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Summary

# Agricultural Economic Report

**2 0 0 4** of the Netherlands



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#### ABSTRACT

AGRICULTURAL ECONOMIC REPORT 2004 OF THE NETHERLANDS: SUMMARY

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

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This report offers an English summary of the Landbouw-Economisch Bericht 2004. 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 2004* offers 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 2004 edition of the report was completed in May 2004.

The Hague, July 2004



The Director,  
Prof. L.C. Zachariasse

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## Economic and Political Framework

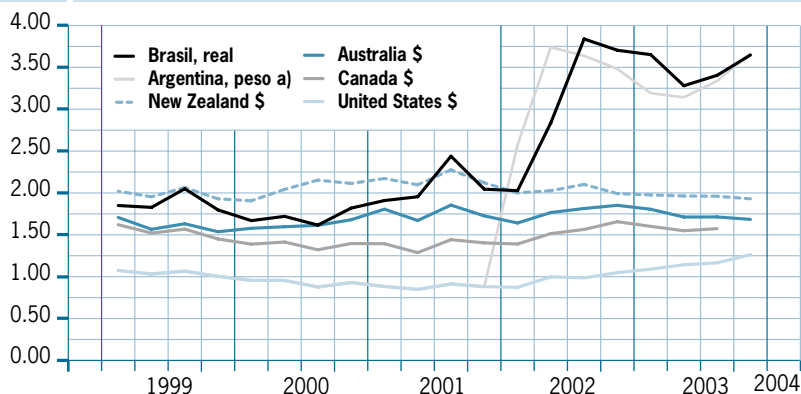
### 1.1 General Situation

In 2003 the world economy showed a modest growth of around 1.5 to 2%. In the OECD countries, the economic growth was a mere 1.5%; in developing countries growth levels of 4% were reached. However, major differences exist between regions. In East Asia, with booming countries such as China and India, growth levels of 6% are not uncommon. Projections of economic growth for 2004 are slightly optimistic, with better prognoses for the United States than for the European Union (EU). However, the confidence of consumers in the economy remains an important risk factor in these projections. Terrorist attacks, such as the one in Madrid on 11 March, create uncertainty as well, which is also reflected in the sharp increase of oil prices since 11 March.

The euro appreciated in 2003. This was mainly due to the weakness of the American dollar. The American dollar depreciated 12% on average (figure 1.1). The increasing strength of the euro created a disadvantage for European exporters to the world market, where dealings mostly take place in dollars. The even quicker depreciating currencies of important agricultural exporters like Argentina and Brazil exacerbated this negative effect for the EU. Economic growth for the EU for 2004 is projected at 1.7%, rising to 2.1% for 2005.

On 1 May 2004 Estonia, Latvia, Lithuania, Poland, Slovenia, Hungary, the Czech Republic, Slovakia, Cyprus and Malta joined the European Union, a new milestone in the EU's history. With this enlargement, the number of inhabitants rose to over 75 million people, an increase of 20%. The agricultural area in the EU 25 increased by a quarter, the agricultural work force will grow by around 60%.

**Figure 1.1** Depreciation of several currencies against the euro, per quarter, 1999-2003



a) The Argentinean peso has been decoupled from the American dollar since 2002. Source: IMF, International Financial Statistics.

Another more disputed milestone in the EU is the lifting of the moratorium for admittance of new genetically modified organisms (GMOs). With new rules concerning the labelling and the tracing of GMOs the European Commission and the Member States hope to have effectively given in to objections of consumer and environmental organisations.

In 2003 the Dutch economy stagnated, with a negative growth of 0.5%. The inflation was 3.3%. For 2004 a recovery of the economic growth to 1% is expected. In line with the low economic growth, the level of unemployment rose to 5.5%. Severe cuts in government spending have been announced to stay in line with the requirements of the European Union's Stability pact. Together with substantial cutbacks in expenditure, the new Dutch government also presented her ideas to decrease unemployment and stimulate economic growth in order to strengthen the economy.

## 1.2 Agriculture in the World

World agricultural production has been fairly stable the past years. Although production grew slightly in absolute terms, it increased by less than 1% per capita.

Cereals production rose slightly, the same goes for other arable products. The production of livestock products increased a little as well. The world market prices for agricultural products show a diverse picture. For crops, prices were generally speaking good, for livestock products prices improved from the low levels of 2002.

International trade has expanded strongly in the past fifty years, due to economic integration. The growth of trade in agricultural products has been less strong than the growth in trade in manufactures and mining products. In 2002 the share of agricultural products (486 million dollars) and food (114 million dollars) in the world export volume amounted to around 9%.

**Table 1.1**      **Agricultural trade by region, 1993-2000**

	Specialisation index <sup>a)</sup>			Net export in billion USD	
	1993	1997	2000	1993	2000
EU-15	-12	-11	-10	-12.7	-11.6
Rest of Europe	-6	-29	-25	-1.8	-10.7
Asia	-52	-50	-54	-44.3	-56.0
NAFTA	23	18	8	179	72
Latin America	61	61	65	21.0	29.6
Africa	-21	-9	-8	-2.7	-0.8
Oceania	72	70	71	12.7	16.5
World trade in billion USD	357	465	432		
Idem, excl. EU 15	184	261	246		

a) The specialisation-index is the ratio between the net-export of a product (group) and the total foreign trade of the product (group).

Source: ITC/WTO.



**Table 1.2** Specialisation-index trade <sup>a)</sup> and net-export for a number of agricultural products, 1993/94-2000/01

		Specialization-index trade			Net export in billion USD	
		93/94	97/98	00/01	93/94	00/01
Sugar	EU-15	7	11	12	0.2	0.3
	Latin America	91	92	94	1.2	2.2
Cereals	EU-15	29	4	18	1.2	0.8
	Asia	-73	-72	-61	-7.2	-7.4
	NAFTA	95	93	91	11.4	9.8
	Oceania	97	98	97	2.1	2.7
Milk and dairy products	EU-15	63	66	60	3.6	3.6
	Asia	-90	-90	-85	-2.5	-3.9
	Oceania	95	97	97	2.6	4.3
Livestock and meat	EU-15	0	3	-2	0.5	-0.3
	Asia	-83	-78	-81	-11.5	-14.5
	NAFTA	36	50	41	3.4	5.4
	Latin America	73	61	71	2.2	3.0
	Oceania	97	95	94	5.5	6.1
Oilseeds/fat	EU-15	-66	-51	-59	-8.5	-7.9
	NAFTA	69	71	67	5.6	6.0
	Latin America	84	79	88	6.4	9.2

a) excluding intra-trade.

Source: ITC/WTO, calculations by LEI.

Table 1.1 gives an overview of the most important importers and exporters of agricultural products. Not only the absolute value of the export, but also the so-called index of specialization is given. This index reflects the importance of the net-export of a product in relation to total trade in a product. A higher index points to a greater importance of export in relation to total trade. The table shows the Asian agricultural trade deficit, caused mainly by the imports of Japan of livestock and meat, as well as of processed agricultural products. The EU is a net importer of agricultural products as well.

