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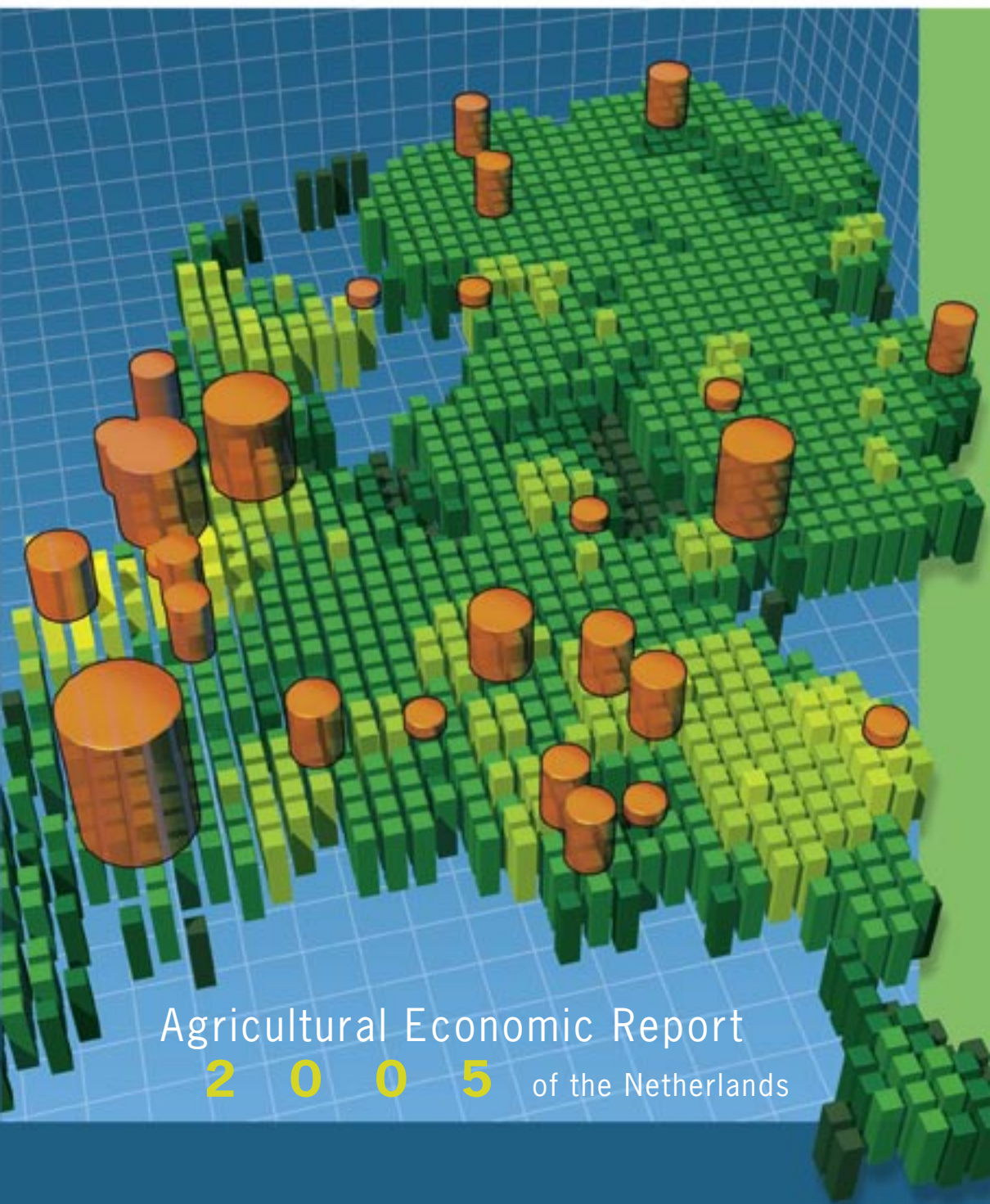
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Summary



# Agricultural Economic Report

2 0 0 5 of the Netherlands



## Summary



Agricultural Economic Report  
2 0 0 5 of the Netherlands

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#### ABSTRACT

AGRICULTURAL ECONOMIC REPORT 2005 OF THE NETHERLANDS: SUMMARY

P. Berkhout & C. van Bruchem (eds.)

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This report provides an English summary of the *Landbouw-Economisch Bericht 2005*. It presents a survey of the economic state of Dutch agribusiness. 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 and with environmental issues. Following a description of the production structure and production factors in agriculture, profitability and income formation in the various sub sectors are analysed.

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## Preface

This summary of the *Landbouw-Economisch Bericht 2005* provides 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. The complete report, which is available only in Dutch, is based on data and contributions from the three research departments of the Institute. The report has been coordinated and edited by the Public Issues Department. The final draft of the 2005 edition of the report was completed in May 2005.

The Hague, July 2005

A handwritten signature in blue ink, appearing to read 'Zachariasse', is positioned above the typed name.

The Director,  
Prof. L.C. Zachariasse



# Contents

<b>1</b>	<b>Economic and political framework</b>	<b>1</b>
1.1	Economic and political developments	1
1.2	Agriculture around the world	2
1.3	Agriculture in the European Union	3
<b>2</b>	<b>Developments in the Dutch agricultural sector</b>	<b>7</b>
2.1	A developing agro-complex	7
2.2	Agricultural trade	8
2.3	Food and beverages industry	8
2.4	Retail and consumption	9
<b>3</b>	<b>Rural areas, the landscape and the environment</b>	<b>11</b>
3.1	Economic developments in rural areas	11
3.2	Agriculture and the landscape	11
3.3	Agriculture and the environment	12
<b>4</b>	<b>Structural developments in Dutch agriculture and horticulture</b>	<b>15</b>
4.1	Number and size of farms	15
4.2	Labour, land and capital	16
<b>5</b>	<b>Production and income development in the various sectors</b>	<b>18</b>
5.1	Results of the primary sector as a whole	18
5.2	Horticulture under glass and mushroom growing	20
5.3	Horticulture in the open	21
5.4	Arable farming	22
5.5	Grassland-based livestock farming	23
5.6	Intensive livestock farming	25
	<b>Definitions</b>	<b>26</b>





# Economic and political framework

## 1.1 Economic and political developments

The global economy grew by between 4 and 5% in 2004. Such percentages had not been achieved in many years. The most important driving forces in the recovery were the United States (US) and China. High growth percentages were also achieved in Eastern Europe, in several developing countries and in Japan. Due to the strong growth, the prices of raw materials increased sharply. Oil topped the list with a price increase of more than 30%. The expectations for economic growth over the coming years are fairly positive, although the high oil price will be a restrictive factor. In addition, the growing shortages on the current account of the US and the US government budget form an increasing threat. The value of the dollar fell once again in relation to currencies such as the euro, which is disadvantageous for the EU's export position.

With an average growth of approximately 2%, the economic development in the EU-15 in 2004 remained a significant distance behind the global average. The German economy in particular continues to be a source of concern. The economies of the ten member states that acceded to the EU in 2004 are, in general, showing fairly high growth figures. Slightly greater growth is expected for the EU-25 for the next few years, but employment remains at a high level. Despite the high oil prices, inflation remains limited to 1.5 to 2%.

Partly in connection with the moderate level of development in Germany, the Dutch economy does not present a very flourishing picture. In 2004, growth was limited to 1.4% and unemployment rose to over 5% of the labour force. The expectations for 2005 are also fairly gloomy, though a clear recovery is expected in 2006.

Little progress was made in 2004 during the Doha round for the further liberalisation of world trade. However, a framework agreement for agricultural trade was reached (see 1.2). The Kyoto Protocol regarding emissions of glasshouse gases entered into effect in February 2005. The EU is considering imposing a tax on aeroplane fuels, which would make the transportation by air of horticultural products more expensive. Market mechanisms are gradually being applied to an ever-increasing extent in international environmental policy. The best-known example of this is the trade in CO<sub>2</sub> emission rights. Incidentally, Europe, and the Netherlands in particular, appear to be more cautious regarding the application of market mechanisms than the US, for example.

