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MARKET CREATION: ORGANIC AGRICULTURE IN THE NETHERLANDS

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FOREWORD

This report was prepared by T.M. van Bellegem and A. Eijis, of the Ministry of Housing, Spatial Planning and the Environment.

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MARKET CREATION: ORGANIC AGRICULTURE IN THE NETHERLANDS

by

T.M. van Bellegem and A. Eijs

EXECUTIVE SUMMARY

Organic agriculture showed a strong growth in recent years (annual growth up to 25%) and it is expected that its economic significance will increase sharply.

There is a steady increase in the number of farms that are switching to organic agriculture and in the average size of the organic farms. Some types of farms are expanding rapidly but other sectors are expanding extremely slowly. As there is an open market within the European Union it is striking that there are considerable variations among the Western European countries.

Considering sustainability of organic farming and conventional farming a comparison on economic, social and ecological issues is required. It is clear that organic agriculture requires more labour but has no negative effects on the amount of available food on a global scale and eliminates health risks. The current agriculture fails to take adequately into account the costs of its negative environmental effects. Compared to conventional agriculture, the ecological issues show the advantage of organic agriculture on a wide range of these issues (acidification, eutrophication, biodiversity, agricultural biodiversity, aridification and spatial distribution).

The difficulties associated with market creation depend on the relationship patterns linking producers, processors, trade and customers. In organic agriculture this is a network/chain pattern which involves specific difficulties to be solved by specific measures.

Farmers, the processing sector, retail trade, international trade and consumers have specific problems in the market creation of organic agriculture and therefore need specific and focused measures to promote the process of market creation.

Special attention is paid to the role of the government. Its ambivalent role is striking. The pretension that it is an encouraging role dominates and is expressed in policy documents. However the

government's role in improving the market position of traditional agriculture can be seen as a bias against organic agriculture.

The market creation of organic products is quite complicated. A development is seen in the instruments: less financial support for the primary production but promoting the market mechanism and leaving a producers' driven market and promoting a consumers driven one.

The main policy lessons learned:

- market creation for organic agriculture seems to be successful;
- market creation for organic agriculture needs a strong international certification system;
- it is of vital importance to involve all stakeholders in the production chain in the process of market creation, specific instruments (especially non-financial) to achieve this involvement are necessary;
- perverse incentives and measures in favour of conventional agriculture frustrate the market creation process;
- non-financial measures/instruments are important in the process; and
- the governmental measures in market creation for organic agriculture were focused on the producers but the measures should be focused on consumers, the process should be more market driven and less producer driven.

I. INTRODUCTION

Organic agriculture is one of the most prominent forms of sustainable production. In the recent past, the scale of this type of agriculture was so small that its economic significance was very limited. However, at present, a change can be seen and organic agriculture has been on the rise now for more than a decade. As a result of the rapid growth of the sector (annual growth rates of 25% have been seen in a number of countries), it is expected that its economic significance will increase sharply. This study describes the development of the sector in the Netherlands and in Western Europe. It looks at the reasons why this form of agriculture can be considered to be a desirable development on the basis of considerations of sustainability. It looks at organic agriculture in terms of sustainability in the social, ecological and economic fields. It then provides an analysis of the main problems and difficulties associated with the extension of the market for organic products. The discussion then turns to the measures and instruments that are deployed in order to improve the market for the products of organic agriculture. A number of the remaining difficulties are also discussed.

2. ORGANIC AGRICULTURE: MARKET DEVELOPMENT

2.1 Market development in the Netherlands

Organic agriculture is an activity that has occupied a fairly marginal position in the Netherlands up to a decade ago. Nevertheless, there has been strong growth in recent years (table 1).

Table 1. **The expansion of organic agriculture in the Netherlands**
(Central Statistics Netherlands, CBS, www.cbs.nl)

	Number Organic farms	Area, hectares Organic farms
1995	521	12,790
1996	554	14,333
1998	705	19,661
1999	786	21,511
2000	906	25,531

There is a steady increase in the number of farms that are switching to organic agriculture. The figures also show an increase in the average size of the farms. In 1991, the average farm size was 21 hectares. In 2000, this had increased to 28.2 hectares. In the past the organic farms were smaller than the conventional ones. Nowadays this has changed for farms with land-based livestock production and arable farming. In this types of agriculture the average size of organic farms surpasses that of the conventional ones (e.g. average size livestock farms in 2000, organic: 51 ha, conventional: 36 ha). In other types of farming (e.g. horticulture) the average size of the organic farms is growing and is expected to equal (or even surpass) that of the traditional farms. Despite the expansion of organic agriculture it remains limited compared to conventional agriculture and this sector currently accounts for approximately 1-2% (based on area) of agricultural activity in the Netherlands as a whole.

Further analysis of the figures shows that expansion is rapid but that there are considerable differences between the various types of farms. Some sectors are expanding rapidly whereas other sectors are expanding extremely slowly (Table 2).

Table 2. Rate of expansion (based on number of farms) of various types of organic agriculture in the Netherlands (Central Statistics Netherlands, CBS, www.cbs.nl)

Type of agriculture from 1991 to 1999	Expansion in %
Arable farming	55
Greenhouse horticulture	52
Land-based livestock production	194
Mixed farms	130
Long-term crops (e.g. orchards)	68

Developing measures for the market creation of organic agriculture these differences in the growth rate and its underlying causes should be taken into account. There was virtually no organic farming at all in a number of types of agriculture at the beginning of the nineties. This was the case, for example, for non-land-based livestock production and mushroom farming. There are clear variations in the rate of transition for the various types of farming. There are various reasons for this and they will be discussed later here. They include the efforts which farmers have to make, the size of the investments, and so on.

2.2 International market development

The economic significance of the sector also remains limited in international terms. Nevertheless, we are also seeing rapid expansion internationally. In addition, there are major variations in terms of the various countries, both in terms of the acreage accounted for by organic agriculture and the rate of growth (Table 3).

Table 3. Area covered by organic agriculture in various countries, percentage of agricultural area used for organic and average yearly increase of the area used for organic agriculture (Grijp, den Hond, 1999 and Gujer, 2001)

	Organic acreage 1998 (ha)	Organic as percentage of agricultural area	Average yearly growth rate as a (1993-1998)
Belgium	6,8000 *	0.5	12.3
Denmark	90,000	3.3	28.2
Germany	374,000	2.2	10.7
Finland	119,000	5.5	25.6
France	230,000	0.4	13.9
Greece	7,2000	0.1	78.3
Great Britain	188,000	1.0	18.1
Italy	610,000*	4.1	46.6
The Netherlands	19,000	1.0	16.1
Norway	15,581	1.5	32.8
Austria	350,000*	10.1	15.5
Portugal	17,000	0.4	33.6
Spain	140,000*	0.6	36.1
Sweden	110,000*	3.2	12.9
Switzerland	78,369	7,1	53,3
* based on 1997			

It is very striking that there are considerable variations (in terms of the area covered by organic farming) between the various Western European countries. The variations are striking precisely because there is an open market within the European Union for agricultural products. This is also true of organic agricultural products. The variations raise the question of whether this formally open market is an actual open market for organic products.

The rates of growth for the various countries are also different. On the basis of the figures, it can be concluded that the average rate of growth within Western Europe is 27%. Correspondingly high growth rates have also been observed outside Western Europe. For example, in the United States the average growth rate is estimated to be 30-40%, and in Canada an annual increase of 15 to 20% was reported (EKO-monitor, 2000, no. 7).

Although organic agriculture is still limited in size, it is growing extremely quickly globally. At present, no other form of agriculture is achieving growth rates of this kind over a period of several years.

In the Netherlands, it is not only the surface area which is increasing but also the value of total shop sales of organic products, which increased sharply to €234 million in 1999 (EKO-monitor, 2000, no. 1). This is 1.1% of total sales in the Dutch food retail trade. Globally, the organic food and drinks market for 2001 has been estimated at €20 billion.

The future of organic production is difficult to estimate. Various governments have major ambitions for the extension of organic agriculture. The Dutch government is counting on a further expansion of organic agriculture to a market share of 10% in 2010. Belgium is also hoping for sizeable expansion of this kind (EKO-monitor 2000, no. 7). A survey conducted by the Soil Association indicated that 10% of British farmers are considering switching to organic farming (EKO-monitor 2000, no. 7).

It is clear that there is growth potential in organic agriculture but the question is how big the market will be in the future for organic products. There is a fear in some countries that, if growth is not market-driven, there will be a mismatch of supply and demand. This may result in fluctuations in prices which may temporarily slow down growth.

