

AGRICULTURAL ECONOMIC REPORT 1998 OF THE NETHERLANDS

Summary

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Agricultural Economics Research Institute (LEI-DLO)
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ABSTRACT

AGRICULTURAL ECONOMIC REPORT 1998 OF THE NETHERLANDS; SUMMARY

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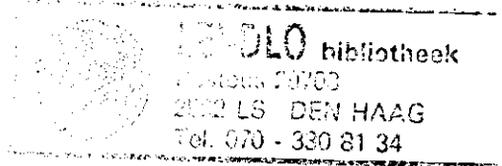
31 p., fig., tab.

This Periodical Report offers an English summary of the Agricultural Economic Report 1998 (195 p.), which is published in Dutch. A general survey is given of the economic situation of Dutch agriculture and horticulture for the past years. Among other subjects, attention is paid to the organization of processing and marketing, and to imports and exports of agricultural products. Next the report deals with developments in the rural area, with agriculture and environment, with forestry and with production structure and production factors. Furthermore an analysis is made of the development of production, price formation, profitability and incomes of the various parts of the agricultural and horticultural sector in the Netherlands.

**Agriculture/Horticulture/Trade/Farm Structure/Agricultural Production/Farm results/
Incomes/Environment/Netherlands**

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Preface

The Agricultural Economic Report (Landbouw-Economisch Bericht) is an annual publication of our Institute, offering a global survey of the economic and financial situation of Dutch agriculture and horticulture. Thereby the changing economic and political circumstances of the sector are taken into account explicitly. This (extended) English summary is published separately as part of the series 'Periodieke Rapportages' (Periodical Reports). The complete report is available only in Dutch.

The report is based on data and contributions from nearly all divisions of the Institute. The coordination and editorship of the report is conducted by the General Economics and Statistics Division. The final draft of the 1998 edition of the report was completed in the course of June 1998.

The director,

The Hague, September 1998

L.C. Zachariasse

1. Economic and political framework of the Dutch agricultural sector

1.1 Social and political developments in the Netherlands

The economic and political framework of the Dutch agricultural sector is more and more determined by the globalization of the world economy and by liberalization in international economic policy. These trends result in further concentration and internationalization of business. The introduction of the euro will form an additional incentive here. In the Dutch food retailing industry, the agricultural wholesale business and the foodstuffs industry the concentration process is likewise continuing at a rapid rate.

Another consequence of the above developments is that the agricultural sector is increasingly being exposed to international competition. At the same time Dutch society, via the government but also via the large retail trade enterprises is making more and more stringent requirements of the production methods in the agricultural sector, above all with regard to the environment and animal welfare. In the course of 1997 drastic measures were taken in pig-keeping, partly as the result of a large and persistent outbreak of classic swine fever, these measures including a compulsory contraction of the pig population by at least 10%. It is to be expected that the 'socialization' of agricultural production will continue in the years to come. The Dutch government is increasingly restricting policy to these aspects of production and is endeavouring to attain the objectives in this field above all by incentives. For matters that are chiefly of importance to the sector itself, the responsibility is vested in business.

1.2 General economic developments in the Netherlands

Partly under the influence of the favourable international economic situation the Dutch economy has been developing satisfactorily in recent years: economic growth is above 3% a year and inflation is confined to some 2%. Employment is growing and unemployment falling to such an extent that in some sectors manpower is starting to become a sticking point. The surplus on the current account of the balance of payments is assuming a considerable size. The developments are so favourable that the 'polder model' forming the basis for this policy, of which restriction of wage costs is a major element, is regarded worldwide as a shining example. In 1997 employment grew in all sections of the economy except agriculture and the government sector. More or less the same picture is expected for 1998 and 1999. The fairly strong economic growth in 1997 would have been a few tenths of a percent higher if there had been no swine fever. The government's financial deficit in 1997 was about the same as in 1996. The swine fever, which cost the government about 2.5 billion guilders in compensation had only a limited effect on this, because the greater part of this expenditure can be claimed back from Brussels. The Dutch deficit has meanwhile been so far reduced that the public sector debt, one of the criteria for participation in the EMU, has been reduced from over 81% of national income in 1993 to 72% in 1997 and is expected to fall still further in the years to come. The drop in interest rates from nearly 9% in 1990 to approximately 5.5% in 1997 made a major contribution to putting government finances on a healthy basis.

In 1997 the consumer price index barely rose more strongly than in the preceding years, viz. by upwards of 2%, while for the years to come less rather than more inflation is expected. The prices of foodstuffs clearly lagged behind the general price rise. This is the usual picture: between 1990 and 1997 the general price increase totalled nearly 19%, but foodstuffs became only 8 to 9% more expensive. The prices of agricultural produce rose in that period by approx. 4%, partly through the Mac Sharry reform.

It looks as if the Dutch tax system will be radically reformed within a few years. The principal arguments for this are: the levying of taxation must become simpler, the financial basis for the public sector and the social security system must be guaranteed for the future, the charges on labour must be reduced and the new system must make a contribution towards solving the environmental problem. Meanwhile proposals have been submitted, one of which is that there will be a shift from direct taxes (chiefly wage and income tax) to indirect ones (environmental and energy charges and value-added tax). These proposals are still the subject of considerable discussion. The consequences for the agricultural sector are as yet unclear, but seem on balance to be fairly limited. Higher charges on inputs will in general lead to greater financial burdens for farms and holdings, but against that direct taxes will work out lower.

1.3 Agriculture in the world

In 1997 El Niño caused massive problems: great drought in South-east Asia, among other regions, and excessive rainfall in East Africa. The number of countries with an acute food shortage increased according to the FAO to 37, most of them in Africa. In the long term too the prospects for African agricultural development are a matter of concern because the population is growing more quickly than production. Production per head in Africa has fallen to less than half of the world average. Despite the problems bound up with El Niño, world agricultural production grew by 1% in 1997. However, that was less than the growth of the population. In the period 1965-1995 agricultural production in the world increased more quickly than the population. That growth was attained to a small extent by an expansion of the agricultural area by a quarter percent per year. The number of workers in agriculture increased worldwide by 1.3% per year. Production per worker rose by nearly 1% per year and per hectare by about 2% per year.

The volume of world trade in agricultural products displays continual growth, although rather large fluctuations occur in the rate of growth. The prices of agricultural produce on the world market displayed in 1997 a slight recovery after the relapse in 1996. It is expected that world market prices in the years to come will be higher than at the start of the nineties, but lower than in 1995. Implementation of the GATT agreement of 1994 bears some fruit, but there will still be anything but really free trade in 2000. Meanwhile preparations for a new trade round are starting. Further reduction of support is advocated by the Cairns Group and the USA. These will probably force the EU on the defensive. Having regard to the contents of Agenda 2000, the EU will give priority in the negotiations to retention of the direct payments over export support. A difficult point will be on what grounds governments may erect trade barriers with a view to consumer concerns. It is internationally recognized that products may be kept off the market that are harmful to man, plant or animal. This is conditional on that harm being scientifically demonstrable. The present discussion is, however, concentrated on the question whether production methods may also be a reason

for taking trade measures. Great international differences have arisen on this point. For instance, to be able to make requirements of imports of live animals or meat products with regard to animal welfare, fundamental amendment of the WTO treaty is necessary.