In mid 2004, the EU expanded with the accession of eight Eastern European countries and two Mediterranean countries. A new European Parliament and a new European Commission were also established. An agreement must be reached within the EU in 2005 regarding financial prospects for 2007- 2013, and accession negotiations will begin with Turkey. The first issue will be complicated by discussions on the division or reallocation of the financial contributions of the member states to the EU's resources. The European Constitution will be subject to referenda in various countries. This has already resulted in rejection by France and the Netherlands. The future of this constitution is

not yet clear. According to the constitution, the European Parliament would gain more authority in fields such as agricultural policy.

One of the aims of the current Dutch cabinet is to create a decisive government, with less bureaucracy and lower administrative burdens. Within that framework, more responsibility will be passed on to citizens, industry and civil-society organisations. The Ministry of Agriculture, Nature and Food Quality is already reporting having realised a 25% reduction in administrative costs. The Minister of Agriculture, Nature and Food Quality is working on a new long-term vision of the future of Dutch agriculture.

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## **1.2** Agriculture around the world

Global food production grew strongly in 2004, with the growth in the developing countries being stronger than in the richer countries of the world. Vegetable-based production increased particularly sharply and the world grain harvest reached a record high. The increase in animal-based production was generally more limited.

Total food production per capita of the world population increased by just over 1%, due particularly to increasing production in the United States and Europe. In Africa, on the other hand, production per capita fell by about 2%. The number of undernourished people – estimated at about 800 million – is clearly decreasing in relative terms, but scarcely at all in absolute numbers. Amongst other things, the stagnation in combating undernourishment in India and China plays a role in this. The agreement made during the World Food Summit to halve the number of undernourished people between 1996 and 2015 appears to be no longer feasible. The OECD expects a reasonable balance between the growth of production and consumption in the coming years. For grain, the prognoses indicate a trend towards a surplus. Consumption will generally grow less strongly in the OECD countries than in the other countries.

For most vegetable-based products, the sharp growth in production in 2004 was accompanied by lower prices on the world market. Coffee and cocoa formed exceptions to this rule. Animal-based products generally became more expensive as supply lagged behind demand. The prices of some dairy products even reached record heights. The meat trade was overshadowed by animal diseases such as BSE in North America and fowl plague in the Far East. Other exporters were able to profit from this.

Countries not belonging to the OECD will play an increasingly important role on the global agricultural market. For example, China is now a major importer of grain, and Brazil has become one of the largest exporters of various agricultural products in a relatively short space of time. India will also play a more important role, but is expected to manifest itself chiefly as an importer.

Over the last ten years, the value of global trade in agricultural products has grown by an average of approximately 3.5% per year. The export share of the rich countries increased during that period while that of the developing countries declined; in the case of imports, the opposite was true. A growing proportion of trade took place within the region and the share of processed products increased.

A major part of global trade in agricultural products and foodstuffs is in the hands of a limited number of enterprises, mainly based in the United States.

#### *Reduction of support*

The Uruguay round for the reduction of support for agriculture does not appear to have brought about any major changes for the scale and structure of global agricultural trade. The extent of protection for agriculture has changed very little over recent years. For the OECD countries, the average agricultural support fluctuated around 30% of the production value. The EU lies slightly above the average, while the US lies markedly under this level. The lowest levels of agricultural protection can be found in New Zealand and Australia, while the highest levels are in Japan, Switzerland, Norway, Iceland and Korea.

In principle, the abovementioned framework agreement for agricultural trade within the context of the Doha round contained the agreement that all forms of export support would be abolished and that other forms of support would be limited further. Less far-reaching reduction obligations apply to the developing countries, as well as longer transition periods, while the least developed countries are permitted to maintain their protection. The farm payments provided within the EU will remain unaffected for the time being. In light of a recent panel decision by the WTO regarding support for the cotton sector, however, the question is whether this will remain the case, partly because the payments do not satisfy all the aspects of the WTO criteria for the so-called 'green box.' Another statement by the WTO resulted in the EU's sugar policy having to be radically changed.

The number of agricultural holdings is falling sharply in most OECD countries and the sector is becoming more large-scale. This trend is accompanied by an increasing significance of incomes from other sources.

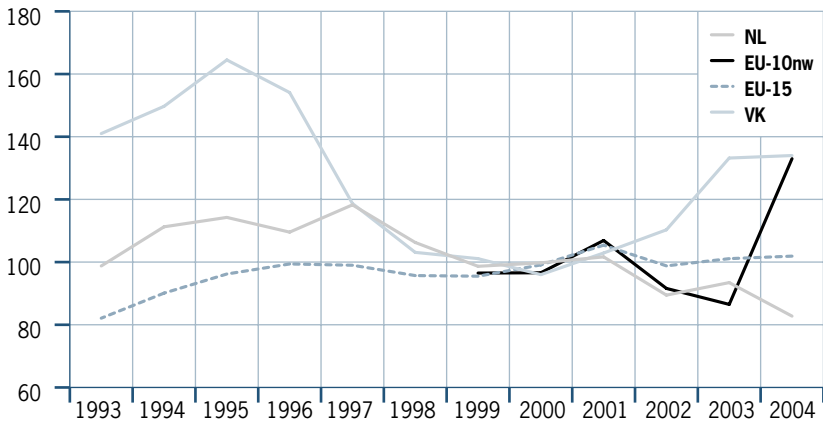
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### **1.3** Agriculture in the European Union

The volume of vegetable-based production in the EU-15 grew strongly in 2004 following the low yields in 2003 resulting from the drought. The large harvest resulted in a sharp increase in the grain stocks in the EU, partly since exports to the global market were hampered by the high euro. Animal-based production remained at approximately the same level. On average, the agricultural prices fell slightly.

The gross production value in the EU-15 increased by 3%. The value of the purchased means of production rose by 4%, in particular as a consequence of higher prices of energy and artificial fertiliser. The manpower decreased by 2%. The net added value per unit of labour in the EU-15 rose slightly as a result of various factors. In the Netherlands, however, a strong reduction took place, whereas there was an increase of over 50% in the ten new member states. In the last ten years, the actual agricultural incomes in the EU increased by an average of 20%. In the Netherlands, Belgium and the UK, however, they have fallen (figure 1.1).

**Figure 1.1** Development of actual value added per unit of labour in agriculture



Source: Eurostat, Statistics in focus 38/2004.

### *Changes in the structure of agriculture*

In 2000, the EU still had around 6.7 million agricultural holdings, a little over a third of the number in 1980. In Italy, Greece and the United Kingdom, the reduction came about at a much slower rate. In Belgium, Denmark, Germany and France, however, it happened much faster (45-50%). The number of workers per enterprise generally declined during that period. The Netherlands formed an exception in this respect, particularly due to the expansion of the larger glasshouse horticultural holdings. The number of non-family workers per enterprise has increased almost everywhere, in contrast with the number of workers who are family members. The enterprises with the largest average area are to be found in the UK and in France. Comparatively, the Netherlands has more horticultural holdings and more pig and poultry farms than the other EU countries. The average intensity of production here is therefore also more than four times the intensity in the whole of the EU (table 1.1). Incidentally, the intensity of production has increased in the entire EU due to the relative growth of horticulture, amongst other factors. In general, the average age of the heads of the agricultural holdings is increasing, as is the percentage of part-time farmers. In both respects, there are also countries that differ from the norm.

