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Green supply chain initiatives in the European food and retailing industry

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Green supply chain initiatives in the

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Summary

Traditionally, the reduction of pesticide use by farmers has been dealt with exclusively by public policy makers and farmers' organisations. Their policies, however, have not always been as effective as was hoped for. More recently, the influencing of farmers has taken a new turn, because companies in the conventional food industry and retail trade are taking initiatives aimed to increase the market share of food products produced with substantially less or no pesticides. This report aims to give more insight in the nature of these initiatives.

Thus, the objective of the study is to identify European corporate initiatives aimed at more sustainable agricultural practices, with a focus on the reduction of pesticide use. To this end, an inventory was made of initiatives in all member states of the European Union (EU), plus Norway and Switzerland, while focusing on the market leaders in each country. Because of time pressure, it was later decided to leave Ireland and Luxembourg out of the study. To limit the scope of the study, the inventory focuses on all agricultural food products, with the exception of meat. It is not aimed to give a comprehensive overview of all corporate initiatives; our goal is to sketch only the outlines of the relevant developments in the chosen countries in the form of a country profile. To give these profiles more background, attention is also paid to the nature of national agriculture, the present level of pesticide use and relevant government policies and measures.

The study was commissioned by the Dutch ministry of Housing, Spatial Planning and Environment (VROM). The ministry is presently preparing a document on pesticide policy for the period after 2000 as a follow-up to the Multi-Year Crop Protection Plan ('MeerJaren Plan Gewasbescherming') that covers the period from 1991 until 2001. Our inventory of corporate initiatives fits in the governmental preparations for the new policy plan. The study is meant as a benchmark for the situation in the Netherlands. The final goal is to make an assessment of the Dutch position in comparison to that of other European countries.

European agriculture is characterised by a broad heterogeneity of production systems. At the overall level, most of these systems have been subject to intensification and concentration of production in the last 40 years, partly due to the Common Agricultural Policy (CAP) of the EU. The level of pesticide use differs considerably between and within European countries. Greenhouse cultivation and irrigated farming, for example, usually take a lot of external inputs. On the other hand, small-scale, traditional production generally coincides with low inputs of agricultural chemicals. With its very intensive farming system, the Netherlands has the highest pesticide consumption per hectare in Europe.

In the first half of the 1990s, the total volume of pesticide products sold in Europe fell by some 17.7%. The biggest reductions were realised in Finland, Sweden, and the Netherlands. However, reduction of the pesticide load does not necessarily mean that the environmental pressure is reduced, because in many cases farmers are using less of more potent products.

Recent reforms of the CAP system are aimed at, among other objectives, reducing the environmental impact of agriculture, thus reinforcing various trends towards sustainable

agricultural practices, including organic farming, precision farming and integrated crop management (ICM). At present, organic agriculture is the only type of the sustainable agricultural production methods with a certification system for its products, which makes them recognisable in the market and suitable for the payment of premium prices. Usually, a two-year transition period from conventional to organic production is required for certification.

During the study, we had difficulties to identify companies developing precision farming or ICM programmes, simply because products produced under such protocols are hardly recognisable in the market, and companies have more difficulties to communicate the 'less chemical inputs' message to the public than the organic one. However, our research findings give the impression that large retailers and food processing companies are increasingly developing programmes to define and implement sustainable agricultural practices that could be defined as precision farming or ICM. This is also the case in the Netherlands, as we found several examples of retailers and food producers seriously committed to reduce chemical inputs. Moreover, it may be even stated that the Netherlands is one of the European countries in the forefront, with the largest Dutch retailer Albert Heijn already starting to implement an ICM programme ten years ago and the Dutch eco-labelling system ('Milieukeur') covering a selection of agricultural food products.

Thus, the emphasis in our study has been on the identification of corporate initiatives to stimulate organic production and consumption. European organic production steeply increased in the last decade: all European countries showed a growth of organic acreage and the number of farmers involved. When combining the figures of relative share and average annual growth, four groups of countries can be distinguished:

1. booming countries (Denmark, Finland, and Italy);
2. stabilising countries (Austria, Germany, and Sweden);
3. countries with a high potential (Greece, Ireland, Norway, Portugal, and Spain);
4. countries lagging behind (Belgium, France, Luxembourg, the Netherlands, and the UK).

For Switzerland, it was not possible to make a proper assessment because the necessary data about the development of organic production were not available. However, Switzerland is expected to qualify for the group of either booming or stabilising countries.

As the categorisation shows, the Netherlands is one of the countries lagging behind in organic production. It has been suggested that the intensive nature of Dutch agriculture makes it more difficult to convert to organic farming methods. Another factor limiting growth could be the relatively late entry into force of the government support system that initially provided for only moderate conversion premiums. However, the premiums were raised in early 1999.

The supply side of the European organic food market is highly fragmented, with thousands of small to medium-sized specialist companies in operation. In recent years, however, there have been several important developments that are changing the characteristics of the market. First, some of the large multinational food companies based in Europe started to offer organic product lines besides their conventional ones. Basically, these companies choose between two strategies, either the taking over of a specialist company

or the establishing of a new product line from scratch. Second, large retailers became increasingly involved in the organic market, and launched organic retailer own brands. Third, specialist suppliers changed their strategic behaviour by forming alliances and partnerships to benefit from economies of scale and access to distribution channels, as well as to help ensuring more consistent supplies.

Organic food is one of the fastest growing sectors of the entire European food market. Germany, the UK and France represent the largest markets for organic products in absolute terms. Regarding relative consumption shares, we consider the value of 1% as the limit value indicating whether the organic market in a certain country has left its niche and has become mainstream. Five European countries already passed the 'magical' line, notably Austria, Denmark, Germany, Sweden, and Switzerland. Sales in the Netherlands are still under 1%. It is suggested that the main reasons for this arrears include the late introduction of organic products by the major supermarket chains, and the inclination of Dutch people not to spend too much money on food.

The countries now booming or stabilising in organic production are the ones where government support to farmers in conversion was introduced in an early stage and can be assessed as high. The exception to this rule is Italy where government support is low or medium, depending on the region. The countries lagging behind are the ones where government support was introduced relatively late and/ or premiums were only moderate. In several countries, financial support to farmers has recently been raised to at least the average European level. The consequences of these policy changes are not visible yet.

In several countries, conventional supermarkets have a share of 50% or more in the sales of organic products. A high involvement of the supermarket channel usually coincides with domestic organic consumption above or at the limit value of 1%. This is not the case in Belgium where supermarket involvement is above 50%, but sales are still under 1%. In the Netherlands, the involvement of the supermarket channel is still under 50% reflecting the late introduction of organic products by the large retailers. Moreover, up to now only one of the three largest retailers introduced an extensive range of organic products.

A high involvement of the conventional food processing industry in the organic market is not always a prerequisite for a well-developed consumer market. For example, the relatively high consumption of organic products in countries such as Austria, Denmark, Germany and Switzerland is not accompanied by a medium to high involvement of the conventional food producers, but is rather the result of a strong involvement of the specialist organic industry. On the other hand, the relationship between involvement of the conventional food industry and organic production is more clearly defined whereas a higher level of industrial involvement usually goes together with a higher relative share of organic production. In the Netherlands, the involvement of the food industry is somewhere between low and medium, but this may change since a broad variety of companies is presently showing interest to move into the organic market. The next years will prove if this trend is strong enough to hold on.

The study provides a 'snapshot' at a given moment in time. As the developments in the market for organic products are going fast or are even speeding up, the situation may radically change in the next few years. In relation to the Netherlands, the recent increase

of government support and supermarket involvement may be reasons for an accelerated development of organic production and consumption.

1. Objectives and approach

1.1 Introduction

Traditionally, the reduction of pesticide use by farmers has been dealt with exclusively by public policy makers and farmers' organisations. Their policies, however, have not always been as effective as was hoped for. More recently, the influencing of farmers has taken a new turn, because companies in the conventional food industry and retail trade are taking initiatives aimed to increase the market share of food products produced with substantially less or no pesticides. This report aims to give more insight in the nature of these initiatives.

1.2 Objectives of the study

The objective of the study is to get an overview of the present developments in Europe concerning corporate initiatives aimed at more sustainable agricultural practices, with a focus on the reduction of pesticide use. To this end, an inventory was made of food industry initiatives in all EU member states, plus Norway and Switzerland, while focusing on the market leaders in each country. Because of time pressure, it was later decided to leave Ireland and Luxembourg out of the study. To limit the scope of the study, the inventory focuses on all agricultural food products, with the exception of meat. It is not aimed to give a comprehensive overview of all corporate initiatives; our goal is to sketch only the outlines of the relevant developments in the chosen countries in the form of a country profile. To give these profiles more background, attention is also paid to the nature of national agriculture, the present level of pesticide use and relevant government policies and measures.

The study was commissioned by the Dutch ministry of Housing, Spatial Planning and Environment (VROM). The ministry is presently preparing a document on pesticide policy for the period after 2000 as a follow-up to the Multi-Year Crop Protection Plan ('MeerJaren Plan Gewasbescherming') that covers the period from 1991 until 2001. Our inventory of corporate initiatives fits in the governmental preparations for the new policy plan. The study is meant as a benchmark for the situation in the Netherlands. The final goal is to make an assessment of the Dutch position in comparison to that of other European countries.

Agricultural pesticide policy in the Netherlands has traditionally been oriented at keeping the environmental impact of pesticide use within established norms while simultaneously guaranteeing the availability in the market of a sufficiently wide range of pesticide products for crop protection not to endanger the continuity of the farming sector. Specifically, it is aimed at (1) a reduction of the load of pesticides, (2) a diminishing of farmers' dependency of pesticide use in their cropping and husbandry systems, and (3) a reduction of the environmental impact of pesticide use (Ministerie van LNV, 1991). Progress has been made on the first and third objectives by a range of technical adaptations in the formulation and application of pesticide products, but no significant progress has been made concerning the second policy objective (Van den Heuvel et al, 1997). This may be due to a bias in pesticide policy towards technical measures in the 'environ-

mental impact chain' at the expense of attention to the 'agro-food production chain' (see Figure 1). For example, it has been suggested that increased demand for organically grown produce, stimulated by various policy measures along the production chain, may act as a lever in helping farmers to diminish their dependency of pesticide products (Groenewegen *et al.*, 1997). Thus, private initiatives may be instrumental in reducing farmers' dependency of pesticides. However, the reduction of pesticide use by farmers using more sustainable production techniques does not necessarily imply that conventional farmers become less dependent on chemical inputs.

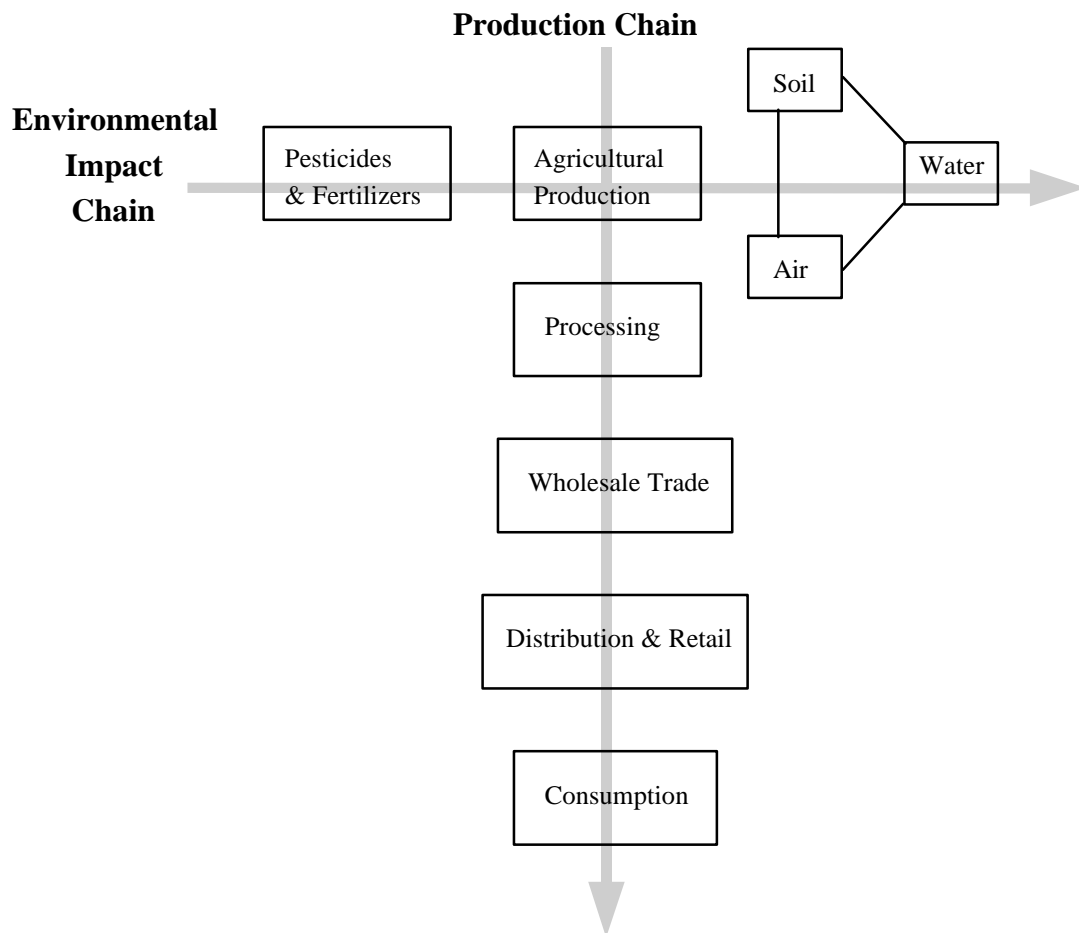


Figure 1 (adapted from Groenewegen *et al.*, 1997).

1.3 Approach of the study

The approach of the study was down to earth. We started with a questionnaire which we sent by fax or email to stakeholders from NGOs and research institutes we already knew or could easily identify (see Annex 1 for the questionnaire). Our idea was to get from them some clues for further research. However, the response was at first disappointing;

the number of questionnaires returned was low and several people commented negatively on the load of work our questionnaire involved. But, unexpectedly, we kept receiving reactions, and after all it may be concluded that it was a quite successful attempt. In addition to the questionnaire, we collected information by way of literature search, Internet search, telephone calls and a few personal interviews. During our research we came across three studies, all published in 1998, which have been the basis for the country profiles. The first one is a report from the English consultancy agency Leatherhead Food RA, giving an overview of the European organic foods market (Comber, 1998). The second one is a German book about organic agriculture in Europe, consisting of a series of country perspectives (Willer (ed.), 1998), and the third one is about the environmental effects of the reform of the European Union Common Agricultural Policy, including 14 national reports (Brouwer & Lowe (eds.) 1998).

Two Internet web-sites need also to be mentioned because they proved to be very useful, while providing the latest news. The first one is the site of Biofood.Net (<http://www.biofood.net>), which is meant as a world wide information platform for organic agriculture, consisting of a consumer and a business section. Biofood.Net was launched in September 1998 in co-operation with a number of organic certifying organisations, including Biogarantie from Belgium, Bioagricoop from Italy, the Soil Association from the UK, and SKAL from the Netherlands. The second site is that of Agriholland (<http://www.agriholland.nl>); it is only accessible for people able to read Dutch. Agriholland provides weekly overviews of agricultural news from the Netherlands but also from other European countries. Their scope is quite broad; attention is paid, for example, to environmental and consumer issues, and to activities of retailers and food industry.

Furthermore, we visited BIO FACH 1999, the largest ecological trade fair in the world, and a seminar on the breakthrough of organic products, organised by the Dutch consultancy agency Aurelia! Advies. These visits provided us with new contacts, and further insights about trends in market initiatives.

After finalising the draft version of the report, we asked country experts to comment on the respective country profiles. Several of them reacted positively to our request and helped us to improve the draft texts.

1.4 Outline of the report

The structure of the report is as following. Chapter 2 provides the context to the inventory of market initiatives by describing agricultural practice and policy in Europe. Chapter 3 gives a general overview of the European consumer market for food and addresses present developments in the food and retailing industries that are relevant to the issue of greening of food supply chains. Chapter 4 consists of 15 country profiles pointing out the initiatives of national retailing and food processing industries against the background of trends in more sustainable agricultural production and consumption, government policy and the influences of other stakeholders. Chapter 5, finally, compares the position of the Netherlands with that of other European countries.

2. Agricultural practice and policy in Europe

2.1 Introduction

This chapter aims to give a general context to the inventory of market initiatives to increase sustainability in the European food and retailing industry. Section 2.2 provides an overview of agricultural activity and pesticide use in Europe. Section 2.3 describes the agricultural policy of the EU. Section 2.4 introduces various forms of environmentally sustainable agricultural practices. Section 2.5 deals with standards and regulations concerning organic agriculture. Section 2.6 pays attention to estimations about organic production in Europe. Section 2.7, finally, contains some concluding remarks.

2.2 Agricultural activity and pesticide use in Europe

European agriculture is characterised by a broad geographical heterogeneity of production systems. At the overall level, however, most of these systems have been subject to intensification and concentration of production in the last 40 years. Table 2.1 gives some basic figures about the agricultural activity in the member states of the EU. Similar figures were not available for Norway and Switzerland. The table shows that France and Spain have by far the highest acreage of agricultural land in Europe, respectively 30,056,000 ha and 25,093,000 ha in 1997. Other countries with a large amount of agricultural land are the UK, Germany and Italy. The Netherlands, with its 1,981,000 ha, has only a small acreage of agriculture, but it has by far the highest output per hectare. Most EU member states (9 out of 15) are net importers of agricultural products. Denmark, France, Greece, Ireland, the Netherlands, and Spain are net exporters.

The level of pesticide use differs considerably between and within European countries. Greenhouse cultivation and irrigated farming, for example, usually take a lot of external inputs. On the other hand, small-scale, traditional production generally coincides with low inputs of agricultural chemicals. Table 2.2 gives an overview of the volume of pesticide products sold in the EU in relation to agricultural land use. In absolute terms, France and Italy consume the largest amounts of pesticide products. When measured in kg/ha, the Netherlands (5,46 kg/ha), Belgium (3,42 kg/ha), and Italy (3,28 kg/ha) are on top of the list. Countries with the lowest consumption figures, notably less than 1 kg/ha, include Austria, Finland, Ireland, and Sweden.

Table 2.2 also shows trends in consumption, comparing the figures from 1995 to those from 1990. In Europe, the total volume of pesticide products sold fell by some 17.7% in the first half of the 1990s (Brouwer & Lowe, 1998). The biggest reductions were realised in Finland (-47.8%), Sweden (-47.8%), and the Netherlands (-42.0%). However, reduction of the pesticide load does not necessarily mean that the environmental pressure is reduced, because in many cases farmers are using less of more potent products (Brouwer & Lowe). Moreover, in some countries, including Greece, Ireland and Portugal, the usage of pesticide products actually increased (Brouwer & Lowe, 1998). More generally, the volumes sold in southern Europe fell at lower rates than in Northern Europe.

Table 2.1 Basic figures related to agricultural land use and agricultural production in the 15 EU member states, plus Norway and Switzerland, in 1997.

Country	Total agricultural land (ha)	Total value of agricultural production (Mio ECU)	Value of agricultural production per hectare (ECU)	Share of imports of agricultural products (%)	Share of exports of agricultural products (%)
Austria	3,412,000	3,583	1,050	8.3	6.7
Belgium	1,375,000	6,592	4,794	11.9	11.3
Denmark	2,721,000	6,932	2,548	15.8	26.6
Finland	2,150,000	2,306	1,073	8.7	7.9
France	30,168,000	46,953	1,556	10.6	13.6
Germany	17,335,000	32,745	1,889	10.5	5.2
Greece	3,456,000	8,815	2,551	16.8	29.9
Ireland	4,325,000	4,435	1,025	9.3	12.5
Italy	14,685,000	35,081	2,389	14.2	6.9
Luxembourg	127,000	181	1,425	11.9	11.3
Netherlands	1,848,000	16,385	8,866	14.0	21.4
Portugal	3,967,000	4,347	1,096	15.2	8.2
Spain	29,649,000	26,853	905	13.8	16.8
Sweden	3,177,000	3,333	1,049	8.3	6.1
UK	15,858,000	18,997	1,198	10.9	6.9
Total EU	134,261,000	217,538	1,620	10.6	7.6

Table based on: Eurostat, European Commission, Directorate-General for Agriculture, Willer (1998).

