or mountain, through intentional or accidental action by humans. This is how invasive species have been defined in the proposal for a national strategy on invasive alien species prepared in a broadly-based working group appointed by the Ministry of Agriculture and Forestry. Harmful invasive species, in turn, mean species which cause ecological, economic, health or social damage that calls for special action. Species which have spread naturally to Finland, such as cormorant or wild boar, are not covered by the strategy.

For the strategy purposes, an inventory was made on the invasive alien species already present in Finland or seeking access here. Experts estimated that Finland is threatened by 157 harmful invasive species, while 128 species call for regular observation or may be locally harmful. In addition, 37 dangerous or so-called quarantine pests were identified. Based on the preliminary assessment, five particularly harmful invasive species were identified: giant hogweed, *Rosa rugosa* (Japanese rose), crayfish plague, Portuguese slug and mink.

Significant costs

On the global scale invasive species constitute the second greatest threat to biodiversity, after the loss of habitats. Even if most of the invasive species do not survive in the new habitats, the species that do survive may have serious economic consequences: it is estimated that in total invasive species cause damage worth more than 1,000 billion euros a year. In Europe the annual damages caused by invasive species are estimated to be at least 12.5 billion euros. In Finland no comprehensive assessment has been made on damages caused by invasive species, but individual examples can be found. Among the most significant damages caused by invasive species is the collapse of crayfish catches due to crayfish plague of American origin. Calculated by the current producer prices, the damages have totalled about 10 million euros a year over the past 100 years. Should pinewood nematode or some other serious pest spread in Finnish forests, the economic consequences would be very serious indeed. In Canada, for example, the annual damages to forestry caused by pinewood nematode are estimated to rise to about 540 million euros.

Costs arise from the preventive measures as well. The annual costs to the Finnish Food Safety Authority Evira for maintaining plant health rise to millions of euros. In recent years the City of Helsinki has spent about 0.5 million euros annually on reducing the European rabbit population and preventing damage they cause. The working group which prepared the strategy estimates that tens of millions of euros are used every year in Finland for measures to prevent invasive species, and the total costs they cause rise to tens or even hundreds of millions.

Repairing the damages afterwards is very costly and especially in the case of marine invasive species practically impossible. The damages can be prevented or significantly reduced through preventive action.

Current legislation insufficient

So far there has been no comprehensive programme on invasive species or related legislation. The strategy proposal presents a long list of shortcomings as regards invasive species in the current legislation. Invasive species are not sufficiently recognised in the present legislation, which also means that the responsible authorities and their tasks or the responsible parties obligated to take eradication measures, for example, are not defined. In the case of certain invasive species the legislation does not give the authority to undertake measures to eradicate the population after the first observations have been made. The legislation also does not lay down a sufficient notification obligation for harmful invasive species, nor does it give a list of species which may or may not be imported. The responsibilities of importers, sellers and users in case of intentional spreading of harmful invasive species have not been specified. At the moment, for example, there is no act or decree that would regulate the import and use of hymenopteran pollinators.

These are among the gaps which the comprehensive strategy should fulfil. The strategy work was founded on two main principles. The precautionary principle is a widely recognised international approach to invasive species, because in the end their prevention is almost invariably less costly than any subsequent actions to combat them. The strategy also aims to promote the polluter-pays principle, according to which the parties which in the first place cause the problems relating to the spread of invasive species should also be the ones to bear the responsibility for the economic consequences. Through this they would take the spread of invasive species by their actions better into account, thus reducing the total risk to the society. The measures presented in the strategy include the study of various financing mechanisms to solve questions relating to invasive species, which would be quite realistic as regards both the polluter-pays principle and the current very tight public finances.

Numerous proposals for measures

The strategy proposal highlights the role of early warning systems and risk assessment. So far no risk assessment concerning invasive species has been made in Finland. According to the strategy, the likelihood of the entry and establishment of invasive species and the harm they may cause should be established using harmonised risk assessment methods. This would allow to target the scarce public resources to species that are estimated to cause the highest costs, as well as to the most cost efficient control measures.

A board should be set up under the Ministry of Agriculture and Forestry, which in the future would be the responsible coordinator for invasive species issues in Finland and the Finnish focal point for invasive species in international contexts. The strategy also emphasises the role of communication both among the authorities and bilaterally between the citizens and authorities. An invasive species portal should be created to offer centralised information for communication, risk assessment, monitoring and prevention needs. Tools should be developed for the prevention of species spread unintentionally in connection with trade and transport, while various targeted actions should be taken, for example, to eradicate the giant hogweed in Finland.

A public hearing relating to the strategy proposal was conducted in February 2011, after which the working group finalised the proposal and submitted it to Minister Sirkka-Liisa Anttila in March 2011. The strategy proposal (in Finnish with a documentation page in English) is available on the website of the Ministry of Agriculture and Forestry at (www.mmm.fi/vieraslajit).

6. RURAL AND REGIONAL POLICY

6.1. Changes in Finnish rural areas

Finnish countryside has gone through various significant changes in the past few decades. Changes in the regional distribution of labour have led to increased specialisation both between the Finnish regions and within the rural areas. The role of the other rural industries as employers has become increasingly important because of the constant decrease in the number of farms and jobs in primary production as a result of the structural change in agriculture. The strongest phase of this change was over by the end of the 1970s. The accession to the EU in 1995 reinforced the regional concentration of agriculture. This is a common phenomenon throughout the developing world.

Rather than the structural change in the livelihoods, in recent decades the rural areas have been affected the most strongly by our ways of using space. For the Finns the countryside is first and foremost a place for living and recreation. As the number of jobs in primary production has decreased, the jobs have moved to towns and population centres. In terms of permanent places of residence, however, the trend has been slower. To a growing extent the countryside is the location for secondary, third or holiday homes, or a place visited for leisure activities or work. The Finns are still active users of the countryside, but in a different way than before.

Organising one's life in multiple places, i.e. residing, working and engaging in other activities in several locations on a regular basis has become an everyday routine for growing numbers of Finns. According to the Rural Barometer done by the MTT Economic Research, commissioned by the Finnish Innovation Fund, in 2011 38% of the Finns had a dual identity: they consid-

ered themselves as both rural and urban. This kind of dual identity seems to become increasingly common at the cost of identifying oneself as purely rural or urban.

The majority of the working-age population in the countryside earn their living from services, just like the urban residents. The proportional share of jobs in the industrial sector is slightly higher in the rural than in the urban areas. Most of the rural working-age population commute to other areas for work. In international comparison our way of using space is quite exceptional, which is reflected in the record high number of summer cottages and holiday homes in Finland: there is one holiday home per 10 inhabitants. Another aspect of this exceptional use of space is that the primary place of residence may be in the countryside and the secondary or third home in a town or city.

The countryside is a particularly attractive place of residence especially in areas that are adjacent to urban areas, where the well-being of the Finns is the highest. In such areas the share of working-age population and the income and health status of the population are above the average, i.e. higher than in urban areas or other types of rural areas (rural heartland areas and sparsely populated rural areas). These distinctions are important to allow an accurate analysis of the large rural areas in Finland and proper understanding and anticipation of the various development paths.

In the Finnish rural policy it is very typical to view the countryside in terms of three types of rural areas. The typology of municipalities is based on a multi-stage method where the factors influencing the classification include variables indicating the rural nature of the municipality, areas where people go to work and variables indicating the regional structure, structure of economic activities, farming operations

and development problems. The analysis made for the typology of the rural areas is considered to reflect the socioeconomic situation and development of the areas so well that the typology is also used for the targeting of various development measures, especially under regional and rural policies, and differentiation of the possible support payments.

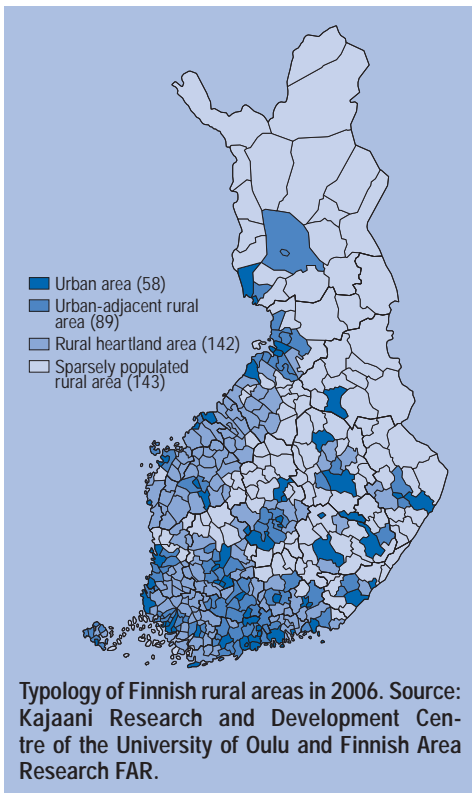
Compared to other regions of Europe, the share of the rural population is very high and population density is extremely low in Finland. This is why rural development policy and actions are highly significant for the whole nation. According to the typology of municipalities from 2006, the 432 Finnish municipalities in 2005 were distributed as follows: 58 urban municipalities, 89 urban-adjacent rural municipalities, 142 rural heartland municipalities and 143 sparsely populated rural municipalities. In 2005 more than 1.3 million Finns lived in municipalities located in the

rural heartland areas and sparsely populated rural areas.