**Table 1.1** Farm size and economic intensity of agricultural production in the EU, 1980-2000

	Average area of the holding (hectare)			Economic intensity (ESU per hectare)		
	1980	1990	2000	1980	1990	2000
Belgium	12.34	15.81	<b>22.59</b>	1.5	1.8	<b>2.3</b>
Denmark	23.80	34.19	<b>45.73</b>	0.9	1.1	<b>1.4</b>
Germany	14.37	26.09	<b>36.34</b>	1.0	0.7	<b>1.1</b>
Greece	3.55	4.31	<b>4.39</b>	1.1	1.0	<b>1.4</b>
Spain		15.39	<b>20.32</b>		0.4	<b>0.6</b>
France	23.32	30.52	<b>41.96</b>	0.7	0.8	<b>1.0</b>
Ireland	22.59	26.04	<b>31.40</b>	0.3	0.4	<b>0.7</b>
Italy	5.60	5.61	<b>6.06</b>	1.1	1.3	<b>1.5</b>
Luxemburg	25.14	32.03	<b>45.38</b>	0.7	0.7	<b>0.8</b>
Netherlands	13.70	16.12	<b>19.97</b>	2.9	3.2	<b>4.5</b>
Austria			<b>16.99</b>			<b>0.7</b>
Portugal	4.26	6.69	<b>9.29</b>	0.7	0.6	<b>0.7</b>
Finland			<b>27.33</b>			<b>0.9</b>
Sweden			<b>37.75</b>			<b>0.7</b>
United Kingdom	63.67	67.88	<b>67.73</b>	0.5	0.5	<b>0.7</b>
EU-11 (excluding Spain)	12.23	14.85	<b>17.96</b>	0.8	0.9	<b>1.1</b>
EU-12		14.96	<b>18.43</b>		0.8	<b>1.0</b>
EU-15			<b>18.73</b>			<b>1.0</b>

Source: Eurostat, calculations by LEI.

*Reforms of the EU agricultural and rural policy*

When the EU agricultural policy was reformed in 2003, it was decided to separate income support from production and to award the farmers a payment per enterprise. The amount of this payment is based on the premiums and payments received by the farmer in the period 2000-2002 on account of various market regulations. The member states have a great deal of freedom in implementation of the payments, and the manner of implementation therefore also varies significantly. Some countries have fully separated the payments from the numbers of animals or hectares, while others only made a partial separation. In most countries, the payments are awarded individually, while in other member states a sum is given per hectare on a regional basis. There are conditions attached to the payments in the areas of the environment, food safety, plant and animal health and animal welfare. The farmers must also keep the soil in good condition and ensure that things like characteristic elements of the landscape are preserved. All these conditions mean that the farm payments become a kind of reward for the management of collective property, which will probably aid their continued existence.

Since the EU needs to limit sugar exports (on the grounds of WTO rules) and because the least developed countries will be able to export sugar to the EU without restrictions as of 2009, the common sugar market organisation will need to be modified. Proposals put forward by the European Commission in July 2004 centred on a one-third price reduction and a restriction of the quota by 16%. These proposals – which came up against strong resistance within the EU – were not far-reaching enough to achieve market equilibrium, so the European Commission compiled new proposals whereby the emphasis was placed even more strongly on price reductions, and less on volume restrictions.

The proposals of July 2004 have considerable disadvantageous consequences for the incomes of sugar producers in the EU. They also have disadvantageous consequences for sugar producers in developing countries, who now receive a higher price from the EU for their sugar. Something to which very little attention has yet been devoted in the debate on the review of the sugar market regulations is the effect on the sugar-related starch, glucose and isoglucose markets. Within the EU, 2 million hectares are being used for the production of starch, compared with 1.8 million hectares being used to produce sugar. These are industry branches that offer a considerable amount of employment. The reform proposals could lead to a major disruption of the markets for glucose, isoglucose and starch.

The EU rural policy is being reformed and is being steered primarily towards reinforcing competitiveness in agriculture, care and concern for the environment and the improvement of the quality of life in the countryside. The EU's cohesion policy will be directed even more strongly than before at regions behind in development.

A political agreement was reached within the EU at the end of 2004 regarding the transportation of animals. The rules governing the transportation of animals are once again being tightened and more opportunities are being created for their enforcement. The new rules will enter into effect on 1 January 2007.

#### *Budgetary framework*

The direct payments to farmers now comprise three-quarters of the expenditure on the agricultural policy. The Commission's proposals for the financial framework for 2007-2013 imply a limited increase in the total EU budget. More resources will be set aside for rural policy, while the resources available to agricultural policy as such will be reduced. The agriculture budget would need to be broadened a little with respect to the previous long-term perspectives, as extra funds will be needed as of 2007 for agriculture in Bulgaria and Romania. Various member states, including the Netherlands, are calling for a lower EU budget and have serious objections to the proposals. It is therefore uncertain whether the Commission proposals will be accepted.

## Developments in the Dutch agricultural sector

### 2.1 A developing agro-complex

From 1995 to 2003, the gross added value of the Dutch agro-complex increased from 32.3 to 41.6 billion euro (table 2.1). Since the growth of the added value of the agro-complex was lagging behind that of the national income, the share of the agro-complex in the national economy declined from 12% to a little over 10%. Other than primary agriculture and horticulture, this complex also comprises the processing and distribution of agricultural products and the delivery of products and services necessary for this. Almost 40% of the added value of the agro-complex relates to the processing, delivery and distribution of foreign raw materials. This share is gradually increasing. The total amount of employment in the agro-complex is approximately 650,000 full-time jobs. This number is gradually falling. The added value per man-year of the total agro-complex underwent approximately the same growth in the period indicated as the national average (almost 3.5% per year). In primary agriculture and horticulture, however, the growth was much less (approximately 1% per year). Exports account for more than two-thirds of the added value and employment in the agro-complex; where the production of domestic raw materials is concerned, this export share is as high as 75%.

**Table 2.1** Gross value added and employment of the Dutch agricultural complex, 1995 and 2003

	Gross value added (EUR billion)		Employment (1,000)	
	1995	2003 (est)	1995	2003 (est)
Agricultural complex <sup>a)</sup>	32.3	41.6	659	650
Share in national total	12.0%	10.4%	11.6%	10.1%
Gardening, agricultural services and forestry	1.0	1.7	39	43
Foreign agricultural raw materials:	11.1	16.3	190	211
Processing industry	5.7	7.9	75	70
Supply	2.3	3.1	50	44
Distribution	3.1	5.3	65	97
Agricultural complex (based on domestic agricultural raw materials)	20.2	23.6	430	397
Share in national total	7.5%	5.9%	7.6%	6.2%
Agricultural and horticulture	8.4	8.1	189	168
Processing industry	3.0	4.9	54	51
Input manufacturing	6.5	7.6	135	122
Distribution	2.3	3.1	53	56

est.: estimation; a) Based on domestic and foreign agricultural raw materials (including gardening, agricultural services, forestry, cocoa, alcohol and tobacco).

Source: LEI.



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## **2.2** Agricultural trade

The Netherlands is the largest agricultural exporter within the EU, with a share of almost 20%, and has the largest agricultural trading balance by far. France is in second place in this respect. In 2004, Dutch exports of agricultural raw materials and foodstuffs increased by 6%, while imports increased by 4%. Exports of agricultural products and foodstuffs in 2004 amounted to over 49 billion euro, while imports totalled over 28 billion. The agricultural trading balance therefore amounted to 21 billion euro compared with a little less than 20 billion euro in 2003. Plants and other ornamental products have the largest share (15%) of total agricultural exports, followed by meat and dairy products (11% and 9% respectively). Over 80% of Dutch agricultural exports go to EU countries, with Germany as the most important customer, followed by the United Kingdom. Germany is also the most important trading partner in terms of imports, particularly with regard to dairy and meat products. In 2004, Germany supplied 6.1 billion euros' worth of agricultural products to the Netherlands. Belgium and France followed, with 4.5 and 2.6 billion respectively.

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## **2.3** Food and beverages industry

The Dutch food and beverages industry has a share of over 30% of the total added value of the agro-complex (see table 2.1). It comprises approximately 4,800 enterprises and offers employment for 140,000 people. Approximately two-thirds of these are employed in large enterprises, i.e. enterprises with more than 100 employees. Meat processing occupies an important position within the food and beverages industry (table 2.2). The dairy industry – within which two companies call the shots – falls within the 'other' category of the food and beverages industry in table 2.2 due to confidentiality.

Concentration and scaling-up are still continuing within the food and beverages industry. One example of this is the pig sector. As a result of a number of takeovers, the Vion Food Group – within which the Dutch companies Dumeco and Hendrix Meat Group and the German companies Moksel and Norddeutsche Fleischzentrale are united – has a 63% share of the total pig slaughters in the Netherlands. With a 6.8% share of the EU-25 market, this group is only surpassed by Danish Crown. This Danish company has a 9.1% market share in the EU.

