

AGRICULTURAL ECONOMIC REPORT 1994

Summary

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Agricultural Economics Research Institute LEI-DLO
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ABSTRACT/REFERAAT

AGRICULTURAL ECONOMIC REPORT 1994; SUMMARY

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This Periodical Report offers a summarized overview of the contents of the Agricultural Economic Report 1994 (261 pp.), which is published in Dutch. A general survey is given of the economic situation of Dutch agriculture and horticulture, mainly for the years 1992, 1993 and 1993/94. Among other subjects, attention is paid to the Common Agricultural Policy, developments in the agricultural production in the world, in the EU and especially in the Netherlands, to some aspects of the structure of Dutch agriculture, the Dutch exports of agricultural products and to the environment policy for agriculture. Furthermore, the report deals with the development of rentability, income, investments and the financial situation of agricultural and horticultural holdings in the Netherlands.

Agriculture/Agricultural Policy/Trade/Environment/Farm Structure/Agricultural Production/Farm Results/Incomes/Netherlands

LANDBOUW-ECONOMISCH BERICHT 1994; SAMENVATTING

Het Landbouw-Economisch Bericht 1994 geeft een samenvattend overzicht van de economische situatie van de Nederlandse land- en tuinbouw, vooral voor de jaren 1992, 1993 en 1993/94. Daarbij wordt onder andere aandacht besteed aan het EU-landbouwbeleid, de ontwikkeling van de landbouwproductie in de wereld, in de EU en meer in het bijzonder in Nederland alsmede aan enkele aspecten van de landbouwstructuur, het landbouwmilieubeleid en aan de Nederlandse export van agrarische producten. Voorts wordt ingegaan op de ontwikkeling van rentabiliteit, inkomens, investeringen en vermogenssituatie van de land- en tuinbouwbedrijven.

Landbouw/Landbouwbeleid/Handel/Milieu/Bedrijfsstructuur/Productie/Bedrijfsuitkomsten/Inkomens/Financiële positie/Nederland

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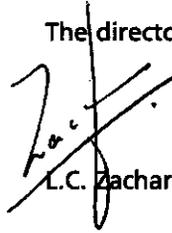
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PREFACE

The Agricultural Economic Report is an annual publication, offering a global survey of the economic situation of Dutch agriculture and horticulture. This is a summary in English, which is published separately as part of the series 'Periodieke Rapportages' (Periodical Reports). The complete report is available only in Dutch.

The report is based on data and contributions from nearly all divisions of the Institute. The coordination and editorship of the report is conducted by the General Economics and Statistics Division. The final draft of this edition of the report was completed in the course of September 1994.

The director,

A handwritten signature in black ink, appearing to be 'L.C. Zachariasse', written over a vertical line that serves as a separator or part of the signature.

L.C. Zachariasse

The Hague, December 1994

1. THE ECONOMIC AND POLITICAL FRAMEWORK

1.1 General economic developments

Economic growth in the OECD countries in 1993 was rather more than 1%. For 1994 and 1995 growth rates of 2.5 to 3% are expected, so that 1993 was the last year of the cyclical decline. Inflation in the OECD in 1993 was in excess of 3%, which was considerably lower than the 4.5% average in the five preceding years. Unemployment in the OECD rose in 1993 to 8.2% of the working population and will work out even somewhat higher in 1994.

With a growth of only 0.3% the Dutch economy reached the lowest point of the economic cycle. For 1994 and 1995 the Central Planning Bureau expects a modest economic recovery. In connection with the stagnating economy, employment fell in 1993 by 13,000 working years. This brought to an end the annual expansion of on average 80,000 working years since 1985. The number of unemployed persons rose in 1993 to 550,000, which corresponds to 8.8% of the Dutch working population. Inflation, which was determined above all by the development of wage costs, the prices of raw materials and crude oil on the world market and the course of the guilder exchange rate, remained limited to approximately 2.5% in 1993.

1.2 Enlargement of the EU

In March 1994 the negotiations with Norway, Sweden, Finland and Austria on accession into the EU were rounded off. The date of accession is planned for January 1, 1995. The applicant countries have ultimately agreed to a direct alignment of agricultural prices to the lower EU level. This will lead to a sharp decline in agricultural incomes. By way of compensation the applicant countries have been permitted to give their farmers both temporary and permanent income support.

2. AGRICULTURE IN THE WORLD

2.1 Agricultural production and food supply

After the increase by some 2% in 1992, world agricultural production fell in 1993 by nearly 1%. Development of the volume of the individual agricultural products displayed a varying picture: contraction of the production of cereals, soya beans, cow's milk, beef and sheepmeat, a growth of approximately 1% in the production of sugar, potatoes, pigmeat and eggs and a somewhat greater increase (over 3%) in the production of pulses and poultry meat. In 1993 there was a clear difference in rate of growth between on the one hand the developing countries, where the production of practically all agricultural products increased, and on the other hand the developed countries, where the production fell.

Making allowance for the population growth and for a higher consumption of cattle feed, the available quantity of food per head of population in the world in 1993 declined by 2-3%. The production per head in the developing countries displayed a 1% drop, by which the continuing rise since the beginning of the eighties was interrupted. According to a study by the FAO, on a worldwide basis both the supply of and demand for agricultural products per head of the population will grow more slowly between 1990 and 2010 than in the period 1970-1990. Because demand for food in the developing countries is increasing more quickly than production, in the years to come the developing countries will become even more strongly dependent on the industrialized countries for their food supply.

2.2 Agricultural trade and the GATT agreement

The volume of world trade in agricultural products, which in 1992 had still risen by over 6%, fell somewhat in 1993. Above all, world trade in cereals and oilseeds was smaller. The contraction of the cereals trade was largely the result of diminished demand from the Commonwealth of Independent States (CIS). World market prices in 1993 were on average about the same as in 1992.

In April 1994 the final agreement was signed of the GATT Uruguay Round on trade liberalization, which had been proceeding laboriously since 1986. The agreements on trade in agricultural products include reduction of internal support, reduction of export subsidies, widening market access and also rules and standards in the veterinary and

phytosanitary fields. These agreements have to enter into effect between 1995 and 2001.

As regards the EU, the price reductions connected with the Mac Sharry reform are probably sufficient to meet the reduction commitment for internal support. For most products, except for dairy and possibly beef, the Mac Sharry reform is also sufficient to comply with the GATT agreements in the field of export subsidy reduction and widening of market access. The European Commission therefore barely has to take additional measures to bring its own reformed agricultural policy in line with the obligations of the GATT agreement. However, Brussels' latitude for an independent (price) policy and unlimited exports to the world market will become less. The extent of the adverse income effects of the GATT agreement for the agricultural sector depends mainly on the adjustments that are necessary in the dairy and beef sector.

The reduction of export barriers is favourable for Dutch exports of horticultural produce. Conversely, the GATT agreement may cause problems for exports of cheese and to a lesser extent exports of pigmeat and poultry meat. Incidentally, one third of exports of Dutch cheese to third countries is barely dependent on export subsidies. If world market prices rise, it will perhaps become possible to export more Dutch cheese to the world market without export refunds. In addition the Dutch cheese exporters will try to sell still more cheese on the EU market.

Anyway, it does not seem that the latest GATT agreement is the last word in the world trade discussions. In the first place, there is still a great deal to liberalize, and in the second place, there are increasing calls for regulations for the coupling of trade with agreements in the field of social policy and that of the environment.