Since the typology of 2006 the structural change of municipalities has progressed rapidly. According to the distribution of municipalities of 2010, the total number of municipalities was 342 and in 2011 it has decreased to 336. In connection with municipal mergers the typology is usually updated so that the type of rural area to which the new municipality is placed is the category to which the more population-rich of the former municipalities belonged. Because an individual municipality cannot belong to more than one type of rural area, municipal mergers weaken the regional accuracy of the typology. As a whole the major changes in the municipal structure causes great pressures to develop a typology of rural areas that is based on spatial data to allow the classification of areas independent of administrative boundaries.

Most of the sparsely populated rural municipalities are in eastern and northern Finland, as well as in certain parts of central Finland and on the south-west coast, where there are numerous small archipelago municipalities. Rural heartland municipalities are typical for the southern and western Finland, while most of the urban-adjacent municipalities are in southern Finland. When the mergers of municipalities are not taken into account, from the typology of rural areas in 1993 the number of rural heartland municipalities has decreased considerably while the numbers of urban-adjacent and sparsely populated rural municipalities have grown. This also tells about the growing differentiation in the development that is taking place in the rural areas.

In general we can say that, on the basis of the socioeconomic situation and development, the challenges for regional development, measured by all indicators, are in practice greater in sparsely populated rural areas than in the rest of the country. Relative to the national average, the develop-

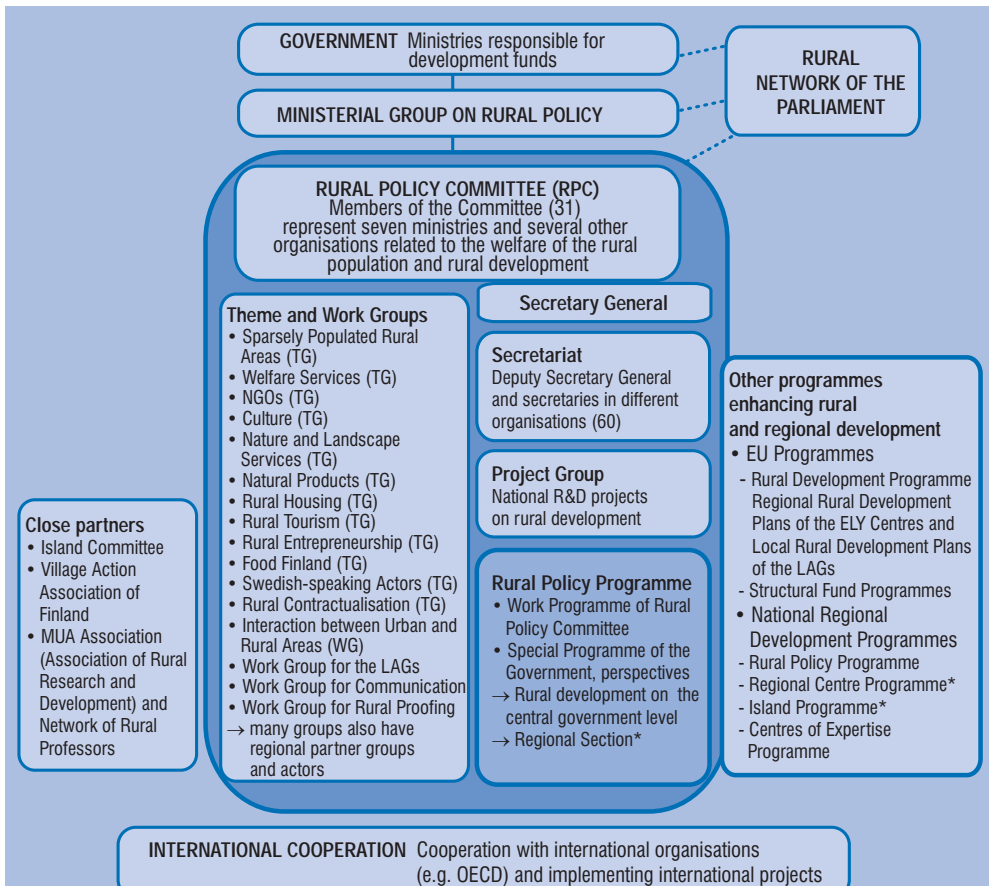


ment challenges of rural heartland municipalities are also considerable. Instead, in the light of socioeconomic factors the situation and development of urban-adjacent rural areas are far more positive. This is why perceiving the countryside as a single uniform area for rural development purposes gives a very misleading picture.

6.2. Finnish rural policy

The core objective of regional policy is to ensure a balanced regional development. Rural policy, in turn, aims to improve the conditions for living and well-being in the

countryside, in particular. National rural policy started to take shape during the 1980s in a situation where the positive impacts of sectoral policies on the countryside were diminishing and there was an obvious threat that the rural perspective was becoming overshadowed by other issues. Resources and ready measures available for rural policy were, however, lacking. As a new policy sector it evolved and adapted to the current circumstances and since then the actors, instruments and priorities of the regional and rural policy have assumed the specific shapes of their own, different from each other. In rural policy the role of the third sector and local action



* From the beginning of 2010 the Regional Section of the Special Rural Policy Programme, Regional Centre Programme, including the urban programmes in the Uusimaa Region, and local and regional implementation of the Island Programme will be merged into a Cohesion and Competitiveness Programme.

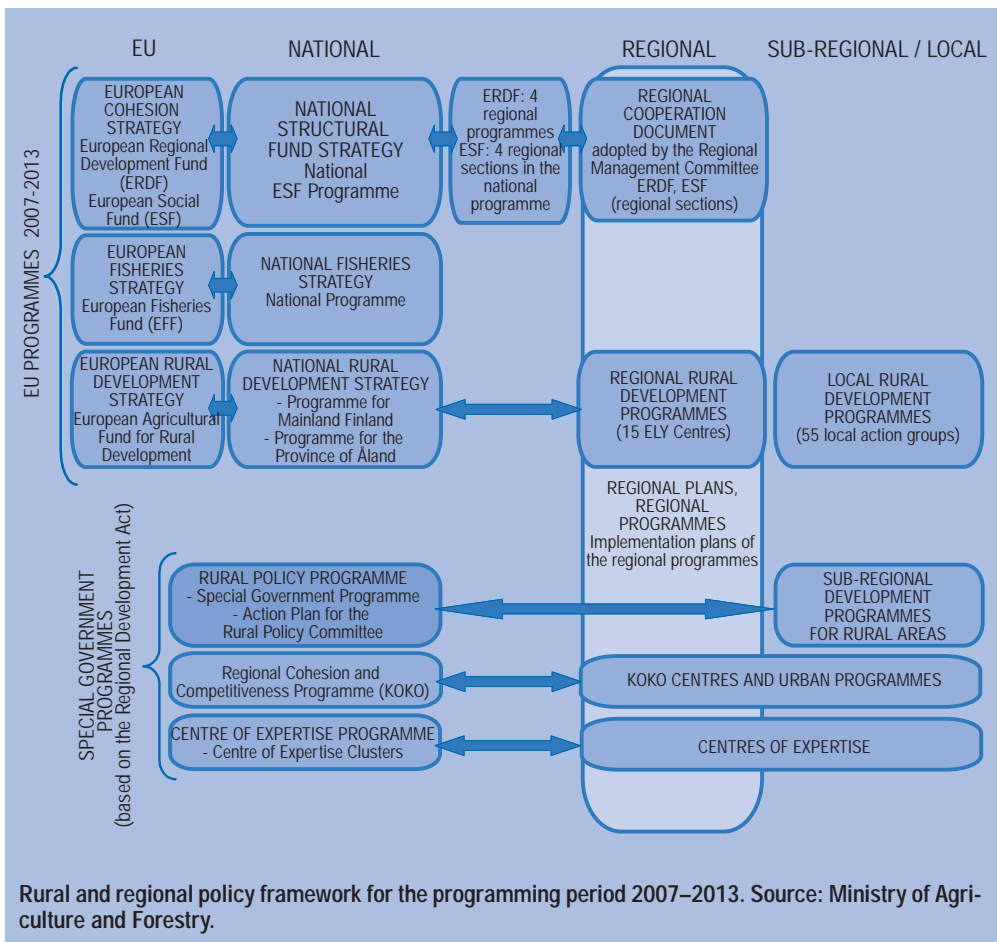
Finnish rural policy network. Source: Ministry of Agriculture and Forestry.

receive more emphasis than in regional policy, priority is given to structures that ensure the commitment of different actors and reinforce this, and the leverage provided by the financial resources used is very strong. In international comparison Finnish rural policy is exceptionally advanced in terms of both structures and policy instruments.