Table 2.2 Volume of pesticide products sold in the European Union in 1995 measured in tonnes of active ingredients, compared to 1990, and in relation to total agricultural land use.

Country	Total agricultural land use in 1995	Pesticide products sold in 1995 (in tonnes a.i.)	Kg/ha a.i. in 1995	1995/1990 (%)
Austria	3,425,000	3,231	0.94	- 23.9
Belgium	1,337,000	4,572	3.42	- 22.4
Denmark	2,727,000	4,911	1.80	- 21.3
Finland	2,161,000	1,047	0.48	- 47.8
France	28,267,000	84,007	2.97	- 14.0
Germany ^a	17,157,000	25,551	1.48	- 14.0
Greece	3,465,000	8,525	2.46	+ 8.5 ^b
Ireland	4,325,000	2,639	0.61	+46.4
Italy	14,685,000	48,190	3.28	- 17.0 ^b
Luxembourg	127,000	-	-	-
Netherlands	1,999,000	10,923	5.46	- 42.0
Portugal	3,925,000	9,712	2.47	+ 3.8 ^b
Spain	25,230,000	27,852	1.10	- 29.6
Sweden	3,060,000	1,224	0.40	- 47.8
United Kingdom	16,449,000	20,627	1.25	- 12.6
Total EU	128,370,000	253,011	1.97	- 17.7

a-Situation in FRG; b-Situation 1995/1991.

Table based on: Brouwer & Lowe, 1998, Eurostat, 1998.

2.3 Agricultural policy at EU level

The Common Agricultural Policy (CAP) of the European Union was set up in 1958, and replaced the national agricultural policies of the EU member states. It has certainly favoured the modernisation of agriculture in Europe, but the intensification of agricultural production has also led to problems of surpluses and environmental degradation.

The increasing awareness of the need for an economically sounder and environmentally friendlier policy has inspired attempts to adjust the CAP from the 1980s onwards. The 1992 CAP reform marked a turning point. It was aimed primarily at restructuring agricultural markets. One of the central elements of the CAP reform was the encouragement of farmers to use less intensive production methods, thereby reducing their impact on the environment and cutting the creation of unwanted surpluses.

To this end, the CAP Reform of 1992 saw the introduction of both 'mainstream measures' and 'accompanying measures', such as the agri-environment programme: EC Regulation 2078/92. The purpose of this scheme is to contribute to the achievement of policy objectives regarding agriculture and the environment, and to contribute to providing an appropriate income for farmers. Aid is for example available for farmers who undertake to reduce substantially their use of fertilisers and/or plant protection products, or to keep to the reductions already made, or to introduce or continue with organic farming methods.

Thus, regulation 2078/92 provides a framework for all EU member states to implement policies to support organic farming. As it is now, the underlying principles of the implemented policies differ from country to country, and in case of Germany and Italy, from region to region. In most European countries, for example, conversion premiums largely differ according to the type of crop concerned. Higher premiums are generally paid for the conversion of greenhouse cultivation, irrigated cultivation, fruit cultivation, and wine and olive growing. Most of the schemes, but not all, allow for both new farmers converting to, and existing farmers continuing with, organic production to qualify for aid (Lampkin, 1996). Several countries with relatively low conversion premiums recently increased their financial support to organic agriculture, including Belgium, France, the Netherlands and the UK. The EU regulation also includes provisions for training and demonstration in relation to good organic farming practice.

Currently, the EU is engaged in a further round of CAP reform as part of Agenda 2000. This further round has the following objectives: increased competitiveness, high standards of food safety and quality, ensuring a fair standard of living for the agricultural community, the fuller integration of environmental goals, the creation of alternative job and income opportunities in rural areas, and simplification of EU legislation and administration (Brouwer & Lowe, 1998). These changes are seen as necessary to respond to contemporary public demands on agriculture and the countryside and to prepare the CAP for the imminent enlargement of the EU and for the reopening of world trade negotiations on agriculture.

2.4 More sustainable agricultural production methods

Due to the series of environmental problems related to European agriculture, various forms of environmentally more sustainable agricultural practices have come at the focus

of attention. They all have in common that external inputs are drastically reduced. One of the production methods presently gaining ground is organic agriculture. IFOAM, the International Federation of Organic Agricultural Movements, describes organic agriculture as following (<http://www.ecoweb.dk/ifoam>, 1/11/1998): 'Organic agriculture includes all agricultural systems that promote the environmentally, socially and economically sound production of food and fibres. These systems take local soil fertility as a key to successful production. By respecting the natural capacity of plants, animals and the landscape, it aims to optimise quality in all aspects of agriculture and the environment. Organic agriculture reduces external inputs by refraining from the use of chemical-synthetic fertilisers, pesticides and pharmaceuticals'.

An alternative method to reduce the environmental impact of agriculture is through the development of what is called 'precision farming'. In this concept, information technology is considered crucial for optimising operational decisions concerning agricultural input variables. The argument is that the management of spatial and temporal variability of agricultural land may be optimised through the processing and use of data on soil, weather, and productivity at a level of resolution smaller than the individual field. In precision farming, expert decision support systems significantly enhance, or might even substitute for, the farmer's good judgement in managing the complexity and uncertainty of realising maximum yield or profit (Den Hond *et al.*, 1999).

Integrated crop management (ICM) has been presented as a third alternative to reducing the environmental impact of agriculture, but also as an intermitting stage for farmers that gradually adapt their cropping systems toward either organic or precision farming (Den Hond *et al.* 1999). ICM, though much used and debated, is not easily defined. It could be considered as a step-wise implementation of a range of agricultural practices that more or less radically diverge from conventional agriculture. ICM is aimed at (Vos, 1992):

- maintenance of the chemical, physical or biological properties of the soil as a healthy environment for crop production in the future;
- no accumulation of hazardous or potentially hazardous compounds in the soil, including fertilisers, pesticides, or their residues;
- prevention of concentrations of pesticides or their residues and of mineral nutrients, notably nitrate, above agreed standards in soil, groundwater and in surface waters;
- minimal emissions into the atmosphere of volatile compounds such as pesticides, ammonia and nitrogen oxides.

Thus, ICM aims at minimising the use of fertilisers and pesticide products by favouring natural predators, crop rotation and hand weeding. Pests need not be eliminated, but rather kept under control, at levels below which they cause economic damage. In this manner it encompasses the earlier concept of 'integrated pest management' (IPM) (Perkins, 1982). This is largely done through managing the cropping system. Increased attention is given to a range of cropping variables that potentially add to controlling pest damage, such as crop rotations, the application rate of fertilisers, choice of resistant cultivars, phytosanitary measures, soil preparation in the field, timing of seeding, etc. Pesticides are used as one of a range of pest control methods rather than the crop protection method of choice. Supporters of ICM see it as a 'quiet revolution', winning the best of both worlds by marrying organic techniques with the option of chemicals if things go

wrong. Sceptics argue that without (legally) binding rules, ICM can mean more or less anything.

At present, organic agriculture is the only type of the more sustainable agricultural production methods with a certification system for its products, which makes them recognisable in the market and suitable for the payment of premium prices.

2.5 Standards and regulations concerning organic agriculture

The integrity of organic products is safeguarded by legislation and standards, which require regular inspections of all producers and manufacturers, and certification according to strict standards. The goal of certification is to ensure that each producer or handler of organic food or fibres meets the standards for organic production, processing and handling. Certification always includes on-site inspection of the production operation. The certification process focuses on the methods and materials used in production.

Certified organic products can command premium prices in the market which, given arrangements along the production chain, may be translated into a premium for the farmer. Usually, a two-year transition period from conventional to organic production is required for certification. Crops grown on land which is in transition to organic can not be labelled as organic.

The International Federation of Organic Agricultural Movements (IFOAM) is an important organisation in the development of organic standard setting. IFOAM aims to provide minimum standards allowing national and regional certification programmes a basis for developing detailed production standards. The IFOAM standards are subject to constant review and a new set of basic standards is published every two years. To support inspection and certification activities, at least one hundred sets of standards have been developed so far at the national and regional level. These standards are very varied, due to socio-cultural, economic and geo-climatic conditions.

The IFOAM accreditation system is meant to strengthen the regional or national certification standards. Accreditation is the process used to ensure that each certifying agent is competent, independent of financial concern in the operations it certifies, and maintaining the legal standard for organic production. IFOAM has started the accreditation of private and state run certification programs in 1992. The IFOAM accreditation programme is meant to ensure equivalency of certification programmes world wide by confirming whether they meet the IFOAM accreditation programme criteria for certification programmes and the IFOAM basic standards (<http://ecoweb.dk/ifoam>, 1/11/1998). Participation to the accreditation programme is on a voluntary basis.

At the end of 1998, IFOAM introduced an IFOAM accreditation logo to accompany the accredited certifiers' personal one (<http://ecoweb.dk/ifoam>, 1/11/1998). This logo should provide visible reassurance to consumers in countries other than those where the product originated.

The EU legislation defining organic agriculture is largely based on the IFOAM system of inspection and certification. In 1991, the Council of the EU adopted a regulation on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs (EC Regulation no 2092/91, 24 June 1991). In the preamble to the regulation the Council considers that: 'A framework of Community rules on produc-

tion, labelling and inspection will enable organic farming to be protected in so far as it will ensure conditions of fair competition between the producers of products bearing such indications and give the market for organic products a more distinctive profile by ensuring transparency at all stages of production and processing thereby improving the credibility of such products in the eyes of consumers.' The Regulation was implemented on the 1st January 1993, and requires member states to set up an inspection system operated by one or more designated inspection authorities and/or by approved private bodies (Article 9). Annex 1 to the Regulation sums up the minimum requirements for organic production at farm level.

Article 11 of the Regulation opens the EU organic market for products from non-EU-countries. Their access is based on the concept of equivalence; production, processing, documentation and inspection must be equivalent in the exporting country. Imports are allowed from countries explicitly registered (Argentina, Australia, Israel, Switzerland and Hungary) or on a case-to-case basis which involves an import authorisation procedure. A condition for admission to the third country register is national legislation, containing rules equivalent to those in the EU Regulation.

The EU legislation applies to unprocessed agricultural products from vegetable origin, as well as processed food products composed of one or several ingredients. Only processed foods with more than 95% organic agricultural ingredients can be classified as organic, whilst those with more than 70% but less than 95% can be described as 'partly organic'. Non-organic foods are those with less than 70% of their contents being from organic ingredients. EU regulations also exclude the use of genetically modified ingredients in organic foods, which may be a key selling point with some groups of consumers (Comber, 1998). It is expected that the EU legislation will soon cover also products from animal origin.

Already in June 1995, the EU commission was authorised by the EU council to replace the standard indication 'Organic farming - EEC Control System' by a graphic symbol. However, the logo has not yet been presented, because organic farmers associations oppose such a logo since it is likely to diminish the profile of their own logos in the market (Schmidt, 1996).

Following the implementation requirement of the EU regulation 2092/91, all EU member states have by now designated certification bodies which all have their own inspection schemes, symbols and organic standards.

2.6 Organic production in Europe

European organic production steeply increased in the last decade: the number of organic farms rose from less than 10,000 to more than 80,000, and the acreage from less than 250,000 to more than 2,200,000 ha (cp. Comber, 1998, Rippin, 1999, Willer, 1999). The official figures on organic agriculture in Europe are being collected and published by Dr. Nicolas Lampkin from the Welsh Institute of Rural Studies in the UK, and are as yet only available for 1993-1996. More recent country figures differ between authors, and are therefore indicative. Table 2.3 gives estimations about organic acreage, including land in conversion, in 1998 and average annual growth rates in the last five years.

Table 2.3 Organic acreage, including land in conversion, in the EU member states, plus Norway and Switzerland.

Country	Organic acreage in 1993 (ha)	Organic acreage in 1998 (ha)	Relative share in 1998 (%)	Average annual growth rate 1993-1998 (%)
EU	800,000	2250,000	1.6	45.3
Austria	170,000	350,000 ^a	10.1	26.5
Belgium	3,800	6,800 ^a	0.5	19.7
Denmark	26,000	90,000	3.3	49.2
Finland	38,000	119,000	5.5	42.6
France	120,000	230,000	0.4	20.0
Germany	225,000	374,000	2.2	13.2
Greece	0,400	7,200	0.1	340.0
Ireland	5,500	29,500	0.7	87.3
Italy	90,000	610,000 ^a	4.1	144.4
Luxembourg	0,320	0,750	0.6	28.7
Netherlands	9,000	19,000	1.0	22.2
Norway	3,779	15,581 ^b	1.5	62.1
Portugal	4,000	17,000	0.4	65.0
Spain	30,000	140,000 ^a	0.6	91.7
Sweden	60,000	110,000 ^a	3.2	20.8
Switzerland	-	78,369 ^c	7.3	-
United Kingdom	82,000	188,000	1.0	25.9

a-Situation in 1997; b-Based on data received from Debio, 10/6/1999; c-Based on data from Helga Willer, 17/3/1999.

Table based on: Rippin, 1999 and Eurostat.

All European countries show a growth of acreage and number of farms involved. Since 1997, Italy is the country with the highest organic acreage in absolute terms, notably 610,000 ha in 1997, while Germany and Austria follow at a considerable distance with respectively 374,000 ha in 1998 and 350,000 ha in 1997. Countries with relative shares above the EU average of 1.6% include Austria (10.1%), Switzerland (7.3%), Finland (5.5%), Italy (4.1%), Denmark (3.3%), Sweden (3.2%), and Germany (2.2%). The Netherlands with its 1% of organic land use can be classified somewhere in the middle. Among the countries with the highest growth rates in recent years are the Mediterranean countries, Ireland, Norway and Denmark. Between 1993 and 1998, their average annual growth has been above the EU average of 45.3%. The Dutch growth rate was in the same period well below the EU average, notably at 22.2%.

When the figures of relative organic acreage and annual growth are combined, the countries can be categorised into four groups. The first group consists of countries with a high relative share as well as a high growth rate (both above the EU average); they may be considered the booming countries in organic production. Denmark and Italy fulfil these conditions totally, and Finland nearly. Countries belonging to the second group passed the 'booming' years and are now stabilising which is indicated by a high relative share in combination with a low growth rate (below the EU average). These are Austria, Sweden and Germany. The third group consists of countries with a low relative share in combination with a high growth rate, including Greece, Ireland, Norway, Portugal and Spain. These are the countries with a high potential: in a few years, they may turn out to be either booming or lagging behind. Countries of the fourth group are lagging behind which

is represented by a low relative share as well as a low growth rate, notably Belgium, France, Luxembourg, the Netherlands and the UK. For Switzerland, it was not possible to make a proper assessment because the necessary data about the development of organic production are as yet not available. However, Switzerland is expected to qualify for the group of either booming or stabilising countries.

Considering the figures on organic production, it is difficult to draw unambiguous conclusions on the reduction of pesticide consumption because figures on the sales of pesticide products are only available at the country level, and not at the local or field level (see Table 2.2). In theory one may expect that countries with a high average level of pesticide inputs per hectare will benefit relatively most from conversion to organic production.

2.7 Conclusions

Agricultural production is an important production sector in the EU economy. European agriculture has become quite intensive in most regions and in most cropping systems, partly due to the CAP system. Recent reforms of the CAP system are aimed at, among other objectives, reducing the environmental impact of agriculture, thus reinforcing various trends towards sustainable farming practices, including organic farming, precision farming, and integrated crop management. Organic farming stands out among these trends being relatively easy to communicate to, and recognisable by, the larger public. Within the larger context of changing agricultural practices and policies, several factors have been a stimulus to the development of organic farming. Among these factors are national policies to reduce the application of pesticides and their environmental impacts, specific regulations and policies (conversion payments), the certification of organic farming practices, and growing demand from consumers. In the last decade, all European countries showed a growth of organic acreage and the number of farmers involved. When combining the figures of relative share and average annual growth, four groups of countries can be distinguished, notably booming countries, stabilising countries, countries with a high potential, and countries lagging behind. The Netherlands belongs to the last category.

3. Food market developments and trends in Europe

3.1 Introduction

This chapter aims to give a general overview of the market situation in Europe, with a special focus on trends and developments related to the greening of food supply chains. Section 3.2 contains information about the European consumer market for food in general and the market segment of organic products more specifically. Section 3.3 describes trends and discussion themes in the European food and retailing industry. Section 3.4 contains conclusions.

3.2 The market for food in Europe

The market for food in European countries is influenced by a large variety of characteristics, including e.g. income, life styles, and food culture. In the context of this study we were not able to go into detail on this subject. However, to give a first impression of the issues at stake, we included Table 3.1 providing basic figures on the population of the EU member states, the GDP per inhabitant, relative household expenditure to foodstuffs, and domestic organic food consumption. Four European countries have a population of more than 50 million people: Germany, the UK, France and Italy. As a consequence these countries represent the largest consumer potential in the EU.

The GDP per inhabitant varies between the extremes of Greece (13,138 ECU) and Luxembourg (31,531 ECU). Countries with a GDP above the EU average of 18,979 ECU are Austria, Belgium, Denmark, France, Germany, Italy, and the Netherlands. Related to the share of household expenditure to foodstuffs, the people in the Mediterranean countries spend relatively the largest share of their income on food, and the people in Germany, Luxembourg, the Netherlands and the UK the smallest share.

Organic food is one of the fastest growing sectors of the entire European food market. Sales nearly tripled in value between 1990 and 1997, rising from 1,438 million ECU to be worth in excess of 4,271 million ECU, and the market is forecast to grow from its current level of under 2% to take 10% of total food sales by the year 2006 (Comber, 1998). Germany, the UK and France represent the largest markets for organic products in absolute terms. Regarding relative consumption shares, we consider the value of 1% as the limit value indicating whether the consumer market in a certain country has left its niche and has become mainstream. Table 3.1 shows that five European countries already passed the 'magical' line, notably Austria (5%), Denmark (3%), Germany (2.5%), Switzerland (1.5%), and Sweden (1-1.5%). The Netherlands belongs to the countries with a less developed consumer market for organic food.

Generally, the level of consumer interest in organic foods is higher in northern Europe than it is in southern Europe, where the emphasis is on the production of organic food for northern European markets (Comber, 1998). Overall, purchasers of organic food tend to be the wealthier consumers. The main reasons to consume organic products are related to food quality and safety, environmental awareness and animal welfare.

Table 3.1 Population of the EU, the GDP per inhabitant, expenditure to foodstuffs, and share of domestic organic food consumption.

Country	Population (1000 inhabitants)	GDP/inhabitant (ECU)	Share of household expenditure to foodstuffs in 1996 (%)	Share of organic food consumption in 1998 (%)
Austria	8,068	21,349	12.7	5
Belgium	10,170	21,456	12.4	< 1
Denmark	5,275	21,751	14.0	3
Finland	5,132	18,726	13.4	1
France	58,492	19,817	13.8	< 1
Germany	82,012	20,865	10.2	2.5
Greece	10,487	13,138	16.8	< 1
Ireland	3,652	18,294	14.2	< 1
Italy	57,461	19,239	15.9	1
Luxembourg	418	31,531	10.9 ^a	< 1
Netherlands	15,567	19,835	10.7	< 1
Norway	4,370 ^d	-	-	1
Portugal	9,934	13,415	23.6 ^c	< 1
Spain	39,299	14,758	16.8 ^b	< 1
Sweden	8,844	18,672	13.4	1-1.5
Switzerland	7,060 ^d	-	-	1.5
United Kingdom	58,902	18,929	10.5	1
Total EU	373,713	18,979	14.6 ^a	-

a-Situation in 1991; b-Situation in 1993; c-Situation in 1995; d-Situation in 1996.

Table based on: Eurostat, European Commission, Directorate-General for Agriculture, and Comber (1998).

The supply side of the European organic food market is highly fragmented, with thousands of small to medium-sized specialist companies in operation (Comber, 1998). In recent years, however, there have been several important developments that are changing the characteristics of the market. First, some of the large multinational food companies based in Europe started to offer organic product lines besides their conventional ones, but sales in pan-European terms are (still) insignificant in comparison with those of their mainstream brands. Examples including for example Groupe Danone (France), Del Monte (UK), Nestlé (Switzerland) and Unilever (UK/NL) will be discussed in Chapter 4, in the profiles of the home countries of these companies. Basically, these companies choose between two strategies, either the taking over of a specialist organic company or the establishing of a new product line from scratch.