3. AGRICULTURE IN THE EUROPEAN UNION

3.1 Production and income development

In 1993 in the EU smaller quantities of cereals, oil seeds, potatoes, vegetables, fruit, wine, beef, sheepmeat and eggs were produced. Conversely, the production of sugarbeet, pulses, olive oil, pigmeat and poultry meat grew, while milk production stabilized at the 1992 level. On balance this resulted in a contraction of the volume of total EU agricultural production by some 2%. This was the largest decrease in the past twenty years. The volume of the purchased means of production declined in 1993 by nearly 1.5%, although consumption of feedingstuffs rose somewhat as a result of the strong growth of pigmeat production. The selling prices for agricultural products decreased in 1993 by over 2.5% on average, after they had already fallen in 1992 by approximately 5%. In real terms the fall in prices in 1993 was some 6%. Over the previous two years the real fall worked out at nearly 15% and, calculated from the mid eighties, at about 30%. For a good assessment allowance must, however, be made for the effect of reducing or abolishing co-responsibility levies and of the expansion of various kinds of direct payments. Particularly through the Mac Sharry premiums, the direct payments were greatly expanded in 1993 and then corresponded on estimate to some 12% of the production value of EU agriculture. In the mid eighties this was still only 4%. The expansion of the direct payments has therefore compensated for part of the real price drop that has occurred since 1985.

Family farm income per family worker in 1993 increased in nominal terms by nearly 1% and decreased in real terms by approximately 2.5%, despite the increase in the various payments. The sharpest decline in real family income occurred in Germany (-45%), followed by the Netherlands and Portugal (both -20%). In Spain and the United Kingdom, however, real family farm income improved by 35-40% and in Denmark, where income was very low in 1992, even by over 60%.

3.2 EU agricultural budget and institutional prices

Expenditure on market and price policy in the EU increased in 1993 by 10% to over 35 billion ECU. More than one third of the increase was the result of exchange rate adjustments of the European currencies in 1992/93. For most products an increase in expenditure occurred; only in the case of oilseeds and beef there was a decline. The European Commission estimates that the expenditure for 1994 will increase by 3%. This

increase is, among other things, related to the budgetary consequences of the Mac Sharry reform, which weigh on the budget for the first time to their full extent in 1994.

Probably expenditure in 1994 will stay just within the agriculture guideline, that was set during the European Summit in Brussels in 1988 as a ceiling for agricultural expenditure. The guideline, which was established at 27.5 billion ECU in 1988, had a value of 36.7 billion ECU in 1993. In the period 1988-93 spending on agriculture was always 1 to 5.5 billion ECU below the guideline. Considering the modest economic development in 1994, there is a possibility that agricultural expenditure in 1995 will exceed the guideline. In that case further measures have to be taken.

The decisions on the institutional agricultural prices for 1993/94 amounted for most products to a freezing of the support price level. By adjustments in the agromonetary field the ECU prices were lowered by 1.5%, but as a result of raising the green rates of the various weak currencies, the price level in national currency rose by over 8% on average. Even when allowance is made for the price reductions as part of the Mac Sharry reform, there was a real increase in the support price level. This had not occurred since 1982/83. For 1994/95 a limited reduction of 0.3% of the support prices in ECU was decided on, but in national currency the prices were raised by approximately 2%.

3.3 Reform of EU agricultural policy

In mid 1993 the Mac Sharry reform of EU agricultural policy entered into effect, which broadly speaking meant a shift from price support to conditional direct payments for beef and for a number of arable products. In the first year of the reform, in which the greater part of the cereal price reduction has been realized, over 2.5 million arable farmers have applied for compensatory premiums for a total area of 46 million hectares. Of this area, 4.7 million hectares have been compulsorily set aside. In addition, in 1993/94 a further 1.5 million hectares was voluntarily set aside, so that the total area of set-aside corresponded to more than 9% of the area of arable land in the EU.

The fall in cereal production by some 2% was, however, much smaller than the decline by 8% of the area under cereals. Even when allowance is made for the low level of the returns per hectare in 1992, this development points to an increase in the average hectare yields, which is above all the result of taking poor land out of production. Partly as a result of the real price reduction of cereals of approximately 14%, sales of cereals in 1993/94 were some six million tons above those of the year before. About two thirds of this growth in sales were accounted for by a higher consumption of cereals in feed. Incidentally, the consumption of cereals for feed in 1993/94 was still clearly lower than the average consumption of nearly 90 million tons in the first half of the eighties. Therefore it remains to be seen whether, through the sharp price reduc-

Table 3.1 Production, consumption and real price development of cereals in EU-12

| | "1983" a) | "1986" | "1989" | 1991 | 1992 | 1993 (estimate) |
|-----------------------------------|--------------|--------|--------|------|------|--------------------|
| Production (in millions of tons) | 153 | 157 | 162 | 181 | 168 | 165 |
| Consumption (in millions of tons) | 140 | 142 | 136 | 141 | 133 | 139 |
| Real price (1985=100) b) | 114 | 97 | 80 | 74 | 68 | 59 |

a) "1983" = average 1982, 1983 and 1984 etcetera; b) Deflated with price index of the gross domestic product of EU-12.

Source: E. Cook and B. Hill, *Economic aspects of cereal production in the EC, Luxembourg, 1994*; supplemented by estimates of LEI-DLO.

tion, the downward tendency in the consumption of cereals in feed has really broken through. The considerable real fall in the cereal price in the EU between 1983 and 1992, i.e. before 'Mac Sharry', was accompanied by a stagnation in cereal consumption (table 3.1). This indicates that the expectations with regard to the additional sales as a result of the recent price reductions cannot be very high.

The export surplus of cereals amounted to some 26 million tons in 1993/94. Under the commitments of the GATT agreement the EU has to reduce the export surplus of cereals from 32 million tons to 23 million tons between 1995 and 2001. In the short term, the policy reform offers sufficient relief to bring the export surplus of cereals into line with these commitments. In the longer term, when cereal production per hectare increases further through technical developments, the experiences of 1993/94 give rise to doubt on this point. The Commission estimates cereal production in the EU in 1998 at 175 million tons. OECD forecasts work out at about the same amount, which would then be accompanied by an export surplus of some 20 million tons. Others consider a production level of 180-185 million tons more probable. In the latter case, having regard to the GATT agreement, a further adjustment of cereal policy would certainly be necessary.

The existing sugar regulation, which has remained outside the Mac Sharry reform, has again been extended to 1994/95. To counter an overproduction of starch, it has been decided with effect from 1995/96 to impose a quota scheme for potato starch.

Reform of beef policy included among other things a reduction of the intervention price, increased compensating premiums and a restriction of intervention. Through the cyclical decline in beef production, the intervention stocks at the beginning of 1994 were small and the beef market caused no problems. The projections of the export surplus in the medium long term suggest that an appeal will regularly have to be made on the safety net regulation, so that during the peak of the beef cycle

the low safety net prices will be decisive for the market price and not the intervention prices on which the compensations are based.

The Mac Sharry reform presented the possibility of cutting the EU milk quota for 1993/94 by 1%. With regard to the development of the intervention stocks of butter and skimmed-milk powder in 1993, there was little reason for the European Agriculture Ministers to make this cut. Italy, Greece and Spain were even temporarily assigned additional milk quota, whilst the quotas for the northern Member States were also raised. The price of butter, however, was reduced. Expenditure on the dairy sector is still fairly extensive, which is connected with the fact that milk production in the EU exceeds internal consumption by 15-20%. At EU level, dairy policy is not fundamentally under discussion.