Table 1.2 gives the specialization index for a number of products; the index is given for both the EU-15 and for the major exporters (export value more than 1 billion USD) of a certain product. The table shows the relative stable trade position of the EU compared to the position of other important trading blocks. Especially Latin America has developed into a major exporter of sugar and oilseeds. New Zealand and Australia have consolidated their position as major exporters of dairy products and livestock and meat.

The trend of declining support of governments for agricultural production has been reversed in 2003. The producer subsidy equivalent (PSE) was estimated at 32% in the OECD countries in 2003,

a slight increase compared to 2002 but clearly less than in 1986-1988 when the PSE was estimated at around 38%. The latest figures also show a shift in the composition of support; the most trade and production distorting forms of support now account for around 75% of the PSE against 90% in 1986-88. Less distorting support, such as payments based on area planted or number of animals, now account for around 14% of the PSE against 7% in 1986-88.

The WTO trade talks, otherwise known as the Doha development round, have come to a temporary halt due to non-agreement on several dossiers. The forthcoming presidential elections in the USA as well as the new European Commission that will take office in November will slow down the negotiations. Currently parties are working on a framework agreement that will serve as a basis for further negotiations. Market access and export subsidies remain the divisive issues.

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

In June 2003 the Council of Agricultural ministers adopted the proposals for a reform of the Common Agricultural Policy (CAP). The core of the reform proposals is decoupling: support will no longer be linked to area or animals. The current support payments will be transformed into a single farm payment, independent from production. These single farm payments will be given on the condition that certain standards in the area of the environment, food safety, animal welfare, health and occupational safety are met, as well as the requirement to keep all farmland in good condition ('cross-compliance'). The single farm payments will be reduced over the years for holdings with a payment higher than 5.000 euros to generate additional money for rural development and savings to finance further reforms. The single farm payment will enter into force in 2005. If a Member State needs a transitional period due to its specific agricultural conditions, it may apply the single farm payment from 2007 at the latest.

Besides the single farm payment a number of revisions to the market policy of the CAP have been agreed, especially in the dairy sector. The intervention price for butter will be reduced by 25% over four years; for skimmed milk powder a 15% reduction over three years was agreed. The milk quota will be retained until 2015.

In order to respect the tight budgetary ceiling for the EU-25 until 2013, ministers agreed to introduce a financial discipline mechanism. This mechanism enables them to reduce the farm payments if the available budget would be exceeded.

To strengthen the second pillar of the CAP, three new measures are added to the current menu available for rural development: to promote quality, animal welfare and to help farmers to meet EU production standards.

The (revised) CAP is also applicable in the ten new EU members. From 1 May 2004 all market measures – like intervention and export subsidies – will be applied. The direct payments will be gradually phased in over a ten-year period, starting at 25% of the amounts given to farmers in the EU 15.

### *A wide variety in national implementation*

The European Commission originally proposed to fully decouple payments and production. However, several Member States insisted on the option to partially couple payments, as full decoupling would tend to reduce and possibly jeopardise future production in more marginal, and often socio-economically sensitive, regions in the Union. Another choice Member States have is to implement the single farm payment on an individual basis or on a regional basis. In the latter case every farmer in the region, including those who previously were not entitled to payments, will receive the same payment. The regional version is attractive for its administrative simplicity, but could lead to a redistribution of subsidies with matching income effects. The options Member States have chosen until now - they must decide before 1 August 2004 how to implement the payments - show a wide variety in implementation. For instance, Denmark, Germany, Finland, England, and Northern Ireland have opted for a hybrid model, a combination of a regional base payment topped up with an individual payment. France, the Netherlands, Austria, Scotland and Wales have chosen for an individual payment with varying degrees of (de)coupling. These different ways for implementation will most probably give rise to the question whether some harmonisation would not be desirable.

### *Production in the EU*

In 2003, the volume of production in the EU 15 decreased by 3%, especially due to a 20% decrease of the production of cereals in France. In the livestock sectors production remained by and large the same; only in the poultry sector did production fall, mainly due to lower production in the Netherlands as a consequence of the outbreak of Avian Influenza.

Agricultural prices increased by 2% on average. In the crop sector prices on average rose by 5%. The livestock sector was faced with a 2% price decrease on average, due to considerable price changes for pigs (-7%), poultry (+5%) and milk (-4%). The volume of the means of production purchased fell slightly, but prices went up with a few percent. The drop in agricultural income in the EU was on average 1%. In the northern member states incomes in general declined more substantially than in the southern member states. Farmers in Denmark and Germany faced the largest income decrease; farmers in the UK saw their income rise by 21% compared to 2002.

## Development of the Dutch Agribusiness

### **2.1** Consumption and sales structure of food

Consumer spending on food in the Netherlands increased to 32 billion euros in 2003, an increase by 1.6% as a result of higher prices. The share of food expenditure in total expenditure on consumption remained almost the same (11.4%). Consumption of fruit and vegetables has been steadily declining the past years. Poultry has become more popular the last decennium, due to the growing demand for convenience food and the favourable price.

Within the Dutch retail sector the concentration process continues. Albert Heijn, the largest Dutch retailer and part of the Ahold concern, has a market share of around 27%. This retailer started a 'price war' in October 2003 to regain part of the market share it had lost to (German) discounters. These discounters are very successful with a formula based on low prices, low service and a limited number of products compared to retailers like Albert Heijn.

The food and beverages industry is the largest segment of the Dutch industry, offering jobs to around 140,000 people in 4,825 companies. The slaughterhouses and the meat processing industry generate the largest turnover and provide most jobs within the food and beverages section. A large part of the turnover is generated abroad. In 2001 foreign sales accounted for nearly 43% of total sales. The majority (77%) was sold in the EU.

