



# **FINNISH AGRICULTURE IN 1990**

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# **FINNISH AGRICULTURE IN 1990**

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MAATALOUDEN TALOUDELLINEN TUTKIMUSLAITOS  
AGRICULTURAL ECONOMICS RESEARCH INSTITUTE, FINLAND  
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## Abstract. Finnish agriculture in 1990

1990 was a good year for agriculture in Finland. The area under cultivation was about the same as in the previous year. Weather conditions in the summer were favorable, despite the drought in the early part of the season. The total yield was 5,944 mill. f.u. and the hectarage yield 3,142 f.u. The hectarage yields of almost all crops were higher than ever, and the quality was excellent.

Livestock production increased slightly last year. The amount of milk delivered to dairies was 2,598 mill. liters, which is 2% more than in 1989. Pork production rose by 5% and the export ceiling was exceeded by 14 mill. kg. Beef production also increased by about 5%. Farm income rose by 21%.

A new Farm Income Act came into effect last year. As the production ceilings were lowered, it has the greatest impact on the responsibility of agriculture for exports. The share of agriculture of the export costs rose to almost FIM 800 mill. The change was remarkable because in 1989 the production ceilings were not exceeded at all.

The responsibility of agriculture for exports was covered through taxes on fertilizers, feed

and milk fat, marketing fees for milk and pork, as well as various smaller charges. These amounted to altogether FIM 670 mill. The tax on phosphorus, which should remain a purely environmental tax, caused additional strain to agriculture. In 1991 the responsibility for exports will be at least as high as last year.

An attempt is being made to adapt agriculture to the tightening international situation. Production is restricted through fallowing that is prescribed by law, according to which each farm has to leave fallow 15% of the arable land area or it has to pay an export cost charge of FIM 1,000/hectare. The voluntary measures to reduce the production of milk and eggs were intensified at the turn of the year. A special effort is made to reduce milk production by 10-12%.

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**Index words:** Finnish agriculture, production, price, income, yields, policy.

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## Preface

In 1990 the GATT and EES negotiations cast a shadow over agriculture's prospects for the future. The GATT negotiations, in particular, seemed to threaten the Finnish farmer as the large export countries are demanding liberalization of the foreign trade of agricultural products, or at least a notable decrease in border protection. No solutions were reached, however, which means that Finnish agriculture got some more time to adapt itself to the future conditions.

Last year was a good one from the viewpoint of agriculture proper. The yield was record high, and the quality was also good. Livestock production increased as well, which led to a considerable increase in the export cost charges collected from agriculture. Towards the end of the year the measures to restrict production were tightened up. In 1991 about 15% of the arable land area will be left fallow.

This publication presents a brief overview of Finnish agriculture in 1990. Statistics are based on the situation in mid-January, and, consequently, many figures are still preliminary or estimates. Especially agricultural income involves many uncertain factors. I hope, however, that the preliminary survey presented here is sufficiently accurate.

Chapter III on Finnish agricultural policy is very condensed, and it is not possible to include all details. Some of the data in this chapter is also only preliminary. Some parts of the publication have been kept as before because no major changes have occurred in certain issues. Statistical data has naturally been brought up to date.

I wish to thank Jaana Ahlstedt, Ossi Alamaantila, Marja Hokkanen, Helena Jokinen, Jukka Kola and Juha Marttila from the Research Institute and Helena Serén from the National Board of Agriculture for their assistance in preparing this publication. I also thank Jaana Kola for the English translation.

The author alone should be held responsible for possible mistakes and defects. Also, the judgements and viewpoints presented here are those of the author, and do not necessarily represent the views of the Research Institute or the official agricultural policy.

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Lauri Kettunen

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# I

## OVERVIEW OF AGRICULTURE IN FINLAND

### 1. Agriculture and the national economy

#### 1.1. Gross domestic product and investments

In Finland agriculture proper accounts for only 3 % of the gross domestic product. An abundance of purchased inputs, e.g. fertilizers, machinery, fuel, services, etc., is used in agriculture, and the share of farmer's income is only about a third of the value of agricultural production. The total food chain, which, apart from farmers, includes the manufacturing of produc-

tion inputs, food industry, and trade, is much larger. Food accounts for about one fifth of consumer expenditure, which also illustrates the share of food chain in the whole national economy.

The share of agriculture in GDP has continuously been on the decrease because agricultural production has not grown as much as production in other sectors. This is caused by the fact that consumption of food stuffs has increased slowly, and production for export is not profitable.

The share of agriculture of the employed labor force is over 7% (Appendix 2), i.e. over two times its share of the GDP. This reflects the low income level in agriculture, but it should be noted

*Table 1. Gross domestic product (in producer price) and investments in the whole national economy and in agriculture.*

Year	Gross domestic product			Investments		
	total FIM bill.	agriculture FIM bill.	%	total FIM bill.	agriculture FIM bill.	%
1981	195.29	7.65	3.9	54.69	3.51	6.4
1982	218.82	9.39	4.3	60.99	4.29	7.0
1983	246.33	11.40	4.6	70.05	4.68	6.7
1984	275.24	12.44	4.5	73.43	4.61	6.3
1985	298.67	12.43	4.2	80.05	4.80	6.0
1986	315.90	13.05	4.1	83.51	4.59	5.5
1987	344.93	10.93	3.2	93.27	4.25	4.6
1988	384.46	11.01	2.9	111.05	4.54	4.1
1989e)	431.00	13.39	3.1	135.92	5.19	3.8

*e) estimate*

*Source: Statistical Yearbook of Finland (from various years) and Economic Survey 1990).*



that only about half of farmers' total income comes from agriculture, and many farmers work partly in other sectors. The statistics may not give a correct picture of the work contribution of agriculture and its significance as an employer. There is no more labor force available in agriculture for the needs of the other sectors.

Agricultural investments are about 4% of the investments of the whole national economy, which is proportionally more than its share of the domestic product implies. This is probably a result of the strong structural change in agriculture, and, in general, of the fact that agriculture is a very capital intensive industry. It is also notable that in the 1980s investments have been proportionally higher than in the 1970s. The turning point has probably been reached, however, and there are some indications of a decrease in investments. The number of farms as well as production are on the decrease, and, as a result, fewer investments are needed.

## 1.2. Economic growth

In 1990 an essential change occurred in the growth of Finnish economy. The growth of the gross domestic product was only 1%, while in the previous year it was over 5%. According to forecasts, the growth will stop completely in 1991. Thus the steady and quite strong growth that started in 1979 has come to an end. Towards the end of the year, quite gloomy estimates were presented concerning a deep depression in the next few years.

There are many reasons for the change. In 1988 and 1989 the growth was too strong, which led to overheating in the economy. This caused a shortage of labor force and, as a result, wages increased more than the agreements would have required. In 1990 the wage drift was still 4%, which doubled their increase despite the fact that a moderate raise in the income level had been set as a target. The competitiveness of industry in the foreign markets decreased considerably, and the growth in exports remained small. On the other hand, the construction sector is returning to a normal level after the boom in 1988 and

1989. In the early part of 1990 industry was still working with its full capacity, but towards the end of the year economic difficulties started to show in the form of lay-offs and bankruptcies.

The situation in the labor market is weakening, but it is not very bad yet. At its lowest, the unemployment ratio was only 3.1% at the end of 1989, and in many sectors a shortage of labor force made it impossible to increase production. In the long run, the shortage of labor force is still considered a serious problem, even if the unemployment ratio rose to 4% in 1990. Internationally, employment situation is quite good in Finland, and it is clearly better than in the industrialized countries on the average. The shortage of labor force has been a restricting factor in maintaining economic growth. There is work to be done, but the training of the unemployed is not suitable for the vacant jobs. The labor market is not flexible enough, neither for the part of entrepreneurs nor employees.

Especially in Helsinki area the shortage concerns all kinds of labor force, but as far as skilled labor force is concerned, the shortage affects the whole country. It is hard to find enough employees especially to the social branch of the public sector. Increase of vacancies has mainly occurred around Helsinki, where, for example, shortage of housing makes it very difficult to get labor force from other parts of the country.

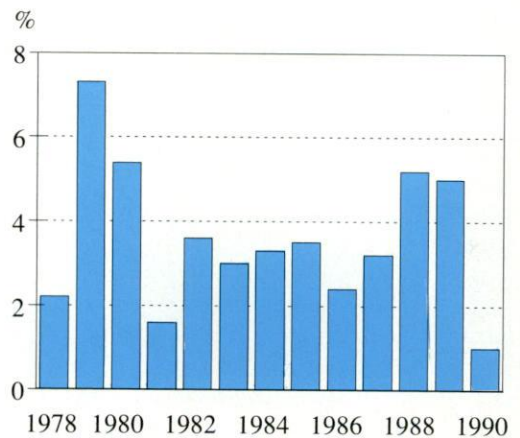


Figure 1. Growth of market price GDP in 1985 prices (%/year).

The greatest imbalance in the economy has been created by the foreign trade. Especially the deficit in the balance of current accounts has increased continuously, being about FIM 24 billion in 1990, while in 1986 it was about FIM 3.8 billion. Trade balance showed a deficit of about FIM 3 billion last year. The strong economic growth has been based on foreign loans, and this cannot go on. Slowing down the economic growth has been regarded as the only solution to correcting the balance of current accounts. The results were visible already in the end of 1990: the deficit in the trade balance remained smaller than had been forecast in the early part of the year.

Great fluctuations in oil prices disturbed economic growth, and the uncertainty in the world economy was reflected in Finland, too. The economic problems of the Soviet Union and the East European states also affected Finnish economy. Exports to the Soviet Union decreased, and the prospects for the future are not very good, either. The negotiations on the integration in the EC as well as the discussions and speculations related to them have also created economic uncertainty.

Decrease in the growth of consumer demand has had a balancing effect on the trade balance. Imports of consumer goods increased only slightly from the previous year, and car imports, for example, decreased by about 20%. Savings level has been increasing slightly, after being close to zero at the end of the 1980s. Liberalization of the money market made money more readily available, which reduced the motivation for saving, compared to a period of a more regulated money market. This may also have been the reason for the increase in consumption and in the foreign debt.

High interest level has slowed down economic growth. In 1990 the growth of investments was still about 5%, but in 1991 they are expected to decrease by about 7.5%. The indebtedness of households also slows down the increase in consumption. Especially the rise in the interests on housing loans has reduced the purchasing power of consumers, although the real earnings increased by about 2.5% in 1990. Many housing

loans are tied to the basic interest rate of the Bank of Finland. Several banks raised the interests on housing loans unilaterally, which almost led to a national movement against banks.

In January 1990 a two-year total settlement on income and economic policy was made, which included quite small raises in wages. Increase of the disposable real income by 4.5% in 1990-1991 was set as the target. In 1990 nominal wages rose by about 8.5%. The real increase in wages was only about 2.5% due to inflation.

In addition to the actual raises in wages the settlement also included lightening income taxation. As a result the disposable real income was supposed to increase more than wages, but this has not occurred due to the delay of the final taxation of 1989.

The agreement on wages for the spring also included an index condition: if the rise in the consumer prices from December 1989 to December 1990 is more than 5.7%, the excess will be compensated for at the beginning of March 1991. However, according to a preliminary estimate, there was no excess at all.

In the beginning of 1990 the wages had to be raised by 2.5% because of the index clause, i.e. the index clause for 1989 was exceeded by this amount. Consequently, the efforts to prevent inflation were slightly more successful in 1990, or the objective was more realistic than in the previous year.

The annual inflation was 6% in 1990, being 6.6% in 1989. Housing prices started to decrease, which slowed down the rise in housing costs. The boom in the construction sector continued to some extent, but this resulted in a considerable increase in the number of vacant apartments.

The currency reserve has remained high due to the foreign loans. Interest rate in Finland is higher than the international interest rate, and as the Finnish mark has been strong, foreign capital has flown to Finland. The high interest rate has also been criticized, but the Bank of Finland has regarded it as necessary to maintain the value of the Finnish mark. Great fluctuations in the market interest rates were characteristic to the money market in 1990.

Forestry is the backbone of Finnish economy,

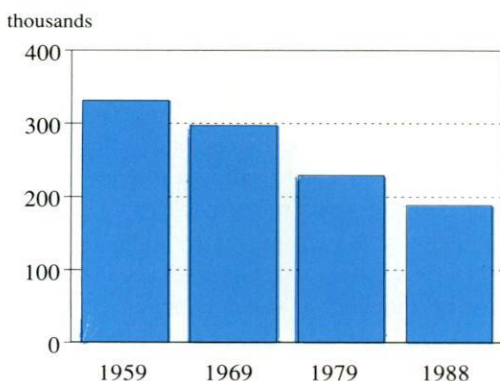


Figure 2. Development of the number of farms 1959-1988.

and it is also important for agriculture. Depression started to show in the wood processing industry, in which the increase in production came to an end. The development of prices was unprofitable, especially as the world market price of pulp decreased considerably. Commercial felling decreased by about 5%. Wood processing industry and forest owners have annually negotiated the stumpage prices for wood. In the spring the contract prices were raised by about 5%.

## 2. The Finnish farm

Finnish agriculture is based on family farms. The average farm size is still very small (about 13 ha), although there has been some growth during the past few years (Table 2). The average farm size grows because many small farms discontinue their production. The number of large farms has not increased very much, and the present agricultural policy does not favor large farms, either. In order to maintain the rural population level an attempt has been made to keep as many farms as possible in production, even if this means that the structure of production has remained quite unprofitable.

In practice, it is possible to increase the farm size through renting field. In 1988 altogether 262,200 ha arable land was rented. Because the price of land is high and farms are not likely to be sold, renting field seems to be the only way to increase the farm size in the future.

Forest is an integral part of the Finnish farm: an average farm has 13 ha arable land and 37 ha forest. However, the regional distribution varies. In general, the area of arable land is larger and, correspondingly, forest area is smaller in

Table 2. The distribution of farms according to their size and the average farm size (over 1 ha).

	1959		1969		1980		1988	
	1000	%	1000	%	1000	%	1000	%
1-4.9	147.6	44.6	108.8	36.6	69.4	30.9	53.9	28.5
5-9.9	101.8	30.7	98.0	33.0	69.2	30.8	49.5	26.2
10-19.9	62.2	18.8	68.0	22.9	56.8	25.3	50.2	26.5
20-49.9	18.0	5.4	20.6	6.9	26.4	11.7	31.6	16.7
50-	1.6	0.5	1.9	0.6	2.9	1.3	3.9	2.1
Total	331.2		297.3		224.7		189.1	
Acreage								
1000 ha	2 614.4		2 669.1		2 462.7		2 415.5	
Average size ha	7.89		8.98		10.96		12.77	

Source: Official statistics of 1959 and 1969 and Farm registers of 1980 and 1988.



Table 3. Regional distribution of arable and forest land in 1980 and 1988 (halfarm).

Province	1980	1988	1980	1988
	Arable land and gardens		Forest land	
Uusimaa	18.2	20.8	28.2	29.8
Häme	14.1	16.1	31.0	32.4
Vaasa	11.3	13.2	26.4	27.1
Kuopio	9.4	11.2	37.2	38.8
Oulu	9.2	10.8	45.8	48.3
Lappi	6.1	7.1	78.8	83.4
Whole	11.0	12.8	35.5	37.3

Source: Farm register of 1980 and 1988.

the south than in the north (Table 3).

About 99% of farms are privately owned. However, a large number of farms belong to pensioners or heirs, only about half of the farms being owned by active farmers. It is likely that this includes a number of farmers who get their living mainly from other sources than agriculture. Consequently, there are 189,100 farms in Finland, but only about half of them are real producing farms.

According to the Farm Register, in 1988 about 19.1% of private farms were owned by pensioners. At that time, farmers or pensioners owned 80.3% of farms, heirs and family companies 18.6%, societies 0.3% and the state and municipalities 0.5%. The share of farms owned by heirs has decreased slightly. This is significant for agricultural policy because these farms have the lowest productivity, and their existence slows down structural development.

Finnish agricultural production is mainly based on livestock. Only 15% of arable land is used for crop production for human consumption. Milk production accounts for about 36% of the total return of agriculture (calculated from Appendix 5), and the share of cattle production rises to 52% when beef production is taken into account. Consequently, the area of hay, silage and pasture is about a third of the total arable land.

Production structure has changed in the course of time so that the share of milk has decreased, whereas that of meat has increased.

The specialization of agriculture accelerated especially in the 1960s and 1970s. Earlier almost all farms produced milk, but in October 1990 there were only 44,900 milk suppliers (Appendix 2). About half of the farms are engaged solely in crop production.

### 3. Side-line industries

In addition to agriculture and forestry, farmers practice many other industries, e.g. horticulture, fishing, fur farming, farm holidays, etc. An overview of these industries in 1989 is presented in the following. No statistics from 1990 are available, and, on the whole, the statistics on these industries are incomplete.

This publication is mainly concerned with agriculture proper, which in Finland includes only outdoor garden production, and greenhouse production is excluded. In 1988 the value of *greenhouse production* was about FIM 1.19 billion, the share of vegetables (mainly cucumber, tomatoes and lettuce) being about FIM 590 million and that of flowers about FIM 600 million. About 3,100 entrepreneurs were engaged in greenhouse production, and the greenhouse area was altogether 450 ha. Thus the average greenhouse area was about 1,452 m<sup>2</sup>. There are no estimates on how many people this whole field employs, but it should be about 10,000 people.

Greenhouse production does not receive any actual state support. However, imports are regulated through import charges and licenses. The prices of cucumber, tomatoes and lettuce have stayed almost at the same level or decreased slightly in the 1980s, which means that the real producer prices have decreased considerably.

In 1988 there were about 5,800 *professional fishermen* in Finland (1,600 full-time and 4,200 part-time). Almost 70% practice their trade at sea. The number of fishermen has been decreasing rapidly. Most fishermen are part-time farmers.

In 1988 the value of the catch of fish was estimated at FIM 205.6 million. In addition, aquaculture produced fish (mainly rainbow trout) for about FIM 361 mill. in 1988. Occasionally rainbow trout is also an important export article. In 1988 the export share of its production, which amounted to 16.4 million kg, was about 20%. The value of planting production, which is important for improving the stock of fish, was FIM 82 million in 1988. The increased control of water systems has probably also improved the catch of fish. Many farms are located close to a lake, which makes fishing for household use possible.

An especially important side-line for agriculture is *fur farming*, which is also practiced on its own. In 1988 there were about 5,151 fur farms, of which about 60-70% were part of a farm. The value of fur production was about FIM 1.0 billion, and, including all its indirect effects, fur industry employs annually about 25,000 people. Fur production is mainly concentrated in Ostrobothnia, where about 3/4 of fur farms are located. The most important fur animals are mink, silver fox, blue fox, fitch and finnraccoon.

However, the past few years have been very difficult for fur farming. The collapse of the world market prices has forced many fur farms to stop their production. In 1990 there were only 3,086 fur farms left, and in 1989 the value of the sales amounted to about FIM 416 mill.

Finland has been the leading fur producer in the world. Most of the production is exported. In 1988 the value of exports was about FIM 1.0 billion, but in 1989 this had dropped to only about 400 mill. In 1989 57% of the world's fox pelt production came from Finland. Mink accounts for about 46% of the value of our fur production, but the share in the world market is less than 10%.

Fur farming is subsidized very little. Fur farms can buy feed (including domestic feed grain) for the world market price. In other respects this field has to adapt itself to the changes in the world market, which may be great. However, Finnish producers have tried to adapt themselves to international competition through breeding.