The transferral of business activities to other countries may be a growing trend, but within the foodstuff industry this only occurs to a limited extent. Furthermore, such moves are usually to another EU country. Another trend is that enterprises once again concentrate on their core activities and reject their sideline activities, some of which may only have been begun relatively recently.

<b>Table 2.2</b>		<b>Core figures of the food and beverages industry in the Netherlands, 2002</b>		
<b>Business group</b>	<b>Enterprises with 100 or more employees</b>	<b>Employees (x 1,000)</b>	<b>Net turnover (x million euro)</b>	
Slaughterhouses and meat-processing industry	60	19.9	5,605	
Slaughterhouses (excluding poultry)	20	6.2	2,592	
Poultry slaughterhouses	10	3.8	1,130	
Meat-processing industry	30	9.9	1,883	
Fish processing industry	10	1.9	349	
Vegetable and fruit processing industry	25	8.7	2,697	
Margarine industry	5	1.1	567	
Flour industry	5	3.5	1,516	
Animal feed industry	20	5.3	3,028	
Bread, pastries and biscuit factories etc.	30	5.8	677	
Cocoa bean processing industry	15	5.9	2,533	
Mineral water and soft drink industry	5	2.5	1,023	
Other food and beverages industry	80	39.9	24,416	
<b>Total food and beverages industry</b>	<b>255</b>	<b>94.5</b>	<b>42,411</b>	
<b>Total industry</b>	<b>1,480</b>	<b>492.6</b>	<b>159,443</b>	
Share (%) of food and beverages industry	17.2	19.2	26.6	

Source: CBS Statline.

## **2.4** Retail and consumption

In 2002, the retail turnover of food and beverages amounted to over 29 billion euro. The share of the supermarkets in this turnover is still increasing and was approximately 82% in 2002. This growth is at the expense of the specialist shops, which are seeing a decline in their turnover. The number of shops is declining rapidly, by 14% between 2000 and 2002. This process is accelerated by the *price war*, which began in October 2003 and through which the supermarket chains try to expand or maintain their market share by means of significant price reductions on numerous products. The battle was started by the Ahold concern, the market leader in retail trade foodstuff sales with a share of almost 27%. In second place is Laurus, with a market share of a little over 16%. The top five together have a share of over 73%. The main victims of the price war are the independent specialist shops and some of the smaller chain stores. The negative consequences of the price war for Dutch farmers appear to be limited. A large proportion of Dutch agricultural goods are exported. It is also the case that the price war has focused on the premium brands for which fairly ample margins apply. Many foodstuffs, such as meat, bread, fruit and vegetables, are sold without a brand name; dairy products form an exception to this.

The developments in retail trade also have consequences for other parts of the chain. For example, the function of the auction clock in the fruit and vegetable trade has been drastically reduced since this auctioning method offers the supermarket chains insufficient certainty with regard to the timely delivery of sufficient products that satisfy certain specifications. The auctions have developed into sales agencies that mediate between growers and chain stores. Farm shops are a new and relatively fast-growing phenomenon, selling an extensive range of local products.

### *Consumption*

Partly due to lower prices, the volume of foodstuff consumption rose slightly in 2004. For example, meat consumption increased from an average of 85.5 kg per capita in 2003 to 86.1 in 2004. There is also a shift towards products that are quick and easy to prepare. Young adults in particular eat unhealthily: they do not eat enough fruit and vegetables, and they consume too much saturated fatty acids. Over the last few years, the foodstuff industry has been developing a whole range of new products with the aim of combating the increasing problem of obesity.

## Rural areas, the landscape and the environment

### 3.1 Economic developments in rural areas

Taking the population density as a basis, the Netherlands can be divided into less urbanised areas (rural areas), urbanised areas and strongly urbanised areas. The latter two types of area together comprise 57% of the Dutch land area and over 80% of the population. Around 10% of the Dutch agricultural holdings are situated in the strongly urbanised areas, 56% in urbanised areas and 34% in less urbanised areas. The development of economic growth and of employment in the rural areas of the Netherlands in recent years was not much different from that in the urbanised areas (see table 3.1). The standard of living (in the sense of income per capita) is highest in the urbanised areas, although the differences are small. The number of agricultural holdings is declining more strongly in the more urbanised areas.

<b>Table 3.1</b>		<b>A few core economic aspects in the three region groups</b>			
	<b>The Netherlands</b>	<b>Less urbanised regions</b>	<b>Urbanised regions</b>	<b>Strongly urbanised regions</b>	
Growth in employment, 1996-2002 (% p.a.)	2.4	2.7	2.3	2.4	
Population growth, 1990-2002 (% p.a.)	0.7	0.8	0.7	0.6	
Actual economic growth, 1996-2002 (% p.a.)	2.8	2.2	3.0	2.9	
Proportion of residents aged over 65, 2002 (%)	14	14	13	14	
Unemployment, 2002 (%)	2.3	2.6	2.1	2.4	
Disposable income per capita, 2000 (x 1,000 euro)	11	10	11	12	
Decline in number of agricultural enterprises, 1996-2003 (% p.a.)	-3.7	-3.4	-3.7	-4.5	

Source: Terluin et al. (2005).

### 3.2 Agriculture and the landscape

There are growing concerns regarding the quality of the Dutch landscape as a consequence of fragmentation resulting from for example the construction of infrastructure, urbanisation and scaling-up and intensification in agriculture.

Agriculture is the largest form of land use, even in the urbanised areas, and thus determines to a great extent the appearance of the Dutch landscape. The national government delegates the responsibility for the preservation and reinforcement of the quality of the landscape to the provincial

and municipal government bodies. The national government does however retain a special responsibility for 20 so-called national landscapes, which together account for approximately 800,000 hectares – almost a quarter of the land area of the Netherlands. The unique qualities of these national landscapes – such as openness or parcellation patterns – must be preserved or reinforced by means of a focused policy. Dairy farming and other grazing livestock farming (suckler cows, sheep, beef cattle, etc.) are by far the largest forms of land use in these landscapes. The dairy farms in these areas are on average a little smaller than those in other areas. Consequently, they receive lower payments, though they have more sideline activities such as nature management. Both a significant scaling-up of livestock farms and the rise of all sorts of non-agricultural activities could be disadvantageous for the quality of the landscape.

The national government makes a financial contribution to the investments and the management costs of the national landscapes. In about a quarter of the national landscapes, the farmers are eligible for a payment within the framework of the EU less favoured areas scheme.

The various national state budgets regarding rural areas are drawn together in the Rural Area Investment Budget (ILG). The provinces are given a leading role in spending these funds. The aim is to launch the ILG on 1 January 2007. Since the government schemes relating to landscape management are not available everywhere, various initiatives at local and regional level are in progress in order to create a landscape fund for the area concerned, combining private and public resources.

In 2004, 270 million euro was set aside by the Dutch Ministry of Agriculture, Nature and Food Quality to 'reinforce the rural area.' The intention is to gradually increase this to over 350 million euro in 2009. The funds will be spent on matters such as land use planning, 'nature in and around the city,' recreation areas and the reconstruction of sandy areas with a lot of intensive livestock farming. The reconstruction in particular will require more state resources over the coming years. The twelve reconstruction areas comprise 80% of the approximately 7,000 Dutch intensive livestock farms. A few hundred of these farms will be moved to locations where the nature is less vulnerable and in order to lessen the environmental pressures in the reconstruction areas.

The limits of the Dutch water management system are brought into view by processes like urbanisation, climate change, rising sea levels, land becoming brackish and subsidence. It is therefore necessary to allow rivers more room, for example by means of dyke shifting, and to make polders suitable for use as water storage areas. The latter will result in major restrictions for agriculture, although extensive forms of land-tied livestock farming will remain possible.