Second, supermarkets became increasingly involved in the organic market, and launched organic retailer own brands. The inception of the European organic movement dates back more than 50 years, but it was only in the 1970s, with the expansion of nature food stores that organic foods began to achieve a commercial significance (Comber, 1998). Since then the market has changed dramatically: in the late 1990s organic foods are increasingly achieving mainstream status, and this is reflected in a drastic change in distribution. Today, supermarkets represent over 50% of sales in several European countries, including Austria, Belgium, Denmark, Finland, Sweden, Switzerland, and the UK. In Germany, Italy and the Netherlands, however, nature food stores still have a dominating position (Comber, 1998).

Third, some of the specialist suppliers changed their strategic behaviour by forming alliances and partnerships to benefit from economies of scale and access to distribution channels, as well as to help ensuring more consistent supplies (cp. Comber, 1998).

3.3 Trends and discussion themes in the food and retailing industry

Trends at the large food fairs of Europe, activities of business organisations and discussion themes at specialist conferences and seminars may provide indications of developments in the food and retailing industry. To identify the trends at the large food fairs, we decided to take a closer look at the participants of ANUGA and SIAL (Salon International de l'Alimentation), the most important fairs of the food industry in Europe.

ANUGA is held every one year in Germany, and SIAL every other year in France. The last ANUGA in 1997 had 6,540 exhibiting companies (<http://www.koelnmess.de/anuga>, 1/15/99). From its web-site on Internet, it is not clear if special attention was paid to organic food products. At SIAL 98, with about 4,000 exhibitors, organic products were undeniably more present than ever before; there were 257 exhibitors of organic products (6.4%) (<http://www.sial.fr>, 6/5/1999). Table 3.2 gives an overview of the exhibitors in relation to the countries involved in this study. From the table, it may be concluded that Austria, France, and Switzerland had a relatively strong representation of organic exhibitors.

Table 3.2. Number of exhibitors by country at SIAL 1998.

Country	Total number of exhibitors	Number of organic exhibitors	Relative share of organic exhibitors (%)
Austria	41	6	14.6
Belgium	286	16	5.6
Denmark	18	1	5.6
Finland	12	0	0
France	1675	144	8.6
Germany	109	6	5.5
Greece	104	3	2.9
Ireland	44	0	0
Italy	778	13	1.7
Luxembourg	9	0	0
Netherlands	149	9	6.0
Norway	6	0	0
Portugal	28	1	3.6
Spain	298	5	1.7
Sweden	17	1	5.9
Switzerland	24	6	25.0
UK	136	5	3.7

Table based on: <http://www.sial.fr>, 6/5/1999.

BIO FACH is the world's biggest trade fair of ecological products, including food, drinks, cosmetics, textiles, leather goods, furniture, toys, and paper. It is often called the 'ANUGA of organic food'. Other European countries have also trade fairs of ecological products. Among the most prominent ones are those of Italy and Spain.

BIO FACH 1999 was held from the 18 to 21 February in Nuremberg. Country of the year was Italy, because of the considerable growth of organic production that this coun-

try has experienced recently. In total 1258 companies had registered for participation at BIO FACH, with 736 of them involved in the food business. Most of the countries involved in this study had exhibitors at BIO FACH 1999. Germany, as the organising country, and Italy, as the country in the spotlight, had by far the most exhibitors, but other countries with a considerable representation included Austria, France, the Netherlands, and Spain.

The food and retailing industry is increasingly exchanging information and experiences about the greening of food supply chains at the international level. EUREP, for example, is a working group of 36 large European retailers discussing requirements for integrated crop management, the so-called good agricultural practices (GAP), and trying to create support for these from agricultural producers. It is EUREP's final aim to reach consensus on the content of the GAP and make them a universal standard in Europe. Among the members of the group are Sainsbury's (UK), Delhaize De Leeuw (Belgium), ICA (Sweden), and the leading Dutch supermarket chain Albert Heijn. One of the last meetings of the group was at the occasion of BIO FACH 1999, when the members met to talk about declarations of involvement, communication and statutes.

CIES, the global food business forum, provides another example of the growing interest of industry for the greening of supply chains. The membership of CIES is made up of 250 major food retailing companies drawn from some 48 countries and an equal number of their suppliers world wide. Environment is one of the issues CIES is dealing with. Its Environment Committee has formulated the following mission:

- to constitute a business network on environmental issues for senior management in the food retailing and manufacturing sectors;
- to introduce new tools and analysis, and to develop common approaches and solutions on environmental issues in the food retailing and manufacturing business for sector-wide forecasting and implementation.

In April 1999, CIES organised an environment conference with the central theme 'Sustainability, Performance, and Profit: The new challenges for the food business'. According to CIES, the corporate world is on the verge of a major paradigm shift that requires a fundamental review of business concepts. Speakers included representatives from Albert Heijn (Netherlands), Groupe Danone (France), ICA (Sweden), Kesko (Finland), Sainsbury's (UK), and Nestlé (Switzerland), and the European Commission and the United Nations Environment Programme. On the agenda were a wide range of issues, including organics and sustainable agriculture in marketing, the challenge of sustainable farming, and communication with the public.

To promote organic agriculture and trade, and to exchange experiences, the organic umbrella organisation IFOAM organises intermittently scientific/technical and trade conferences. The 5th IFOAM Trade Conference on Organic Products was held in the UK in 1997, with as a central theme: 'The Future Agenda for Organic Trade' (ecoweb.dk/ifoam/conf, 1/19/99). The conference was sponsored by the British supermarket chain Sainsbury's, and by HIPP, the largest organic producer in the world. Sessions included: current markets and future trends; organic trade as the model for sustainable world trade; fair trade -integrating the social agenda, food quality and safety issues-; making global organic standards work, and the role of governments in developing or-

ganic trade. The multinational company Nestlé was scheduled in the programme to give a presentation on the multinational perspective, but later withdrew its contribution.

The 6th IFOAM Trade Conference on Organic Products will be held from 20-23 October 1999 in Italy. As is foreseen now, the theme of the conference will be 'The year 2000: The development of markets and the quality of organic products'.

At the occasion of the 12th IFOAM Scientific Conference in 1998, a special international seminar called 'Organics in the Supermarket' was organised (<http://ecoweb.dk/ifoam/conf/conf98/index.html>, 1/15/99). At the seminar issues related to marketing and logistics were under discussion:

- how to reach the consumer with price and quality;
- how to guarantee the organic origin;
- how to supply in great volumes with regularity;
- how to communicate the benefits of organic products to the public;
- how to identify organic products in the midst of thousands of conventional merchandises;
- how should the producer negotiate with the supermarket;
- how to develop a fair and transparent market on a massive scale.

The 13th IFOAM Scientific and Technical Conference will be titled 'IFOAM 2000: The world grows organic', and will be held in Basel, Switzerland, in 2000. The conference intends to explore ways in which organic agriculture can gain global momentum. The results of the conference will be presented at the final plenary session as the Declaration of Basel that will be communicated to decision makers world-wide. Major issues for discussion will include (<http://www.ifoam2000.ch/themes.html>, 1/19/99):

- research in progress: current projects, scientific exchange;
- rural development: organic agriculture, a future for rural areas;
- beyond organic agriculture: holistic approaches to food production;
- living systems: organic agriculture as a blueprint of life processes.

3.4 Conclusions

Organic food is gaining market share in the EU, especially in the Northern and Middle European countries. The highest market shares are found in Austria, Denmark, Germany, Sweden and Switzerland. This is partly a result of the relatively higher standards of living and the greater environmental awareness of their populations. The Netherlands is still one of the countries with a less developed consumer market for food.

Overall, supermarkets and food multinationals are increasingly entering the organic market with growth rates exceeding those of traditional players such as nature food stores. Thus, a restructuring of the organic food market is taking place, evidence of which can also be found in the topics of discussion of various European retail roundtables, food trade fairs and specialist conferences and seminars.

4. Country profiles

4.1 Introduction

This chapter consists of 15 profiles of European countries. Each profile has the same structure. First, a few remarks are made about important characteristics of the country involved. Second, an overview is given of production and consumption developments. Third, the initiatives of the food industry and retailers to reduce pesticide use are shortly described, and the initiatives to stimulate the organic market are summarised in a table. Fourth, attention is paid to certification schemes and logos. Fifth, a description of relevant government policy is given. Sixth, influences of other stakeholders are mentioned if we have been able to identify them. The final part of the profile provides an outlook to the future. Because the Netherlands is at the focus of attention in this study, we will start with a relatively detailed Dutch profile. The other countries are being dealt with in alphabetical order.

4.2 The Netherlands¹

Background information

The Netherlands, with a population of about 15 million people, has one of the most intensive farming systems in Europe. The high output levels are supported by a considerable use of agrochemicals. The emphasis in production is on pig raising, greenhouse cultivation, and bulb-growing. About 60-70% of Dutch agricultural production is exported to markets inside and outside the EU (Brouwer & Van Berkum, 1998).

Overview of production and consumption

The Dutch market for organic products is lagging behind in comparison to most other European countries. It has been suggested that the main reasons for this arrears include the late introduction of organic products by the major supermarket chains, and consumer attitude (cp. Comber, 1998, Kortbech-Olesen, 1998). Dutch people have the image to spend not too much money on food. EU statistics show indeed that Dutch consumers spend a smaller percentage of their income on food than most EU citizens (see Section 3.2). However, the year 1996 is marked as a turning point in the Dutch organic trade, because retail sales, especially of dairy products, began to increase with a higher percentage than in the preceding years (Kortbech-Olesen, 1998).

The slower market development seems to be reflected in organic production; growth rates in the Netherlands are lower than in most other countries. Besides the slow development of market sales, it has been suggested that the intensive nature of Dutch agricul-

¹ This Section is partly based on interviews with Willem Hofmans, Albert Heijn, 3/2/1999, en Dagmar van Rijnberk, ministry of LNV, 4/2/1999. They later commented on the draft version of the country profile. Further comments were received from Hans Muilerman, Stichting Natuur en Milieu, 14/6/1999, Wim Engels, Aurelia! Consultancy, 14/6/1999, and Carol Haest, Haest Consultancy for the Organic Industry, 21/6/1999.

ture makes it more difficult to farmers to convert to organic farming methods (Comber, 1998). An additional factor limiting growth could be the relatively late entry into force of the government support system that initially provided for only moderate conversion premiums. However, figures relating to 1998 show a considerable increase of organic producers, especially in the dairy sector. Growth amounted to 200 extra producers in comparison to 60 in previous years (Biologica, 1998). In Spring 1999, the 1000th organic farmer was welcomed. The number of processors also steeply increased: from 432 in 1996 to 575 in August 1998. Table 4.1 presents recent data on organic activity in the Netherlands.

Table 4.1 Data on organic production in the Netherlands in 1998.

Total of organic producers	962
Certified producers	784
Producers in conversion	155
Share of total agricultural area	0.9%
Total organic acreage	19,300 ha
Organic fruit and vegetable production	28%
Organic arable production	24%
Organic livestock production	39%
Organic mixed production	9%

Source: Biologica, 1998.

In spite of the relatively small production and consumption of organic food, the Netherlands is very significant as a processor and a trader of organic products. Around 80% of organic products which are imported are subsequently re-processed, packed and re-exported to key European markets, such as the UK and Germany (cp. Comber, 1998, Kortbech-Olesen, 1998).

Nature food stores have long been the most important retail outlet for organic products. According to Biologica (1998), the Netherlands presently counts 380 of these shops. In 1997, they still accounted for 75% of total sales (Comber, 1998). Supermarkets had then a share of 20%, while other outlets including direct sales, subscription schemes and farmers' markets took the remaining 5%. However, in 1998 the balance began to turn with an increase of the market share of supermarkets: they now account for 35-40% of sales (Rabobank, 28/10/1998).

Initiatives of the retailing and food processing industries

Albert Heijn, owned by Ahold, is the largest food retailer in the Netherlands with an estimated market share of 28% realised through its 670 shops. The company positions itself as a high-quality supermarket, attracting a relatively large share of the better educated, middle and higher income groups of the Dutch population. Until last year, Albert Heijn, offered a selection of just 20 organic products, including some vegetables. However, in February 1998, the company announced the launch of a new own-brand label ('AH Biologisch') which is to cover an extensive range of lines, including fresh produce, meat, dairy products and groceries. Reportedly, the company decided to extend the organic product range only after consumers requested to do so through a petition (HP/De Tijd, 17/7/1998). Subsequently, Albert Heijn asked its suppliers if they were able to sup-

ply organic products besides the conventional lines. Several suppliers reacted positively to the request and as a result the number of conventional companies involved in the organic market increased significantly.

To promote the organic product range, Albert Heijn uses its monthly customer magazine (*Allerhande*, 2.1 million copies). In March 1999, Albert Heijn intensified its promotion campaign with television advertisements, temporary price reductions and the publication of a leaflet to inform consumers about the organic home brand, containing a list of the 100 organic products presently available. The company aims to offer 500 organic products in about a year. Recently, Albert Heijn publicly expressed its concern about the high price level of organic products and announced to strengthen collaboration with producers and processors with the aim of a more reasonable price level (BFN Newsservice, 9/3/1999).

Already in the early 1990s, Albert Heijn started to develop a programme for ICM ('Aarde & Waarde'). The publication of the Multi-Year Crop Protection Plan (MJPG) in 1991 was the reason to start with the programme. Albert Heijn had the advantage of its policy of long-term supply contracts. Because of its concern for quality, the company has traditionally exercised a tight control over the various supply chains, which in case of fruits and vegetables consist of a limited number of direct suppliers who buy the produce of selected farmers. The ICM programme started with the development of ICM norms and criteria to which Dutch suppliers and farmers should aim to conform. Subsequently, the programme has been implemented step-wise within the existing supply chain management system. At first a small number of farmers started with ICM on a limited number of crops. Both the number of crops and the number of participating suppliers and farmers were increased such that in 1999 an estimated 95% of crops from Dutch origin will be produced under ICM standards, and probably 100% in 2000. Three years ago Albert Heijn also started with an ICM programme for its foreign suppliers and farmers, to begin with in Italy and Spain. It is Albert Heijn's final aim to offer fresh produce, produced under either ICM or organic practices. In relation to the ICM-programme, Albert Heijn co-operates with several other large European retailers (see Section 3.3).

The other large supermarket chains, such as Edah (300 shops) and Dirk van der Broek have only small ranges of organic products on offer. Some of the smaller supermarket chains, however, such as Konmar (25 shops) and Dekamarkt (60 shops) have developed more specific corporate policies on organics. Organic pioneer Konmar is the Dutch supermarket with the most extensive range of organic products (on average 300), including a diversity of fresh fruits and vegetables. Because of its extensive range, environmental organisations chose Konmar as the 'green' supermarket of 1998. But Konmar's pioneering role has not been without obstacles. The company has repeatedly experienced difficulties in obtaining supply agreements with some of the larger wholesalers, because these suppliers did not want to jeopardise their relationship with their traditional customers, the nature food stores (Comber, 1998). Dekamarkt pursues a policy of offering a selection of its vegetables only as organic, because it saves the extra packaging necessary in case of a conventional as well as an organic product offer (Vermeulen, 1998).

Originally, organic dairy production was largely confined to specialist producers. However, recently, the two major Dutch dairy co-operatives moved into the organic market. In 1998, Campina Melkunie took over two organic dairy companies, thereby strengthen-

ing its position. At the occasion of the last take-over, the company stated that the policy of a mark-up on the price of organic milk in comparison to conventional milk will be continued (Press Release Campina Melkunie, 28/10/1998). Early 1999, Friesland Coberco started to market a range of products under the brand name 'NatuurBest' (ANP, 2/10/1998).

There are several examples of conventional companies in the Dutch food industry taking initiatives that directly or indirectly affect pesticide use by farmers. A group of major Dutch food companies, for example, is allied in the Dutch foundation for a sustainable food industry ('Stichting Duurzame Voedingsmiddelenketen'), which aims at environmentally sound product development and integrated chain management. Among those companies are Unilever (see Section 4.16) and Cosun which consists of a conglomerate of business units, including for example Suiker Unie which recently did an appeal on conventional sugar beet producers willing to convert to organic production (Agrarisch Dagblad, 17/12/1998). Another business unit of Cosun, Aviko, a processor of potatoes, developed a new species of potato requiring a minimum use of pesticides (<http://www.aviko.nl/engels/pommiesinfo.htm>, 16/12/1998).

The fresh produce co-operative The Greenery, handling about 60% of all Dutch fresh fruits and vegetables, recently announced to aim at a 10% turnover share of organic products in the next five years, because of the increasing demand from the large European retailers (Groenten en Fruit, 13/11/1998). Since the company is expecting shortages of supply, especially of greenhouse vegetables, it has planned to actively source farmers willing to convert. However, the Greenery has not been explicit up to now how it will realise its stated goals.

HAK is a producer of preserved fruits and vegetables with a corporate policy that is very much focused on chain management and total trace-ability of its products. Recently, the company developed an ICM programme and started to experiment with organic production. Moreover, HAK plans to make information available on the Internet concerning the content of its jarred fruits and vegetables (FEM, 4/4/1998). Consumers may learn about the origin of the ingredients (farmers, pesticides, sunshine, rainfall etc.) by way of typing the jar's identification number.

Among the large number of specialist organic companies active in the import/export business, several have significance on a pan-European basis including Eosta International (fresh produce), Dutch Organic International Trade (Do-It) (cereals and groceries), Euro Herb Bio BV (Europe's biggest supplier of organic herbs and spices), and Oerlemans Diepvries Centrale (Europe's number one in frozen organic potatoes and vegetables). (Comber, 1998). Eosta International is a truly pan-European group, handling high volumes of both locally grown and imported fresh fruit and vegetables. It trades through a vast network of wholesalers and supplies a large share of the European supermarket chains. The company has a strategic alliance with Organic Farm Foods (UK) to source and ship organic produce from major producing areas world wide, and also co-operates with several other fresh produce distributors.

Important specialist wholesalers are Natudis NV with a broad range of products, and the fresh produce co-operative Nautilus which is one of the suppliers of Albert Heijn. Nautilus is also a member of the Organic Producers Europe Network that aims to exchange information on supply and demand in 10 European countries. The specialist wholesaler

Odin is responsible for the introduction of the subscription scheme in the Netherlands in 1994, an example which was adopted by some other specialist wholesalers. Subscribers receive every week a paper bag filled with vegetables or fruits selected by the supplier. Since their introduction, subscription schemes have shown a fast growing number of subscribers. At present, 30,000 people have a subscription to one of the schemes (ANP, 11/3/1998). The 'surprise' effect concerning the contents of the bag, the rediscovery of 'forgotten' vegetables, the information about producers, and the included recipes are important factors explaining the success of these schemes.

Table 4.2 Conventional companies active in the Dutch organic market.

Company	Sector	Initiative	Date
Albert Heijn	Supermarket	AH Biologisch	1998
Konmar	Supermarket	Natuurland	
Dekamarkt	Supermarket		
HAK	Preserved fruit and vegetables		
LNV/Van Hecke	Catering		
Numico	Baby food	Zonnatura	
Campina Melkunie	Dairy		1997
Friesland Coberco	Dairy	NatuurBest	1999
Cosun/Suiker Unie	Sugar		1999

Certification schemes and logos

The Dutch government has designated the private organisation SKAL to inspect and certify organic food production in the Netherlands. SKAL has developed the EKO certification mark to distinguish organic products. Research shows that the EKO logo is well known among consumers (Agrarisch Dagblad, 23/2/1998). 72% of the population recognises the symbol, whereas the 'Milieukeur', the Dutch eco-labelling logo, is far less known with only 23% of recognition. Platform Biologica is the Dutch umbrella organisation promoting the interests of organic agriculture and the specialist retail trade.

The Dutch eco-labelling system, in contrast to those of other countries and the EU, covers also some food products. To date, environmental requirements have been defined for bread, apples, pears, onions, wheat, barley, apple juice and potatoes (Persbericht Stichting Milieukeur, 21/1/1998). These requirements are less stringent than those for organic labelling. The use of pesticides (and other chemical substances) is not totally forbidden, but only allowed under certain conditions.

Government policy

To implement EU regulation 2078/92 and to stimulate conversion to organic agriculture, the Dutch government issued a compensation scheme in 1994 which provides for five years of financial support to farmers in conversion ('Regeling Stimulerend Biologische Productiemethode'). However, the scheme did not seem to have the expected effect on the growth rate of conversion; the premiums were generally considered too low.

