Agricultural Economic Report 1999 of the Netherlands

Summary

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ABSTRACT

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This report offers an English summary of the 1999 Agricultural Economic Report (200 pp.), published in Dutch. It presents a general survey of the economic state of Dutch agriculture and horticulture. First, attention is paid to general economic and political developments and to the development of the agricultural complex. Next, the report deals with the rural area, with agriculture and environment and with forestry. After a description of the production structure and production factors in agriculture, profitability and income formation in the various subsectors are analysed.

Agriculture/Horticulture/Trade/Farm structure/Environment/Profitability/Incomes/ Netherlands

Preface

The Agricultural Economic Report of The Netherlands (Landbouw-Economisch Bericht) is one of our Institute's annual publications, offering a global survey of the economic and financial state of Dutch agriculture and horticulture. In it, the changing economic and political circumstances affecting the sector are explicitly taken into account. This 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 report is coordinated and edited by the General Economics and Statistics Division. The final draft of the 1999 edition of the report was completed in June 1999.

The Hague, July 1999

The Director,
Prof. L.C. Zachariasse

Contents

Economic and Political Framework

1.1 General Situation

The framework of the Dutch agricultural sector is largely determined by international political and economic developments. In this respect, the introduction of the Euro, the future enlargement of the EU and the WTO negotiations on agricultural trade liberalisation are major developments.

In 1998 the highest growth level of total private consumption since 1973 was recorded. However, domestic food consumption remained stable. The strong growth of private consumption in 1998 resulted from rising employment, increasing purchasing power and capital gains. Total employment has increased by roughly 150,000 jobs in both 1997 and 1998. Under the influence of the unfavourable international economic situation, the economy is expected to develop less satisfactorily in 1999 and 2000 than in 1998. The pace of economic growth will probably decrease from more than 3% in 1998 to some 2% in 1999.

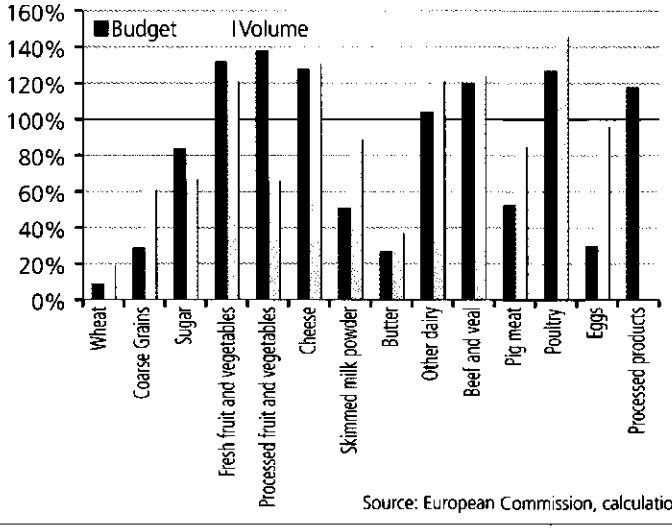
The vigorous growth in employment of the past years is closely linked to investments: during 1995-1998 these increased by more than 7% annually. The drop in interest rates from nearly 9% in 1990 to 4.6% in 1998 made a major contribution to the boost in investments. In 1999 and 2000 total investments are expected to stabilise, whereas agricultural investments are likely to actually decrease.

The government's financial deficit has decreased in the 1990s, in line with public expenditure. However, the tide could turn because of wage increases, the growing influx of asylum seekers, compensatory payments for the 1998/99 flood damage and decreasing natural gas revenues.

In the west of the country, in particular, congestion is causing problems: places are increasingly difficult to reach and the number of traffic jams is growing. In an effort to solve this problem, plans have been drawn up to boost investments in the infrastructure, for instance for new railway links. For the Dutch agrosector, which is highly trade-oriented, it is of crucial importance to be within easy reach of the port of Rotterdam, Schiphol Airport and the neighbouring markets.

In its policy plan for agriculture, the second Kok government has chosen to follow the line of the previous government. This means that attention is shifted more and more from supporting agricultural production as such, towards the total rural area, nature, environment, outdoor recreation, food safety and animal welfare. Farmers are increasingly facing stringent requirements with respect to production methods and at the same time are being exposed to strong international competition.

Figure 1.1 **Subsidised exports of the EU in 1996/97 as % of WTO commitments for 2000**



Source: European Commission, calculations by LEI-DLO.

1.2 Agriculture in the World

The volume of agricultural production in the world remained more or less unchanged in 1998. Owing to a slight population increase, agricultural production per capita fell by 1%. Whereas animal production increased in 1998, crop production decreased. According to the FAO, cereal production will drop again in 1999 on account of the severe weather conditions in Central America and Asia. High prices during the past years have caused a considerable expansion of intensive livestock production in North America and Europe. On the other hand, the number of countries with an acute food shortage increased to 40, according to the FAO. Armed conflicts in Africa and the Balkans and economic crises in Asia and Russia increased the need for food aid in 1999.

Because fresh water is of crucial importance to the future supply of food, concerns have been expressed about its availability. According to the OECD, about 25 countries are trying to cope with water shortages and this may amount to 50 countries in the year 2015.

In 1998 more than 27 million hectares of GMO crops were produced in the world, as opposed to 1.7 million hectares in 1996. The United States grows three-quarters of this production. In Europe hardly any GMO crops are produced because of difficulties regarding the acceptance and regulation of these crops. After all, there is still much uncertainty about the consequences of GMOs on public health and the environment.

The greater part of agricultural production is sold at domestic and neighbouring markets. The export shares of tropical products (coffee, bananas and cotton) are much larger than the export shares of arable crops and animal production.

Trade volume in 1998 was influenced by the economic crises in Asia, Russia and Brazil. Devaluations of currencies and a drop in demand in these countries as well as overproduction in some other countries (during the last years) resulted in extremely low commodity prices at international markets. One of the side effects of the low international prices for agricultural products is a substantial increase in measured agricultural support in developed countries.

Implementation of the current WTO agreement for agriculture

- ***Domestic support:*** during 1995-2000 domestic support has to be reduced by 20% compared to the 1986-88 level. This so-called amber box support or AMS (Aggregate Measurement of Support) contains trade-distorting measures of support. Green and blue box measures are excluded from this reduction. Green box support is support that does not directly influence production decisions made by agricultural producers (food aid, damage etc.). Hectare payments and headage premiums fall within the blue box. Due to the blue box and the high reference levels in 1986-88, this commitment has not imposed constraints on the EU.

- ***Market access:*** variable import levies and other import restrictions have been converted into fixed import tariffs (based on 1986-88 levels). These fixed tariffs are then reduced by an average of 36%, with a minimum of 15%. By means of the Special Safeguard Clause (SSC), the EU can impose additional levies on some products. Secondly, the EU has to maintain current access opportunities and increase minimum market access quotas from 3% of domestic consumption to 5% over the implementation period. These two commitments have not yet placed many constraints on the EU, because of the high levels in the base period and the possibilities offered by the SSC.