1.4 Agriculture in the EU

It looks as if the euro will be fully introduced on 1 January 2002 in conformity with the planning. For the Dutch agricultural sector, with its strong orientation towards international trade, introduction of the euro is favourable, on account of lower transaction costs and smaller currency risks.

With Estonia, Hungary, Poland, Slovenia and the Czech Republic negotiations for accession to the EU can begin, according to the European Commission. It is expected that it will still take some considerable time before these countries actually form part of the EU. Among other things, the great differences in agricultural structure form a problem.

After three years of strong growth, income per worker in EU agriculture fell by nearly 3%. The greatest decline in income took place in British farming, which was troubled by the strong rise in the pound. Despite the swine fever, the development of incomes was the most favourable in Dutch farming, which left behind a few years with disappointing income development. For the first time since the Mac Sharry reform the direct payments to EU agriculture did not increase in 1997. In general the expenditure on market and price policy has been reasonably stable in recent years.

No great changes occurred at the price negotiations for 1997/98, although the set-aside percentage was reduced to 5%. More radical policy adjustments have been proposed by the European Commission within Agenda 2000. These proposals form an answer to threatening future surpluses of some basic products, the need for a new financial long-range framework, accession to the EU of Central and Eastern European countries and preparation of the next WTO round of trade talks. The proposals amount to a (further) price reduction for beef, cereals and milk by 30, 20 and 15% respectively. The price reduction is partly compensated for by direct payments. The compulsory set-aside is terminated.

According to calculations by some Dutch research institutes, the proposed reforms will lead to a greater production in the EU of most products with an EU market regulation, as a result of the abolition of set-aside and the increase of the milk quota. The additional production translates into greater growth of exports to the world market, which becomes possible because the price differences between the EU and the world market, especially for cereals and beef, are becoming considerably less. On balance the reform demands 1.5 to 2 billion ecu in additional expenditure by the EU on this account. Expenditure on food would work out at 13.5 billion ecu less, so that the taxpayer/consumer is clearly better off. That does not apply to the farmers in the EU, who would jointly have to give up over 12 billion ecu in income. The disadvantage for Dutch agriculture and horticulture would be concentrated in arable farming and above all cattle farming (see Chapter 5).

In the calculations it has been assumed that the institutional price reductions affect in their entirety the market prices. The experience of the Mac Sharry reform shows that this is not an automatic process. It depends on the developments on the international and European markets and the market management followed. Furthermore, changes in market and price policy are not passively undergone. The restructuring that has started in the various sectors can contribute towards the actual results being less negative than the calculations suggest.

Simultaneously with the reform of market and price policy agricultural structure policy will also be adapted. Various schemes, such as the support scheme for young farmers and the mountain farmers scheme, will be integrated. In that way the agricultural structure policy will be converted into a 'countryside policy'. Its financing will henceforth be placed in the Guarantee Division of the European Agricultural Fund, from which the market and price policy is also financed.

2. Development of the Dutch agricultural sector

2.1 The agricultural complex

The total Dutch agricultural complex represents a slightly falling share in national value added and employment (Table 2.1). In 1996 the estimated share in national value added was 11.6% and in national employment 11.8%, as against 12.5% and 14.4% respectively in 1985. The agricultural complex is defined here as the whole of economic activities in the Netherlands that are connected with agricultural produce of domestic and foreign origin (including cocoa, drinks and tobacco). It then concerns the primary sector, the processing industry, the firms supplying the two sectors and the firms attending to distribution.

A sign of dynamism in the agricultural complex is that the share of the part based on foreign raw materials increased from 26% in 1985 to 34% in 1996. This part of the agricultural complex even had a higher share (3.9%) in the Dutch economy in 1996 than in 1985 (3.2%). Conversely, the agricultural complex based on domestic raw materials has clearly

Table 2.1 Gross value added (factor costs) and employment of the agricultural complex, 1985-1996

	Gross value added (Dfl. billion) a)		Employment (1,000 working years)	
	1985	1996 (est.)	1985	1996 (est.)
Agricultural complex b)	52.3	68.9	651	646
Share in national value added (%)	12.5	11.6	14.4	11.8
Processing, supply and distribution of foreign agricultural raw materials	13.5	23.1	172	189
Agricultural complex c)	36.1	45.8	479	457
of which: distribution	4.9	6.1	77	60
supply industry	12.5	16.1	132	145
processing industry c)	4.7	6.7	61	70
agriculture and horticulture	14.0	16.8	209	181
Share in national value added (%)	9.1	7.7	10.6	8.4

a) In 1997 1 guilder (Dfl.) had a value of about 0,5 US dollar; b) Based on domestic and foreign agricultural raw materials (including cocoa, drinks and tobacco); c) Based on domestic agricultural raw materials.

Source: Agricultural input-output table LEI-DLO.

risen less than the national value added: the share fell from 9.1% in 1985 to 7.7% in 1996. The share of the primary sector in the value added of the whole agricultural complex in 1996 was nearly 37%.

The international dependence of the Dutch agricultural complex is increasing not only through the growing share of the agricultural complex based on imports, but also through the growing dependence on exports. In 1985 the share of exports in the value added and employment of the agricultural complex, insofar as based on domestic raw materials, amounted to some 66%, but by 1966 this had risen to approximately 75%.

2.2 Agricultural trade

Despite the strong fall in exports of live pigs and pigmeat as a result of the swine fever, total Dutch exports of agricultural products and foodstuffs in 1997 increased further (+5%) to nearly 84 billion guilders. In this way the upward trend of the past years was continued (Figure 2.1). The corresponding imports rose by the same percentage, as a result of which the balance of agricultural trade increased by 1.4 billion to over 35 billion guilders. In 1997 the share of agricultural trade in total Dutch trade amounted to 22% in exports and 14% in imports, both a percentage point less than in 1996.

Ornamental products form the product group with the highest trade balance: in 1997 over 9.5 billion guilders (Table 2.2). Both exports and imports of ornamental products grew