*Reindeer herding* is the main source of livelihood for about 800 households in Lapland. In addition, in about 1,500 households it is a very important secondary occupation. In the herding year 1989/90 there were about 7,750 reindeer owners. At reindeer round-ups in 1989/90 there were about 363,700 animals, of which 124,600 were slaughtered. Meat production was 2.7 mill. kg, and its value was about FIM 61.3 million. Most of the reindeer meat has been consumed in Finland. Hardly any reindeer meat was exported last year.

In 1990 there were about 40,000 horses in Finland, about half of them on farms. The number of horses has increased in the past few years, although they are very rarely used in farm work. *Horse husbandry* is practiced on about 6,000 farms, and on 550 farms it forms the main production line. Horses are mainly used for riding and trotting. On the farms horse husbandry employs 1,300-1,400 people full-time and about 5,000 part-time. The value of the production of horse husbandry is estimated at about FIM 230 million, and the export value of horses at FIM 3.7 million.

*Beekeeping* provides additional income to about 5,000 beekeepers. In 1989 altogether 2.4 mill. kg honey was produced, and its value was about FIM 65 mill. In 1990 1.5 mill. kg of honey was produced, and its value was about FIM 41. mill.

*Wild berries* (cloudberry, blueberry and lingonberry) are an important source of income for many people, especially in northern Finland. In 1988 this income amounted to about FIM 85.3 million. In addition, there is the value of the berries used in households. The income from picking mushrooms was estimated at FIM 11.6 million in 1988.

It has been hoped that *farm holidays* would become a new side-line industry for farmers. About 5,000 entrepreneurs are offering farm or summer cottage holidays, and about half of them are farmers. This activity has expanded year by year, and the return of all holiday and traveling services is estimated at FIM 60 million. Compilation of statistics is difficult because this field is very heterogenous.



## II

# PRODUCTION, PRICES AND FARM INCOME

## 4. Crop production

### 4.1. Weather conditions

Spring was about two weeks ahead of the normal in 1990, as it was last year, too. Winter was very mild. Especially in Southern Finland there was not very much snow, and it melted already in March. In Northern Finland the amount of snow was normal, but it also melted early. At the beginning of the year temperatures were above the average, but since July they were about normal or below. Sowing could be started about two weeks ahead of the normal and it was completed in good conditions.

The effective temperature sum was clearly above the normal at the beginning of the growing period, but later in the summer the temperatures were lower so that, in the end, the effective temperature sum of the growing period was close to the normal in the whole country. It was warmer in Western Finland than in Eastern Finland. In Northern Finland and in Lapland the effective temperature sum was in accordance with the long-term average. In general, the summer was quite usual as far as the temperature was concerned. There were only few very hot days, but there was also hardly any frost during the growing period.

Precipitation was below the normal during the whole growing period. The early part of the summer was dry, and it seemed that the crop was not going to be very good. It rained a lot in July, which made haymaking difficult. It did not rain very much in August so that the harvesting of grain could be completed both well on time and in good conditions.

Despite the drought in the early part of the summer, the conditions seemed to be favorable to agriculture, because the yield was good in terms of both quality and quantity. Fall sowing was also completed in good conditions. The area of rye remained small, however, because due to overproduction the production of rye should decrease considerably, and a quite high marketing charge was also set for rye. The area of winter wheat was larger than last year.

### 4.2. Areas and yields

The total arable land area has increased in the last couple of years as a result of the increase in land clearing. However, land clearing has stopped because a clearing charge set in 1987 made it unprofitable. Consequently, the arable land area has started to decrease again, in 1990 by 16,700 ha, i.e. 0.7% of the total arable land area.

The area under cultivation was the same as in 1989, however, because premium fallowing remained 14,000 ha smaller than in the previous year. The measures taken by the state authorities were inadequate for reaching the fallowing objective, or farmers may not have fully realized the significance of restricting the cultivation of grain. The export ceiling for grain was exceeded a lot, and, according to an estimate, farmers had to pay about FIM 157 million as export cost charges. The fallowing objective for 1991 has been set to 350,000 ha. In restricting agricultural production the authorities rely most on fallowing, through which production potential can be reduced.



The cultivated areas of different crops were about the same as in 1989. However, the area under rye grew again strongly (18%) and exceeded clearly the area set as the target, which was about 50,000 ha. The producer price of rye has been raised considerably and, as the conditions for sowing have been good in the fall, the cultivation of rye has increased more than is necessary. In the fall of 1990 only 18,000 ha rye was sown as a result of the export cost charges. There is rye in stock for many years. Instead, the area under wheat was in accordance with the target.

The slight increase in the area under bread grain dropped the area of barley by about 6%.

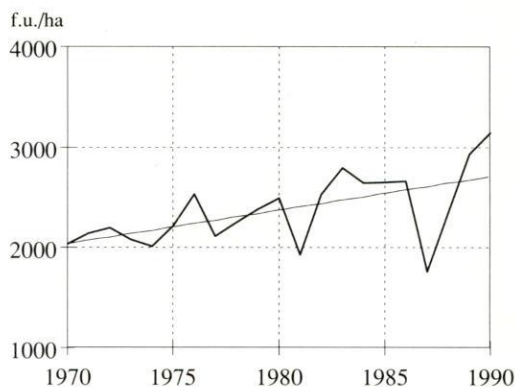


Figure 3. Total yield without straw in 1970-1990.

Table 4. Harvested areas and yields of main crops in 1989 and 1990.

	1989			1990		
	Area 1000 ha	Yield 100 kg/ha	Total mill.kg	Area 1000 ha	Yield 100 kg/ha	Total mill.kg
Winter wheat	24.5	38.1	93	35.6	38.6	137
Spring wheat	126.9	32.6	414	144.3	33.9	490
Rye	68.6	28.6	196	81.1	30.1	244
Barley	516.9	31.5	1630	485.5	35.4	1720
Oats	446.4	32.3	1444	453.4	36.7	1662
Potatoes	44.8	219.0	981	41.0	215.0	881
Sugar beets	30.9	320.3	990	30.1	330.6	995
Hay	292.2	42.4	1238	278.7	43.3	1207
Green fodder	28.6	177.9	509	31.6	182.2	576
Silage	216.6	198.5	4300	223.8	190.3	4318
Oil seeds	73.8	17.0	125	65.3	17.9	117
Other crops	47.9			47.8		
<b>Total</b>	<b>1918.1</b>	<b>2930.0<sup>1)</sup></b>	<b>5539<sup>2)</sup></b>	<b>1918.2</b>	<b>3142<sup>1)</sup></b>	<b>5944<sup>2)</sup></b>
Pasture	133.4			131.6		
Premium fallowing	189.1			175.0		
Other fallow	22.2			16.9		
Other arable land	190.3			194.7		
<b>Arable land, total</b>	<b>2453.1</b>			<b>2436.4</b>		

<sup>1)</sup>f.u. without straw, <sup>2)</sup>mill. f.u. without straw

Consequently, the production of barley corresponds quite well to the needs of livestock production, and there has been no need for export. Instead, the area under oats, which increased slightly last year, has been too large in relation to domestic consumption. Reducing the production of feed grain in particular has been set as the target for 1991.

The distribution of the cultivation of feed grain has come closer to the earlier level. The cultivation

of oats has also been recommended because oats are easier and perhaps also more profitable to export than barley. The area of hay decreases gradually along with the decrease in the production of milk and beef. Part of the area is still transferred to the cultivation of silage.

Like in 1989, the yield level was excellent. Record high hectareage yields were reached in the case of almost all crops.

The yield of rye was 244 mill.kg, the hectareage

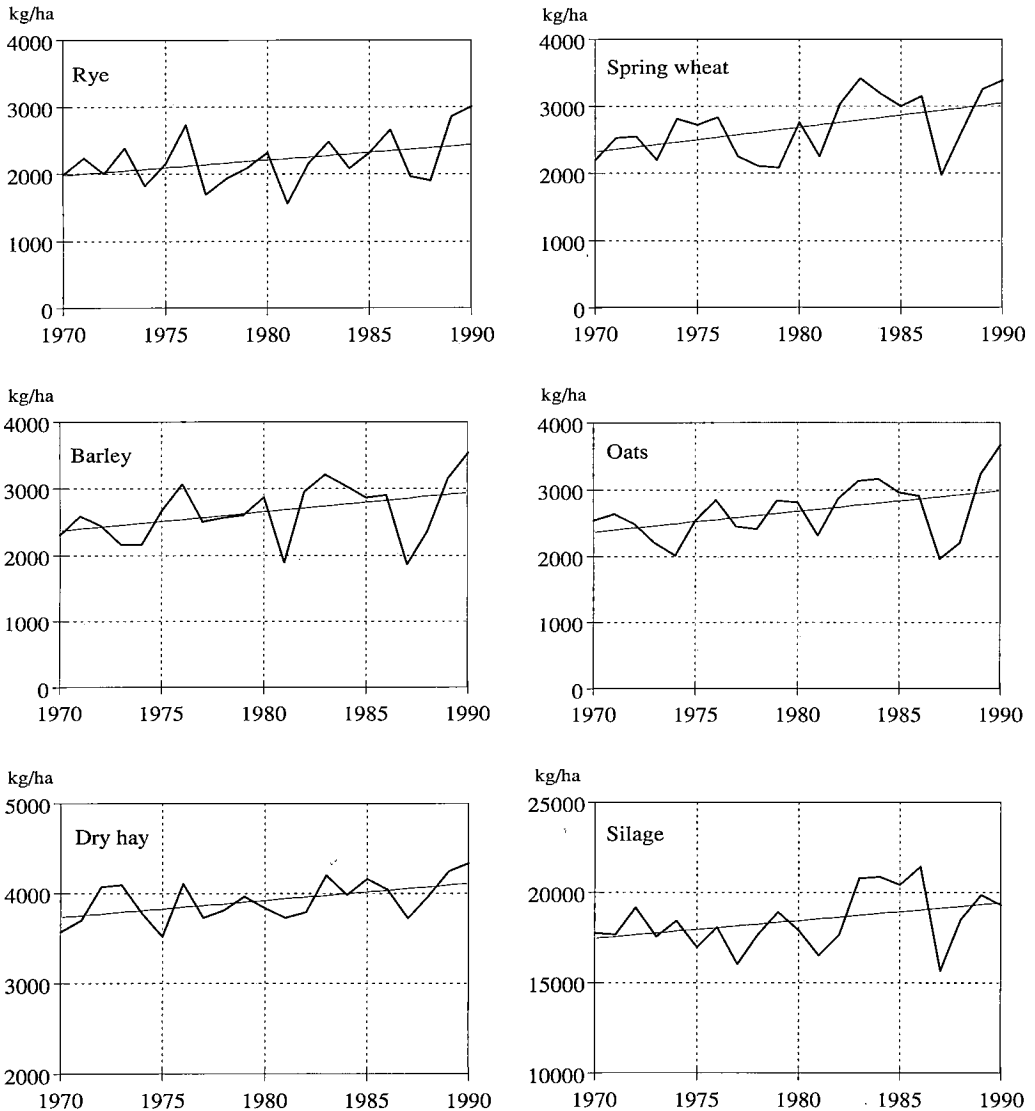


Figure 4. Yields of main crops (kg/ha) in 1970-1990.

yield was the highest ever, and the quality was also very good. The domestic need for rye is about 100 mill. kg a year, which means that the yield was more than double with regard to the consumption. As the yield was record high in 1989, as well, there is rye in stock for many years.

The yields of both winter and spring wheat hit a record. The total yield was 627 mill. kg, i.e. 120 mill. kg higher than in 1989. The hectareage yield of oats, 3,670 kg/ha, was the highest ever, and it exceeds the long-term trend estimate by about 15%. The yield of barley was also very good. The total yield of feed grain was 3,425 mill. kg, which exceeds the domestic need by about 1,000 mill.kg.

In the production of roughage 1990 was more usual, but still quite a good year. The hectareage yield of dry hay exceeded all earlier records and the quality was also good, despite the rains during the haymaking period. Instead, the yield of silage remained below both that of the previous year and the trend values. This was probably caused by the drought in the early part of the summer. The total yield of silage was higher than in 1989 because the area increased. The yields of oil plants, potatoes and sugar beets were also excellent.

The total yield was 5,944 million feed units, which is higher than ever. The previous record, 5,773 million feed units, dates from 1983. The yield per hectare was 3,142 feed units, which naturally was also higher than ever before. 1990 was particularly favorable for grain producers, but livestock producers also benefitted from the good weather conditions as the feed grain yields were good in terms of both quality and quantity.

## 5. Livestock production

Livestock production started to increase in 1990, and this development is not in accordance with the production restriction targets. An attempt has been made to reduce overproduction through all possible means, due to both criticism within Finland and international agreements and prospects for the future.

The good crops in the past two years are proba-

bly the main cause for the increase. In livestock production the effects of crop are somewhat delayed. Production started to increase already towards the end of 1989 and, consequently, 1990 was a particularly good year because in the summer of 1990 the crop was good both qualitatively and quantitatively. In milk production the high feed quality has a direct effect on the average yields, which had been quite low in 1988/89.

The bad crops in 1987 and 1988 and the resulting reduction of overproduction also loosened the measures to restrict production, and the shortsightedness of this policy revenged itself immediately. There should be some flexibility in the milk quota system, but this seems to lead very easily to an increase in production.

Milk production increased by about 2% from 1989. The amount of milk delivered to dairies was 2,598 million liters, whereas in 1989 it was 2,547 million liters. Especially in the early part of the year production was higher than in the previous year, but towards the end of 1990 production decreased already by 1-2%. The production ceiling, after which agriculture carries the full responsibility for exports, was exceeded by about 48 million liters.

Production has been growing for two years in a row. The number of cows has decreased continuously, but the average yields per cow have increased rapidly, probably as a result of the good feed crops. This was the case especially in 1990.

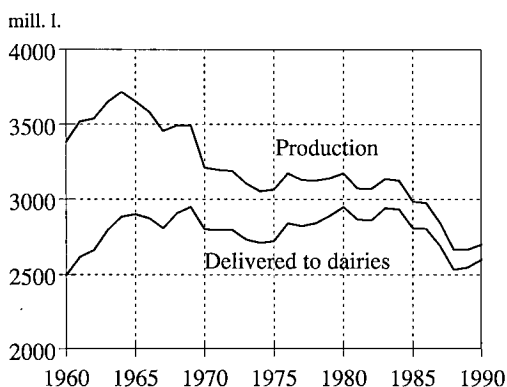


Figure 5. Milk production and the amount of milk delivered to dairies in 1960-1990.



Table 5. Animal production in 1984-1990.<sup>1)</sup>

		1984	1985	1986	1987	1988	1989	1990 <sup>e)</sup>
Milk	mill. l.	3124	2988	2976	2847	2668	2668	2705
Dairy milk	"	2935	2808	2803	2692	2530	2547	2598
Beef	mill. kg	124	126	125	123	111	107	117
Pork	"	171	172	174	176	169	174	187
Eggs	"	89	88	84	81	77	76	76
Poultry meat	"	20	21	22	27	28	30	32
Other meat	"	2	2	2	2	2	2	2

<sup>e)</sup> estimate

<sup>1)</sup>The hot weight reduction of meat was abolished at the beginning of March 1990. As a result, the quantities are 3 % bigger than earlier. The prices were dropped correspondingly by 3%. In comparisons of the percentages in the text this change has been taken into account.

The number of farmers delivering milk to dairies decreased further (see Appendix 2).

In 1991 the aim is to drop the production of dairy milk to 2,300 million liters. In order to achieve this, a considerable number of contracts to reduce production were made at the end of 1990. The restriction program will be continued at the beginning of 1991. Some overproduction will remain because consumption decreases continuously. A balance can only be achieved through drastic cuts in production.

Dairy industry regards the decrease in production as too rapid. Milk has to be transported from far away to Southern Finland and the processing possibilities of provincial dairies have been narrowed through the decrease in raw material. On the whole, however, there is still overproduction. Self-sufficiency in liquid milk is becoming the minimum factor, whereas there is proportionally more butter fat. According to an estimate, the self-sufficiency in liquid milk (i.e. protein) was 117% and that in butter fat 127% in 1990.

The decrease in beef production stopped last year. Production amounted to 187 mill.kg, which means that it increased by 6 mill.kg, i.e. by about 5% (see footnote in Table 5). This is a result of the good feed crop. The additional growth of cows was quicker than usual, and the slaughter weights rose by 6-7%. Also, more cows were eliminated than earlier.

Production exceeded consumption by about 9 mill.kg, which means that the ceiling after which agriculture carries the full responsibility for exports was exceeded by only 1 mill.kg. In this respect beef production is well under control. There was no need for imports, as was the case in the previous year. Production is expected to increase slightly in 1991 as the restriction of milk production will further increase the elimination of cows. After that the number of slaughter animals should have decreased considerably and beef production can be expected to drop rapidly, even below the self-sufficiency level. Consumption has increased slightly, which has balanced the market.

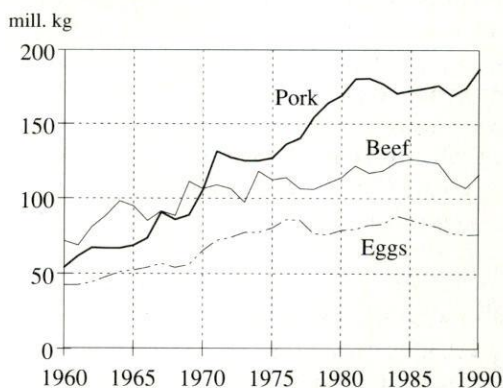


Figure 6. Production of beef, pork and eggs in 1960-1990.



In 1990 pork production was 187 mill.kg, i.e. 5% more than in 1989. Production had been stimulated by granting additional pig places. The good crop is also likely to have contributed to the increase in production. Slaughter weights continued to grow, and at their highest they were close to 81 kg, while a few years ago about 70 kg was regarded as the ideal slaughter weight. The quality has suffered from the increased slaughter weights. At the end of 1990 a marketing charge, carried on slaughter animals of over 76 kg, was introduced. Consequently, towards the end of the year the weights dropped to 75 kg.

The overproduction of pork increased. About 26 mill. kg pork was exported, which means that, despite the increase in consumption, the ceiling after which agriculture carries the full responsibility for exports was exceeded by 14 mill. kg. Pork production is expected to grow by one million kg in 1991.

Egg production was about the same as in the previous year. Overproduction still amounts to about 21 mill. kg, i.e. it exceeds the ceiling after which agriculture is fully responsible for export by 9 mill. kg. In 1991 the aim is to reduce production through various voluntary measures to 69-70 mill. kg, i.e. by about 10%.

In 1990 poultry meat production increased by about 2 mill. kg, i.e. 7%. Consequently, chicken is taking the market from other meats, which is likely to be the reason for the fact that, for example, pork consumption has been quite steady. Poultry meat market has been well in balance. Production is based on contracts, through which it can be regulated according to demand. Poultry meat production is expected to continue to grow.

The statistics on other meats consist of mutton, reindeer meat and horse meat. Production of mutton has remained small despite all efforts to stimulate it. Each fall the influx of venison confuses the meat market to some extent.

## 6. Consumption

The real income of consumers has risen considerably in the last few years. However, income and price elasticities in the consumption of agricultural products are small, which means that

economic factors do not cause any major changes. Other factors, especially health considerations related to nutrition, seem to have a greater impact than income or prices. Cholesterol has continuously been a topic of public discussion, but last year it remained more on the background. Instead, there was a lot of debate on food prices.