The Finnish countryside and regions are developed under various rural and regional development programmes implemented on different administrative levels by means of national funding as well as co-funding from the EU. National rural policy has evolved with the special aim of highlighting the rural perspective in all choices and decisions in the society which

have either direct or indirect impacts on the countryside. A few years ago the so-called rural proofing (rural impact assessment) was developed as a new tool to be employed in the preparation of and decisions on all issues in the public sector which may have impacts on the countryside. Rural proofing was introduced on the basis of the recommendations included in the OECD Rural Policy Review on Finland.

In the EU context the development of the rural areas and regions is founded on various kinds of policy programmes, usually drawn up to cover a whole programming period. The current period is 2007–2013. As regards rural development the most important programme is



the Rural Development Programme for Mainland Finland, where the EU contribution to the funding comes from the European Development Fund for Rural Development (EAFRD). The action programmes under structural funds (especially European Regional Development Fund ERDF and European Social Fund ESF) include objectives which also concern the rural areas. In rural and regional policy efforts are made to reconcile the action programmes based on EU policies and the national special programmes approved by the Finnish Government in such a way that the special local characteristics and needs are taken into account as well as possible.

In Finland the rural and regional policy development is steered, in particular, by the Rural Development Strategy, Structural Fund Strategy and Rural Policy Programme. The priorities of the Rural Development Strategy are economically and ecologically sustainable and ethically acceptable agriculture and forestry, developing rural enterprise and reinforcing local initiative. The aim of the Structural Fund Strategy is to reinforce the national and regional competitiveness, employment and well-being. The Rural Policy Programme highlights the impacts of decisions made in various sectors of the society on rural areas and reinforces cross-sectoral rural development.

6.3. The role of national rural policy programmes in Finnish rural policy

The most important strategic instrument for rural development in Finland is the Rural Policy Programme. The first programme was drawn up in 1991. The fifth Rural Policy Programme for 2009–2013 is entitled Countryside for Vigorous Finland. First and foremost it is the action programme of the Rural Policy Committee, which is responsible for its preparation.

The Rural Policy Programme compiles

and steers the rural development actions of both the public and private sector and the NGOs. It comprises a broad spectrum of strategies and actions which apart from the different administrative sectors and the public sector in general also touch upon various other partners. The objective of the Rural Policy Programme is to ensure that the countryside stays a good place to work and live in, and that the resources and opportunities of the countryside support the well-being and competitiveness of the whole country even better than before.

The Rural Policy Programme contains a comprehensive description of the state and development challenges of the Finnish countryside. The current programme consists of 15 strategic outlines divided by themes, with more than 140 proposals for measures. The strategic outlines are in line with those of the Government Report on Rural Policy.

The Rural Policy Committee, which prepares the Rural Policy Programme, is a cooperative body appointed by the Finnish Government, comprised of representatives of seven ministries and almost 20 other organisations. At the moment the Committee is chaired by the Permanent Secretary of the Ministry of Agriculture and Forestry. The operative leadership is also placed at the same ministry, but in practice the Committee operates in sectors governed by nine ministries. The task of the Committee is to coordinate rural development actions and promote the efficient utilisation of resources directed to the rural areas. Cooperative arrangements are applied to support national, regional and local rural development work and promote the opportunities to take advantage of the EU co-funded programmes and other rural development tools. The term of the present Committee is from 17 July 2008 until 16 July 2013. It continues the work of the previous Rural Policy Committees, which were appointed by the Ministry of the Interior and the Ministry of Agriculture and Forestry.

The preparation of the next Government Report on Rural Policy for the Finnish Parliament by the previous Government proceeded in line with the Rural Policy Programme. These reports are issued less frequently than the Rural Policy Programme and they do not have the same regularity as the programmes. Both documents share the same strategic outlines, but the programme is more concrete as well as more comprehensive than the Government report. The concrete aspects of the programme include the shorter time span (for the report 2009–2020) and larger number of proposals for measures. Whilst the report is mainly concerned with the central government actors, the programme is also concerned with other levels of public administration as well as with the private and third sector.

The outlines of the Government Report on Rural Policy of 2009 are implemented by the Government Resolution on Rural Policy prepared during 2010 after discussion with the Parliament. The Resolution will be updated by the new Government, which starts its term in 2011.

The Government Resolution on Rural Policy of 2011 outlines and reconciles the rural development objectives and measures in different administrative sectors. The Resolution identifies four main challenges in the operating environment: preparing

for more rapid population ageing in the rural than in urban areas, ensuring access to services in the countryside, seeing to the coverage and condition of transport and communications infrastructure, and promoting the viability of economic activities in the rural areas.

According to the Resolution, the viability and competitiveness of the rural areas call for decisions and measures in which the special characteristics of the countryside are recognised and taken advantage of. The effectiveness of the resources available for regional development is improved by ensuring that the actions by different sectors and actors aim at the same direction. For balanced regional development and equal treatment of citizens the development actions must be targeted according to the different needs of the regions. The Resolution sets out 18 measures to respond to the challenges faced by the rural areas.

The roles of the Rural Policy Programme and Rural Policy Committee in the field of Finnish rural policy are best understood through the concepts of narrow and broad rural policy. Broad rural policy comprises the political outlines, decisions and allocation of resources by different administrative sectors which may have any kinds of impacts on the preconditions for rural development. Narrow rural policy, in turn, refers to actions

Comparison between the old and new rural policy paradigm.

	Old paradigm	New paradigm
Objectives	Harmonisation, farm income, competitiveness of farms	Competitiveness of rural areas, enhancing local resources, utilisation of unused resources
Key sector	Agriculture	Several rural livelihoods (tourism, handicraft, processing and manufacturing industry, IT, etc.)
Main instruments	Support	Investments
Key actors	National governments, producers and producer organisations	All administrative levels (transnational, national, regional and local), all local actors and experts (public, private, NGOs)

Source: OECD 2006.

whose specific and defined purpose is to promote rural development, such as the Rural Development Programme for Mainland Finland under the EAFRD and sections concerning the rural areas under the Structural Fund Programmes. The Rural Policy Programme brings together actors involved in the broad and narrow rural policy and provides a comprehensive picture of the rural development needs and the available measures.

The Rural Policy Programme represents the so-called new rural policy paradigm. According to this, a core principle of the rural policy is that it is area-based: the policy is targeted at the countryside and the whole broad spectrum of different actors. The aim is to improve the viability and functioning of the rural areas starting from their own needs, resources and perspectives. The new paradigm is characterised by administration on several levels, where the top-down steering by the central Government has been replaced by interaction among different administrative levels, NGOs and the private sector. The main difference compared to the “old” rural policy thinking is that the countryside is no longer defined through agriculture. There are large rural areas in Finland with no significant agricultural activities. Agriculture has a role of its own to play in the rural policy paradigm, but this may vary considerably between different kinds of rural areas.

6.4. Socioeconomic role of agriculture in rural areas

Finnish rural thinking was for a long time dominated by agriculture. The reasons for this largely derive from the history. Compared to Central, Southern and Western Europe, the central role of agriculture in preserving the basic population in the rural areas and as the most significant economic activity continued much longer in Finland. In part this was due to political choices,

in part the natural geography and demographic aspects. The settlement of immigrants and veterans to small farms after the Second World War increased the number of people who earned at least part of their living from agriculture at the very same time when elsewhere the trend was the exact opposite. In addition, the sparse population, long distances and lack of (urban) centres indirectly related to these slowed down the appearance of new sources of livelihoods alongside agriculture.

Finland is still a very rural country, where agriculture signifies a number of various things, depending on the type of rural area. According to the distribution of municipalities in 2010, in 2009 36% of the Finnish population lived in one of the three types of rural municipalities. The type of rural areas the Finns now mostly live in is changing gradually. This is also reflected in the policy challenges to which rural development should be capable of responding.