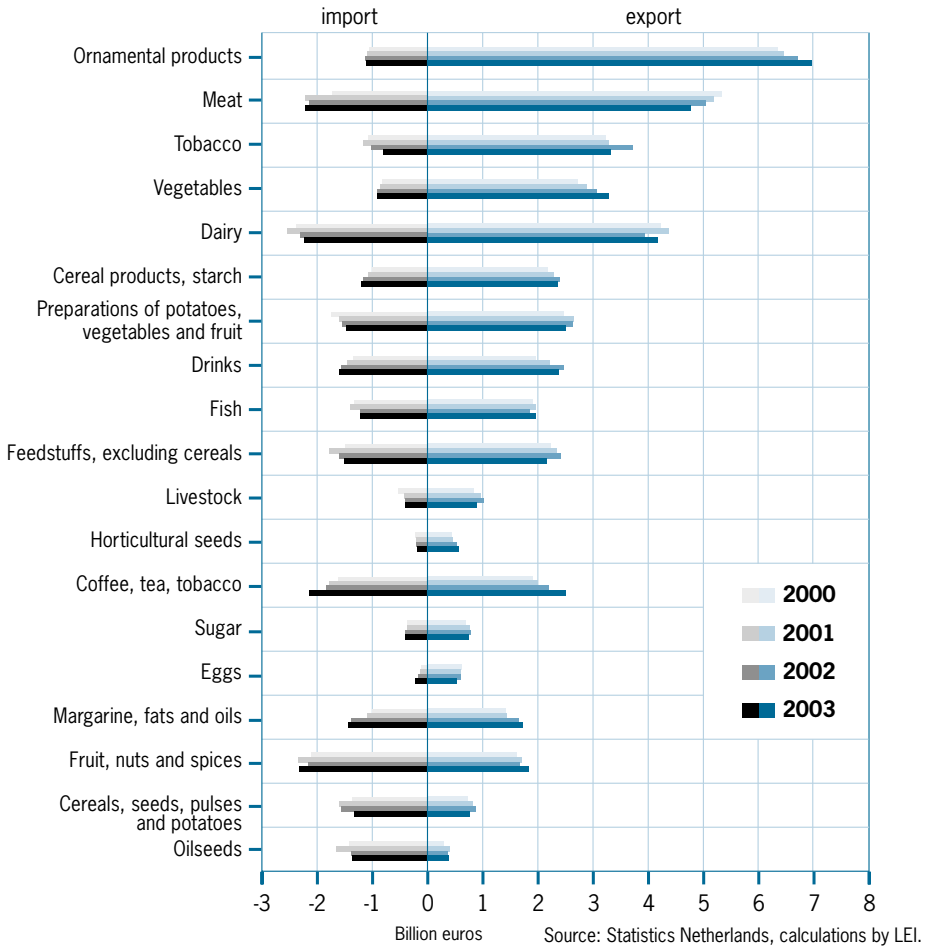
### **2.2** Agricultural Imports and Exports

The total Dutch import and export decreased slightly in 2003, with 0.5 and 1% respectively. Imports amounted to 205 billion euros, including 26.5 billion euros in agricultural products. Exports totalled 232 billion euros, including 46.4 billion in agricultural products. The surplus on the agricultural trade balance grew to around 19.9 billion euros, unchanged compared to 2002.

Ornamental crop products make the greatest contribution to the agricultural export, followed by meat and dairy products (figure 2.1).

The Dutch agricultural export is still largely focused on the EU partner states. In 2003 nearly 80% of agricultural exports was sold on the internal market and 65% of the import originated in the EU. Germany was, as always, the most important destination, followed by the United Kingdom, France and Belgium and Luxembourg. The United States are the most important non-EU trading partner.

**Figure 2.1** Agricultural imports and exports by product, 2000-2003



## 2.3 The Agricultural Complex

The gross value added of the Dutch agricultural complex has risen from around 32 billion euros in 1995 to over 40 billion in 2002. However, the share of the agricultural complex in the national total has decreased in this period, just as the share in employment, to just above 10% (table 2.1). The share of the primary sector (the sum of agriculture and horticulture) in the gross value added has declined over this period. The dependency of the Dutch agricultural complex on export is still rising, in 2002 about 75% of the gross value added and of employment was related to export activities, compared to 66% in 1985. The grassland-based livestock complex contributes most to the value added of the agricultural complex. The share of this sector is however diminishing, while that of the greenhouse gardening complex is growing.

**Table 2.1** Gross value added and employment of the Dutch agricultural complex, 1995 and 2002

	Gross value added (EUR billion)		Employment (1,000)	
	1995	2002 (est.)	1995	2002 (est.)
Agricultural complex <sup>a)</sup>	32.3	40.3	659	660
Share in national total	12.0%	10.3%	11.6%	10.1%
Gardening, agricultural services and forestry	1.0	1.6	39	46
Foreign agricultural raw materials:				
Processing industry	5.7	7.5	75	74
Supply	2.3	3.0	50	52
Distribution	3.1	5.2	65	88
Agricultural complex (based on domestic agricultural raw materials)	20.2	22.9	430	400
Share in national total	7.5%	5.9%	7.6%	6.1%
Agriculture and horticulture	8.4	7.7	189	170
Processing industry	3.0	4.9	54	48
Input manufacturing	6.5	7.3	135	126
Distribution	2.3	3.1	53	55

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

Source: LEI.

## Rural Areas and the Environment

### 3.1 Land use

The total land area of the Netherlands amounts to 3.4 million hectares, of which some 69% is used for agriculture and horticulture, 17% for woodlands, nature reserves and recreation ('green activities') and 14% for housing, business activities and infrastructure ('red activities'). Between 1996 and 2000 the agricultural area decreased by 34,000 ha, mainly to make room for housing areas (25,000 ha) and nature and recreation areas (8,000 ha).

If a rural area is defined as an area with less than 100 addresses per square kilometre, 66% of the total area in the Netherlands can be defined as rural, 24% as semi-rural (100 to 500 addresses per km<sup>2</sup>), 5% as peri-urban (500 to 1,000 addresses per km<sup>2</sup>) and 5% as urban (more than 1,000 addresses per km<sup>2</sup>). Sixteen percent of the Dutch population live in rural areas, 25% in semi-rural areas, 16% in peri-urban and 43% in urban areas.

The farming sector is still the most important employer in the rural areas; however, its share is steadily declining. In 2003 agriculture accounted for 17% of employment in the rural areas, compared to 19% in 1998. Since 1992 over 7,300 farmhouses have lost their agricultural function. Around 14% of these have been redeveloped for other, non-agricultural uses, like a small enterprise in ITC. This re-use of farm buildings creates extra employment in rural areas.

The number of farmers involved in non-agricultural activities on the farm, like agro tourism and nature conservation, is growing. Around 17% of all holdings were engaged in some sort of non-agricultural activity, not including the production and sale of farm products like cheese. The income derived from these activities remains however small, and is estimated at 1.5% of the total income of the primary sector. Especially grassland-based holdings are active in this segment.

The actual price of agricultural land decreased by around 13% in 2003, which is in contrast with the sharp price increases of the past few years. The reduction is due to the diminishing non-agricultural demand, mainly for houses. Over the past years there was a strong relation between the (rocketing) prices for houses and the price for land, especially in peri-urban areas. In areas less under the influence of cities the prices of land are also influenced strongly by the drop in agricultural incomes.

The new government has shifted the focus from nature conservation by public organisations to nature conservation by farmers and other private organisations. The goal for purchasing land by the government for nature development has therefore been brought down. However the aim for the the national ecological network, to be realised in the year 2018, remains unchanged at 730,000 ha; of these, 140,000 ha should be realised through private – including agricultural – management.

## 3.2 Environmental Issues

The pressure on the environment from agriculture and horticulture is steadily diminishing; however not all goals have been reached yet. The reduction of pressure on the environment goes hand in hand with a declining production volume. In the previous decade total agricultural production grew by around 13%; in the past few years production has hardly grown.

### Crop protection

In 2002 the use of pesticides increased (table 3.1), which is a deviation from the long-term trend of declining use. The past ten years the use of pesticides dropped by 20%. The increase in use of chemical substances in 2002 should not be regarded as a reversal of the downward trend, as the use in 2001 was extremely low due to favourable weather conditions. The government has formulated ambitious goals to further cut back the use of pesticides.