Subsequently, the ministry of LNV launched the Action Plan Organic Agriculture ('Plan van Aanpak Biologische Landbouw') in November 1996. A major reason to come up with the action plan was the observation that the developments in the Netherlands were lagging behind in comparison to neighbouring countries. The action plan contains no

numerical targets about the organic acreage to be realised. The ministry holds the opinion that market forces will determine which share is feasible.

With the publication of the action plan, the minister of LNV proposed to raise the conversion premiums. The new scheme entered into force end of March 1999. The total of financial contributions was initially limited to a maximum of 10 million guilders, but was later raised up to 15 million guilders because the number of interested farmers was higher than expected. Table 4.3 gives an overview of former and current compensation premiums per hectare.

Table 4.3 Former and current compensation premiums for farmers converting to organic agriculture.

Type of production	Former premium (ECU)	Current premium (ECU)
Arable farming	227	500
Vegetable production	545/839*	1,134
Fruit production	839	2,269

*Different premiums for open air and greenhouse cultivation.

In addition to increased farmer support, the government considered it necessary to increase the sales potential by creating more and new outlets, especially by involving the conventional circuit of supermarkets and catering industry, and to strengthen demand (<http://www.minlnv.nl>, 10/7/1998). Market development, subsidies and promotion campaigns are among the instruments to implement the plan. In late 1998, for example, the ministry started a television campaign to promote the consumption of organic products.

Part of the action plan is a quality programme for organic products ('Kwaliteitsprogramma Biologische Produkten'). The programme aims to improve the tuning between on the one hand the producers and processors of organic products and on the other hand the conventional supermarkets and catering industry (LNV, 29/06/1998). A steering group with representatives from all links in the food chain (including Centraal Bureau Levensmiddelenhandel, Veneca, Koninklijke Horeca Nederland, LTO and Biologica) has been set up to advise the minister on the implementation of the programme. Within the framework of the quality programme, workshops have been organised in Spring 1998 for several sectors, including dairy, fruits and vegetables, meat, and groceries to identify current bottlenecks and to look for solutions (LNV, 29/6/1998). Based on the workshop proceedings, the steering group concluded that the present bottlenecks are related to knowledge insufficiencies, lack of tuning of supply and demand, and lagging consumer appreciation of organic products.

Influences of other stakeholders

Aurelia! Advies is a Dutch consultancy agency specialised in the Dutch organic market. Apart from its involvement in the workshops organised by the ministry of LNV in 1998 (see above), it develops all kinds of activities in relation to the marketing of sustainable food products while targeting conventional as well as specialist companies. In 1997, Aurelia! organised its first seminar about organic products in supermarkets, questioning whether organic products would experience a breakthrough in Dutch supermarkets. Presentations were held about successful examples from other European countries, including

FDB (Denmark), and Delhaize de Leeuw (Belgium) (Aurelia! Advies, 1997). Among the participants were several representatives of conventional food companies and retailers. At the second seminar in 1999, which was organised in co-operation with the organic umbrella organisation Platform Biologica, it was concluded that the breakthrough of organic products was no longer a question, but had become a certainty. Several key players made strategic statements emphasising the increasing significance of organic agriculture in the Netherlands (Aurelia! Advies, 1999). First, the minister of LNV delivered a key note speech about his strong commitment to the organic sector. Second, the chairman of the Dutch farmers' union (LTO) stated that only farmers who are able to produce environment-friendly have a 'licence to produce' in the long term and that the LTO will support organic agriculture intensively. Third, the fresh produce co-operative The Greenery announced a change in company policy in favour of a future market share for organic products. These were all remarkable events that had been unthinkable only one year ago. In addition to the strategic statements, presentations were held about national experiences, with speakers from Albert Heijn, Friesland Coberco, Dekamarkt and Van Hecke Catering. Among the public were representatives from a broad diversity of conventional companies, definitely a lot more than two years ago.

Environmental organisations play an active role to influence the behaviour of consumers and retailers. In 1998, for example, Greenpeace and Milieudefensie started with so-called EKO-inspections (Persbericht Greenpeace and Milieudefensie, 23/11/1998). Staff members visited 165 supermarkets, counted the number of products provided with an organic label, and gave a red, yellow or green card to the supermarket manager accordingly to the counting results. Subsequently, they elected the 'EKO-supermarket' of the year (Konmar) and gave a lot of publicity to the results.

Outlook

After years of only marginal progress in the organic sector, the recent increase of government support and supermarket involvement may be reasons for an accelerated development of organic production and consumption in the Netherlands. Especially the launching of the Albert Heijn own label line for organic products is expected to be an important impetus for increasing sales. In addition, ever more companies are collecting information about the possibilities to convert to less harmful agricultural practices. However, it is may be too early to speak of a breakthrough. The next years will prove if this trend is strong enough to hold on.

With regard to the potential for production growth, the willingness of farmers to change their agricultural practices will be a determining factor. According to a research of IKC-Landbouw, 2-5% of Dutch farmers is inclined to convert to organic agriculture in the next five years. The higher prices of organic products may be a barrier for the development of the organic sector, as Dutch people are not inclined to spend much money on food. Its further growth will strongly depend on the ability of suppliers to offer organic products to consumers at prices they are prepared to pay (Kortbech-Olesen, 1998).

4.3 Austria

Background information

The mountainous country of Austria has about 8 million inhabitants. The country became a member of the EU in 1995. In comparison to other European countries, agriculture is of a rather extensive nature with low levels of chemical inputs.

Overview of production and consumption

Austria is one of the European countries with the highest level of organic agriculture, undeniably due to strong government support (cp. Comber, 1998, Vogl et al, 1998). Livestock farms have shown the most significant growth, and account now for 80% of organic acreage (Vogl et al, 1998). Most organic farms are located in areas with already relatively extensive agriculture which has positively influenced conversion (Vogl, 1998). Lately, the increase in production has somewhat slowed down.

Together with the growth in production, consumption has also steeply increased: Austria is now one of the bigger consumers of organic products in Europe. Estimations vary between 2 and 5% of total food sales (cp. Comber, 1998, Vogl et al, 1998). Supermarkets have the largest market share, amounting to 65-70% of sales. Fresh produce and dairy products account for virtually all sales, with processed food sales being insignificant, except baby food. Domestic production accounts for about 65% of the market, with 35% coming from imports (Comber, 1998). Demand tends to exceed supply in the fresh produce and grain areas, whereas there is an oversupply of milk and other dairy products. It is even stated that about 50% of organic milk produced in Austria is actually marketed as such, with the rest being sold as conventional milk (Comber, 1998).

Initiatives of the retailing and food processing industries

The most significant factor contributing to increasing sales has been the entrance of major retail groups, notably that of Billa and Spar, launching their retailer own brands in the mid 1990s (Comber, 1998). The introduction of organic products was accompanied by big advertisement campaigns. Moreover, the initiatives of the two retailers encouraged other major grocery chains to follow their example. Especially Billa experienced the advantages of its pioneering role; it welcomed many new customers, and the increase in turnover was beyond expectations (Vogl et al, 1998). The average price difference between organic and non-organic lines is around 20%. In general, organic foods tend to have a prestige image, and shops sell them in an area that is separate from that of conventional products (Comber, 1998).

Wholesalers of organic products do not play a major role in the Austrian market; most supermarket groups have direct supply contracts with organic producer associations. It is only very recently that Austrian food companies have begun to take an interest in producing processed organic foods. In addition, several mainstream conventional food companies have entered the market, including Unilever and Nestlé.

Table 4.4 Conventional companies active in the Austrian organic market.

Company	Sector	Initiative	Date
Billa	Supermarket	Ja Natürlich	1994
Spar	Supermarket	Natur Pur	1995
Hipp ^a	Baby food	Hipp	
Inzerdorfer	Ready meals	Bio Gulasch	1996
Nestlé ^b	Dried soups	Maggi Bio	1997

a-German-based company; b-Swiss-based company.

Certification schemes and logos

Austrian organic food production is strictly regulated and controlled. In addition to the legal requirements laid down by EC regulation 2092/91, farmers have to comply with the regulation of the organic food association to which they belong. If they are to receive government support, they also have to fulfil certain conditions of the Austrian agricultural ministry. However, membership of an organic association is not statutory; about 35% of organic farmers is not a member of any organisation. By far the largest of the 11 producer organisations is Ernte für das Leben. In 1994, the Austrian government introduced an obligatory BIO label, which exists in two varieties: one for products with at least 70% of domestic origin, and one for the remaining products (Vogl et al, 1998).

ARGE Bio-Landbau is the Austrian umbrella organisation for organic agriculture. It has contributed to the success of the organic sector by intensive lobbying in the media (Vogl et al., 1998). ARGE Bio-Landbau also set up a consumer service that aims to stimulate the dialog between organic farmers and consumers. Members of this so-called Bio Club receive the club's newspaper and benefit from discounts using their membership card. In 1994, ÖIG was established, as a counterpart of ARGE. ÖIG criticises the sales of organic products through the conventional supermarket channel, because of the risk of market distortions.

Government policy

The year 1989 was the turning point for organic production in Austria, because the Austrian government then started to provide financial support to organic farmers, which it has consistently increased, and this has contributed to a strong rise in production. Financial support is now available to every organic producer, whether in conversion or not; in 1996, 94% of the Austrian organic farmers made their claims valid (Vogl et al., 1998). In addition, the government pays subsidies to the 11 producer associations and the two umbrella organisations. The educational infrastructure is very well organised with several specialist schools throughout the country. Technical advice to farmers is generally provided by the producer associations. However, research into organic production methods receives only a small amount of government funding, and is still in an early stage of development (Vogl et al., 1998).

Outlook

It is expected that the market share of organic products will rise to around 10% within the next 5 to 10 years (Comber, 1998). IFOAM is even of the opinion that in Austria the sales of organic food products are likely to overtake those of conventional ones within

10-15 years (<http://ecoweb.dk/ifoam>, 1/19/99). Because of the dominance of the big retailers, there is some concern that farmers will get too dependent from them, and that consequently farmers' prices will decrease (Vogl et al, 1998). Therefore, efforts are increasingly made to strengthen the potential of the regional market. Another challenge in the next years will be to convince consumers about the value of organic production and to make them recognise the necessity to pay higher prices.

4.4 Belgium²

Background information

Belgium, with about 10 million inhabitants, consists of Flanders and Wallonia which both have considerable government responsibilities. Agriculture is especially in Flanders of a rather intensive nature.

Overview of production and consumption

The Belgian market for organic products is rather small, and although it grows steadily, its growth rate is well below that of many other European countries (Comber, 1998). The largest market area is believed to be fresh produce, but there is also demand for groceries and prepared foods. Organic production is also small, even too small to meet Belgian demand (cp. Van Boxem, 1998, Comber, 1998). As a consequence, approximately 50% of organic products needs to be imported. Belgium is also an exporter of organic products, especially vegetables to Germany (Van Boxem, 1998).

Initiatives of the retailing and food processing industries

Supermarkets are increasingly dominating the Belgian organic market, representing around 65% of sales. The big supermarket chains -Delhaize de Leeuw, GB, and Colruyt- all sell organic products. Delhaize, the leading retailer in organics, is even considered one of the pioneers in the European mainstream market. It started its initiative in 1989, and sells now more than hundred organic products under its own home brand (LBAktualiteiten, 15/05/98). GB offers a range of organic products and has also developed a programme of controlled production aimed at Belgian as well as Dutch farmers. Colruyt launched its extensive environmental programme 'Green Line' in 1990. Part of the programme is the identification of products which are environmentally less harmful, including organic products; these products carry a green coloured label. Although the cost prices of organic products are higher than those of conventional products, Colruyt claims to offer them at similar consumer prices (<http://www.colruyt.be>, 12/3/98).

Several national and foreign wholesalers are active in the Belgian market. Biomarché is the dominant supplier of organic fruit and vegetables; these are also sold by the auction called Brava. Two other big distributors operating in the Belgian market are the French company Distriborg, supplying the Bjorg brand, and La Vie, supplying the Le Goût de la Vie brand to Belgian supermarket chains.

² Comments on the draft profile were received from Carol Haest, Haest Consultancy for the Organic Industry, 21/6/1999, and Bert Maes, Blik, 11/6/1999.

Presently, there is a lot of activity among the wholesalers of organic products. An explanation may be that the market prospects are considered to be encouraging. For example, Lima Reformwaren merged with Natudis Belgium, a branch of Natudis NV in the Netherlands, and two Dutch companies, Eosta International and Van der Steen, created the company Biofresh which has been set up to serve the Belgian market with organic produce.

To serve the trendy public, the company WSL BIO was recently created. It launched a still small but well conceived assortment of organic products of gourmet quality under the O.A.O. brand, with packaging in exclusive Philippe Starck design (BF.N news service, 29-9-98). With this O.A.O. brand, it is aimed at the first place at organically committed supermarket chains, one in each country. Tests have been run in Delhaize De Leeuw in Belgium and Carrefour in France. The Bijenkorf now sells the O.A.O. products in the Netherlands.

Table 4.5 Conventional companies active in the Belgian organic market.

Company	Sector	Initiative	Date
Colruyt	Supermarket	Green Line	1991
Delhaize De Leeuw	Supermarket	Delhaize Bio	1989
GB	Supermarket		
Mik	Dairy	Pur Natur	

Certification schemes and logos

The ministry of Agriculture has appointed two certifying organisations to ensure that Belgian produced organic foods meet with official standards. These are Ecocert and Blik. Both have agreed to use the Biogarantie logo. Bioforum is the Belgian umbrella organisation for organic agriculture.

Government policy

Government support to organic agriculture is rather weak in Belgium. In 1994, the government published a regulation providing for financial support to farms in conversion, which would stay into force until 1999 (Van Boxem, 1998). Recently, the regulation was extended for at least one year. The financial support for conversion of vegetable production will be increased threefold, but the contribution for grassland conversion will be diminished. The government also started demonstration projects to inform conventional farmers about organic agriculture. It is hoped for by the Belgian organic sector that these projects can be converted into a technical farmers' advice service which presently does not exist in Belgium. Research into organic agriculture is scarce.

Influences from other stakeholders

The environmental organisation 'Bond Beter Leefmilieu' recently organised a special campaign ('10 op 10 voor de biologische landbouw'), aiming to increase the share of organic agriculture in Flanders up to 10% in 2010 (BFN Newsservice, 9/3/1999). Among the sponsors were conventional dairy producer Mik and supermarket retailer Delhaize De Leeuw. Farmers, processors and wholesalers, many restaurants and catering organisa-

tions as well as nature food shops and the main supermarket chains joined in a huge campaign in order to promote the growth of the organic sector.

Recently, the Belgian farmers' union ('Boerenbond') got actively involved in organic agriculture.

Outlook

Since supermarkets have a strong position in the marketing of organic products in Belgium, it may be expected that the Belgian consumption of organic products will steadily increase. However, production might stay behind if the infrastructure for organic agriculture will not be improved. It is even feared that organic products imported from countries with stronger governmental support will take over the market (Van Boxem, 1998).

4.5 Denmark³

Background information

Denmark is a country of almost 5,5 million inhabitants. Its conventional agriculture is highly export oriented and dominated by the dairy and meat sectors. It is among the most industrialised in the EU.

Overview of production and consumption

Organic agriculture in Denmark is characterised by strong government support and by significant involvement of both producer co-operatives and supermarket chains in managing the supply chain (Michelsen, 1996). With the benefit of hindsight it can be stated that this 'tripod' allowed for a balanced growth of both supply and demand (Hamm & Michelsen 1996). However, organic agriculture would not have been so much of a success in Denmark without the pioneering work of the organic grassroots that paved the way for the conventional companies and repeatedly kept them up to the mark.

85% of organic farms have livestock, and correspondingly, a large share of Danish organic acreage is used for the production of fodder crops (grassland, grains). Organic farming is strongly concentrated in Jutland (Willer, 1998). Table 4.6 illustrates the increases in the number of certified organic farms and converted acreage.

Hamm and Michelsen (1996) distinguish three periods in the development of organic farming in Denmark:

- 1980-1987 - growth in supply through farmer initiatives;
- 1987-1993 - growth in supply through government support;
- 1993-1996 - growth in demand through initiatives from the market (distribution and sales).

Hardly any organic farming existed before 1980. The establishment of LØJ in 1981 was a first milestone. LØJ - a private certification body for organic farming - aims to stimu-

³ This Section is partly based on telephone interviews with Christian Ege (Ecological council, Copenhagen), Jesper Lund Larsen (SID, Copenhagen), Paul Holmbeck (LØJ, Århus) and Johannes Michelsen (University of South Jutland, Esbjerg), in November 1998. Comments on the draft profile were received from Jan Holm Ingemann, 28/6/1999.

late organic farming and sought unconventional methods of doing so, e.g. FDB⁴ was contacted to discuss ways of increasing the sales of organic products. FDB was interested, knowing of a strong latent consumer interest through consumer surveys. In 1987 the Danish government decided to support organic farming through legislation, a certified label (the 'Ø'-label), research and extension, and by means of financial support. However, producers started to compete with each other for access to the established distribution channels, rather than to co-operate to create new channels. In this context, MD-Foods and Kløver Milk succeeded in capturing a dominant market share in the processing and sales of organic milk (Michelsen 1996). In this situation, FDB faced stagnating sales and 'there was a real danger that FDB would be lost as a faithful partner with major market potential between 1988 and 1992' (Michelsen, 1996:21). In order to overcome the difficulties, FDB changed their purchasing policies, selecting only a limited number of closely collaborating producers. 'The trade [was] based on a detailed agreement with mutual obligations governed by close contracts between FDB and a single representative of the growers' (Michelsen 1996:21). Small organic producer organisations have become the backbone of the distribution system to supermarkets (Michelsen 1996). Specialist companies such as Biodania, Økokød, Friland emerged from these. A further significant step forward was the 15-20% price reduction on organic products by FDB daughter SuperBrugsen in September 1996.

Table 4.6 Growth of organic farming in Denmark.

Year	Milestones	Number of certified farms	Acreage (converted and in conversion), in ha.
1981	Establishment of LØJ		2000
1984		85	
1987	Legislation on organic farming		
1988	Financial support	219	5880
1990		523	11581
1992		675	18500
1993	Price reductions by FDB	640	20090
1994		677	21145
1995	Action plan sustainable agriculture	1050	40776
1996		1166	44710
1998		2270 (3,5%)	~ 100000 (3,6%)

Table based on various sources, including: Comber (1998), <http://www.ecoweb.dk>, Økologisk Landscenter (no date), Willer (1998).

The Danish market for organic products is one of the most developed in Europe. Organic products are believed to hold 3% of the total food market in 1997, second after Austria (Comber, 1998). It is expected that the organic market share may increase to 10% by 2005 (Kortbech-Olesen, 1998). Not only has there been a strong consumer demand, government policy and private initiatives from notably the retail sector - the pioneering role of FDB - have also been highly stimulating to the strong development of organic sales.

⁴ FDB is the national consumer co-operative movement, supplying more than 30% of the Danish food market through six supermarket chains, among which Superbrugsen (Michelsen, 1996).

Denmark has a significant production of organic milk and other dairy products (63% share of total organic production value), reflecting the importance of the dairy sector in agricultural production, followed by vegetables - notably carrots - and potatoes (21%), and eggs (9%). Despite a relatively high percentage of certified organic production land, Denmark is not self-sufficient in organic fruit, cereals and flour, and vegetables (at the end of the growing season). It is estimated that the area of organically grown agricultural land must increase to about 200,000 ha (7% of total arable land) in 2000 to meet the still growing demand (Willer, 1998).

Exports are low, because of strong home demand. Demand tends to exceed production, even in the dairy sector where production quadrupled between 1992 and 1997 to 139,000 tonnes (Comber, 1998). Interestingly, small specialist companies, such as Thise Dairy, are leading in exports.