Measured as energy consumption cannot grow any more, but it is rather on the decrease. In 1989 we consumed about 2,792 kcal/day/capita (11.7 MJ), while in 1970 the corresponding figure was about 3,000 kcal. In the course of time consumption has shifted from grain products to livestock products, especially meat. However, today consumer counselling favors an increase in the consumption of crop products, and in the past few years the consumption of fruits and vegetables has increased considerably. Some increase is still expected in meat consumption, but the total consumption of milk and dairy products is on the decrease. The consumption of grain and potatoes should stay at the present level, but some decrease is also possible.

The consumption of dairy products has undergone a considerable structural change during the past couple of years. Butter-vegetable oil mixes

*Table 6. Consumption of dairy products and margarine in 1980-1990 (per capita).*

	Liquid milk litres	Butter kg	Cheese kg	Margarine kg
1980	263.3	11.8	7.1	7.8
1981	255.3	12.4	7.9	7.5
1982	253.1	12.3	8.8	7.7
1983	243.8	11.9	8.8	7.1
1984	240.5	11.4	9.4	6.8
1985	235.8	12.2	9.8	7.1
1986	228.4	10.3	10.5	7.2
1987	223.3	10.0	11.4	7.1
1988	221.8	9.5	12.3	7.2
1989	217.9	7.1	12.9	8.0
1990 <sup>e)</sup>	215.2	7.0	13.3	7.8

<sup>e)</sup> estimate



Table 7. Consumption of meat and eggs in 1980-1990 (kg/capita).

	Beef	Pork	Poultry	Eggs
1980	23.2	29.5	3.2	11.7
1981	22.4	29.3	3.5	10.7
1982	22.0	29.6	3.4	10.6
1983	21.1	30.9	3.8	10.6
1984	21.7	31.0	4.0	10.9
1985	21.3	32.0	4.2	11.1
1986	21.1	32.7	4.5	11.7
1987	20.9	32.6	5.2	11.8
1988	20.8	32.7	5.6	11.6
1989	20.4	31.6	6.2	11.1
1990 <sup>1)</sup>	21.6	32.9	6.5	11.1

<sup>1)</sup> Consumption figures do not include the hot weight reduction.

with a fat content of 40 or 60% have established their position in the Finnish diet, and their consumption continued to increase, causing a decrease in butter consumption. Including all spreads butter consumption amounted to 7 kg/capita, i.e. 26 % less than in 1988, the consumption of actual butter being 5 kg/capita. The consumption of margarine increased considerably in 1989, but there was a slight decrease last year.

In 1990 the consumption of liquid milk products stayed at the same level as before. Increase in cheese consumption has formed an exception among dairy products, and it has kept the total milk consumption almost stable. Last year cheese consumption amounted to 13.3 kg/capita, the increase from the previous year being about 3%. The share of curd in cheese consumption is less than 1 kg.

In addition to the consumption of cheese and chicken, pork consumption is the only one among agricultural products that has been expected to increase for a few more years. However, for the past 5 years it has stayed at the same level, which indicates that the peak may already have been reached. Actually, in 1989 there was a 2% decrease. Last year, however, pork consumption grew again by about 2%, and thus returned to the earlier level. According to health experts, the present meat consumption level is quite suffi-

cient, and chicken and fish could replace some of the red meat.

In 1990 beef consumption also stayed at about the same level as earlier. It has been forecast to fall because domestic supply is likely to decrease as a result of the decrease in the number of dairy cows. Shortage of supply will raise the price level, which is already regarded as too high. Consumption has remained quite steady, however, although there has been a slight decrease in the past few years. In 1990, however, some increase occurred in beef consumption.

Poultry meat consumption increased by 4% last year. The rapid growth in the previous year slowed down to some extent, but the increase is still expected to continue.

Egg consumption stayed at the earlier level last year. It was not possible to maintain the consumption level reached in 1986. The discussion on cholesterol may be one reason for the decrease. On the other hand, consumption seems to have reached the level at which it was earlier forecast to stay for a longer period of time.

## 7. Foreign trade

Because the objective of Finnish agriculture is self-sufficiency, and foreign competition is prevented, the main function of exports and imports is to balance the fluctuations in demand and supply. Thus, the task of foreign trade is to export overproduction in order to maintain the domestic price level. There is very little imports of basic commodities; only some grain has to be imported when the grain crop remains small due to weather conditions. This was the case, for example, in 1987 and 1988.

Fruits and vegetables are imported according to demand because there is little domestic production. Coffee is one of the most important free import articles, and import of certain tropical products is also relatively free. The value of imports exceeds that of exports (Table 8), although overproduction is regarded as the most serious problem of Finnish agriculture.

The increase in agricultural production can be seen in an increase in exports. The exports of dairy products increased considerably, even if



Table 8. Exports and imports of agricultural products in 1980-1990 (FIM mill.).

	Export	Imports total	Coffee	Fruits	Beverages and tobacco
1980	1669.9	4598.1	1097.1	638.0	255.6
1981	2639.4	4462.2	825.4	688.9	335.1
1982	2151.9	5308.9	990.5	710.6	286.0
1983	2673.4	4888.2	1065.7	752.2	332.7
1984	2994.1	5226.5	1360.5	775.1	342.3
1985	2876.2	5388.9	1125.5	814.0	358.9
1986	2256.3	5713.2	1376.9	855.2	405.0
1987	2074.7	5798.1	990.9	978.7	401.7
1988	1815.8	5705.2	787.6	915.4	372.6
1989	2098.5	6111.3	825.5	942.1	494.3
1990 <sup>b)</sup>	2181.0	5139.2	513.8	879.6	493.0

<sup>b)</sup> January-November.

Source: Official statistics of Finland IA. Foreign trade.

Table 9. Exports of some agricultural products in 1980-1990 (mill. kg.).

	Butter	Cheese	Milk powder	Pork	Beef	Eggs	Grains
1980	9.8	40.3	30.1	25.9	1.1	22.3	-
1981	14.7	36.8	28.0	39.8	16.1	27.5	13.5
1982	8.8	33.3	22.6	36.1	8.5	30.1	58.3
1983	26.6	31.5	39.1	25.5	17.7	30.2	92.4
1984	20.0	36.3	37.6	20.8	19.2	35.4	811.3
1985	18.6	35.9	36.3	17.8	22.3	33.1	561.0
1986	14.9	33.8	31.3	10.3	22.0	25.1	664.3
1987	21.4	34.4	31.7	17.3	22.0	21.7	294.9
1988	19.2	32.5	18.4	9.2	10.5	18.6	25.0
1989	20.3	26.3	8.1	14.0	5.5	20.0	520.0
1990 <sup>c)</sup>	25.0	31.0	22.8	25.8	8.5	21.1	490.5

<sup>c)</sup> estimate

Source: Statistics of the Ministry of Trade and Industry.

the stocks grew at the same time. 25 mill. kg more butter was exported than in 1989, which can be explained through the decrease in consumption. Half of all churned butter must be exported.

The exports of pork increased by about 12 mill. kg from the previous year. The exports of beef also increased slightly, and there was no need

for imports, as was the case in 1989. In 1991 the exports are still expected stay almost at the present level.

The decrease in egg exports has stopped. In the past few years the measures to reduce production have not been very efficient. The effects of the contracts to decrease production made at the end of 1990 will probably be seen in 1991,

when the exports are expected to drop to about 10 mill. kg

A particularly notable increase has occurred in grain exports. In 1990 about 465 mill. kg oats and 25 mill. kg barley was exported, and about 208 mill. kg grain was used in Finland for the world market price. The increase in exports is a result from the good crops in the past two years. In any case, the excess in grain has been expected to be great without efficient fallowing.

The imports of processed foods is on the increase because, as a result of various trade agreements, their import is relatively free. It has been estimated that the liberalization of foreign trade will be especially visible in the increase of the exports of processed foods. At least in connection with the European integration, the production of basic commodities seems to remain quite protected. The greatest pressures on Finnish agriculture are caused by the GATT negotiations, in which large exporting countries are demanding free foreign trade also for agricultural products. It would be extremely difficult for Finnish agriculture to adapt itself to full competition because the cost level is too high compared to the cost level in many actual agricultural countries.

## 8. Farm income settlements

Producer prices of agricultural products are decided twice a year in the farm income negotiations. The negotiations are based on the Farm Income Act, which defines the general directions for the setting of prices. According to the act, the negotiations are held between the state and the producer organizations.

There are two phases in the negotiations. In the first phase, the agricultural price council prepares a total calculation of the return and expenditure of agriculture, based on the average amounts of the past three calendar years. Current prices as well as those of the last settlement are used in this connection. According to the act, the farmers receive a full compensation for the rise in costs through a rise in the target prices and in the price policy support to the extent that the increase in the total return corresponds to the

rise in costs.

The total calculation of the price council includes (with some exceptions) the same products and production inputs as the total calculation of the Agricultural Economics Research Institute (see Appendix 5). However, the quantities used are the average quantities of the last three calendar years, and the prices are those of January and July (with some exceptions). Consequently, the return and cost figures of the calculation do not represent the real figures of any year.

Target prices are set for milk, pork, beef, mutton, eggs, rye, wheat, feed barley and feed oats (see Appendix 7). Producer prices of other products may fluctuate freely, but the changes of prices are taken into account in the total calculation. Also, the prices of, for example, sugar beets, potatoes and oil plants are agreed on in the income negotiations.

Target prices should be realized completely. In the spring settlement a calculation is made which shows deviations from the target prices. According to the present act, shortfalls and excesses of over one percentage point are credited or subtracted in connection with the spring settlement. The following year this correction is returned to the prices. In the earlier acts the excesses and shortfalls were taken into account in full and, consequently, in the long run farmers received exactly the prices that were agreed on. The system is no longer so tight, but it still guarantees a price development that is close to the target. Retroactive payments are also included in the price settlement, and thus it is not possible to deviate from the target price level in this way, either.

In the second phase the raise of farm income is negotiated. Farm income is a compensation for farmers' labor input and own capital (interest on loans is taken into account in the cost calculation). In the earlier acts the raise of agricultural income was tied to the development of the general income level or to the income development of rural wage earners. This is no longer the case, but the negotiators can freely decide upon the raise of farm income. In practice, the general labor market settlements are still followed, agri-



Table 10. Return and cost calculation of the 1990 spring price settlement, FIM mill.

	Price level in spring 1989	Price level in spring 1990	Change %
<b>Return</b>			
- Target price products	16 906.1	16 906.1	
- Other products	2 441.3	2 485.7	1.8
- Rent income	652.9	638.8	4.7
- Retroactive payments	294.9	334.4	13.4
- Support, total	2 578.3	2 578.3	
- Compensation for crop damages	180.0	190.0	5.6
<b>Total</b>	<b>23 053.5</b>	<b>23 178.3</b>	<b>0.5</b>
- Excess over target prices in 1988, repayment	132.8		
<b>Total return</b>	<b>23 186.3</b>	<b>23 178.3</b>	
<b>Costs</b>			
- Fertilizers	1 468.2	1 468.7	0.0
- Purchased feed	3 769.1	3 659.2	-2.9
- Wages	518.1	570.5	10.1
- Machinery and implements	3 831.4	4 079.0	6.5
- Buildings	1 017.7	1 103.1	8.4
- Interest on debt	1 681.3	1 943.5	15.6
- Overhead costs	1 405.9	1 471.6	4.7
- Rent	600.2	628.5	4.7
- Other	2 645.1	2 889.7	9.7
<b>Total</b>	<b>16 937.0</b>	<b>17 813.8</b>	<b>5.2</b>
<b>Farm income</b>	<b>6 249.3</b>	<b>5 364.5</b>	
Change from the basic level		-884.8	
<b>Summary:</b>		FIM mill.	
Change from the basic level		884.8	
Excess over target prices in 1989		-5.1	
<b>Return and cost calculation, total</b>		<b>879.7</b>	

culture being considered a kind of low wage sector, and the raise of income has been determined in the same way as in the other sectors of the national economy. An attempt has been made to raise the income on the basis of a calculated hourly wage, and the overall increase in farm

income is then determined for the whole agriculture, based on the total labor input in agriculture. Because the settlement is always an outcome of negotiations it cannot be described by any particular formula.



## 8.1. Spring price settlement

The rise of costs since the fall price settlement of the previous year (i.e. the cost level in July) is calculated in the spring price settlement. In many recent years, however, no correction has been made because inflation has been slow. This was also the case in the fall of 1989, and, consequently, the cost calculation was made from the level of January 1989 to that of January 1990.

Table 10 presents the main points of the spring price settlement. In the first place, it shows the increase in the return on the non-target price products (potatoes, sugar beets, oil plants, poultry meat and malt barley). In addition, there are the changes in retroactive payments, rent income and support. The return on non-target price products had decreased by FIM 124.8 mill.

The change in costs as a result of the change in the price of production inputs forms the most important part of the calculation. The calculation indicated that costs had risen by 5.2%. The prices of fertilizers rose hardly at all. The follow-up of the prices of purchased feed aroused a lot of discussion in the price council because various studies indicated that the discounts to farmers had increased. Already in 1987 the price council had started to use wholesale prices, which at that time corresponded to the prices paid by farmers when the discounts were taken into account, instead of retail prices.

Since then, however, the discounts have increased further. The price council estimates that they are about 14% of the retail prices. The price settlement was realized by subtracting 7% from the wholesale prices of 1990, but the prices used as the starting point were still based on the earlier settlement. Thus, in fact, agriculture had to pay back the raises in the price of purchased feed approved in the earlier settlement. Without this correction the rise in the feed cost would have been FIM 113 mill. It is likely that agricultural producers accepted this solution because the total of the price settlement was rising very high, and it would not have been in accordance with the moderate wage settlements.

Increase in the capital costs has also been problematic to decision makers. On the other

hand, their level has been considered doubtful. The price council has always based its calculations on the depreciations on machinery and buildings according to the calculations of national income, which are higher than the depreciations made by farmers according to taxation data. The difference is caused by the fact that in the statistics on the national income depreciations are calculated on the basis of the depreciations according to the replacement costs of capital, whereas in taxation only depreciations made from the purchase value can be used. In the former procedure inflation is also taken into account, which means that capital values are higher than is possible in taxation.

Difference between the two aforementioned procedures can also be caused by the fact that the capital reserve of the statistics on the national income is too big, because it may include machinery and buildings that are no longer used for agricultural production. This does not seem to be the case in taxation.

The price council solved this problem by starting to use a procedure which, in principal, takes the depreciations according to taxation statistics as the starting point, but in which investment reserves are taken into account. The amount of depreciations decreased by almost FIM 1 billion, which also reduced the need for compensations considerably. Determining depreciations needs to be made more accurate, however. Three different kinds of depreciations are used in statistics, and the matter will certainly not benefit by this.

The costs of machinery and implements as well as building costs had increased a lot, and the rise in interest expenditure was also considerable (15.6%). Increase in the prices of other production inputs was close to 10%, i.e. clearly higher than the average inflation. As the share of feed and fertilizers in the costs is about 30%, the average increase was 5.2%, which is slightly below the inflation in the whole national economy.

The cost calculation indicates the excess over target prices twice. According to the Farm Income Act, target prices must be realized exactly. If this is not the case, the deviation is taken into

account as a correction in the price settlement of the following year. Thus, according to the calculation, in 1988, for example, the target prices were exceeded by FIM 132.8 mill., and the target price level for 1989 was lowered by the same amount. In the 1990 spring price settlement this amount was returned to the target price level.

In 1989 the target prices were exceeded by 1.03%. According to the new act, the part of the excess that is over one percentage point is taken into account, which means that the target price level had to be lowered by FIM 5.1 mill. during 1990. This amount will be returned to agriculture in 1991. Agriculture will benefit from the new act if the target prices continue to be exceeded. One percentage point corresponded to FIM 169.1 mill., i.e. over 2% of the farm income in 1990.

The total of the return and cost calculation indicated that the need for raise in the target price level amounted to FIM 879.9 mill. Without the

corrections made in calculating feed costs and depreciations the total would have been FIM 300 mill. higher.

The negotiations on farm income proceeded at a normal rate, even if the producers felt that there were some complications when the negotiations were still in progress. An attempt was made to adapt the outcome of the negotiations to the general consolidation settlement made in fall 1989, which aims at a 4% increase in the disposable real income in two years.

On the basis of this, the state and the producer organizations agreed on a raise of farm income by FIM 401.7 mill., which also included a compensation for the inflation in 1989. Consequently, the total raise of the target prices and price policy support amounted to FIM 1,261.7 mill., i.e. 5.4% of the total return.

The raise was divided so that FIM 457.6 mill. were directed to the target prices, FIM 566.1 mill. to price policy support, FIM 150.0 mill. to other

Table 11. Target prices in 1987-1990<sup>1)</sup>.

		1.3.87	1.4.88	1.3.89	1.3.90
Rye	FIM/kg	2.70	3.00	3.10	3.10
Wheat	"	2.33	2.43	2.51	2.51
Feed barley	"	1.70	1.75	1.78	1.80
Feed oats	"	1.58	1.66	1.76	1.75
Milk	FIM/l	2.345	2.445	2.69 <sup>2)</sup>	2.77
Beef	FIM/kg	25.10	26.10	27.80	28.22
Pork	"	16.30	17.00	17.95	18.06
Eggs	"	8.80	9.10	9.20	9.20 <sup>3)</sup>
Mutton	"	24.65	25.90	27.45	27.88

<sup>1)</sup> The hot weight reduction of meat was abolished from March 1st, 1990, and the prices were lowered by 3%. See also Appendix 7.

<sup>2)</sup> The target price of milk was raised by FIM 0.15/l from Jan. 1st, and the same amount was subtracted from retroactive payments. Consequently, the target price was FIM 2.595/l from the beginning of the year. The raise percentage has been calculated from this amount.

<sup>3)</sup> The target price of eggs was lowered by FIM 1.50/kg from Jan. 1st, 1986 when the dual price system was adopted (see Chapter 12.4)

- The basis for the scaling of the additional price of milk was raised from 37,000 liters to 50,000 liters Sept. 1st, 1989.

- The additional price of eggs was raised by FIM 0.4/kg, in the provinces of Oulu and Lapland FIM 0.45/kg for less than 10,00 kg, March 1st, 1989.

- Beef production premium: a new weight class of over 270 kg with a premium of FIM 5.00/kg. The lowest weight limit for bulls was raised from 180 kg to 190 kg.

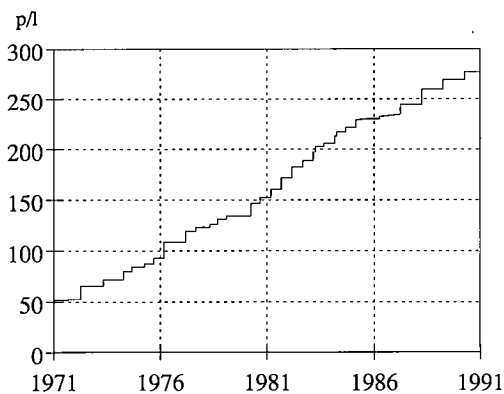


Figure 7. Target price of milk in 1971-90.

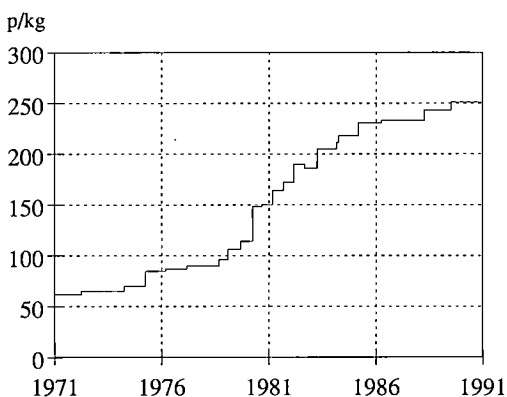


Figure 8. Target price of wheat in 1971-90.