Although the Mac Sharry reform has been only partly introduced in practice, the discussions on further adjustments of the Common Agriculture Policy continue. Among other things, a further replacement of price support by (temporary) direct payments is advocated, whereby the Member States would have to play a greater part, also financially.

The Mac Sharry reform related principally to the northern products. Meanwhile the Commission has also made proposals for a policy reform for some southern products. That relates in the first place to wine, for which a quota regulation has been suggested. The size of the proposed wine quota is 20-25% below the present level of production, but still nearly 20% above the volume of consumption. It has further been decided to reopen the uprooting regulation for fruit trees for 1994/95. Besides that, it has to be expected that the fruit and vegetable sector will be faced with a limitation of intervention.

3.4 Structural and rural policy

Within agricultural structural policy, attention is shifting increasingly from modernization measures to support for production methods that are compatible with conservation of the landscape, nature and environment and to regional measures. At the end of the eighties about a quarter of EU expenditure on agricultural structural policy went to the less favoured areas directive. Under this scheme farmers in less favoured areas can be granted direct income support. The payments, which are based on the numbers of animals or hectares, varied in 1990 from approximately 350 ECU per farm in Greece, Portugal and Spain to more than 3,000 ECU in Luxembourg and the United Kingdom. A comparison of the direct subsidies per family worker in less favoured areas and normal areas shows that subsidies in less favoured areas are in general higher. In less favoured areas in the northern and central parts of the EU the payments are over three times as high as in normal areas, whereas the differences in the southern part of the EU are very small. The socio-economic situation in less favoured areas differs considerably. An income-

supporting policy is therefore not the most effective form of policy for all regions. In fact a territorial approach is needed.

The number of regions in the EU that fall under objective 1 and objective 5b has considerably increased for the period 1994-1999. These areas have priority within EU structural policy. Of the financial resources that become available between 1994 and 1999, 96 billion ECU is intended for the objective 1 areas and 7 billion ECU for the objective 5b areas. Of this, 300 million ECU has been allocated to the Netherlands.

4. STRUCTURAL DEVELOPMENTS IN DUTCH AGRICULTURE

4.1 Development of the number of holdings and workers in past years

In May 1993 there were in the Netherlands over 92,000 full-time holdings registered in agriculture and horticulture. This number was 1.4% less than in the preceding year. This drop was clearly less than in the period 1987-1992, when the annual decrease amounted to over 2.5%. The decline in the number of holdings was greatest among the specialized dairy farms (-3.2%). The number of part-time holdings in the Dutch agricultural sector in 1993 was over 27,000, which meant an increase of 1.3% between May 1992 and May 1993. This rise was equal to that in the period 1987-1992. The number of part-time holdings corresponds to nearly 23% of the total number of agricultural and horticultural holdings. Nearly half of the part-time holdings apply themselves to keeping grazing animals, such as sheep and beef cattle.

The presence of a successor is an important condition for the continuation of agricultural holdings. In May 1993 a successor was present on 45% of the full-time holdings with a farmer of fifty years or older. This percentage corresponds to that in 1988. However, on the glasshouse holdings the succession percentage has fallen considerably from 48 in 1988 to 43 in 1993. This is probably related to the poor income development and the threatening costs of environmental measures. On the specialized dairy farms the succession percentage is relatively high.

The total number of workers in the agricultural sector in May 1993 was over 290,000, 0.3% less than in the year before. In the period 1988-1993 a slight rise occurred in the number of workers, which was the result of a limited decrease in the number of family workers on the one hand and a considerable rise in the number of non-family workers on the other. The share of the non-family workers in the total agricultural labour supply has as a result risen from 17% in 1988 to 21% in 1993. In horticulture the share of this personnel, of some 50%, is much higher than on animal and arable farms, where it is some 7%. The number of female workers increased between 1988 and 1993 by nearly 2% per year, whereas the number of male workers fell annually in that period by over 0.5%. The labour supply in agriculture has received increasing attention in recent years. Bottlenecks in this include the underexposure of labour as a strategic factor in business policy, the seasonal ups and downs in the demand for labour and the lack of recruiting and binding capacity of the agricultural sector.

4.2 Land use and landscape conservation

The agricultural area, which covers more than 70% of Dutch territory, has declined from 2.5 million hectares in 1950 to 2.4 million hectares in 1989 (table 4.1). The strongest decline in the agricultural area occurred in the seventies (-0.5% per year). Thereafter the reduction was not even 0.2% per year. The wooded area has grown from 240,000 hectares in 1950 to 300,000 hectares in 1989. The area of nature reserve has conversely fallen from over 260,000 hectares in 1950 to 140,000 hectares in 1989.

Expectations are that the withdrawal of land from agricultural use for building etcetera, but above all for laying out forests and nature reserves, will be somewhat greater in the years to come than it was in the recent past. This is connected with the policy intentions of the government to expand forests and nature reserves by 190,000 hectares in the next 25-30 years. For the time being, it is not clear to what extent it is necessary or desirable that land be bought up and managed by government bodies or that it be managed by farmers. From a financial point of view the decision will probably favour government bodies in strict forms of conservation - in which natural values are closely protected - and favour farmers in light forms. Calling in farmers to assist in nature and landscape conservation at the same time meets their growing need for other sources of income. In 1993 over 4,500 Dutch farmers had concluded a conservation agreement for in total some 30,000 hectares under what is called Relation Paper Policy. In this Paper (from 1975) the Dutch government presented the broad outlines of the policy on the relation between agriculture and the conservation of nature and landscape. The intention is that the area with conservation agreements is ultimately extended to 100,000 hectares.

Table 4.1 *The development of land use in the Netherlands, 1950-1989 (x 1,000 hectares)*

| | Agricultural use a) | Nature reserve | Forests | Other land use a) |
|------|---------------------|----------------|---------|-------------------|
| 1950 | 2,512.9 | 264.2 | 242.2 | 277.7 |
| 1960 | 2,552.2 | 235.6 | 267.9 | 307.1 |
| 1970 | 2,551.9 | 199.1 | 298.1 | 328.8 |
| 1979 | 2,425.2 | 160.3 | 294.0 | 514.4 |
| 1985 | 2,397.4 | 149.7 | 300.3 | 544.7 |
| 1989 | 2,383.3 | 143.8 | 304.1 | 559.5 |

a) The data before and after 1970 are not entirely comparable.

Source: CBS, Land Statistics, various years.

4.3 Cropping plan and land prices

The total registered area of agricultural land in the Netherlands amounted to 1,987,000 hectares in May 1993, which was a little more than in the preceding year. The area of grassland (1,063,000 hectares) and the area of outdoor horticulture (101,000 hectares) remained practically the same. The area of arable land (566,000 hectares) contracted by 2.6%, the greater part (11,000 hectares) accounted for by potatoes. The area under fodder crops (green maize) has conversely grown by 11,000 hectares to 235,000 hectares and the set-aside area increased by about 6,000 hectares to some 23,300 hectares. The area of horticulture under glass also increased and amounted to 10,300 hectares.