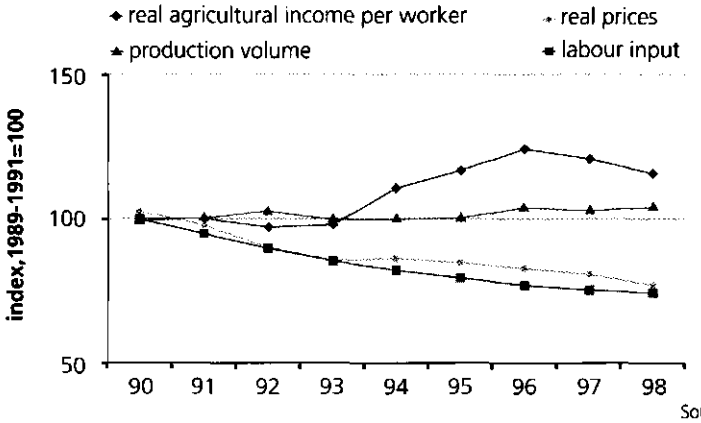
- ***Export support:*** the volume and the value of subsidised exports have to be reduced by 21% and 36% respectively over 6 years from a 1986-90 base period level. As expected, this is the most strongly binding constraint of the current WTO agreement. The commitments for dairy, beef, poultry, vegetables and fruit, and processed products are the most problematic (figure 1.1). It is to be expected that the EU will have to make some adjustments in order to fulfil the conditions in 2000.
  In the course of 1999 a new WTO trade round will start, aimed at further liberalisation of agricultural trade. The USA and the Cairns Group advocate the abolition of export subsidies and large reductions in other support measures. This will probably force the EU onto the defensive although the EU has already decided to reform its agricultural policy.

1.3 Agriculture in the European Union

In 1998 income from agriculture per worker in the EU fell for the second consecutive year (figure 1.2). The 4.1% decline was caused mainly by the fall in prices of livestock products and the drop in subsidies. No great changes occurred with respect to the budgetary expenditures for agriculture. The price negotiations for 1998/99 resulted in largely unchanged prices in comparison with the previous year. The set-aside was set at 10%. More radical adjustments were proposed in the context of the Agenda 2000.

The European leaders came to an agreement on the Commission proposals at the Berlin Council in March 1999. Together with the reform of market and price policy (see next page) several changes were agreed in the structural policies. The existing seven Objectives will be integrated into three Objectives. In addition, expenditure will be reduced. The various schemes in the agricultural structure policy, such as the support scheme for young farmers, the scheme for mountain farmers and the accompanying measures, will be integrated. In that way the agricultural structure policy is to be transformed into a 'countryside policy'.

Figure 1.2 Some indicators of the agricultural income in the EU-15, 1990-1998



Source: Eurostat.

Reform of Market and Price Policies: Decisions on the Agenda 2000

Arable Crops

- For cereals, oilseeds and protein crops, intervention prices are cut by 15% in two equal steps of 7.5 percentage points starting in the 2000/2001 campaign down to 101.31 Euro/t from 119.19 Euro/t now.
- Direct payments are increased in two annual steps, to 63 Euro/t from 54 Euro/t. In the case of oilseeds, direct payments per hectare will be reduced in three annual steps to those of cereals, while the reference price system for oilseeds will be abolished in 2000. Protein crops will receive direct payments of 72.5 Euro/t.
- Compulsory set-aside is retained until 2006/2007, at a basic rate of 10% from 2000/2001. The compensation for set-aside is established as for arable crops at 63 Euro/t from 2001/2002.
- The minimum price of starch potatoes is reduced to 178.31 Euro/t from 2001/2002, while the compensatory payments for producers are raised and national quotas are adjusted.

Beef and Veal

- The new regulation introduces a 20% reduction in the current intervention price (2,780 Euro/t) in three steps. From July 1, 2002 the intervention price will be replaced by a basic price for private storage fixed at 2,224 Euro/t. Private storage aid can be granted if the average Community market price is less than 103 % of the basic price. A "safety net" intervention system will be set up.
- The levels of the existing premiums (basic special premium for male animals and suckler cow premium) will be increased. A slaughter premium will be paid directly to the farmer, on condition of a retention period. It will amount to 80 Euro for bulls, steers, dairy cows, suckler cows and heifers (from 8 months for all these categories of animals) and 50 Euro for calves.
- A financial envelope will be introduced for each Member State which can be used to top up payments for male or female cattle, including dairy cows. This will allow Member States flexibility to compensate for regional differences in production practices and conditions.
- The current extensification premium will be significantly increased and the qualification criteria are changed.

Milk

- All quotas will be increased by 1.5 % in three steps starting in 2005 supplemented by specific increases in five Member States i.e. Greece, Spain, Ireland, Italy and the UK (Northern Ireland) who will receive this specific increase in two steps starting in 2000. The future of the regime will be reviewed in 2003.
- The intervention prices for butter and skimmed milk powder will be reduced by 15% in three equal steps, starting in 2005.
- To ensure farm incomes are protected a system of aids will be introduced. This aid will increase in three equal steps to 17.24 Euro/t in 2007 supplemented by a payment from the EU financial envelope allocated to Member States, which will be also increased over three years from 2005 to 2007.

Source: European Commission.

Development of the Dutch Agricultural Sector

2.1 Agricultural Imports and Exports

On the list of international traders in agricultural products, The Netherlands is placed second behind the United States of America in terms of export surplus (table 2.1). Total Dutch exports of agricultural products and foodstuffs increased further in 1998 (table 2.2). In 1998 the share of agricultural trade in total Dutch trade amounted to 21% in exports and 13% in imports, both a percentage point less than in the previous year.