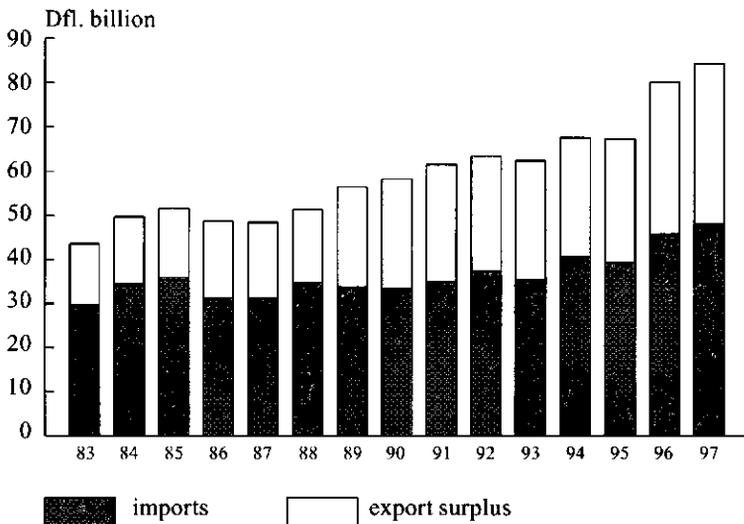


Figure 2.1 Development of Dutch agricultural imports and exports, 1983-1997

Table 2.2 Dutch imports and exports of agricultural products in 1997

	Dfl. millions	%	Index, 1996=100		
			volume	price	value
<i>Exports</i>					
Total	83,650	100	103	102	105
of which:					
Cereals, pulses, potatoes	1,452	1.7	121	87	106
Feeding stuffs, excl. cereals	4,775	5.7	113	97	109
Cereal preparations and starch	4,558	5.4	104	100	104
Ornamental products, plants	11,256	13.5	109	100	108
Vegetables	5,404	6.5	103	103	105
Fruit, nuts, spices	3,163	3.8	100	104	105
Livestock	1,065	1.3	-	-	44
Meat	10,948	13.1	99	104	103
Eggs	1,210	1.4	-	-	100
Dairy produce	8,500	10.2	105	101	106
Fish	3,431	4.1	109	99	107
<i>Imports</i>					
Total	48,135	100	100	105	105
Of which:					
Cereals, pulses, potatoes	3,190	6.6	100	95	95
Oil seeds	2,957	6.1	96	115	110
Feeding stuffs, excl. cereals	3,162	6.6	85	99	85
Ornamental products, plants	1,669	3.5	113	95	106
Vegetables	1,579	3.3	110	108	119
Fruit, nuts, spices	4,022	8.4	97	110	106
Preparations of potatoes, vegetables and fruit	2,906	6.0	95	106	101
Livestock	1,124	2.3	-	-	104
Meat	3,159	6.6	114	100	114
Dairy produce	5,024	10.4	109	100	108
Fish	1,934	4.0	101	103	105
Margarine, fats, oils	1,805	3.7	84	110	93
Coffee, tea, cocoa	3,448	7.2	90	114	102

Source: Statistics Netherlands; processing LEI-DLO.

fairly strongly in 1997. Exports of live pigs and pigmeat fell back considerably, but against this exports of beef and poultry meat grew vigorously. The contraction of the pig population forms the principal explanation for the reduction in imports of cattle feed.

Nearly 65% of Dutch agricultural imports come from EU member-states; in the case of exports the EU countries, with a share of more than 80%, are even more important. Germany remains the most important agricultural trading partner, but in 1997 exports above all to the United Kingdom increased considerably, thanks to the rise in the exchange rate of the

pound sterling. Agricultural exports to the countries in Central and Eastern Europe, including Russia, have been growing fairly strongly in recent years. Outside the EU these countries have meanwhile become the principal market.

2.3 Consumption and distribution

In the consumption of foodstuffs a number of trends may be identified. Thus the consumption per head of meat, and in particular poultry meat, is still on the increase. Consumption of butter is stable, that of margarine is displaying a downward trend, whereas the consumption of edible fats and oils displays an increase. The consumption of above all whole milk is declining, like that of potatoes. The consumption of cheese, vegetables and fruit is more or less stable.

The concentration of the food retailing industry trade is still continuing. In the past year a number of mergers and take-overs again occurred, the result being that about 70% of the retail trade is in the hands of some four concerns. As part of the competition between them attempts are being made to increase their own share of the market, for instance by extending opening hours into the evening and selling groceries in filling stations. Through their strong position the chain stores can increasingly determine how the products must be produced in agriculture and horticulture. One of the new developments that the chain stores have been encouraging in recent years is the sale of eco-products, which until recently took place chiefly via organic food stores and the like.

Partly as an answer to the concentration in the retail trade, the increase in scale is continuing in the wholesale trade and in the food industry. In 1997 this process resulted in the Dutch dairying industry consisting of only two (cooperative) companies. In the slaughterhouse sector continuing concentration likewise took place, so that two firms together perform about 60% of the Dutch slaughtering.

2.4 Primary production and income formation

As a result of the swine fever the gross production value of intensive livestock farming fell back sharply in 1997, but the production value of arable farming, horticulture and cattle farming rose (Table 2.3). The production value of total agriculture and horticulture thus fell slightly as a result. A smaller volume was accompanied by higher prices.

The prices of arable products rose in general, partly through the smaller harvests. In horticulture higher prices also occurred; only flower bulbs became cheaper. After a number of years of falling prices, the price of milk rose somewhat in 1997. In intensive livestock farming too prices rose over a wide front; only eggs fell in price. In this sector a reduction in production volume occurred, as a result of the more than 30% smaller pig production through the swine fever. As a result, the value of pig production fell from 6.3 billion guilders in 1996 to 4.5 billion guilders in 1997. When the compensation paid by the government of in all some 2.5 billion guilders is taken into account, this drop in value proves to have been more or less compensated for.

The value of the purchased means of production remained practically the same, as a result of somewhat higher prices on the one hand and a rather smaller volume on the other. Of particular importance in this context was above all the reduction in the consumption of

Table 2.3 *Gross production value and value added of the agricultural sector*

	Value in Dfl. million			1997 index in % of 1996		
	1995 (prov.)	1996 (prov.)	1997 (est.)	quantity (est.)	price (est.)	value (est.)
<i>Gross production value</i>						
Arable products	2,930	2,449	2,735	98.7	113.1	111.7
Horticultural products	12,687	13,520	14,101	100.7	103.6	104.3
Cattle farming products a)	9,673	9,068	9,268	98.8	103.4	101.4
Intensive livestock farming products b)	9,511	10,435	8,921	82.0	104.3	85.5
Grand total	34,901	35,572	35,223	94.7	104.5	99.0
less:						
- Purchased goods and services	18,010	18,667	18,601	97.7	102.0	99.6
- Depreciation	4,389	4,433	4,566	-	-	103.0
- Production-tied taxes and levies	995	1,000	979	-	-	97.9
plus:						
- Premiums under market and price policy and other subsidies	735	1,019	713	-	-	69.9
- Compensation for swine fever	0	0	2,500	-	-	-
Net value added	12,242	12,491	14,290	-	-	114.4

a) Including sheep- and goat-keeping; without taking into account superlevy and compensation for suspended quota; b) The 1997 production value excludes the compensation of some 2.5 billion guilders in total paid in connection with swine fever.

Source: 1995 and 1996: Statistics Netherlands; 1997: revised estimate LEI-DLO.

feeding stuffs by 2.5%, which was partly bound up with the swine fever. Depreciation rose somewhat, but taxes and subsidies - apart from the compensation in connection with swine fever - fell to some extent. The fall in the amount of subsidies was largely bound up with the termination of the compensation for agrimonetary developments.

The consequence of the above was that the sector as a whole showed a clearly better income result than in 1996. The net value added rose by over 14%. Taking into account the expenditure on interest, rent and wages, and also inflation and the reduction in the number of holdings, this amounts to an average increase in real farm income of agricultural families by about 25%.

2.5 Income development at farm level

In the longer term the average returns of agricultural and horticultural holdings are increasing, but the share of income in business returns (margin) is falling. This development is closely connected with the scaling-up process, which is necessary on account of the relative fall in selling prices.