The spatial allocation of the various agricultural activities did not undergo any sweeping changes in the past decade. Only intensive livestock farming has concentrated somewhat more strongly in the sandy area in the south of the country, where by now more than half of this branch of farming is to be found. The share in arable production of the traditional arable areas in the north and southwest of the country has somewhat lessened. Horticulture under glass has in the last ten years spread somewhat more strongly over the country, although nearly 70% of these activities still takes place in the west of the country.

There is a possibility that in the future a shift of livestock farming from the sandy areas in the east and south of the country to the north and to Zeeland (southwest) is going to occur. Such a movement proceeds from the policy of reducing the environmental burden - particularly ammonia emission - and lowering the pressure on the land market. The spatial planning for intensive livestock farming is aimed at maintaining the regional concentrations, whereby the production must be 'clean'. For horticulture under glass, bulb-growing and tree nurseries the endeavour is to maintain and strengthen the existing centres.

The average land prices in the Netherlands in 1993 maintained themselves at about the same level as in 1992. However, at regional level there were both price increases and price cuts. For a hectare of unlet land without buildings approximately 38,000 guilders ¹⁾ was paid on average and for a hectare of let land without buildings 20,000 guilders. The level of the land price is chiefly determined by the expectations with regard to the future family farm income per hectare. Further, manure policy has an upward effect on land prices, whereas the milk quota system has a downward effect. In some areas with intensive agriculture such as the North Brabant Sandy Area and North Limburg, land prices fell in 1993. In other areas, such as the Frisian Peat Grassland district and the Peat Grassland Area in South Holland, precisely the opposite took place, partly under the influence of the favourable results in dairy farming.

1) In 1993 one guilder was 0,46 ECU.

The area of let land in the Netherlands fell between 1950 and 1993 from 1,225,000 hectares to 606,000 hectares, and today covers only 30% of the total agricultural area as against more than 52% in 1950. Leasing of land by private persons has declined more strongly than leasing by the government and organizations. Causes of the decrease in the leased area are: 1) the relatively low rentals in relation to the price of land, so that the direct return for the landlord is very low, and 2) the phenomenon that the price of let land is only slightly more than half of the price of unlet land. The latter is largely connected with the strong legal position of the tenant. The government is trying to do something about both these aspects. It can be established that the decline in the leased area has been proceeding somewhat more slowly in recent years than before.

4.4 Production capacity and production structure

In 1993 the production capacity in various parts of the Dutch agricultural sector was less than in the year before. This decline cannot be viewed in detachment from the depression in various sectors, which is bound up in part with changes in policy. Nevertheless, pig-keeping and vegetable growing under glass did display some growth. With the introduction of the milk quota system and the Interim Intensive Livestock Farming Act in 1984 an end came to the unhampered expansion of livestock farming. Between 1984 and 1991 the size of all continued farms increased on average by nearly 6%. However, on among 20-30% of the farms contraction occurred.

On the arable farms the area under horticultural crops increased from 12,000 hectares in 1984 to 20,000 hectares in 1991, but on the whole outdoor vegetable-growing on most farms remains a marginal event. The average size of the arable farms in this period grew by 3% and the deployment of labour fell by 5%. On dairy farms the milk quota system led to a reduction in the number of dairy cattle and to keeping more beef cattle. The size of the dairy farms decreased by an average of 5% between 1984 and 1991. Conversely, labour productivity did not fall, owing to the fact that the volume of labour simultaneously decreased by some 7%.

On a large number of the smaller dairy farms the quota has been wholly or partly sold, above all to medium-sized and large dairy farms. In the period 1988-1991 5% of the farms were annually involved in the transfer of milk quota. On average approximately 300,000 tons of milk quota were sold every year. This corresponds to more than 2.5% of the total Dutch milk quota. In recent years the price of the milk quota has been around four guilders per kilogram. In addition to buying and selling, renting and leasing milk quota also takes place on a large scale. In 1991 over 280,000 tons were involved in renting and leasing.

Despite restrictions from the viewpoint of environment and physical planning, the Dutch pig population grew from 11 million in 1984 to 13

million in 1991. The average size of the continued pig farms grew by 6%. Some 70% of the breeding pigs and over 50% of the fattening pigs were kept on specialized farms in 1993. The importance of 'closed farms' - farms that keep both breeding and fattening pigs - has been growing strongly in recent times. A major explanation for this is that the risk of outbreaks of contagious diseases is less on closed farms. The size of and the volume of labour employed in glasshouse holdings both grew between 1984 and 1991 by some 25% on average. Cultivation has been further intensified, which is connected among other things with the transition from growing in soil to substratum cultivation.

5. AGRICULTURE AND THE ENVIRONMENT

5.1 Results of environmental policy

The efforts to have the Dutch agricultural sector produce in a more sustainable fashion are beginning to have an effect. For instance, the use of pesticides lessened by nearly a quarter between 1985 and 1992 and ammonia emission by over a third. In addition the surplus of phosphate and nitrogen has been cut back by 15% and 20% respectively. However, energy consumption - and thus CO₂ emission - in the agricultural sector is still displaying a rising trend. It also looks as if the policy objectives of reducing the emission of pesticides to surface water and decreasing the desiccated area will not be met in time.

Agricultural environmental policy in the Netherlands is criticized from two sides: on the one hand it is claimed that it is deficient from an ecological point of view, and on the other the costs are said to be so high, that the competitiveness and the continuity of farms are endangered. So far the costs of environmental policy for the Dutch agricultural sector are limited: in 1992 the net costs amounted to an estimated 3.3% of the net value added. The environmental costs, of which livestock farming bore the brunt, related above all to facilities for manure storage, low-emission manure spreading and manure disposal.

Expectations are that the environmental costs will rise fairly quickly and in 2010 be about five times as high as in 1992. This rise will result in considerable tension between what is ecologically desirable and economically feasible. This tension can be removed in part by technical innovation and by an agricultural environmental policy in which the creativity of those directly responsible is encouraged as much as possible. In an individualized approach of this policy environmental costs can be kept down to a minimum.

5.2 Manure policy

An example of this approach is a 'mineral registration system', in which the input and output of minerals per farm is registered. In that way a mineral surplus can be calculated per farm and if necessary subjected to a charge. The intention was to make such mineral registration obligatory for all Dutch animal farms as from January 1, 1996. However, on account of problems with implementation and control, this has been postponed. As an alternative the 'manure sales scenario' has been proposed, in which a charge is imposed on manure that cannot be disposed of in a responsible manner. Other aspects of manure policy concern a

30% reduction in the phosphate production rights of the livestock farmers and the Manure Reallocation Act. This law, which renders possible trade in manure rights under many restrictions, will probably lead to a limited readjustment and an increase in scale of the remaining farms in intensive livestock farming in the concentration areas. Incidentally, farm expansion is also hampered by the introduction of the Ammonia and Livestock Farming Act, because expansion is in many cases possible only if elsewhere in the local area a reduction of the emission takes place, or if the emission on the farm involved is reduced. The latter can be achieved with the aid of the Green Label stalls, from which much less ammonia is released. In the last few years ammonia emission by the agricultural sector has decreased considerably: between 1990 and 1992 by over a quarter as against less than 15% in the five years before. Practically the whole decrease was accounted for by low-emission manure spreading.