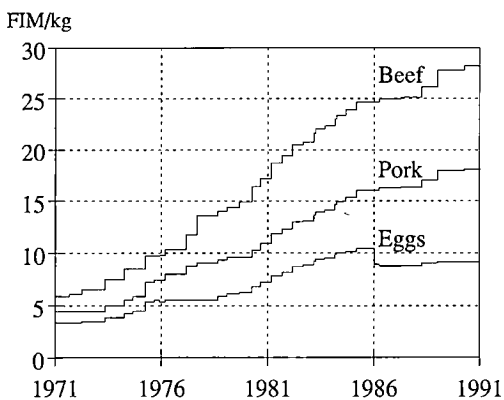


Figure 9. Target prices of beef, pork and eggs in 1971-90.

purposes, and FIM 88.0 mill. to social benefits. The last amount guarantees an extension of farmers' annual vacation by two days, which means that from the beginning of the vacation year 1990/91 it is possible for farmers to have 21 holidays a year.

A special feature in this settlement was that direct support was applied for the first time. Price support, which increases production, should not be increased because of the GATT agreements, but direct support should be used instead. FIM 510 mill. were reserved for this purpose, and they will be divided on the basis of the area (FIM 300/ha). Farms with less than 3 ha are not entitled to this support.

The settlement includes an index condition, like other labor agreements. If the inflation from January to December 1990 is higher than 5.7%, farm income will be raised by the excess in connection with the price settlement of 1991.

At the last stage of the negotiations the raise is divided to different products. This time the raises were directed to livestock products. The hot weight reduction of meat was abolished from March 1st, 1990. Because the quantities rise by 3% as a result, producer prices were lowered correspondingly by 3%. Thus the real increase in the target price of beef is about 4.5%, while it is only 1.5% when concluded on the basis of the actual figures. Similarly, in reality the increase in the target price of pork is 3.6%. Grain producers received the compensation as a hectare subsidy, which amounted to FIM 300/ha, i.e. about FIM 0.1/kg if 3,000 kg/ha is regarded as the average yield

The production premiums of beef and mutton and the additional price of eggs were changed slightly (see footnote in Table 11).

## 8.2. Fall price settlement

In the fall price settlement, the change of costs due to the changes in the prices of production inputs is determined, and target prices are corrected correspondingly. The fall settlement is much more limited than the spring settlement. Incomes are not negotiated at all, and the change in capital costs is taken into account only once a



Table 12. Producer prices of the most important agricultural products in 1980-1990, including all subsidies (export cost charges and milk quota payments have been subtracted).

Year	Milk p/l	Beef FIM/kg	Pork FIM/kg	Eggs FIM/kg
1980	184.2	17.69	10.13	7.35
1981	203.1	19.59	11.42	8.48
1982	229.6	22.22	12.68	9.31
1983	248.2	24.01	13.68	9.99
1984	261.7	25.84	14.98	10.29
1985	273.9	27.62	16.17	10.72
1986	276.4	28.28	16.49	10.68
1987	283.3	28.77	16.52	10.71
1988	292.6	30.62	17.28	11.06
1989	312.6	32.86	18.02	11.76
1990 <sup>e)</sup>	316.6	32.15	17.66	12.07

<sup>e)</sup> estimate

year, in the spring settlement.

From January 1990 till July 1990 the rise of costs was FIM 151.3 mill, i.e. 0.9%. The rise in retroactive payments, which was FIM -12.4 mill., has to be taken into account in the fall price settlement. Consequently, the total need for change in target prices and price policy support would have been FIM 163.7 mill.

In the fall price settlement the change is realized only if the change in target prices and price policy support is more than 2%. The change would have been only 0.8%, and, consequently, target prices were not changed at all, and the change in the prices of production inputs during 1990 will be taken into account in full in connection with the 1991 price settlement.

### 8.3. Producer prices

Target prices (see Appendix 7) do not give a fully accurate picture of the return farmers get for their products, including all subsidies. For example, in 1989 the additional price of milk was, on the average, 23 p/l, and other price support was 10 p/l. Thus the average producer price of milk was FIM 3.13/l. No final data from the year 1990 is available. Table 13 presents the de-

velopment of the producer prices of the most important products in 1980-1990. Export cost charges and milk quota payments have been subtracted from these prices.

### 8.4. Retail prices

A few examples of the retail prices of food stuffs are given in Table 14. It is hard to compare the producer and retail prices because the products that reach the consumers are seldom exactly the same as were produced on the farms. Fat is subtracted from milk to make consumer milk, meat is only part of the whole carcass, bread grain has gone through mills, etc. In some cases, however, the comparison is easier, for example, potatoes and eggs do not change in the market chain.

## 9. Income trends in agriculture

### 9.1. Income disparities

The study on farmers' income level and its comparison to other sectors of economy has been continued in the Agricultural Economics Research Institute. Figures are now available for 1988.

According to this study, based upon tax statistics, farm families received about 50% of their income from agriculture in 1988 (Table 14). This

Table 13. Retail prices in September in 1988-90.

Product	1988 FIM/kg	1989 FIM/kg	1990 FIM/kg
Milk (FIM/l)	3.61	3.74	4.04
Butter	39.00	40.60	39.48
Emmenthal-cheese	40.99	43.81	47.91
Beef (ground)	44.23	48.21	49.98
Pork (flank)	30.92	32.58	34.39
Eggs	16.24	16.79	16.87
Wheat flour	6.51	6.23	6.26
Sugar (lump)	7.38	9.16	9.95
Potatoes	2.78	3.17	2.77

Source: Bulletin of Statistics



Table 14. Distribution of income of farm families according to source of income (1988 tax statistics).

	Income FIM/farm	%
Agriculture	49 596	49.9
Forestry	10 501	10.6
Wages	32 241	32.4
Other	7 066	7.1
Total	99 404	100.0

calculation included 126,700 farms. There was 14.9 ha arable land and 38.0 ha forest on these farms on the average. As far as agricultural income is concerned, tax statistics are completed with other statistics.

In the aforementioned study the classification of farms is made in many different ways. One main classification method is based on distribution of taxable net incomes. A farmer is considered a full-time farmer, if his income from agriculture and forestry is at least 75% of all income.

About 41,500 farms belonged to this category in 1988 and they had on average 20.5 ha arable land. The farm income was FIM 49,320 per person on those farms whereas an industrial worker received at the same time FIM 83,860 as wages.

## 9.2. Income in 1990

It is still difficult to make any reliable statistical estimates about the income trends of farmers in 1990. All the information on quantities and prices needed for this purpose is still preliminary. If this information is used to calculate returns and costs, an error may accumulate in the part referring to farm income.

Nevertheless, in the following a preliminary rough estimate of trends in farm income according to the overall calculation of the institute is given. Two figures for 1985 are given in the table 15 due to the revision of the total calculation. The input prices for fertilizers and feed were earlier list prices. In fact, farmers have got a sizeable discount of these prices, which have now been taken into account in the calculation.

In 1990 the income development in agricul-

Table 15. Trends in farm incomes in 1980-90, FIM mill. and as an index.

	Gross return	Total costs	Farm income	Index
1980	13 598.0	10 129.3	3 468.6	100.0
1981	15 202.8	11 685.1	3 517.7	101.4
1982	18 169.2	13 604.3	4 564.9	131.6
1983	20 441.4	14 228.7	6 212.6	179.1
1984	21 635.3	15 095.5	6 539.8	188.5
1985	22 511.7	15 938.3	6 573.4	189.5
1985 <sup>1)</sup>	22 516.4	15 504.0	7 012.3	100.0
1986	23 262.3	15 834.0	7 428.3	105.9
1987	22 473.5	16 711.6	5 761.9	82.2
1988	24 013.8	16 825.3	7 188.5	102.5
1989 <sup>e)</sup>	25 713.3	18 182.0	7 531.3	107.4
1990 <sup>e)</sup>	27 667.7	18 553.8	9 113.8	130.0

<sup>1)</sup> New procedure for cost calculation    <sup>e)</sup> estimate

ture was quite good. According to a preliminary estimate, farm income rose by 21 %. This development was influenced especially by the increase of the amount of grain that came to the market. Livestock production also exceeded the amounts of the previous year slightly, because there was some growth in the production of both milk and meat. Consequently, the total return rose by about 7.4%.

The use of production inputs fell by 4%. The use of purchased feed decreased, too, which is quite understandable because the grain crops have been good. Fertilizer sales decreased, too.

Consequently, farm income increased considerably despite the fact that altogether about FIM 617 mill. were collected from agriculture as marketing charges. However, the compensations for measures to restrict production amounted to FIM 816 mill., which fully compensated for the marketing charges.

### 9.3. Taxation

Farmers pay taxes according to their real income. For this purpose, each farmer keeps simple accounts, including sales income and the expenditure on production inputs. Capital assets like machinery and buildings are depreciated. The difference between the income and expenditure is taxable income, and the taxation is carried out according to the same provisions and tax tables as in the case of other income earners.

The depreciations on machinery and implements can be the maximum of 25% of the expenditure balance, and the depreciations on production buildings can be 10% of the expenditure balance. In 1988 the depreciations on machinery and implements were 79%, and those on buildings 15% of all depreciations.

The value of own products used on the farm is not counted as taxable income. An attempt is

made to separate the private household completely from production. Especially the use of energy is problematic in this respect: oil and electricity are bought for both household use and production. Tax authorities have special instructions in order to be able to take this into account. Also, the division of the interest on loans between production and the household is problematic.

Finnish taxpayers pay both state and municipal taxes. In the municipal tax, the percentage is the same for everybody (15-20%) independent of income, but the state tax is progressive.

Tax deductions can be made on various grounds, and the income actually taxed may be considerably smaller than the taxable income. In 1988 the average taxable income of farmer and spouse in the whole country was FIM 101,300, and the tax on this was about 27%.

There is a separate, progressive tax on property, which amounts to the maximum of 2% of the value of the property. In agriculture, the property used in production (except for animals and stores) is liable to taxation, unlike in other enterprises. In practice, only large farms pay property tax because the value of a farm used in taxation is clearly below the real value.

In 1990 we paid a sales tax of 17% of the final price on almost all goods. At the beginning of 1991 the tax rose to 17,5%. Consequently, the production inputs of agriculture also include a sales tax, which is not returned to agriculture. Thus production costs are higher than they would be without a sales tax.

Instead, when the sales tax on the retail price of agricultural products is calculated, primary production is excluded. This means that sales tax is carried only on the value added in the processing, delivery and trade of products. According to some estimates, the sales tax on food stuffs is about 8-10% of the retail prices.



### III

## AGRICULTURAL POLICY

### 10. Outlines of Finnish agricultural policy

The main factors affecting the shape of Finnish agricultural policy have been the aspiration to guarantee food supply in all conditions, to develop farmers' income level and to keep rural areas inhabited. On the background there is a long development process from food shortages of the post-war period to present overproduction. Agriculture has been protected against foreign competition in order to make it possible to regulate the price level so that the income objective can be achieved.

The situation has changed, and keeps on changing. Production exceeded domestic consumption already in the 1950s, and since then restricting and reducing overproduction have been the topic of continuous political debate. For a long time pressures were internal, based on the state economy. Strongest criticism was directed to the subventions required for the export of overproduction. In the past few years pressures on the independence of agricultural policy have come from abroad, especially from GATT. An attempt is being made to liberalize the foreign trade of agricultural products, and this requirement also meets response in Finland: the high price level is strongly criticized by consumers.

Agricultural policy has taken its present shape in the course of time, but it has been influenced a lot by the report of the "Agriculture 2000" commission completed in summer 1987, which gives the outlines of a long-term program for agricultural policy. The report concerns mainly price and income policy as well as production

policy, but it also takes a stand on issues concerning the other sectors of agricultural policy. The outlines of Finnish agricultural policy will be presented in brief in the following. However, this is again being discussed in a committee, and its proposals for reform are expected by the middle of 1991.

#### 10.1. The objectives of agricultural policy

The objectives of our agricultural policy are realized in the legislation and as administrative measures. According to the "Agriculture 2000" commission, the central sectors of agricultural policy are:

- production policy
- structural policy
- income policy
- employment in the countryside and maintaining the rural population level

The production objective is presented as a self-sufficiency objective: production must be directed so that, in the long run, it corresponds to domestic consumption. In practice, this requirement means reducing production, because consumption does not increase very much, and at the moment the self-sufficiency in main commodities is above 100%. Due to seasonal variation some overproduction is allowed, especially in milk production. In its proposal for the GATT negotiations the government set as a target a 60% decrease in export support by 1996, and it was also suggested that this support could be low-

ered even more. Thus it might be possible to abolish overproduction completely by the year 2000, which, in fact, is implied in the report of the "Agriculture 2000" commission.

The self-sufficiency objective is based on the aim of securing food supply in all conditions. As a result, a high production level in peacetime has been regarded as necessary. Maintaining agricultural production is also considered important for employment, regional policy and inhabitation of the countryside.

Structural policy has to support the self-sufficiency objective. In the future, too, Finnish agriculture will be based on family farms. An attempt is made to develop the preconditions for production by securing an increase in productivity, which is realized, for example, through rational use of production inputs. It would be possible to reduce production costs by increasing the farm size, but this is restricted to reduce agricultural production and to maintain the rural population level.

The limits must be set so that the increase of the farm size above them does not essentially change the unit costs of the products. The objective of a rather small farm size is partly based on the idea that farmers get additional income from forestry and side-line industries.

The objective of income policy is, according to the "Agriculture 2000" commission, to guarantee the agricultural population a just income level in relation to other population groups. Disparities due to the location of farms and the farm size are equalized through the means of price policy. An attempt is made to bring the social security of farmers on an equal level with other population groups.

The development of the income level is secured through price policy, the Price Act being the most important means. It guarantees a compensation for the increase in costs as a result of the rise of the prices of production inputs, as well as an increase in farm income so that farmers' incomes develop about in the same way as incomes in the other sectors of the national economy.

Rural population, which was emphasized by the "Agriculture 2000" commission, concerns

the relationship between agriculture and the society as a whole. Decrease in the rural population causes problems, especially in the sparsely populated areas. Maintaining the vitality of the countryside is regarded as desirable, and, consequently, the side-line industries of agriculture and other industrial activities in the countryside are supported in order to achieve the general objectives of social development policy, as well as of regional policy.

The commission suggested that the money saved as the export costs of overproduction decrease should be spent on developing agriculture and other industries and services in the countryside, and, through this, on maintaining the rural population level.

## 10.2. Other objectives

In addition, agricultural policy has objectives that were not especially emphasized, for example, by the "Agriculture 2000" commission, but which have been put forward in the discussions on agricultural policy or in its realization. These include, among other things, reasonable consumer prices, pure food stuffs, and, in general, environmental considerations.

Food prices are internationally very high in Finland, and agricultural policy has been held responsible for this. In practice, the consumer price target has not attracted very much attention, but producer prices have been determined solely on the basis of the level set as the target for farmers' income. The truth is, however, that producer prices are high due to natural conditions and the high cost level in Finland in general, and they cannot be lowered without affecting farmers' income level.

In the public discussion it has become clear that the criticism is not directed only to farmers, but that processing industry and trade can just as well be blamed for the high food prices in Finland. However, the possibilities of the processing and trade to lower the price of food are also limited.

More and more attention is paid to the quality of agricultural products. The residues are followed continuously. Agricultural production that

uses chemical substances involves real or imaginary problems. Some consumers favor ecologically produced commodities, even if they are more expensive than those produced by using fertilizers and plant protection chemicals. However, Finnish agricultural policy has not clearly taken a stand on these questions, although ecological farming is supported.

In the future the factors related to the quality of products may be very important. They might also contribute to finding solutions to overproduction and environmental problems. Extensive agriculture using less fertilizers and other chemicals could produce the pure commodities required by consumers. However, this is possible only if consumers are prepared to pay a higher price for food stuffs, because extensive production usually leads to an increase in costs.

So far, there is no environmental policy of agriculture, but this is being developed at the moment. Environmental issues are dealt with more in detail in Chapter 11.1.

### **10.3. Agricultural policy in practice**

Agricultural policy is, in the first place, search for and application of various means in order to achieve the objectives. The measures are prepared by committees, commissions, teams and the authorities, as well as in the negotiations between the producers and the state. Ultimately, they are based on the law, acts, as well as official decisions of the government and other authorities.

The four most important acts on which the running of agricultural policy is based are the Farm Income Act, the Act on Directing and Balancing Agricultural Production, the Act on Directing Livestock Production (i.e. the regulation of the establishment of large production units) and the Act on Rural Industries (earlier the Farm Act). These are complemented by the dual price systems for milk and egg production.

The Farm Income Act is a means of running income policy. According to this act, the producers negotiate twice a year with the state about the prices (see Chapter 8). So far the producers

have got a full compensation for the rise of costs due to the rise in the prices of production inputs, and, in addition, the raise of farm income has been agreed on separately. A new Farm Income Act came into effect at the beginning of 1990.

The quite complex support policy, which aims at equalizing income disparities between different parts of the country and between farms of different sizes, forms an essential part of income policy. Additional prices and income support are graded regionally in order to maintain agricultural production in the northernmost parts of the country, too (see Chapter 13.2). The freeze of the support required by the GATT agreements made it necessary to start using direct income support in 1990.

The Farm Income Act determines the general objectives for production policy. The Act on Directing and Balancing Agricultural Production and the regulation of the establishment of production units provide the means for controlling production, which is central in Finnish agricultural policy. Mainly, regulating means restricting production, but production is also supported to some extent (see Chapter 12).

The Farm Act aims at developing the structure of agriculture. It determines the general framework for granting loans and subsidies to agriculture, and, consequently, makes it possible to influence the structural development. This act was reformed in 1990. It is now called the Act on Rural Industries, and the purpose is to grant loans, apart from farms, to other enterprises, too (see Chapter 14). The dual price systems of milk and egg production as well as the regulation of the establishment of production units (see Chapter 12.6) also regulate the structure of agriculture a great deal.

The means of agricultural policy are manifold, and many of them contribute to reaching more than one objective. Like the objectives, the means sometimes contradict each other, too. For example, the development of farmers' incomes is taken care of through the price policy, but too high prices lead to overproduction. Low interest loans may lead to an increase in the prices of agricultural enterprises, and thus invalidate the state support, which aims at improving the struc-



ture of agriculture. However, the conflicts between the objectives and means are hard to avoid in administered agricultural policy. It is often suggested that this should be replaced by market oriented agricultural policy, the disadvantages of which would be taken care of, for example, through direct income support to farmers.

## 10.4. Farm Income Act

A new Farm Income Act was passed in 1989. It is a five-year act concerning the pricing years 1990/91 - 1994/95. Pricing year starts at the beginning of March, except in the case of grain, for which it starts at the beginning of July. The new act was applied for the first time in the settlement of spring 1990.

In principle, the new act is similar to the earlier one, which came into effect in 1982. First, the increase in the prices of production inputs is compensated in full to farmers, and after that the raise of farm income is negotiated in the same way as according to the previous act (see Chapter 8).

Production and export ceilings set in the Farm Income Act determine the share of the state of the costs due to the support on agricultural exports. According to the previous act, the state supported the exports in full up to the ceilings.