The differences in income per holding are considerable. In 1996/97 about 15% of the entrepreneurs in agriculture and horticulture ended up with a negative family farm income. On the other hand, 10% of the entrepreneurs earned an income of more than 150,000 guilders. Within horticulture under glass, and notably in ornamental cultivation, the spread of incomes is the greatest: there are both relatively many holdings that score very well and relatively many holdings that earn low incomes.

For the income formation of agricultural households the off-farm incomes are becoming increasingly important. In the first half of the eighties on average 14,000 guilders per holding was earned in off-farm income, whereas in the first half of the nineties that figure had risen to 24,000 guilders. The upward trend has continued. This involves above all returns from work off the farm by both the entrepreneur and by his or her spouse. High additional incomes occur notably in arable farming and intensive livestock farming, where the labour requirement offers more possibilities for sidelines than in dairy farming and horticulture under glass.

3. Agriculture, rural area and environment

3.1 Agriculture and countryside

In the densely populated Netherlands space is in very short supply. With a share of over 69% - which corresponds to more than 2 million hectares - agriculture is by far the largest user of land. Under pressure from other functions, such as housing, commerce and industry, but also recreation and nature, this sector must, however, constantly concede ground. In 1979 the agricultural sector still occupied nearly 72% of the total area. It is expected that the share of the agricultural sector will reduce further in the years to come. The area under woodland and nature reserves will increase, as will that for industry and housing. The demand for housing in rural areas displays fairly strong growth as a result of the growing prosperity. The government is trying to control this process to some extent, among other things by experiments with new country estates and country-houses. These may have a positive effect on the level of countryside facilities, such as schools, shops and care institutions. These are gradually entering into a more difficult position on account of the need to increase scale on the one hand and the greying of many rural municipalities on the other. The Dutch authorities are trying in various ways to further renovation of the countryside, among others by subsidizing projects aimed at this.

3.2 Agriculture, nature conservation and forestry

The above-mentioned expansion of the area of nature reserves will acquire shape above all within the Ecological Main Structure, which forms a cohesive whole of nature reserves, connecting zones and buffer zones. According to the existing plans the area under nature must by 2018 have approximately doubled in respect of the end of the eighties. However, implementation of these plans is lagging behind the intentions.

In addition to the purchase of areas nature conservation is encouraged by drawing on the services of farmers for that work. That is in practice a fairly inexpensive form of nature conservation, and it offers the farmers an additional source of income. Interest in this activity on the part of the farmers is clearly growing. In 1984 there were only 400 farmers with a conservation contract, but by 1997 this number had already grown to over 6,600. The area to which these agreements related increased from 3,700 ha to approx. 48,000 ha. The objective for 2018 is 140,000 ha, which means that some 20,000 farmers may have a part to play in managing nature and landscape for pay. That number corresponds to an estimate 30% of the total number of farms and horticultural holdings then to be expected.

The total forested area in the Netherlands exceeds 300,000 ha, which corresponds to 9% of the country's total area. The Netherlands supplies only 7% of its own requirements of timber. It is the intention that in the course of the following century the degree of self-sufficiency rises to 25%, but this seems rather optimistic.

The largest forest owner is the National Forest Service, and the second largest are the joint private owners, who incidentally are seeing their share steadily shrink. The rest of the woodland is in the hands of lower authorities and of nature and landscape protection organizations.

The decline of private forest property is bound up among other things with the low earning power of forestry operation, despite all kinds of subsidies. In 1996 these amounted to about 50% of the total yields of the private forests. The earning power has been displaying an improvement in recent years, but only the woodlands covering more than 250 ha had cost-effective operation in 1996.

Calling upon farmers for the management of nature and landscape is an example of multifunctional agriculture that is favourable to the farmers and at the same time meets a growing social demand. Agrotourism is another example in which more interest has grown in recent years. A first inventory has shown that in 1997 at least 2,250 farms - over 2% of the total number - engage in some form or the other of agrotourism. These farms are to be found above all along the coast (Zeeland and the island of Texel) and in the sandy areas in the east and the south of the country. In about 60% of the cases residential recreation is concerned, such as a farm campsite, letting of summer cottages or bed and breakfast. In addition day trippers are catered for, such as by hiring out horses. Above all arable and grazing farms engage in agrotouristic activities. Information on farms from the Farm Accountancy Data Network of the Agricultural Economics Research Institute shows that these activities in 1995 yielded for those concerned about 11,000 guilders in income. This corresponded to 17% of the total family income.

3.3 Agriculture and environment

The burden on the environment by Dutch agriculture and horticulture is in general decreasing (Table 3.1). It is expected that these trends will continue in the years to come, but that most emissions will reduce insufficiently in time to meet the objectives formulated by the government. The Dutch agricultural sector is making a relatively large effort to reduce the environmental burden. Environmental costs have meanwhile risen to about 5.5% of the value added of the sector, while they amount to only 3% for the total economy. It is expected that in the future too the environmental costs will increase more strongly than for the rest of business. In the environmental policy for the agricultural sector more stress will gradually be laid on incentives instead of compulsory prescriptions.

Table 3.1 The trend of the environmental burden of Dutch agriculture and horticulture

	1985	1990	1993	1994	1995	1996
Emission of carbon dioxide (CO ₂), millions of tons	5.6	8.6	9.0	9.3	9.4	9.4
Emission of methane (CH ₄), millions of kg	527	507	492	486	479	479
Emission of dinitro-oxide (N ₂ O), millions of kg	24	26	28	29	28	28
Total emission of greenhouse gases, x 10 ¹² CO ₂ equiv.	24.0	26.1	28.0	28.8	28.0	28.0
Emission of ammonia (NH ₃), millions of kg	239	220	184	160	141	138
Discharge of phosphorus (P) to soil, millions of kg	87	71	67	70	63	60
Discharge of nitrogen (N) to soil, millions of kg	527	426	427	461	509	473
Consumption of pesticides, millions of kg	21.0	18.8	13.3	12.9	12.6	10.8

Source: National Institute for Public Health and the Environment (RIVM).

The consumption of pesticides has been reduced by approximately half since the mid eighties, whereas meanwhile the volume of vegetable production has increased by 40 to 50%. The strongest drop in consumption - over 80% - occurred among soil disinfection agents, as a result of strict restrictions on soil disinfection in potato-growing. The consumption of the other categories of pesticides remains more or less stable. The policy objectives for these agents, which amount to the fact that consumption in 2000 must be some 40% lower than in 1985, will probably not be met then. Above all fungus control in potatoes remains a problem.

The agricultural sector accounts for about 12% of the Dutch contribution to the greenhouse effect. In the emission of CO₂ the share is admittedly confined to 5%, but in two other greenhouse gases - N₂O and CH₄, which are accounted for by above all livestock farming - the share is much greater. The CO₂ emission of agriculture and horticulture continually increased up to and including 1995, stabilized in 1996 (Table 3.1) and probably reduced in 1997. The principal explanation for this development may be found in horticulture under glass, which accounts for about 80% of the CO₂ emission in the agricultural sector. From 1991 onwards the energy consumption per unit of product in this sector has displayed a drop, but the total energy consumption is still rising as a result of the strong production growth. Only in the last few years have energy-saving investments been the deciding factor and the total energy consumption has been falling. For instance, more and more use is being made of residual heat from electricity generation. Partly on the strength of the agreements reached in Kyoto Dutch CO₂ emission must be reduced in the years to come. There is a chance that this will also lead to higher energy costs for horticulture under glass.