The opportunities for organic agriculture products will be determined in part by the degree to which the organic producers succeed in forming and developing that market. Given the current price differences between biological products and conventional agriculture products, a market share of 10% would seem to be feasible for organic agriculture. However, market share will vary for the various products. It is clear that the rapid development of organic agriculture can be seen as an opportunity, both in economic and ecological terms.

3. ORGANIC AGRICULTURE: SUSTAINABILITY ISSUES

3.1 Introduction

Sustainability requires a balanced development in which social, economic and ecological interests are represented fairly so that future generations can fully enjoy the environment. Any assessment of the sustainability of organic agriculture requires a comparison with conventional agriculture since the products of both compete on the market. The appraisal of the sustainability of organic agriculture below is based on this point of view. It sets out the economic, social and ecological issues.

In the next paragraphs, conventional agriculture and organic agriculture are compared regarding social, ecological and economic issues. This comparison is rather tricky because both types of agriculture are applied in quite a range of products and in extensively as well as intensive produced crops. The figures are based on the situation in the Netherlands. In the Netherlands a highly intensified conventional agriculture with a high input of chemicals and a technically well developed organic agriculture are applied.

3.2 Social sustainability issues relating to organic agriculture

The principal social sustainability issues in biological agriculture are employment, health and the global food supply.

Employment issues

Conventional farming is a major source of employment. The introduction of mechanisation, industrialisation and specialisation has resulted in a sharp fall in the amount of labour needed in agricultural production. Employment in agriculture decreased in recent decades to 4.6% of the population (Slangen et al., 1994). A further decrease in employment in conventional farming can be expected in the future. Organic agriculture requires more man-hours, primarily because no pesticides are used. Kalverkamp (Kalverkamp and Hoytema, 1990) estimate that organic agriculture requires between 10 and 15% more manpower. In the case of organic dairy farming, the additional manpower requirement is 15% compared to conventional farming. Nevertheless, manpower requirements can vary considerably depending on the crop (Table 4).

Table 4. **Labour required (hours per hectare) to grow crops on an organic and a conventional farm (PBLV, 1997)**

Crop	Organic farming	Conventional Farming
Potatoes	185	30
Beetroot	235	25
Carrots	1140	1000
Leek	1150	1000
White cabbage	700	500
Red cabbage	600	400

Broadly speaking, it can be concluded that the additional manpower required for an average organic farm in the Netherlands is between 10 and 20%. Specific additional requirement depends on the crop and on the agricultural equipment.

Global food supply

The introduction of organic agriculture can have an effect in various ways on the world food supply. The main issues in this respect are the amounts of food that are produced and food prices.

In western countries with advanced farming methods, conventional farming results in high yields per surface unit. Organic agriculture results, given the current state of know-how and technology, in a considerable decrease in crop yields. The main reason for the fall in yields is the abandonment of artificial fertilisers and pesticides. Western European experts believe that decrease is approximately 20%. In the United States, the decrease is thought to be at least 5%. In fact, it is not possible to produce an accurate estimate of the fall since it depends on the crop and on subsequent agricultural developments. However, nobody disputes that a considerable fall in crop yields is to be expected in countries with advanced farming techniques.

However, the situation in the developing countries is the opposite. The use of sound organic farming methods in developing countries could increase yields there by 300%. This increase would more than compensate for the fall in yields in industrialised countries (EKO-monitor, 2000, no. 7). In terms of yield potential, then, the use of organic farming could also generate an increase in global food production. The switch to organic farming need not therefore have a negative effect on the amount of available food.

Another issue associated with organic farming and the food supply is food prices. Organic products are, at present, considerably more expensive than produce from conventional agriculture. It is often argued in reply that this low price is caused in part by the failure to pass on the cost of environmental damage (see section 4.7), economy of scale effects and a shortage of know-how. However, these considerations do not affect the reality of the fact that the prices charged for organic food are currently higher.

Health issues

The health issues regarding to organic farming are complicated and partly controversial. The health issues include among others: nitrate content of food, residues of mycotoxins, bacterial contamination and above all pesticides residues.

Current conventional food production methods use a lot of pesticides. Although attempts are made to reduce the effects on health caused by the use of these substances, risks remain for workers and consumers.

The introduction of organic farming would eliminate (or strongly reduce) the possibility of a dioxin crisis and of a BSE crises of the type seen in Western Europe in 1999 and in 2000.

3.3 Economic sustainability issues relating to organic agriculture

One of the main criteria for the sustainability of an activity is the question of the extent to which the cost of environmental damage is included in the price of a product. There can be no economic sustainability without the inclusion of environmental damage in the final price of a product. It is therefore important to know whether the costs of environmental damage have been passed on to public funds or future generations. The literature has repeatedly provided indications that conventional farming causes environmental damage. In general, this damage is not taken into account in calculations of the output of the sector. The passing on of costs to third parties or future generations means that conventional farming as it is conducted at present is not a sustainable activity. Kalverkamp (Kalverkamp and Hoytema, 1990) made an overall economic comparison for Dutch farming on conventional lines and on organic lines. They compared two theoretical situations. The first one was that all farming in The Netherlands was organic and the second one was the situation with only conventional farming (Table 5).

Table 5. Economic comparison of theoretical situations with only organic agriculture or only conventional agriculture in the Netherlands

	Conventional Billion €	Organic Billion €
Gross production value	14.8	9
Purchase raw materials/services to 3rd parties	8.3	3.6
	-----	-----
Added value	6.5	5.4
Labour	4.8	5.4
Capital expenses	3.0	2.7
	-----	-----
Economic results	-1.4	-2.7
Environmental damage	2.8	0
Results	- 4.1	-2.7

Although some doubts may be expressed about the level of the figures, it is beyond dispute that the current economic value of conventional agriculture fails to take adequately into account the considerable costs of the negative effects and that organic agriculture is considerably better in this respect.

3.4 Ecological issues relating to organic agriculture

The main contribution which organic agriculture makes to sustainability is the vast improvement in environmental terms compared to conventional agriculture.

A survey has shown that conventional agriculture in the Netherlands has a wide-ranging influence on the environment (Bellegem et al., 1998,1). The principal effects are:

Acidification

Acidification is a process in which agriculture emits large amounts of acidifying substances such as nitrates and ammonia. These substances then acidify the soil causing significant changes in floral species or ecosystems (RIVM, 1996; IKC-NBLF, 1994)

Eutrophication

Eutrophication is caused by large deposits of fertiliser. Soil enriched with minerals (mostly N, P, K) transforms nutrient-poor ecosystems into nutrient-rich, more abundant systems. This transformation causes the loss of species and domination a restricted amount of species.

Aridification

Intensified drainage, increased water withdrawal and evaporation by crops cause a lowering of the ground water table. Aridification threatens a number of characteristic Dutch wetland species. It makes the negative effect of acidification and of eutrophication worse.

Spatial distribution

An intensive agricultural system like the conventional Dutch one tends to be quite homogeneous in appearance and uses a small number of crops. This makes it difficult for animal and plant species to migrate and results in isolated and vulnerable populations (AKB, 1996)

Dispersion of toxic substances such as pesticide residues or heavy metals

Conventional agriculture is characterised by the highly intensive use of pesticides. Use continues to be highly intensive, even though a fall has been observed (Table 6).

Table 6. **Volume of pesticides sold per hectare farming land in some EU member states in 1995 (Grijp, 1999)**

	Kg/ha active ingredients In 1995	Percentage change from 1990 to 1995
Austria	0.94	-23.9
Belgium	3.42	-22.4
France	2.97	-14.0
Germany	1.48	-14.0
Italy	3.28	-17.0
Netherlands	5.46	-42.0
United Kingdom	1.25	-12.6
Total EU	1.97	-17.7

Dispersion of these substances causes reduced fertility, weakness or death in various plants and animal species at certain threshold levels (IKC-NBLF, 1994). Pesticide residues may have a detrimental effect on the number of predator species, causing farmers to increase the amount of pesticides used.

Damage to biodiversity

It has been shown that conventional intensive agriculture has a considerable effect on biodiversity in the Netherlands. These changes take place on the ecosystem level, species level and the level of genetic biodiversity. The effects of conventional agriculture and organic agriculture on biodiversity are compared in table 7.