5.3 Use of water, pesticides and energy

Both the emission of ammonia and the withdrawal of ground water and the resultant reduction of the ground water level, lead to a decline in the ecological quality of woods and nature reserves. In the latter the agricultural sector plays a part by the use of ground and surface water for drinking water for livestock and for irrigation, and by the performance of land development projects, such as the water level reduction. To counter desiccation, Dutch policy is aimed at a reduction in ground water consumption, which has to be attained by a charge. Infrastructural and land development measures are also envisaged.

The objective of reducing the use of pesticides by 35% in 1995 and by 50% in 2000 in respect of the reference period 1984-1988 will be attainable, broadly speaking. The aforementioned reduction in use is connected, among other things, with more economical spraying by the farmers, mechanical instead of chemical weed control, the use of resistant varieties, the application of biological control methods, restrictive rules with regard to soil disinfection, changes in market and price policy and above all the introduction of new active ingredients. To reduce the emission of pesticides to ground and surface water, the Discharge Order was enacted; this lays down that glasshouse holdings must be connected to a sewer system within a few years.

Energy consumption by the agricultural sector, about three quarters of which is accounted for by horticulture under glass, has been increasing in recent years. This is connected with the considerable expansion of the area under glass and with a switch to production methods that demand more energy per hectare. The possibilities of saving energy on glasshouse holdings, such as insulation of heating boilers, heat storage, heat pumps, double glazing, combined heat and power plants and use of residual and waste heat, are sometimes difficult to realize for economic or organizational reasons.

6. PRODUCTION AND TRADE

6.1 Agricultural and horticultural production in the Netherlands

The total volume of production of Dutch agriculture and horticulture grew by 1% in 1993 and the prices have fallen by 5% on average (table 6.1). Arable production in 1993 was somewhat greater than in the year before. The production of coarse grains displayed a sharp increase of more than 30% as the result of a larger area and higher hectare yields. The production of seed and starch potatoes increased through higher yields per hectare. Conversely, production of sugarbeet, ware potatoes, pulses and onions was lower. The prices of arable products rose on average by nearly 5%. However, cereal prices fell by over 20%, above all as the result of the Mac Sharry reform, whereas the prices of ware potatoes, oilseeds and onions displayed a considerable rise after the drop in price in 1992.

The production of vegetables in 1993 was practically identical with that in 1992. Just as in the previous years, the supply of cucumbers and paprika's shot up. Production growth of mushrooms, however, proceeded much more slowly than in recent years and the supply of tomatoes, lettuce and winter vegetables fell. Above all through a greater supply of pears and strawberries, fruit production ended 12% above the abundant harvest of 1992. The prices of both fruit and vegetables fell in

Table 6.1 Development of volume and prices of agricultural and horticultural products

| Product | Value (mln. DFL.) | Changes in % in relation to previous year | | | | | |
|------------------------------|----------------------|--|-----------------|-----------------|----------------|-----------------|-----------------|
| | | volume | | | price | | |
| | | 1992 (prov.) | 1991 (prov.) | 1992 (prov.) | 1993 (est.) | 1991 (prov.) | 1992 (prov.) |
| Arable products | 2,675 | -4.4 | 5.2 | 0.5 | -3.8 | -15.1 | 4.5 |
| Vegetables and fruit | 4,655 | 0.4 | 14.2 | 2.0 | 4.7 | -18.8 | -5.0 |
| Cut flowers | 3,825 | 3.4 | 4.2 | 1.0 | 7.1 | -6.3 | 3.5 |
| Pot plants | 2,200 | 7.3 | 4.5 | 3.0 | 1.5 | -3.9 | 1.0 |
| Other horticultural products | 1,677 | 7.5 | -0.0 | 3.0 | 2.4 | 3.0 | 1.0 |
| Milk | 8,735 | -1.6 | -1.6 | 1.0 | 1.1 | 2.5 | -1.0 |
| Meat and eggs | 14,378 | 2.9 | 1.8 | 0.5 | -1.6 | 1.8 | -14.0 |
| Total/Average | 38,145 | 1.9 | 3.2 | 1.0 | 1.0 | -2.8 | -5.0 |

1993 by some 5% on average. The poor prices are related to the large European supply of fruit and vegetables as the result of a higher production per hectare and an expansion of the area. Both the production and the prices of ornamental products in the Netherlands rose in 1993 by approximately 2%. The production of cut flowers in 1993 was only 1% greater than in the year before and the prices improved by over 3%. Roses, carnations and tulips in particular became more expensive; conversely, freesias and gerberas became cheaper. The production of pot plants rose by some 3% in 1993 and the prices went up somewhat. The supply of tree nursery products also increased slightly, but the prices did not change. The production of flower bulbs rose in 1993 by 4% and the prices went up by 2%.

Milk production displayed a modest growth in 1993 and the milk price fell somewhat. The total production of meat and eggs was practically just as large as in 1992. Less beef and veal was produced and more poultry meat, pigmeat and sheepmeat. The price of beef rose somewhat, but the other meat prices fell sharply. The low pig prices were above all a consequence of the deterioration in outlets on the export markets. The production of eggs fell by 1% and the prices lay somewhat higher.

6.2 Processing and consumption of agricultural products

Nearly half of the agricultural and horticultural products of the Netherlands undergo processing in the food, drink and tobacco industry before reaching the consumer. In 1992 the direct contribution of that industry to the gross domestic product (GPD) was 3.2%. Together with the contribution of primary agriculture and horticulture, the share of the agribusiness in GDP worked out at 6.8%. With respect to 1985 the production in the food, drink and tobacco industry increased by 24%, whereas that in the total industry grew by only 15% (table 6.2). The growth of production in the livestock products sector has in recent years

Table 6.2 *Development of the production volume of the food, drink and tobacco industry (index of gross production, 1985=100)*

| | 1985 | 1988 | 1990 | 1991 | 1992 | 1993 (v) |
|--|------|------|------|------|------|-------------|
| Total food, drink and tobacco industry | 100 | 108 | 118 | 120 | 123 | 124 |
| of which: livestock products | 100 | 89 | 92 | 96 | 96 | 98 |
| other foodstuffs | 100 | 118 | 129 | 128 | 133 | 136 |
| drinks | 100 | 101 | 115 | 124 | 128 | 116 |
| tobacco | 100 | 104 | 135 | 146 | 138 | 132 |
| Total industry | 100 | 107 | 115 | 116 | 117 | 115 |

Source: Central Bureau of Statistics.

again been keeping pace with that in the whole food, drink and tobacco industry. In the whole period 1985-93 this had still lagged far behind the other sectors. This was caused on the one hand by the decline in the dairy sector on account of the milk quota system and on the other by the stagnation in the slaughterhouses and the meat processing industry. Above all, the pig slaughterhouses are still confronted with an overcapacity of slaughtering hooks. Development of both the return and employment in the food, drink and tobacco industry have in recent years displayed a more favourable picture than that of the total industry.

Spending on food, drinks and tobacco in the Netherlands in 1993 exceeded 51 billion guilders. Nearly two thirds of this amount was spent on fresh and processed foods, such as bread, dairy products, vegetables, fruit and preserves and the rest on semi-luxuries, such as sweets, drinks, tobacco and ice cream. That amount corresponds to 15% of the total domestic private consumer expenditure; in 1985 the proportion was still some 17%. The cause of this relative reduction is both a volume and a price effect. In recent years stabilization of the consumption per head of the population has become apparent for most foods, except in the case of whole milk, margarine and beef, for which a clear decrease can be observed. This seems to have brought to an end the constant rise in the eighties.