### Greenhouse gasses

The emission of greenhouse gasses from the agricultural sector has decreased by 16% since 1990, the reference year for the Kyoto protocol. According to this protocol, the Netherlands should reduce the emissions by 6% in the period 2008-2012. To make sure these aims will be achieved, the government has set maximum emission levels for CO<sub>2</sub> for several sectors of the economy. For the agricultural sector the maximum is determined at 7 million tons, a reduction of 10% compared to the emissions in 2000. In the long term the Dutch government aims at reducing the emission of greenhouse gasses by 40 to 60%. This ambitious goal can only be reached through strong adaptations in production processes, especially in sectors that use a lot of energy like the horticultural sector. In the past years this sector has substantially increased its energy-efficiency, the amount of energy used per unit of product produced. In 2002 the amount of energy used per unit product has been halved compared to 1980. It has been agreed that in 2010 an improvement of 65% must be achieved, although it is doubted if this ambitious aim can be attained. Further improvements in the energy-efficiency are possible but require far reaching innovations such as storing surplus solar energy in the ground to use this as a source of energy in the winter.

**Tabel 3.1** Use of pesticides in Dutch agriculture (1984-2002) and policy objectives for 2000

Category	Use in mio. kg active substance								Objective 2000
	1984-88	1995	1997	1998	1999	2000	2001	2002 (v)	
Soil disinfectants	10.25	2.39	1.57	1.18	1.47	1.40	0.99	1.20	3.28
Herbicides	4.60	3.98	3.85	4.05	3.87	3.50	3.09	4.03	2.53
Fungicides	4.45	4.49	4.94	5.81	5.20	4.93	3.95	3.78	2.85
Insecticides	0.69	0.55	0.49	0.46	0.41	0.29	0.27	0.24	0.44
Other pesticides	1.31	1.20	1.16	1.18	1.05	1.26	1.12	1.29	0.86
<b>Total</b>	<b>21.30</b>	<b>12.61</b>	<b>12.01</b>	<b>12.68</b>	<b>11.99</b>	<b>11.38</b>	<b>9.42</b>	<b>10.54</b>	<b>10.65</b>

Source: PD/Nefyto.



The mineral surplus in Dutch agriculture has decreased steadily in the past years. The difference between input and output of nitrogen (N) declined from 172 kg per ha in 2001 to 147 kg N per ha in 2002; the difference between the input and output of phosphate (P<sub>2</sub>O<sub>5</sub>) decreased from 54 kg per ha in 2001 to 42 kg per ha in 2002. The manure surplus has almost disappeared if the current standards for the maximum permitted losses per hectare are applied. In the long term, however, these standards are not strict enough in the light of EU agreements. It can therefore not be excluded that a manure surplus will again develop, despite the expected further reduction in the number of animals in the Netherlands.

The European Commission has approved the requested derogation by the Dutch government to allow a higher input of nitrogen per hectare grassland than allowed by the Nitrate directive (maximum of 170 kg N per ha). This request is based on the assumption that input of nitrogen can be higher because the output - through products - is higher as well. During a period of four years the derogation is set at 250 kg. After four years the limit will probably be set at 230 kg per ha.

The emission of ammonia from Dutch livestock decreased from 220 million kg in 1980 to 123 million kg in 2002. This reduction is largely due to the reduction of the number of animals and strict rules for the application of manure. By 2010 emission should have been reduced, according to EU agreements, to around 128 million kg. For the agricultural sector this results in an emission level of 114 million kg. The latest prognoses for ammonia emission point to an emission level of 90 million kg in 2010, well below the set goal.

### *Agribusiness and the environment*

The environmental pressure of the agri-industry (defined as the agricultural complex excluding the primary sector) on the different environmental themes is lower than the pressure of the primary sector. Waste is the exception to the rule. The past years both the agri-industry as well as the primary sector improved their environmental performance more than the rest of the economy (table 3.2) This can partly be explained by the difference in growth of production. With a modest growth environmental goals are easier to obtain.

**Table 3.2** Environmental pressure of agriculture and the agri-industry, 1995-2002

Environmental theme	Share (%) in the national average, 2002		Development (%) between 1995 and 2002		
	Agri-industry	Agriculture	Agri-industry	Agriculture	National total
Greenhouse gasses	2.3	12.2	-4.5	-13.3	+1.4
Acidification	0.6	30.0	-34.3	-26.1	-15.6
Mineral surpluses <sup>a)</sup>	4.0	79.9	-22.3	-31.0	-23.0
Waste <sup>a)</sup>	11.2	1.3	-14.7	-74.3	-7.2
GDP/production volume	3.2	2.4	+5	+1	+23

a) 2002=2001

Source: Statistics Netherlands and Statistics-Statline.

## Structure of Agriculture and Horticulture

### 4.1 Production Capacity and Farm Structure

The number of holdings dropped between 2002 and 2003 by 4,100 to 85,501 farms. This is a reduction by 4.6% and an acceleration of the decrease compared to previous years. The reduction in number of farms can largely be explained by more or less voluntary ending of especially smaller holdings due to mediocre income perspectives. The special government arrangements aimed at reducing the manure surplus are another reason for the increased decline in number of farms.

The number of organic farms dropped in 2003 to 1,522 after a steady growth these past years. The total area of organic farming dropped by 700 ha to 41,900 ha. Lagging demand is the key factor responsible for the decline of the organic sector.

The agricultural production increasingly takes place on specialised farms, farms on which more than two thirds of production (measured in DSU, see Annex) originates from 1 sector. The degree of specialization - the part of production in a sector coming from specialised farms - has risen most in the intensive livestock sector, from less than 50% in 1980 to over 70% in 2003. In the glasshouse horticultural sector the degree of specialisation is highest, over 90%. In other sectors - arable farming, dairy farming, outdoor horticulture - the degree of specialization varies between 75 and 90%. In the poultry meat sector the degree of specialization is lowest, 65%. Due to the changes in the common agricultural policy for the arable sector, it has become more attractive for arable farmers to keep poultry for meat. Consequently, the arable sector is the only sector where the degree of specialization decreased.

Concentration on one sector in general yields better results, technically and economically. Increasing demands on the production process by for instance society or further stages in the production chain, can give an extra impetus to the tendency towards specialisation. The ensuing adaptation of the holding and investments may lead to an accelerated cut down of smaller production units on the farm. Specialization may therefore step up further expansion of the farm size.

#### *Further expansion of farm size*

The average size of farms is still growing. Figure 4.1 and 4.2 (page 14 and 15) show the changes over the past 23 years in number of holdings by size, and by area or number of animals for a few sectors. In the arable sector the number of holdings with more than 100 hectares has increased threefold to 750. These large farms use 20% of the arable area against 10% in 1980. In the glasshouse horticulture sector holdings with more than 5 ha now account for 20% of the production area against 1% in 1980. The average size of glass per holding has doubled since 1980 to 1.25 ha while the number of holdings with glass halved. In the dairy sector the percentage of farms with more than 100 cows has risen from 3% in 1980 to 10% in 2003. These holdings own 20% of the dairy herd. Comparable trends have occurred in the intensive livestock sector, pig farms with more than 1,500 animals now account for 35% of the total stock against 6% in 1980. In the poultry sector nearly 30% of the animals are kept on farms with more than 100,000 animals, against 10% in 1980. In general bigger farms generate better incomes and are more innovative.