Table 7. **Characteristics of organic agriculture (crop production, animal husbandry and nature conservation) and its effect on biodiversity as compared to conventional agriculture (Bellegem et al., 1998,1)**

Characteristic organic agriculture	Effect on biodiversity
A. Crop production systems	
<i>Fertilisation</i>	
- Use of organic fertilisers	Soil organisms
- Use of leguminous, nitrogen-fixating crops	- Larger number
- Special care for a 'living soil'	- More species
	- Abundant top predators
	Less pollution results into more diversification non-soil organism
<i>Weed control</i>	
- No use of herbicides	Plant species

- Use of crop rotation, mitigating weeds
- Thermal and mechanical weed control

- Larger number
- More species
- Survival of rare arable weed species

Pest and disease control

- No use of pesticides/fungicides
- Range of plant varieties grown
- Use of crop rotation, mitigating pests and disease

- Balance between pests and predators
- Higher species variability

Tillage

- Soil and water conservation methods

Thriving soil life

Crop rotation

- 1 in 6 rotation
- Less monocropping

- Higher agrobiodiversity
- Genetic variability

Crop choice

Genetic variability

B. Animal production systems

Fodder

- Fewer concentrates
- Mostly on-farm and organically grown

Less fodder import results into diversified production system and diversified biosystem

Extensive and soil bound

Possibilities in nature conservation through low livestock densities

Housing

- Designed to meet animals' behavioural needs

Healthier farm animals

Breeding

- Range of species
- Breeding system

- Higher agrobiodiversity
- Higher genetic variation amongst species

No use of hormones or antibiotics

No negative effect of residues on wild species

Nature conservation

Creating natural networks on-farm

- | | |
|----------------------|--|
| - Woody networks | Interaction between individuals of species |
| - Wet networks | Refuge possibilities |
| - Flowering networks | Migration possibilities |

Less intensive use of field and water borders

More room for different species

Set-aside nature

Refuge and migration of species on farm

Organic agriculture spares the biodiversity of wild flora and fauna but an important factor is that conventional agriculture results in low levels of agrobiodiversity (Bellegem et al., 1998, 1) (see also section 4.3.4).

The figures show that organic agriculture is a considerably better form of agriculture than the conventional form from the point of view of biodiversity. This is also shown by field observations of species richness in plants, soil fauna, insects and larger animals (Bellegem et al., 1998.1).

3.5 Conclusion

If we compare organic agriculture to the market alternative, it is fair to conclude that organic agriculture is more sustainable than conventional agriculture from the point of view of social, economic and ecological sustainability. However application of intensive organic agriculture (e.g. organic farmers using high organic fertiliser input) may result in effects that may not be neglected.

4. ORGANIC AGRICULTURE: DIFFICULTIES ASSOCIATED WITH MARKET CREATION

4.1 Introduction

When creating a market for products with a positive effect on biodiversity, the difficulties and the solutions depend to a significant extent on the nature of the relationship between consumers and producers. This relationship can take the form of a one-step relationship, a chain relationship or a network relationship (Figure 1).

In a one step relationship, there are direct deliveries and contacts between producers and consumers. The organisational implications of market creation are therefore relatively limited. For the purposes of market creation, it is enough to optimise production and then to convince the consumer of the value of the product.

In a chain relationship, the situation is considerably more complex. Optimisation must cover all links in the chain. Furthermore, co-ordination between the successive links is also very important. However, there is generally no contact between links that are not close to each other in the chain.

In a network relationship, network optimisation and network co-ordination are also required in addition to the necessary optimisation of individual cells and this is considerably more complex than in a chain relationship.

The conclusion is therefore that the relationship between consumers and producers is an important factor in determining the nature of the difficulties (and the market creation arrangements).

Organic agriculture and the production of organic food is almost never a one step process. It is often seen as a chain process but in practice it is, in many cases, a network process. This situation is further complicated by the fact that organic agriculture is not one product but a set of products. In addition, the market is a global one with a lot of government interference. The difficulties facing the development of organic agriculture are therefore quite varied. An understanding of those difficulties is required in order to ensure that market creation arrangements are effective.

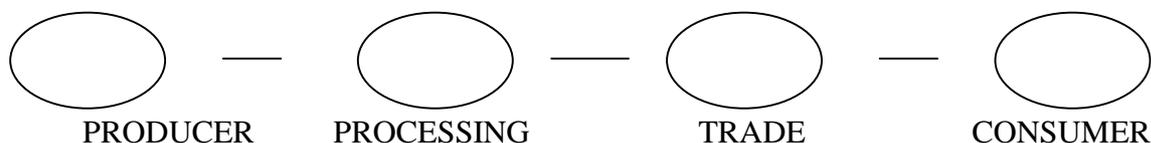
To discuss the difficulties, we can classify them on the basis of where the difficulty is located in economic system (in other words, focusing on the individual cells or links in the models above). The chain/network difficulties will be discussed separately. The chain model will be used for organic agriculture.

Figure 1. **Relationship patterns linking producers and customers during market creation for products with relevance for biodiversity**

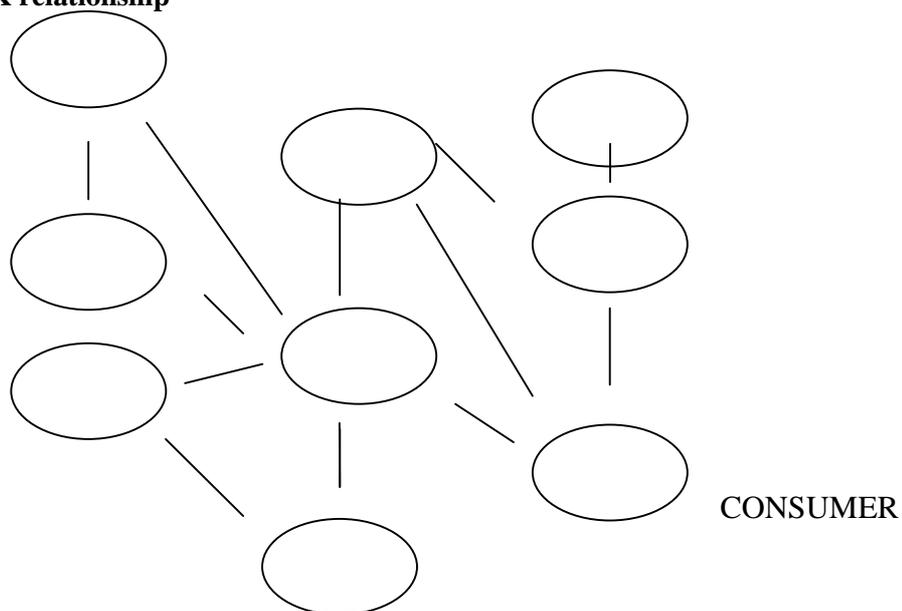
ONE STEP relationship



CHAIN relationship



NETWORK relationship



4.2 Chain (network) difficulties

As stated above, one of the difficulties with organic production is that it is only possible to win market share if the links in the chain are unbroken: farmer, trader, processor, trader, retail trade, consumers.

One of the main difficulties which continues to interfere with the acquisition of market share by organic products is a lack of balance and co-ordination between activities in the chain. The consequences include slow rates of growth, production which is more supply-driven than market-driven, late participation of the usual distribution channels (supermarkets), limited range of products, discontinuity in

production and a lack of upgrading to high-grade products (products in which raw material cost is only a small part of total cost). Various reasons can be stated for this. In practice, attempts have also been made to find various solutions. For example, the primary producers - the farmers - try surprisingly often to deal with poor links in the chain by taking over functions from later stages, processing their own crops or dairy products and perhaps even selling them directly at local markets. The consumers who see that the local supermarket does not have the products they want will, in many cases, also skip the intermediate phases and buy directly from local farmers or markets, even though this involves more time and travelling greater distances. The farmers and consumers therefore attempt to create the one step model in order to avoid the problems associated with the chain/network model.

The poor co-ordination in the chain also means that the processing of primary organic products to produce simple secondary products still takes place but that it is precisely processing with a view to producing high-grade secondary products which is often neglected since a more complex network model is generally involved. However, it is with these high-grade products that the higher purchase price for the basic raw materials has less effect on the final price. Relatively high-grade end products would therefore provide the best opportunities for organic products.

Initially, a lot of attention went to primary production. The chain difficulties were only discovered and tackled at a relatively late stage.

4.3 Farmers

Various difficulties can be noted among the farmers, the primary producers of the organic products, which interfere with the switch to organic agriculture. Farmers are the first link in the chain. It is therefore important to look at the difficulties they encounter.