6.3 Dutch agricultural imports and exports in 1993

The advent of the internal EU market with effect from January 1, 1993 also meant a change in the registration of imports and exports between the EU Member States. As a result, there are no properly comparable figures available for 1993 on the development of Dutch trade with the EU Member States. It can be derived from the registered trade figures that the export volume of agricultural products and foodstuffs in 1993 has increased and that the volume of imports has probably hardly changed in respect of 1992. Growing export markets outside the EU in 1993 were above all the countries in Central and Eastern Europe, notably Hungary, the Czech Republic, Slovakia, Bulgaria, the Baltic States and the CIS, North Africa and the USA. The prices of both the exported and the imported products were in 1993 in general somewhat lower than in 1992. The volume and price developments of imports and exports indicate that the balance of agricultural trade, which in 1992 worked out at 26.2 billion guilders, probably improved somewhat in 1993.

6.4 Imports and exports of horticultural products since 1980

The value of Dutch exports of horticultural products in 1992 amounted to over 13 billion guilders, whereas horticultural products to the value of somewhat less than 3 billion guilders were imported

Table 6.3 Dutch exports and imports of horticultural products, 1981-1992 (in million guilders)

| | "1981" a) | "1984" | "1987" | "1990" | 1992 |
|-----------------------------------|-----------|--------|--------|--------|--------|
| Exports of horticultural products | 5,802 | 7,535 | 9,260 | 11,894 | 13,072 |
| of which: ornamental products b) | 3,218 | 4,354 | 5,548 | 7,028 | 7,866 |
| fresh fruit and vegetables c) | 2,585 | 3,182 | 3,712 | 4,866 | 5,205 |
| Total agricultural exports | 39,233 | 48,576 | 49,471 | 58,781 | 63,465 |
| Imports of horticultural products | 1,146 | 1,436 | 1,833 | 2,409 | 2,897 |
| of which: ornamental products | 332 | 450 | 617 | 826 | 1,048 |
| fresh fruit and vegetables | 814 | 987 | 1,216 | 1,583 | 1,848 |
| Total agricultural imports | 27,567 | 33,607 | 3,232 | 34,020 | 37,295 |

a) "1981" = average of 1980, 1981 and 1982, etcetera; b) Bulbs, trees and shrubs, cut flowers and other ornamental products; c) Tomatoes, cucumbers, onions, other fresh vegetables grown in the Netherlands, apples, pears and other fresh fruit grown in the Netherlands.

Source: Central Bureau of Statistics, Statistics of foreign trade; calculations by LEI-DLO.

(table 6.3). Exports of horticultural products have grown more quickly in the last ten years than the rest of agricultural exports. As a result the share of horticultural products in agricultural exports rose from 15% in 1981 to 21% in 1992. In addition, exports of ornamental products have increased more strongly than those of fresh fruit and vegetables. The trade balance of horticultural products in 1992 was over ten billion guilders, as against somewhat less than five billion at the beginning of the eighties.

Some 80% of the exports of ornamental products and more than 85% of the exports of fresh fruit and vegetables are directed towards countries within the EU. Of the third countries Japan has in recent years been developing as an important destination for ornamental products. At the beginning of the nineties about half of the exports of ornamental products consisted of cut flowers, some 15% of flower bulbs and 7% of trees and shrubs. The rest of the exports (nearly 30%) was formed by among others indoor plants and planting stock. Of the Dutch exports of fresh fruit and vegetables in 1992, about a quarter consisted of tomatoes, a fifth of fresh fruit and a third of other fresh vegetables, such as paprika's, asparagus and mushrooms.

Over 40% of the imports of ornamental products in 1992 came from the EU. Much of these imports was re-exported. In that way foreign flower growers make use of the services of the Dutch auctions. About 40% of imports of ornamental products in 1992 consisted of cut flowers, of which more than 70% came from Israel, Kenya, Spain and Zimbabwe. More than half of Dutch imports of fresh fruit and vegetables in 1992

came from the EU Member States. Within the EU Spain, with a 20% share in imports, was the largest country of origin. Spain supplies above all fresh vegetables. Outside the EU Chile was the largest country of origin of fresh fruit and vegetables, and had a 17% share in 1992. From that country chiefly fruit is imported.

7. RESULTS OF SECTORS AND HOLDINGS

7.1 Returns and costs of the arable and livestock sector

The production value of Dutch agriculture (arable farming and stock-keeping) in 1992/93 was somewhat lower than in the year before (table 7.1). The volume of production increased a little, but the prices fell considerably. As regards the volume, increases among arable products, pigmeat and poultry meat contrasted with decreases among beef and veal and eggs. The drop in prices was the result of the unfavourable price development in arable farming and intensive livestock farming. To only a limited extent, this was made up for by price increases for cattle products. The value of the non-factor costs increased by 1%, among other things through a somewhat larger consumption of feed and services. The result of these developments was a considerable decline in the net value added by 18%. The value of the factor costs rose by about 2%, above all through the higher price of labour. The result was that only 54% of the factor costs was covered by the value added, whereas in 1991/92 this was still the case for two thirds. In 1992/93 arable farming, with a cover percentage of something above 30, had the lowest score.

In 1993/94 the volume of production of agriculture remained practically the same (table 7.1). As against a rise in production in intensive livestock farming and arable farming there was a fall in cattle-keeping and calf fattening. The average selling price fell for the second successive year, by 4%. Prices in pig-keeping, as in 1992/93, went down by nearly

Table 7.1 Returns and costs of the agricultural sector (exclusive of horticulture)

| | Value (mln.DFL) | | | Changes in % relation to previous year | | | |
|------------------|-----------------|--------------------|-------------------|--|-----------------|------------------|-----------------|
| | 1991/92 | 1992/93 (prov.) | 1993/94 (est.) | volume | | price | |
| | | | | 92/93 (prov.) | 93/94 (est.) | 92/93 (prov.) | 93/94 (est.) |
| Returns | 25,555 | 24,290 | 23,295 | 1.0 | 0.0 | -6.0 | -4.0 |
| Non-factor costs | 17,670 | 17,855 | 17,400 | 0.5 | -0.5 | 0.5 | -2.0 |
| Net value added | 7,885 | 6,435 | 5,895 | 1.5 | 1.5 | -20.0 | -10.0 |
| Factor costs | 11,690 | 11,900 | 11,615 | -0.5 | -2.0 | 2.0 | -0.5 |
| Total costs | 29,360 | 29,755 | 29,015 | 0.0 | -1.0 | 1.0 | -1.5 |

20%. In arable farming a limited price recovery occurred. The value of agricultural production declined further in 1993/94 through the above. The value of the non-factor costs likewise fell, which was mainly caused by the lower prices for feed. The result of this development was that the value added in 1993/94 again declined considerably, now by over 8%. Above all through a smaller volume of labour and a lower interest rate the factor costs displayed a drop. Because the decline in the factor costs was less than that in the value added, the cover percentage fell back further to just over 50. In intensive livestock farming only 33% of the factor costs was covered by the value added, whereas this percentage for arable farming recovered somewhat to 43.

It looks as if in 1994/95 a limited recovery will take place of the results of pig-keeping and table chicken-keeping through somewhat higher selling prices and lower feed prices. The results of layer-keeping, which is confronted with very low egg prices, will conversely deteriorate further. For cattle-keeping too a decline in the results is expected, owing to the fact that the lower selling prices will be only partly compensated for by lower feed prices. In arable farming a further recovery is foreseen on the basis of the trend of the prices for cereals and potatoes and the limited increase in the costs.

