

CHAPTER 3

CERTIFIED ORGANIC AGRICULTURE - SITUATION AND OUTLOOK

Introduction

Environmental concerns, food scares, production subsidies and institutional reforms have all contributed to the substantial growth in organic production and sales in recent years. Global retail sales of certified organic products have increased to around \$16 billion in 2000. In some national markets, a few organic products have obtained shares of 10 or even 15 percent. Organic sales represent a small share, between 1-2 percent, of global food and beverages, but they constitute a growing market that appears to be more than a passing fashion. While many consumers view organic products as catering for the privileged few, the products are gaining greater acceptance.

The market for food is evolving quickly in developed countries. The increase in demand for natural products seems somewhat incongruous given increased sales of processed and convenience (fast) foods. Sales of certified organic food have increasingly moved into supermarket chains and gained much wider exposure. In this changing environment, different and new factors will drive the growth in organic sales in the future.

The purpose of this Chapter is to examine the current state of certified organic agriculture and to assess its situation and outlook in the coming years. While such prognostics are inherently unreliable, it is useful to focus on the factors that may drive the trends. While some of these factors, such as food safety concerns and technological innovations, are unpredictable in magnitude and timing, others are observable (e.g. income growth), constrained by supply side factors (e.g. lack of feed) and determined by institutional changes (e.g. harmonization of standards) and policies (e.g. agricultural subsidies and environmental regulations).

This Chapter describes the distinctive characteristics of organic agriculture that have an impact on marketing and trade of organic commodities. The current situation with organic production, retail marketing and international trade is then presented. Trends and factors driving organic growth suggest the outlook for organic production and sale until 2010 as well as possible implications on commodity trade and land use.

The organic industry at the turn of the century

There is no official data for organic production, consumption, trade or prices. National statistics organizations tend to regard organic production as of insufficient importance to be reported separately. The best estimates of the state of organic agriculture relate to land use and retail sales. On the production side, certifying bodies may collect farm-level data, but for reasons of confidentiality may be reluctant to make it publicly available.

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Some production on certified organic farms may be sold as conventional produce due to a lack of market, further complicating data collection. For example, in Australia approximately one third of organically produced crops and livestock is sold in the conventional market¹. For some Australian products, especially meats, up to 90 percent is sold on the conventional market. Furthermore, some farmers who farm organically may not bother to become certified. There are also places (e.g. Sweden) where farming systems are subsidized in order to be managed organically but where products are not certified as organic. Finally, some land may be classified as organic starting in a particular year, although little has changed by way of management. Nonetheless, some estimates are available, usually collated from certifying bodies.

Relevant characteristics of organic agriculture

Organic agriculture has a number of distinct characteristics. These features determine the driving forces behind the growth in organic production and sales. They are:

- organic agriculture is a process-oriented, rather than a product-oriented, production system;
- the organic agriculture process involves significant constraints that raise costs of production and marketing;
- consumers buy organic products mainly for the perceived health, food safety and environmental benefits.

Process-oriented production

The most notable characteristic of organic agriculture is the emphasis on the production process rather than a product itself. With a credible certification scheme, the consumer is ensured that products have been produced according to certain defined standards and are likely to be:

- low in pesticide residues;
- grown in a way that is favourable to the environment and possess other characteristics such as the humane treatment of animals;
- provide fair payments to producers, particularly in developing countries.

Organic agriculture is a process-oriented, rather than a product-oriented, production system.

These characteristics cannot be seen in the product itself. Consumers may therefore not have a good understanding of what they are buying, and may be more inclined to switch to non-organic products offering somewhat similar characteristics, such as "free range" rather than organic eggs. Future organic sales may compete with products carrying ecolabels, possibly without verification and at a reduced cost as compared to organic products.

Production and marketing costs

The primary feature of all organic production methods is the restriction on the use of:

- synthetic fertilizers and pesticides in crop and fodder production;
- synthetic health care products, growth promoters and hormones in livestock production;
- synthetic preservatives and irradiation in post-harvest handling;
- GMOs at all stages in the food chain.

These constraints tend to require changes in the rotation away from monocultures and, in crop dominated systems, towards some livestock. Crop yields are generally lower on organic farms when compared with high input agricultural systems, especially during conversion years. For example, in Europe, cereal yields were commonly observed to be about 60-70 percent of those obtained under high external input management. Stocking rates on organic pasture also tend to be lower². As livestock generally provides a lower return per hectare than crops, organic cereal/livestock producers are doubly disadvantaged as they have lower yields, especially during conversion, and a less favourable output mix. However, this may be compensated for by higher output prices as well as lower input costs, and many European organic farmers also receive additional taxpayer-funded subsidies.

Box 1: Certified organic cotton in Uganda

Cotton production was introduced in Uganda in the 1940s, but the sector virtually collapsed between 1972 and 1986 due to poor prices, non- or delayed payment and an unfavourable policy environment attributed to armed rebellion and insecurity. The post-1986 period has seen a revival in agriculture and a rejuvenation of the cash crop sector. This paved the way for organic cotton production alongside conventional production in certain districts of Uganda, including the low-potential eastern and north-eastern areas of the country. In 1994 organic cotton production only involved 200 farmers. By the year 2000, some 24 000 had become organic.