Discharge of phosphorus to the soil has been displaying a downward trend for some years now, but discharge of nitrogen, after falling in the second half of the eighties, seems to be increasing again in recent years (Table 3.1). The emission of ammonia has fallen by approximately 40%. The reduction of these emissions has been influenced by contraction of the dairy herd as a result of the milk quota system. In addition the manure and ammonia policy is beginning increasingly to bear fruit. In that connection the mineral reporting system - MINAS - entered into force in 1998. Under this system livestock farms with more than 2.5 livestock units per hectare must keep exact records of the amounts of phosphorus and nitrogen entering the farm and leaving it. If the difference between introduction and discharge - the surplus - lies above a certain amount per hectare - the norm - the livestock farmer must pay a charge. This policy will gradually be extended to other groups of farms. At the same time the norms are being gradually tightened. So far the emphasis in ammonia policy lay on the low-emission spreading of manure (manure injection, direct working into the ground), whereas in the years to come the building of low-emission housing will be to the forefront. For some of the livestock farms this rather expensive housing will be obligatory in the future. There is some doubt whether the policy with regard to minerals and ammonia will have sufficient effect.

4. Structure of agriculture and horticulture

4.1 Production capacity and farm structure

The total production capacity of Dutch agriculture and horticulture, measured in Dutch Size Units (dsu), has been displaying a contraction since the beginning of the nineties. Under the influence of the milk quota system the production capacity of the grazing farms has already been declining since the mid eighties. Since 1994 the production capacity of horticulture under glass has also been shrinking, as a result of the poor operating results in the early nineties. In the last few years, these have been much better (see Chapter 5) and there has been considerable investment in glasshouses. Therefore, an expansion of horticulture under glass has probably occurred again in 1998.

The number of agricultural and horticultural holdings has been falling in recent years by about 2.5% per year, which is somewhat faster than in the preceding period (Table 4.1). Above all in horticulture under glass, other horticulture, dairy farming and - with the exception of 1997 - intensive livestock farming, there was a fairly quick fall in recent years. In the case of the last three farm types the relatively rapid decline was to a (limited) extent a matter of transition to a different, more mixed type of farm. This can take shape by expansion of a subsidiary branch or by contraction of the main activity. Most agricultural holdings prove incidentally to be very 'type-fast'. Between 1984 and 1994 fewer than 20% of the holdings changed the type of farm.

Table 4.1 Development of the number of holdings (in % per year) by type of farm, 1987-1997

Type of farm	Changes in % per year				Number of holdings in 1997
	1987-1991	1991-1994	1994-1996	1996-1997	
Arable farming	-2.3	-0.8	0.1	-0.2	14,652
Horticulture under glass	0.0	-1.5	-3.6	-3.2	8,785
Other horticulture	-2.2	-2.0	-3.1	-2.9	11,962
Grazing farms	-1.1	-1.7	-2.8	-4.0	50,471
Intensive livestock farming	-3.1	-2.9	-3.8	0.8	11,392
Mixed farms	-3.9	-2.0	-3.4	-0.6	10,657
All types of farms	-1.8	-1.8	-2.7	-2.5	107,919

Source: Statistics Netherlands - Agricultural Censuses, processed by LEI-DLO.

Termination of holdings occurs in most cases because older farmers have no successors. In only a limited number of cases is there any question of a forced, premature termination. In the period 1992-1995 a total of 1,340 farmers younger than 55 terminated their business. These are mostly smaller holdings with a head aged on average 40.

The number of agricultural and horticultural holdings is reducing more quickly than the production capacity, which means that the average holding size is steadily increasing. Between 1987 and 1997 the average number of dsu per holding rose from 47 to 73. Large holdings account for a steadily larger share of total production capacity. In 1987 only 8% of the holdings were larger than 100 dsu, but by 1997 this was already a quarter. In 1987 this group had a share in total production capacity of 30%, while this has meanwhile risen to nearly 60%. By way of illustration, a horticultural holding under glass of 100 dsu corresponds to 0.5 ha of pot plants and a dairy farm of 100 dsu has about 75 dairy cows.

4.2 Production factors

With the decrease in the number of holdings the number of workers active in agriculture and horticulture is also falling. In the last five years the total volume of labour, expressed in working years, fell by 1.6% per year. The number of active persons fell by only 0.6% per year. This difference comes about through the increase in the number of workers with a limited working time: in 1992 18% of the personnel worked less than 20 hours per week, but in 1997 that was already the case with 38%. The share of the workers who are engaged from outside the family is steadily growing, especially in horticulture. In horticulture under glass the non-family workers already account for 60% of the total work. The reduction in the number of workers between 1992 and 1997 is entirely for the account of the males. The number of female workers increased by 0.8% per year in that period.

The Dutch area of land under cultivation contracted between 1987 and 1997 by 0.2% per year and still comprised nearly 2 million hectares in 1997. The area in use for horticulture, which covers just over 5% of the total, increased in that period. Between 1987 and 1990 the area under horticulture under glass was also expanded, but thereafter a limited contraction occurred. A regional shift occurred in horticulture under glass, in the sense that the relative share of the Province of South Holland, where a large part of the area under glass had long been concentrated, gradually reduced in favour of North Brabant, Utrecht and North Holland.

The share of legally regulated let land in the total area of land under cultivation has been displaying a decrease for some considerable time. Between 1987 and 1997 the share of let land in the total area fell further from nearly 35% to over 27%. To turn this tide two new forms of lease were introduced, whereby lessee and lessor have more freedom and also are not bound by the legal maxima for the rental. These new forms are meanwhile applicable to 21% of the let area. Land prices, which remained fairly stable at the beginning of the nineties, have in recent years been displaying an upward trend. Causes are: the improvement of agricultural incomes, the fall in the interest rate, the demand for farmland for non-agricultural purposes and the need for additional land on account of the more stringent environmental requirements.

Partly through the decline of the lease as a form of financing the need of the holdings for outside capital is growing. On average there is per agricultural holding - insofar as represented in the Farm Accountancy Data Network of the Agricultural Economics Research Institute - some 1.75 million guilders invested. That is nearly twice as much as in 1980. About 60% of the capital is tied up in land and buildings. Some 70% of this capital is financed from net worth, nearly 25% from bank loans and about 10% from family loans. The importance of the latter is declining sharply. The arable and dairy farms have a relatively strong

capital position with an average solvency of 80% and 73% respectively. In horticulture under glass the share of net worth is considerably less, viz. about 55%.

The investments in arable farming, horticulture under glass and livestock farming in the last ten years amount to between 5 and 6.5 billion guilders per year. Investments varied in the period 1992-1996 from an average 67,000 guilders per farm per year in arable farming to 113,000 guilders in horticulture under glass. Arable farmers invest relatively large sums in machinery and in land, entrepreneurs in horticulture under glass in equipment and glass coverings, while dairy farmers in recent years have been using fairly extensive amounts for the purchase of milk quota.