Southern and western Finland, where most of the urban-adjacent rural areas are located, possess the most favourable and diverse natural preconditions for practising agriculture. The local markets function better than in the other types of rural areas, and thanks to the shorter distances it is also easier to work outside the farm. Agricultural production is on the decrease in urban-adjacent rural areas, where the farms are introducing high value added services activities which are not directly linked to agricultural production, such as horse husbandry or farm tourism. Rural heartland areas, in turn, are strong agricultural production areas or rural areas with diverse activities. The majority of the rural heartland municipalities are also located in southern and western Finland. In rural heartland areas larger centres are a little further away, but there are medium-sized centres at a reasonable distance. The situation is quite good as regards the demand for products and services and off-farm employment. In the sparsely populated

Share of agriculture in the labour force and share of farming as in the total income of farms.

	Urban-adjacent rural areas*	Rural heartland areas	Sparsely populated rural areas	Whole country
Share of agriculture in jobs in 2007 (1988)	4.6% (11.1%)	11.4% (21.7%)	12.0% (22.6%)	3.1% (7.5%)
Share of farm income in total income of farms in 2008	36.2%	41.1%	48.4%	41.2%

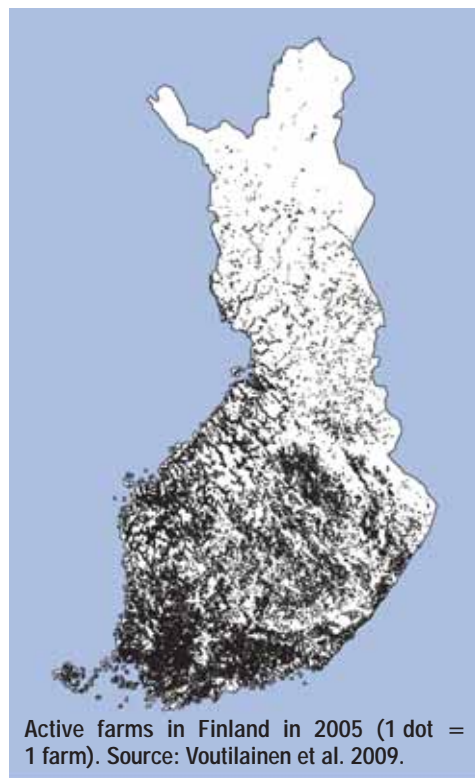
* according to the division of rural areas into three types of 2006 and typology of municipalities of 1 January 2010.
Source: Statistics Finland.

rural areas, mainly in eastern and northern Finland, the natural conditions restrict the practising and opportunities of agriculture the most. More than in the other parts of the country, long distances are a major obstacle to both off-farm employment and local marketing of products and services.

According to the employment statistics of Statistics Finland, in the three types of rural areas, according to the distribution of municipalities in 2010, the share of jobs in agriculture was 9% in 2007, while in 1988 it was still 20%. The role of agriculture as an employer varies considerably between the different types of rural areas so that in urban-adjacent rural areas the proportional share of agriculture of the jobs is much smaller than in the other types of rural areas. In addition, in all types of rural areas and the whole country the share of agriculture in the labour force is decreasing constantly. In 2007 the share of agriculture in the total number of jobs in Finland was a little over 3%, while in 1988 it was 7.5%.

In 2008 the average share of agricultural income in the total income of farms was a little over 40%. The share of agricultural income of the total income of farms is the greatest in sparsely populated rural areas and smallest in urban-adjacent rural areas. Agricultural income also includes farm forestry and other entrepreneurial activities connected to farming practised by diversified farms under the Agricultural Income Tax Act. Of the other entrepreneurial activities of diversified farms about

two-thirds take place under the Agricultural Income Tax Act and one-third under the Act on the Taxation of Trade Income, i.e. the latter is not shown as agricultural income. This means that part of the earnings included in agricultural income in fact derives from other entrepreneurial activities. More than a third of the Finnish farms are so-called diversified farms, i.e. engage in other entrepreneurial activities besides agriculture and farm forestry.



The concentration of farms to fewer and fewer areas continues. In recent decades the number of farms has decreased the most in sparsely populated rural areas, i.e. especially in eastern and northern Finland. On the other hand, it is also in eastern and northern Finland where the sparsely populated rural areas faced with the greatest development challenges have increased the most. Eastern and northern Finland are also particularly strongly affected by the structural change in agriculture. In these areas agriculture is still a significant employer, which is why the consequences of structural change – substituting machines and more advanced technologies for labour – are felt the most strongly.

6.5. Resources of the countryside

Finnish rural areas are becoming more and more differentiated in terms of their socioeconomic profiles, while agricultural production is concentrating to fewer farms and smaller areas. As a whole the proportional significance of agriculture has diminished clearly and in some places it has even become marginalised relative to the other economic activities. In spite of this predominant trend, in certain areas agriculture is still highly important for the local and regional economy. Depending on the area, agriculture and farms may also have quite different roles as regards, for example, the share of agricultural income in the total income of farm households. Even if basic agricultural production is on the decrease, the farms as such may keep their position as locally significant junctions for economic and social activities as they are reorienting their activities.

The basic task of rural and regional policy is to promote a balanced regional development in our country. The sparse population which extends to almost all parts of Finland is a major challenge as

such. In view of the changes it is important to observe that the Finnish countryside is by no means being deserted. Rural areas are still perceived as the most attractive places of residence, and areas which have been losing population are not getting empty, either. In eastern and northern Finland we are thus mainly concerned with a thinning population, not complete desertion of the areas. Our way of life has changed in a manner that is difficult to capture through the statistics on permanent residence alone. Parts of the countryside are becoming places for “popping in”, with specific functions of their own.

The new countryside can be perceived more accurately through the use of space. Urban-adjacent rural areas are to a growing extent used for spacious living and service production. The core of agriculture rests in the rural heartland areas, together with other entrepreneurial activities. Various livelihoods are practised in sparsely populated rural areas often in connection with farms, but also with no link to these. The trump cards for the sparsely populated areas include various natural products, space, peace and quiet – even darkness. Among the strengths in all rural areas are active citizens capable of influencing their own living conditions, functioning democracy, locally mobilised civil society, well-targeted rural policy instruments, and forums for activity. In order to take full advantage of these resources the rural areas must be accessible and basic services must be organised in a way that takes account of the special characteristics of the areas.

When dealing with rural development, perceiving the countryside as a homogeneous whole is not feasible. We need to fully recognise the differentiation processes, and the development tools must be regionally specific and based on the local initiative, in close contact with time and space. In this work Finland is among the tops in the world.

Success stories and promoting enterprise

Kari Mikko Vesala¹ and Hilikka Vihinen²

Today the social significance of small and medium-sized enterprises (SMEs) is widely recognised and policy action is taken to promote enterprise and business activities. The active development policy does not, however, target all enterprises on an equal standing. Among the questions that arise in the contacts between entrepreneurs and the society are who takes the lead and who helps whom.

Our study was concerned with enterprise and the policy to promote it in a predominantly rural sub-regional unit. Special attention was target to the rise of a new kind of enterprise policy alongside the SME policy (see figure). Enterprise policy aims to create environments and facilitating structures that promote entrepreneurship such as clusters of enterprises and centres of expertise, while the means employed in SME policy aim for direct influence to individual enterprises and entrepreneurs (e.g. financing, advisory and training services). Through the programme-based regional policy and rural policy, among other things, the implementation of enterprise policy is linked to various public policy sectors and actors. The policy specifies how the range of SME policy means is to be developed and channelled, as well as the resources needed for this.

Successful enterprises do not use the policy tools offered in the same way: some of them take advantage of all the means available, some of the means offered by both or only of the two types of enterprise policy, while some manage well enough without using the policy means offered.

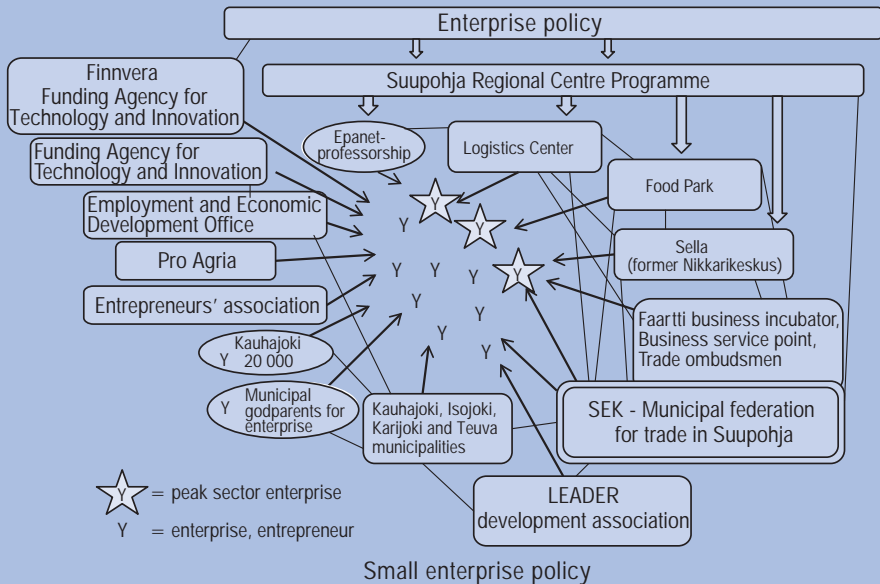
The implementation of enterprise promotion policy was described in Suupohja sub-regional unit and its central municipality Kauhajoki, where enterprise policy has been on the forefront in the business policy setting, partly thanks to regional centre policy. Interviews of entrepreneurs and implementers of promotion policy were analysed to find out how the role of the promotion policy means and actors was reflected in the success stories of the 15 enterprises used as examples and how the relationship between the entrepreneurs and developers was constructed as they told about the promotion policy and its implementation.