4.3.1 Costs

Additional cost of transition period

Conventional farmers who decide to switch to organic agriculture cannot simply make the switch from one moment to the next. They are required to observe a legally fixed transition period. During that period (which is fixed on the European level in most cases and which may be up to two or three years depending on the type of crop), farmers must observe the strictures of organic production methods. Their level of costs per unit product will be higher compared to conventional products in that period. Nevertheless, they may not yet sell their products as organic products during this transition period. They therefore receive no direct economic reward for their efforts. Furthermore, their yields may not be up to scratch during this period because of a lack of know-how and experience and they may be faced with additional capital expenditure. For example, there may be disinvestment as a result of the decommissioning of certain machines. Furthermore, a sector like pig farming has to make considerable alterations to the sties to meet regulations relating to the housing for animals.

An additional complication for farmers is that they generally switch the entire farm to organic agriculture. In practice, it is not often that parts of farms in the Netherlands switch to organic farming. Generally, then, the two production methods are not found alongside one another. It is clear that, for many farmers, the transition period can impose severe pressure on the family income.

Additional costs of production

Organic farmers have a higher level of costs per unit product. (Bellegem, 2000). The higher costs are caused by lower yields as a result of halting the use of pesticides and chemical fertilisers. Furthermore, there are additional costs because of higher labour costs (see also section 3.2.). The additional costs differ according to the various types of farming. The additional average costs in the Netherlands (on an annual basis) have been estimated at €31,800 for arable farming, €15,900 for outdoor vegetable growing and €18,200 for livestock farming (with the emphasis on milk production).

Currently organic agriculture has a higher profit margin. The additional returns admittedly more than compensate for the additional costs. Nevertheless, it is highly questionable whether a larger proportion of consumers can or will pay this higher price. In order to acquire a larger market share, organic farmers will therefore have to reduce those additional costs. Measures to reduce the additional cost will be discussed in paragraph 5.

4.3.2 Lack of know-how

One of the difficulties facing farmers is a severe lack of know-how. Their normal training and experience proved to be inadequate to manage an organic business.

Examples of gaps in the agricultural know-how of transitional organic farmers (derived in part from the Ministry of Agriculture, Nature Management and Fisheries, LNV 2000):

- general understanding of organic production systems and production techniques;
- quality and properties of plant varieties and raw material;
- diseases and plagues, prevention and control;
- soil processes such as mineralisation;
- soil management, nutrient management;
- weed control;
- labour productivity;
- labour-saving techniques;
- economic implications of agricultural methods e.g. they lack the knowledge on the cost and return of alternative production methods.

The lack of know-how complicates the transition process. In addition, it leads to failures and increases costs. The lack of know-how is not only a question of a specific lack of know-how among individual farmers since knowledge dissemination mechanisms such as training, professional literature, etc. are not yet as they should be. The problem is considerably worse because know-how remains inadequate. Agricultural research and training have focused for decades on conventional farming methods. There should therefore be a focus not only on adequate knowledge dissemination but also, more fundamentally, on generating knowledge through specific research.

4.3.3 Lack of resources

The R&D potential of suppliers and of the scientific institutions has focused for a century on conventional agriculture. The result is that there are many good resources available on the market for

conventional agriculture. There have been no research efforts of this kind made in the past for organic agriculture. This has a strong upward effect on costs. Examples of a shortage of resources are:

Technology: there is a shortage of labour-saving devices. In particular, there is a shortage of resources for weed control (especially mechanical). For many years, billions of guilders have been spent on tackling this problem using chemicals but research into alternatives has been limited. Section 4.3.1 showed that additional labour was a major cost factor in organic agriculture. The development of technological resources is therefore of primary importance.

Organic pest control techniques: disease control and weed control using non-chemical techniques open up possibilities (e.g. using predators, laser technology for weed control, mechanical weed control, mixed crops, crop rotation systems). Organic pest control techniques are still in the early stages of development. They are also expensive and availability is still inadequate. The result is a reduction in returns and generally an increase in costs as a result of high labour costs.

Agrobiodiversity: Species selection and breeding have been focused on conventional agriculture. Species have therefore been tailored to the requirements of that type of agriculture. There have been no tailoring efforts of this kind in the past for organic agriculture. The best basic materials for organic crops are therefore generally not in place. A problem here is that, in a number of cases, the source material for breeding purposes (i.e. natural agrobiodiversity or the biodiversity of local varieties) is under severe pressure both domestically and abroad. This pressure is caused by habitat destruction of wild varieties and advanced breeding programs that resulted in abandoning of local varieties. The source material for breeding has already been lost in some cases. The loss of local varieties on the global scale is devastating and it can be illustrated by the use of rice varieties in India (Swanson, 1997). In India, over a period of fifty years, ten bred varieties have replaced 50,000 local varieties. There have also been considerable losses of genetic source material for crops grown in the Netherlands as a result of the loss of both local varieties and wild varieties in the source area.

The lack of resources results in many cases in poorer quality, higher labour costs and a reduction in returns. Better resources are required in order to make the sector more competitive compared to conventional agriculture.

4.3.4 Availability of capital/capital charges

Initially, banks viewed organic farmers with a certain degree of misgiving (Rademakers in Jeucken, 1998). Their attitude to business, which involved a sizeable emotional component, the absence of business plans and the lack of an established market position meant that banks thought of them as having a high risk profile. In addition, it was clear that the transitional period would involve a definite reduction in financial income for the farmers. The cautious approach of the banking sector was the result and this was evidenced by a reluctance to make capital available and a high-risk supplement in interest rates. The only farmers able to escape from this trap were those with solid collateral (generally land).

4.3.5 Labour

As stated above, organic agriculture is relatively labour-intensive. Given the current situation in the labour market in the Netherlands (hardly any unemployment), this constitutes a problem. The severity of the problem is, however, partly caused by the seasonal demand for labour. Furthermore, the prevailing image of working conditions in agriculture is not favourable. There is a therefore a shortage of labour.

4.3.6 *Enterprise/attitude/image/tools*

Organic agriculture was established by people with a strong emotional commitment to nature, the environment, animal welfare and health. This commitment gave them an advantage in terms of determination but it also generated difficulties. Their business attitude sometimes depended on the dictates of the heart rather than of the ledger. There were generally no business plans and, in economic terms, they were taking a leap in the dark. Another group of transitional farms consisted of conventional farms that got into economic difficulties (generally because of the limited size of the farms). They saw the higher prices for organic products as a way out. Their problem was sometimes that they were making the transition after their economic position had already been weakened. This made the transitional period, with the additional expenses, particularly difficult.

There was little respect in conventional agriculture circles for organic farmers. In general, the usual sector organisations therefore adopted a fairly passive approach to organic agriculture. The lack of respect for organic farmers delayed the transition.

The next group of farms to switch over consisted of farms that made a rational economic decision to move into organic agriculture. They benefited from the work done by the pioneers.

The group of organic farmers is now very active. A striking feature of the group is the low average age. Only 20% of organic farmers are older than 55. 46% of conventional farmers come into that age group (Linden, van der, 1999).

The increasing commercialisation of the sector is now clearly present. This commercialisation needs to continue and there must be an improvement in economic know-how so that more attention can be paid to matters such as business plans and so on.

Commercialisation will also have to lead to more market-driven working methods. The supply-driven approach must be replaced by a more demand-driven approach.

The emotional commitment of the sector is also demonstrated by the internal conflicts about what exactly is permissible in organic agriculture. The fragmentation of opinion is not beneficial in terms of establishing a clear image for the sector. In order to create a market for the products of organic agriculture, the pragmatists and hard-liners need to promote common interests together.

4.4 *Processing sector*

The processing sector is very important for the processing of agricultural produce. Much agricultural produce is only sold to consumers after processing and packaging. The processing sector is also needed for the differentiation of the derived products and increasing the value of those products. Producing high-grade products means that the relatively high price of the raw materials becomes less of a factor in relative terms. It is precisely organic products that therefore benefit from being used to produce high-grade consumer products.

There are still too few processing companies but there is a positive trend in the number of organic processing companies. In 1996, there were 430 processing companies in the Netherlands, with this number increasing to 780 in 2000 (Eko-monitor 5, 2000). An additional increase in the number of processing companies is required.

The processing sector for organic products is also very small-scale. This results in a large increase in costs and extra charges for transport and so on. In addition, the small-scale nature of the activities constitutes an additional problem with respect to perishables. The small-scale nature of organic products is further intensified by the requirement that separate processing systems are used for organic and non-organic products.

The difficulties of the processing sector remain considerable:

- the discontinuity in the supply of the raw materials. The crops are highly seasonal in nature;
- the absence of widely-known and strong brand names; and
- quality control.