5. Market and income development in the various sectors

5.1 Arable farming

For Dutch arable farming, which represents about 12% of the agricultural production capacity and comprises over 14,500 farms, sugarbeet and starch potatoes proved to be comforting elements. For both products EU agricultural policy has through the years been an important condition for stable growing areas and prices. Although the European Commission in Agenda 2000 (see Section 1.4) makes no proposals for far-reaching changes in sugar market regulation, there is a chance that adjustments will be necessary if the EU is enlarged.

The Dutch area under cereals in 1997 was about the same as that in 1996, but the production was more than 10% smaller. This was coupled with a further fall in prices, partly as a result of lower world market prices. Conversely, a strong price increase occurred with spring-sown onions, of which some 8% less were harvested. The production of potatoes, in value the most important crop of Dutch arable farming, was practically the same as in 1996. As against a smaller crop of table potatoes, partly caused by contraction of the area, there was a higher production of seed potatoes and starch potatoes. The prices of the latter two categories therefore barely remained at the same level, but the prices of table potatoes worked out 50% higher. Potatoes and above all onions display strong price fluctuations, largely bound up with fluctuations in the cultivated area. For seed potatoes a national regulation was in force until the end of 1997, fully financed by the growers, with which a certain

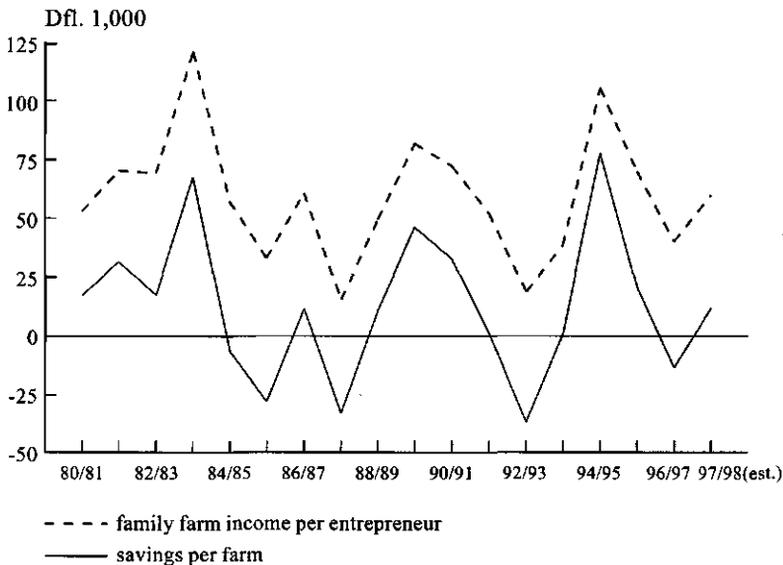


Figure 5.1 Development of incomes and savings of arable farms

bottom price was fixed in the market. This regulation has been suspended with effect from 1998, as a result of which price fixing of seed potatoes will probably become less stable.

The average price of all arable products rose in 1997/98 by over 10%. As a result incomes in arable farming displayed a clear recovery (Figure 5.1). The average family farm income grew from 40,000 to 60,000 guilders per entrepreneur. Partly as a result of that, it was possible for positive savings to be made of on average 12,000 guilders per farm. This amount is in keeping with the average of past years, but in 1996/97 the savings were clearly negative.

The reforms proposed by the European Commission as part of Agenda 2000 amount for arable farming to a price reduction of 20% for cereals and for starch potatoes. Of the resultant fall in returns about 40% is compensated in the Dutch situation by direct payments. For the average arable farm these proposals would lead to a drop in income of over 6,000 guilders. The arable farms in the Veenkoloniën, in the north-east of the country, which are highly dependent on starch potatoes, would be confronted with a loss in income of 14,000 guilders.

5.2 Outdoor horticulture

Outdoor horticulture has a share of 12% in the total production capacity of agriculture and horticulture. It equals that of arable farming, but the sector is based on a much larger number of crops: various kinds of outdoor vegetables, fruit, flower bulbs and tree nursery products. In total over 11,000 specialized firms are concerned, of which 1,700 outdoor vegetable holdings, 2,300 flower bulb growers, 2,600 fruit growers and 2,500 tree nurseries.

In past years the share of tree nursery products in the production value of outdoor horticulture, which in recent years has fluctuated round a total of 4 billion guilders, has steadily increased. In 1997 the production value of tree nurseries again grew by 10%, whereas the production values of the other product groups fell.

Outdoor vegetable growing comprises a large number of different products, such as carrots, cabbage, sprouts, chicory and asparagus. The total area in 1997, with 44,700 hectares, was somewhat larger than in 1996, and the production value worked out about 5% lower. And yet a clear rise is estimated for the operating results. The average family holding income rose from 57,000 guilders in 1996 to 77,000 guilders in 1997 (Figure 5.2). This income led to an average saved amount of 37,000 guilders per holding, which is exceptionally high for these holdings.

The Dutch area under fruit amounts to approximately 23,000 ha, of which 15,000 ha are apples and 6,000 ha pears. In 1997 the value of fruit production fell by nearly 10% through lower apple prices, under the influence of a large supply in the EU. The prices of pears, on the other hand, were higher than in 1996. It is expected that, partly through a growing supply from the southern hemisphere, apple prices will be under pressure in the years to come. The European grubbing-up scheme will have little effect on that. The average family farm income is estimated for 1997 at 31,000 guilders per entrepreneur, which is a clear rise in respect of the very low level of the preceding year (Figure 5.2). The fact that the savings remain negative (-15,000 guilders per holding) indicates that the income level is still on the low side.

The Netherlands is the world market leader for flower bulbs. Of the flower exports from the EU, 93% are for the account of the Netherlands. Both the area under flower bulbs

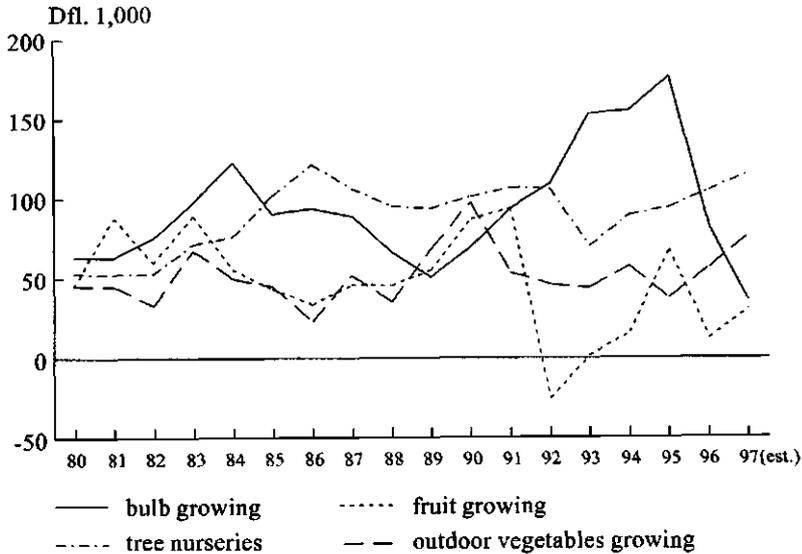


Figure 5.2 Development of family farm incomes of outdoor horticultural holdings

and their production value have almost continually increased in the past years. However, in the last two years the picture has deteriorated. Through too large a supply the prices have fallen, which led in 1997 to an approximately 10% lower production value. This found expression in a sharp drop in incomes, which in the first half of the nineties had reached a very high level (Figure 5.2). The average family farm income is estimated for 1997 at 36,000 guilders per entrepreneur more than half less than in 1996. Savings, which in the years 1992-1995 averaged more than 100,000 guilders per holding per year, turned in 1997 into dis-savings of an estimate 60,000 guilders.