## 4.2 Labour, Land and Capital

Agriculture and horticulture offered employment to 255,000 people in the Netherlands in 2003, a decrease by 11% since the year 1990. The loss of employment mainly occurred after 2000, when the decline in the number of farms quickened. The number of full-time jobs went down by almost 20% since 1990 to around 184,000 jobs. About one third of the labour force on farms is non-family labour, against 16% in 1991 (table 4.1).

The average balance total of all businesses in the Dutch agricultural and horticultural sector increased the past decade by nearly 0.5 mio to 1.6 mio euros. Increasing farm size, innovations and investments to improve the environmental and animal welfare status of the farm have necessitated this increase. Nearly one third of the capital is loan capital. The solvency percentage, the relation between own capital and loan capital, is highest on dairy farms, mainly due to the relatively large area of land on these farms and the value of the milk quotas.

The average family farm income in all agricultural and horticultural holdings in 2003 is estimated at 40,000 euros. This is a partial recovery from last year's result of 34,800 euros. Income from outside the farm, which has become more important in the past years, is estimated at 8,000 euros. Total family income (before taxes) therefore adds up to 48,000 euros.

Large differences exist between sectors and within sectors. In 2001 the income on half the holdings was more than 40,000 euros, in 2002 39% of the farms had an income over 40,000 euros. About 1 in 3 holdings had an income below 20,000 euros, the Dutch lowincome line. Ten percent of the holdings had an income exceeding 100,000 euros, 15% of the holdings suffered losses.

Table 4.1

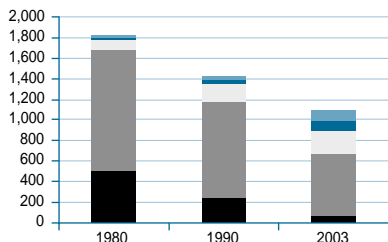
### Agricultural labour force, 1995-2003

	Index (1990 = 100)				Number (x1,000)
	1995	2000	2002	2003	2003
<b>Total labour force</b>	<b>96</b>	<b>97</b>	<b>90</b>	<b>89</b>	<b>255</b>
Family labour	93	84	77	<b>76</b>	<b>177</b>
of which entrepreneur	101	92	87	<b>85</b>	<b>125</b>
other family labour	79	70	59	<b>61</b>	<b>52</b>
Non-family labour	107	151	140	<b>137</b>	<b>79</b>

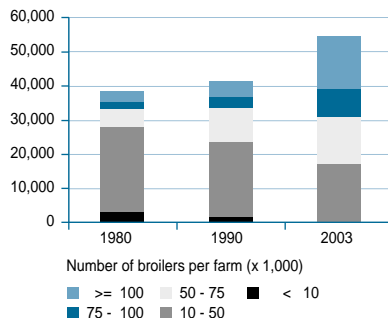
Source: Statistics Netherlands, calculations by LEI.

**Figure 4.1** Number of holdings and animals by size, 1980-2003

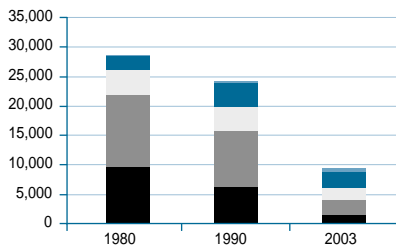
Holdings with poultry



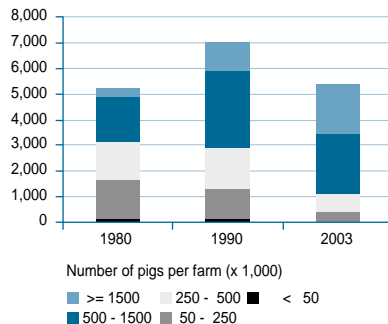
Animals (x 1,000)



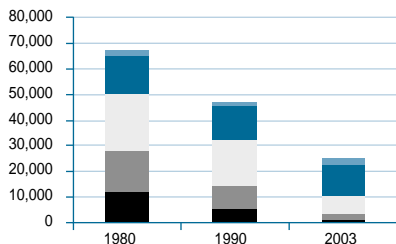
Holdings with fattening pigs



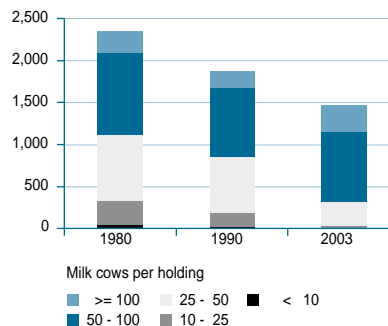
Animals (x 1,000)



Holdings with milk cows



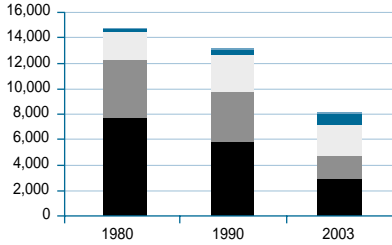
Animals (x 1,000)



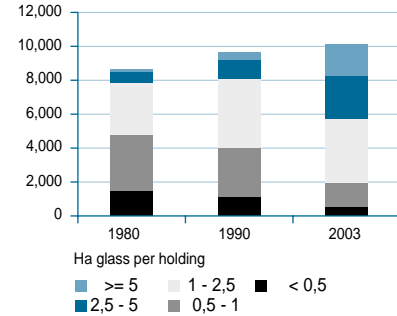
Source: Statistics Netherlands; calculations by LEI.

**Figure 4.2** Number of holdings and area by size, 1980-2003

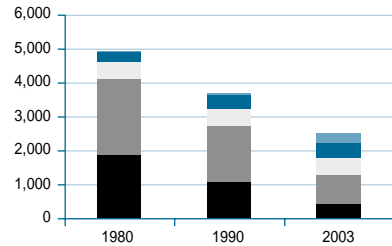
Holdings with glass house horticulture



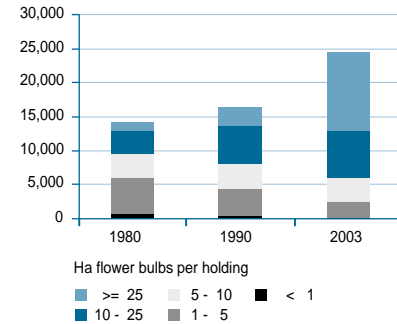
Area of glass



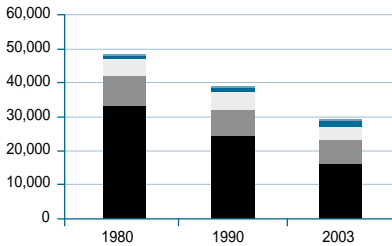
Holdings with flower bulbs



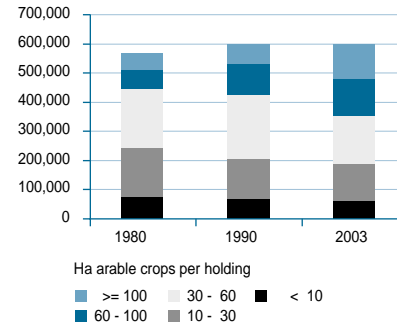
Area



Holdings with arable crops



Area



Source: Statistics Netherlands; calculations by LEI.