As stated above, the primary producers attempt to deal with the problem of the under-developed processing sector by going into processing themselves. These small-scale, traditional methods push up prices a great deal. This may be a solution for individual farmers but for the long-term development and for wide scale organic agriculture, it is not the way forward.

The main solution for reducing the level of costs in the processing sector is to be found in professionalisation, scaling up activities and better chain co-ordination. This may also contribute to improvements in quality control.

4.5 Trade

4.5.1 Retail trade

The trade in organic products has gone through a difficult process of development. Initially, there was the direct sale of products. This was soon followed by sales through specific shops: health food shops. There were also all sorts of new initiatives. For example, the number of farmers' markets (markets selling organic products) in the Netherlands increased after a period of decline. There were also initiatives such as the 'groenteabonnementen' ('vegetable subscription', a regular order for a package of different vegetables).

There were considerable changes in the various sales outlets for organic produce (Table 8).

Table 8. **Points of sale for organic products in the Netherlands in 1995 and in 1999**
(Bok and Lössbroek, 2000)

	NUMBER 1995	NUMBER 1999
Supermarkets (>15 organic products in range)	70	4000
Health food shops	280	400
'Groenteabonnementen'	4000	44000

The increase in the number of points of sale in supermarkets has been very large in recent years. These points of sale have therefore acquired a sizeable market share (Table 9).

Table 9. **Locations where consumers can buy organic products**
(Some consumers buy in several locations)

	Percentage of consumers who state that they buy here
Supermarkets	60
Health food shops	30
Farmers' markets/farmer	15

In the past, there was a fear that the increase in sales in supermarkets would take place at the expense of the other distribution channels. This has not proved to be the case at present. On the contrary, a different group of consumers has been opened up (Oosterom, 2000). These consumers also have different reasons for buying organic products. Now that there is no change as a result of sales in supermarkets, it has emerged that large profits can be booked by exploiting this sales channel. Further expansion in this sales channel is a difficulty and a challenge. The requirements of the supermarkets for organic products are the same economic, logistical and market requirements which are also imposed on other suppliers (Oosterom, 2000). If organic products are to become ordinary market products, they must meet the usual requirements for ordinary market products such as adequate volume of sales, regular supplies, consistent quality etc.

It is expected that the share of the supermarkets in the retail trade for organic food will continue to increase.

At present, the difficulties in the retail trade are:

- **High margins.** The margins in the health food shops are high compared to the rest of the food trade. This means that retail prices for organic products are higher than for the alternatives. These high margins are not only found in health food shops. The market strategy adopted by the supermarkets involves classifying and presenting organic products as niche products. Margins for niche products are generally higher in the retail trade and this results in higher selling prices. The high selling price does not help in increasing the market share of organic products.
- **Limited nature of the range.** The limited nature of the range means that only for a limited number of food products organic ones are available. The trade is therefore often limited to a number of organic products for which no reasonable turnover can be achieved.
- **Discontinuity of supply.** The discontinuity in the supply of the products is, for the retail trade, a reason for not including a number of organic products in the range. This problem can only be dealt with by scaling up domestic production and processing, and by increasing international trade. Chain co-ordination can also make a contribution here.
- **Logistical problems.** Logistics will continue to be an additional complication as long as the market shares for organic products remain small, discontinuity persists in supplies, production is fragmented, and numbers of processing companies remain small with a lot of small-scale processing companies.

4.5.2 *International trade*

The trade in conventional agricultural produce and in derived foods has a strong international orientation. This is less true of organic products. The consequence is a poorer allocation of production factors and this pushes up prices. Furthermore, it can result in discontinuity in supplies. The international trade is, in part, held back by differences in definitions of organic agriculture and differences in certification systems and logos. International co-ordination of these matters is therefore desirable for the further development of organic agriculture.

4.6 *Consumer*

For the consumer there are still a number of difficulties that play a part and impede growth and expansion of the market for organic products:

4.6.1 *High price level (relative/absolute)*

The higher price does not present an obstacle to the present purchaser of organic products. They are "premium products", whose price can fluctuate within limits without having a big impact on sales (Oosterom, 2000). The situation is evidently different, though, when the aim is to achieve a greater market share for organic produce. In that case the relatively high price of organic products *does* present an obstacle to the potential customer. So the high level of prices is a contributing factor to the smallness of the market and results in the effects of economies of scale failing to occur. There are many reasons why the price level (in an absolute sense) is high.

Nonetheless, it is not enough to create means that have the effect of lowering prices. Sales of organic products are not determined solely by the absolute price level of these products, but also by the level of the price for non-organic alternatives (the relative price level). The price level for conventional agricultural products does not always reflect the actual cost, but is to a large extent dominated by distortion of the market, support measures, not charging costs, etc. (see section 4.7). While this kind of situation is maintained, organic products will remain absolutely and relatively expensive for the consumer. There is therefore the double difficulty of an absolutely and a relatively high price level for organic products.

4.6.2 *Product guarantee and distinguishing feature*

One of the principal prerequisites for the introduction of a product onto the market is the distinguishability of the product. Organic agricultural products and derived products cannot be distinguished as such. The specific organic method of producing the product can only be origin-guaranteed on the basis of certification. This is one of the biggest difficulties of organic production. First of all, it has to be established clearly and indisputably what is understood by the specific organic method of production. In addition, compliance with this method of production needs to be established reliably. Finally, consumers should be able to see when they can depend on products having been produced in compliance with the standards in force. Consumers require transparency so they demand:

- a) to know the product quality requirements (product quality requirements);
- b) to be sure about production reliability (product reliability); and
- c) to have a distinguishable product (distinction).

a. Product quality requirements

In the international arena the International Federation of Organic Agricultural Movements (IFOAM, www.IFOAM.org) has made great efforts towards achieving a definition and standardisation of the production of organic produce. The work of this organisation has provided guidance for various authorities (among them the EU) in laying down rules and regulations. In the EU the basic requirements for the organic method of vegetable farming are laid down in Regulation No. 2092/91 of the Council of the European Communities. For livestock production a regulation was published in 2000 (Regulation No. 1804/1999). National implementation of these regulations created a reasonable basis for a more uniform system, albeit that the countries have a certain freedom in interpreting the regulations or supplementing them with additional requirements. Various groups of producers sometimes also impose further requirements than are desired on the basis of national or European requirements. Nonetheless, the standardisation of requirements within the EU is at a level that has created greater clarity for consumers. However, the market for agricultural products is not a national or European market, but a global market and end products are often composed of a large number of agricultural raw materials that can originate from an equally large number of countries. On a global scale there is certainly no standardisation of requirements for organic agriculture as of today. The United States does not yet have a uniform system of requirements. The proposals that have been made for criteria for Organic Foods do not go as far as in the EU (EKO-monitor 2000, no.7). The differences in fleshing out criteria for organic agriculture constitute a serious problem. International consultation is required to solve this problem, otherwise confusion will remain and parties will distort competition by watering down the requirements. This will also undermine consumer confidence and frustrate market development for organic products.

b. Production reliability

Not only should there be a further standardisation of production requirements at the international level, but a further standardisation of the certification procedures also needs to be realised at an international level. Consumers should have the guarantee that there has been supervision of the method of production and that the label is being used rightly. Certification should not be confined to the primary phase but should also cover the phase of processing into different products. Certification is not yet uniform at the global level either.

c. Distinction

Being able to distinguish organic products from conventional ones is very important for market creation. A logo or label can be used for packed products. From the global point of view, however, there are too many logos. They should be further standardised.

Another complication is the fact that some products are sold loose or are only packed late in the commercial chain. Take, for example, fruit and meat products. For the creation of a good market it is desirable, however, that a reliable chain of products be established. This can be achieved on the one hand by separate sales outlets for organic products (organic butchers and health food stores) and through efforts to separate product streams so as to create a distinguishable product for the consumer.

It is clear that the present systems are not transparent or uniform. Both these elements are essential pre-requisites for capturing the trust of the consumer on a permanent basis. Further global standardisation of the systems is therefore a requirement for expanding organic agriculture.

4.6.3 Range of products/availability

Another difficulty for consumers is the range of products and limited availability of the products. These two factors are meanwhile changing fast (see section 4.5.3.).