7.2 Returns and costs of the horticulture under glass sector

The total production value of the Dutch horticulture under glass sector in 1992 remained just above eight billion guilders, which was over 6% less than the record amount in 1991 (table 7.2). The decrease was caused by declining prices in all sectors, whereby the price drop of more than 20% in vegetable growing under glass was the largest.

Table 7.2 Returns and costs of horticulture under glass

| | Value (mln. DFL) | | | Changes in % relation to previous year | | | | | |
|------------------|------------------|-------|-------------|--|------|-------------|-------|-------|-------------|
| | 1991 | 1992 | 1993 (est.) | volume | | | price | | |
| | | | | 1991 | 1992 | 1993 (est.) | 1991 | 1992 | 1993 (est.) |
| Returns | 8,625 | 8,085 | 8,200 | 4.0 | 5.0 | 1.5 | 6.5 | -10.5 | -0.5 |
| Non-factor costs | 5,535 | 5,665 | 5,945 | 7.0 | 2.0 | 6.5 | 2.5 | 0.5 | -1.5 |
| Net value added | 3,090 | 2,420 | 2,255 | -1.0 | 13.0 | -9.5 | 13.5 | -30.5 | 2.5 |
| Factor costs | 3,365 | 3,515 | 3,690 | 4.5 | 1.0 | 2.5 | 0.5 | 3.0 | 2.5 |
| Total costs | 8,900 | 9,180 | 9,635 | 6.0 | 1.5 | 5.0 | 2.0 | 1.5 | 0.0 |

The volume of production rose by 5%. In 1992 the non-factor costs displayed an increase of 2.5%. Especially the lower energy costs played a part in this limited growth. As a result of this, the net value added in horticulture under glass fell by nearly 22%. The factor costs increased by 4.5%. This was the result of higher labour costs on the one hand and a lower interest on the other. Only 69% of the factor costs was covered by the value added in 1992; in 1991 this was still 92%. The sharpest fall in this percentage occurred in vegetable growing under glass: from 101 in 1991 to 58 in 1992.

According to the estimate the total production value of horticulture under glass recovered somewhat in 1993 from the decline in 1992 with an increase of 1% (table 7.2). However, this did not apply to vegetable growing under glass, for which the production value fell by a further 5%. A favourable development of prices and a modest increase in the volumes led to an increase in the selling price of some 4% for both cut flower and pot plant growing. The non-factor costs rose in 1993 by 5% as a result of the larger volume of materials and other means of production. Energy costs barely increased. The factor costs too rose by 5% in 1993. A fall of 7% in the net value added resulted, which was mainly accounted for by vegetable growing under glass. The ratio between the factor costs and the net value added deteriorated further in 1993 and amounted to approximately 60% for the whole of horticulture under glass sector.

For 1994 a clear price recovery for vegetable growing under glass is becoming apparent. Assuming that the cost increase will be limited, an improvement in the results of vegetable growing under glass can be expected in 1994. For both cut flower and pot plant growing it looks as if the results in 1994 will not differ much from those of 1993.

7.3 Results of arable and livestock farms

On the average Dutch farm (arable and livestock farming) entrepreneurial income in 1992/93 fell by 30% to rather more than 36,000 guilders per entrepreneur. Only on the larger dairy farms entrepreneurial income displayed an increase, namely some 17% (table 7.3). On the smaller dairy farms a deterioration of nearly 6% occurred and on the larger arable and intensive livestock farms entrepreneurial income plummeted by approximately 70%. On the smaller arable farms entrepreneurial income even became negative. With regard to the decline in entrepreneurial income in intensive livestock farming it must be noted that the results in 1991/92 achieved a historic high.

The estimates for 1993/94 point to a further deterioration (-6%) of the entrepreneurial income to 34,000 guilders on average. This decline is largely accounted for by intensive livestock farming, where on average a negative entrepreneurial income was gained (table 7.3). This was due above all to the poor course of events in pig-keeping and table chicken-

Table 7.3 Average entrepreneurial income on farms (x 1,000 DFL per farmer)

| | Number of farms in 1992/93 | Average entrepreneurial income | | | | |
|-----------------------|----------------------------|--------------------------------|---------|---------|---------|----------------|
| | | 1989/90 | 1990/91 | 1991/92 | 1992/93 | 1993/94 (est.) |
| Dairy farms | | | | | | |
| - larger farms | 26,250 | 90.5 | 61.5 | 47.1 | 55.0 | 53.0 |
| - smaller farms | 6,190 | 37.3 | 19.2 | 19.2 | 18.1 | 21.0 |
| Pig and poultry farms | | | | | | |
| - larger farms | 6,400 | 123.4 | 103.8 | 122.7 | 34.5 | -8.0 |
| - smaller farms | 2,310 | 42.3 | 30.5 | 54.1 | 2.2 | -4.0 |
| Arable farms | | | | | | |
| - larger farms | 8,790 | 83.0 | 69.7 | 48.8 | 15.0 | 31.0 |
| - smaller farms | 1,530 | 24.9 | 11.7 | 4.7 | -5.7 | 4.0 |

keeping. On the larger dairy farms a decline in entrepreneurial income likewise occurred, but this was confined to a few per cent. Entrepreneurial income on the arable farms, which displayed a strong recovery, nevertheless stuck at a low level.

7.4 Results of horticultural holdings

Entrepreneurial income on the average Dutch glasshouse holding was rather more than 21,000 guilders per entrepreneur in 1992, which was some 75% less than the year before. On the pot plant holdings the fall in entrepreneurial income was confined to above 30%, but on the cut flower holdings income halved and on the vegetable under glass

Table 7.4 Average entrepreneurial income on horticultural holdings (x 1,000 DFL per entrepreneur)

| | Number of holdings in 1992 | Average entrepreneurial income | | | | |
|---------------------------------|----------------------------|--------------------------------|-------|-------|-------|-------------|
| | | 1989 | 1990 | 1991 | 1992 | 1993 (est.) |
| Vegetables under glass holdings | 3,360 | 81.2 | 92.6 | 111.6 | -8.4 | -63.5 |
| Cut flower holdings | 3,410 | 56.6 | 62.6 | 68.6 | 36.2 | 42.0 |
| Pot plant holdings | 900 | 112.8 | 116.8 | 89.9 | 61.9 | 74.0 |
| Field vegetable growers | 1,080 | 53.3 | 80.9 | 34.7 | 31.6 | 4.5 |
| Tree nurseries a) | 1,040 | 84.6 | 90.0 | 94.0 | 93.6 | - |
| Fruit growers | 1,320 | 41.3 | 71.1 | 79.2 | -37.0 | -26.5 |
| Flower bulb growers | 1,310 | 46.7 | 64.5 | 89.0 | 105.1 | 123.5 |
| Mushroom growers | 580 | 92.8 | 63.2 | 31.1 | 7.1 | 33.5 |

a) 1989 = 1989/90 etcetera.

holdings even a negative income was reached (table 7.4). On the fruit-growing and mushroom holdings too entrepreneurial income plummeted. On the field vegetable holdings and the tree nurseries entrepreneurial income in 1992 conversely remained practically unchanged. The bulb-growing holdings formed the only production branch in horticulture in which an increase in the already fairly high entrepreneurial income was achieved.