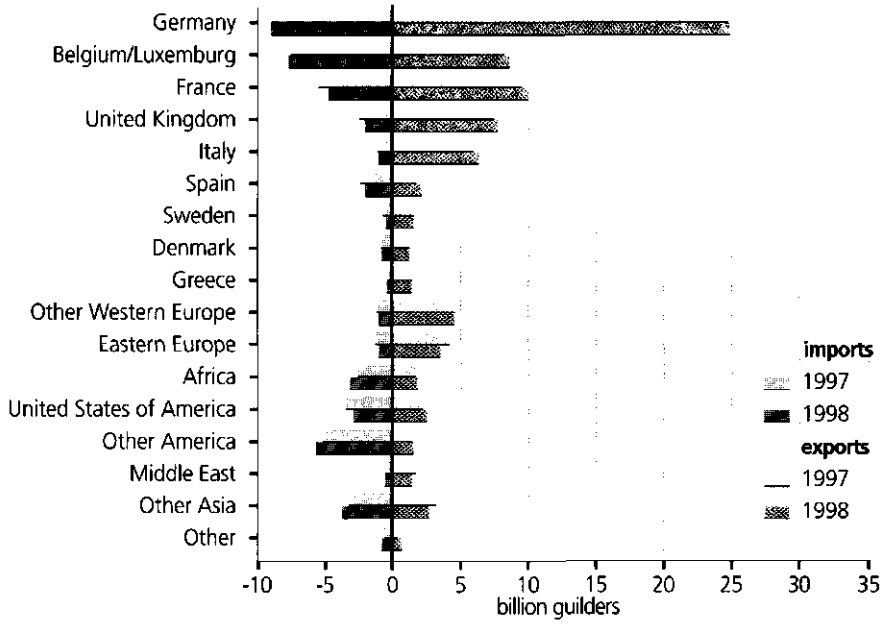
In 1998 about 62% of Dutch agricultural imports came from EU member states, three percentage points less than in 1997. Germany, Belgium and France remain the most important suppliers to the Dutch market (figure 2.1). Within the group of countries outside the EU, the USA, Brazil and Argentina are leading suppliers. The share of EU member states in the agricultural exports of the Netherlands remained stable at about 80%. Germany is by far the most important market within the EU, whereas the USA, Russia, Japan and Switzerland are major markets outside the EU. After some years of considerable growth, exports to Russia fell back considerably (-30%) in 1998 on account of the financial and economic crisis.

Table 2.1 Agricultural exports and imports of selected countries [a] (billion US dollar), average 1996-1997

	Exports	Imports	Export surplus
United States	64.4	39.5	24.9
Netherlands	34.7	19.3	15.4
France	39.5	26.8	12.7
Australia	16.5	4.4	12.1
Argentina	11.0	1.5	9.5
Brazil	15.4	6.4	8.9
Denmark	10.4	4.6	5.7
Canada	14.9	10.0	4.9
Malaysia	7.6	4.4	3.2
Spain	15.0	12.5	2.5
Belgium/Luxemburg	18.4	16.7	1.7
Mexico	6.0	7.7	-1.7
China	13.9	16.7	-2.9
Hong Kong	5.9	11.0	-5.1
South Korea	1.8	10.2	-8.4
Italy	16.3	24.9	-8.5
United Kingdom	16.4	26.9	-10.5
Germany	25.5	43.0	-17.5
Japan	1.6	40.0	-38.4

a) Agricultural products and food; fish and wood excluded. Source: FAOSTAT.

Figure 2.1 **Origin and destination of Dutch agricultural trade in 1997 and 1998**



Source: Statistics Netherlands, calculations by LEI-DLO.

2.2 The Agricultural Complex

The agricultural complex, which includes the primary sector, the processing industry, the firms supplying the two sectors and the firms attending to distribution, represents a slightly falling share in national value added and employment (table 2.3). The part of the complex that is based on foreign raw materials is growing. The growing international dependence of the Dutch agromplex is also reflected by the fact that the share of exports in the value added and employment of the agricultural complex, in so far as based on domestic raw materials, amounted to some 74% in 1997, against 66% in 1985.

Per capita consumption of foodstuffs in the Netherlands is fairly stable (table 2.4). Eco-products are gaining popularity. The estimated consumption of Eco-food worked out at 430 million guilders in 1998. In particular, the consumption of Eco-dairy is growing.

A slightly increasing number of people are employed in the Dutch retail sector: nearly 255 thousand, of which 189 thousand in supermarkets. The concentration and internationalisation of the food industry and retail sector is continuing without abatement. The company with the highest turnover in the Dutch agrosector is Unilever, followed in succession by Ahold, Heineken, Laurus and Sara Lee/Douwe Egberts. Next on the list are the dairy cooperatives Friesland Coberco Dairy Foods and Campina Melkunie.

2.3 Results of the Primary Sector

The gross production value of the total agricultural production rose by roughly 1% in 1998 (table 2.5). A larger production volume was accompanied by lower prices. The average price level of agricultural products fell by 2.5%. The results were very different per sector. The production volume of the arable sector fell by nearly 20%, as a result of the floods during the harvesting time. Conversely, the volume of the intensive livestock production recovered by 20% from the severe drop in 1997 due to the outbreak of swine fever.

Table 2.2 Agricultural exports and imports [a] of the Netherlands (billion guilders), 1997-1998

	Exports		Imports		Export surplus	
	1997	1998	1997	1998	1997	1998
Cereals, pulses, and potatoes	1.6	1.7	3.4	3.2	-1.7	-1.4
Oilseeds	0.5	0.8	2.8	2.7	-2.3	-1.9
Feeding stuffs, excl. cereals	4.7	4.3	3.0	2.5	1.7	1.8
Cereal preparations and starch	4.5	4.4	1.8	1.8	2.7	2.6
Sugar	1.5	1.4	0.7	0.7	0.8	0.7
Horticultural seed	0.7	0.8	0.3	0.3	0.4	0.5
Ornamental products and plants	11.0	11.8	1.7	1.7	9.4	10.1
Vegetables	5.3	5.5	1.5	1.5	3.8	4.0
Fruit, nuts, and spices	3.1	3.4	4.0	4.2	-0.9	-0.8
Preparations of potatoes, vegetables, and fruit	4.6	4.8	2.9	3.1	1.7	1.7
Livestock	1.0	1.1	1.1	1.0	-0.1	0.0
Meat	10.5	10.5	3.2	3.1	7.3	7.4
Eggs	1.3	1.1	0.2	0.2	1.0	0.9
Dairy produce	8.0	8.7	4.8	4.9	3.1	3.9
Fish	3.3	3.5	2.0	2.2	1.3	1.3
Timber and cork	0.6	0.6	2.4	2.3	-1.9	-1.7
Margarine, fats and oils	3.2	3.8	1.8	2.9	1.5	0.9
Drinks	3.3	3.4	2.6	2.5	0.7	0.9
Coffee, tea, and cocoa	3.8	3.9	3.4	3.7	0.4	0.3
Tobacco	5.8	6.1	2.2	2.0	3.6	4.0
Other products	3.6	3.6	2.0	2.0	1.6	1.6
Total	**81.9**	**85.1**	**47.8**	**48.4**	**34.0**	**36.8**

a) Agricultural products, foodstuffs, fish, and timber.

Source: Statistics Netherlands; processing by LEI-DLO.

Table 2.3 Value added and employment of the Dutch agricultural complex, 1985-1997

	Gross value added (Dfl. billion) [a]		Employment (1.000 working years)	
	1985	1997 (est.)	1985	1997 (est.)
Agricultural complex [b]	**49.6**	**72.4**	**686**	**647**
Share in national total (%)	12.5	11.5	15.1	11.7
Processing. supply and distribution of foreign agricultural raw materials	13,5	23,9	172	182
Agricultural complex [c]	**36.1**	**48.5**	**514**	**465**
of wich distribution	4.9	6.2	77	61
supply industry	12.5	15.8	132	134
processing industry	4.7	7.1	61	61
agriculture and horticulture	14.0	19.5	244	208
Share in national value added (%)	9.1	7.7	11.3	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 cacao. drinks and to-bacco); c) Based on domestic agricultural raw materials.