## Market and Income Developments in the Various Sectors

### 5.1 Results of the Primary Sector

The production value of the primary sector was unchanged in 2003 compared to 2002. Prices were somewhat higher but this was offset by a slightly lower volume of production (table 5.1).

Production in the arable sector increased due to good weather conditions; especially production of cereals and sugar beets went up. In the horticultural sector the production volume grew as well; especially the production of fruit, plants and trees increased. Production of livestock reduced, largely due to the outbreak of Avian Influenza (AI). The production of eggs and poultry meat fell by 35%. In the pig sector, however, production declined as well, by 6%. Due to fierce competition within the EU and outside the EU, prices remain low for pig meat. Prices for arable products developed favourably, prices for other products showed little change. The slightly higher milk production was sold against lower prices to the dairy industries.

The value of intermediate consumption went down compared to 2002, despite higher prices for energy and fertilizer. Combined with a stable production value this leads to a somewhat higher net value added for the primary sector in 2003.

**Table 5.1** Value added of agriculture and horticulture in the Netherlands, 2001-2003

	Value added in EUR billion			Index 2003 (2002 = 100)		
	2001	2002 (v)	2003 (est.)	Volume (est.)	Price (est.)	Value (est.)
Arable products	2.4	2.5	2.7	103	106	110
Horticultural products	7.6	7.8	8.0	102	100	102
Grassland-based livestock products	4.6	4.5	4.4	100	97	97
Intensive livestock products	4.3	3.5	3.1	88	101	89
Other	1.9	1.8	1.9	102	103	105
<b>Total</b>	<b>20.7</b>	<b>20.1</b>	<b>20.0</b>	<b>99</b>	<b>101</b>	<b>100</b>
Intermediate consumption	11.1	11.0	10.9	98	102	99
Gross value added	9.6	9.1	9.1	101	100	100
Depreciations	2.5	2.6	2.7			103
Balance of levies and subsidies	0.1	0.2	0.1			-
<b>Net value added</b>	<b>6.9</b>	<b>6.2</b>	<b>6.2</b>			<b>101</b>

Source: Statistics Netherlands; 2003 estimation LEI.

## 5.2 Horticulture under Glass and Mushroom Growing

Horticulture under glass and mushroom growing together account for a quarter of the total production value of Dutch agriculture and horticulture. Total production value of horticulture under glass increased by 4% (table 5.2). Over the years a shift has occurred in production from the production of vegetables to the production of flowers and plants. Meanwhile an increase took place in the size of the holdings. Holdings with more than 3 ha glass now own one third of the total Dutch glass area, compared to only six percent in 1980.

The surface area of glass increased to 10,535 ha in 2003. The number of specialised greenhouse horticulture holdings continues to fall and in 2002 comprises around 9,500. The number of mushroom growers likewise continues to fall. In 2003 their number declined to less than 400 holdings. The total area of mushrooms decreased by 2.5%.

The traditional auction to market vegetables, flowers and plants loses ground every year. In 1990 about 56% of production was sold through the auctions, in 1998 this percentage had diminished to 11%. It is expected this will further decrease to around 5% in 2012. Sales through contracts with retailers and food providers have taken over the role of the auction.

Thanks to the rise in production value, which was accompanied by a rather small increase in costs, the results of the vegetables under glass holdings and the pot plants holdings in 2003 substantially improved (table 5.3). For the cut flower growers the results were less favourable; they suffered among other things from the reduced export to markets outside the EU.

Mushroom growers on average faced very low incomes and negative savings (table 5.3). Due to fierce competition and stagnating demand, the incomes of these holdings have been under pressure the past years.

## 5.3 Outdoor Horticultural Production

The outdoor horticultural sector includes tree nurseries, bulb growing, fruit growing and vegetable growing. It is therefore a rather heterogeneous sector. The production of bulbs is most important,

**Table 5.2** Production value (mio. euro) of horticulture under glass and mushroom growing in the Netherlands, 1990-2003

	1990	1995	2000	2001	2002	2003	2003 as a % of 2002
Vegetables	1,173	1,067	1,259	1,163	1,192	<b>1,300</b>	109
Cut flowers	1,480	1,614	2,086	2,065	2,149	<b>2,160</b>	101
Pot plants	769	865	1,149	1,213	1,301	<b>1,385</b>	106
<b>Total horticulture under glass</b>	<b>3,422</b>	<b>3,546</b>	<b>4,494</b>	<b>4,441</b>	<b>4,642</b>	<b>4,845</b>	<b>104</b>
Mushroom	182	245	316	318	303	<b>285</b>	94

Source: Productschap Tuinbouw.

Table 5.3

## Dutch family farm incomes and savings (1,000 euro) per farm, 2001 – 2003

	Family farm income			Savings per farm		
	2001	2002	2003 (est.)	2001	2002	2003 (est.)
Vegetables under glass	57	70	<b>88</b>	-14	12	<b>28</b>
Cut flower holdings	53	65	<b>50</b>	-15	3	<b>-12</b>
Pot plant holdings	88	106	<b>118</b>	33	45	<b>53</b>
Mushroom growers	82	33	<b>22</b>	19	-22	<b>-35</b>
Outdoor horticulture holdings <sup>a)</sup>	37	36	<b>23-33</b>	8	5	<b>-10-0</b>
Fruit growers <sup>a)</sup>	38	35	<b>35-45</b>	12	9	<b>8-18</b>
Bulb growers <sup>a)</sup>	60	40	<b>30-40</b>	45	25	<b>10-20</b>
Tree nurseries <sup>a)</sup>	46	43	<b>42-47</b>	19	15	<b>13-23</b>
Arable farms	54	15	<b>41</b>	27	-13	<b>12</b>
Dairy farms	49	41	<b>37</b>	22	15	<b>12</b>
Pig breeding farms	8	-9	<b>-20</b>	-13	-41	<b>-50</b>
Pig fattening farms	5	-23	<b>-16</b>	-14	-40	<b>-33</b>
Closed pig (breeding and fattening) farms	11	-29	<b>-28</b>	-14	-67	<b>-65</b>
Poultry egg farms <sup>b)</sup>	49	40	<b>176</b>	25	5	<b>135</b>
Poultry meat farms <sup>b)</sup>	59	-14	<b>-2</b>	35	-40	<b>-30</b>
All agricultural and horticultural holdings	45	35	<b>40</b>	16	3	<b>7</b>

a) Farm income per entrepreneur.; b) In 2003 only farms not affected by the outbreak of AI.  
N.B. Due to changes in the accounting systems the above figures cannot be compared to figures in previous editions of this summary.  
Source: LEI.

measured in terms of production value (table 5.4). The production of vegetables takes up the largest part, 43%, of the total area for outdoor horticultural production.