4.7 Government

National as well as EU policy is of importance for the development of organic agriculture in EU Member States. What is striking is the ambivalent role that governments play in regard to organic agriculture. Their pretension that they have an encouraging role dominates and is expressed in various policy documents (Ministry of Agriculture, Nature Management and Fisheries, LNV, 2000). However, it is not enough to measure the role of the government in regard to organic agriculture against its efforts on behalf of this sector. Organic products compete on the market with conventional agricultural products. The government's efforts to improve the market position of the latter products directly prejudices the market position of organic products. The government exerts itself a great deal on behalf of traditional agriculture; these exertions can be seen straightaway to be biased against organic agriculture. Government efforts include:

- **Education.** State-funded agricultural education still focuses strongly on traditional agriculture.
- **Research.** State-funded research focuses almost exclusively on conventional agriculture. It has been announced that the aim is to focus 10% of the research funds of Wageningen Agricultural University on organic agriculture (Ministry of Agriculture, Nature Management and Fisheries, LNV, 2000). This means that (even after this action) research for conventional agriculture will still be nine times that for organic agriculture. So, research continues to focus virtually entirely on conventional agriculture.
- **Institutions.** The government maintains institutions that encourage the existence of conventional agriculture. One example of this is the "Catalogue of varieties". This is a catalogue of crop species in which trade is permitted. The list includes only general breeder varieties, pure lines with little genetic variability (Bellegem, 1998).
- **Indirect subsidies.** Indirect subsidies are hidden and outwardly looking often not recognised. Dutch arable and dairy farmers operate within the context of the market and pricing policy for agricultural products of the European Union (EU). The EU market operates as a single market with one common border. Prices of agricultural products are maintained at a high level compared to world market prices. This protects farmers inside the EU against cheap imports from outside. Inside the EU production levels are kept high because of these high prices, causing high pressure on agricultural land and biodiversity. In future this protective policy will be harder to maintain because of World Trade Organisation interference (Slangen et al., 1994). This mechanism may be regarded to be an indirect subsidy too conventional; agriculture. Another example of an indirect subsidy is the quota system. Since the 1980s, agricultural policy in the EU has been reformed, for budgetary as well as political reasons. The EU tried to reduce the surplus production of certain agricultural products, e.g. milk and sugar. In 1984 a quota system for milk was introduced, allowing for only a limited production of milk on each EU dairy farm. The designated milk quota for a farmer was based on the production level of each individual producer in 1983. Milk quotas are tradable among farmers so as not to restrict farm development. The effect of the milk

quota system on the position of organic agriculture is controversial. On the one hand it can be said that the present system works to the advantage of the organic farmer because his extensive production yields greater financial returns per quota unit (Brouwer and Helming, 1999). These authors show that the quota system is therefore less of a burden on the organic farmer than it is on the conventional farmer. Others say that the overproduction of milk is caused by conventional agriculture and that the system should therefore be confined to that sector.

- **Direct subsidies.** Farmers can obtain investment grants for investments in long-term depreciable goods, e.g. machinery or buildings. This regulation also tried to boost environmentally friendly investment, e.g. manure storage or specific pesticide spray equipment and fertiliser application equipment. These subsidies, which made the application of pesticides cheaper, were one of the causes of the over-mechanisation of Dutch agriculture (Slangen et al., 1994). The 1992 MacSharry reform of EU agricultural policy has different objectives: to restore the market balance for agricultural products, to strengthen the competitive position of EU grains (especially compared to imported cattle fodder), to improve the environment and to maintain employment in the countryside. Fundamental to this reform is the change from product-bound market and price support to direct income support combined with lower product prices (Slangen et al., 1994). The price decreases, especially for grain and cattle-beef, are offset by hectare payments and premiums. There is a change from intervention and export restitution to premiums and additional direct payments. The total agricultural budget will not decrease, because after the MacSharry reform a larger part of income support is paid from the EU budget and less by consumers (Slangen et al., 1994). As a condition for income support, farmers are required to set aside a part of their cropped area. This can have a positive effect on biodiversity. The MacSharry reform has certain positive impacts on biodiversity. Lower internal grain prices make it attractive to use EU grain for fodder. Less fodder needs to be imported from outside the EU, reducing the pressure on the environment in the EU and the potential damage to agricultural areas or forests elsewhere for the production of animal fodder (Slangen et al., 1994). Premiums to offset decreasing product prices are based on average production levels for a Member State or region. Compensation payments are given to growers of grain, maize, colesseed and a few protein crops (Slangen et al., 1994). These measures are a direct support for conventional farmers. The objective of these measures is to prevent the production of other crops of which a production surplus in the EU might arise. The measures would be unnecessary if conventional agriculture were replaced by organic agriculture because the output of organic agriculture is lower. Brouwer and Helming, 1999, made an overall comparison of support for organic and conventional farms. They say that based on the subsidies they considered organic farmers enjoy a higher level of support. At the same time, it should be noted that the study made did not include in its calculations all support measures targeting the agricultural sector. For example, support measures for investment were not taken into consideration. Also, the support measures for switching from conventional to organic agriculture are of a temporary nature. The argument that an analysis of the national and the EU support for their impacts on organic agriculture is desirable is therefore justified.
- **EU framework of support.** With the exception of transition premiums the EU framework of support is based on investment support. The idea behind this is that environmental improvement can be achieved through improved technology. Support measures for farmers who farm in a manner that improves the environment, by taking different action, are not permitted. However, a conventional farmer who buys an improved machine for applying pesticides, which reduces the amount of pesticide by 50%, is allowed to receive support. His organic colleague who does not use pesticides and goes back to 0%, solving the problem

using labour is not permitted any support to compensate for this use of labour. This system operates to the advantage of conventional agriculture.

– **Tax incentives/tax reductions**

- *VAT differences:* There is currently a large difference between the VAT (Value added tax) levels of agricultural 'inputs' in the European Union. In the Netherlands inputs like fertilisers, pesticides and antibiotics are subject to a low VAT level of 6%, making them relatively cheap. The highest level of VAT in the Netherlands is 17.5 %. The difference is 11.5%, meaning that for the inputs a change to the higher VAT level would result in a significant price increase for farmers. Implications for the price of pesticides, if one assumes a price elasticity of demand for pesticides of -0.4, for example, might be a decrease in pesticide use of 4.6 % (Oskam et al., 1992). Agricultural inputs in the Netherlands are only lightly taxed, so the use of these pesticides and fertilisers is encouraged by the government.¹
- *Tax reduction:* In many European countries farmers are not taxed in accordance with their actual profit calculation but on the basis of a lump-sum system. The lump sum may be based e.g. on surface. So the tax burden per amount of product is high for extensive producers. Numerous countries have tax incentives for encouraging investment in energy conservation by conventional agriculture. The same applies to investments for limiting the use of pesticides. Although the aim of these measures is to protect the environment, they amount to direct support for conventional agriculture. In the context of nature conservation numerous measures are taken to encourage minimisation of the impacts of agriculture on the environment. For example, in the Netherlands there are support measures for agricultural nature management, as it is known. The aim of these measures is to restore or prevent the damage caused to the environment or nature by conventional agriculture. The measure can therefore be seen as supports for conventional agriculture.
- **Neglecting the polluter pays principle.** As indicated above, conventional agriculture is accompanied by great pressure on the environment. Current environmental legislation in virtually every country means that the agricultural sector does not foot the bill for the environmental harm it causes. As stated before, this damage is estimated for the Netherlands to be €2.8 billion (is about €1350/ha agricultural ground/year, see 3.3). These losses are not attributed to the sector. Failure to apply the polluter pays principle is a far-reaching support measure for conventional agriculture compared with organic agriculture.

To summarise, it can be stated that government policy favouring conventional agriculture is an obstacle to producers of organic products capturing more of the market.

1. The greening of the tax system has meanwhile put an end to this situation in the Netherlands. In many countries the situation is still the same as described here.

5. MARKET CREATION MEASURES

5.1 Introduction

Creating a market for organic products is a highly complex problem because it involves many primary and secondary products. As indicated in section 4.1 we are dealing with a chain or a network model. So not surprisingly the inventory of difficulties compiled in chapter 4 shows the wide variety of problems. Some of these difficulties relate to financial matters, such as price, and some to non-financial matters. The various measures taken in the Netherlands in the last few years and those that will be taken in the next few years are discussed below. The development that has taken place in these measures will also be highlighted.