Source: Agricultural input-output table LEI-DLO.

Table 2.4 Domestic use (kg per capita) of food and beverages, 1990-1997

	1990	1992	1994	1995	1996	1997
Butter	3.4	3.4	3.3	3.5	3.4	3.5
Margarine	9.8	9.2	8.2	8.1	7.8	7.5
Halvarine	2.9	3.1	3.2	3.0	3.1	3.0
Spice fats and oils	13.0	13.3	13.9	14.2	14.7	15.0
Milk	41.6	37.8	34.9	33.4	31.2	30.6
Skimmed milk	41.6	43.0	42.2	44.2	44.4	44.6
Low fat milk	20.0	19.9	19.3	17.8	18.7	18.8
Cheese	15.1	14.4	14.2	14.2	14.5	14.6
Beef and veal	19.3	19.3	20.2	20.3	20.4	20.2
Pigmeat	45.2	42.4	43.7	44.2	44.5	43.0
Poultrymeat	17.4	18.5	20.0	20.4	21.4	21.8
Eggs (pieces)	176	172	173	175	175	176
Bread	60	60	60	59	59	59
Potatoes	87	83	84	83	84	85
Drinks	86	92	93	97	95	97
Beer (litre)	91	89	86	86	85	86

Source: Statistics Netherlands.

Table 2.5 Gross production value of Dutch agriculture and horticulture, 1996-1998

Product group	Value in Dfl. million			1998 index in % of 1997		
	1996 (prov.)	1997 (prov.)	1998 (est.)	quantity (est.)	price (est.)	value (est.)
Arable products	**2,383**	**2,712**	**2,813**	**83.5**	**124.3**	**103.7**
among which cereals	419	327	295	98.4	91.8	90.3
potatoes	891	949	1,049	67.0	165.0	110.6
sugar beets	720	786	670	82.0	104.0	85.3
onions	172	364	360	110.0	90.0	99.0
Horticultural products	**13,467**	**14,283**	**14,537**	**101.2**	**100.6**	**101.8**
among which vegetables [a]	3,936	4,131	3,866	98.0	96.0	94.1
fruit	750	766	741	104.0	93.0	96.7
flowers and plants	6,285	6,762	7,100	100.0	105.0	105.0
flower bulbs	909	838	915	104.0	105.0	109.2
three nursery products	1,039	1,173	1,196	102.0	100.0	102.0
Grassland based livestock products [b]	**9,108**	**9,329**	**9,713**	**100.3**	**103.8**	**104.1**
among which cattle (excl. calves)	1,183	1,289	1,250	96.0	101.0	97.0
milk [c]	7,427	7,588	8,047	101.0	105.0	106.1
Intensive livestock products	**10,435**	**8,770**	**8,441**	**121.3**	**79.3**	**96.3**
among which calves	1,705	1,837	1,958	96.0	111.0	106.6
pigs [d]	6,253	4,329	4,128	149.0	64.0	95.4
poultry	1,425	1,590	1,508	102.5	92.5	94.8
eggs	1,052	1,014	848	102.0	82.0	83.6
Grand total	**35,502**	**35,194**	**35,576**	**103.7**	**97.5**	**101.1**

a) Including mushrooms; b) including the products of sheep and goat keeping etc.; c) without taking into account the superlevy and compensation for suspended quota; d) The 1997 production value excludes the compensation of some 2.5 billion guilders in connection with swine fever.

Source: Statistics Netherlands; estimates by LEI-DLO.

The increased production volume was realised with a lower value of purchased means of production. The consumption of feeding stuffs and energy were both reduced. Depreciation remained practically the same, whereas production-tied taxes and levies declined. A substantial fall in the amount of subsidies was bound up with the termination of compensations for the swine fever outbreak, milk quota and the BSE crisis. Consequently, agricultural income declined sharply. Average real farm income fell some 9% in 1998, against the rather favourable result of 1997.

3

Agriculture, Rural Areas and the Environment

3.1 Agriculture and the the Countryside

The countryside, which can be defined as the non-urban and semi-urban municipalities, covers almost 80% of the land area and is inhabited by about 38% of the Dutch population. Agriculture is still by far the largest user of land with a share of nearly 70% (more than 2 million hectares). In general, land is in short supply in the densely populated Netherlands. Under pressure from other functions, such as housing, infrastructure, commerce and industry, recreation and nature, agriculture must constantly concede ground. The allocation of land is controlled by the government.

The structure of employment differs between the urban and non-urban areas. Whereas 11% of employment in the non-urban areas is still made up by agriculture, this percentage is less than 1 in the urban areas. In the non-urban areas the industry sector represents a comparatively large share as well. The service sector is concentrated in the urban areas, where the disposable income per capita is on average about 500 guilders higher than in the non-urban areas. However, inhabitants of non-urban areas are generally more satisfied with their living conditions than people living in urban areas.

3.2 Agriculture, Nature Conservation and Forestry

Although for the first time in decades the area of nature reserves is slightly on the increase, biodiversity is still decreasing. To counteract this trend, government policy aims to implement the Ecological Main Structure by the year 2018. This structure forms a comprehensive network of nature reserves, connecting zones and buffer zones. However, implementation of these plans - the purchase of areas - is lagging behind the intentions.

The Ministry of Agriculture, Nature Management and Fisheries aims to broaden its nature conservation policy by more explicitly taking into account the people's interest in nature. The government will consider the needs of society and will join forces with the recreation sector, the building industry, water management and financial institutions.

To stimulate a sustainable forestry, initiatives have been taken to develop a labelling system for wood products. In the Netherlands, the FSC (Forest Stewardship Council) and the 'Stichting Keurhout' are two of the most important labels. These labels show that certain products originate from forests that stimulate the efficient use of the various forestry products and services in order to safeguard economic and social benefits. Furthermore, these labels indicate that forestry management is directed towards the conservation of biodiversity, water and soil, unique landscapes and vulnerable ecosystems. Up to now, the introduction of the labels has been difficult, especially in the private forestry sector. So far, about 53,000 hectares of woodlands in the Netherlands have been labelled by FSC, of which the National Forest Service owns 40,000 hectares.

The private forestry sector recorded a deficit of 7.1 million guilders in 1997, against minus 3.4 and minus 2.2 million guilders in 1996 and 1995, respectively. Low yields of timber and a reduction in subsidies caused the negative result in 1997. Estimates for 1998 also show unfavourable results. The government objective to have positive results for at least 80% of the private foresters in 2003 will prove difficult to attain.