In total the sector includes around 16,400 holdings. The number of farms in this sector has declined by almost 50% since 1980, but the total surface area increased by nearly 2,000 ha. In all sub-sectors the average size of holdings has gone up. In 1980 holdings by more than 10 ha accounted for 33% of total production area, in 2003 this percentage has increased to 63%. Especially the production of bulbs is concentrated on large farms; more than half of the production area is concentrated on farms with more than 25 ha.

The importance of the auction is declining. Traders have taken over. Alternatives for the auction are now being explored.

In 2003 the total production value of outdoor horticulture was around 2% lower than in 2002. There are however substantial differences between the sectors. The production value of outdoor vegetables decreased by 10%, mainly due to lower prices as a result of higher production levels in the EU and stagnating export. The production value of bulb growing decreased as well due to lower prices. Export



**Table 5.4** Production value (mio. euro) of outdoor horticulture in the Netherlands, 1990-2003

	1990	1995	2000	2001	2002	2003	2003 as a % of 2002
Vegetables	463	434	363	453	433	390	90
Fruit	309	313	326	347	330	360	109
Bulbs	381	504	563	600	613	575	94
Trees	346	433	548	535	553	570	103
<b>Total outdoor horticulture</b>	<b>1,499</b>	<b>1,684</b>	<b>1,800</b>	<b>1,935</b>	<b>1,929</b>	<b>1,895</b>	<b>98</b>

Source: Productschap Tuinbouw.

of bulbs dropped considerably in the second half of 2003, with 10%, to important markets outside the EU like the United States and Japan due to the expensive euro. The fruit sector and the tree nursery sector showed an increase in production value.

The income in 2003 for outdoor vegetable growers is considerably lower than in 2002. Fruit growers, tree nurseries and bulb growers had comparable incomes to 2002 (table 5.3).

## 5.4 Arable Farming

The production value of arable farming was 2.7 million euros in 2003. Potatoes account for about one third of this value (0.9 million euros), sugar beet and cereals both have a production value of 0.3 million euros.

The area of arable crops has been fairly stable in the past years at around 600,000 ha. In terms of acreage cereals are the most important crop with nearly one third of the area. The number of farms growing arable crops has decreased to nearly 29,500 farms. The average area per farm has gone up. In 1980 around 13% of the arable area could be found on farms with more than 80 ha. This percentage has increased to 28% in 2003. Only 4% of the arable farms have more than 80 ha.

Production per ha of all crops but potatoes for consumption and starch potatoes developed favourably in 2003 due to the good weather conditions. The tight supply in the EU led to rising prices with the exception of starch potatoes (table 5.5).

The rising prices in combination with good production levels have restored incomes in the arable sector after the bad results of 2002 (table 5.3). On average income reached a level of 41,000 euros allowing for average savings of 12,000 euros per farm.

**Table 5.5** Production and prices <sup>a)</sup> for arable products, 2001-2003

	Wheat	Barley	Potatoes for consumption	Seed potatoes	Starch potatoes	Sugar beet	Onions
<b>Production (ton/ha)</b>							
2001	8.6	6.0	46.4	36.7	43.7	9.3	54.0
2002	8.1	5.7	53.5	35.7	46.5	9.7	52.7
2003 (est.)	10.0	5.8	48.8	36.8	40.0	10.9	55.0
Idem, change (%)	+24	+2	-9	+3	-14	+12	+4
<b>Prices (euro/100 kg)</b>							
2001	12.40	13.40	11.00	26.80	5.30	57.65	12.90
2002	10.70	12.90	6.95	19.00	5.30	48.50	9.40
2003 (est.)	14.30	13.75	12.00	21.00	5.30	48.00	18.00
Idem, change (%)	+34	+7	+73	+11	0	-1	+91

a) Excluding the Mac Sharry payments.

Source: LEI.

## 5.5 Grassland-Based Livestock Farming

Production value of grassland-based livestock farming declined to 4.4 million euros in 2003. Milk production takes up the larger part with 3.6 million. The decrease is due to a lower production of beef and lower prices for milk.

The total number of grassland-based livestock farms decreased to 50,344 farms; compared to 1980 the number of farms has halved. Since 1980 the number of specialised dairy farms went down by two thirds, but they are still the largest group with 22,857 holdings. Milk production is more and more concentrated on bigger farms, farms that produce more than 400,000 tons of milk per year. The majority of livestock, 92%, is kept on specialised farms, holdings that use more than two thirds of their production capacity for one farming activity. The livestock density, measured in livestock units per hectare, has fallen from 2.8 LFU in 1980 per ha to 2.2 LFU per ha on average in 2003.

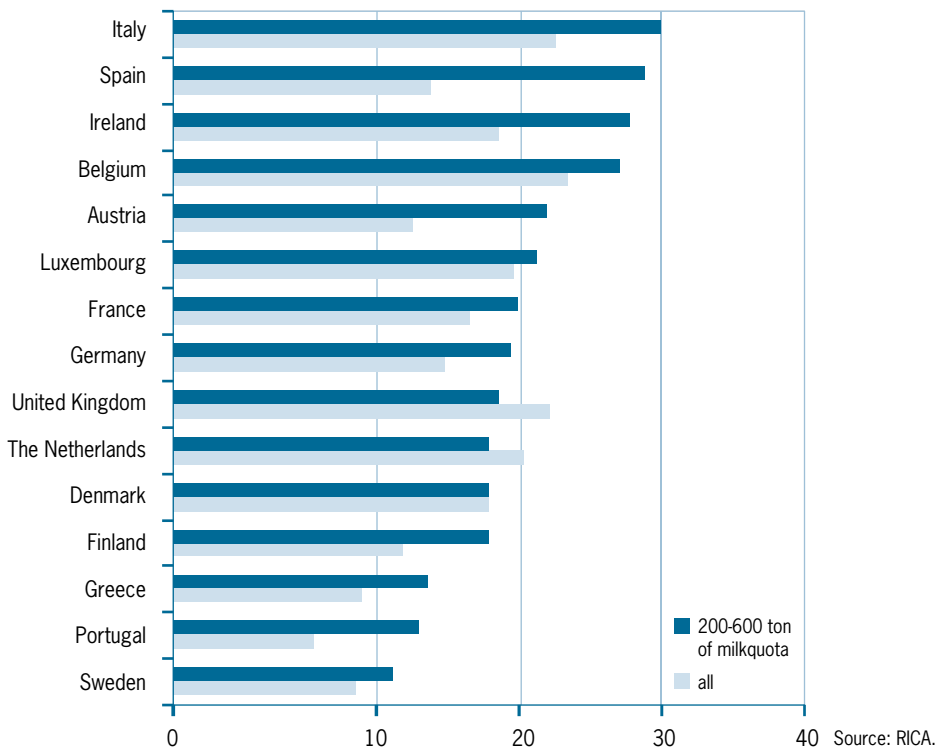
The introduction of the milk quota in 1984 has had a major influence on the structural development of the Dutch livestock sector. In 1985 2.4 million cows were needed to produce the allowed amount of milk, in 2003 a little under 1.5 million cows did the job. Average milk production per cow increased from just over 5,300 kg in 1985 to 7,100 kg in 2003. Before 1984, 40% of all dairy farms had less than 30 cows compared to 20% in 2003. The declining cowherd has had its effect on the calf-fattening sector as well. They are forced to increase import of calves due to the diminished Dutch supply.