In accordance with the estimate for 1993 entrepreneurial income on the vegetable under glass and the field vegetable holdings fell further, which was caused above all by the poor development of the selling prices. For the entrepreneurial income on the cut flower, pot plant and mushroom holdings a limited increase was expected in 1993, but nevertheless the income remained at a fairly low level. On the fruit-growing holdings too a slight recovery occurred, as expected, although a negative income still applies. It looks as if the rising trend in entrepreneurial income on the bulb-growing holdings has continued in 1993 and that a top income of some 124,000 guilders was attained.

8. INCOME, FINANCING AND INVESTMENTS

8.1 Arable and livestock farms

In connection with the declining business results the family farm income on the average Dutch farm in 1992/93 fell by over a quarter to some 50,000 guilders per entrepreneur (table 8.1). On the arable farms this income averaged nearly 18,000 guilders, on the pig and poultry farms approximately 38,000 guilders and on the dairy farms 63,000 guilders. After addition of the non-farm income and after deduction of the taxes and social security premiums paid a disposable income of 53,000 guilders resulted for the average farm. That was nearly a fifth less than in 1991/92. Of this income, only 5,000 guilders was saved. The total amount of own financial resources of the joint farms decreased through the lower savings and the somewhat higher depreciation from 4.4 billion guilders in 1991/92 to 3.6 billion guilders in 1992/93. In addition on balance more than one billion guilders was borrowed. Per entrepreneur this was over 15,000 guilders (Table 8.1). Nearly two thirds of the available resources were used for investments, which averaged nearly 77,000 guilders per farm. That was more than 8% less than in the year before, because above all less was invested in land and farm buildings.

In accordance with the estimate, family farm income of the average farm fell in 1993/94 by over 5% to 47,000 guilders (table 8.1). However, on the different farming types the picture varies somewhat: for the dairy farms stabilization of the family farm income is estimated for 1993/94, and for the arable farms a recovery to 39,000 guilders, whereas for the pig and poultry farms it looks as if family income has fallen back to some 6,000 guilders. For the second successive year dissaving will have occurred

Table 8.1 *Income, savings and investments on farms (x 1,000 DFL per farmer)*

| | 1989/90 | 1990/91 | 1991/92 | 1992/93 | 1993/94 (est.) |
|-----------------------------------|---------|---------|---------|---------|-------------------|
| Family farm income | 96.2 | 71.3 | 67.4 | 49.8 | 47.0 |
| Total family income | 111.5 | 89.8 | 86.0 | 69.0 | 65.0 |
| Disposable income | 101.6 | 73.7 | 66.0 | 53.0 | 51.0 |
| Savings | 53.2 | 24.3 | 16.8 | 5.2 | 4.0 |
| Total private financial resources | 90.6 | 62.3 | 58.6 | 45.7 | - |
| Increase in outside capital | -0.3 | 12.6 | 15.0 | 15.6 | - |
| Gross investments in holdings a) | 76.8 | 73.1 | 83.5 | 76.8 | - |

a) x 1,000 DFL per farm.

on the arable farms and in intensive livestock farming. On the dairy farms savings remained at the same level as in 1992/93.

8.2 Glasshouse holdings

Family farm income on the average Dutch glasshouse holding decreased in 1992 by two thirds to some 35,000 guilders per entrepreneur (table 8.2). On the vegetables under glass holdings, where in 1991 a top income of 120,000 guilders was attained, the fall in income by 95% was the greatest. On the pot plant holdings family income fell by over a quarter to 79,000 guilders and on the cut flower holdings it fell back by over 40% to 49,000 guilders. Because non-agricultural income and taxes paid remained about the same, disposable income also fell sharply. Despite the unfavourable business results, family spending in 1992 was somewhat above the level of the preceding year. As a result, on the average horticulture under glass holding, a sum of approximately 36,000 guilders per entrepreneur was dissaved in 1992. Through this dissaving, which was accompanied by higher depreciation, the total amount of own financing resources of the horticulture under glass sector declined from 1.5 billion guilders in 1991 to 0.8 billion guilders in 1992. In addition, on balance over 400 million guilders more was borrowed. Per entrepreneur this was over 46,000 guilders, which was considerably more than in the two years before (table 8.2). Some two thirds of the available resources was used for investments, which averaged 150,000 guilders per holding. That was somewhat less than in the year before.

The estimates for 1993 indicate that the lowest point in income in 1992 had not yet been reached. As expected, family farm income of the average glasshouse holding in 1993 was rather more than 18,000 guilders, which means nearly a 50% drop in respect of the preceding year (table 8.2). This deterioration was entirely accounted for by the vegetables under glass holdings, for which a negative family farm income

Table 8.2 *Income, savings and investments on glasshouse holdings (x 1,000 DFL per entrepreneur)*

| | 1989 | 1990 | 1991 | 1992 | 1993 (est.) |
|-----------------------------------|-------|-------|-------|-------|----------------|
| Family farm income | 87.9 | 95.0 | 101.6 | 34.8 | 18.3 |
| Total family income | 101.3 | 110.8 | 117.8 | 50.4 | 31.0 |
| Disposable income | 71.7 | 91.7 | 93.2 | 25.1 | 9.5 |
| Savings | 15.1 | 32.7 | 32.5 | -36.5 | -54.5 |
| Total private financial resources | 89.5 | 112.7 | 120.5 | 65.1 | - |
| Increase in outside capital | 65.5 | 36.2 | 10.9 | 46.2 | - |
| Gross investment in holdings a) | 179.4 | 172.9 | 151.5 | 150.0 | - |

a) x 1,000 DFL per holding.

income of nearly 50,000 guilders has been estimated. Conversely, on the cut flower and pot plant holdings an increase in income of 10-15% has taken place. Through the lower interest rate a decline in non agricultural income is foreseen. Tax expenditure fell only slightly, so that the disposable income per entrepreneur on the average glasshouse holding will have been even less than 10,000 guilders. It is assumed that family spending in 1993 will have risen further. The result of this is that on average more than 50,000 guilders per entrepreneur will have been dissaved. On the vegetables under glass holdings the dissaving will have amounted to over 125,000 guilders and on the cut flower holdings to some 14,000 guilders. Conversely, on the pot plant holdings an estimated 16,000 guilders was saved.

ANNEX

Definitions

Dutch Size Units (dsu): A unit for the economic size of agricultural holdings. The dsu is based on the standard gross margins (sgm), which are calculated by deducting related specific costs from the gross returns per hectare or per animal. The sgm is expressed in ECU (current prices). On the EU level the size of farms is not measured in sgm, but in the more workable European Size Units (ESU). Dsu is the Dutch variant of the ESU. The dsu is recalculated frequently in such a manner that the average farm size in dsu corresponds with the development of the volume of the value added of the average farm. Some examples: 1 hectare wheat = 0.85 dsu; 1 hectare sugarbeet = 1.83 dsu; 1 dairy cow = 1.24 dsu; 1 sow = 0.26 dsu and 1 hectare tomatoes under glass = 151.37 dsu

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

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

Net value added: gross returns minus non-factor costs

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

Entrepreneurial income: the remuneration for the farmer's own labour and for his own capital and land; this income results after deduction of a remuneration for the labour of the other family workers from the family farm income

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

Disposable income: total family income minus current social security premiums and taxes on income and wealth