The Dutch area under tree nurseries is gradually increasing and in 1997 amounted to nearly 10,000 ha. The production value has been growing since 1985 by about 7% per year. In 1997 there was an increase of 10%. It is expected that this growth can continue further, having regard to the increasing interest in the ornamental garden at home and abroad. Income development is displaying a steady improvement, as a result of which the tree nurseries have taken over the leading position from the flower bulb holdings (Figure 5.2). For 1997 an increase in the average family farm income by over 10,000 guilders up to an amount of 116,000 guilders per entrepreneur is estimated. Of that income an estimated 60,000 guilders per holding could be saved.

5.3 Horticulture under glass and mushroom-growing

Covered horticultural cultivation accounts for more than a fifth of the agricultural production capacity in the Netherlands. The mushroom sector, which is established mainly in the south of the country, has some 600 businesses. Nearly 9,000 holdings are counted as being of the horticulture under glass type. Almost two thirds of these specialize in growing flowers or plants and over a third in growing vegetables. The glass area of pot and bedding plants has been displaying a clear rise in past years, and the area of cut flowers is increasing somewhat, but the area of vegetables under glass is showing a slight decrease. The average size of the horticulture under glass holdings is relatively large and still continually growing.

The structure of horticulture under glass is in full discussion. In this the future location of the sector plays an important role. According to the Economic Main Structure of Horticulture under Glass - a kind of economic ideal picture - the old centres like the Westland (south of The Hague) ought to give up some of their area. Conversely, other areas, including the centre of the Province of South Holland and the north of North Holland, ought to have a much larger area under glass. The sector is incidentally hard at work renewing the production range, partly to offset the growing international competition. For the same reason a more business-like system of charges for the suppliers has been introduced at the flower auctions.

Income formation in horticulture under glass has developed positively in recent years after the poor results at the beginning of the nineties (Figure 5.3). In those years investments fell to such a level that obsolescence of the glasshouses occurred. Thanks to the recovery of the incomes, catching-up has been taking place in the last few years. This is encouraged by a subsidy scheme for structural improvement of horticulture under glass, which is aimed



Figure 5.3 Development of incomes and savings of horticulture under glass holdings

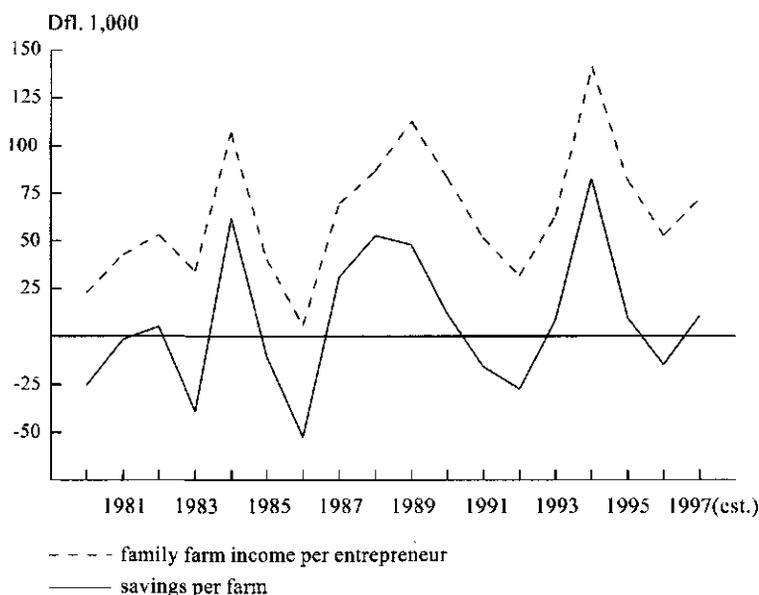


Figure 5.4 Development of incomes and savings of mushroom growers

among other things at energy-saving, reduction of the environmental burden and improvement of working conditions.

In vegetable-growing under glass it was above all the much higher prices of sweet peppers that influenced the rise in incomes in 1997, after a vigorous recovery had already occurred in 1996. The average family farm income is estimated for 1997 at 135,000 guilders per family farm, as against 117,000 in the preceding year. From the income over 80,000 guilders per holding was saved.

The prices of flowers and plants in 1997 were on average 6% higher than in 1996. As a result incomes rose (further) on both the cut flower holdings and the pot plant holdings. For the cut flower holdings an average family farm income is estimated of over 100,000 guilders per entrepreneur, 50% more than in 1996. After a five-year period in which the cut flower holdings dissaved several thousand guilders per year, in 1997 there was for the first time again a substantial positive saving of 38,000 guilders per holding. The incomes of the pot plant holdings at the beginning of the nineties fell less far than those of the two other types of glass holdings. The savings of the pot plant holdings have therefore almost always remained positive. In 1997 these holdings achieved an average family farm income of approx. 125,000 guilders per entrepreneur, which means an increase of some 10% in respect of 1996.

Dutch mushroom-growing has had to contend with falling prices for some years now, because consumption did not keep in step with the growth of production. In 1997 the picture

deviated from this trend: despite the somewhat higher production prices rose, thanks to the growing exports to the United Kingdom and France. There is a chance that in the years to come pressure will increase on mushroom prices because China will try to sell large batches on the EU market. Thanks to the higher prices the downward trend of the incomes of mushroom growers was reversed in 1997 (Figure 5.4). For the average family farm income an improvement has been estimated from 53,000 guilders in 1996 to 72,000 guilders in 1997. The savings, which were negative in 1996, will work out thereby at over 10,000 guilders per holding.

5.4 Grassland based livestock farming

Almost half of all agricultural and horticultural holdings in the Netherlands are regarded as belonging to the grazing farm type. Most of these specialize in dairy cattle. Partly because of its spatial extent the sector, which has a share of over 40% in the agricultural production capacity of the Netherlands, is vital to the image of practically all provinces. The sector has made proposals as part of a vision of the future, to encourage grazing by cows and to let dairy farms play a more important part in nature and landscape management. At the same time continuation of European dairy policy, including the existing milk quota system, is advocated. This policy is an important factor for the income formation of the dairy farms. Incidentally, there are between the farms large differences in the cost price of milk, which are bound up among other things with the size of the farm.

Partly through the lower value of the guilder higher prices for dairy produce were received in 1997/98. In addition the concentration of the Dutch dairying industry plays a part. As a result the supply, above all of cheese, can be better geared to the demand. Partly because of this, the price of milk was about 3% higher than in 1996/97.