The income for dairy farmers dropped in 2003, due to lower milk prices and rising costs (table 5.3). The outlook for this year is mediocre as well, due to the expected effects of the reform of the common market organisation for dairy products. The lower institutional prices for butter and skimmed

milk powder will reduce milk prices, a reduction only partly compensated by the farm payments. Prognoses for 2007 indicate an income drop of 5,000 euros due to the reform, which comes close to 16% of the annual income.

Figure 5.1 shows that the income in the Dutch dairy sector is no longer the highest in Europe. This is caused by a slow growth of already big holdings, a somewhat lower milk price and higher production costs. Belgium dairy farmers have the highest income, if all dairy farms are taken into account, followed by Italy. If the category smaller farms is left out in the comparison a different picture arises, with Italy and Spain on top of the list. The UK and the Netherlands are the only two countries where average income of all farms is higher than average income of farms with a quota between 200,000 and 600,000 kg. This is due to the high income on farms with more than 600,000 kg of quota.

**Figure 5.1** Family farm income (x 1,000 euro) per labour unit in the dairy sector, average 1996 – 2000



The prices for beef improved in 2003 due to lower supply. Consumers have regained confidence in beef; as a consequence consumption is increasing. The EU is now a net-importer of beef. Cattle fattening is usually a side activity on dairy farms. The cattle-fattening farms have similar results as in 2002. These past years the profitability of the cattle-fattening business has been under pressure.

Prices for sheep meat were unchanged compared to 2002. Export of live sheep flourished, France being the most important market. Consequently the export of sheep meat went down, by more than 10%. Sheep farmers saw their results in 2003 diminish. The balance per ewe decreased by 7 euros per ewe to 102 euros.

## **5.6** Intensive Livestock Farming

The production value of the intensive livestock sector fell to 3.1 million euros in 2003, as a consequence of much lower production volumes in the poultry sector due to the outbreak of Avian Influenza (AI) in the spring 2003. The effect was partly offset by higher prices. Pig production is the most important part of livestock farming, with a share in total production value of over 50% (1.7 million euros), followed by poultry and eggs.

The number of farms in the intensive livestock sector has fallen considerably over the past years, especially the number of pig farms. This is partly due to the success of several measures of the ministry of Agriculture. With a number of subsidy schemes the government has actively bought up pig production rights, thereby significantly reducing the livestock population and consequently the number of holdings. In 2003 around 50,000 farms in the Netherlands were involved in intensive livestock farming, compared to nearly 100,000 in 1985. In 2003 there were 11 million pigs in the Netherlands (compared to 15 million in 1997) and 81 million fowls. The last figure is considerably lower than in 2002 due to the mass destruction of infected stock in order to combat the outbreak of AI.

The average size of pig and poultry farms has increased steadily over the past years. The 300 (3%) largest pig farms keep nearly 20% of all animals. In the poultry sector nearly 30% of all animals are kept on holdings with more than 100,000 animals, compared to 10% in 1980.

Prices for pigs were low in 2003, production decreased by 3%. In the EU pig production was stable compared to 2002. The growth of pig production in for instance Canada and Brazil puts extra pressure on the European pig prices, although the growth in Canada seems to have come to an end due to low economic results.

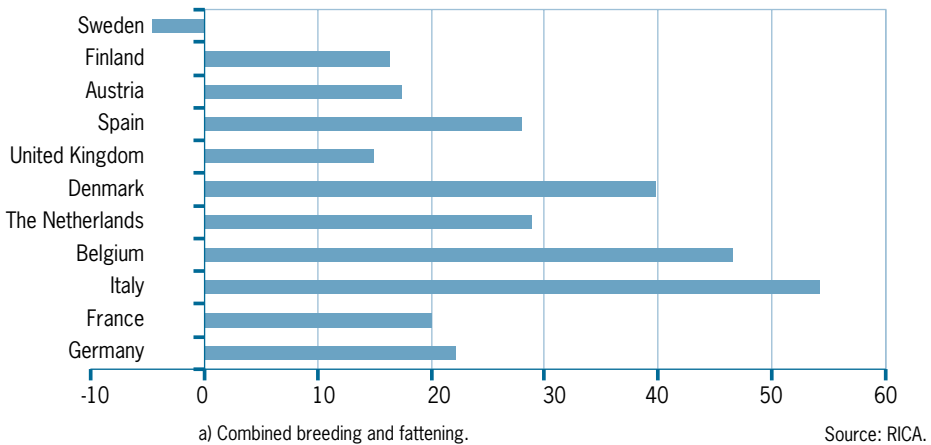
Family farm income in the pig sector was very low for all three types of farms: closed farms (combined breeding and fattening), fattening farms and breeding farms (table 5.3). The low incomes can for the larger part be explained by the low pig prices. Negative savings as high as 65,000 euros clearly show the difficult financial position of a lot of pig farmers. The future does not look too bright for a number of holdings in this sector. Increasing demands from society require investments to improve the environmental and welfare status of the farms. This leads to rising costs that are not (always) reflected in the market price due to the competition from outside the EU where different production standards are applied.

Figure 5.2 shows the wide variety in the family farm income on closed pig farms in several EU member states. This variety is due to differences in costs, for instance environmental costs. These are quite high in the Netherlands but low in for instance Denmark. Italian and Belgium farmers have the best results, thanks to high yields and low costs.

Prices for poultry meat were fairly stable in 2003. The production of poultry meat increased worldwide. In the Netherlands production went down due to the effect of AI. The prices for eggs went up with on average 30%, egg production dropped by 27%.

In the poultry sector family farm income was very high for those poultry egg holdings not affected by the outbreak of AI. These farms could profit from the high(er) egg prices and had a very good year with incomes as high as 176,000 euros (table 5.3). Farms whose herd was stamped out faced – on average – a loss of 30,000 euros. For the unaffected poultry meat farms income was negative, mainly due to low prices. Poultry meat farms that were affected by the AI had even worse incomes, minus 60,000 euros on average.

**Figure 5.2** Family farm income (x 1,000 euro) per labour unit on closed farms <sup>a)</sup> in the pig sector, average 1996 – 2000



# 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 euro (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. The 2000 DSU equals a SGM of about 1,375 euros. Some examples (on the basis of the DSU 2000): 1 ha winter wheat = 0.81 DSU; 1 ha sugar beet = 1.72 DSU; 1 dairy cow = 1.270 DSU; 1 sow = 0.247 DSU, 1 ha round tomatoes under glass = 146,9 DSU and 1 ha 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 which has not been used for consumption or personal taxes, but is added to net worth.

## **Solvency**

Net value 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.



This report offers an English summary of the *Landbouw-Economisch Bericht 2004*. 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.