The analyses revealed, on the one hand, that the entrepreneurs were active in developing their stakeholder relationships and operating environment and, on the other, that there were great differences between the enterprises as regards their relationship with the promotion policy. Along with the introduction of enterprise policy the entrepreneurs are to a growing extent becoming social and trade policy actors as part of their role as entrepreneurs. At the same time more elements relating to taking the initiative, identification of business opportunities and business development – and thus taking risks – has been incorporated into the role of developers. The implementation of policy programmes open up the role of agents of change in the local economy for the developers. Now that the policy is being made not only through but also with the entrepreneurs, it is particularly important to create an experience of a mutually beneficial relationship between the entrepreneurs and developers, bilateral opportunities for power and influence, and equality among the entrepreneurs.

As they talk from the SME policy perspective the entrepreneurs and developers define mutually opposite positions as actors for themselves and each other. Both parties consider themselves as the active, leading actors, and perceive the other party as

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Entrepreneurs and promoting enterprise in Suupohja. Source: Niska & Vesala 2011, p. 121.

the one being helped or steered. When talking about the enterprise policy aspect the definitions of entrepreneurs and developers for their respective positions are more similar and equal with each other than in the SME discourse. Reconciliation and management of these two perceptions pose a challenge for the promotion efforts from the perspective of both the commitment of the enterprise sector and, more broadly, the local capital of trust.

In policy programmes the entrepreneurs are easily perceived as economic objects alone. In the light of this study the entrepreneurs are active developers of both their own business operations and their stakeholder relations. Besides this they may promote the activities of other enterprises and, for example, construct all this into promoting local enterprise as a whole. Many entrepreneurs are in various ways involved in developing facilitating environments for enterprise, as well as take advantage of these. Through the new enterprise policy the entrepreneurs themselves – not only their organisations – have to a growing extent turned into social and trade policy actors, not only as citizens but through their role as entrepreneurs. The common designation for entrepreneurs as the driving force of the economy does not fully capture this aspect of their role.

Through the new enterprise policy it has become increasingly common that entrepreneurs and developers and parties representing the public sector are both involved in policy implementation. The implementation of enterprise policy rests in various ways on entrepreneurs and their actions. Identification and efficient utilisation of the strengths of specific regions often means that individual enterprises and clusters are used as the base for growth when developing the operating environments. Entrepreneurs taking advantage of business opportunities offered are needed to reach the assumed and intended benefits from the environments that are being developed. Entrepreneurs are also needed as co-financiers of the development projects. The role of entrepreneurs in public policy and the change in this is an essential question in terms of the rural and regional development.

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

	Producer price index of agriculture ²	The index of purchase prices of means agricultural production			
		Total index	Goods and services	Investments	Buildings
2010	111.5	130.1	128.1	136.2	134.6
2009	107.2	126.9	124.1	135.2	131.5
2008	119.9	139.5	141.8	134.3	136.6
2007	109.3	122.1	119.1	129.0	132.1
2006	103.2	116.1	113.7	121.6	120.5
2005	98.9	110.8	108.2	116.8	114.0
2004	101.5	107.1	105.1	111.8	109.5
2003	99.0	104.2	102.5	108.1	106.3
2002	103.7	102.8	101.5	105.5	104.6
2001	105.2	102.2	101.8	103.1	102.4
2000	100.0	100.0	100.0	100.0	100.0

¹ Indices are based on EU classifications.

² Incl. fur production.

Source: Statistics Finland.

Structural change in agriculture.

	Number ¹ of farms 1,000	Average ¹ size of farms, hectares	Number of milk suppliers 1,000	Employed in agriculture ² 1,000 persons	% of employed
2010	63	36.7	11	84	3.4
2009	64	35.9	11	88	3.6
2008	66	35.0	12	88	3.5
2007	67	34.4	13	87	3.5
2006	69	33.3	15	90	3.7
2005	70	33.0	16	91	3.8
2004	72	31.5	17	93	3.9
2003	74	30.6	18	99	4.2
2002	75	30.0	19	106	4.5
2001	77	29.1	21	112	4.7
2000	80	28.0	22	118	5.1
1999	24	121	5.3
1998	88	25.0	26	120	5.4
1997	90	24.0	28	130	6.0
1996	94	22.9	30	133	6.3
1995	100	21.7	32	141	6.7

¹ A farm refers to a unit with more than 1 ha of arable land that practises agriculture or other entrepreneurial activity.

² From 2005 based on new industrial classification TOL 2008.

Sources: Information Centre of the Ministry of Agriculture and Forestry, Statistics Finland.

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
2010 ¹	289	7,900	1,367	3,394
2009 ¹	290	7,850	1,381	2,926
2008 ¹	289	7,767	1,483	3,190
2007 ¹	296	7,796	1,448	3,134
2006 ¹	309	7,646	1,436	3,103
2005 ¹	319	7,505	1,401	3,128
2004 ¹	324	7,404	1,365	3,069
2003 ¹	334	7,251	1,375	3,016
2002 ¹	348	7,117	1,315	3,212
2001 ¹	355	6,932	1,261	3,202
2000 ¹	364	6,786	1,296	3,110
1999 ¹	372	6,443	1,351	3,361
1998 ¹	383	6,225	1,401	3,802
1997 ¹	391	6,183	1,467	4,152
1996 ¹	392	5,993	1,395	4,184
1995 ¹	399	5,982	1,400	4,179
1994	417	5,869	1,298	4,090
1993	426	5,648	1,273	4,025
1992	428	5,613	1,298	3,969
1991	446	5,619	1,344	4,138
1990	490	5,547	1,394	4,845

¹1.5.

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

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

	Nitrogen kg/ha	Phosphorus kg/ha	Potassium kg/ha	F.u.yield (incl. straw) f.u./ha
2009–10	80.3	6.5	18.9	..
2008–09	67.1	5.3	16.2	..
2007–08	78.5	7.8	24.3	..
2006–07	73.5	7.9	24.6	..
2005–06	73.9	8.6	25.3	4,673
2004–05	75.0	9.2	25.9	4,826
2003–04	76.5	9.3	26.4	4,630
2002–03	80.0	9.8	27.8	4,478
2001–02	80.5	10.1	28.3	4,692
2000–01	83.2	10.8	31.1	4,531
1999–00	84.2	10.4	30.5	4,900
1998–99	81.0	11.0	31.1	3,146
1997–98	85.0	11.4	32.6	2,980
1996–97	86.0	11.8	32.5	3,816
1995–96	92.3	16.1	34.3	3,736