5.2 Development of instruments

Initially, farmers were very supply-oriented. Their departure point for production was not what can I sell but what can I grow. Government instruments, too, concentrated on the primary producer and his supply. It is partly for this reason that the transition premium was the chief instrument. The realisation is growing that encouraging primary production is not the right way to create a solid future for the sector. It is not supply that should be decisive; supply should be geared to demand. Market prospects should form the basis for transition. The professionalisation of organic agriculture is therefore producing a shift from supply-driven to demand-driven production. Hence a change is emerging in government instruments. The focus is switching towards improving conditions, towards innovation and the spreading of know-how on the one hand and to market creation on the other. The instruments are consequently focusing increasingly on a structural reduction in costs for primary production and on consumer awareness, i.e. more on the parts of the chain other than the farmer. So more attention towards the parts of the chain before the farmer (suppliers) and after the farmer, with support for the farmer even declining.

A second change is the realisation that we are dealing with a chain process. Initially, the spotlight focused on primary production. There was little consideration for the chain. It can be said that the instrumental approach to market creation in that phase was one of a one-step relationship model (see section 4.1). The accent lay on the one production cell. The policy approach was therefore fragmentary and less integrated. People now realise that the problem is one of a chain, which requires an integrated approach using a different set of market creation instruments.

5.3 Financial measures targeting the organic farmer

These measures are understood here to be direct primary support for the primary producers from central government funds. The European Union has a Common Agricultural Policy (CAP). One of the elements of EU policy is that support measures from Member States which distort competition are absolutely forbidden. In 1992 a clear change was visible in Regulation 2078/92 and Member States were given more room to provide support for the transition to organic agriculture. However, Member States are required to remain within the framework of EU regulations with their financial support. So there is no unlimited freedom regarding the method and level to which financial support can be given to farmers. The chief support measures are:

5.3.1 *Financial support for the transitional period.*

As stated above in section 4.3, the transitional period is financially a very difficult one for farmers. Several Member States therefore provide support for the transitional phase. There may be differences, however, among Member States. There are also differences for the various crops. In the Netherlands the support system for encouraging the organic method of production was introduced in 1994 (Bok and Lössbroek 2000, Ministry of Agriculture, Nature Management and Fisheries, 2000). Some of the premiums come from EU funds. In 1999 the system was expanded (Table 10).

Table 10. **Support sums in the Netherlands on transition to organic agriculture**

	Premium 1996 €per hectare	Premium 1999 €per hectare	Premium 2000 €per hectare
Arable crops, fodder crops	227	227	148
Market gardening crops, outdoor	545	1136	750
Market gardening crops, under cover	841	1136	750
Fruit growing	841	2272	886

There were a number of objections to the system. For example, there was a maximum per farm. In some cases lots had to be drawn due to a limitation in the state budget. Under the old system of premiums there was relatively little enthusiasm for switching. It was concluded from this that the premium was too low. The increase in the premium (in 1999) produced a sharp increase in interest. The level of the contributions was apparently such that farmers could make the switch. This did not apply to market gardening under cover where the level of investment is very high and where this increase in switching was not perceived. In Austria higher premiums were granted, which some say contributed to the sharp growth in their organic sector (Ministry of Agriculture, Nature Management and Fisheries 1996).

As stated in section 5.2, a change has taken place in the instruments and the government intends to lower the transition premiums. In 2000 and 2001 the premiums will be calculated at 65% of the loss of income during the transition period. In 2002 the premiums will be reduced to 50% of these costs. The aim is to drop the premiums entirely in 2003. This is due to the new policy approach that focuses less on primary production but more on the market (see section 5.2). People involved in the organic agriculture pretend lowering transition premiums in this way will make transitions hardly feasible.

5.3.2 *Financing/availability of capital*

In the Netherlands two phenomena have contributed to the financing of and capital availability for organic agriculture.

Two ethical banks (Triodos and ASN) made loans available for the sector at an early stage and thus were in the vanguard. Even now the banks in question play a vital role. For a long time one of them (Triodos) had a listed investment fund (the Biogrondfonds) which invested in farmland for organic agriculture.

In the Netherlands private individuals who invest in green projects receive a tax benefit. Part of this benefit is passed on to the project owner in the form of a low interest soft loan. Private individuals and organic farmers made large-scale use of this opportunity (Bellegem, 1998, Bellegem, 2000). The scheme, which was introduced in 1995, is used by about 80% of Dutch organic farmers. These farmers work about 80% of the organically cultivated land. The effect for farmers of the Dutch green investment system is that money has become more readily available on considerably better terms.

5.3.3 *Guarantee for capital-intensive sectors*

As already stated, the costs of switching are very high for certain capital-intensive products. This applies especially to pig farming, where strict housing requirements are imposed in the Netherlands in connection with animal welfare. Investment expenses are consequently very high. There is a guarantee fund, with the government standing partly guaranteeing the interest on and repayment of the loans. (Ministry of Agriculture, Nature Management and Fisheries, LNV, 2000).

5.3.4 *Sustainable farmers allowance*

In the Netherlands work is being done on a generic measure aimed at assisting sustainable farmers by granting a tax allowance for farms of a sustainable nature. Many countries, including the Netherlands, have facilities for farmers that enable them, through investment, to make their farms less environmentally polluting (more sustainable). These measures are of no or of considerably less value to farms where the sustainable nature is not linked to investment but lies in other measures such as intensive use of labour, lower yield per hectare and the like, as occur in organic agriculture. This is the very area where extensification and often a lower pattern of investment occurs, but where additional costs are incurred as a result of taking the environment into account. A measure is being developed for these businesses, the financial strength of which is not determined by the level of investment but by the wage bill, for example. This measure is intended to be restricted to sustainable production systems; conventional agriculture will not be eligible for this scheme. Organic agriculture (together with a number of other sectors) could make use of this incentive. The measure still needs to be checked for EU compliance.

5.4 Knowledge

Knowledge among the primary producers is important. A distinction can be drawn between generating knowledge and the process of passing on the knowledge.

5.4.1 *Generating knowledge-research*

In recent years research has increasingly focused on specific problems. Of these the following are of importance:

- practical research on trial farms;
- plant breeding research at a specific institute for organic agriculture;
- study of farming systems;

- ecological weed control; and
- cattle breeding systems, etc.

In fact, research before 1995 was limited, expanding after 1995. After 1995 more funds came available. This expansion is expected to continue. The present target is to concentrate 10% of research at the research institutes on organic agriculture (Ministry of Agriculture, Nature Management and Fisheries, LNV, 2000).

5.4.2 *Disseminating knowledge-information*

Information activities were given an impetus in the Netherlands in 1997 as a result of a specific programme: Information on Organic Agriculture. This information focused on aspects of cultivation, financial analysis and cost control. The participants' assessment of the information was positive. Presently, as a supplement to this programme, information in the financial sphere has been increased. In this context farmers are assisted by the Agricultural Information Agency in preparing a farm-specific development plan and business plan.

5.4.3 *Disseminating knowledge-education*

Initially, the training opportunities for organic agriculture were very limited. The Organic Agriculture Plan of Attack (Ministry of Agriculture, Nature Management and Fisheries, LNV, 1996) expanded these educational opportunities and a project for an organic knowledge centre was announced. In the period 1997 - 2000 a knowledge impulse was given to education through work at a number of pioneering educational institutes on training for trainers, refresher training projects and compiling an inventory of teaching material. Increasingly, efforts are being made to integrate aspects of organic agriculture into regular agricultural education. Also, over the years a chair in ecological agriculture has been established at Wageningen Agricultural University (Bok and Lössbroek, 2000).

5.5 *Organisational measures*

Organic production is a complex problem from the organisational point of view. It involves many primary producers who sell their produce to processors via a logistically and commercially complex system. These processors often make end products out of produce from different primary producers and then have to sell their products to the retail trade. The retail trade has to convince consumers that the product is one worth buying. This complex chain demands instruments that optimise the functioning of the chain (network).

In the complex chain of organic products collaboration in two fields is necessary for the chain to function well: firstly, collaboration between the successive links in the chain (chain-specific measures) and, in addition, collaboration between the farms in the same link in the chain (link-specific measures). Organisational measures in particular played more of a role than financial instruments in furthering co-operation.

5.5.1 Network/chain-specific organisational measures

IFOAM

IFOAM (founded in 1972, www.IFOAM.org) is the International Federation of Organic Agricultural Movements. The organisation pioneered the organic method of production. It still plays a pioneering role in the sphere of definitions, requirements and certification. In addition, it brings parties together and in the context of IFOAM knowledge is generated by the members and exchanged. Organisations like IFOAM are still very important for further market creation for organic produce.