3.3 Agriculture and the Environment

The decreasing burden on the environment by Dutch agriculture and horticulture, which was the trend in the first half of the nineties, seems to have stagnated. This is related to the use of pesticides, which has been reduced by approximately half since the mid-1980s. Meanwhile, the volume of vegetable production has increased by 40 to 50%. In the last few years the use of pesticides has remained more or less stable. However, due to fungus control it has increased substantially. The policy objectives, which imply that total pesticide use in 2000 must be some 50% lower than in 1984-88, will therefore probably not be met. Nevertheless, many actions (research programmes, demonstration projects, etc.) have been undertaken to reduce the use of pesticides. The government has entered into agreements with several agricultural sectors, like the flower bulb and cut flower sector.

Agriculture and horticulture account for about 12% of the Dutch contribution to the greenhouse effect. In the emission of CO_2 the share is admittedly confined to 5%, but in two other greenhouse gases N_2O and CH_4, the share is about 40%. This substantial share is due to the (intensive) livestock sector. The emission of CO_2 increased continually up to 1995, mainly as a result of the strong growth of the horticultural production under glass. In 1996 and 1997 the CO_2 emission stabilised and decreased respectively. The emissions of other gases have also been showing a decrease for some time now.

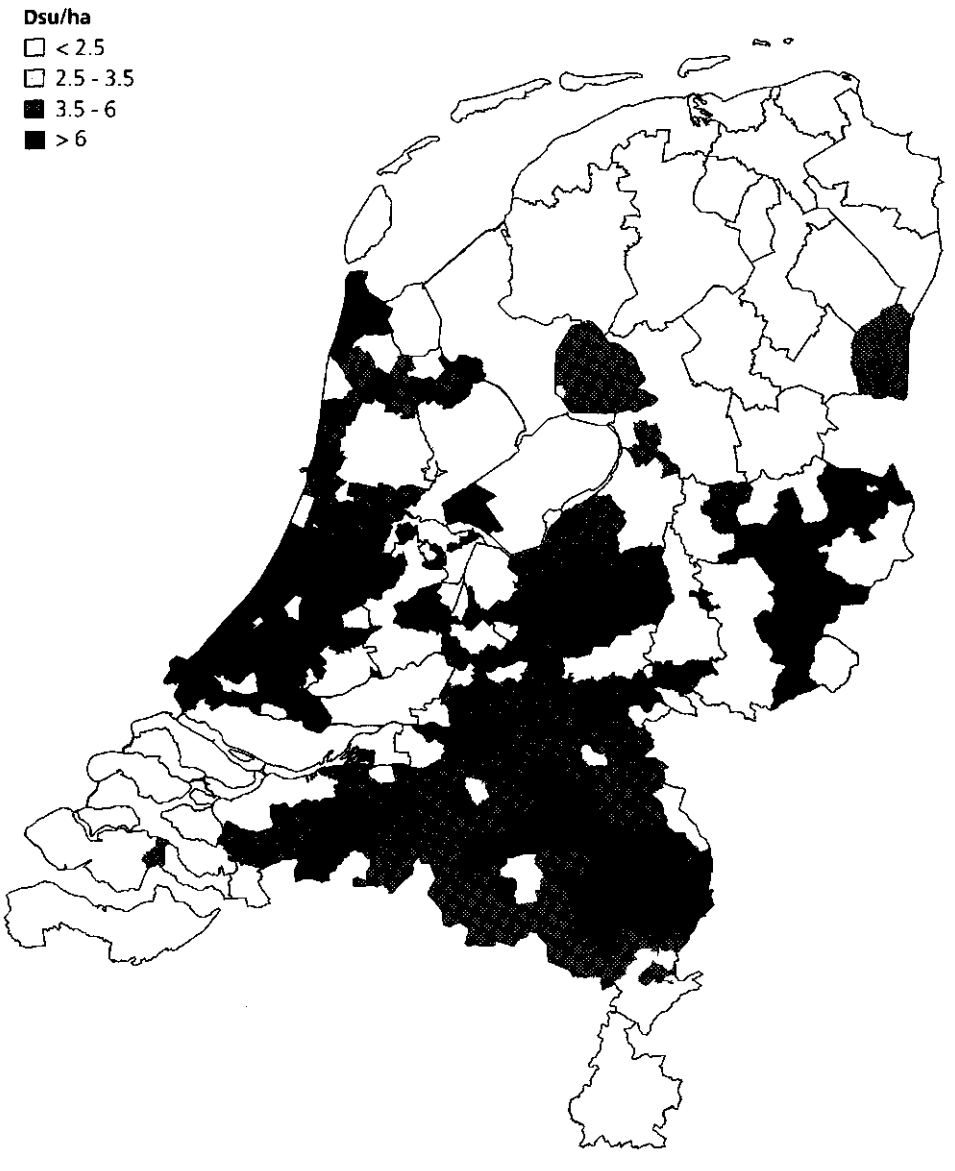
The horticultural sector accounts for roughly 75% of the total energy consumption of Dutch agriculture and horticulture. From 1991 onwards the energy consumption per unit product in this sector has displayed a drop. Policy objectives with respect to energy saving were reached for 1995. The objectives for 2000, an energy saving of 50% (compared to the 1992 consumption level) will probably not be met. In 1997, a reduction of only 42% was achieved. The energy consumption of the other agricultural branches has become more or less stable in recent years. Gradually, the energy-saving policy is being extended to other agricultural sectors. For instance, the government has entered into a long-range energy-saving agreement with mushroom growers and flower bulb growers.

Discharge of phosphorus into the soil has been displaying a downward trend for some years now: since the mid-1980s the emission of phosphorus from Dutch agriculture has fallen by roughly 40%. The discharge of nitrogen fell in the second half of the 1980s, increased in the first half of the 1990s and has decreased again in recent years. The reduction in these emissions was influenced by contraction of the dairy herd as a result of the milk quota system. In addition, the phosphate content in pig feed and other feed and the more efficient use of fertilisers has been

successful. In 1998 the mineral reporting system (MINAS) came into force. Under this system the Dutch livestock farms with more than 2.5 livestock units per hectare have to keep exact records of the amounts of phosphorus and nitrogen entering the farm and leaving it. If the difference between input and output - the surplus - is above a certain amount per hectare (the norm) the livestock farmer has to pay a fee. From the year 2001 this policy will be introduced in arable farms and open field horticultural holdings. To halt the growing surplus of poultry manure, the government has placed a limit on the number of poultry in the Netherlands.

Mineral discharge varies widely among the farms. Adjustments to the management of a farm can result in considerable reductions of minerals, without any loss of profits. By the end of 1998, the European Commission was suggesting that Dutch policy with regard to minerals and ammonia will not affect the environment sufficiently. For this reason, the nitrogen norms have been recently tightened. Some 600 million guilders will be spent to achieve the tightened norms, among such things as relocating livestock farms.

Figure 4.1 **Intensity of agricultural production (dsu/ha) per community, 1998**



Source: Statistics Netherlands, calculations by LEI-DLO.