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

Results of the total calculation of agriculture in 2000–2010e at current prices, € million.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010e
Rye	14	10	9	9	9	4	11	22	13	4	7
Wheat	78	72	79	77	74	62	77	174	92	63	95
Barley	125	110	96	94	101	109	124	275	153	137	177
Oats, other cereal	95	79	96	70	43	50	75	130	86	53	87
Oilseed crops	18	20	19	18	14	20	34	33	31	50	40
Grass fodder	53	14	10	11	35	19	13	68	43	35	35
Potato and sugar beet	122	131	124	123	123	129	93	99	71	81	112
Leguminous plants and other	13	13	12	9	8	12	19	12	13	19	27
Return on crop production	518	448	447	410	406	404	446	813	501	441	581
Return on cattle husbandry	1,145	1,089	1,159	1,112	1,188	1,153	1,170	1,198	1,357	1,265	1,285
Return on pig husbandry	375	442	474	411	395	410	376	449	456	408	399
Return on poultry	133	148	181	190	190	210	171	195	256	194	186
Sheep and goats	9	17	15	13	11	13	17	26	19	26	25
Return on livestock	1,662	1,695	1,829	1,726	1,784	1,785	1,735	1,868	2,088	1,892	1,896
Return on horticulture	962	992	1,017	954	960	816	893	1,006	1,116	998	1,020
Other return	149	140	178	182	183	188	234	244	241	270	310
CAP support total	383	421	427	421	470	505	548	546	565	568	569
Natural handicap and environment payments	696	702	716	712	731	737	745	770	779	805	805
National, investment subsidy	720	732	764	758	766	786	791	738	733	702	733
Support payments	1,800	1,855	1,907	1,891	1,966	2,027	2,083	2,054	2,077	2,075	2,107
GROSS RETURN	5,091	5,131	5,377	5,163	5,298	5,219	5,391	5,985	6,022	5,676	5,914
Supplies cost											
Fertilisers, liming	197	196	198	189	192	198	201	210	235	335	220
Other crop production costs	411	421	447	423	458	434	411	444	473	473	420
Fuels	241	266	229	236	243	251	300	291	379	303	368
Electricity	116	117	129	150	162	138	192	230	268	251	263
Purchased fodder cost	459	468	507	496	519	493	471	520	610	506	517
Livestock cost	289	308	347	325	342	361	356	383	369	373	336
Machinery cost											
Depreciations on machinery	459	478	511	511	559	566	572	619	683	657	658
Other machinery costs	314	317	341	346	357	352	373	406	437	439	489
Building costs											
Depreciations on buildings	271	271	289	296	309	300	310	355	361	338	339
Other building costs	61	64	65	62	62	56	64	64	70	66	68
Other cost											
Insurances	245	248	261	260	287	288	302	304	295	301	302
Fixed rents	94	101	108	113	112	113	119	122	134	146	148
Other depreciations	48	49	45	42	45	45	46	48	50	50	50
Other costs	337	369	390	392	369	394	388	406	416	418	397
Labour costs											
Wages paid	294	285	297	289	282	255	266	308	354	326	330
Wage claim	1,384	1,341	1,781	1,731	1,734	1,728	1,589	1,561	1,524	1,491	1,518
Interest costs											
Interest expenses	135	144	132	120	117	124	134	176	192	154	130
Interest claim on own capital	493	489	493	496	527	522	545	575	611	611	607
PRODUCTION COST	5,847	5,930	6,569	6,474	6,675	6,616	6,639	7,020	7,459	7,238	7,159
ENTREPRENEURIAL PROFIT	-734	-779	-1,170	-1,290	-1,356	-1,374	-1,231	-1,017	-1,415	-1,546	-1,230
ENTREPRENEURIAL INCOME	1,142	1,050	1,104	937	905	876	903	1,119	720	556	896
PROFITABILITY COEFFICIENT	0.61	0.57	0.49	0.42	0.40	0.39	0.42	0.52	0.34	0.26	0.42

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

	2004	2005	2006	2007	2008	2009	2010e
CROP PRODUCTION							
Rye	5.1	3.4	3.2	10.7	9.9	3.7	6.8
Wheat	54.6	53.3	50.9	88.6	88.2	64.0	83.9
Barley	67.1	64.3	73.9	141.2	130.8	93.7	111.1
Oats	36.9	33.5	31.9	66.5	72.2	43.9	59.1
Potatoes	51.2	47.0	33.1	59.8	43.7	51.9	62.5
Potatoes for processing	19.2	19.6	17.2	19.1	21.3	20.1	0.0
Sugar beet	60.9	51.4	42.8	22.8	19.1	19.0	19.4
Oil plants	13.2	18.7	26.7	33.5	29.5	23.7	51.6
Other crop production	10.8	8.1	9.1	11.0	9.5	10.0	4.7
Total	319.0	299.3	288.7	453.3	424.1	329.9	399.2
ANIMAL PRODUCTION							
Milk	844.0	814.2	811.7	869.8	981.5	899.9	882.9
Beef (excl. veal)	185.0	177.7	184.6	195.3	197.4	204.6	201.3
Pork	246.1	261.6	262.0	280.6	312.9	290.9	279.1
Mutton	1.3	1.3	1.4	1.6	1.6	1.8	1.8
Poultry meat	111.1	104.5	100.9	112.0	134.2	120.5	118.7
Eggs	41.8	34.9	35.4	43.7	55.2	48.2	55.4
Other animal production	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total	1,429.6	1,394.4	1,396.1	1,503.2	1,683.0	1,566.1	1,539.5
Gross return at market prices	1,748.6	1,693.7	1,684.9	1,956.5	2,107.2	1,896.1	1,938.7
COMPENSATIONS FOR CROP DAMAGES	2.7	19.6	1.0	5.2	1.6	5.4	0.3
INCOME FROM RENTS							
Means of production	36.5	36.8	37.4	38.4	20.0	20.0	20.2
Buildings and land	29.7	30.2	31.7	31.8	76.4	79.5	84.6
Total	66.2	67.0	69.1	70.2	96.4	99.5	104.8
Energy tax refund total					29.8	12.0	17.2
OTHER RETURN TOTAL	68.9	86.6	70.1	75.4	127.7	116.9	122.3
SUPPORT PAYMENTS							
Single farm payment scheme			489.6	485.5	488.2	493.8	488.0
CAP subsidy for fields crops	366.4	381.5	5.8	5.5	5.0	5.2	5.3
CAP subsidy for livestock	88.1	142.3	51.1	32.6	32.6	32.0	32.8
Other CAP payments			29.7	15.8	33.2	22.2	17.1
LFA	420.2	418.3	417.1	417.3	417.9	416.7	418.8
Environmental subsidies	290.3	284.1	289.9	303.2	317.7	337.7	334.4
Subsidy for animal units (nordic subsidy)	114.1	99.7	99.3	101.0	101.0	104.4	101.3
Other national subsidies for animals	78.9	65.1	59.5	56.8	50.6	50.1	43.4
Other national subsidies for field areas	148.1	221.7	230.3	225.7	190.3	194.0	216.8
Production subsidies							
- milk	228.0	185.5	162.9	166.8	170.1	173.5	180.7
Subsidy paid by the common measures of the EU	1,165.0	1,226.2	1,283.2	1,259.8	1,294.6	1,307.6	1,296.7
National subsidies	569.1	572.0	551.9	550.3	512.0	521.9	542.1
Total subsidies	1,734.1	1,798.2	1,835.1	1,810.1	1,806.6	1,829.6	1,838.6
GROSS RETURN TOTAL	3,551.6	3,578.4	3,590.1	3,842.0	4,041.5	3,842.5	3,899.6

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

	2004	2005	2006	2007	2008	2009	2010e
COSTS							
Fertilizers	166.5	169.9	175.2	176.6	291.9	169.0	172.5
Lime	20.0	21.2	26.9	20.2	25.8	29.9	24.3
Feed concentrates	350.5	341.0	335.8	376.1	430.4	362.6	360.8
Feed conserving chemicals	21.6	22.2	23.2	24.1	25.4	25.6	26.0
Plant protection products	60.2	64.1	61.0	60.1	73.5	86.1	71.0
Purchased seeds	57.5	60.4	57.4	56.7	68.9	59.8	57.7
Fuel and lubricants	157.5	199.6	219.8	228.9	309.0	224.4	292.1
Electricity	80.0	78.9	83.9	89.7	107.1	114.3	124.1
Overhead costs	294.1	304.5	318.1	329.5	344.0	347.4	353.3
Hired labor costs							
- wages	92.1	97.6	100.0	105.0	104.4	108.9	113.0
- social expenses	63.2	66.8	68.6	71.9	69.9	74.7	77.5
Machinery and equipment expenses							
- depreciations	381.3	402.2	417.4	432.6	461.9	479.8	481.0
- maintenance	155.0	160.0	168.5	174.2	182.2	189.8	198.6
Equipment	45.8	48.3	50.1	52.0	55.5	57.6	57.8
Building expenses							
- depreciations	243.1	251.0	264.4	289.9	299.8	288.8	295.6
- maintenance	43.5	44.9	46.6	50.0	51.0	51.0	52.4
Ditches, bridges, etc.							
- depreciations	70.2	73.1	77.0	84.5	87.3	84.2	84.9
- maintenance	22.1	23.0	23.9	25.6	26.1	26.1	26.3
Interest payment	128.4	122.1	122.7	140.0	136.6	123.5	107.2
Rent expenses							
- means of production	41.5	42.2	43.0	44.0	22.9	22.0	22.3
- buildings and land	82.1	84.2	88.3	88.7	147.2	153.2	162.3
Farmers' share of cost from							
- accident insurance payment	11.7	11.6	11.8	12.1	10.2	10.6	10.6
- outside help	15.6	16.2	16.0	16.4	15.7	16.4	16.4
- day-off scheme	5.2	5.5	6.5	5.7	6.6	7.5	7.5
TOTAL COSTS	2,608.8	2,710.8	2,806.2	2,954.4	3,353.2	3,113.1	3,195.2
FARM INCOME EXCL. HORTICULTURE	942.8	867.6	783.9	887.7	688.3	729.4	704.4