Now the system has been altered so that a partial responsibility of agriculture for exports (10%) begins with the first exported kilo. In the next stage the responsibility is 50% and, finally, 100%. However, the state still accounts fully for part of the costs for milk product exports, and after that comes producers' 10% export responsibility. All production and export responsibility ceilings will be lowered during the five-year period (see Table 16).

An attempt is made to keep agricultural production at or below the level determined by production and export ceilings. In the state budget an annual transfer appropriation of FIM 550 mill. in 1990-91 and 500 mill. in 1992-94 is allocated for regulating and balancing production. If the appropriation is exceeded, 50% of the excess will be included in agricultural income.

Recently, about FIM 300-500 mill. has annu-

ally been spent on regulatory measures (see below Chapter 12). In 1990 this amount rose to about FIM 816 mill. as a result of fallowing. Agriculture has partly financed fallowing: marketing fees that have exceeded the requirement have not been returned in full to agriculture. This procedure has been agreed on separately in connection with income negotiations.

In the previous act the deviation of producer prices from target prices was taken into account in full in the price settlements. Now the act has been changed so that the deviation is taken into account only for the part that the prices on the average deviate from the target prices by more than one percentage point. This means that there may be a deviation of about FIM 170 mill., which has no effect on the settlement next year.

## 11. Special topics

### 11.1. Environmental concerns of agriculture

More and more attention is paid to the environmental problems caused by agriculture. It has been noted that the increase in phosphoric load and eutrophication of lakes and rivers are serious problems, and, in addition to industry and settlement, agriculture is considered a major emission source. Nitrogenous fertilizers also have an effect on eutrophication. Nutrients from intensive fertilization have in some places led to oxygen shortages in bays.

The increase in the load of agriculture on waterways has probably been influenced by specialization and continuous cultivation of grain, which has in places led to harmful condensation of the soil and deterioration of its structure. This has resulted in an increase in leakage.

In Finland, too, contamination of groundwater has become a problem in some places, especially in the case of private wells in the countryside. The silage effluent and the microbes in manure (e.g. salmonella) may also contaminate waterways or wells.

A considerable amount of ammonia is evaporated from livestock buildings and manure pits

as well as in connection with manure spreading. Ammonia gas returns to the ground as acid rain and affects the soil. It has been noted that the ammonia gas from traffic increases the ozone content of the air, which according to studies made in Sweden cause a reduction in the yield of spring wheat. Research on this matter has been started in Finland, too.

An increasing amount of attention is directed to the rural landscape. In Finland agriculture has been considered an important factor in maintaining the cultural landscape, and this is why it has been regarded as necessary to support agriculture in all parts of Finland. On the other hand, the present farming technology causes ecological problems. The use of plant protection chemicals, subsurface drainage and the disappearance of meadows has led to the vanishing of many plants and a decrease in the populations of certain species of birds.

Environmental problems are centered in water and soil. Instead, food in Finland is clean, and heavy metals are not a serious threat, either. As a result of the good quality of the raw material, there is relatively little cadmium in fertilizers. Other sources of cadmium are the fallout from the atmosphere and sludge from the sewage treatment plants, the use of which is not approved of by agriculture. The residues of plant protection chemicals in foodstuffs are very small. Besides, like in other parts in Europe, some decrease has occurred in the total amounts of chemicals used in plant protection.

Attempts have been made to solve environmental problems through various means. Phosphoric fertilization is being reduced through voluntary measures by lowering the phosphorus content of fertilizers and by changing the fertilization recommendations for the part of phosphorus, but also through taxation, because a tax on phosphorus came into effects in the beginning of 1990, which at the beginning was FIM 0.50 and since the middle of the year it has been FIM 1.00/kg of phosphorus. In 1991 the tax will rise to FIM 1.50/kg

An attempt is also made to prevent the leakage of phosphorus into the water through buffer strips and grass fallowing, for which a special com-

pensation is paid.

The use of nitrogenous fertilizers is restricted indirectly, because a tax on fertilizers has been collected to finance the export of overproduction and fallowing. The main objective has been to restrict production, and the increase of the nitrogen content of the groundwater has not as yet led to any special measures.

Agricultural producers themselves have also taken the initiative in taking environmental considerations into account. The Central Organization of Agricultural Producers has passed a program for environmental policy, which gives general directions on farming and other production techniques through which the problems caused by, for example, fertilizers, manure, plant protection chemicals and other factors that may be hazardous to the environment can be reduced. The agricultural advisory organizations have also enforced their activity concerning environmental considerations.

## 11.2. Current policy issues in 1990

In 1990 the most important topics in the discussion on agricultural policy were overproduction, negotiations in GATT and EES as well as the price of food. Increase in overproduction caused pressures against agriculture again. They were enforced by the acceleration of the GATT negotiations towards the end of the year. The EES negotiations also concerned agriculture, although it was supposed to be left out.

The increase in overproduction came in a bad time. For many years there has been a promising decrease in milk production, but this was a result of the bad crops in 1987 and 1988. As the yields in 1989 and 1990 were excellent, the possibilities for a growth in production were good, even if no actual measures were taken in this direction. On the other hand, it must be noted that production restriction measures were relaxed. The milk quota system was made less tight, and new pig places were granted.

Preparing the proposal for the GATT negotiations was very difficult for Finland. It was feared that the reduction of the support required in the negotiations, which, in fact, means lowering the

producer price level, may quite rapidly cause a decrease in farmers' incomes. It is possible to take care of the income target through direct income support, but there is a danger that the state expenditure may increase quite strongly.

Finland's proposal included a 60% reduction in export support by 1996, as well as other measures which would result in a 20-30% reduction in internal support and a 5-10% reduction in border protection.

Finland was working in cooperation with the other Nordic Countries, but the problem was that Sweden changed its agricultural policy radically: the internal support was reduced by abolishing the export support, and leaving only border protection. This means that the domestic market determines a balance price, which is used in the domestic trade. Sweden has not yet liberalized its foreign trade, but as a result of the border protection the domestic price level can still be considerably higher than the world market prices. However, Sweden was prepared to reduce its support a lot in the GATT negotiations.

When this publication was written the GATT negotiations were not yet completed. Consequently, Finnish agriculture still has some time to consider how to adapt itself to the international pressures.

The starting point for the EES negotiations was to include food industry in the agreement so that the trade of processed foods would be free, but the price of the raw material would be balanced at the border according to the EC country with the lowest price and the price in Finland. Thus Finnish food industry would be faced with a tough competition with the other European countries and could lose its markets. The basic production of agriculture was supposed to be excluded from the EES negotiations. However, at the last stage the EC wanted to add basic production into the negotiations, and that the same principle as in the case of processed foods would be applied to them, i.e. the trade would be free but the price would be balanced at the border. These negotiations have not yet been completed, either.

Discussion on the price of food continued in 1990. Criticism was directed, in addition to ag-

riculture, to the other parts of the food chain, i.e. food industry and especially retail. The information presented to the public has gradually become more many-sided, and the reasons for the disparities in prices have been reflected on more accurately. Other comparisons have been taken into account, in addition to the absolute differences in prices.

The overall price level is high in Finland. The Finnish mark may be overvalued, which means that, measured as the gross domestic product, Finland is one of the richest countries in the world. At the same time, however, the price level is high, too, so that the real income level is not as high as the mere figures indicate. This is also partly the reason for the high level of food prices. Weather conditions are unfavorable for agriculture. The possibilities for lowering the prices in both agriculture and in processing and trade are very small. Finland is a small country, and, consequently, it is not possible to take advantage of large-scale production as well as in the large industrialized countries.

So far, there have been no major changes in Finnish agricultural policy, even if the pressures have increased. The most serious concerns for the policy makers are caused by the commitments in GATT. Agricultural support cannot be raised from the level of 1989. Strictly speaking this means that the producer price level cannot be raised, unless production decreases correspondingly. This problem came forward in the price settlement for 1990, and it was solved by introducing direct support. It should be possible to take care of the income development through direct support, but this will also soon lead to high budget costs for the state, which are problematic both politically and from the viewpoint of the state economy.

The speculation connected with the GATT and EES negotiations as well as the general negative attitudes, for example, in the media were quite depressing for farmers last year. The mandatory restrictions of production (mandatory fallowing in 1991) also aroused anger, especially among owners of small farms. For them this means a decrease in income, although the compensation paid for fallowing will help a little.



The legislature concerning agriculture was revised very strongly in 1990. The most important revision is the Act on Rural Industries, which replaces the Farm Act. The Act on Directing Production was also reformed, but no major changes were made in its contents.

## 12. Regulation of supply

Regulation of supply involves determining the production objectives and directing production so that the objectives will be achieved. Production objectives can be regarded as formed on the basis of the production and export ceilings determined in the Farm Income Acts (see Table 16). "Agriculture 2000" commission recommended that, in the long run, production should correspond to consumption, although some overproduction will be allowed due to seasonal variation. This 100% self-sufficiency can be regarded as the production objective of the government.

The export responsibility of the state decreases by degrees. Thus in 1991 the state will account for 90% of the export costs of beef up to 4 mill. kg, and for 50% of the costs of the next 3 mill. kg. If the exports exceed 7 mill. kg, agriculture will get only the world market price for the excess. Export ceilings will be lowered according to Table 16 by 1994.

In 1991 the state carries the full responsibility for the export costs of dairy products if the amount of milk delivered to dairies does not exceed 2,280 mill. liters. For the excess the state accounts for 90% of the export costs up to 2,375 mill. liters, and after that for 50% of the costs up to 2,525 liters. After this agriculture gets only the world market price for the exports. However, agriculture is responsible for the exports of 3 mill. kg butter in any case.

Similar procedures will be applied to pork, eggs and grain. Non-food grain used in industry, which is supplied for the world market price, is included in exports.

Consequently, agriculture has to account for export costs even for small quantities. In the case of the marginal amounts, the 10% share of export

costs does not necessarily cause economic loss. When the share rises to 50% the penalty is so heavy that it is not profitable for agriculture to exceed the limit in question.

Export cost charges can amount to the maximum of 13% of the agricultural income of each year. The state is responsible for the rest.

The amount of import levies of dairy products, meat and grain is deducted from the export cost responsibility of agriculture. At times it may be necessary to import, for example, meat due to seasonal variation or because the demand for certain parts of the carcass is higher than the domestic production is able to meet. Correspondingly, part of the production must be exported. It is also necessary to import grain for some special needs of industry.

Earlier especially the production ceilings for milk, beef and eggs used to be exceeded. The export responsibility of agriculture increased continuously as both the ceilings and world market prices went down. The situation improved considerably in 1988 and 1989, when there remained no export costs for overproduction to be covered by agriculture. Especially grain exports remained clearly below the export ceilings in both years. According to the new Farm Income Act, the export ceilings were lowered and, as the grain crops were good in both 1989 and 1990, the export responsibility of agriculture grew very strongly in 1990.

Measures to restrict production have been the most central means of regulating supply. Production could be directed through price settlements, but as the agricultural income settlement usually leads to increases in prices, the real prices have remained stable, and it has not been possible to reduce production through pricing. Instead, pressures to produce more have increased constantly.

On the other hand, it has been difficult to change the price relations due to internal factors in agriculture. All production lines want at least equal raises in prices. Consequently, it has been necessary to direct the development of production mainly through restrictive measures.

Both mandatory and voluntary means are being applied to restrict production. The most impor-

Table 16. Quantities of milk production (mill. liters) and exports of eggs and meat (mill. kg) up to which the state accounts for 100%, 90% or 50% of the export costs in 1990-1994.

	%	1990	1991	1992	1993	1994
Milk <sup>1</sup>	100	2300	2280	2260	2240	2220
	90	2400	2375	2350	2325	2300
	50	2550	2525	2500	2475	2450
Beef	90	5	4	4	4	3
	50	8	7	6	6	5
Pork	90	7	6	6	5	5
	50	12	11	10	9	9
Eggs	90	8	7	6	5	4
	50	12	11	10	9	8
Grain	90	515	490	465	440	415
	50	715	690	665	640	615

<sup>1</sup> In any case, agricultural producers are responsible for the export costs of 3 mill. kg butter.

tant mandatory measures are the dual price systems for milk and eggs, the regulation of the establishment agricultural enterprises, and restricting land clearing.

In 1983 an act was passed for the voluntary systems (the Act on Regulating and Balancing Agricultural Production), according to which the government can annually decide on the various measures to restrict production. In 1990 this act was continued until the end of 1994. On the basis of the act, the government makes decisions on various measures to restrict production, and it gives the government a better chance to direct production in a more flexible way, i.e. according to the current situation, than earlier. Usually, it has been possible for farmers to receive compensation for only one measure. Now this requirement has been abolished, which makes it possible, for example, to start beef production, which is supported from the state funds, after making a contract to reduce milk production.

In practice, the following restrictive measures

were applied in 1990:

- Contracts to decrease
  - agricultural production
  - milk production
  - egg production

as well as

- fallowing contracts
- support of afforestation

Last year restricting production was directed to all sectors of agriculture. In the early part of the year fallowing was the most important measure. At the end of the year a lot of contracts to reduce milk and egg production were made. Some contracts concerning all agricultural production were also made with young producers. These contracts concerned the transition from agriculture to forestry or other rural industries.

Contracts to reduce milk production and some other production reduction contracts made in the earlier years are still in force. In addition, vari-



Table 17. Excesses and shortfalls of production and export ceilings and the share of agriculture of the export costs in 1985-90.

	1985	1986	1987	1988	1989	1990 <sup>1)</sup>
Dairy milk	78.0	93.0	-6.0	-130.0	-85.0	48.0
Pork	3.8	-3.7	4.3	-2.8	3.0	13.8
Beef	10.3	10.3	10.0	0.5	-4.0	1.1
Eggs	20.1	13.1	10.7	8.6	10.0	9.4
Bread grains	-	-	-	-100.0	-100.0	-
Feed grains	-	169.9	-230.0	-510.0	-68.0	-
Export cost, FIM mill.	482	602	274	0	0	791

<sup>1)</sup> Estimate of the excess over the 50 % production and export ceilings (see table 16).

ous other measures also have an effect on production. The licenses required for the establishment of production units are one of the most important means of regulating production. In addition to covering the marketing responsibility, the export cost charges collected for financing the export of surpluses, as well as the tax on fertilizers and feed have a restricting effect on production. The land clearing charge, which has stopped land clearing almost completely, also aims at restricting production.

Another means of restricting production are the measures concerning farmers' pensions: an attempt has been made to promote retirement through improving pensions, as well as by abolishing hectarage subsidies and additional price of milk from farmers over 65 years of age from the beginning of 1988, and the additional price of eggs from the beginning of July 1988. The connection between retirement and giving up production has been tightened. Contracts to give up production have been made with pensioners.

Production is also supported to some extent, for example, the production of beef and mutton is supported through an additional price (see Chapter 12.8.).

Consequently, there is a good number of regulatory measures, and they dominate the realization of agricultural policy. These measures are briefly dealt with in the following.

## 12.1. Restricting production

In order to reduce agricultural production it has been possible to draw up contracts that are directed to the whole production of the farm, to livestock production or to only one product, e.g. milk.

*Contracts to reduce agricultural production*, which have been made since 1977, concern the whole production of the farm. 335 new contracts were made in 1990. Priority was given to farmers under 55 of age who had the chance to shift to forestry or small-scale industrial activity. The contracts are in force for ten years. Earlier it was possible to make these contracts with older farmers, too.

For the first five years a farm that turns to forestry or industrial activity receives a compensation according to the income, and for the other five years only a basic compensation of FIM 12,000 a year. When the contract was made the timber output of the farm had to amount to the minimum of 150 solid cubic meters a year. The afforestation of arable land was supported by doubling the afforestation compensation. However, starting the new production is voluntary.

The objective of *afforestation* has been set to 10,000 ha a year. Last year, 7,000 hectares was afforested. Depending on the region, the compensation was FIM 6,000-9,000/hectare. The act



was changed for the part of afforestation so that the special qualifications required for receiving the compensation were abolished.

The *contract to reduce livestock production* is more limited than the contract concerning the whole production. It was applied in 1984. A condition for joining this system was that a farmer had to give up all animals causing overproduction for five years.

*Contracts to reduce milk production* (milk bonuses) were made in 1988-90. In 1988 there were two alternative ways of giving up milk production: farmers could stop producing either for five years or completely, i.e. give up their milk quota. In the five-year contracts the compensation was FIM 0.90/l, and in the case of giving up production completely it was FIM 1.20/l, except for farmers over 65 years of age who could get only FIM 0.75/l. The compensation could amount to the maximum of FIM 80,000 a year, and in both cases it is paid for five years.

In 1991 the aim is to reduce production by at least 300 mill. liters. In order to achieve this, 5-year contracts to reduce milk production will again be made in 1991.

A compensation is paid for three years, and it is scaled on the basis of the amount of milk produced on the farm so that the compensation is FIM 1.00/l for less than 50,000 liters, FIM 0.70/l for the amount exceeding this up to 90,000 liters, and FIM 0.40/l for over 90,000 liters. The aim is thus to include small-scale producers in the system. Cows may still be left on the farm for own use or as suckler cows for beef production, or cows can also be exported. Applications could be filed already in December 1990. If the objective were reached production would come close to domestic consumption, except for butter, which would still have to be exported.

*Pork production* exceeds the objective, but no actual contracts to reduce production have been made since 1988, and the contracts made at that time are no longer in force. The scaling of pricing has a restricting effect on production because the producer price is FIM 0.40/kg lower if the slaughter weight is over 76 kg.

In 1987 five-year *contracts to reduce egg production* were made. The compensation was FIM

70/hen up to 1,000 hens and FIM 60/hen for more. If the producer committed himself to giving up production completely, the compensation was FIM 30/hen higher. Thus the state bought production quotas from farmers. The contracts made in 1987 covered about 6 mill. kg eggs. New contracts were made again in 1989, and they concerned about 700,000 hens.

In 1990 reducing egg production were enforced by raising the compensation to FIM 150/hen. The contracts remain in force for five years. A new way to reduce production is the so called production interval: the producer receives the additional price only if he has an interval of at least ten weeks between production periods. Hens that are under 20 weeks old can be raised during the interval. It is estimated that production should decrease by about 7 mill. kg.

An attempt has also been made to reduce egg production by restricting hatching. For this purpose, general instructions on the number of hatching have been issued. In 1990 the number allowed was the same as in the previous year. During the past few years, expanding hatcheries and setting up new ones has been prohibited.

In practice, the *clearing of new arable land* has been made unprofitable through a land clearing charge of FIM 30,000/ha.

At the beginning of 1990 the act on land clearing was relaxed slightly.

Already in August 1986 the authorities started to reform pension systems in order to cut overproduction. The *pension system* in case of giving up production was improved so that farmers could commit themselves only to leaving their land uncultivated for six years. Earlier the system required selling or afforestation of arable land. By the end of 1990 this pension system covered about 70,000 hectares arable land.

## 12.2. Fallowing

Heavy fallowing was started in 1989, and this was continued last year. Farmers could make fallowing contracts with the state for either one or three years. The area to be fallowed had to be at least 15% of the arable land area of the farm, the minimum area being 2 ha.

Altogether about 25,600 contracts were made, and the total fallowed area was 175,000 hectares. 16,900 hectares was fallowed without the contracts in question, and, consequently, altogether 191,900 hectares, i.e. 8% of the total arable land area, remained out of production. As a rule the area left fallow has been only about 2% of the arable land area. The three-year contracts required grass fallowing, and this amounted to about 60,000 ha of the total fallowed area. Compensations amounted to FIM 383 mill.