Initiatives of the retailing and food processing industries

Supermarkets account for 75% of organic sales (Comber, 1998). All supermarkets are now selling organic products. FDB entered the organic food market in 1981 and today represents an estimated 38% of all organic food sales (Comber, 1998). A breakthrough occurred in 1993 when FDB daughter SuperBrugsen realised a significant price reduction and marketing effort. The company reasoned that the price levels at that time were prohibitive for most consumers. Consumer polls showed consistently high interest in organic products, but that latent demand could only be met at significantly lower price levels. Noting the immediate success of the initiative, other supermarkets quickly followed this lead. Currently, FDB operates a consumer loyalty system that favours organic products.⁵

FDB brands most of its 700 organic products with the company's own labels: Natura and Markens. FDB is currently replacing conventional milk with organic milk.

The two largest dairy groups, MD Foods and Kløver, merged in Spring 1999. Previous to that they had already established a joint venture partnership that accounted for 70% of all Danish organic milk production, and jointly marketed their products under the Harmonie brand.

An important move in the development of organic farming has been the establishment of Biodania in 1993. Biodania is a co-operative organisation set up by suppliers co-operations including Fælles Grønt Vest, Svanholm Grøntsager and Sørís, with the objective of stimulating the sales of organic vegetables through marketing initiatives. Biodania mainly serves the large supermarket chains.

Mainstream bakery and milling companies have become heavily involved in the production of organic bread and cereal products. Schulstad Brød A/S is a major competitor among the 500 or so bakeries producing organic bread (Comber, 1998; Willer, 1998).

All in all, there are some 120 food processing and wholesale companies active in the organic sector (Willer, 1998).

⁵ FDB daughters SuperBrugsen and Dagli' Brugsen operate a consumer loyalty system that yearly returns consumers a percentage of the value of their purchases. For conventional products this is 2%, for organic products 5% (<http://www.fdb.dk/omfdb/1997/forbrugermiljoe.html>).

(Associations of) farmers' co-operatives - Biodania, Økokød - have thus been important in co-ordinating the supply chains of vegetables and meat in order to match the retailers demand for steady supply. Interestingly, in the dairy sector mainstream companies such as MD Foods and Kløver have been able to seize the market, mainly because the farmers were unable to join forces. The organic bread and cereals sector is more dispersed with both mainstream and specialist suppliers.

Table 4.7 Conventional companies active in the Danish organic market.

Company	Sector	Initiative	Date
FDB	Supermarket	Natura Markens	1981
MD Foods/Kløver	Dairy	Harmonie	
Schulstad Brød A/S	Bakery		

Certification schemes and logos

As one of the first European countries in 1987, Danish parliament passed legislation on the norms for the production and marketing of organic products. The state-controlled 'Ø'-label was introduced in that same year and it is reportedly a very important factor in establishing a high level of trust in organic products among the Danish population. Imported products may be marketed under the 'Ø'-label if production is certified according to the EU organic farming directive or IFOAM regulations. Certification and control is done by the Ministry of Agriculture and Fisheries. Additional controls are done by the Landsforeningen Økologisk Jordbrug (LØJ, established in 1981) and Foreningen for Bio-Dynamisk Jordbrug (Demeter, established in 1985).

Government policy

The Danish government has a strong commitment to organic farming. In addition to the 'Ø'-label, various policies and institutions should be mentioned. In 1987, the Økologisk Jordbrugsråd (Council for Ecological Agriculture) was established as an advisory council to the Minister of Agriculture. This Council proposed an action plan for sustainable agriculture in 1995. It formulates the objective to have 15-20% of all the Danish farms converted to organic production methods by the year 2000. Conversion compensation was increased and a subvention of 13 million ECU was allocated for the further development of organic agriculture (dissemination of information to farmers and traders, education, exhibitions, demonstration farms, product development, marketing associations and market analyses). Another 13 million ECU was allocated for research into organic farming (Willer, 1998).

The objective of the Danish pesticide policy was a reduction by 50% before the end of 1997 compared to the average level in 1981-1985 (measured as active ingredients and frequency of application). A number of specific measures was introduced, among which requirements regarding the handling and applying of pesticides by professionals, accounts of pesticide use on all farms over 10 ha, prohibition of pesticide use in ecologically sensitive areas and within two meters from shores of streams and lakes, and a sales tax on pesticides. Indeed, average pesticide use in Denmark has reduced from about

7000 tonnes of active ingredients in 1981-1995 to about 4000 tonnes of active ingredients in 1993-1996 (Linddal, 1998).

Influences from other stakeholders

The state-supported Økologisk Landscenter in Århus has an important role in enhancing the sales of organic products through dissemination of information to, and polling, consumers. Labour unions, such as the General Workers' Union of Denmark (SiD) and the Danish Secretariat of Food, Drink and Service Workers (FDS), are stimulating the discussion about sustainable agriculture.

Outlook

The success of organic farming in Denmark has been widely reported. A number of factors are believed to account for its high growth rates and market shares, in addition to strong state support:

- active producer co-operatives and co-operation with conventional distribution channels;
- pro-active role of supermarket chains;
- the strict control on the quality of the 'Ø'-label;
- high level of environmental awareness in media and consumers;
- significant price reductions in 1993, changing the image of organic products from luxury goods to commodities.

However, the increase in production is still insufficient to supply the growing demand. Denmark will remain dependent on imports. Major challenges in the further development of organic farming are extending its scope, e.g. from milk to processed dairy products, from carrots, potatoes and fodder crops to a more balanced production assortment, from imports to exports (Willer, 1998).

4.6 Finland⁶

Background information

The country of Finland, with about five million inhabitants, lies in the upper northern part of Europe, and is largely covered with forests and tundras; only 8% of its surface area is used for agricultural purposes (Heinonen, 1998). As a result of the climatic conditions, agricultural production is fairly limited, and mainly consists of livestock farming and the production of cereals and berries. However, greenhouse farming has been a fast growing sector in recent years. Finnish farmers use the smallest amount of pesticides measured by agricultural product quantity in Europe (ANP, 16/04/1998). Finland became a member of the EU only in 1995.

⁶ This Section is partly based on questionnaires sent back by Minna Halme, Helsinki School of Economics, 11/12/1998 and Kari Tiilikkala, IPMEurope representative for Finland, 10/3/1999. Comments on the draft profile were received from Sampsa Heinonen, Plant Production Inspection Centre, 14/6/1999.

Overview of production and consumption

Organic production in Finland has increased considerably in recent years, resulting in a relative share well above EU average. The emphasis in production is on dairy products and cereals, especially rye, but the Finns also grow a large variety of other organic crops, including, rather exceptionally, greenhouse fruits and vegetables (Comber, 1988).

Finnish supermarkets started to market organic products already at the end of the 1980s, but these initiatives were hampered by a lack of supply, and a total dependence on imports (Heinonen, 1998). Similar barriers prevented the emergence of nature food stores. When domestic organic production increased in the early 1990s, the range of organic products offered by supermarkets increased, especially in the dairy and cereals sectors. However, fresh produce is less available, which has been the reason for increasing imports of vegetables and fruits. So far there have been only minor exports of organic products from Finland.

Initiatives of the retailing and food processing industries

Kesko and SOK operate the most important supermarket chains in Finland. They both sell organic products but not a full range. During the study, information was only found about the activities of Kesko. In 1996, Kesko made the decision to improve its environmental performance. The company aims to increase the market share of environmentally less harmful products, and wants to offer them to their customers in all possible product categories. Kesko's present product range includes eighty organic food products (<http://www.kesko.fi/eng/environment/tuotteet.htm>, 12/11/98); the company has not launched an organic home brand.

Overall, the number of companies processing organic or low input products is increasing. Among the conventional companies involved in such initiatives is Cultor, a Finnish-based multinational company operating in several market sectors (<http://www.cultor.com>, 12/11/98). In relation to our study, its activities concerning sugar and bakery products are especially relevant. In recent years, Cultor committed itself to implementing the principles contained in the International Chamber of Commerce's Business Charter on Sustainable Development, and signed a co-operation agreement with WWF Finland. One of Cultor's units, Cultor Baking, engaged in rye production for fresh bread and crispbread products, has implemented the concept of controlled farming. Contract farmers are required to use sound, environmentally compatible cultivation methods and implement the principles of sustainable development. In addition to the controlled farming programme, Cultor promotes organic farming. Currently, organic rye production accounts for only approximately 2%, but this figure is expected to grow in the future. Organic sugar beet cultivation and the producing and marketing of organic sugar are currently under evaluation. Other examples of large Finnish companies with low input as well as organic programmes are Raisio and Lännen Tehtaat. However, it was not clarified during our study whether these companies are as pro-active as they claim to be; for the time being they seem to take an awaiting stance.

Table 4.8 Conventional companies active in the Finnish organic market.

Company	Sector	Initiative	Date
Kesko	Supermarket		1996
SOK-Yhtymä	Supermarket		
Lännen Tehtaat	Vegetables		
Talkion Leipomo ^a	Bakery		
Cultor	Bakery products		
	Sugar		
	Cereals		
Raisio Yhtymä	Frozen food		

a-Owned by the Finnish-based Fazer Companies.

Certification schemes and logos

Since 1994, the Finnish ministry of agriculture has the final responsibility for the control and certification of organic production (Heinonen, 1998). In the years before 1994, Luomu-Liitto, the private umbrella organisation which looks after the interests of the organic sector, had already developed a control and certification system. Luomu-Liitto still performs an important role in the Finnish organic sector; its field of operation includes promotion of organic farming, standards development, market development, publishing and certification (Heinonen, 1999).

The Finnish State label for certified organic products was only launched in May 1998 (Heinonen, 1999). Previous to that the Ladybird-label, owned and administrated by Luomu-Liitto, was the common organic label. As it is now, most organic products produced in Finland are still marketed under the Ladybird-label, but the new State label is gradually gaining more users.

Government policy

Government support to organic agriculture is relatively abundant in Finland. It was introduced already in 1990, when the Finnish government established a support system for conversion to organic agriculture which resulted in a first wave of increasing organic production in areas which had already a larger share of organic activity (Heinonen, 1998). The accession to the EU in 1995 brought a second wave of conversion, especially in areas with intensive farming, caused by the general fall in producers' prices which stimulated farmers to look around for more profitable options. In addition, the government increased financial support to organic farmers; the present system provides for five years of funding to farmers in the process of conversion as well as to those already producing organically. The government also gives financial support to the agencies providing technical advice to farmers and to institutes performing research on organic agricultural practices.

Outlook

Finland is one of the leading countries in organic farming in Europe. The target of 120,000 ha (equivalent to a share of 6%) set by the Finnish government was reached in 1998 (Heinonen, 1998). Since the early 1990s, a discussion is going on about the feasibility of an 'organic Finland'. A recent study, performed by Miettinen et al (1997),

shows that organic agriculture can be considered a fairly realistic alternative to conventional agriculture, especially in countries such as Finland, where the natural conditions are difficult, and markets of conventional 'bulk' products are oversupplied. However, the present high increase of organic production poses the country to problems, comparable to those in other booming countries. The increase in production makes it, for example, necessary to improve existing marketing and distribution systems, and to create new markets (Heinonen, 1998). To meet these demands, the government has decided to establish a State-funded marketing organisation (Heinonen, 1998). In addition, the organic umbrella organisation Luomu-Liitto aims to improve distribution and regular supply by co-ordinating the activities of the producer organisations.

4.7 France⁷

Background

France, with 58 million inhabitants, has the highest acreage of agricultural land use of all countries involved in our study. Cereals are one of the most important crops. The country has also a major position in the world food industry. It is for example a big producer of vegetable preserves.

Overview of production and consumption

Until 1985 France was Europe's leading organic food producer and an important exporter of organic fresh produce. However, the development of organic production stagnated in the years afterwards. Reynaud (1998) suggests that a tendency to protectionism of organic farmers, a strong conventional farmers' union, a lack of a united organic front, and a lack of specific government support were the main reasons for the decline of the French position.

Presently, organic foods form a small but rapidly growing part of the French food consumption (cp. Comber, 1998, Kortbech-Olesen, 1998). Food quality and safety seem to be issues increasingly pre-occupying the minds of French consumers. A key driving force behind market expansion has been the increasing availability of organic products in supermarkets. Between 1995 and 1997 the share of sales turned in favour of supermarket outlets at the expense of nature food stores (Comber, 1998). Important features of the French organic market include the linkage with the gourmet and delicatessen market, and the involvement of the diet-guru Michel Montignac.

Due to its relatively small production, France imports a considerable amount of organic products, including many that could be produced locally (Kortbech-Olesen, 1998). The lagging national production is generally considered a serious bottleneck for the development of the market.

Initiatives of the retailing and food processing industries

Carrefour, with 132 super and hyper markets, is the French supermarket chain which made most progress in the organic market. It has developed its own initiative to source

⁷ Comments on the draft profile were received from Gérald Assouline, 18/6/1999.

organic products and market them under its own label Carrefour Bio⁸. To ensure adequate supply, Carrefour is supporting the development of small organic farms while offering new labour contracts for young farmers and/or the unemployed. The initiative was developed in response to consumer research indicating increasing demand for organic products and was inspired by organic gardener and general director Daniel Bernard. The French supermarket giant launched the initiative along with a pledge to support small-scale, more humane and sustainable agriculture. Other French supermarket chains to place strong emphasis on organic foods include Auchan, Casino, and Monoprix. Traditionally, supermarkets focused on processed organic products, but are now increasingly moving into fresh food areas. The large retailers all offer own-label lines.

The French specialist organic food industry is fairly concentrated compared to other countries (Comber, 1998). In recent years, several specialist companies emerged which are specialised in the supply of organic products to supermarkets. The biggest supplier is Distriborg, established in 1997, which distributes fresh produce, dairy products, bakery and cereal products, and a large range of groceries to the large retailers. Distriborg also operates its own chain of about 130 nature food stores under the name of La Vie Claire. Other important specialist distributors, especially of fresh produce, are Arcada, which has an alliance with the British supplier Organic Farm Foods, Bioprim, Uni-Vert and Al-terbio, which sources its products from Spain.

The specialist companies are now facing increasing competition from major conventional producers, marketing organic lines alongside existing conventional ranges (Comber, 1998). Among those is Groupe Danone, one of the world's largest food companies that purchased the organic grocery producer Bio Vivre in 1996.

Groupe Danone is especially big in dairy products and biscuits. Danone has dozens of regional and international brands, including Danone (yoghurt), LU (biscuits), Galbani (dairy), Minute Maid (fruit juices), Star (groceries), La Cocinera (prepared and frozen foods) and Lea & Perrins (groceries) (<http://www.danonegroup.com>, 21/1/1998). It has an extremely strong presence in the food markets of France, Italy and Spain. According to Danone's own publicity, the group acts 'upstream' involving suppliers in its green policies by imposing quality standards and supporting environment projects. It claims to be supporter of integrated farming practices which includes integrated pest control which is defined as a compromise between spraying crops with calculated amounts of certain chemicals to ensure good yields, and organic farming using natural predators to control pests ([http://www.danonegroup.com ... integrated_farming.html](http://www.danonegroup.com...integrated_farming.html), 12/1/1998). According to Danone, over 100 farms in France have already adopted the integrated farming methods.

Bonduelle and General Conserves, large conventional producers of preserved fruits and vegetables, both developed ICM programmes.

Besnier was the first of the large conventional dairy producers launching organic milk. Its Lactel Bio entered the market in 1995. Since the launching of Lactel Bio, other dairy producers followed and the sales of organic dairy products have since then shown a

⁸ Based on information received from Carolyn Foster, Welsh Institute of Rural Studies, 19/1/1999.

strong growth. A key factor to the success of organic dairy products has been the widespread availability in supermarket outlets which sell them at prices well below those of specialist outlets (Comber, 1998). However, current production is insufficient to meet demand. Large conventional bakeries are also increasingly entering the organic market. Among those are Les Grandes Moulins de Paris and Sofrapain.

Table 4.9 Conventional companies active in the French organic market.

Company	Sector	Initiative	Date
Auchan	Supermarket		
Carrefour	Supermarket	Carrefour Bio	1997
Casino	Supermarket	Casino Bio	1998
Monoprix	Supermarket	Monoprix Bio	
Soleco	Fresh produce	Florette Bio	1998
Groupe Danone	Processed vegetables	Bio Vivre	1997
	Dairy		
	Cereals		
	Groceries		
Sofrapain ^a	Bakery products		1997
Novartis ^b	Cereals	Céréal	
Hipp ^c	Baby food		
Nestlé ^b	Baby food		1998
Vitagermine	Baby food	Baby Bio	1996
Besnier	Dairy	Lactel Bio	1995
		B'A	
Eurial-Poitouraine	Dairy	Nactalia	1995
Triballat-Noyal	Dairy	Vrai	1995
Sodiaal	Dairy	Biolait	1997

a-Owned by British-based Tomkins; b-Swiss-based company; c-German-based company.

Certifications schemes and logos

French organic food production is controlled by three organisations, including Ecocert Sarl, Qualité France, and Ascet (Reynaud, 1998). In 1996, the French government established the official organic food logo AB ('Agriculture Biologique'), which has gained a strong image amongst French consumers. The Federation Nationale de l'Agriculture Biologique (FNAB) is the umbrella organisation which promotes the interests of French organic agriculture. FNAB also provides technical advice to producers.

Government policy

The stagnation of organic production in the 1990s is largely due to a lack of government financial support. In December 1997, however, the French government announced that it was to invest a large amount of money in a programme to increase and improve organic food production and distribution (Plan Pluriannuel de Développement en de Promotion de l'Agriculture Biologique 1998-2002). By the year 2005, France aims to become one of the leading producers of organic foods, increasing its organic land area to 3% of total agricultural land use (Assouline et al, 1999). Among the measures proposed are a harmonisation of regulations and control, a steep increase of financial government support,

and the support of marketing and promotion activities (Reynaud, 1998). The French government has not developed any specific policy on integrated production.

Influences from other stakeholders

The farmers' organisation APCA set up a programme to promote good agricultural practices (Assouline et al, 1999). APCA gives advice to farmers and supports pilot projects.

Outlook

The prospects for organic production and consumption in France seem very positive since government support and the involvement of supermarkets and the conventional food industry have considerably increased in recent years. To be less dependent on imports of organic products, the French government has set ambitious goals to increase domestic organic production. However, it is yet too early to predict if the planned increase of production will keep pace with the growing demand, and how this will affect France's position as an importer and exporter.

4.8 Germany⁹

Background information

Germany is a federal state with a certain autonomy of the regional governments. Since the unification with former Eastern Germany in 1990, it has more than 80 million inhabitants. Environmental protection is a major issue of policy debate in Germany.

Overview of production and consumption

Germany has played a central, and often pioneering, role in the development of organic production and consumption in Europe. In the first half of the 1990s, Germany was the biggest producer as well as consumer of the countries involved in this study. However, since 1997 Italy took over as the number one producer. Although German production continues to increase, it is presently growing more slowly than in other European countries.

Sales of organic food products have remained relatively static for the past few years (Comber, 1998). Possibly the most important factor holding back the market is that sales largely take place outside mainstream channels. However, this may change because supermarkets are presently expanding their organic ranges. Other explanations include the high premium prices for organic products and consumer confusion because of the proliferation of organic labels (about 100). However, this situation may improve since the responsible organisations have finally agreed on a joint label that was recently launched at BIO FACH 1999. Furthermore, inadequate supplies of fresh produce have hindered the market. It has been estimated that between 60 and 70% of all organic produce is imported, with key suppliers being Italy and the Netherlands (Comber, 1998).

⁹ This Section is partly based on questionnaire sent back by Luitgard Schwendenmann, Naturland, 11/11/1998. Comments on the draft profile were received from Helga Willer, SÖL, 10/6/1999.

The organic bakery market is fairly well developed; the organic dairy market is still relatively small, but is earmarked as having a strong potential for growth (Comber, 1998).

Initiatives of the retailing and food processing industries

Several German supermarket chains offer organic product ranges, but these have been fairly small for a long time. Tengelmann was the first supermarket chain in Europe, introducing an organic home brand. It launched its label Naturkind already in 1985. Other supermarket chains offering organic products are Rewe and Asko/Metro.

Producer organisations of organic farmers fulfil a central role as wholesalers to the specialist companies and conventional supermarkets and food producers. Bioland, Biopark, Demeter and Naturland are the most important ones.

Several conventional food producers have moved into the organic market. Examples include Lehmann Natur with fresh produce and Groupe Danone with organic dairy products. However, Hipp is the largest processor in the German organic market. It markets its successful organic baby food range not only in Germany, but also in Austria, France and the UK. About 70% of Hipp's production is organic, but the company aims to increase this share to 100% in the next few years. Only recently, Hipp started a new activity, namely to sell organic fresh produce meant for supermarket sales. To this end, an alliance was sought with Dutch Eosta and British Organic Farm Foods.