Gross return of horticulture at current prices, million euros.							
	2004	2005	2006	2007	2008	2009	2010e
FIELD PRODUCTION							
Vegetables	80.0	76.2	82.1	99.7	96.6	102.2	100.2
Berries and fruits	37.2	35.6	37.0	46.7	55.4	54.2	39.8
Others	21.2	21.2	21.2	22.3	22.3	24.5	24.5
Total	138.4	133.0	140.3	168.6	174.3	180.8	164.5
GREENHOUSE PRODUCTION							
Ornamental plants	104.8	96.6	93.8	98.7	99.0	97.5	96.3
Vegetables	119.0	124.3	140.8	135.9	147.7	150.4	150.2
Total	223.8	220.8	234.6	234.6	246.7	247.8	246.5
Gross return at market prices	362.2	353.8	375.0	403.2	421.0	428.6	411.0
SUBSIDIES							
Subsidies for greenhouses	40.1	40.1	39.1	38.2	37.3	37.6	36.5
Subsidies for field production	2.0	2.0	2.0	1.9	1.8	1.9	2.1
Other subsidies	11.8	11.9	14.6	19.1	18.9	18.9	19.5
Total	53.9	54.0	55.8	59.2	58.1	58.3	58.0
GROSS RETURN TOTAL	416.1	407.8	430.7	462.4	479.0	487.0	469.0
COSTS							
Fertilizers and lime	7.8	8.2	8.5	8.9	15.4	11.5	11.5
Plant protection products	5.6	5.5	5.3	5.2	5.6	6.3	5.5
Seeds, seedlings, plants	13.4	13.9	13.6	14.5	17.0	16.2	15.7
Other material	35.7	36.7	38.6	40.4	48.1	48.6	49.4
Hired labor costs	74.7	75.9	79.7	80.2	79.9	79.9	82.9
Fuel and lubricants	17.8	23.4	24.1	23.8	31.0	22.5	27.6
Electricity	21.8	21.5	23.2	24.2	27.0	28.5	30.3
Interests paid	14.5	13.5	13.5	14.1	14.1	13.6	11.8
Depreciation of machinery	23.3	24.7	25.4	26.4	28.2	29.5	29.6
Depreciation of buildings	21.7	22.5	23.8	26.1	27.0	25.9	26.5
Depreciation of ditches, etc.	1.8	1.9	1.9	2.1	2.2	2.3	2.3
Other costs	50.5	52.1	53.7	55.9	58.2	59.3	59.8
TOTAL COSTS	288.6	299.8	311.3	321.7	353.8	344.3	353.0
HORTICULTURAL INCOME	127.6	108.0	119.4	140.7	125.2	142.7	116.0

Total calculation of agriculture (incl. horticulture) at current prices, million euros.							
	2004	2005	2006	2007	2008	2009e	2010e
RETURN ON AGRICULTURE	3,551.6	3,578.4	3,590.1	3,842.0	4,041.5	3,842.5	3,899.6
RETURN ON HORTICULTURE	416.1	407.8	430.7	462.4	479.0	487.0	469.0
RETURN, TOTAL	3,967.7	3,986.3	4,020.8	4,304.4	4,520.6	4,329.5	4,368.6
COSTS OF AGRICULTURE	2,608.8	2,710.8	2,806.2	2,954.4	3,353.2	3,113.1	3,195.2
COSTS OF HORTICULTURE	288.6	299.8	311.3	321.7	353.8	344.3	353.0
COSTS, TOTAL	2,897.3	3,010.6	3,117.5	3,276.1	3,707.0	3,457.5	3,548.2
AGRICULTURAL INCOME	1,070.4	975.6	903.3	1,028.4	813.6	872.0	820.3

Agricultural support¹.

SUPPORT FINANCED COMPLETELY OR PARTLY BY THE EU IN 2011, €/ha or €/unit

Aid area	A	B	C1	C2	C2north	C3	C4
DECOUPLED CAP PAYMENTS, €/ha							
Single payment (regional flat-rate payment), €/ha	248.6	202.5	202.5	167.98	167.98	167.98	167.98
Farm-specific top-ups:							
Farm specific top up for bulls, €/livestock unit	44.1	44.1	44.1	44.1	44.1	44.1	44.1
Farm specific top up for steers, €/livestock unit	31.5	31.5	31.5	31.5	31.5	31.5	31.5
Farm specific top up for starch potato, €/tonne	12.38	12.38	12.38	12.38	12.38	12.38	12.38
Additional payment for milk, €/tonne of the reference quantity	17.14	17.14	17.14	17.14	17.14	17.14	17.14
Farm specific top up for sugar beet, €/tonne	92.82	92.82	92.82	92.82	92.82	92.82	92.82
PROTEIN AND OILSEED CROPS PREMIUM²	50	50	50	50	50	50	50
CAP LIVESTOCK PREMIUM, €/animal							
Beef premium, bulls and steers	240	240	132	132	132	132	132
Beef premium, suckler cows and suckler cow heifers	160	160	80	80	80	80	80
Dairy cow premium	150	150	-	-	-	-	-
Ewe premium ³	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Quality premium for slaughter lambs ⁴	23	23	23	23	23	23	23
LFA SUPPORT, €/ha⁵							
LFA ⁶ - basic payment	150	200	200	210	210	210	210
- additional payment for livestock farms	80	80	80	80	80	80	80
ANIMAL WELFARE PAYMENT, €/LU							
		Basic conditions		Additional conditions			
Bovines		17.50		3.58–21.29			
Pigs		5.00		1.53–13.29			
ENVIRONMENTAL SUPPORT, €/ha							
		Crop producing farm			Livestock farm		
Cereal, oilseed crops, protein crops, grasses		93			107		
Group 1 horticultural crops (outdoor vegetables etc.)		450			450		
Group 2 horticultural crops (berries and fruits)		438			438		
Nature management fields (perennial grasses)		170			170		
Nature management fields (biodiversity)		300			300		
Certain seed spice plants		181			181		

Additional agri-environment measures: support areas A, B and C: reduced fertilisation 10 €/ha, more accurate nitrogen fertilisation of arable crops 23 €/ha, manure spreading during growing season 27 €/ha, plant cover in winter and reduced tillage 11 €/ha, nutrient balances 18 €/ha.

Additional measures only for areas A and B: plant cover in winter 30 €/ha, intensified plant cover in winter 45 €/ha, crop diversification 24 €/ha, extensive grassland production 55 €/ha and cultivation of catch plants 13 €/ha.

Extensive grass production 55 €/ha (support areas A and B), 49 €/ha (support area C).

Additional measures for horticulture (support areas A, B and C): more accurate nitrogen fertilisation of horticultural crops 90 €/ha, use of cover for perennial horticultural crops 256 €/ha and use of pest monitoring methods 144 €/ha.

Contracts concerning special agri-environment measures: support level 54–450 €/unit of payment.

¹ Includes payments for main products, which means that the table does not cover all support payments.

² The final level of the premium is determined according to the approved total area. Protein crops which entitle to the premium are field pea (food and fodder pea), field bean and sweet lupin. Mixtures containing more than 50% of the protein crop seed in the total amount of seed sown are also eligible. Premium is paid for the following oilseed crops: winter oilseed rape, winter turnip rape, spring oilseed rape, spring turnip rape, sunflower, oil flax, oil hemp and gold of pleasure (*Camelina sativa*). The premium is subject to the condition that at least 10% of the arable area of the farm is under the eligible crops or mixtures.

³ Milk production animals 8.4 €/animal. In addition, supplement to less-favoured farming areas 3.5 €/ewe.

⁴ Premium is granted on the basis of slaughterings notified to the sheep and goat register for lambs with a carcass weight of at least 18 kg. The final level of the premium is determined when the final number of lambs slaughtered is known; this level is calculated assuming that about 38,000 lambs are slaughtered.

⁵ In LFA scheme livestock farm is a farm with minimum stocking density of 0.4 LU/ha or the farm has at least 10 LU and the minimum stocking density is 0.2 LU/ha for the whole commitment period

⁶ Top-ups to LFA payments are cut due to payment ceilings. In 2009 the payments were 98.3% of the maximum per hectare.