4

Structure of Agriculture and Horticulture

4.1 Production Capacity and Farm Structure

The production capacity of Dutch agriculture and horticulture, measured in Dutch size units (dsu), has been fairly stable in recent years. In 1998 the production capacity expanded slightly. The increase is linked to the expansion (6%) of open field horticulture. Glasshouse horticulture has grown as well. The production capacity of the livestock sector has dropped. Livestock farming accounts for 53% of the total production capacity; horticulture accounts for one third. On average, production capacity per hectare is the highest in the provinces of North Holland, South Holland, Gelderland, Brabant and Limburg (figure 4.1).

The average size of farm holdings is steadily increasing. In 1990 only 10% of the holdings were larger than 100 dsu, but by 1998 this was already a quarter. In 1990 this group had a 35% share in the total production capacity, while now this has risen to 61%. The average production capacity per holding amounted to 75 dsu in 1998, as against 50 dsu in 1990. In comparison with other EU member states the production capacity of Dutch farms is large, whereas farm acreage is small. The number of agricultural holdings has fallen by 2.8% in 1998, which is somewhat faster than in the preceding period (table 4.1). Above all, in intensive livestock farming, grassland based livestock farms and glasshouse horticulture, there was a fairly quick decline in 1998. The relatively rapid decline was partly a matter of transition to a different, more mixed type of farm. Forced, premature terminations of agricultural holdings occur only to a limited extent.

The number of organic or Eco farms - farms that do not use pesticides and fertilisers - is still small. This category of holdings includes 0.7% of the total number of holdings and 1% of the total agricultural area. However, the number of organic holdings is increasing rapidly: during 1990-1998 by 7% annually.

In 1998 about 9% of the 105,000 agricultural holdings undertook 'non-agricultural' activities such as nature conservation, processing and selling at home, agri-tourism and health care at the farm. A comparatively large number of these holdings can be found in areas with beautiful scenery and recreation areas.

4.2 Labour, Land and Capital

As far as labour input is concerned, there is a steadily growing share of agricultural workers who are engaged from outside the family, especially in horticulture. The volume of family labour has decreased, analogous to the decline in the number of holdings.

The Dutch area of land under cultivation (nearly 2 million hectares) is displaying a slight downward trend. The area used for pasture has shown the largest decrease, while the area in use for horticulture has increased. In 1998, 10,300 hectares were in use for horticulture under glass, 1,000 hectares more than in 1988.

Table 4.1 Development of the number of holdings (in % per year) by type of farm, 1990-1998

Type of farm	Changes in % per year				Number of holdings
	1990-1994	1994-1996	1996-1997	1997-1998	in 1998
Arable farming	-1.6	0.2	-0.2	-2.5	14,283
Horticulture under glass	-1.4	-3.3	-3.5	-3.7	9,025
Other horticulture	-1.7	-2.8	-2.6	-1.1	11,249
Dairy farms	-4.5	-3.2	-3.0	-3.9	29,910
Other grassland based farming	4.0	-1.4	-5.4	-0.9	18,683
Intensive livestock farming	-2.0	-3.1	0.8	-5.0	10,816
Mixed farms	-2.5	-3.3	-1.1	-2.3	10,907
All farms	**-1.8**	**-2.4**	**-2.5**	**-2.8**	**104,873**

Source: Statistics Netherlands; calculations by LEI-DLO.

Prices of farmland are rising fairly sharply. Nevertheless, in real terms the price level is still below the high level of the late seventies. The recent increase in prices is bound up with income results in some of the agricultural sectors, the need for land with respect to more stringent environmental requirements, the low rate of interest and the growing demand for farmland for other purposes. In particular, work involving the infrastructure, the construction of housing and the expansion of the Ecological Main Structure makes demands on farmland.

The sustained decrease of the share of land tenure has finally come to a standstill. Between 1990 and 1997 the share fell from 31% to over 27%. In 1998 it rose to 27.7%. This development can be attributed to changes in tenure legislation. Two new forms of lease were introduced in 1995, whereby lessee and lessor have more freedom.

Total capital in agricultural and horticultural holdings amounted to some 155 billion guilders in 1997, as against 95 billion guilders in 1980. More than half of the capital (83 billion guilders) is tied up in land and buildings and nearly 50 billion guilders in the other means of production. Some 70% of this capital is financed from net value. Savings and reassessments have contributed considerably to the growth of the net value. Savings of agricultural holdings display heavy fluctuations, as a result of fluctuating incomes. Despite the average family income of 76,000 guilders per agricultural holding in 1997, 11% of the holders recorded a negative income and 36% of the holders had an income of less than 50,000 guilders. Additional income, earned outside the farm holding, has become increasingly important to farmers. In the first half of the eighties, these earnings amounted to an average of 14,000 guilders per holding, as against nearly 29,000 guilders in 1997. Most of these earnings relate either to work done by the farmer (or partner) outside the farm or to social security benefits.

5

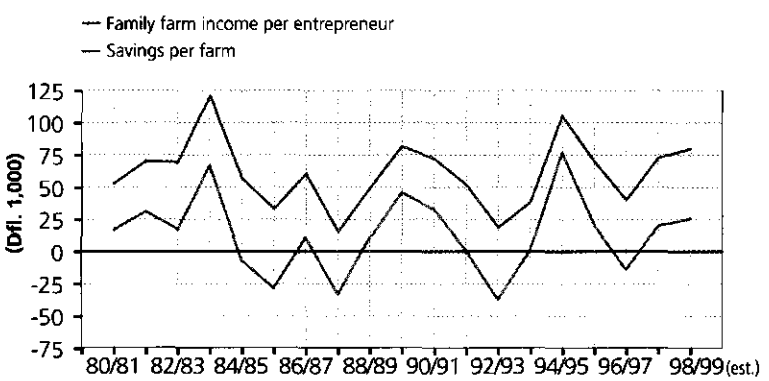
Market and Income Developments in the Various Sectors

5.1 Arable Farming

Arable farming represents about 12% of the agricultural production capacity in the Netherlands, compared to 15% in 1988. Cereal prices have fallen sharply during the last two seasons. This was caused by a large world production, which followed high prices in 1995/96, coupled with a drop in demand due to the economic crises in Asia and Russia. The excessive rainfall in the autumn of 1998 resulted in lower crop yields. Cereal production decreased by 3% in 1998. The drop in yields of sugar beet led to high producer prices in 1998/99. On the other hand, sugar prices on the world market dropped to their lowest level during this decade. Prices of table potatoes in the Netherlands displayed a substantial increase, due partly to the short supply. Compared to the previous season, the total potato yield fell by almost one third in 1998/99. As a consequence, the potato distribution and processing industry suffered substantial losses. The market for starch potatoes has been unfavourable for the last few years. Therefor, despite a smaller crop of starch potatoes, prices did not rise. For onions, a season of extremely strong prices in 1997/98 was followed by a season (1998/99) with much lower prices.