The German organic specialist sector is large, diverse and fragmented. Rapunzel is Germany's biggest specialist food trader and processor, distributing more than 700 Rapunzel branded products, mainly to nature food stores.

Table 4.10 Conventional companies active in the German organic market.

Company	Sector	Initiative	Date
Asko/Metro	Supermarket	Grünes Land	1995
Globus	Supermarket	Terra Pura	1998
Rewe	Supermarket	Füllhorn	
Tengelmann	Supermarket	Naturkind	1985
Hipp	Fresh produce	Biohof	
	Baby food		1996
Lehmann Natur ^a	Fresh produce	Ökogarten	
Hoffart	Frozen food	Öko First Frost	1997
Frosta	Frozen food		
Völpel	Dried vegetables		
Groupe Danone ^b	Dairy	Jahreszeit	1997
Lufthansa	Airline catering		
BZ Bio-Zentrale ^c	Bakery products	Gut & Gerne	
Numico ^d	Groceries	Zonnatura	
	Baby food	Milupa	

a-Owned by the US-based banana company Chiquita; b-French-based company; c-50% ownership by the sugar, hot beverage, and snack food group Pfeifer & Langen; d-Dutch-based company.

Certification schemes and logos

Germany has nine producer organisations which all operate their own controlling and certification systems, including different product logos. Bioland and Biopark represent

by far the largest organic area. Demeter is the producer organisation of biological dynamic agriculture. It was founded in 1924, and has gained a significant international presence, not only in Europe, but world-wide (Comber, 1998). AGÖL is the German umbrella organisation for organic agriculture.

At BIO FACH 1999, AGÖL and CMA, the marketing organisation for German agricultural products, launched a generic label for organic products, because consumer confusion about the profusion of organic labels seemed to hinder the further development of the market.

Government policy

Most regional governments have developed special policies and support programmes for organic and low-input agriculture. Most of these programmes include the following items:

- financial support to farmers cultivating their land without or with a reduced amount of pesticides and fertilisers;
- financial support to farmers who are member of organic agricultural organisations to cover inspection costs;
- financial support to organisations promoting the commercialisation of organic products;
- funding for research projects and education programmes.

Outlook

Although the growth of German organic production and consumption has somewhat diminished in recent years, there is no reason to believe that stagnation will follow. The increasing involvement of supermarket chains and the recent introduction of a uniform logo for organic products are among the reasons to believe in a further steady development of the organic market.

4.9 Greece¹⁰

Background information

Greece has about 10 million inhabitants, with 5 million living in Athens and 1.5 million in Thessaloniki. The agricultural sector is characterised by the predominance of small and fragmented farms; Greece has the lowest average farm size among EU countries (Caraveli, 1998). In contrast to the general tendency in Europe, pesticide use has increased in the first half of the 1990s. Cereals, fruit and olives are the main crops.

Overview of production and consumption

Greece got recently involved in organic agriculture. Production was started in the 1980s at the request of specialist companies from Germany and the Netherlands (Van der Smitsen et al, 1998). Although production is still small, the relative growth rate is the highest of all European countries (Comber, 1998). A key area of production is organic olives and

¹⁰ Comments on the draft profile received from Nicolette van der Smitsen, DIO, 18/6/1999.

olive oil. Production is largely exported to northern Europe; estimations amount to 75%. The domestic demand for organic products is still limited, but consumer demand in urban areas is increasing. In 1998, an organic farmers' market was started in Athens.

Initiatives of the retailing and food processing industries

The Greek organic sector has still the characteristics of a niche market. Conventional retailers and food processing industries are hardly involved, and sales of organic products largely take place by specialist nature food stores. Recently, however, a large supermarket chain started to place organic products from Greek origin in some of its stores in Athens, and some big industries showed interest in products from organic farmers in order to start an organic product line (e.g. frozen vegetables, flour, tomato juice).

Certification schemes and logos

Since 1993, three certifying organisations have been established - SOGE, DIO, and Fysiologiki - which all have their own logo (Van der Smissen et al, 1998). DIO is the biggest and the best organised.

Government policy

The EU regulation 2078/92 was implemented in 1996, but practice shows that the procedure to get financial support is so complicated that several farmers refrain from making an application (Van der Smissen et al, 1998). Within the ministry of Agriculture, an office was set up to serve the interests of organic production. In addition, the government set an ambitious target to increase organic production the next five years; it is aimed to multiply the organic acreage fifteen fold to 100,000 ha (Van der Smissen et al, 1998). However, this policy has led to small results up to now because the government does not support organic farmers besides the EU subventions. Another barrier for such a development is the lack of information and education about organic agriculture. To date, such activities are particularly the result of private initiatives.

Outlook

It was only a few years ago that organic agriculture started to be taken seriously by Greek farmers, consumers and the government, and only very recently that conventional food processing companies and retailers became involved. It is therefore rather early to forecast how production and consumption will develop, but it is not impossible that Greece will follow the Mediterranean booming model of Italy and Spain, probably in a more moderate version, with the emphasis on exports to northern European countries. However, it seems an important prerequisite that government support will be increased and that the facilities for education and technical advice will be thoroughly improved.

4.10 Italy¹¹

Background information

Italy, with 57 million inhabitants, is a country well known for its food culture. Italians also tend to spend much money on food. Agricultural production is one of the highest in Europe; the same accounts for the volume of pesticides used.

Overview of production and consumption

Italy is one of the European countries with the highest increase of organic agriculture in recent years (cp. Platform, 16/02/1998, Willer, 1998b, BIO FACH, 1999). Since 1997, when organic production nearly doubled, it has in absolute terms the largest acreage of organic production in Europe. The year 1993, with the implementation of EU-regulation 2092/91 and the recognition of several certifying organisations, is considered to be the turning point for Italian organic agriculture (Zanoli, 1998). The emphasis is on primary production, especially of fruits and vegetables; the processing industry is still rather small (Zanoli, 1998). The regional spreading of organic agriculture varies widely, with the main production centres in Sardinia and especially Sicily, due to its high vocation for fruit (citrus) and vegetable production which are highly demanded on the organic market, especially abroad (Zanoli, 1998).

An important feature of the Italian market is its large export business, with sales being driven by a rise in demand for organic fresh produce in northern European countries, especially Germany and France (Comber, 1998). It is estimated that 60% of production is exported.

The Italian domestic market for organic products is small but increasing, with most consumers living in the more affluent, northern part of the country. It is suggested that sales have been held back by an inefficient distribution system, a limited range of products, considerably higher prices, consumer confusion about organic, and negative publicity about the practices of certifying organisations (cp. Comber, 1998, Willer, 1998b).

Initiatives of the retailing and food processing industries

Nature food stores are the most important outlet for organic products in Italy, but supermarkets have increased their market share in recent years (cp. Comber, 1998, Zanoli, 1998). According to Sana, supermarkets now manage 25% of organic sales (<http://www.sana.it>, 1/15/1999). Organic products are available in all major supermarkets, with market leader Co-op Italia, a company with a pro-active environmental policy¹², as the most serious supplier. Euromercato is also rather significant in the organic market, while Conad, Esselunga and Gs stock some organic lines. However, the range of products available, especially dairy products and groceries, appears to be more limited than in other countries. The French specialist company Distriborg is one of the main suppliers of grocery products to supermarkets, together with Brio, an agglomerate of organic farmers' co-operatives based in north-east Italy.

¹¹ Comments on the draft profile were received from Raffaele Zanoli, University of Ancona, 9/6/1999.

¹² Information received from Giuliano Noci, Politecnico di Milano, 16/11/ 1998.

The conventional food industry has recently moved into the organic market, reflecting the increasing demand for organic products in northern European markets (Comber, 1998). Among those is Conerpo, Italy's leading fresh produce company, which plans to become Europe's largest organic fresh produce supplier by the year 2000 (Comber, 1998). To this end, Conerpo established an organic products division called SGS, and introduced a new organic brand 'Borgosole' at the beginning of 1998. The Italian subsidiary of Del Monte (UK), Del Monte Italia, developed a programme for integrated crop management and introduced an organic product line in Italy.¹³ Del Monte's initiatives are meant as pilots and may be extended to other countries than Italy in the future.

Two mainstream dairy companies started to market organic dairy products in the first half of the 1990s.

Table 4.11 Conventional companies active in the Italian organic market.

Company	Sector	Initiative	Date
Co-op Italia	Supermarket	Naturali Biologici	
Billa ^a	Supermarket	Si! Naturalmente	
Euromercato	Supermarket		
Conad	Supermarket		
Esselunga	Supermarket		
Tigre	Supermarket		1998
Gs	Supermarket		
Apofruit	Fresh produce	CaNova	1995
Conerpo	Fresh produce	Borgosole	1998
CORER	Fresh produce		1994
Del Monte ^b	Fresh produce	Sanafrutta	1997
	Fruit products		
CERPL	Dairy products	Granarolo	1994
Scaldasole ^c	Dairy products	Scaldasole	1990
	Baby food	Teddy	
Monini	Olive oil		
Barilla	Cereals	Panem	
Novartis ^d	Cereals	C��r��al	1980 or earlier
Corticella Mollini e Pastifici	Cereals	Alce Nero ¹⁴	

a-Austrian-owned company; b-British-based company; c-One of the pioneering organic processors, now owned by USA-based Heinz; d-Swiss-based company.

Certification schemes and logos

At the end of 1996, the Italian ministry of Agriculture approved of eight different certifying organisations. Among the largest and best known are AIAB and CCPB. A ninth certifying body, Biozert connected with the German Bioland, operates only in S  dtyrol. Every certifying organisation operates its own logo. Attempts have been made to introduce a uniform organic logo, but these have failed up to now.

¹³ Information received from Leonardo Serpetri, Del Monte Italia, 19/2/1999.

¹⁴ Alce Nero is one of the pioneering Italian organic pasta makers. Recently, it gave the exclusive marketing of its brand to Corticella, a leading conventional cereal processor.

Government policy

The Italian government implemented the EU-regulation 2078/92 in 1993, but the practical interpretation is left to the regional authorities. Financial support is in most regions available to farmers in the process of conversion as well as to those already producing organically. Although the EU-regulation is supposed to have a positive effect on the growth of Italian organic agriculture, figures collected show that about 50% of all farmers concerned do not claim financial support (Zanoli, 1998). This is particularly due to insufficient information available to farmers. Besides, in some regions the main impetus to conversion are the premium prices paid for organic products, although only 60-70% of the policy-supported production is sold on the organic market (the rest goes into the conventional market).

Outlook

The Italian organic sector has essentially the potential for further growth. Besides the increasing export business, it is believed that a 4% domestic market share of organic products will be realised in the next few years.¹⁵ At the moment the market share is around 1% though. However, the enormous increase of organic production in recent years is presently posing problems to the organisational and logistic structures available (Willer, 1998b). As is already recognised by the organisations in charge, the capacity for control and certification needs to be strengthened. In addition, it will be necessary to improve the advisory structures, and to expand promotion and marketing activities (Zanoli, 1998). A further development of the domestic market and of the processing capacity are other important challenges which will determine whether the Italian organic sector can hold on to its present success.

4.11 Norway¹⁶

Background information

Norway -not a member of the EU- is the smallest of the Scandinavian countries. Probably because of the mountainous character of the Norwegian landscape, farms are small. Agriculture is relatively insignificant, taking slightly over 3% of the land with concentrations around Oslo (south-east), Stavanger (south-west), and Trondheimfjord (west). Almost 60% of agricultural land is used for grassland (Johnsen, 1998), and about 70% of total agricultural income relates to animal production (<http://www.bondelaget.no/>).

Overview of production and consumption

In 1997, the share of organically cultivated land was about 1% of total farmland, well below the European average, but the growth rate has been considerable in recent years. The main organic products include dairy products, cereals and fresh vegetables. The Norwegian market for organic food is less well developed than that of Denmark and Sweden,

¹⁵ Statement of Sergio Rossi, general manager of Sana, made at Bio Fach 1999, 19/2/1999.

¹⁶ This Section is partly based on the questionnaire sent back by Petter Arnestad, Norwegian School of Management, 1/3/1999. He later commented on the draft version of the country profile. Further comments were received from Debio, 1/6/1999.

due to shortages in supply, a limited selection of products, a lack of market communication, distribution problems (not all organic produce is certified as organic), and quality problems with organic produce. As in the other Scandinavian countries, demand exceeds supply and almost all production is consumed in the home market.

Initiatives of the retailing and food processing industries

Traditionally, most sales of organic products took place through nature food stores or directly from the farm, but supermarket outlets have been gaining importance since the second half of 1990s. COOP Norway - comprising wholesale activities and several retail formulas with an overall market share of almost 25% (Ytterhus *et al.*, 1998) - started to market organic products in 1995 (Johnsen, 1998). COOP Norway also plans to sell low pesticide input products in the near future.

Some conventional companies, e.g. potato packer Hvebergsmoen Potetpakkeri and processor of fruit Gvarv Fruktlager, have started to implement low pesticide input production schemes.

Table 4.12 Conventional companies active in the Norwegian organic market.

Company	Sector	Initiative	Date
COOP Norway	Wholesale & retail		1995
Felleskjøpet Rogaland Agder Statkorn	Various, e.g. cereals Cereals		
Tine Norwegian Dairies	Dairy	TINE	1992

Certification schemes and logos

Debio, established in 1986, is the only certification and control organisation for Norwegian organic production ('Ø'-label). SNT is the control organisation for the processing, trading and import of organic products (<http://www.debio.no/>)

Government policy

Organic farming is being supported in two ways: through direct farm support and through financial support of organisations that stimulate organic farming. In 1995, an action plan for the future development of organic farming was presented. According to the plan, farmers receive a conversion premium paid in the conversion period followed by additional annual payments for fully converted areas. One of the other measures taken was a doubling of the financial support for organisations that stimulate organic farming (Johnsen, 1998). A working group was created to advice on market strategies for organic farming, but the advice is as yet not available.

Although not an EU-member State, Norway is associated with the EU through EFTA. One of the implications is that Norway is nevertheless obliged to comply with EU regulations on organic farming.

In 1998, the Norwegian government adopted the Action Plan for Plant Protection Products Risk Reduction in Norway (1998-2002) as follow-up to a previous plan. One of the proposed measures is to establish guidelines for integrated pest management in various crops.

Influences from other stakeholders

The Norwegian Society for the Conservation of Nature (Friends of the Earth Norway) and the Norwegian Farmers' Union support the development of organic farming (<http://www.bondelaget.no/>).

Outlook

During the 1990s, not only has there been an increase in the acreage of organically cultivated land and outlets in Norway, but also has the food industry lived through a period of consolidation resulting in a more concentrated and a more vertically integrated industry. It may be the case that the larger scale of operations and the smaller number of market parties have created conditions more favourable to the distribution of organic products.

4.12 Portugal¹⁷

Background information

Portugal is a rather small country, with nearly 10 million inhabitants. The per capita income is one of the lowest in the EU. Agriculture makes a valuable contribution to the national income (about 30%), and has still a rather traditional character; the input of pesticides is fairly low.

Overview of production and consumption

Portuguese production and consumption of organic products are small, measured in absolute terms. Since 1994, though, there has been a relatively steep increase in organic acreage, mainly due to the implementation of EU regulation 2078/92 (Firmino, 1998). The most important crops include olives and fruit. Portuguese domestic demand for organic products is very limited since organic products are considered luxury products. The distribution of organic products is not very well organised; it has happened repeatedly that producers had to market organic products as conventional (Firmino, 1998). The export market is still in its infancy.

Initiatives of the retailing and food processing industries

The number of shops and markets selling organic products is gradually increasing in the bigger cities of Portugal, except Porto (Firmino, 1998). Several supermarkets have decided to sell these products, often against huge prices. One of these supermarket chains is Pão d'Açúcar, part of the big French retailing company Auchan. Pão also markets low input products. The conventional Portuguese food processing industry is not engaged in any initiatives to reduce pesticide use. This accounts, for example, for the most important processors of vegetables and fruits, such as Compal and Multinacionais, the main dairy producers Lactogal and Lacto - Iberica Sa, and the big processors of cereals Nestlé and Nacional.

¹⁷ This Section is partly based on the questionnaire sent back by Samuel Infante, Quercus, 10/1/1999.

Certification schemes and logos

Since January 1996, Socert, partly owned by the French Ecocert, is the only official certifying organisation in Portugal, using the Ecocert logo (Firmino, 1998). From way back, the Portuguese organic food association AGROBIO runs an additional symbol scheme for producers, suppliers and processors (Comber, 1998).

Government policy

The Portuguese government has not developed its own policies and measures to reduce pesticide use by farmers or to stimulate more environment-friendly production techniques. It has only implemented the relevant EU legislation, such as EU regulation 2078/92 in 1994. However, the pay out of EU subsidies has given rise to several conflicts between the government and farmers, eventually leading to a complaint to the European Commission (Firmino, 1998). Furthermore, the level of information, education and technical advice to farmers is very low, and if available, often difficult accessible to farmers who mostly have a total lack of financial resources.

Outlook

At present, the future for organic agriculture is rather insecure in Portugal. Lack of an efficient distribution system, lack of domestic demand, bureaucracy and bad payment habits of the government may have as a consequence that organic agriculture will not really come off the ground. The main opportunity in the near future may lie in the export of organic produce to northern European countries, whether or not initiated by northern European retailers (Comber, 1998). However, these conclusions need to be seen in the perspective of the already low level of pesticide use in Portugal.

4.13 Spain

Background information

Spain, with nearly 40 million people, is the country with the second largest agricultural acreage in Europe. The average agricultural output per hectare is at the lowest level of all EU member states. The input of pesticides is in general fairly low.

Overview of production and consumption

Spain has still a low acreage of organic agriculture, but this may change in the near future since organic production has multiplied manifold over the last few years. The natural circumstances and the mainly traditional nature of Spanish agriculture make conversion to organic agriculture relatively easy. The emphasis in production is on fresh produce which is for the largest part (about 75%) exported to northern European countries (Comber, 1998). Most production is located in the South, while processing especially takes place in the north.

The domestic market for organic products is considered to be small and underdeveloped. The lack of retail outlets has been mentioned to be the main reason, as there would be enough demand among consumers for quality products. The annual Biocultura trade fairs in Barcelona and Madrid perform an important role in the promotion of organic products to the public (Picazos & Parra, 1998).

Initiatives of the retailing and food processing industries

Supermarket chains offer only a small range of organic products (Picazos & Parra, 1998). To date the most important outlet for organic products is the abundance of very small specialised reform and diet shops (about 2500) which sell only a few organic lines. The number of nature food stores is rather small in Spain (about 100).

Spanish companies active in organics mostly focus on supplying the fresh produce export market. Important players include Biospan and La Tenienta (Comber, 1998). To date, few conventional processors have entered the organic market, but it has been noticed that they are increasingly collecting information about market opportunities (Picazos & Parra, 1998). The only company identified in this study is Balcon de Europa which works under two trademarks: Balcon for conventional products, and Ecobalcon for organic ones.

Table 4.13 Conventional companies active in the Spanish organic market.

Company	Sector	Initiative	Date
Pryca/Continente ^a	Supermarket		
Balcon de Europa	Fresh produce	Ecobalcon	

a-Owned by the French-based company Carrefour.

Certification schemes and logos

The official government body responsible for managing organic agriculture in Spain is CRAE (Consejo Regulador de la Agricultura Ecológica). It was established in 1993, and endorses certified organic products with the official CRAE label as well as being responsible for overseeing the activities of regional certification bodies. These regional bodies have developed their own logos largely based on the CRAE label. However, the best known logo in Spain is that of the independent organisation Vida Sana (Picazos & Parra, 1998).

Government policy

The EU regulation 2078/92 was implemented by a royal decree in 1995. It authorises the autonomous regions to provide financial support to organic producers and those in conversion. However, in some regions (including Catalonia, Galicia and Madrid) there has not been developed any payment practice (Picazos & Parra, 1998). The central government has not invested in organic research and marketing. To date, education and technical advice to organic producers is especially the result of private initiatives.

Outlook

The prospects for organic production look rather well for Spain, certainly when the demand of the large supermarket chains from northern Europe will further increase. However, domestic demand is still in its infancy.