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### **3.3** Agriculture and the environment

The environmental impact of agriculture and horticulture is gradually declining, even though the tempo seems to have been slowing over recent years, and it will still take quite a long time before the ultimate objectives of various environmental aspects are reached. The composition of the production package – with a relatively large proportion of horticulture and a lot of intensive livestock farming – is a particular reason why the environmental impact of the Dutch agricultural sector is higher than the

impact in most other countries. For example, the quantity of chemical pesticides used per hectare in the Netherlands is approximately 2.5 times the EU-15 average, and the nitrogen losses are 3 to 4 times as great. Due to the high yields per hectare, the environmental impact per product unit is often lower in the Netherlands than elsewhere.

The environmental costs for agriculture and horticulture have increased fairly sharply in recent years and now amount to around 500 million euro per year after deduction of the environmental subsidies. The largest share of these costs is for the account of the livestock farmers as a consequence of the ammonia policy and the mineral policy. The total net environmental burdens (excluding administrative burdens) in recent years equate to 5 to 6% of the gross added value, whereas the national percentage is just under 3%. The environmental costs for the food & beverages industry lie at around 2% of the added value and are therefore lower than the national average.

The use of chemical pesticides has virtually halved between 1985 and 2000. Since then, however, it has continuously hovered around 9.5 million kg. The quantities of such agents used vary considerably between crops. For grain and sugar beet, the quantity is usually between 3 and 5 kg per hectare; for potatoes, onions, vegetables and fruit, it is between 10 and 20 kg; between 20 and 60 kg are used for ornamental plants. New legislation is underway with the objective of ensuring that the Netherlands no longer leads the pack with regard to the admission policy for these agents but will rather keep in step with other EU countries. The policy will remain focused on a drastic further reduction of the environmental impact and a reduction of the chemical dependence of the production.

The emissions of greenhouse gases by agriculture and horticulture – measured in CO<sub>2</sub> equivalents have declined by over 20% since 1990, the reference year for the Kyoto protocol, which entered into effect at the beginning of 2005. Roughly speaking, CO<sub>2</sub> forms just under a third of these emissions; another third is methane and just over a third is N<sub>2</sub>O (nitrous oxide, also known as laughing gas). The emissions of the last two gases originate mainly from livestock farming, and these emissions have also declined sharply in recent years. The majority of CO<sub>2</sub> emissions come from glasshouse horticulture. A target ceiling for CO<sub>2</sub> emissions has been set for the year 2010 for agriculture and horticulture: 7 million tonnes, which is 10% less than the current emission levels. It is expected that this ceiling will not cause any problems unless glasshouse horticulture expands greatly.

The energy efficiency of glasshouse horticulture improved once again in 2003, but it will be difficult to achieve the agreed objective before 2010. This agreement concerns a 65% reduction in the amount of energy per product unit in 2010 compared to 1980.

The emissions of phosphates from the agricultural sector have shown a downward trend since the mid 1980s, while the emissions of nitrogen have been falling since the mid 1990s (table 3.2). The shrinking number of cattle is resulting in a decreasing supply of animal manure, while the use of artificial fertiliser is also decreasing, partly due to the manure policy. The reduction of mineral emissions from agriculture accelerated around 1999, though the tempo has slowed once again in recent years.

The nitrate levels in the groundwater also declined in parallel with declining emissions, though there is doubt as to whether the Netherlands will fulfil the EU norm as early as 2009 as agreed. Since the EU has little confidence in the manure policy in operation in the Netherlands, in which the balance of the supply and removal of minerals occupied a central position, this policy needed to be modified once

**Table 3.2** Balance of nitrate and phosphate on agricultural land in the Netherlands, 1970-2003

	1970	1980	1986	1990	1995	2000	2001	2002	2003(p)
<b>(kg N/ha)</b>									
<b>Input</b>	<b>332</b>	<b>447</b>	<b>508</b>	<b>459</b>	<b>472</b>	<b>394</b>	<b>380</b>	<b>353</b>	<b>343</b>
Manure	133	190	241	239	252	205	209	187	177
Fertilizer	185	240	249	201	201	169	151	146	147
Output	167	210	243	248	228	212	207	212	198
Difference	165	237	265	211	244	182	172	141	145
<i>Idem, index 1970=100</i>	100	144	161	128	148	110	104	85	88
<b>(kg P<sub>2</sub>O<sub>5</sub>/ha)</b>									
<b>Input</b>	<b>135</b>	<b>160</b>	<b>176</b>	<b>153</b>	<b>140</b>	<b>125</b>	<b>119</b>	<b>108</b>	<b>104</b>
Manure	80	115	128	108	101	87	88	78	72
Fertilizer	50	39	41	37	32	32	27	25	27
Output	50	66	73	71	64	68	65	68	64
Difference	85	94	103	82	76	57	54	40	40
<i>Idem, index 1970=100</i>	100	111	121	96	89	67	64	47	47

p: preliminary.

Source: Statistics Netherlands; RIVM.

again. Usage norms are being introduced in the place of loss norms. According to the applicable EU rule, 170 kg of nitrogen from animal manure may therefore be used on grassland. The Netherlands has requested that this limit be relaxed to 250 kg, the so-called derogation. This request was granted at the end of June 2005. A new manure surplus (to be eliminated one way or another) will develop according to calculations for 2009 in response to the introduction of the usage norms. As a consequence, the costs for the livestock farmers will rise.

The ammonia emissions from Dutch livestock have almost halved since the mid 1980s. In 2003, these emissions amounted to approximately 115 million kg. The objective set for 2010 (114 million kg for agriculture) is feasible. However, in order to protect the environment adequately, these emissions must be reduced a great deal further.

## Structural developments in Dutch agriculture and horticulture

### 4.1 Number and size of farms

In May 2004, the number of farms (agricultural and horticultural) in the Netherlands was almost 2% less than a year previously (table 4.1). The reduction was approximately 4.5% between 2002 and 2003, although this picture was distorted due to the closure of poultry farms as a consequence of the outbreak of Avian Influenza. The number of farms declined by about 15% between 2000 and 2004. The smallest reduction was in arable farms, while the greatest reduction was in intensive livestock farms. The latter reduction was partially influenced by the Termination of Livestock Farming Branches regulation (Beëindiging Veehouderijtakken), which was intended to combat the manure surpluses and which was used by a total of 4,500 farms. The relatively low reduction in the number of arable farms, dairy farms and farms with other types of grazing livestock could possibly also be partially explained by the fact that farmers are delaying the proposed termination of their farm's activities in anticipation of the introduction of farm payments in 2006 (see also 1.3).

The head of the business on over 60% of the farms is over 50 years of age. In 2004, 33% of this group had a successor. Four years previously, 40% had a successor. This reduction, indicating a further decline in the number of farms, is probably connected mainly with mediocre financial results and unfavourable prospects. In dairy farming, 55% of the farms have a successor; this is the highest percentage in the agricultural sector.

A subsidy scheme for young farmers was introduced in the spring of 2005. The funds were exhausted within three weeks. In addition, a number of modifications have been made in the fiscal regulations, making it slightly easier to take over a farm.

	Changes in % per year						Number of holdings
	1990-95	1995-00	2000-01	2001-02	2002-03	2003-04	2004
<b>All farms</b>	<b>-1.9</b>	<b>-2.8</b>	<b>-4.8</b>	<b>-3.5</b>	<b>-4.6</b>	<b>-1.9</b>	<b>83,885</b>
Glasshouse horticulture and mushroom growing	-1.8	-3.2	-6.5	-4.6	-4.7	-5.8	6,745
Horticulture in the open	-1.8	-2.7	-6.6	-3.4	-2.4	-3.1	8,840
Arable farms	-2.0	-1.2	-6.1	-1.2	-1.1	0.1	12,628
Dairy farms	-3.2	-3.9	-4.7	-6.1	-4.7	-2.5	22,279
Other grassland based farms	3.1	-1.3	2.6	-1.1	-1.5	-0.8	18,829
Intensive livestock farms	-2.3	-3.3	-8.8	-5.6	-14.8	-0.3	7,061
Mixed farms	-3.9	-3.5	-10.5	-1.2	-8.3	-2.4	7,503

Source: Statistics Netherlands; calculations by LEI.