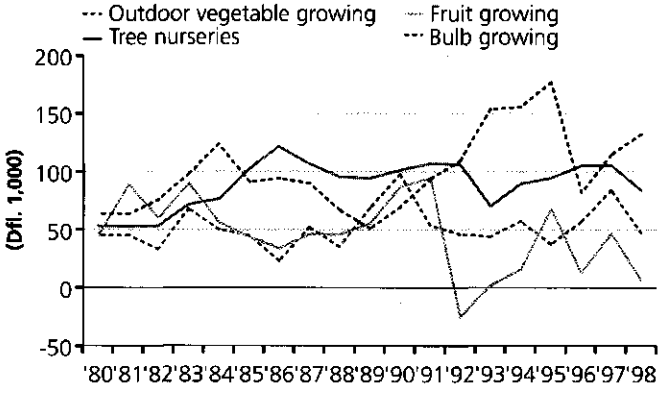
The production volume of arable crops fell by 18% in 1998/99. However, as a result of the high prices as well as compensation payments for water damage, average family farm income grew from 73,000 guilders to an estimated 80,000 guilders per entrepreneur (figure 5.1). Whereas the large farms had an average family farm income of 99,000 guilders (+13%), the small farms showed a farm income of 14,000 guilders (-27%) on average. The lowest average farm incomes are found in the

Figure 5.1 Incomes and savings of arable farms



Source: Dutch Farm Accountancy Data Network.

Figure 5.2 **Family farm income per enterpreneur of horticulture in the open ground holdings**



Source: Dutch Farm Accountancy Data Network.

area called Veenkoloniën, where incomes are highly dependent on starch potatoes. The family farm incomes of the organic arable farms were on average better (during 1992-1997) than the incomes of the conventional farms. Arable farms with a second branch of production generally did not display better incomes than the conventional farms.

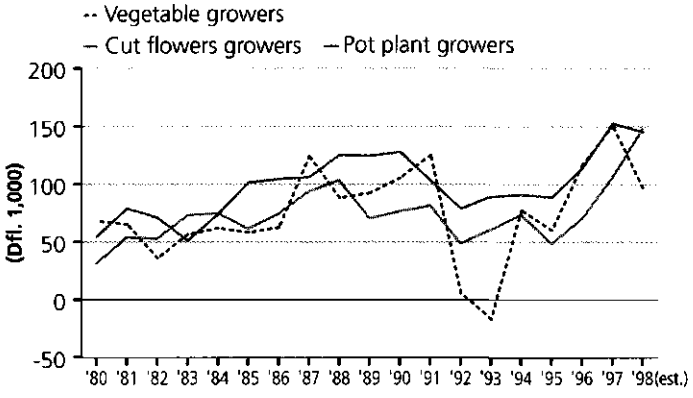
5.2 Field Production of Horticultural Products

Field production of horticultural products has a share of about 13% in the total production capacity of agriculture and horticulture. This share has been increasing in the last ten years. Over 20,000 farms - among which are 11,500 specialised holdings - grow field crops, namely vegetables, fruit, flower bulbs and tree nursery products. Generally, bulb growers have fairly large farms.

For the first time in years, the total production value of field vegetables (excluding onions) amounted to less than 900 million guilders in 1998. The average family farm income for vegetable growers fell from over 84,000 guilders in 1997 to an estimated 47,000 guilders in 1998 (figure 5.2). As a result, savings were negative: on average -12,000 guilders per holding. To encourage consumption of vegetables and fruit, producer organisations applied for EU subsidies for sales promotion.

Apple prices reached rock bottom in the first months of the 1998/99 season, partly through a large supply in the EU and partly through the drop in Russian demand. The prices of pears were higher in 1998 than in 1997, but in the second half of 1998 were subjected to great pressure, partly due to the Russian crisis. For several years, fruit farmers' incomes have been comparatively low. In 1998, fruit farmers' incomes fell from nearly 47,000 guilders in 1997 to about 6,000 guilders. Consequently, savings turned into dis-savings of an estimated -30,000 guilders per holding.

Figure 5.3 **Family farm income per enterpreneur of horticulture under glass holdings**



Source: Dutch Farm Accountancy Data Network.

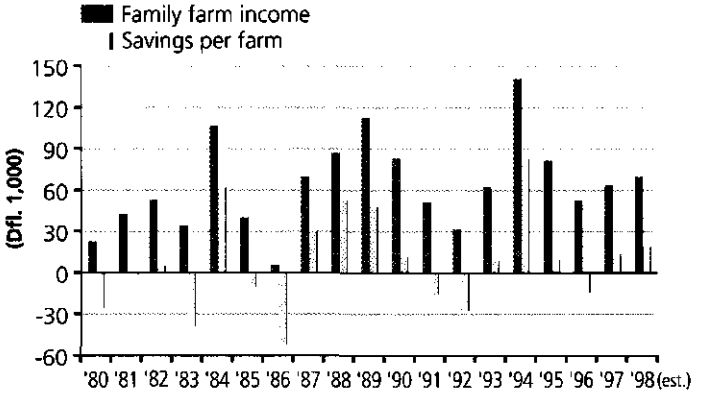
Conversely, results were much better for flower bulb growers. The average price of bulbs has been a little higher than last year's. The area of bulbs has increased by 9%, to over 21,000 hectares. The heavy rainfall that was followed by an early period of frost led to severe harvesting problems and many crop diseases. In spite of this, the value of production increased by 1% to 1,125 million guilders. The export value increased by the same percentage. In particular, the USA, the United Kingdom and Canada were major buyers of Dutch bulbs in 1998. Average family farm income of bulb growers increased from 114,300 guilders in 1997 to an estimated 132,000 guilders in 1998. Just like flower bulbs, tree nursery products are for the greater part (70%) exported. The acreage of tree nursery products is gradually increasing and amounted to around 12,000 hectares in 1998. At the same time, the production value rose by 7%, as a result of the increasing demand in the first half of 1998. The tree nurseries market came under pressure towards the end of 1998. The average family farm income for 1998 is estimated at 84,000 guilders per entrepreneur.

5.3 Horticulture Under Glass and Mushroom Growing

Horticulture under glass and mushroom growing account for roughly one fifth of the agricultural production capacity in the Netherlands. Nearly 9,200 holdings are of the horticulture under glass type, making them 9% of all agricultural holdings. About one third of these specialise in growing vegetables and almost two-thirds in growing flowers or plants. The mushroom sector consists of some 600 holdings.

The average prices for vegetables under glass dropped a little in 1998. Family farm income of glasshouse vegetable growers in 1998 is estimated at 97,000 guilders per holding, as against nearly 151,000 in the preceding year (figure 5.3). The incomes of tomato and pepper growers were on average higher than those of cucumber growers.

Figure 5.4 Incomes and savings of mushroom growers



Source: Dutch Farm Accountancy Data Network.

The prices of flowers in 1998 were some 7% higher than in 1997, whereas prices of plants remained stable. The supply of Dutch flowers decreased with more than 1%. Conversely, the supply of imported flowers at the flower auctions (almost 20% of the total cut flower supply) has increased again. The total production value of flowers rose by nearly 5%. Thanks to the higher prices, the export value of flowers set up a new record in 1998. Exchange rates positively influenced the trade in 1998, while the economic crises in Russia and Asia negatively influenced the flower export in the second half of 1998.