4.14 Sweden¹⁸

Background information

Sweden - member of EU since January 1st, 1995 - is the largest of the Scandinavian countries, with a population of about 9 million. Agriculture is concentrated in the southern and central parts of the country.

Overview of production and consumption

Sweden experienced a high growth of organic agriculture in the last ten years, and has now a large relative share of land under organic production, notably 3.2%. However, the share of organic consumption in the total market remained at 1-1,5% in 1997, behind Austria, Germany, Denmark and Switzerland.

The number of organic farmers and the acreage of organic farmland both quadrupled from 1992 to 1996, and is expected to have grown with another 40% in 1997. More than half of this acreage is grassland; a third is used to produce grains (Lindner & Willer, 1998).

The organic sector is reported to have grown at rates of 25-30% per annum. Supermarket outlets account for 80% of the sales of organic products. Most food manufacturers and suppliers have become active in organic products. The position of organic products is such that even McDonald's has substituted conventional milk and coffee for organic alternatives (Comber, 1998).

Because of strong demand, exports are generally low - some export of cereal products to notably the UK and Denmark. Imports are important to address demand, but supply is insufficient to satisfy demand. Consequently, prices for organic food are relatively high.

Initiatives of the retailing and food processing industries

The consumer co-operative chain Gröna Konsum, part of the KF corporation, started in 1983 to distribute organic products in a partnership with Samodlarna Sverige, a farmers' marketing co-operative. Since then, the supermarket retail channels have increasingly grown in importance to their present market share of 80%. There is not only a wide range of fresh products - organic fruit still being expensive because of difficult production conditions and a strong dependence on imports - and dairy, but also an increasingly diverse range of processed products. Swedish largest supermarket chain ICA reports that 2% of its fresh product sales are organic. Gröna Konsum is reported to have the highest share of organic products in its sales at 4%, but Hemköp, Dagab's retail daughter, is aiming at market leadership (Comber, 1998).

Arla, a mainstream dairy company in Sweden, represents about 60% of organic milk production (Comber, 1998).

As in Denmark, mainstream bakery and milling companies have become heavily involved in organic products (Comber, 1998).

¹⁸ This Section is partly based on a telephone interview with Göte Frid (Swedish Board of Agriculture) in November 1998.

It used to be difficult to find nature food stores in Sweden, but in the past few years they have grown in number - some 400 in the late 1997 - and they are increasing their market share (data from KRAV).

In the early 1990s, the certifying body KRAV established a subsidiary for the certification of imported goods. Since then, the number of certified companies importing organic goods from notably developing and Eastern European countries has increased to more than 60. Additionally, since 1995 restaurants have started to apply for KRAV certification - they were 90 in 1997 (data from KRAV).

Table 4.14 Conventional companies active in the Swedish organic market.

Company	Sector	Initiative	Date
KF (Gröna Konsum / Coop)	Wholesale & Retail	Änglamark	1983
ICA	Wholesale & Retail	Sunda	
Dagab (Hemköp)	Wholesale & Retail		
Arla	Dairy		
Samodlarna Sverige	Trader of organic fruits and vegetables		Early 1980s
Göteborgs Kex AB	Biscuits		1994
Wasabröd ^a	Biscuits		Early 1990s

a-Owned by the Swiss-based company Novartis.

Certification schemes and logos

Organic products may only be produced and marketed as such if controlled and approved by the official certifying organisation KRAV. This organisation was founded in 1985, and is a co-operative society comprising 22 member organisations, including several farmer associations, and traders and distributors of organic products. Demeter supplements KRAV for the bio-dynamic sector. KRAV also controls and certifies the EU 2092/91 scheme.

Government policy

Agriculture in Sweden is to achieve three primary objectives: to satisfy national security requirements, to safeguard the environment, and to promote regional development (Sumelius & Walter-Jørgensen, 1998). From this vantage point, it is not hard to see why there is a strong policy support for organic agriculture. Nevertheless, agri-environmental programmes are more focused on the preservation of bio-diversity and cultural heritage than on the promotion of organic farming (Sumelius & Walter-Jørgensen, 1998). The Swedish government supports organic farming by various means, noteworthy to include direct (financial) support for the marketing activities of organic farmers associations and the subvention of a chair of organic farming at the University of Uppsala (Lindner & Willer, 1998).

The official policy objective (1994) is to have at least 10% of acreage under organic production schemes by the year 2000.¹⁹ Other farmers are encouraged to reduce their pesticide use to minimum levels, a.o. by taxation of pesticide products which seems to be an

¹⁹ http://sll.bibul.slu.se/sll/sjv/rapport_jordbruksverket/RJV96-03.HTM (Swedish only).

effective measure. By 1996 already 9% of the farms was under the EU compensation scheme for environmentally friendly agriculture and about 4% was KRAV certified (Lindner & Willer, 1998).

The official application by Sweden to EU membership in 1991 gave rise to anticipatory adjustments of agricultural policy to CAP schemes. Although the adjustments are believed to be significant²⁰, it is unclear how this has affected the nature of farming.

Influences from other stakeholders

The Ekologiska Lantbrukarna (Association of Organic Agriculture, to which most bio-dynamic farms are adhered too) was founded in 1985. Its objective is to reinforce organic farming not only through influencing agricultural policy, setting of regulations and certification of organic farming, research, formation, dissemination of information, etc., but also through attempts to co-operate with conventional farmers, processors and distributors (Lindner & Willer, 1998). Together with the latter, in 1993 the Ekologiska Lantbrukarna formulated the policy objective of 10% organic by 2000, which was endorsed by the Swedish parliament in 1994.

The union of agricultural workers has chosen a strongly supportive stance towards organic farming, in line with its policy of minimising agricultural pesticide use. The Swedish Consumer Agency (Konsumentverket) provides consumers with information about eco-labelling schemes and food logos to be trusted.

Outlook

Organic farming is seen in Sweden as a means for the renewal and rejuvenation of agriculture. Hence the strong state support and the close co-operative arrangements between the state, conventional farmers, organic farmers, and traders and distributors (Lindner & Willer, 1998).

4.15 Switzerland

Background information

Switzerland -not a member of the EU- is a federal state with somewhat more than 7 million inhabitants.

Overview of production and consumption

Already since 1990 Switzerland is experiencing a 'bio-boom', due to government commitment and strong impulses from the market (Niggli, 1998). The country has now the second highest percentage of organically farmed land in Europe. Most organic production takes place in mountainous areas, with the province of Graubünden representing the highest share (Niggli, 1998). Dairy farms account for a considerable share of production. Within the fresh produce sector, the production concentrates on potatoes, carrots, celery

²⁰ E.g. specialisation in cereals in the South, milk production moving north, slower reduction of pesticide use, reduction of support for commercial crops (Sumelius & Walter-Jørgensen, 1998).

and cabbage (Comber, 1998). Switzerland is also an importer of organic products, especially fruit and vegetables, with key suppliers being France and Italy.

The country has also a well-developed organic food market, well ahead of that of most European countries. The two leading retailers, Coop and Migros, are playing a key role in the development of the organic market (Comber, 1998). Specialist nature food stores also constitute a major distribution channel.

Initiatives of the retailing and food processing industries

Coop started to sell organic products in 1993 (Niggli, 1998). Migros entered the market in 1996, and by now, all Swiss supermarkets are offering organic products. Both Coop and Migros also adopted a policy of 'regional preference' (Comber, 1998). This means that, when choosing their product lines, preference is given firstly to local products, secondly to products of neighbouring countries and regions, and lastly imports. The dairy product market is particularly well developed; organic milk is now believed to account for around 25% of total milk sales (Comber, 1998).

Coop has by far the biggest sales of organic products, offering around 150 different products under its own-label Naturplan. It also keeps innovating its product range. One of the reasons for Coop's success is its comprehensive strategy to facilitate the identification of the employees with their company (Wüstenhagen, 1998). Thanks to Coop's successful range of organic food products, Coop -the eternal number two in the Swiss market- has been able to gain market shares against its major competitor Migros. Coop now plays an important role in the price setting of organic products, with smaller competitors adapting to Coop's price level. All retailers presently follow high pricing strategies that bear the full costs of the respective products (Wüstenhagen, 1998).

Swissair, in co-operation with its catering organisation Gate Gourmet, was the first airline company in Europe which launched a programme to serve organic food to its customers (Swissair Press Release, 3/6/1997). This decision was partly based on the outcome of customer polls. More specifically, it is Swissair's aim to use by 2000 at least 90% organic or IPM ingredients for meals on flights departing from Switzerland. The time necessary for implementation of the programme is estimated to be three years, because a new network of suppliers needs to be established. The example of Swissair was later followed by Lufthansa from Germany and British Airways.

The Swiss-based multinational Nestlé is the world's largest food company, producing a wide range of food products. Among its trademarks available in most European countries are Maggi, Buitoni and Findus (<http://www.nestle.com>, 26/3/1999). In its Nestlé Policy on the Environment, the company explains that it is in principle not directly involved in primary production of raw materials and other food ingredients, but that it uses locally available raw materials and purchases them either directly from producers or through existing trade channels. Nestlé states that whenever possible it gives preference to those goods for which environmental aspects have been taken into consideration, and more specifically supports plant growing and livestock husbandry which allow the lowest, most appropriate and safe use of agro-chemicals. However, Nestlé is not explicit whether it has a programme for ICM in place.

Table 4.15 Conventional companies active in the Swiss organic market.

Company	Sector	Initiative	Date
Coop	Supermarket	Naturplan	1993
Migros	Supermarket		1996
Hero Schweiz AG	Processor of fruits		
Hug AG	Bakery products		
Swissair/Gate Gourmet	Catering		1997

Certification schemes and logos

Swiss organic food production is controlled and certified by VSBLO, IMO and FiBl, private organisations, which all use the Knospe Bio Suisse label. Out of marketing reasons, Migros started to use its own label, Migros-Bio, in 1996 (Niggli, 1998).

Government policy

Swiss government policy is extremely favourable to a more environment-friendly agriculture. Since 1993, the Swiss government is providing financial support to farmers complying with ecological objectives. According to the support system organic farms receive the highest payment, followed by farms using integrated crop management practices, whilst conventional farms receive no payment at all. In absolute terms, most funding goes to integrated production (72%) (Niggli, 1998). The federal provinces (Kantons) provide premiums to farms in conversion. In 1996, the Swiss public voted for an even stronger commitment to ecological objectives. As a consequence, the government has stepped up support with the implementation of Agricultural Policy 2002, which will strengthen the current tendency to have only integrated and organic farms in the future (Niggli, 1998).

To give a legal status to its organic standards, Switzerland adopted a regulation on organic production in 1998 which is largely similar to that of the EU (regulation 2092/91) (Niggli, 1998).

Research has already been developed in the 1970s, with a central role of FiBl (Niggli, 1998). The provision of technical advice to farmers is very well organised and accessible to all of them (Niggli, 1998).

Outlook

In the year 2000 Switzerland will be several times in the spotlight because of its organic activities. The country will host the IFOAM 2000 conference, where it is aimed to launch the Basel Declaration on organic production, a milestone for the organic movement, and it will be the country of the year at BIO FACH. The choice of Switzerland for these events is not without any reason. The country has been very successful in changing agricultural practices. To date, the Swiss circumstances for organic and low-input agriculture may be considered to be rather ideal. As was already stated above, it is not inconceivable that future Swiss farming will be either integrated or organic. According to Niggli (1998), there is a general consensus that by the year 2000 approximately 15% of agricultural production will be organic. It is also predicted that the consumer market will further grow. Probably, Switzerland will be the country to first show the limits to the growth of organic agriculture, provided by the willingness of consumers to pay premium

prices and the willingness of farmers to change their production methods (cp. Niggli, 1998).

4.16 United Kingdom²¹

Background information

The UK, with a population of nearly 59 million people, has a modern, productive agricultural sector (Lowe *et al.*, 1998). Food self-sufficiency has always been one of the major policy objectives. Arable cultivation and dairy farming are the most prominent types of agricultural land use. Issues such as the dramatic decline in the numbers of certain birds drew already decades ago attention to the side-effects of pesticide use.

Overview of production and consumption

Organic production in the UK is still relatively small in comparison to other European countries, mainly due to a lack of government funding and support (Stolton, 1998). The consumption of organic products, on the other hand, shows a steady growth. Already in the mid-1980s organic foods became available in supermarkets and these have been the dominant force ever since, representing a share of around 70% of sales (cp. Comber, 1998, Stolton, 1998). Fresh produce has always had the largest market share, but in recent years processed products have been on the increase. Organic dairy products and baby food are also fast growing areas. Recent food scares and the claim that organic regulations prohibit the use of genetically modified material have stimulated the market. However, high prices for organic foods are generally considered to hold back the market (Comber, 1998).

The growth in consumption has mainly been fuelled by increased imports. In 1997, imports accounted for 70% of the market; most imported products could have been produced in the UK (cp. Stolton, 1998, cp. Kortbech-Olesen, 1998).

Initiatives of the retailing and food processing industries

The first supermarket to introduce organic foods was Safeway in 1981, and by 1990 the 'big five' -Asda, Safeway, Sainsbury's, Tesco, and Waitrose- were all stocking them (Comber, 1998). The major supermarket chains all developed their own strategies to market organic products. Tesco's, for example, offers organic produce at the same price as conventional lines, and is financially supporting a newly created organic agriculture research centre at Aberdeen University (Organic Food News UK, 29/9/98). Furthermore, it works with the certification organisation Soil Association to help develop the organic produce sector, and actively encourages farmers to move into organic growing.

It is Waitrose's strategy to replace conventional produce with organic produce wherever possible. Sainsbury's, presently the biggest UK retailer of organic products, has put a strong emphasis on the development of its own-label; it offers by far the widest selection

²¹ This Section is partly based on questionnaires sent back by Geoffrey Burke, Elm Farm Research Centre, 31/12/1998, and by Carolyn Foster, Welsh Institute of Rural Studies, 19/1/1999. Comments on the draft profile were received from Sue Stolton, Equilibrium, 21/6/1999.

of products (about 350). Furthermore, Sainsbury's introduced a range of initiatives to encourage the development of the organic market. For example, the company established Source, the organic sourcing club, which works with the Soil Association to find new organic suppliers, and recently Sainsbury's announced a labelling scheme for products in the process of conversion, which will display the phrase 'produced under conversion to organic farming'.

To stimulate the involvement of supermarket chains, the Soil Association set up a retailer organic working group with the major UK multiples in 1998 (Organic Food News UK, 29/9/1998). Most supermarket chains are expected to join the group, which will help to co-ordinate and fund orderly development of the UK organic food market. It will address current industry issues including range, volume, continuity of supply, quality and price. Organic standards, technical development, consumer information and initiative funding will also be discussed.

The large English supermarket chains also made progress with ICM programmes. In 1997, Tesco introduced the Nature's Choice range of fresh produce that is grown under strict conditions (<http://www.tesco.co.uk>, 17/12/1998). Concerning pesticides, farmers should consider biological methods of controlling pests, diseases and weeds in preference to chemicals. If there is no alternative, they must choose the most effective non-toxic pesticides approved by the Nature's Choice protocols. Tesco also carries out regular pesticide residue analysis. Sainsbury's claims that by now 88% of all produce grown in the UK meets ICM standards (<http://www.j-sainsbury.co.uk>, 7/10/1998). On the other hand, the progress achieved overseas is smaller than expected due to difficulties in auditing compliance among growers against ICM standards. In this respect, Sainsbury's comments that in order for ICM to succeed overseas, it has to work in partnership with other European retailers.

Most of the food processing companies that operate in the UK organic food market are fairly small. To date, there has been little interest in organic foods amongst the larger processor of vegetables and fruits, such as Birdseye, Geest and Del Monte. However, the Italian subsidiary of Del Monte, Del Monte Italy launched an organic product line in Italy.

The multinational company Unilever presents itself as seriously committed to sustainable agriculture. Food products make up over half of its business; among the company's well-known brands are Becel (margarine), Lipton (tea), Iglo (frozen foods), and Magnum (ice cream). In its Environment Report 1998, Unilever declares that it encourages farmers to apply more environment-friendly agricultural practices. To this end, Unilever developed best-practice guidelines for a number of crops which cover inter alia the type of pesticides allowed and how they should be applied (Unilever, 1998). Most of the farmers producing Unilever's key crops, such as spinach, peas and tomatoes work under contract and follow these guidelines. However, Unilever buys much of its other raw agricultural material on the general market, where it has not always the opportunity to build close relationships with suppliers, but it states to be committed 'to promote the spread of good agricultural practice throughout the farming industry' (Unilever, 1998).

Among the specialist companies, the distributor Organic Farm Foods performs a significant role in the market for fresh produce. It supplies to all the major supermarket chains in the UK. It has also links with several continental organic produce distributors, such as

Arcada (France), Eosta (Netherlands), and Hipp (Germany). To stimulate conversion, Organic Farm Foods offers production contracts to farmers. The Organic Marketing Company is another important specialist market player. It is claimed to be the UK's largest organic vegetable production company, and a significant supplier to the organic box schemes which have around 50,000 customers (Stolton, 1998).

An interesting development in the UK organic foods market has been the emergence of the Duchy Originals food range, which is a food business set up by the Prince of Wales to raise money for charity and help sustain organic farming (Comber, 1998).

Following Swissair's move into organic meals for passengers, British Airways is now serving meals based on organic products for first class passengers on all long haul British Airways flights (Organic Food News UK, 29/9/1998).

Table 4.16 Conventional companies active in the British organic market.

Company	Sector	Initiative	Date
Asda	Supermarket		
Safeway	Supermarket		1981
Sainsbury's	Supermarket		mid-80s
Tesco's	Supermarket		mid-80s
Iceland Group	Frozen food supermarket		1998
Elgro Ltd	Fresh produce		
Tomkins	Fresh produce		
Chivers Hartley	Preserves		1998
Hillsdown	Groceries		
Westmill Foods	Bakery products		
Baby Organix	Baby food		1991
Hipp UK	Baby food		
Cow & Gate ^a	Baby food	Nature's Choice	
Vitagermine ^b	Baby food	Bionat	1997
British Airways	Catering		
British Railways	Catering		

a-Owned by Dutch-based Numico; b-French-based company.

Certification schemes and logos

All organic food producers operating in the UK must conform to the codes of practice set down by the UK Register of Organic Food Standards (UKROFS). Among the five organisations controlling and certifying producers, the Soil Association, is the biggest. Already since 1946 this organisation has played a key role in the development of British organic agriculture (Stolton, 1998). The five organisations have each a different logo. Besides these logos for organic production, there is also a logo for low-input production, the Conservation Grade symbol, which indicates that food is produced with a definite reduction of chemicals. According to this scheme, it is only allowed to use less harmful synthetic fertilisers and pesticides (Comber, 1998). Jordans breakfast cereals is an example of a product carrying the Conservation Grade symbol.

Government policy

British support to organic agriculture has been fairly modest up to 1999. However, with the recent introduction of the Organic Farming Scheme, funding has been increased to

the average European level. In 1996, the ministry of Agriculture decided to improve the advisory structure with regard to organic agriculture (Stolton, 1998). Consequently, an Organic Conversion Information Service (OCIS) is now being operated by the Soil Association and the Elm Farm Research Centre. In the same year, the ministry of Agriculture announced its intention to publish information on pesticide residues in food products, including the mentioning of brand names (VMT, 18/06/98). Potatoes, vegetables, fruits and dairy products are among the products investigated. In reaction to this initiative, the UK government received the comment that it spends more money on pesticide residue testing than it does on supporting organic agriculture (Organic Food News, 29/9/1998).

Influences from other stakeholders

The Pesticides Trust, the National Consumer Council and the Royal Society for the Protection of Birds are examples of British organisations actively involved in the debate about food production and pesticide use.

Outlook

In the UK, developments in organic production are largely driven by private initiatives, including those from the supermarket chain Sainsbury's, the distributor Organic Farm Foods, and the Soil Association. Government support has been relatively small, but was recently increased to the average European level. Conclusively, the prospects for British organic production and consumption seem to look rather well. The Soil Association predicts that the share of organic production will rise to 1.5% by 2000 and to over 10% in 2007 of total agricultural land use. According to trade estimates the sales of organic food products will increase to 10% of total food sales in the next ten years (Organic Food News UK, 29/9/1998).