Obviously, fallowing has a great impact on crop production, although it may also lead to more efficient use of the cultivated land. The total fertilizer sales increased again to some extent.

Fallowing compensations are graded regionally. The basic compensation varies from FIM 2,770 per hectare in Southern Finland to FIM 1,380 per hectare in the agricultural district of Lapland, and it may be raised by 10% if the land is very productive.

Grass fallowing was preferred for environmental reasons because there is less leakage than with conventional fallowing without any plants. Contracts are made for three years and farmers receive an additional compensation of FIM 300 per hectare.

In 1991 an attempt will be made to increase fallowing to 350,000-400,000 hectares. A farmer has to fallow 15% of the arable land area, for which a so called basic compensation of FIM 1,000-1,300/ha is paid. The compensation is FIM 200/ha lower if the land is poor or there are open ditches. If the area to be left fallow is more than 20% but under 30% of the arable land area an additional compensation of FIM 500-1,300/ha is paid for the area exceeding the mandatory 15%. Only the basic compensation is paid for fallowing a larger area.

If the farmer does not leave fallow any land he has to pay FIM 1,000/ha as export cost charges for the whole arable land area. Farms with less than three hectares or on which the grass area is at least 90% of the arable land area are free from mandatory fallowing.

Consequently, in practice fallowing is mandatory in 1991. It is estimated that through fallow-

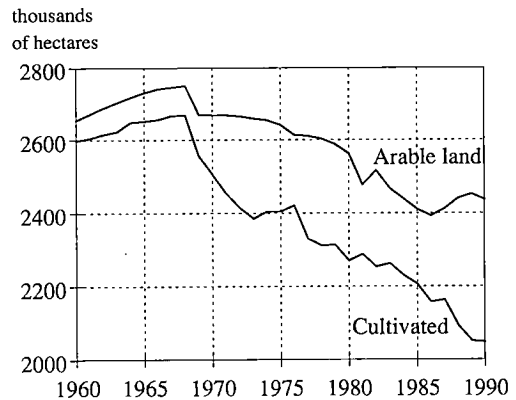


Figure 10. Arable land and the area under cultivation in 1970-1990.

ing about FIM 1,400 mill. will be saved in export costs. The state's costs for fallowing amount to about FIM 350 mill.

In addition to fallowing, farmers may participate in other systems for restricting production.

### 12.3. The cost and effects of production restriction measures

The appropriations to be used for measures to restrict production are prescribed in the Farm Income Acts. In 1990 FIM 550 mill. were reserved for this purpose. It is also stated in the Act that if the amount reserved is not adequate, agriculture has to account for half of the excess. Last year altogether FIM 816 mill. were spent on directing production. In addition, FIM 180 mill. were used for the contracts to leave arable land uncultivated and FIM 30 mill. for beef production contracts.

Table 18 presents an estimate of the effects of all measures to restrict production in 1990. If the quantities covered by the contracts had been exported, the export costs would have amounted to about FIM 2 bill., mainly to be paid by the state. Consequently, it was profitable for the state to apply the above-mentioned measures. However, it seems that the effects have been overestimated to some extent, because part of the reductions would also have occurred without any compensations.

Table 18. Summary of the extent of production control measures in 1990.

	Contracts in force	Area	Cows	Suckler cows	Hens	Pigs	Compen- sation FIM/mill.
Contracts to reduce agr. production	3.0	25.0	13.6		22.0	3.6	96
Contracts to reduce milk production	4.1		37.0				185
Contracts to reduce egg production	1.6				1280.0		105
Fallowing contracts	26.1	175.0					383
Beef production contracts	1.1			18.0			30
Grass	0.13						2
<b>Total</b>	<b>36.66</b>	<b>208.3</b>	<b>50.6</b>	<b>18.0</b>	<b>1302.0</b>	<b>3.6</b>	<b>816</b>
Commitments to leave uncultivated	7.0	70.0					
Corresponding production mill.kg	grain 750	milk 250	beef 3	eggs 22	pork 5		

Source: The National Board of Agriculture

## 12.4. Export cost charges

The responsibility of agriculture for export costs increased considerably in 1990. Export cost charges were collected as follows:

- Tax on fertilizers was FIM 0.05/kg Jan. 1st - May 31st, 0.15/kg June 1st - Dec. 31st and 0.20/kg from Jan. 1st 1991. From June 18th a tax on phosphorus of FIM 1.00/kg of phosphorus was collected, but this is not included in export cost charges, but it is purely based on environmental considerations. From June 16th 1991 it will rise to FIM 1.50/kg of phosphorus.

- The export cost charges for the 1990 grain crop were FIM 0.10/kg for barley and oats and 0.20/kg for rye and wheat. For the part of the 1991 crop the export cost charges will be FIM 0.80 for rye and 0.50 for wheat.

- Export cost charge for pork of FIM 0.20/kg has been collected if the slaughter weight is over

76 kg since July 1st 1990. From the beginning of 1991 the charge is FIM 0.20/kg if the slaughter weight is under 76 kg and 0.60/kg if the slaughter weight is over 76 kg.

- Tax on protein feed of FIM 1.30/kg was collected Jan. 1st - May 18th, and 1.60/kg May 19th - Dec. 31st. The tax concerns raw protein, excluding the protein in grain. The tax on each feed mix is determined on the basis of its protein content. No tax is collected on feed with protein content of under 19%. From the beginning of 1991 the tax is FIM 1.60/kg for raw protein and fat (for the amount exceeding a 5% fat content).

- A charge of fat, which is 0.8 pennies for one tenth of a percentage point for the part of fat content exceeding 3.7% was introduced in 1990 to cover the export costs due to overproduction of milk. The charge is the same as the price of fat, so that nothing is paid for the part of fat if the fat content is over 3.7%.



- Large-scale poultry farms and pig producers have to pay a marketing charge if the sales income that the charge is based on exceeds FIM 1.5 mill. for pig production and 0.65 mill. for poultry production (since 1989). If the producer has income from both pig and chicken production and the income from the production line that provides smaller income is at least 50,000, the marketing charge is determined on the basis of the total income from both production lines. The size of the enterprise that exceeds the income limits is about 570 pig places and 3,800 hens or chickens.

As Table 19 shows, the calculated export cost charges deviate from the final share of agriculture. The balance sheet cannot be calculated until at the end of the year. However, the excesses and shortfalls are taken into account in the calculation in the following year. Consequently, the final calculation indicated that in 1989 FIM 82 mill. too much had been collected from agriculture.

Instead, in 1990 too little was collected because the calculation shows a deficit of FIM 41 mill., although FIM 671 mill. were collected from agriculture as various charges and taxes.

It is estimated that in 1991 about FIM 1,041 mill. will be collected from agriculture for covering the export costs as well as for measures to balance production. The share of the export cost charges proper has been estimated at FIM 704 mill. This calculation does not include the tax on phosphorus, which is estimated to amount to about FIM 80 mill. in 1991.

## 12.5. Dual price system for milk

The dual price system for milk came into effect at the beginning of 1985. A quota was set for each farm on the basis of the amount of dairy milk production in either 1981/82 or 1982/83, i.e. based on the higher one. However, all farms that produced milk at the beginning of 1985 could produce freely up to 30,000 liters. The free quota was raised to 40,000 liters at the beginning of 1990. It is not possible to buy or sell quotas.

If the amount of milk delivered to dairies exceeds the quota, a quota charge (FIM 2.05/liter

in 1990) is collected for the excess. The principal is that producers get only the world market prices for the amount that exceeds their quota. The excesses have amounted to only about 10 mill. liters a year.

At the beginning of 1988 a quota system for dairies came into force. Dairies have to pay a quota charge of FIM 0.50/l for the amount of milk that exceeds the amounts of 1986. The aim is to prevent the dairies from taking advantage of the free quotas and, in general, from increasing milk production for economic reasons.

Quota system impedes structural development because it is not possible to increase the farm size. Rise in the yield level has even forced producers to reduce the number of dairy cows, which has led to underutilization of the buildings and machinery. Because milk production dropped below the production ceiling in 1989, a decision was made to relax the quota system to

Table 19. Export cost charges in 1988-90 (FIM mill.).

	1988	1989e	1990e
Milk	-	-	62
Quota charge	25	20	135
Pork	2	0	11
Tax on fertilizers	46	58	135
Tax on feed mixes	12	0	
Tax on protein feed	50	0	196
Additional marketing charge	15	15	10
<b>Total</b>	<b>150</b>	<b>93</b>	<b>671</b>
Transfer from the previous year	86	152	82
Share of agriculture	63	194	791
Others			3
Transfer to the next year	173	51	-41

Source: Ministry of Agriculture and Forestry.

some extent. In 1990 the quota charge was scaled so that with an excess of less than 10,000 liters the charge is only FIM 0.50/l, and after that it rose to the full FIM 2.05/l.

In 1990 the system was also made more flexible by making it possible to divide 90% of the quantities of those who stop producing to those who continue milk production. Priority was given to young producers as well as those who had increased their average yields. In addition, it was possible for those who had made a contract on ecological farming to apply for a license to start milk production. In this case production could amount to the maximum of 40,000 liters, i.e. the amount of a free quota.

Milk production is completely regulated by the state. It is supervised through a threefold quota system: the highest is the ceiling concerning the whole production, dairies have their own quotas, and the most effective restrictive means are the quotas for individual farms.

## 12.6. Dual price system for eggs

At the beginning of 1986 a quota system for egg production came into effect. A production quota was determined for each egg producer, based on the largest quantity sold in a year in 1982, 1983 or 1984. For special reasons the quota could be altered. In this system the regulation of production is based on an additional price, which in 1990 was paid as follows, depending on the production:

The provinces of Oulu and Lapland	Additional price FIM/kg		
	Jan. 1st	April 1st	Oct. 1st
tons			
0-10	3.35	3.74	3.94
10-100	2.50	2.89	3.09
Other parts of the country			
tons			
0-10	2.95	3.34	3.54
10-100	2.50	2.89	3.09

Producers get the target price plus the additional price for the quota. If the quota is below 10,000 kg, the producer gets the full additional price for the whole quota. Instead, if the quota is over 10,000 kg, additional price is paid for only 90% of the part exceeding 10,000 kg, and if production is over 100,000 kg the producer gets only a reduced target price. The payments of the additional price are realized mainly through the packers. They can also be paid through the agricultural boards, in which case they are FIM 2.64/kg for the part exceeding 10,000 kg.

In 1991 the quantity for which the additional price is paid is lowered: it will be paid for 80% of the production quota, and for the part exceeding 50,000 kg for only 70% of the quota. Producers will receive additional price only up to 80,000 kg.

As a result of the grading of the price production has decreased continuously, but this has been partly caused by the contracts to decrease production as well. It is estimated that in 1991 overproduction will amount to about half of the present level of 20 mill. kg.

## 12.7. Regulation of the establishment of production units

Originally, the regulation of the establishment of production units was based on the objective to prevent agriculture from becoming too industrialized. An attempt has been made to keep production in the hands of farmers. A condition for the establishment of an agricultural enterprise is that the farmer lives on the farm, and the farm size does not exceed certain limits.

The licenses have gradually become an effective means of preventing the increase of production. New livestock production units cannot be established or old ones extended without a license from the authorities. The Act on Directing Livestock Production was revised at the beginning of 1991 and it will remain in force until the end of 1994. For the most part, the new act does not differ very much from the earlier one.

A license from the agricultural districts is re-

quired for the establishment of production units with over 30 beef animals, 25 pigs, 100 hens for egg production, or 1,000 chickens (or other poultry) for poultry meat production.

These restrictions do not apply to milk production because it is regulated separately through the act concerning the milk quota system. Beef production that is based on suckler cows is not regulated, either, but, on the contrary, it is supported through a special suckler cow premium.

Licenses are not granted to enterprises with over 120 beef animals, 400 pigs, 4,000 hens or 30,000 chickens. It is possible for farms to get a license for only one form of livestock enterprise.

In addition, getting the license is subject to the condition that the farm should be able to supply 2/3 of the feed needed in the production. If the size of the enterprise is over 60 beef animals, 200 pigs or 1,000 hens, a 3/4 self-sufficiency in feed is required. In the case of chicken production, the required self-sufficiency is 1/5.

So far granting the license is restricted only to transfers of farms to descendants and, for special reasons, to some other cases when the owner of the enterprise changes.

In 1990, establishment or extension licenses were granted for additional pig places. Licences were granted only to farms that had changed their production line or in some exceptional cases. The farm had to produce at least half of the feed used in production. Changing the production line does not increase the total agricultural production.

In 1989 and 1990 the license system was relaxed so that no license was required for less than 20 sows as a result of the shortage of piglets. This procedure was discontinued at the end of 1990.

It was possible to establish or expand egg and chicken production only in exceptional cases, and beef production only in certain areas in Northern and Eastern Finland.

The licenses were granted on the condition that the ownership of the farm had changed, and the production could not be expanded. The production conditions of beef were improved by excluding suckler cows when determining the self-sufficiency in feed.

## 12.8. Production support

Finnish production policy is mainly characterized by supply control measures. There are, however, some measures that aim at increasing production, too. The most important one is the beef production support, which aims at raising slaughter weights. This was regarded as necessary in the mid 1970s to secure the domestic beef supply.

Production support is realized through an additional price, which is paid if the slaughter weight exceeds certain limits. Additional price for slaughter animals of over 190 kg (heifers over 140 kg) was paid according to the footnote in Appendix 7.

Beef production is also supported through the so called suckler cow premiums (FIM 1,700/cow in 1990). The system covers about 18,000 cows.

Additional production premium is also paid for mutton. There is no actual production support for grain, but the production of rye and feed grain is supported by regional subsidies in some parts of Finland. The production premium for rye was FIM 0.30/kg and that of feed grain FIM 220/ha.

Since 1990 ecological cultivation has been supported by FIM 2,800 per hectare. Farmers can shift to ecological cultivation during a three-year period, during which they are entitled to support. Also, farmers engaged in ecological farming prior to 1990 may receive support. Farmers commit themselves to practicing ecological cultivation for three years after the last year they get the premium. This procedure will be continued in 1991.

## 13. Agricultural support

### 13.1. Support in general

As a rule, agricultural support refers to the support that is paid through the state budget. It is mainly a result of the price system in agriculture, which guarantees the farmers a certain price level for the quantities determined by the production



ceilings. In 1989 the support amounted to about FIM 9 bill. (Table 20).

Part of the price support is a result of the system for equalizing incomes within agriculture, i.e. price policy support, which includes, for example, hectare subsidies, regional subsidies, as well as the additional price of milk and meat, and which is realized through the budget (see Chapter 13.2. on price policy support). Agricultural support presented in Table 20 consists of various amounts, including reindeer husbandry and fishing.

Part of the support is not included in the price system, for example, investment support and support for the financing of structural development are granted through the Development Fund (see Chapter 14). Agricultural counselling and processing are also supported through budget funds.

In the case of sugar and oil plants the difference between the domestic and foreign price level is equalized through special import levies and excise taxes. As a result, the budget also includes support on food stuffs, which amounted to FIM 735 mill. in 1989. Most of this is returned to the state as import levies and excise taxes paid by the consumers.

To realize the target price level the state has to pay export subsidies and compensations for the differences in prices to prevent the export of surpluses from lowering the producer prices. Export subsidies decreased considerably in 1988 but reached the earlier level in 1989 due to the grain exports in the fall. For computational reasons, the refund of the sales tax of export products is also regarded as export support.

Agricultural support can also be defined more broadly as the difference between the producer price and world market price. This definition has been applied, for example, by OECD in its study of the agricultural support in different countries.

In OECD's study the support is measured by a PSE (producer subsidy equivalent) indicator, which is calculated, roughly, as the difference between the producer price and world market price. In principal, all agricultural support (price support, export support, production subsidies,

investment support, research and advisory costs, etc.) are included in the producer price. This procedure has been regarded as necessary to be able to include all forms of support in the calculation.

As calculated by OECD, the support becomes very big because it is based on the world market prices, which are quite low. The support is very much susceptible to disturbances in the market, especially oversupply. Some of the world market prices determined through this procedure have obviously been far too low.

### 13.2. Price policy support

Price policy support is a central form of support related to our price system. The amount is decided in the farm income negotiations, since part of the raises of prices is transferred to price policy support. Income disparities within agriculture are equalized through this support, but it also used to function as a means of slowing down

Table 20. Agricultural support FIM mill.

	1987	1988	1989e
Agricultural production	3245	5085	4886
- price policy support	2043	2021	2990
- structural support	882	939	989
- other	380	2125	908
Food stuffs	1178	805	735
- price support	1127	726	661
- other	51	79	74
Marketing	3845	2855	3338
- export support	2347	1566	2403
- sales tax	652	469	492
- export of processed products	838	788	393
Other	9	31	50
<b>Total, gross</b>	<b>8267</b>	<b>8744</b>	<b>8959</b>
<b>Total, net<sup>1</sup></b>	<b>7031</b>	<b>7534</b>	<b>7784</b>

<sup>1</sup> Net expenditure has been calculated by deducting the state's tax and charge incomes from the gross expenditure.

Source: Economic Survey 1989



inflation in the mid 1970s, when part of the raise in the price of milk was transferred to be paid as a so called additional price through the budget.

The most important forms of price policy support are regional subsidies, support paid according to the farm size, as well as the additional price of milk and eggs. In the last farm income settlement altogether FIM 3,144.4 mill. was reserved for price policy support, including FIM 636.6 mill. for regional support, FIM 955.4 mill. for hectare subsidies, FIM 1,552.4 mill. for additional price of milk, meat and eggs and direct support.

The support that is based on the farm size (the so called *hectare subsidy*) is tied to the area of the farm and to the number of livestock, i.e. to so called production units (one hectare and one dairy cow equal one production unit, one pig equals 0.2 production units, etc.). Subsidies are highest on farms with 7-8 hectares. The payment per production unit is confirmed annually, and it is scaled according to the joint income of the farmer and spouse and according to the region.

Essential changes were realized in the principles of payments in 1989, when hectare subsidies became taxable. This change was connected with the overall tax reform, which aimed at simplifying taxation and abolishing various tax reliefs. As this would have caused an increase in taxation, income tax scales were relaxed. Hectare subsidies became subject to marginal tax, which even in the case of people with low income amounts to almost 50%. In order not to lower the real effect of hectare subsidies so strongly, they were raised by altogether 52.4% in the 1989 farm income negotiations. This increase was not regarded as an increase in farm income, which is true because of the taxation.

In order to determine the hectare subsidies the country has been divided into five areas, two in Southern Finland and three in Northern Finland, and, in addition, the subsidies are scaled according to incomes. Producers that are under 35 years of age receive the subsidy raised by 40% if their income is below FIM 77,500 (Table 21). Hectare subsidy must be applied from the agricultural board of farmers' home county.

Table 21. Hectare subsidies per production unit in 1990.

	Southern Finland		Northern Finland		
	I	II	I	II	III
under 77,500	1120	1232	1344	1456	1680
77,501-87,000	896	986	1075	1165	1344
87,001-96,000	728	801	874	946	1092
96,001-105,500	504	554	605	655	756
105,501-115000	336	369	403	437	504
below 35 years of age	1568	1725	1881	2038	2352

In recent discussions on agricultural policy, direct income support has been put forward very strongly as a means of meeting farmers' demands concerning their income level, if the protectionist foreign trade of agricultural products is abolished. Direct income support should be neutral with regard to production, and it should not increase production at all. Hectare subsidies used in Finland meet this requirement, and they may even reduce production due to the minimum income limit. There has been no reason to increase production if the advantageous tax-free hectare subsidy had been lost as a result.