The large farms now have almost half of the total production in their hands; ten years ago, they still only had one third. These are farms with more than 150 DSUs (Dutch Size Units; see appendix), which roughly corresponds with over a hectare of cultivation under glass, 100 hectares of arable farmland or over 100 dairy cows. Approximately 13% of the agricultural and horticultural enterprises fall within this category, in which the glasshouse horticulture holdings are strongly represented. The incomes on the large enterprises are on average approximately four times as high as on the 'modal' and smaller enterprises.

#### *Organic agriculture is still growing*

The area used for organic farming was almost 15% larger in 2004 than in 2003, and now covers over 48,000 hectares. This corresponds with 2.5% of the total area of cultivated land. The number of organic farms increased between 1999 and 2003 from 936 to 1434. However, a year later, the number had fallen back down to 1383. This was principally because a fairly large number of organic pig farmers stopped farming or returned to 'conventional' pig farming. The turnover from organic foodstuffs amounted to over 400 million euro in 2004. That was 6% more than in 2003 and corresponded with 1.8% of the total foodstuff sales. The objective was for organic foodstuffs to have a 5% market share in 2005, but this target has now been put back to the year 2010. In that year, organic production should be taking place on 10% of the land area. It is doubtful whether this objective is feasible.

## **4.2** Labour, land and capital

In 2004, the Dutch agricultural and horticultural sectors provided work for 230,000 people. Converted, this corresponds with 174,000 full-time jobs. This number has been gradually declining over the last few years, particularly due to the reduction in the number of family workers. In 1991, a quarter of the work in the agricultural sector was carried out by non-family members; in 2004, this was almost a third. The average employment level per holding showed an upward trend until 2000, particularly due to the scaling-up in glasshouse horticulture, but has been declining again since then.

Sickness absenteeism in the agricultural sector declined between 2000 and 2004 from 4.2% to 2.7%, almost half the absenteeism rate in other sections of industry. This is particularly striking, as working in the agricultural sector is linked with relatively high risks.

*Farm payments are of great importance for incomes*

In 2006, Dutch farmers – particularly the arable farmers and the grazing livestock farmers – will receive farm payments, which over the years will reach a total sum of about 800 million euro. The average sum per arable and dairy farm will be over 15,000 euro, more than half the farm income. The expectation is that almost 60% of the dairy farms will receive a payment of more than 15,000 euro in 2008. It is not expected that the system of farm payments will lead to the land being taken out of production. It is, however, expected to lead to extensification and the rejection of dairy cattle and milk quotas. Consequently, there will be more scope for other enterprises that wish to grow. The prices of the milk quotas will probably fall.

The area of cultivated land has shrunk by 6,000 hectares (0.3%) every year since 1990. In 2004, that area covered just over 1.9 million hectares. Approximately 63% of this area is used as grassland and for producing feed crops (mainly green maize), 31% is used for arable farming and 6% is used for horticulture. During the 1990s, the prices of agricultural land in the Netherlands virtually doubled; in 2000, the average price per hectare reached approximately 39,000 euro. In 2001, the land prices remained stable at this level. After 2001, however, prices started to fall again. In the second half of 2004, the average land price was just under 30,000 euro per hectare. Potential sellers have taken up a 'wait-and-see' position in recent years, hoping for a recovery in the land prices.

The average balance sheet value of all Dutch agricultural and horticultural enterprises amounted to almost 1.6 million euro at the beginning of 2004. For dairy farms, this value is considerably greater, particularly due to the value of the milk quota, amounting to almost 900,000 euro per enterprise. Over 60% of the balance sheet total of agricultural and horticultural enterprises is financed with equity capital.

## Production and income development in the various sectors

### 5.1 Results of the primary sector as a whole

The production volume of agriculture and horticulture was approximately 3% greater in 2004 than in the previous year (see table 5.1). On average, the prices fell slightly; animal products generally became more expensive and vegetable-based products became cheaper. The much lower value of arable production is to a great extent caused by the change in the policy of subsidies paid out. The payments for arable farming within the framework of the agricultural policy are no longer product-tied and are therefore no longer included in the production value. This is expressed in a reduction in the price. Incidentally, the prices of potatoes and onions also fell considerably in 2004. To a lesser extent, this also applies to the prices of horticultural products; the prices of vegetables were under particular pressure. Most animal products became slightly more expensive; the prices of beef cattle and pigs increased dramatically but the price of eggs fell sharply, influenced by large-scale production.

The total production value was approximately 1% lower than in 2003 as a result of a 3% larger volume and 4% lower prices. Owing to the purchased goods and services – as well as the average depreciation – becoming more expensive, the net added value ended up a little over 6% lower.

**Table 5.1** Value added of agriculture and horticulture in the Netherlands, 2002-2004

	Value added in EUR billion			Index 2004 (2003=100)		
	2002	2003 (p)	2004 (est)	Volume (est)	Price (est)	Value (est)
Arable products	2.4	2.5	2.2	105	80	85
Horticultural products	7.8	8.1	7.8	104	93	96
Grassland based livestock products <sup>a)</sup>	4.4	4.3	4.3	99	102	101
Intensive livestock products	3.5	3.2	3.6	109	104	114
Other	1.8	1.9	2.0	99	104	103
<b>Total</b>	<b>20.0</b>	<b>20.0</b>	<b>19.8</b>	<b>103</b>	<b>96</b>	<b>99</b>
Intermediate consumption	11.0	10.9	11.0	100	101	101
Gross value added	9.1	9.2	8.8	106	91	96
Depreciations	2.6	2.7	2.7			103
Balance of levies and subsidies <sup>b)</sup>	0.2	0.1	0.1			
<b>Net value added</b>	<b>6.1</b>	<b>6.4</b>	<b>6.0</b>			<b>94</b>

p: preliminary; est.: estimation.

a) The reduction of the price and the production value of arable products is partly a result of the fact that, as of 2004, the acreage payments no longer form part of the production value.

b) Including products from sheep and goat farming.

c) Not product-tied.

Source: Statistics Netherlands; 2004 estimation LEI.

The balance of charges and subsidies has scarcely changed. Interest, lease costs and wages must still be paid from this added value. The remaining income after deduction of the above fell by over 15%, reaching an all-time low. After correction for inflation, this income was almost 60% lower than in the mid 1990s.

The average farm income on all agricultural and horticultural enterprises (see table 5.2) presents a similar picture, falling from 37,000 to 28,000 euro per enterprise. The average savings were negative. In recent years, over 40% of all farming families have had a farm income below the minimum income threshold for self-employed people (which is 22,300 euro). Some of these enterprises manage to boost their incomes to above the minimum by means of income from outside the business, through additional work outside the farm, for example. This generally only happens on small enterprises geared to a limited income from the farm. On the basis of the total income – both from the enterprise and from outside – one in three enterprises has an income below the minimum level.

Table 5.2	Dutch family farm incomes and savings (1,000 euro) 2002-2004					
	Family farm income			Savings per farm		
	2002	2003	2004 (est)	2002	2003	2004 (est)
Vegetables under glass	58	126	16	-5	73	-37
Cut flower holdings	58	38	43	0	-26	-20
Pot plant holdings	92	79	75	29	24	20
Mushroom growers	39	36	11	-9	-11	-36
Outdoor horticulture holdings	33	25	-10/0	-10	-32	-50/-60
Fruit growers	16	42	20/30	-6	24	5/15
Bulb growers	43	30	25/35	-14	1	-5/5
Tree nurseries	58	70	55/65	22	23	10/20
Arable farms	14	41	3	-16	13	-26
Dairy farms	43	35	35	17	10	9
Pig breeding farms	-12	-14	66	-42	-40	32
Pig fattening farms	-6	-6	46	-26	-13	33
Closed pig (breeding and fattening) farms	-26	-2	86	-68	-32	49
Poultry egg farms	25	136	-128	-15	114	-158
Poultry meat farms	-15	-7	-40	-42	-31	-63
All agricultural and horticultural holding	31	37	28	-2	7	-3

est.: estimation.

Source: LEI.

## 5.2 Horticulture under glass and mushroom growing

The reduction in the number of enterprises in glasshouse horticulture has taken place relatively quickly over the last few years; in 2004, there were over 5% fewer than in 2003. The total area under glass remains approximately the same, resulting in a sharp increase in scale. The average Dutch glasshouse horticultural enterprise now has an average of about 1.2 hectares under glass. One can expect this process to continue, partly due to the fact that there is a successor present on only 36% of the glasshouse horticultural holdings.