5. Position of the Netherlands

5.1 Introduction

As is already explained in Section 1.2, the inventory of greener supply chain initiatives in the European food and retailing industry is meant as a benchmark for the situation in the Netherlands. To this end, Section 5.2 summarises the research findings of the previous chapters, mainly seen from the Dutch perspective. Section 5.3 contains some final remarks.

5.2 Comparison

The purpose of the study was to inventory roughly two types of supply chain initiatives of food and retailing companies: those pursuing precision farming or ICM practices and those aiming at organic production. Not unexpectedly, we had difficulties to identify companies developing precision farming or ICM programmes, simply because products produced under such protocols are hardly recognisable in the market, and companies have more difficulties to communicate the ‘less chemical inputs’ message to the public than the organic one. However, our research findings give the impression that large retailers and food processing companies are increasingly developing programmes to define and implement sustainable agricultural practices that could be defined as precision farming or ICM. This is also the case in the Netherlands, as we found several examples of retailers and food producers seriously committed to reduce chemical inputs. Moreover, it may even be stated that the Netherlands is one of the European countries in the forefront, with the largest Dutch retailer Albert Heijn already starting to implement an ICM programme ten years ago and the Dutch eco-labelling system (‘Milieukeur’) covering a selection of agricultural food products.

The emphasis in our study has been on the identification of corporate initiatives to promote organic production and consumption. Table 5.1 summarises the research findings on organic production and consumption in 15 European countries. The data in the three columns about organic acreage, its relative share and the annual growth rate are identical to those presented in Table 2.3. When combining these figures, four groups of countries can be identified:

1. booming countries (Denmark, Finland, and Italy);
2. stabilising countries (Austria, Germany, and Sweden);
3. countries with a high potential (Greece, Ireland, Norway, Portugal, and Spain);
4. countries lagging behind (Belgium, France, Luxembourg, the Netherlands, and the UK).

The column on domestic organic food consumption contains the same percentages as shown in Table 3.1. Considering 1% as a limit value, the consumer market for organic food is relatively well developed in Austria, Denmark, Germany, Switzerland, and Sweden. In addition, several countries are on the verge of a breakthrough having achieved a 1% market share in 1998, including Finland, Italy, Norway and the UK. Sales in the Netherlands are still under 1%.

Table 5.1 Summary of research findings on organic production and consumption in 15 European countries.

Country	Organic acreage in 1998 (ha)	Relative share (%)	Average growth rate 1993-1998 (%)	Consumption of organic food (%)	Imports (%)	Exports (%)	Government support	Supermarket involvement (%)	Food industry involvement
Austria	350,000 ^a	10.1	26.5	5	35	< 50	High	65	Low-Medium
Belgium	6,800 ^a	0.5	19.7	< 1	50	< 50	Low>>Medium	65	Low
Denmark	90,000	3.3	49.2	3	< 50	< 50	High	75	Low-Medium
Finland	119,000	5.5	42.6	1	< 50	< 50	High	> 50	Low-Medium
France	230,000	0.4	20.0	< 1	> 50	< 50	Low>>Medium	< 50	Medium
Germany	374,000	2.2	13.2	2.5	> 50	< 50	Medium/High	< 50	Medium
Greece	7,200	0.1	340.0	< 1	< 50	75	Low	< 50	Low
Italy	610,000 ^a	4.1	144.4	1	< 50	60	Low/Medium	< 50	Medium-High
Netherlands	19,000	1.0	22.2	< 1	> 50	> 50	Low>>Medium	< 50	Low-Medium
Norway	15,581 ^b	1.5	62.1	1	n.a.	< 50	High	< 50	Low-Medium
Portugal	17,000	0.4	65.0	< 1	< 50	< 50	Low	< 50	Low
Spain	140,000 ^a	0.6	91.7	< 1	< 50	75	Low	< 50	Low
Sweden	110,000 ^a	3.2	20.8	1 – 1.5	< 50	< 50	High	80	Medium-High
Switzerland	78,369 ^c	7.3	n.a.	1.5	< 50	< 50	High	75	Medium
UK	188,000	1.0	25.9	1	> 50	< 50	Low>>Medium	70	Medium

a-Situation in 1997; b-Based on data received from Debio, 10/6/1999; c-Based on data from Helga Willer, 17/3/1999.

Table partly based on: Ripplin (1998), Comber (1998).

The import percentages in the table are related to the share of imported products in domestic organic food consumption. Countries importing more than 50% of organic food include France, Germany, the Netherlands, and the UK. The export percentages are related to the share of domestic organic production exported to other countries. The table shows that especially the countries in the Mediterranean and the Netherlands are developing strong positions in the export business. Regarding imports and exports the Netherlands has a rather exceptional position because of its trading activities. Several Dutch companies have specialised in trading organic products from all over the world, shipping them to the Netherlands, and then exporting them again. Theoretically, this characteristic of the Dutch position seems to be the ideal starting point for a real take-off of organic consumption.

The assessments about government support are based on characteristics, such as the national policy framework, financial support to farmers in conversion, and support to the development of the necessary infrastructure. When government support is assessed as 'high', this means that support to organic agriculture was already introduced before the EU regulation 2078/92 entered into force, exceeds the minimum European level, and also covers education, information and research. 'Medium' government support means that two of these conditions are fulfilled and 'low' support is related to the fulfilment of only one condition, or none of them. Germany and Italy have double scores linked by a slash indicating regional differences within the country. Four countries, including Belgium, France, the Netherlands and the UK, recently experienced a change of government policy. Such a change is indicated in the table by double scores linked by an arrow. In these countries, financial support to farmers in conversion was at a relatively low level, but has recently been increased to at least the average European level. The consequences of these policy changes are not visible as yet. The countries now booming or stabilising in organic production are the ones where government support to farmers was introduced in an early stage and can be assessed as high. However, Italy is the exception to this rule. The countries lagging behind are the ones where government support is still low or has been low until recently. One of those is the Netherlands. Up to now, the Dutch government did not play a pro-active role to stimulate the development of organic agriculture. The government holds the opinion that market forces will determine which share of organic production is feasible.

The column with percentages on supermarket involvement contains the market shares of large retailers in the sales of organic products. Other sales outlets include nature food stores, farmers' markets, direct sales from the farm gate, subscription schemes, and mail order. A high involvement of the supermarket distribution channel usually coincides with domestic organic food consumption above or at the limit value of 1%. This is the case for Austria, Denmark, Finland, Sweden, Switzerland, and the UK. Belgium is here the exception with a supermarket involvement above 50%, but sales still under 1%. Interestingly though, Germany, with its extensive network of nature food stores, represents the opposite situation: consumption is above 1% whereas supermarket involvement is under 50%. In the Netherlands, the involvement of the supermarket channel is still under 50% reflecting the late introduction of organic products by the larger retailers. Moreover, up to now only one of the three largest retailers introduced an extensive range of organic products.

The assessments about the involvement of the conventional food processing industry proved to be the most difficult to make. Our scores are based on the fact whether we could identify companies moving into the organic market, and the relative importance of these companies and their initiatives. When the involvement of the food industry is assessed as 'high', it means that conventional companies have moved into all sectors of the organic market, including fresh produce, processed vegetables and fruits, dairy products, groceries, as well as cereals and bakery products. A 'medium' involvement means that conventional companies are active in various sectors of the organic market but not all, and a 'low' involvement is related to less developed activities of the conventional industry. Based on these criteria, it may be concluded that only Italy and Sweden have a medium to high involvement of the conventional food industry. In the Netherlands, the involvement is somewhere between low and medium, but this may change since a broad variety of companies is showing interest to move into the organic market. However, it is maybe too early to speak of a breakthrough. The next years will prove if this industrial trend is strong enough to hold on. Countries with a less developed industrial involvement include Belgium, Greece, Portugal and Spain.

Comparing food industry involvement and domestic consumption, it seems there is not a very tight linkage between the two of them. Indeed, a medium to high involvement of the conventional food industry does not seem a prerequisite for a well-developed consumer market. For example, the relatively high consumption of organic products in countries such as Austria, Denmark, Germany, and Switzerland is not accompanied by a medium to high involvement of the conventional food producers, but is rather the result of a strong involvement of the specialist organic industry. On the other hand, the relationship between involvement of the conventional food industry and organic production is more clearly defined. Countries with a medium to high involvement of the food industry belong without exception to the groups of either booming or stabilising countries.

Table 5.1 provides a 'snapshot' at a given moment in time. As the developments in the market for organic products are going fast and are even speeding up, the picture presented in the table may radically change in the next few years. For example, it may be expected that laggards in organic production, such as Belgium, the Netherlands, the UK, and especially France, will catch up because of increasing government commitment. Furthermore, it will turn out whether the countries with a high potential are in fact as promising as their present growth rates look like. It may also be expected that consumption will increase in the countries with a supermarket involvement above 50% but also in those countries where supermarket involvement is presently under 50% but already on the rise, including Germany, France, Italy and the Netherlands. An additional prerequisite for increased consumption will be the supply of a wider range of organic products against reasonable prices. Such a development will be stimulated by an increasing involvement of conventional as well as specialist food processing industries, distributors and wholesalers.

5.3 Final remarks

The general conclusion of this study is that the conventional food and retailing industry in the Netherlands is well underway to define and implement standards for integrated crop management, but is lagging behind in taking initiatives to stimulate the organic

market. Moreover, it may be expected that the Netherlands will have difficulties to catch up with the surrounding countries in this field.

When compared to other countries, the attitude of the Dutch food and retailing industry can be characterised as 'waiting to see which way the wind blows'. Another example of this expectant attitude concerning food issues relates to the current discussion on food products containing genetically modified organisms (GMOs). Recently, seven large European supermarket chains, including Sainsbury's (UK), Marks & Spencer (UK), Carrefour (France), Superquinn (Ireland), Migros (Switzerland), Delhaize (Belgium) and Esselunga (Italy) took the initiative to boycott products containing GMOs because of increasing consumer concern (de Volkskrant, 18/3/1999). Basically, these are the same supermarket chains that are taking a pro-active stance regarding the organic issue. The Dutch supermarket chains, however, have decided not to participate in the boycott for the time being. According to Albert Heijn, the leading supermarket in the Netherlands, consumers need to be informed about the GMO-content of products but should take their own buying decisions. Greenpeace, on the other hand, stated that the Netherlands is simply lagging behind in this discussion, and that consumer interest will soon be raised.

References

- Assouline, G., C. Bernard & C. David (1999). *Description and Comparison of Current Implementation of Sustainable Agriculture in Europe*. French report to the European Commission.
- Aurelia! Advies (1997). *EKO in de Supermarkt!?! Doorbraak of doormodderen?* Seminar, 4 maart 1997, Zeist, The Netherlands.
- Aurelia! Advies (1999). *De Doorbraak van EKO*. Seminar, 2 maart 1999, Noordwijkerhout, The Netherlands..
- Betz, E. & H. Willer (1998). *Förderung des ökologischen Landbaus im Rahmen der EG-Verordnung 2078/92 vom 30.06.1992 in den Ländern der Europäischen Union*. Stiftung Ökologie & Landbau, Bad Dürkheim, Germany. [Http: //www.soel.de/infos/internat/eu/2078eu98.htm](http://www.soel.de/infos/internat/eu/2078eu98.htm), 24/2/99).
- Biologica (1998). EKO-monitor. Nr. 3, November 1998. The Netherlands.
- Boxem, H. van (1998). Ökologischer Landbau in Belgien. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, Germany, p. 34-43.
- Brouwer, F. & Ph. Lowe (1998). CAP Reform and the Environment. In: F. Brouwer & Ph. Lowe (eds.), *CAP and the Rural Environment in Transition*. Wageningen Pers, Wageningen, The Netherlands, p. 13-38.
- Brouwer, F. & S. van Berkum (1998). The Netherlands. In: F. Brouwer & Ph. Lowe (eds.), *CAP and the Rural Environment in Transition*. Wageningen, Wageningen Pers, The Netherlands, p. 167-184.
- Caraveli, H. (1998). Greece. In: F. Brouwer & Ph. Lowe (eds.), *CAP and the Rural Environment in Transition*, Wageningen, Wageningen Pers, The Netherlands, p. 267-284.
- Comber, L.R. (1998). *The European Organic Foods Market*. Leatherhead Food RA, UK.
- Den Hond, F., P. Groenewegen & W.T. Vorley (1999). *Globalization of Pesticide Technology and Meeting the Needs of Low-Input Sustainable Agriculture*. In: American Journal of Alternative Agriculture, 14 (2).
- Firmino, A. (1998). Potential des ökologischen Landbaus in Portugal.. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, Germany, p. 302-317.
- Groenewegen, P., E.M. Reijnen and T. Govers (1997). *Reduction of pesticide use in the Netherlands: What leverage for policy?* In: European Environment, nr. 7, p. 126-132
- Hamm, U. & Michelsen, J. (1996). Organic Agriculture in a Market Economy. Perspectives from Germany and Denmark. In: Østergaard, T.V. (Ed.), *Fundamentals of Organic Agriculture* (Proceedings Vol.1 of the 11th IFOAM International Scientific Conference, Copenhagen (DK), August 11-15, 1996). IFOAM Ökozentrum Imsbach, Tholey-Theley, Germany.
- Heinonen, S. (1998). Ökologischer Landwirtschaft in Finnland. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, Germany, p. 100-119.
- Heinonen, S. (1999). *Organic farming in Finland*. Plant Production Inspection Centre, Loimaa, Finland.
- Heuvel, P.J.M. van den, P. Leroy, R.S.E.W. Leuven & P.H. Nienhuis (1997). *Chemische gewasbescherming dertig jaar na 'Zilveren sluiers en verborgen gevaren'*. In: Milieu Vol. 12, Nr. 2, p. 50-57.
- Johnsen, K.K. (1998). Situation des ökologischer Landbaus in Norwegen. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, Germany, p.268-279.

- Kortbech-Olesen, R. (1998). *Export potential of organic products from developing countries*. Presentation at the IFOAM'98 first International Seminar 'Organics in the Supermarket', Mar del Plata (Argentina), November 14-15.
- Lampkin, N. (1996). *Impact of EC Regulation 2078/92 on the Development of Organic Farming in the European Union*. Paper to CEPFAR/IFOAM Seminar on Organic Agriculture, Vignola, Italy, June 6-8.
- Linddal, M. (1998). Denmark. In: F. Brouwer & Ph. Lowe (eds.), *CAP and the Rural Environment in Transition*. Wageningen Pers, Wageningen, The Netherlands, p. 185-197.
- Lindner, T. & H. Willer (1998). Ökologischer Landbau in Schweden. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, Germany, p. 318-331.
- Lowe, Ph, L. Hubbard, A. Moxey, N. Ward, M. Whitby & M. Winter (1998). United Kingdom. In: F. Brouwer & Ph. Lowe (eds.), *CAP and the Rural Environment in Transition*, Wageningen, Wageningen Pers, The Netherlands, p.103-140.
- Michelsen, J. (1996). *Organic Farmers and Conventional Distribution Systems: The recent expansion of the organic food market in Denmark*. In: American Journal of Alternative Agriculture, Vol. 11, Nr. 1, p. 18-24.
- LNV, Ministerie van (1991). *Meerjarenplan Gewasbescherming, Tweede Kamer 1990-1991, 21677/5*. SDU, Den Haag, The Netherlands.
- LNV, Ministerie van (1996). *Plan van Aanpak Biologische Landbouw, Tweede Kamer DL/962355*. Den Haag, The Netherlands.
- Niggli, U. (1998). Ökologischer Landbau in der Schweiz. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, The Netherlands, p. 332-349.
- Perkins, J.H. (1982). *Insects, Experts and the Insecticide Crisis*. Plenum Press, New York, USA.
- Picazos, J. and A. Parra (1998). Biologische Landwirtschaft in Spanien. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, Germany, p. 350-370.
- Reynaud, M. (1998). Die Situation und das Entwicklungspotential der ökologischen Landwirtschaft in Frankreich. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, Germany, p. 318-331.
- Rippin, M. (1999). *Materialien zur Marktberichterstattung. Strukturdaten zum Ökologischen Landbau*. Sonderdruck zur BIOFACH '99. ZMP, Köln, Germany.
- Sitzwohl, P. (1999). *Bio-Club*. Presentation held at the conference 'Organic farming in the European Union – Perspectives for the 21st Century, Baden/Vienna, Austria, May 27-28.
- Smissen, N. van der, M. Koulouroudis, & S. Sgouros (1998). Ökologischer Landbau in Griechenland. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, Germany, p. 132-147.
- Stolton, S (1998). Ökologischer Landbau in Grossbritannien. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, Germany, p. 148-169.
- Sumelius, J. & A. Walter-Jørgensen (1998), Sweden. In: F. Brouwer & Ph. Lowe (eds.), *CAP and the Rural Environment in Transition*. Wageningen Pers, Wageningen, The Netherlands, p. 345-356.
- Unilever (1998). *Environment Report 1998. Making Progress*. <http://www.unilver.com/public/env/review/lincon.htm> 26/3/1998.
- Vermeulen, M. (1998). *Albert Heijn gaat bio*. In: Volkskrant, 18/4/1998.
- Vogl, C., J. Hess, and Tanja Loziczky (1998). Biologische Landwirtschaft in Österreich. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, Germany, p. 280-301.

- Vos, J. (1992). *A case history; Hundred Years of Potato Production in Europe with Special Reference to the Netherlands*. *American Potato Journal*, 69: 731-751.
- Willer, H. (1998a). *Ökologischer Landbau in Europa. Perspektiven und Berichte aus den Ländern der Europäischen Union und den EFTA-Staaten*. Deukalion Verlag, Holm, Germany.
- Willer, H. (1998a). *Ökologischer Landbau in Dänemark*. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, Germany, p. 45-62.
- Willer, H. (1998b). *Einmaliges Wachstum des Biosektors in Italien*. [Http://www.soel.de/infos/internat/italia/italia98.htm](http://www.soel.de/infos/internat/italia/italia98.htm).
- Willer, H. (1999). *Organic farming in Europe (EU/EFTA)*. Preliminary results of a SOEL survey in January 1999 (21.2.1999, continual updating).
- Wüstenhagen, R. (1998). *Pricing Strategies on the Way to Ecological Mass Markets*. Paper to the seventh Greening of Industry Network Conference, Rome, November 15-18.
- Ytterhus, B., P. Arnestad, S. Lothe (1998). *Environmental initiatives in the retailing sector*. Paper to the seventh Greening of Industry Network conference, Rome, November 15-18.
- Zanoli, R (1998). *Ökologischer Landbau in Italien*. In: H. Willer (ed.), *Ökologischer Landbau in Europa*. Deukalion Verlag, Holm, Germany, p. 198-217.

Appendix I. Questionnaire on reduction of pesticide use by supply chain management

1. What are the largest market parties in the food processing industry and retail trade in your country? Please identify companies.
2. Which of the market parties mentioned in question 1 are processing or selling low-input produce (produced with substantially less pesticides)? Please identify companies.
3. Which of the market parties mentioned in question 1 are processing or selling organic produce (produced without pesticides)? Please identify companies.
4. We are interested in contacting the companies you identified in the two preceding questions. Please inform us -to the extent possible- about the (email) addresses, telephone and fax numbers of the companies you mentioned, preferably including contact persons.
5. Are organic products being sold in your country by the following outlets?
 - Nature food stores
 - Conventional greengrocers
 - Alternative farmers' market
 - Subscription schemes to delivery of fruit and vegetables
 - Mail order
 - Other
6. Do environmental and/or consumer organisations play an active role to influence pesticide use in your country? If yes, which organisations are involved and whom do they target (government, farmers, consumers, food processors, retailers, other)? Please inform us -to the extent possible- about the (email) addresses, telephone and fax numbers of the organisations you mentioned, preferably including contact persons.
7. Has your national government developed a specific policy to stimulate organic agriculture? Please elaborate on your answer.
8. Has your national government developed a specific policy to increase the national market share of organic produce? Please elaborate on your answer.
9. Has your national government developed other policies and measures to reduce the use of pesticides by farmers. Please elaborate on your answer.
10. Could you provide us with names and personal data of contact persons working for the Ministries of Agriculture and Environment?
11. Do you have suggestions for other people we can send a questionnaire? Please provide names and (email) addresses.
12. Do you have suggestions for interesting books, reports, articles and so forth? Please specify. We would be very grateful if you could send us a copy, if possible.
13. If you are interested to receive a copy of our final report, please give us your postal address.

- THANK YOU VERY MUCH FOR YOUR CO-OPERATION -