*Regional subsidy* is paid to milk and meat producers as production support per production unit. For this purpose the country has been divided into 8 regions, and the production subsidy for milk and meat has been determined for each of them separately. Regional subsidy is very important to farmers in Northern Finland because, for example, the regional subsidy for milk is FIM 0.17-0.32/l in the province of Oulu. In the northernmost parts of the country the subsidy for milk was FIM 0.69/l, for pork FIM 0.85/kg and for beef FIM 9.60/kg. This subsidy has proved very effective as a means of equalizing income disparities within agriculture. According to estimates, the subsidies account for about 75% of agricultural income in Northern Finland.

Based on the *number of animals*, a subsidy, which includes the compensation for the price reduction of commercial feed, is paid in North-

ern Finland and in the archipelago. The subsidy is graded regionally and it varies between FIM 140 and 1,725 per animal unit. In the southernmost parts of the supported area the subsidy is doubled for the first five dairy cows, and in the north it is tripled for the first six dairy cows.

*The additional price* of milk was introduced in 1974 to slow down inflation. At first it was the same for all farmers, but later it has been graded according to the quantities of milk (see Appendix 7), and, consequently, it has become a means of dividing incomes within agriculture. The grading of prices was changed last year.

Farmers over 65 years of age do not get the additional prices. It is generally regarded as desirable that *pensioners* would give up agriculture. Thus part of the arable land might remain out of production, which reduces overproduction.

Farmers over 65 years of age do not get hectare subsidies, either. These two points have increased the willingness to retire, which is also supported by the improvements in the pension systems.

## 14. Developing the structure of agriculture

Developing the structure of agriculture requires investments (e.g. new buildings and machines), land improvements (subsurface drainage) as well as incorporation of farms or their lands. These measures are partly financed privately, and partly through state support. The Farm Act that came into effect in 1977 defines the general framework for the development of farms that is supported by the state. This act was revised last year, and it came into force at the beginning of 1991 with the title the *Act on Rural Industries*.

The objective of the new act is to create a uniform legislation in order to promote agriculture and rural industries. It consists of the earlier Farm Act, the Act on Promoting Small-Scale Industries in the Countryside, starting subsidies to young farmers, the Act on Interest Support Loans for Stocks and part of the support to small-scale enterprises paid by the government and the

Ministry of Trade and Industry.

The rationalization and decrease of agricultural production cause a decrease in rural population and threaten to leave the countryside uninhabited. Consequently, an attempt has been made to develop rural industries in general. The objective of the new act is to make this activity more uniform and extensive. However, only basic production and entrepreneurial activity closely connected with it are subsidized on the basis of the Act on Rural Industries.

Support measures based on the earlier Farm Act stay about the same in the new act. Support is paid on the condition that production on the farm is profitable. In connection with the preparation of the act, the objective of directing the support only to the truly profitable farms has been put forward, in which case small farms would be left without the support. Obviously, this could improve the structure of farms and raise the average farm size.

The state supports agricultural investments by granting low interest loans as well as direct subsidies through the Agricultural Development Fund. Its capital consists of the annual transfers into the fund by the state, interests and repayments. At the end of 1989 the loan capital of the fund amounted to FIM 7.1 bill.

An essential stipulation of the new act is that the interest level is tied to 4-7%, depending on the region. The share of the interest support of the loans is 50% of the interest of the banks.

In the 1990 state budget altogether FIM 180 mill. were transferred to the Development Fund. The amount has decreased considerably in the past few years, but no essential decrease has occurred in the possibilities for granting loans. Income from interests and installments of loans were estimated to have amounted to FIM 808 mill. Together with the untied funds from the previous year, the fund had altogether FIM 1,120 mill. at its disposal. FIM 753 mill. were spent on farm loans, FIM 120 mill. on purchasing land, and the rest on, for example, subsidies and premiums to farmers, to those engaged in reindeer husbandry or ecological agriculture, as well as to loans prescribed by the Act on Small-Scale Industries in the Countryside.



In addition, FIM 274 mill. were reserved in the state budget to be used as interest support for the loans prescribed by the Farm Act. Thus the interest on the loans from private banks could be lowered to the same level with the interest rate of the Development Fund. New interest support loans were granted for about FIM 900 mill. The loans of the Development Fund have mainly been granted to the developing areas.

The so called *start money system* is also part of the investment support. Young farmers under 35 years of age are entitled to state support when they start practicing agriculture on a farm they have acquired. The maximum subsidy is FIM 65,500 in 1991 to be spent on, for example, purchasing machinery, implements or fertilizers.

Altogether FIM 115 mill. of start money was available. In 1991 this rose to FIM 135 mill.

Because agricultural production cannot be increased other rural industries are supported, both through the Agricultural Development Fund and directly from the budget funds. The support is directed, in the first place, to enterprises practiced by farmers in connection with agriculture. The enterprise which is entitled to support must be run by the farm family or can employ, in addition to the owner, outside labor corresponding to 2-3 annual jobs. The most important industrial sectors the have received support are small-scale labor intensive manufacturing and service industries (33%), greenhouses, gardens and other special crop production (22%), horse husbandry, farm holidays and other forms of leisure-time activities (19%), aquaculture, beekeeping and (15%).

In 1990 altogether FIM 110 mill. were reserved as subsidies for supporting the small-scale industries in the countryside, FIM 47 mill. were granted as interest support loans from the funds of banks, and FIM 94.8 as state loans from the Development Fund.

## 15. Social policy

A farmer is at the same time an entrepreneur and an employee. The general laws and acts on the social security of employees do not concern farmers, but a separate legislation has been

developed for them. Usually this has been decided on in the farm income negotiations. The responsibility for the costs of the social security is divided between farmers and the state. The most important acts concern the pensions, compensations in case of sickness or accidents, annual vacation and substitute help.

*Farmers' pensions* are prescribed by law, and they are comparable with employee pensions in other sectors. Farmers pay insurance payments according to their labor income, which is mainly determined by the area of the farms. They are entitled to, for example, old-age pensions, part-time pensions, disability pensions, unemployment pensions, as well as a pension in case of early retirement. The amount is determined by the insurance payments, but the state also contributes to financing the pension costs. Because the number of the insured has decreased and the number of pensioners has increased, the state accounts for about 80% of the pension costs.

The acts on farmers' pensions are supplemented by the pension in the case of a transfer of the farm to a descendant, which mainly aims at lowering the average age of farmers and to get skilled farmers to the field. The transfers of the farms to descendants are promoted through this act, which has been in force since 1974, and which was revised at the beginning of 1991. About 1,500-2,000 contracts a year have been made, and the arable land area of the farms has been a little under 20 ha.

Pension in the case of a transfer of the farm to a descendant can be granted to farmers over 55 of age. The contract can be made when the farmer is 50 years old, but the payments start when he is 55. The pension is subject to the further condition that the production on the farm can be considered profitable. In practice, the amount is determined in the same way as in the case of disability pensions, and the same stipulations are applied as for the other pensions in the case of early retirement. The sale price of the farm also affects the pension. This aims at preventing the rise in sale prices and making them correspond to the productive value of the farm.

*The act on the pension in the case of giving up production*, which came into force in 1974, also

aims at improving the structure of agriculture and reducing production, because the pension is subject to the condition that the farmer quits production. This can be realized in several ways. In the past few years the contracts to stop farming have become most popular, whereas not so many afforestation or sale contracts have been made.

Contracts to give up production can be made by farmers over 55 of age, but the spouse or a widow can get the pension already at the age of 45. This pension may also supplement other pensions, e.g. old age or disability pensions. In the period when the act has been in effect, more than 15,000 farms have made these contracts.

In the case of disability that results from illness farmers are entitled to compensation according to the *act on health insurance*, after the waiting period. Waiting period consists of the day when the disability starts and seven weekdays after that. At the beginning of 1991 a new act came into effect, according to which the compensation is also paid for the waiting period.

In 1982 farmers' *accident insurance* act came into effect. The accident insurance is automatically incorporated in the pension insurance. The insured are entitled to compensation for costs, daily allowance and pension in case of accidents or occupational diseases. Insurance payments are collected from those who, according to the act, have to take the insurance. Farmers account for about half of the costs of the additional insurance, and this is taken into account in the farm income calculation as agricultural cost (FIM 57.7 mill. in spring 1990). The state finances the other half of the additional insurance, and the basic insurance is mainly financed by the National Pensions Office. At the beginning of 1991 the act was revised for the part of the annual labor income that the compensation is based on so that the labor income according to the pension act of agricultural entrepreneurs at the time when the accident occurs would be regarded as the annual labor income.

In 1988, a *group life insurance* for farmers was introduced, the aim being to secure the sub-

sistence of the family of the deceased.

Farmers engaged in livestock production are entitled to an annual leave of 22 days. The municipalities have to arrange vacation substitutes for the duration of farmers' vacations. This system is mainly financed by the state, but agriculture also contributes to the costs, because part of them is taken account as farm income in the farm income negotiations.

Farmers can get *substitute help* in the case of sickness, accidents, rehabilitation, military service or childbirth. The substitute help for the duration of maternity leaves was extended to 320 days from the beginning of 1991 in last year's farm income negotiations. Farmers pay for the substitute help, and the amounts are determined according to their income. The payments are taken into account in the farm income calculation as agricultural cost (FIM 25.0 mill. in spring 1990). The costs of the substitute help system are mainly paid by the state, but agriculture pays part of them in the farm income settlement.

Animal husbandry does not allow week-ends off as most other jobs do, which means that these farmers have a seven-day working week. A *days-off scheme* has been developed to relieve farmers engaged in animal husbandry from being continuously tied to their work. A farmer is entitled to a maximum of 12 days off a year, either one day at a time or several consecutive days, the maximum being five days a month. Farmers contribute to the costs of the scheme, and the amounts are determined according to the number of animals. The payments are taken into account in the farm income calculation as agricultural cost (FIM 12.3 mill. in spring 1990). Only about 20% of farmers entitled to the days-off have taken advantage of this scheme.

An experiment of farmers' *occupational health care* was started in 1980. Occupational health care is preventive health care, including accounts of working conditions and health inspections. Farmers pay 40% of the costs of health inspections, and the National Pensions Office and the state account for the rest.

## IV SUMMARY

The year 1990 was a period of great uncertainty in agriculture. The negotiations in GATT and EES were in progress the whole year, but no decisions were reached in either one. The whole time agriculture was on the defensive because both negotiations are likely to lead to a decrease in agricultural support. However, it should be possible, at least partly, to take care of the weakening of farmers' income level, which is very likely, through direct support. Finland has been willing to reduce export support, but lowering the border protection has met with resistance because it leads very easily to an increase in imports and a decrease in agricultural production.

The external pressures on agriculture have not been removed, however, because the GATT negotiations are still in progress. The integration with the EC will also cause problems. It is likely that the import protection of agriculture will have to be lowered if a contract is made between the EFTA countries and the EC. The criticism against the high food price level continued as well. Another major topic last year was the increase in overproduction.

For the part of agriculture proper, 1990 was a very good year. The area under cultivation was about the same as in the previous year. Weather conditions in the summer were favorable to agriculture, despite the drought in the early part of the summer. Consequently, the crop of 1990 was the biggest ever. The total yield was 5,944 mill. f.u. and the hectare yield 3,142 f.u. The yield of feed grain amounted to 3,425 kg. The hectare yields of almost all crops were higher than ever before.

Livestock production increased slightly in 1990. The amount of milk delivered to dairies was 2,598 liters, i.e. 2% more than in the previous year. Pork production increased by 5%, and the export ceiling was exceeded by 14 mill. kg. Beef production also grew by about 5%.

The consumption of agricultural products has stayed about at the same level. There was some increase in the consumption of meat, but as production grew as well, the exports increased. It was also necessary to increase export subventions due to the fact that the world market prices were on the decrease.

A new Farm Income Act came into effect last year. It had the greatest impact on the responsibility of agriculture for exports because production ceilings were lowered. The share of agriculture in the export costs rose to almost FIM 800 mill. The change was remarkable because in 1989 the production ceilings were not exceeded at all.

The responsibility of agriculture for exports was covered through various charges, the most important being the taxes on fertilizers and feed as well as marketing fees of milk, pork and grain, which amounted to altogether about FIM 670 mill. The tax on phosphorus, which should remain a purely environmental tax, caused additional strain to agriculture. In 1991 the responsibility for exports will be at least as high as last year.

According to a preliminary estimate, farm income rose by 21% in spite of the high export cost charges. Production increased as a result of the good grain crop and the increase in livestock production. Instead, the use of production inputs decreased about 2%.



The measures to restrict production were enforced in 1990. Fallowing was continued in the same way as in 1989, but the area remained slightly below the target. As the grain crop was good, the overproduction of grain exceeded all estimates and the export cost charges had to be realized retroactively in order to take care of the marketing and stocks.

An attempt is being made to adapt agriculture to the tightening market situation. Production is restricted through fallowing that is prescribed by law, i.e. in 1991 each farm has to leave fallow 15% of its arable land area or it must pay an export cost charge of FIM 1,000/hectare of arable land. The voluntary measures to reduce the

production of milk and eggs were made more efficient at the turn of the year. Milk production, in particular, should be lowered by 10-12%.

As a result of the international pressures, the moods have been quite pessimistic in agriculture. Restricting overproduction has also aroused distress and irritation among farmers. The authorities have been forced to search for a balance between the international pressures and farmers' interests, and, on the whole, they have promised to retain agricultural production that corresponds to domestic consumption. However, it also is possible that the outcome of the international negotiations will regulate Finnish agricultural policy in the future.

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Appendix 1. Producer price index and cost price index in agriculture with subsidies (1970=100).

	Producer price index of agriculture	Cost price index	Requisites and tools	Machines	Buildings
1975	188.2	205.9	188.4	208.3	230.2
1976	213.6	238.4	255.3	231.2	255.4
1977	229.4	273.6	267.3	258.1	281.4
1978	242.5	285.4	273.8	282.2	294.9
1979	257.2	304.3	282.8	308.7	325.6
1980	288.2	341.7	318.0	341.2	372.1
1981	324.5	394.0	384.9	374.6	400.8
1982	370.0	427.5	423.2	404.0	424.2
1983	394.8	464.2	461.3	445.7	454.3
1984	419.6	501.7	504.0	474.1	479.2
1985	448.4	527.0	531.4	495.9	499.6
1986	456.5	518.6	506.4	517.7	517.1
1987	463.7	522.8	499.5	534.1	535.1
1988	480.7	537.5	496.9	561.9	563.2
1989	500.0	566.5	518.1	590.2	602.5
1990 <sup>e</sup>	500.4	606.0	554.7	631.8	647.2

Appendix 2. Some figures of the agricultural structure.

	Number <sup>1)</sup> of farms 1000	Average <sup>1)</sup> size of farms, hectares	Number of milk suppliers 1000	Employed in <sup>2)</sup> agriculture 1000 persons	% of total employed
1975	248.7	10.05	128	327	14.1
1976	242.7	10.26	119	306	13.4
1977	237.7	10.43	112	278	12.5
1978	232.8	10.60	104	261	11.9
1979	229.3	10.78	98	251	11.1
1980	224.7	10.96	91	251	10.8
1981	218.9	11.16	85	250	10.6
1982	212.6	11.42	78	255	10.7
1983	208.2	11.63	74	246	10.3
1984	203.9	11.85	70	242	10.0
1985	200.5	12.07	66	228	9.4
1986	195.4	12.38	63	218	9.0
1987	192.2	12.59	58	206	8.5
1988	189.0	12.77	53	197	8.1
1989			48	179	7.2
1990 <sup>e</sup>			45		

<sup>1)</sup> over 1 hectare

<sup>2)</sup> Source: Finnish Labour Review, Ministry of Labour Planning Secretariat

<sup>e</sup> estimate



Appendix 3. Number of animals in June and the average yield per cow.

	Dairy cows 1000	Yield per cow litres	Pigs 1000	Hens 1000
1970	889.1	3677	1002.4	4470.9
1971	849.3	3806	1129.3	5249.0
1972	836.5	3889	1045.7	5963.7
1973	823.6	3839	1139.3	5869.0
1974	818.5	3856	1048.9	5803.2
1975	773.2	3997	1036.1	5943.3
1976	763.1	4200	1053.9	6333.2
1977	751.6	4197	1143.3	6245.1
1978	742.0	4260	1244.7	6046.4
1979	730.1	4336	1288.7	6029.4
1980	719.5	4478	1410.2	6040.7
1981	700.8	4450	1467.1	5200.2
1982	689.2	4493	1475.3	5291.5
1983	663.1	4778	1440.7	5440.4
1984	659.5	4799	1381.8 <sup>1)</sup>	6025.3
1985	627.7	4812	1295.2 <sup>1)</sup>	5922.4
1986	606.8	4935	1322.7 <sup>1)</sup>	5532.1
1987	589.0	4905	1341.9 <sup>1)</sup>	5341.6
1988	550.6	4990	1305.1 <sup>1)</sup>	5237.6
1989	506.6	5246	1290.7 <sup>1)</sup>	4923.3
1990	496.6	5500 <sup>e</sup>	1298.0 <sup>1)</sup>	4841.5

<sup>1)</sup> Including the pigs of dairies

<sup>e</sup> estimate

Appendix 4. Sales of fertilizers (kg/ha).

	N	P	K
1970-71	63.7	29.4	43.5
1971-72	68.5	30.5	46.5
1972-73	69.4	30.8	47.4
1973-74	78.2	33.4	52.0
1974-75	85.8	34.2	53.9
1975-76	79.6	29.5	47.6
1976-77	65.4	25.0	41.1
1977-78	69.1	25.8	43.3
1978-79	76.9	27.8	47.4
1979-80	83.3	28.0	50.2
1980-81	82.4	27.8	49.3
1981-82	78.7	26.8	47.5
1982-83	91.4	29.9	53.8
1983-84	90.7	30.9	55.9
1984-85	88.9	30.8	56.5
1985-86	90.0	30.2	55.5
1986-87	94.4	31.0	56.5
1987-88	98.2	32.0	59.3
1988-89	100.3	29.7	56.1
1989-90	111.5	30.7	57.6



Appendix 5. Agricultural total calculation, gross return in current prices, FIM mill.