	2006	2007	2008	2009	2010	2011
	Unit	€/unit	€/unit	€/unit	€/unit	€/unit
NATIONAL SUPPORT FOR AGRICULTURE AND HORTICULTURE						
NATIONAL AID FOR SOUTHERN FINLAND, NORTHERN AID AND AID FOR CROP PRODUCTION						
Aid per livestock unit						
Aid for animal husbandry, suckler cows						
A and B	€/LU	80	77	73	83	83
C1	€/LU	296	295	295	300	300
C2	€/LU	296	295	295	300	300
C2north. and archipelago	€/LU	372	371	371	376	376
C3	€/LU	447	446	446	451	451
C4	€/LU	632	631	631	636	636
Aid for animal husbandry, male bovines >6 months						
A and B	€/LU	208	199	187	187	187
C1	€/LU	417	414	414	414	422
C2	€/LU	425	422	422	422	430
C2north. and archipelago	€/LU	501	498	498	498	506
C3	€/LU	577	574	574	574	582
C4	€/LU	762	759	759	759	767
Aid for animal husbandry, ewes and goats						
A and B	€/LU	197	194	184	184	184
C1	€/LU	399	390	390	390	390
C2	€/LU	407	398	398	398	398
C2north. and archipelago	€/LU	483	474	474	474	474
C3P1–P2	€/LU	758	664	664	664	664
C3P3–P4	€/LU	839	745	745	745	745
C4P4	€/LU	1,049	956	956	956	956
C4P5	€/LU	1,049	956	956	956	956
Aid for animal husbandry, pigs						
A and B	€/LU	206	199	174	*)	*)
C1	€/LU	220	210	210	**)	**)
C2	€/LU	221	213	213	**)	**)
C2north. and archipelago	€/LU	302	293	293	**)	**)
C3	€/LU	302	293	293	**)	**)
C4	€/LU	302	293	293	**)	**)
Aid for animal husbandry, hens						
A and B	€/LU	203	201	172	*)	*)
C1	€/LU	206	201	204	**)	**)
C2	€/LU	206	204	207	**)	**)
C2north. and archipelago	€/LU	292	290	293	**)	**)
C3	€/LU	359	357	360	**)	**)
C4	€/LU	359	357	360	**)	**)
Aid for broilers and fattening poultry hens						
A and B	€/LU	191	187	157	*)	*)
C1	€/LU	196	185	171	**)	**)
C2	€/LU	201	190	177	**)	**)
C2north. and archipelago	€/LU	288	277	263	**)	**)
C3	€/LU	288	277	263	**)	**)
C4	€/LU	288	277	263	**)	**)

- Support levels for 2006–2007 are final. Support levels for 2008–2011 may change due to payment ceilings.

*) As from 2009 support paid as decoupled payment according to the farm-specific reference quantity of 2007. From 2009 the amount of support decreases by about 6.5% when aid per hectare for livestock farms is taken into account.

**) As from 2009 support paid as decoupled payment according to the farm-specific reference quantity of 2007. The same amount as in 2008 is paid up to 200 LU. In support areas C1 and C2 this corresponds to 286 sows or 867 fattening pig places (with an assumed three production batches a year), 16,000 hen places and 42,000–43,000 broiler places. For LUs exceeding 200 the payment is the same as in support areas A and B.

	Unit	2006 €/unit	2007 €/unit	2008 €/unit	2009 €/unit	2010 €/unit	2011 €/unit
Northern aid paid for slaughtered animals							
Male bovines C3–C4							
P1–P2	€/animal	131	131	131	131	131	131
P3–P4	€/animal	182	182	182	182	182	182
P5	€/animal	333	333	333	333	333	333
Heifers							
A and B	€/animal	121	135	144	114	144	144
C1	€/animal	270	269	269	269	299	299
C2	€/animal	270	269	269	269	299	299
C2north. and archipelago	€/animal	319	318	318	318	348	348
C3	€/animal	361	360	360	360	390	390
C4	€/animal	447	446	446	446	476	476
Production aid for milk							
A and B	cents/l	3.3	3.5	3.5	2.8	4.0	2.8
C1	cents/l	7.6	8.4	7.8	7.6	7.7	7.7
C2	cents/l	8.2	9.0	8.5	8.3	8.4	8.3
C2north.	cents/l	9.5	10.1	9.5	9.3	9.4	9.4
C3P1	cents/l	12.5	13.1	12.5	12.3	12.4	12.4
C3P2	cents/l	14.2	14.8	14.2	14.0	14.1	14.1
C3P3–P4	cents/l	16.8	17.4	16.8	16.6	16.7	16.7
C4P4	cents/l	21.5	22.1	21.5	21.3	21.4	21.4
C4P5	cents/l	30.7	31.1	30.7	30.5	30.6	30.6
Aid for crop production							
C1 area ¹							
Wheat	€/ha	60	57	47	47	47	47
Rye	€/ha	112	112	112	112	150	150
Malting barley	€/ha	70	70	70	70	-	-
Oil seed plants	€/ha	100	100	100	100	120	120
Starch potatoes	€/ha	133	133	133	133	133	133
Vegetables grown in the open	€/ha	348	348	348	348	348	348
Other arable crops excl. cereals	€/ha	100	100	100	100	120	120
C2 and C2north. areas ¹							
Wheat	€/ha	60	57	47	47	47	47
Rye	€/ha	112	112	112	112	150	150
Malting barley	€/ha	70	70	70	70	-	-
Oil seed plants	€/ha	27	27	27	27	47	47
Starch potatoes	€/ha	133	133	133	133	133	133
Vegetable grown in the open	€/ha	348	348	348	348	348	348
Arable crops excl. cereals	€/ha	27	27	27	27	47	47
C3 and C4 areas							
Vegetable grown in the open	€/ha	348	348	348	348	348	348

- Support levels for 2006–2008 are final. Support levels for 2009–2011 may change due to payment ceilings.

¹ Northern aid.

	Unit	2006 €/unit	2007 €/unit	2008 €/unit	2009 €/unit	2010 €/unit	2011 €/unit
Aid for special crops in southern Finland							
A and B areas							
Starch potatoes	€/ha			105	100	100	100
Vegetable grown in the open	€/ha			105	100	100	100
Aid per hectare of livestock farms							
A and B areas							
	€/ha			33	30	30	36
National aid for sugar beet	€/ha	60	367	350	350	350	350
General area payment C2–C4							
Cereals and other arable crops							
C2, C2north and archipelago	€/ha	30	30	30	30	33	33
C3	€/ha	46	46	46	46	49	49
C4	€/ha	97	97	97	97	100	100
Other crops							
C2, C2north. and archipelago	€/ha	35	35	35	35	33	33
C3	€/ha	51	51	51	51	49	49
C4	€/ha	102	102	102	102	100	100
General area payment for young farmers C1–C4	€/ha	32	36	36	36	36	36
Aid for greenhouse products A and B							
over 7 months	€/m ²	11.4	11.3	11.0	10.9	11.4	11.4
2–7 months	€/m ²	4.3	4.1	4.0	4.0	4.4	4.4
Aid for greenhouse products C							
over 7 months	€/m ²	11.4	11.3	11.3	11.2	11.7	12.3
2–7 months	€/m ²	4.8	4.3	4.3	4.3	4.7	4.9
Northern storage aid for horticulture products							
A and B							
Storages with thermo-control system	€/m ³	12.0	11.0	13.6	14.2	14.2	14.2
Storages without thermo-control system	€/m ³	8.3	6.8	8.4	8.8	8.8	8.8
C areas							
Storages with thermo-control system	€/m ³	14.2	14.2	14.2	14.2	14.2	14.2
Storages without thermo-control system	€/m ³	9.8	8.8	8.8	8.8	8.8	8.8

- Support levels for 2006–2007 are final. Support levels for 2008–2011 may change due to payment ceilings

Conversion coefficient of livestock units in national aid

Livestock unit	Livestock unit	Livestock unit
Suckler cows	1 She-goats	0.48 Farmed mother mallards and pheasants
Suckler cow heifers, over 2 years	1 Sows, boars	0.7 Horses
Suckler cow heifers, 8 months–2 years	0.6 Chickens, incl. mother hens	0.013 - breeding mares (horses and ponies)
Bulls and steers, over 2 years	1 Broilers	0.0053 - Finnhorses, at least 1 year
Bulls and steers, 6 months–2 years	0.6 Broiler mothers	0.025 - other horses 1-3 years
Ewes	0.15 Mother geese, ducks and turkeys	0.026

Establishment of livestock units for fattening pigs, young breeding sows, young breeding boars, turkeys, geese, ducks and farmed mallards and pheasants

13 slaughtered fattening pigs	1 LU	585 slaughtered ducks	1 LU
13 young sows or boars sold for breeding	1 LU	1,375 slaughtered farmed mallards	1 LU
223 slaughtered turkeys	1 LU	1,375 slaughtered farmed pheasants	1 LU
325 slaughtered geese	1 LU		

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