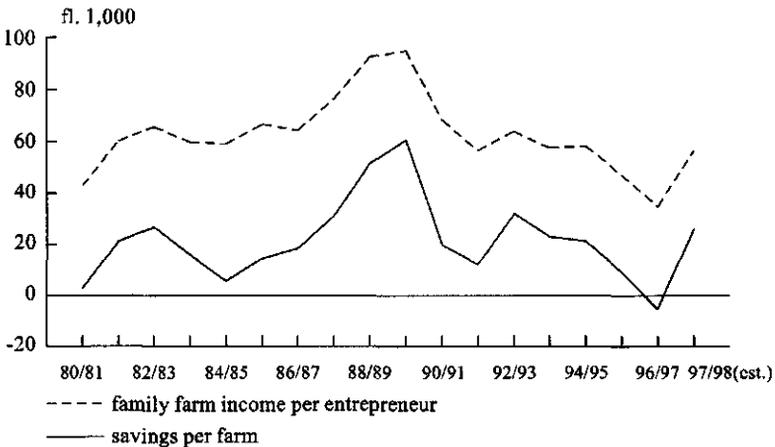


Figure 5.5 Development of incomes and savings of dairy farms

The price of beef also rose, under the influence of a smaller production in the EU. In Agenda 2000 the European Commission has proposed to lower the intervention price by 30% and by way of compensation to pay higher allowances per animal. Calculations with the 'Beef Model' of the Agricultural Economics Research Institute indicate that the problems of the EU beef market will be solved by the proposed reform only if the actual market prices fall as much as the intervention price. The proposals could bring the average Dutch dairy farmer a loss in income of approx. 15,000 guilders.

Through the rise in milk and beef prices incomes in Dutch dairy farming improved in 1997/98, after a decline for years on end (Figure 5.5). The average family farm income will according to the estimate work out in 1997/98 at 57,000 guilders per entrepreneur, as against nearly 35,000 guilders in the preceding year. The savings, which were negative in 1996/97, are estimated at on average 25,000 guilders per farm.

There are in the Netherlands about 12,000 farms with fattening bulls, but the number of specialized bull feeding holdings is confined to a few hundred. The number is falling fairly quickly through the unfavourable operating results. The average family farm income was approximately nil in 1995/96 and 1996/97. Through the price recovery there was an improvement in 1997/98 and the specialized bull feeding holdings attained on average a family farm income of some 25,000 guilders. This therefore continues to be a poor result.

5.5 Intensive livestock farming

Intensive livestock farming represents 14% of the agricultural production capacity in the Netherlands and in 1997 numbered over 11,000 specialized farms, of which more than 7500 pig farms. In 1997 the sector was afflicted by an unprecedentedly large outbreak of classic swine fever, which did great economic and social damage. Partly as a result, legislation has been developed for restructuring the pig-keeping sector. An important element is the introduction of pig rights on the basis of the farm situation in 1995 or 1996. In September 1998 these rights are to be cut by 10%, unless one of the exceptions is applicable. In 2000 a new cut of at most 15% will follow. The cuts are smaller, as the farm is more environmentally or animal friendly. Within the sector this compulsory contraction of the pig population is meeting with fierce opposition, above all because appropriate compensation is not forthcoming. Partly to avoid a compulsory contraction of this kind, the poultry sector has recently presented a plan in which a provisional freeze on expansion of the poultry population is advocated. Just as in the pig sector various aspects are involved, such as environment, welfare, food safety and animal health.

The measures for combating swine fever had a strong effect on development of the market in 1997. Dutch pigmeat production was about a quarter less than in 1996, but the prices were about 5% higher. Thanks to compensation for removal, buying-up and ban on breeding, the damage for the pig farms affected was limited. The unaffected pig farms attained reasonable to good results in 1997/98, but these were lower than in the top year 1996/97 (Figure 5.6). Both for the pig breeders and for the other pig farms a fall in family farm income by 15 to 20% is estimated. The savings remain with amounts of 70,000 guilders and 50,000 guilders per farm respectively at a favourable level.

Dutch poultry production in 1997 was a few percent higher than in 1996, and prices rose by about 7% thanks to demand picking up in the EU. Operating results, although somewhat lower than in 1996/97, remained as a result at a favourable level.

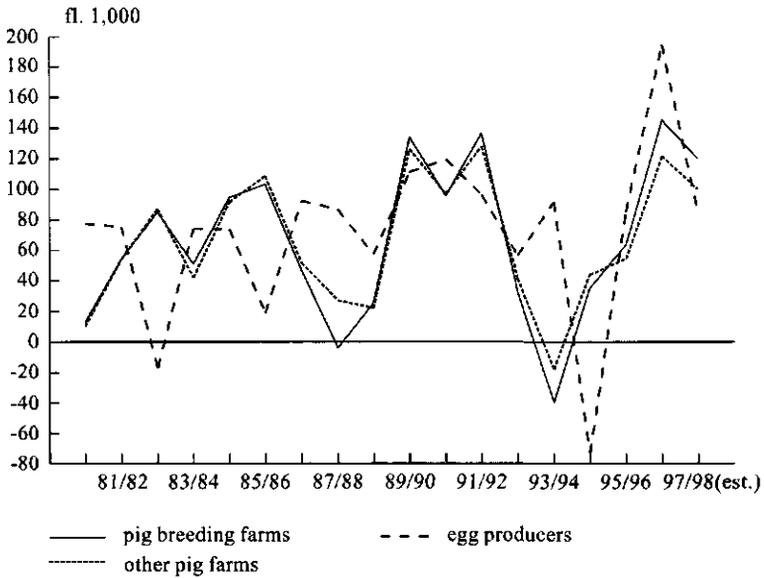


Figure 5.6 Development of the family farm incomes for pig and poultry farms

Dutch egg production was 3% larger in 1997 than in the preceding year. The price worked out on average about 8% lower. Through this the operating results were under pressure. The average family farm income of the specialized layer holding is estimated for 1997/98 at 85,000 guilders per entrepreneur. That was less than half of the high income in the preceding year (Figure 5.6). Nevertheless, the savings still remained largely positive.

Appendix

Definitions

Dutch Size Units (dsu): A unit for the economic size of agricultural holdings. The dsu is based on the standard gross margins (sgm), which are calculated by deducting related specific costs from the gross returns per hectare or per animal. The sgm is expressed in ECU (current prices). On the EU level the size of farms is not measured in sgm, but in the more workable European Size Units (ESU). Dsu is the Dutch variant of the ESU. The dsu is recalculated frequently in such a manner that the average farm size in dsu corresponds with the development of the volume of the value added of the average farm. Some examples (on the basis of the dsu 1992): 1 ha winterwheat = 0.89 dsu; 1 ha sugarbeet = 1.95 dsu; 1 dairy cow = 1.333 dsu; 1 sow = 0.28 dsu and 1 ha tomatoes under glass = 151.52 dsu.

Factor costs: (imputed) costs of labour, capital and land.

Family farm income: income of the farm family out of the farm business; this is a remuneration for the labour of all family members and the private capital and land.

Gross value added: gross returns minus purchased goods and services (excluding depreciations).

Net value added: gross returns minus non-factor costs.

Non-factor costs (intermediate consumption): costs of goods and services purchased from other sectors (including depreciations).

Savings: the part of total income which has not been used for consumption or personal taxes, but is added to net worth.

Solvency: net worth in % of total capital.

Total income: family farm income plus income from non-farm activities and social security of the farmer and his spouse.