The production value of glasshouse horticulture, in which cut flower cultivation has the largest share, amounted to just over 4.6 billion euro in 2004; this was 4% less than in 2003 (table 5.3).

This reduction meant an end to an increase that had continued uninterrupted for many years.

The production value of the glasshouse-grown vegetables rose sharply due to lower prices, but the production value of cut flowers, pot plants and border plants remained approximately the same.

The unfavourable price-making process was connected with the larger supply, with a limited growth in demand (resulting from the changeable economic situation, in Germany amongst other places), and with the strong euro. This last point was a major cause of the reduction of exports of ornamental products to countries outside the Euro-zone, such as the USA (-11%) and Switzerland (-7%).

In 2003, the total added value of the entire complex of activities connected with glasshouse horticulture amounted to approximately 4.8 billion euro. That is an increase of over 20% compared with 1995. Employment in this complex, in which the primary sector has a share of over 60%, increased by 17%.

The incomes of the glasshouse vegetable growers fell sharply in 2004 compared with 2003, resulting in negative savings (table 5.2). Incomes rose slightly on the cut flower enterprises, whereby the savings were once again negative. The pot plant growers saw their incomes improve slightly. There is great variation in the incomes of the glasshouse horticulturalists. The average family farm income was 44,000 euro in 2004; 30% had a negative income and 10% had an income of over 100,000 euro.

Due to the poor farm profits, the number of holdings in mushroom farming is declining, as is the total acreage. In 2004, the number of enterprises was 14% lower than a year previously. Since 1995,

**Table 5.3** Production value (mio. euro) of horticulture under glass and mushroom growing in the Netherlands, 1990-2004

	1990	1995	2000	2002	2003	2004 (p)	2004 as a % of 2003
Vegetables	1,173	1,067	1,259	1,192	1,320	1,100	83
Cut flowers	1,480	1,614	2,086	2,149	2,138	2,125	99
Pot plants	769	865	1,149	1,301	1,395	1,415	101
<b>Total horticulture under glass</b>	<b>3,422</b>	<b>3,546</b>	<b>4,494</b>	<b>4,642</b>	<b>4,853</b>	<b>4,640</b>	<b>96</b>
Mushroom	182	245	316	303	280	265	95

p: preliminary.

Source: Productschap Tuinbouw.

the number has dropped by more than half, while the cultivation area has shrunk by over 20%. In 2004, the production value of mushroom farming was approximately 5% lower than in 2003 (table 5.3). Exports of tinned mushrooms have been under pressure for a number of years, due in particular to increasing competition from France and China. Partly due to increasing costs, the incomes in mushroom farming in 2004 worsened even further and there were very high negative savings (table 5.2).

### 5.3 Horticulture in the open

Horticulture in the open comprises open-air vegetable cultivation, fruit cultivation, bulb cultivation and tree cultivation. In total, these add up to almost 16,000 enterprises. This number is gradually declining. Partly in view of the fact that fewer than 30% of the farm directors in this sector aged over 50 have a successor, this decline will continue, at least for the time being. The total acreage of open field horticulture has been fairly stable for the last few years and totals over 100,000 hectares. Of these, over 40% is used for the cultivation of vegetables, and almost 25% is used for flower bulbs. The area used for open-air vegetable cultivation has shrunk slightly. The shrinkage of the fruit-growing area, which has been underway for many years already, came to a halt in 2004. The area used for flower bulbs shrank in 2004 for the first time in many years. The area used for tree cultivation grew slightly.

The production value of open field horticulture amounted to over 1.8 billion euro in 2004, approximately two thirds of which could be accounted for by flower bulb cultivation and tree cultivation (see table 5.4). The total added value of the entire complex of activities linked with open field horticulture amounted to approximately 2.3 billion euro in 2003, over 25% more than in 1995. Employment in this complex, totalling around 42,000 jobs, has been fairly stable over the last few years.

Compared with 2003, the production value has fallen by about 4%, entirely as a result of lower prices. Only the production value of fruit increased slightly, as the effect of the growth in production was slightly greater than that of the fall in prices. The harvest of open air-grown vegetables was clearly larger in 2004 than in 2003. This was accompanied by considerably lower producer prices, as a result of which the production value ended up about 10% lower (table 5.4). The production value of both

**Table 5.4** Production value (mio. euro) of outdoor horticulture in the Netherlands, 1990-2004

	1990	1995	2000	2002	2003	2004 (p)	2004 as a % of 2003
Vegetables (excluding onions)	463	434	363	433	390	350	90
Fruit	309	313	326	330	355	360	101
Bulbs	381	504	563	613	580	550	95
Trees	346	433	548	553	579	570	98
<b>Total outdoor horticulture</b>	<b>1,499</b>	<b>1,684</b>	<b>1,800</b>	<b>1,929</b>	<b>1,904</b>	<b>1,830</b>	<b>96</b>

p: preliminary.

Source: Productschap Tuinbouw.

flower bulbs and trees fell slightly, also due to lower prices. Both for fruit and open air-grown vegetables, the traditional importance of the auction clock for price making is now declining. However, in the tree nursery sector, the auction is actually becoming more important.

As a result of the lower prices, the incomes in open field horticulture declined across the board (see table 5.2). The average income of open-air vegetable growers even dropped below zero in 2004. The savings of these enterprises have been negative for a number of years. Following the favourable outcomes of 2003, the incomes on the fruit cultivating enterprises in 2004 declined dramatically, although the savings remained positive. Both the average income of flower bulb growers and their savings levels (which have been at or around zero for the last few years) showed little change. Despite an income decline in the tree cultivation sector, incomes and savings remained at a reasonable level on average.

## **5.4** Arable farming

The total number of holdings with arable crops is gradually falling, while the area used for such crops remains roughly stable at around 600,000 hectares. Winter wheat is the largest arable crop, covering 117,000 hectares. The area used for sugar beet is gradually shrinking, and fell below 100,000 hectares for the first time in 2004. The number of specialised arable farms – producing around 70% of all arable crops – has been fairly stable over the last few years. Almost two thirds of arable farmers are older than 50, and of this group only about 30% has a successor lined up. Small farms in particular tend to have no successor due to the lack of prospects.

The value of arable production lies between 2 and 2.5 billion euro (see table 5.1) and the total added value of the arable farming complex in 2003 was 4.7 billion euro. A substantial share of the activities within this complex relates to imported raw materials. Employment within the arable farming complex amounted in 2003 to over 75,000 jobs. This figure has risen slightly in recent years. Over 20% of this employment can be found in arable farming.

The developments in 2004 have not improved prospects. In general, the physical yields were favourable. In fact, record yields were achieved for some crops (see table 5.5). However, the large yields were accompanied by sharply falling prices, particularly for potatoes and onions. Since the EU grain harvest turned out to be considerably larger than in the drought-affected year 2003, the grain prices also fell. Only the price of sugar beet rose, while the price of starch potatoes remained the same.

As a result of these developments, the average family farm income on arable farms fell from over 40,000 euro in 2003 to 2,500 euro in 2004 (table 5.2). It is estimated that almost half of the arable farmers had a negative income, and only 10% had an income of more than 25,000 euro. The savings were strongly negative, just as they were two years previously. The situation was less bad on starch potato farms (which are principally situated in the peat district), although even there the picture was not particularly rosy. Incomes fluctuated around the 15,000 euro, and the savings were slightly negative.

Scaling-up, cooperation between farms and taking on sideline activities inside or outside the enterprise are seen as possibilities for arable farmers to keep their heads above water.