Platform biologica

The Platform Biologica (founded in 1992, www.platformbiologica.nl) is a national organisation uniting those with an interest in the production and sale of organic produce. This organisation (and its predecessors) has in fact proved to be a very important "instrument" in market creation. Organisations of this kind are set up by the market parties without government interference, although setting up such an organisation can be encouraged. It is impossible to overestimate the importance of an organisation of this kind. It constitutes a focal point for authorities and can gather and articulate problems and interests. It can discuss problems in the chain internally and externally. In addition, the organisation plays an important part in providing information to consumers as well as providing information and disseminating knowledge to its own platform participants.

Framework covenant (voluntary agreement) chain parties

In the Netherlands a group of representatives of interested parties (farmers' organisations, supermarket chains, banks, consumer organisations, etc.) is preparing a voluntary agreement or covenant. First of all they are compiling an inventory of the difficulties and possible solutions. Then, business plans will be prepared for the chains. The business plans entail agreements on market activities, production volumes, product innovations, clustering of businesses in business parks to minimise logistical problems, etc. One of the elements of the covenant is a communications plan that targets both the consumer and consumer servers: the retail trade, catering industry, wholesale consumers, etc. These covenants could mean a very important contribution to solving the various chain/network problems.

Partnering events

The idea is growing that in a number of cases there are network problems that require an intensive organisational approach. In order to co-ordinate the cells in the network, a meeting was organised for all potential cells in the chain. A food multinational had mapped out all the problems and highlighted the difficulties. Various companies indicated at the partnering event that they were willing to elaborate a solution for a specific problem in the chain. They indicated the efforts they would put in and how long it would take before they expected a concrete market product. For example, there are companies that say they are working on biological pesticides, machines for improving the soil, certain products for which certain raw materials are necessary. The food groups expressed their intention to buy and process, and the supermarkets indicated that they would take care of promotion. A partnering event is very broad-based and numbers very many businesses and activities. A partnering event is an interesting tool because of its wide approach of the problems. Not only directly connected links in the chain meet but the whole chain or network takes part. Ultimately, one or several participants come to an agreement that they will do an effort

in research or in another activity. The role of the Government in the partnering event is restricted to that of a facilitator.

5.5.2 *Link-specific organisational measures*

Study clubs

Study clubs are regional association of primary producers of organic products. These producers meet regularly and try to expand their financial and cultivation know-how and exchange experiences. They also analyse the merits of differences in methods of cultivation. The study clubs require farmers to be open about success and failure. They are putting all the information about their farming business on the table among their colleagues. The clubs are proving to be valuable and also generate enthusiasm.

Labour pools

As organic agriculture is labour-intensive and seasonal as well, there is a shortage of manpower and labour is relatively expensive. An experiment is currently under way in this sector with labour pools. The aim is to create a local pool of labour (that is not tied to a specific farm) through collaboration among a group of farms (Ministry of Agriculture, Nature Management and Fisheries, LNV, 2000). In some areas this system is already used and operated by farmer unions. It is proved to work well in practise.

5.6 Sales specific campaigns

Further promotion

Promotional activities were set up with the aid of government funding. The projects were of modest size (Governmental contribution of about €0.9 million). The campaign was aimed at promoting sales within the chain of producer, trader and supermarket (at the time supermarkets were not a customary sales outlet for organic produce). It consisted of demonstrations at trade fairs, for example. Researchers found that at the beginning especially these projects functioned as a flywheel. Later, the supermarkets themselves and the sector organisation took over promotion (Bok and Lössbroek, 2000).

A different campaign was targeted directly at the consumer. This promotional activity too was taken over by the sectors themselves. The effect of promotional campaigns is difficult to measure but in general promotion remains important for the sale of organic produce. It has meanwhile emerged that in 1998 over 70% of consumers were familiar with the logo for organic produce in the Netherlands and that 75% of those who were familiar with the logo made a connection with terms like "environmentally friendly", "no chemical pesticides", "organic produce" (Bok and Lössbroek, 2000).

A final form of promotion specifically targeted farmers eligible for switching. So, all in all, promotional activities were specific and applied to the entire chain and its links.

Farmers' markets

One campaign was targeted at the spreading of farmers' markets. These should be understood to mean markets where organic produce is offered for sale. Markets where farmers sold directly to consumers were little known in the Netherlands and a declining phenomenon. The campaign resulted in one year in a doubling of the number of farmers' markets, and several places have meanwhile declared themselves

willing to introduce such a market. At present about 15% of the sales of organic produce are realised via these markets. The markets not only have a direct value as sales outlets, but they also have a promotional value.

Innovation-demonstration projects (broadening range/improving quality)

One of the elements of the Organic Agriculture Plan of Attack was aimed at encouraging innovation, i.e. marketing new organic produce (for example, organically produced sugar) and improving quality. The results of the efforts produced an increase in the range as well as higher quality.

Product guarantee and distinguishability

The production specification requirements and certification systems in the Netherlands and the EU have in the past not been clear enough by far in spite of the efforts of authorities and the IFOAM. This has resulted in fragmentation. Not until 1991 did the Council of Agricultural Ministers of the EC establish rules for the production of organic plant production. In the Netherlands the organisation known as Stichting Skal focused on promoting certification, etc. This organisation also filled the gap that existed in the harmonisation of standards for livestock production systems. In August 2000 a uniform system for livestock production came into effect in the EU. It still needs to be worked out in more detail, though. Organic produce in the EU is therefore not always comparable. Moreover, the requirements for a number of products are still lacking. The harmonisation of production requirements and procedures is an absolute prerequisite for a larger market, yet governments have not acted forcefully. Outside the EU most governments have taken an even more aloof stand than those within the EU. An active government role in the international arena is desirable to support or supplement IFOAM activities. The government should seek international standardisation to give international trade a bigger role.

In a number of countries the government assumes some of the farmer's costs for certification (Grijp, den Hond, 1999), thus making a national contribution to product guarantee and product distinguishability.

5.7 Missing instruments for market creation

In spite of the many instruments used by the sector and the government, a number of major difficulties are not being tackled adequately:

- Transparency of requirements, certification, distinguishability, etc.
- Uniformity of requirements, certification and distinguishability, etc.
- Tackling adverse subsidies and measures granted by the EU and national governments.
- Development of know-how is still inadequate.
- Technical innovations that can reduce additional costs are not receiving enough attention.

6. DISCUSSION

In the Netherlands a general pressure is growing to apply agriculture in a more sustainable way. Organic agriculture is one of the most prominent forms of sustainable agriculture. However it should be mentioned that intensive organic farming might have environmental impacts that cannot be neglected.

The expansion of organic agriculture in The Netherlands shows a steady growth. This growth is different for the different types of agriculture. Some sectors are expanding extremely slowly. Policy instruments should be aimed at these reluctant sectors. Within Western European countries the growth rate of organic agriculture shows important variations. These differences are striking because there is an open market for these products. The conclusion is that this formally open market is not an actual open market due to the lack of international trade. The future market share of organic production is difficult to estimate. Regarding the yearly growth, an overall market share of ten percent of the agricultural production in Western Europe may be achieved in 2010. However, the market share will vary for the various products and regions.

The application of organic agriculture results in a lower food production in countries using advanced technical farming systems. In other countries the situation is opposite. So the switch to organic agriculture does not need to have a negative effect on the global food production capacity. To keep the food production at the desired level it is important to introduce organic agriculture in the developing countries as well. This requires transfer of know how and technology.

The main contribution of organic agriculture to sustainability is the vast improvement in environmental terms. However this contribution may be reduced by the application of intensive organic agriculture farming systems.

Major problems in the introduction of organic agriculture originate from the relationship patterns linking producers and customers. The network relationship has been neglected as well as its consequences for the market creation. The role of the processing industry and of the trade is of vital importance.

Farmers have to cope with specific economic problems during the transition to organic farming. Especially during this period incentives may reduce these problems.

The cost level of organic products is high due to lack of know how and the lack of resources. An effort to improve general understanding of organic production systems and to the development of labour saving tools may reduce the cost level.

Organic production should meet the requirements for ordinary product such as adequate volume of sale, regular supplies, consistent quality etc. A higher co-operation among producers, international trade, processing industry and retail trade is needed and requires new measures e.g. covenants.

The product guarantee and the product distinction are not yet well developed. The efforts made by IFOA towards achieving standardisation has made progress but further co-operation is necessary in order to convince trade and consumers.

The market creation of organic products is hampered by Governmental and EU economic measures. Organic products compete with conventional products. The government's efforts to improve the market position of conventional farming directly prejudices the market of organic products. Besides, governments don't apply the polluters pays principle to agricultural production. Governments and the EU should reconsider the economic measures and their impact on organic agriculture.

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