	1985	1986	1987	1988	1989 <sup>e</sup>
<b>Crop production</b>					
- Rye	195.8	202.1	189.0	163.3	448.5
- Wheat	999.7	1081.6	933.4	659.6	1028.5
- Barley	1446.3	1521.0	1196.6	1266.0	1435.8
- Oats	606.7	680.8	517.1	571.8	901.6
- Potatoes	280.6	358.8	640.4	517.9	457.9
- Potatoes of processing	209.3	200.1	92.2	223.7	260.9
- Seed potatoes	8.1	8.9	6.9	10.7	10.8
- Sugar beets	372.9	457.0	243.4	489.2	539.0
- Oil plants	326.2	451.2	454.3	461.7	515.5
- Peas	22.4	23.7	12.3	13.6	16.3
- Grass seeds	35.8	31.5	17.4	43.5	47.1
<b>TOTAL</b>	<b>4503.8</b>	<b>5016.6</b>	<b>4303.1</b>	<b>4421.2</b>	<b>5662.0</b>
<b>Garden production</b>					
- Root crops	63.6	82.9	70.8	123.5	83.6
- Vegetables	516.0	538.1	546.4	527.5	563.0
- Berries	119.2	123.4	117.4	117.6	149.6
- Fruits	23.5	48.9	15.8	44.1	45.7
<b>TOTAL</b>	<b>722.3</b>	<b>793.3</b>	<b>750.4</b>	<b>812.7</b>	<b>841.9</b>
<b>Animal production</b>					
- Milk	8011.9	8048.5	7893.0	7638.3	8170.6
- Beef	3480.1	3532.2	3547.3	3411.1	3520.9
- Veal	1.6	1.6	1.7	1.7	1.8
- Pork	2787.5	2870.1	2907.9	2924.5	3141.2
- Mutton	42.0	40.0	41.9	36.3	37.1
- Horse meat	18.9	18.1	19.2	14.6	15.6
- Poultry	235.0	265.8	334.7	365.4	392.6
- Eggs	943.2	896.3	865.4	848.3	889.1
- Export of animals	11.0	12.2	11.2	10.6	12.7
<b>TOTAL</b>	<b>15531.3</b>	<b>15684.7</b>	<b>15622.3</b>	<b>15250.8</b>	<b>16181.7</b>
<b>PRODUCTION TOTAL</b>	<b>20757.4</b>	<b>21494.7</b>	<b>20675.8</b>	<b>20484.6</b>	<b>22685.6</b>
<b>Income from rents</b>					
- Means of production	466.0	464.7	457.0	469.4	482.6
- Buildings and land	120.7	148.1	165.3	166.9	175.2
<b>TOTAL</b>	<b>586.7</b>	<b>612.8</b>	<b>622.3</b>	<b>636.3</b>	<b>657.8</b>
<b>Subsidies</b>					
- by farm size	567.8	579.5	531.4	644.6	1340.9
- by number of cows	119.4	124.2	127.8	145.3	180.5
- Premium of feed grains	41.9	42.6	41.4	39.6	42.0
- "Start money"	110.5	90.7	149.3	132.0	116.0
- Premium for suckler cows					7.1
<b>TOTAL</b>	<b>839.6</b>	<b>837.0</b>	<b>849.9</b>	<b>961.5</b>	<b>1686.5</b>
<b>Compensations to reduce production</b>					
- Production guiding (4a§)	65.1	44.8	16.5		
- Milk bonus	157.2	129.6	74.1	142.8	141.2
- Pork bonus	13.2	12.6	11.7	0.0	0.0
- Egg bonus			37.7	0.8	12.8



Appendix 5, continued.

	1985	1986	1987	1988	1989 <sup>e</sup>
- For decreasing animal productions	32.8	32.6	36.1	31.8	22.7
- Premium of beef	5.1	4.2	5.1	5.3	2.2
- Fallowing compensations	26.3	82.1	110.0	209.3	375.5
<b>TOTAL</b>	<b>299.7</b>	<b>305.9</b>	<b>291.2</b>	<b>390.0</b>	<b>554.4</b>
<b>Compensations for crop damages</b>	<b>33.0</b>	<b>11.9</b>	<b>34.3</b>	<b>1541.4</b>	<b>128.9</b>
<b>GROSS RETURN TOTAL</b>	<b>22516.4</b>	<b>23262.3</b>	<b>22473.5</b>	<b>24013.8</b>	<b>25713.3</b>
<b>Costs</b>					
- Fertilizers	1835.7	1875.2	1604.2	1605.9	1674.0
- Lime	147.0	108.1	127.6	119.0	132.6
- Feed concentrates					
- mixture	2819.5	2966.9	3319.0	3478.0	3945.7
- other	214.1	172.9	139.9	122.0	122.9
- Feed conserving chemicals	155.1	143.5	140.3	145.2	149.3
- Pesticides	229.4	264.8	282.2	291.9	342.6
- Purchased seeds	488.4	493.2	590.4	603.0	520.5
- Fuel and lubricants	739.2	585.1	596.4	492.2	572.9
- Electricity	324.1	357.3	398.8	369.5	370.9
- Agricultural firewood and timber	142.7	133.7	126.1	126.9	131.5
- Delivery of calves and pigs	46.5	47.7	47.2	45.8	47.3
- Overhead costs	1204.9	1295.9	1343.1	1338.1	1368.1
- Hired labor					
- wages	310.9	334.9	386.0	363.2	406.4
- social expenses	158.5	187.6	207.4	204.3	247.7
- Machinery and equipment expenses					
- depreciations	2795.0	2921.0	3004.0	3054.0	3190.0
- maintenance	744.6	753.1	814.5	807.8	875.3
- Equipment	135.0	136.7	147.8	144.4	153.1
- Building expenses					
- depreciations	999.0	1062.0	1136.0	1101.0	1260.0
- maintenance	409.5	415.8	433.5	433.7	449.6
- Interest payment	1021.0	1106.0	1231.8	1338.0	1553.2
- Imports of animals	1.8	1.8	2.0	3.1	1.7
- Rent expenses					
- means of production	327.0	326.8	316.7	298.3	292.5
- buildings and land	209.9	238.4	256.9	270.0	287.5
- Farmers' share of costs from					
- accident insurance payment	21.8	25.8	28.4	34.9	45.9
- outside help	15.2	16.8	20.4	22.5	25.0
- days-off scheme	8.3	10.3	11.0	12.6	12.3
<b>COSTS TOTAL</b>	<b>15504.0</b>	<b>15981.5</b>	<b>16711.6</b>	<b>16825.3</b>	<b>18178.6</b>
<b>GROSS RETURN TOTAL</b>	<b>22516.4</b>	<b>23262.3</b>	<b>22473.5</b>	<b>24013.8</b>	<b>25713.3</b>
<b>COSTS TOTAL</b>	<b>15504.0</b>	<b>15981.5</b>	<b>16711.6</b>	<b>16825.3</b>	<b>18178.6</b>
<b>FARM INCOME</b>	<b>7012.3</b>	<b>7280.9</b>	<b>5761.9</b>	<b>7188.4</b>	<b>7534.7</b>

<sup>e</sup> estimate



Appendix 6. Agricultural total calculation, gross return in 1985 fixed prices, FIM mill.

	1985	1986	1987	1988	1989 <sup>c</sup>
<b>Crop production</b>					
- Rye	195.8	191.2	186.7	147.5	371.3
- Wheat	999.7	1033.2	963.7	659.3	883.7
- Barley	1446.3	1466.8	1160.4	1208.3	1306.6
- Oats	606.7	657.7	500.3	535.9	782.4
- Potatoes	280.6	326.6	437.2	415.4	507.6
- Potatoes of processing	209.3	226.9	94.7	213.8	241.2
- Seed potatoes	8.1	8.6	6.4	9.8	9.7
- Sugar beets	372.9	446.6	244.8	532.2	559.8
- Oil plants	326.2	434.6	431.5	431.9	459.8
- Peas	22.4	23.9	10.4	15.1	15.7
- Grass seeds	35.8	36.4	12.0	35.0	51.4
TOTAL	4503.8	4852.4	4048.1	4204.1	5189.2
<b>Garden production</b>					
- Root crops	63.6	85.7	46.3	92.2	76.0
- Vegetables	516.0	514.1	421.7	551.3	534.0
- Berries	119.2	122.8	97.6	113.0	118.5
- Fruits	23.5	33.0	11.3	21.9	32.0
TOTAL	722.3	755.6	576.9	778.4	760.5
<b>Animal production</b>					
- Milk	8011.9	7977.2	7631.7	7150.9	7161.3
- Beef	3480.1	3449.7	3405.5	3076.9	2959.5
- Veal	1.6	1.6	1.6	1.6	1.6
- Pork	2787.5	2814.4	2846.2	2736.6	2818.8
- Mutton	42.0	38.3	37.5	29.5	27.3
- Horse meat	18.9	17.2	17.6	12.9	13.1
- Poultry meat	235.0	252.8	305.6	318.7	346.9
- Eggs	943.2	901.3	867.0	823.0	811.2
- Export of animals	11.0	11.9	10.7	9.8	11.0
TOTAL	15531.3	15464.5	15123.5	14159.9	14150.6
<b>PRODUCTION TOTAL</b>	20757.4	21072.4	19748.6	19142.4	20100.3
<b>Income from rents</b>					
- Means of production	466.0	440.6	408.0	403.3	396.0
- Buildings and land	120.7	152.1	167.5	163.3	163.3
TOTAL	586.7	592.7	575.5	566.6	559.3
<b>Subsidies</b>					
- by farm size	567.8	595.0	538.4	630.7	1249.7
- by number of cows	119.4	127.5	129.5	142.2	168.2
- Premium of feed grains	41.9	43.7	41.9	38.7	39.1
- "Start money"	110.5	93.1	151.3	129.2	108.1
- Premium for suckler cows					6.6
TOTAL	839.6	859.3	861.1	940.8	1571.8
<b>Compensations to reduce production</b>					
- Production guiding (4a§)	65.1	46.0	16.7		0.0
- Milk bonus	157.2	133.1	75.1	139.7	131.6
- Pork bonus	13.2	12.9	11.9	0.0	0.0
- Egg bonus			38.2	0.8	11.9



Appendix 6, continued

	1985	1986	1987	1988	1989 <sup>e</sup>
- For decreasing animal production	32.8	33.5	36.6	31.1	21.2
- Premium of beef	5.1	4.3	5.2	5.2	2.1
- Fallowing compensations	26.3	84.3	111.4	204.8	350.0
<b>TOTAL</b>	<b>299.7</b>	<b>314.1</b>	<b>295.0</b>	<b>381.6</b>	<b>516.7</b>
<b>Compensations for crop damages</b>	<b>33.0</b>	<b>12.2</b>	<b>34.8</b>	<b>1508.2</b>	<b>120.1</b>
<b>GROSS RETURN TOTAL</b>	<b>22516.4</b>	<b>22850.8</b>	<b>21514.9</b>	<b>22539.6</b>	<b>22868.2</b>
<b>Costs</b>					
- Fertilizers	1835.7	1863.4	1830.4	1978.6	2019.5
- Lime	147.0	103.8	122.5	108.1	111.9
- Feed concentrates					
- mixture	2819.5	2990.3	3213.2	3293.5	3565.3
- other	214.1	215.6	172.1	140.5	114.2
- Feed conserving chemicals	155.1	145.5	146.8	150.0	154.7
- Pesticides	229.4	261.7	269.3	268.8	314.4
- Purchased seeds	488.4	493.2	540.4	520.4	432.9
- Fuel and lubricants	739.2	879.8	958.8	851.6	850.0
- Electricity	324.1	344.9	369.4	346.7	340.0
- Agricultural firewood and timber	142.7	136.5	125.9	120.0	115.0
- Delivery of calves and pigs	46.5	45.7	45.1	43.0	44.0
- Overhead costs	1204.9	1330.5	1360.8	1309.3	1275.0
- Hired labor					
- wages	310.9	309.3	334.4	297.9	295.6
- social expenses	158.5	173.2	179.6	167.6	180.2
- Machinery and equipment expenses					
- depreciations	2795.0	2790.0	2746.0	2698.0	2690.0
- maintenance	744.6	725.5	773.6	725.9	750.0
- Equipment	135.0	131.4	137.2	127.4	128.7
- Building expenses					
- depreciations	999.0	1013.0	1022.0	967.0	1031.0
- maintenance	409.5	390.5	390.5	372.0	360.0
- Interest payment	1021.0	1118.5	1234.9	1355.9	1431.3
- Imports of animals	1.8	1.8	1.9	1.7	1.5
- Rent expenses					
- means of production	327.0	309.9	282.7	256.4	240.0
- buildings and land	209.9	244.8	260.3	264.2	268.0
- Farmers' share of costs from					
- accident insurance payment	21.8	26.5	28.8	34.1	42.8
- outside help	15.2	17.2	20.7	22.0	23.3
- days-off scheme	8.3	10.6	11.1	12.3	11.5
<b>COSTS TOTAL</b>	<b>15504.0</b>	<b>16073.1</b>	<b>16578.5</b>	<b>16433.1</b>	<b>16790.7</b>
<b>GROSS RETURN TOTAL</b>	<b>22516.4</b>	<b>22850.8</b>	<b>21514.9</b>	<b>22539.6</b>	<b>22868.2</b>
<b>COSTS TOTAL</b>	<b>15504.0</b>	<b>16073.1</b>	<b>16578.5</b>	<b>16433.1</b>	<b>16790.7</b>
<b>FARM INCOME</b>	<b>7012.3</b>	<b>6777.6</b>	<b>4936.4</b>	<b>6106.5</b>	<b>6077.5</b>

<sup>e</sup> estimate



Appendix 7. Target prices of agricultural products in 1970-1990.

	Rye <sup>1)</sup> (South. area) p/kg	Wheat <sup>1)</sup> p/kg	Milk <sup>2)</sup> p/l	Beef <sup>4)</sup> (all) FIM/kg	Pork FIM/kg	Eggs <sup>3)</sup> FIM/kg	Feed- barley <sup>1)</sup> p/kg	Feed- oats <sup>1)</sup> p/kg	Mutton <sup>5)</sup> FIM/kg
1.4.1970	63.00	62.00	49.57	5.71	4.20	3.35			
1.1.1971	64.00		51.52	5.93	4.42				
1.9.1971			52.79	6.08					
1.4.1972	66.00	62.00	59.00	6.48	4.42	3.50			
1.4.1972 <sup>6)</sup>	68.85	65.00	65.67	6.54	4.44	3.50	(44.09)	(39.89)	(5.23)
1.5.1973	72.85		71.67	7.54	5.01	3.85	46.09	41.89	7.54
1.4.1974	78.85	70.50	80.00	8.51	5.55	4.25	53.09	48.89	9.04
1.9.1974			84.67		5.88	4.48			
1.4.1975 <sup>7)</sup>	94.85	85.00	87.67	9.76	7.21	5.38	68.09	63.89	11.04
1.9.1975	92.67				7.46	5.52			
1.12.1975				9.85		5.38			
1.3.1976	97.85	87.00	108.70	10.35	8.01	5.52	72.09	65.89	12.04
1.3.1977 <sup>8)</sup>		90.00	119.20	11.75	8.78		76.09	69.89	14.04
1.9.1977			123.20	13.65	9.11				15.94
1.5.1978			126.20						
1.9.1978	104.85	96.00	130.90	14.05	9.36	5.87	78.59	72.39	16.54
1.2.1979 <sup>9)</sup>	114.85	106.00	134.60	14.40	9.66	6.17	83.59	77.39	17.04
1.9.1979	124.85	114.00		14.90		6.30			17.54
1.4.1980	159.00	148.00	146.60	16.40	10.31	6.85	101.00	94.50	19.10
1.9.1980	161.00	150.00	152.60	17.14	10.91	7.25	103.00	96.50	20.00
1.3.1981	177.00	164.00	160.60	18.69	11.86	7.85	123.00	114.50	21.50
1.9.1981	187.00	172.00	171.90	19.44	12.31	8.20	128.00	119.50	22.30
1.3.1982	207.00	190.00	182.90	20.44	13.01	8.75	142.00	133.50	23.40
1.9.1982			188.90	20.73	13.14	8.88			23.80
1.9.1982 <sup>10)</sup>	202.70	185.80					138.00	129.50	
1.3.1983			197.20	21.56	13.68	9.23			24.80
1.4.1983	220.70	204.80	202.70	22.01	13.98	9.46	151.00	141.50	25.30
1.9.1983			205.70	22.31	14.18	9.60			
1.3.1984	231.00	211.00	212.70	23.01	14.68	9.90	156.00	146.00	
1.4.1984	245.00	218.00	216.70	23.31	14.98	10.05	161.00	150.00	25.60
1.9.1984			221.60	23.91	15.38	10.20			26.15
1.3.1985	264.00	231.00	228.60	24.67	16.05	10.50	170.00	158.00	
1.9.1985			230.10						
1.1.1986						9.00			
1.4.1986	270.00	233.00	232.00	24.97	16.25	8.80			25.15
1.3.1987			234.50	25.10	16.30				24.65
1.4.1988	300.00	243.00	244.50	26.10	17.00	9.10	175.00	166.00	25.90
1.3.1989			269.00	27.80	17.95	9.20			27.45
1.7.1989	310.00	251.00					178.00	176.00	
1.3.1990 <sup>11)</sup>			277.00	28.22	18.06	9.20			
1.7.1990							180.00	175.00	

For footnotes, see next page

## Footnotes for Appendix 7.

<sup>1)</sup> The price of grain beginning from 1.4.1972 is the price of January, before that the price of September. It comes into force from the beginning of the growing period. From the crop year 1983/84 the target prices of grain are on farm level. Before that they are wholesale prices for purchases of the Finnish State Granary.

<sup>2)</sup> The price of milk with 4 % fat p/kg and from 1973 milk with medium fat p/l without production support.

The additional price of milk is paid as follows:

from 1.9.1988	23.5 p/l up to 37 000 litres, thereafter 12.0 p/l up to 150 000 litres
from 1.9.1989	30.0 p/l up to 37 000 litres, thereafter 15 p/l up to 150 000 litres
from 1.9.1989	30.0 p/l up to 50 000 litres, thereafter 15 p/l up to 150 000 litres

The volume of milk which gives the base for the payment of the step-up additional price is counted on an annual basis starting from 1.9.

<sup>3)</sup> The additional price for eggs paid for beginning from 1.9.1988 is following:

a) Production quota 0 - 10 000 kg

	Oulu and Lapland	The rest of the country
from 1.9.1988	2.90 FIM/kg	2.55 FIM/kg
from 1.3.1989	3.35 FIM/kg	2.95 FIM/kg
from 1.3.1990	3.74 FIM/kg	3.34 FIM/kg
from 1.10.1990	3.94 FIM/kg	3.54 FIM/kg

b) Production quota over 10 000 kg until 31.12.1987 and from 1.1.1988 10 001 - 100 000 kg

from 1.9.1988	2.05 FIM/kg	2.05 FIM/kg
from 1.3.1989	2.50 FIM/kg	2.50 FIM/kg
from 1.3.1990	2.89 FIM/kg	2.89 FIM/kg
from 1.10.1990	3.09 FIM/kg	3.09 FIM/kg

<sup>4)</sup> In addition a production premium for beef is paid:

from 1.4.1988	4.00 FIM/kg	bulls over 260 kg
	3.10 FIM/kg	bulls 210-260 kg
	2.00 FIM/kg	bulls 180-210 kg
	3.10 FIM/kg	heifers over 160 kg
	1.00 FIM/kg	heifers 130-160 kg
from 1.3.1989	2.00 FIM/kg	bulls 190-219 kg
	3.50 FIM/kg	bulls 220-269 kg
	5.00 FIM/kg	bulls over 270 kg
	1.00 FIM/kg	heifers 140-169 kg
	3.50 FIM/kg	heifers 170-259 kg
	5.00 FIM/kg	heifers over 260 kg

<sup>5)</sup> In addition a production premium for mutton is paid:

from 1.4.1988	7.80 FIM/kg	over 16 kg
	6.70 FIM/kg	13-15 kg
from 1.3.1989	8.80 FIM/kg	over 16 kg
	6.70 FIM/kg	13-15 kg

<sup>6)</sup> New statistical basis for beef and pork.

<sup>7)</sup> Target prices for meat were applied from 1.3.

<sup>8)</sup> Target prices for meat were applied from 1.2. and for eggs from 1.4.

<sup>9)</sup> Target prices for meat were applied from 12.1.

<sup>10)</sup> Grain prices on farm level from 1982.

<sup>11)</sup> Price for beef, pork and mutton adjusted to the abolition of the weight reduction. Price for eggs represents IA-class.



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