<b>Table 5.5</b>		<b>Production and prices <sup>a)</sup> for arable products, 2002-2004</b>					
	<b>Wheat</b>	<b>Barley</b>	<b>Potatoes for consumption</b>	<b>Seed potatoes</b>	<b>Starch potatoes</b>	<b>Sugar beet</b>	<b>Onions</b>
<b>Production (ton/ha)</b>							
2002	9.3	6.0	46.9	32.8	47.5	9.7	53.2
2003	9.8	6.8	43.1	36.0	45.8	10.9	49.6
2004 (est)	10.0	5.9	47.4	35.8	51.7	10.8	52.1
Idem, change (%)	+2	-13	+10	-1	+13	-1	+5
<b>Prices (euro/100 kg)</b>							
2002	11.20	12.90	7.30	20.50	3.50	4.70	10.60
2003	13.90	13.50	12.30	21.00	3.40	4.50	13.90
2004 (est)	11.30	11.00	4.90	16.00	3.40	5.00	3.00
Idem, change (%)	-19	-19	-60	-24	0	+11	-78
est.: estimation.							
a) Excluding the Mac Sharry payments.						Source: Informatienet.	

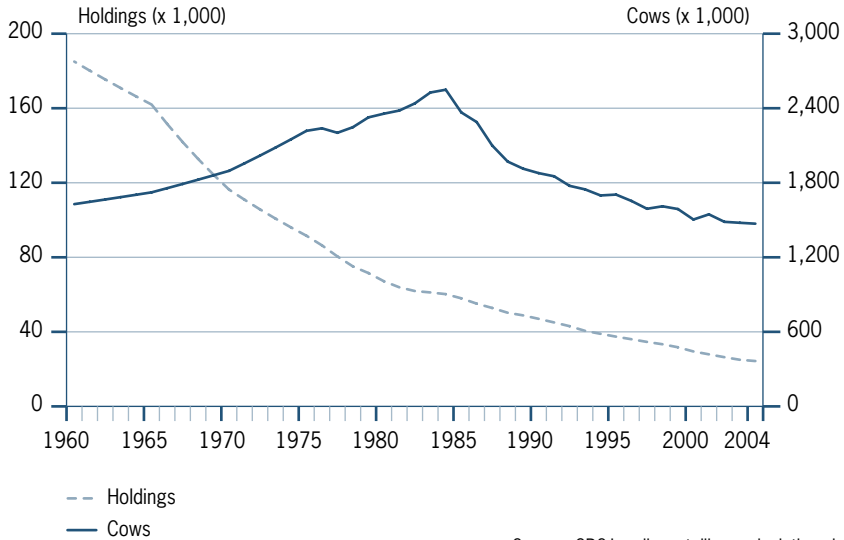
## 5.5 Grassland-based livestock farming

Land-tied livestock production takes place on over 50,000 enterprises, of which about 22,000 are specialised dairy farms. In addition, there are approximately 19,000 'other grazing livestock farms', which are generally limited in size, and the farmers are much older with no successor. Compared with other farm types, the specialised dairy farmers often have a successor lined up (55%), although this percentage is falling. The number of dairy farms is gradually declining, and this decline has been accelerating over the last few years. The number of dairy cattle has also been falling since the introduction of milk quotas in 1985 (see figure 5.1). Due to the reduction in the number of dairy cattle, combined with scaling-up, there are fewer and fewer cows to be seen in the pastures. This trend is expected to continue.

The production value of land-tied livestock production amounted to 4.3 billion euro in 2004 (table 5.1). The added value of all activities connected with land-tied livestock production was 6.7 billion euro in 2003. As such, this complex was the most important part of the total agro-complex. However, the significance of this is decreasing: since 1995, the added value has fallen by 5% and the accompanying employment figures – over 130,000 jobs – have fallen by over 15%.

Due to fairly unfavourable market developments, for cheese amongst other elements, the milk price in 2004 was about 3% lower, although this was fully compensated by the new dairy premium, provided within the framework of the reforms of the dairy policy. The first payment of this premium was made towards the end of 2004. The prices of beef cattle reached an all-time low around the year 2000 as a result of the BSE problems, but have been recovering again in recent years. In 2004, they were more than 20% higher than in 2003.



**Figure 5.1** Number of cows and of agricultural holdings with cows, 1960-2004

Source: CBS-Landbouwtelling, calculations by LEI.

In combination with a limited increase in the costs, the various factors combined resulted in incomes and savings in dairy farming remaining more or less at the same level (table 5.2). Over 10% of the farms had a negative income and more than half had an income of more than 25.000 euro.

As of the late 1980s, incomes in dairy farming have been declining, despite the strong growth of the average production per enterprise: in the early 1980s, milk production per farm was on average around 250,000 kg; today, it is over 450,000 kg.

A lot of money has been invested in milk quotas over the past year, partly because the structural leasing of quotas has been limited. Thanks to higher milk prices, organic dairy farmers were until recently able to achieve much better incomes than their fellow dairy farmers operating along conventional lines. Now that the price advantage is becoming smaller and the costs are increasing, this income advantage has all but disappeared.

## **5.6** Intensive livestock farming

Intensive livestock production – consisting of pig, poultry and veal farming – has undergone major reorganisation and scaling-up over the last few years. The number of pig farms has more than halved since 1990 and 60% of the sows are kept on farms with more than 250 animals. The number of specialised egg production and broiler farms declined from 1400 in 1990 to fewer than 1000 in 2004. The number of veal farms declined by less than 10% in that period; this sector is dominated by a single corporate group, controlling a large proportion of the supply sector (calf milk and new-born calves) as well as the sales sections (slaughterhouses). This group has contracts with approximately 1000 calf-fattening farms.

In 1997, the pig population in the Netherlands reached its highest point with over 15 million animals. Since then, particularly following the outbreak of swine fever in 1999 and due to the manure and ammonia policies, the population shrank to 11 million in 2003, after which the pig population stabilised. The year 2004 was a year of recovery for poultry farming – with 44 million broilers and 27 million laying hens – following the shrinkage of the population as a consequence of the outbreak of Avian Influenza the previous year.

The total production value of intensive livestock farming amounts to between 3 and 3.5 billion euro (table 5.1). The added value of all activities connected with this sector amounted to over 5 billion euro in 2003, and the total employment – which is showing a downward trend – amounted to around 80,000 jobs. Of these, around 20,000 are in intensive livestock production. Almost 80% of the corresponding added value is related to exports.

The business results for 2004 were very varied. Pork production increased slightly and pig prices increased by 15-20%. This resulted in a considerable improvement in incomes compared with the very low income levels in the preceding years (table 5.2). As the prices of piglets increased more than the prices of pigs for slaughter, the incomes in pig breeding increased more than those in pig fattening. The production of poultry meat and eggs recovered strongly following the shrinkage of the sector in 2003 as a consequence of Avian Influenza (table 5.1). The egg prices fell sharply to less than 4 euro cents per egg. The lowest price since the Second World War was reached in August. The average income on laying hen farms – which in 2003 had been very high on farms that had continued production – became strongly negative in 2004 (table 5.2).

Although the prices of broilers were slightly higher than in 2003, the effect of this was more than cancelled out by the sharp increase in feed prices. The average income became even more negative than in the two preceding years (table 5.2). The broiler farms needed to eat into their capital to the extent of an average of around 135,000 euro over three years.

# Definitions

## **Dutch size units (DSU) and European Size Units (ESU)**

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/euro (current prices). At an 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. The 2000 DSU equals a SGM of about 1,375 euro. Some examples (on the basis of the DSU 2000): 1 hectare of winter wheat = 0.81 DSU; 1 hectare of sugar beet = 1.72 DSU; 1 dairy cow = 1.270 DSU; 1 sow = 0.247 DSU, 1 hectare of round tomatoes under glass = 146.9 DSU and 1 hectare of roses = 245.9 DSU.

## **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 costs of goods and services purchased from other sectors (including depreciation).

## **Savings**

The part of total income that has not been used for consumption or personal taxes, but is added to net worth.

## **Solvency**

Net value in % of total capital.

## **Specialised farm**

Farm on which more than two thirds of production originates from one sector.

## **Total income**

Family farm income plus income from non-farm activities and social security benefits paid to the farmer and his spouse.



*This report offers an English summary of the Landbouw-Economisch Bericht 2005.*

It presents a survey of the economic state of Dutch agribusiness. 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 and with environmental issues. Following a description of the production structure and production factors in agriculture, profitability and income formation in the various sub-sectors are analysed.