The results of the flower growers have shown an upward tendency in the last few years. Average family farm income for 1998 is estimated at 148,000 guilders per entrepreneur, 40% more than in 1997. Pot plant holdings achieved an average family farm income of 145,000 guilders in 1998, a decline of 8,000 guilders in respect of 1997.

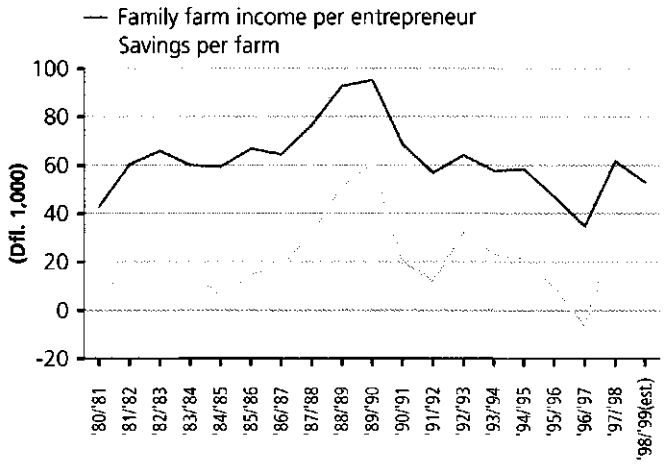
Mushroom prices were slightly higher in 1998, thanks to the growing exports to the United Kingdom and France. The export to Germany, the largest buyer of Dutch mushrooms, has been relatively stable. Competition on the German market is intensifying because of the increasing supply of mushrooms from Poland. An improvement in the average Dutch mushroom growers' family farm income is estimated to have improved from 64,000 guilders in 1997 to 70,000 guilders in 1998 (figure 5.4).

5.4 Grassland Based Livestock Farming

Grassland based livestock farming still represents about 40% of the total agricultural production capacity in the Netherlands and in 1998 numbered approximately 49,000 specialised farms. Only a few of these specialise in bulls, goats, sheep or horses; most of the holdings (62%) specialise in dairy cows.

Dairy prices were under pressure in the second half of 1998. This decline continued in 1999, as a result of the collapse in dairy demand. While the world production of milk is on the increase, the

Figure 5.5 **Income and savings of dairy farms**



Source: Dutch Farm Accountancy Data Network.

demand for dairy products has weakened, mainly under influence of the economic crises in Russia and Asia. Russia had become an important market for Dutch and German dairy products, cheese in particular. As a consequence of the crisis, this cheese had to be sold on the EU market. The average family farm income for dairy farms decreased from nearly 62,000 guilders in 1997/98 to 53,000 guilders in 1998/99 (figure 5.5). On average, family farm incomes for organic dairy farms have been somewhat higher.

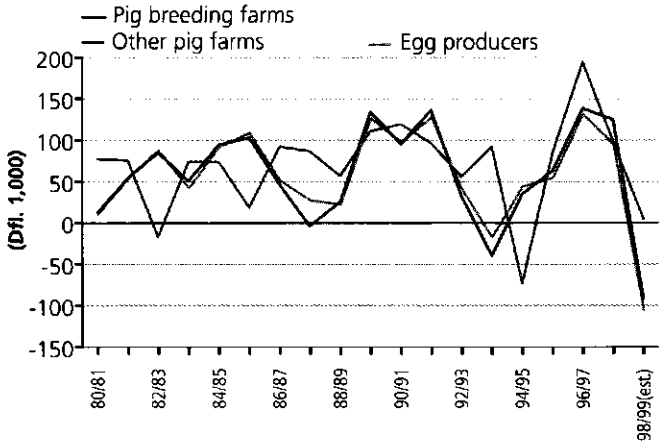
Beef prices have fallen under the influence of a decreasing demand. Firstly, demand decreased due to the economic crises in Russia. Secondly, beef had to contend with competition from other sorts of low-priced meat, especially pig meat and poultry. Within the EU, there has been an overproduction of beef for several years. The number of specialised bull-feeding holdings in the Netherlands is confined to a few hundred and the number is falling due to the unfavourable trading results. Average family farm income in 1998 amounted to only 26,000 guilders per holding.

Sheep prices have also declined in 1998, partly under influence of a large supply by net-exporting countries. Ewe premiums and wool prices on the other hand increased. On balance, this has led to some 10% lower trading results for sheep farming in 1998/99.

5.5 Intensive Livestock Farming

About three-quarters of the production capacity of intensive livestock farming is carried out on 11,000 specialised farms, of which some two-thirds are pig farms. In 1997 the sector was afflicted by an unprecedented, major outbreak of classic swine fever. Partly as a result of this, legislation has been developed for restructuring this sector, including a compulsory reduction of the number of pigs per farm. However, implementation of the legislation is facing legal difficulties. In November 1998, the poultry sector came to an agreement with the government to place a temporary limit on the increase

Figure 5.6 **Family farm income per enterpreneur of pig and poultry farms**



Source: Dutch Farm Accountancy Data Network.

in the number of chickens. Market potential, environmental problems and concerns about welfare, food safety and animal health led to this agreement.

Pig prices fell sharply in 1998, mainly due to the increasing supply in the EU. Meanwhile the demand for pig meat has been on the decrease as a result of the economic crises in Russia and Asia. On account of the extremely low pig prices, pig farmers' trading results were dramatically low in 1998/99. Family farm incomes from pig holdings came down on average to some -100,000 guilders per entrepreneur (figure 5.6).

Prices of poultry also displayed a decrease in 1998. Sales potentials have worsened and the supply of poultry has been growing under the influence of the price increase in 1997. Besides, production of poultry in other EU member countries as well as in countries outside the EU is expanding. As a result, average family farm income dropped by over 90% to 5,000 guilders in 1998/99.

The price of eggs declined in 1998. Favourable prices in previous years had led to an increase of supply. The demand for eggs, however, remained fairly stable. Hence, trading results came under pressure. Average family farm income for the specialised layer holding is estimated at 5,000 guilders per entrepreneur in 1998/99, as against nearly 99,000 guilders in 1997/98.

There are about 1,100 farms with fattening calves, mainly under contract to producers of calf milk or traders. Trading results of the calf-fattening farms have shown an upward trend in the last two years.

Appendix - Definitions

Dutch size units (dsu):
a unit describing 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 way that the average farm size in dsu corresponds to the development of the volume of the added value of the average farm. Some examples (on the basis of the dsu 1994): 1 ha winter wheat = 0.89 dsu; 1 ha sugar beet = 1.98 dsu; 1 dairy cow = 1.36 dsu; 1 sow = 0.27 dsu and 1 ha tomatoes under glass = 144.17 dsu.

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

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

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

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

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

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 benefits paid to the farmer and his spouse.