Production systems

The majority of cotton producers are small-scale resource-poor farmers. Soil fertility management is maintained through traditional cultural practices such as fallowing and rotations. The main difference between conventional and organic cotton production is that conventional cotton is produced with small amounts of mineral fertilizers and chemical pesticides while organic farmers rely on crop rotations and natural pest control. Organic cotton production is mainly a private-sector driven, business activity organized by exporters while the conventional system is under government promotion (Cotton Development Authority and agricultural officers).

Conventional cotton production is not well organized, although the Cotton Development Authority and agricultural officers are mandated to facilitate production and marketing through cooperative unions. This is mainly attributed to ineffective extension service and poor prices.

Support

Initially, the Government opposed organic cotton production. However, as the Government officials began to see some positive results, they started exempting some areas of Uganda from pesticide promotion campaigns. One District in Uganda has now started to promote organic farming by itself. Nevertheless, the organic cotton growing initiative has had little support from research in Uganda. Investment in capacity building through research and training therefore still needs attention.

Being market-driven, organic cotton production is well structured with extensive support. Farmers carrying out organic cotton production are supported by the Export Promotion of Organic Products from Africa (EPOPA) under the Swedish International Development Co-operation Agency (SIDA). EPOPA works with large groups of smallholder farmers (e.g. cooperative unions), giving technical advice on production and marketing. They also link organic cotton exporters and importers to markets in Europe, e.g. Sweden. Exporters such as African Fair Trade participate in the programme as a buyer of organic cotton, but also providing crop finance and guaranteeing a minimum fair price to the farmers. Within this EPOPA programme, a Swedish certifier (KRAV) was contracted to offer inspection

and certification services to organic farmers and are using Internal Control Systems (ICS) according to ISO 53 guidelines. They also provide extension services.

Agricultural and economic performance

Organic cotton production achieves yields of 1 000-1 250 kg/hectare of seed cotton giving approximately 300-320 kg of cotton lint. In comparing organic and conventional systems, van Elzakker and Tulip (2000) have reported that organic farmers have started to obtain high cotton yields compared to conventional farming systems in the same case study sites.

The economic performance of organic cotton production is much higher than that of conventional production thanks to the premium prices received. On average, organic cotton receives a 20 percent organic premium on export. Approximately half of this goes to the farmer, implying a premium over farm gate price of 15-20 percent. Organic farmers are therefore able to obtain a good rate of return on their labour and this has attracted many farmers into organic production.

Exporters also achieve higher profit margins than exporters of conventionally-grown cotton. The cost of inspection and certification, although initially high, has now come down substantially since organic cotton production has become established.

Conventionally-produced cotton receives a poor price and no premium, a situation made worse by poor marketing infrastructures. However, the higher price paid for organic cotton has had a positive influence on the conventional price as buyers of conventional cotton are forced to offer better prices (although lower than that offered for organic cotton) and/or other incentives like farm tools in order to ensure their supplies.

Source: Walaga, 1997; van Elzakker and Tulip, 2000

Economic performance on organic farms in many countries and numerous crops are often found to be comparable with those on conventional farms, even without additional subsidies and sometimes even without output price premiums. For example, a multi-country study of European organic agriculture concludes that "the profits of organic farms are quite similar to those of comparable conventional farms." The authors³ duly note the usual caveats, in particular that the degree of variation within the samples is very high, highlighting the risks and opportunities available. In an earlier study, Lampkin and Padel (1994) mention similar results in a number of European countries. A Danish study using 1996 data found that all three types of organic farms (cereal, dairy and pig) were similarly or more profitable than their conventional counterparts⁴. In general, it is easier to convert dairy farms profitably than intensive livestock operations.

The bulk of the cost to the consumer is post farm-gate costs for all food products, conventional and organic. A loaf of bread costs the consumer ten to twenty times what the producer receives for the wheat, partly due to the processing involved (storage, handling, distribution, milling, baking and retailing). But even relatively unprocessed products such as milk are three times as expensive at the retail level. Marketing costs for organic products in particular are higher because of the need for segregation to preserve organic identity. Also, certification and the scale of distribution contribute to high costs. As organic agriculture assumes larger shares of the market, economies of scale should be able to lower these costs significantly.

Consumer benefits

It is not easy to generalize why consumers buy organic products⁵. Many consumers believe that the products are better for people's health or have better organoleptic qualities. These claims have proven to be difficult to verify⁶, although some recent reports suggest that there is a real difference in nutrient and vitamin status⁷. For some people, food safety seems the major concern, whereas for others, environmental aspects appear paramount.

In comparison with conventional agriculture, organic production methods are considered to have less detrimental environmental effects. This is of course not surprising as the environment is the main objective of organic agriculture. Encouraging a move towards organic agriculture would reduce environmental clean-up costs and lower the damage associated with externalities. Subsidies to organic agriculture are touted as justified because of the environmental benefits they bring. Organic agriculture is one approach that can be used to achieve environmental quality targets. Policy-makers are starting to consider how best to facilitate organic agriculture development in order to maximize environmental benefits.

Organic agriculture gains ground

Area under certified organic agriculture

The International Federation of Organic Agricultural Movements (IFOAM) collaborated with the Foundation for Ecology and Agriculture (SOL) in Germany to obtain up-to-date estimates of certified organic land⁸. According to this study, the global area of land under certified organic agriculture in 2002 was 17.8 million hectares of which:

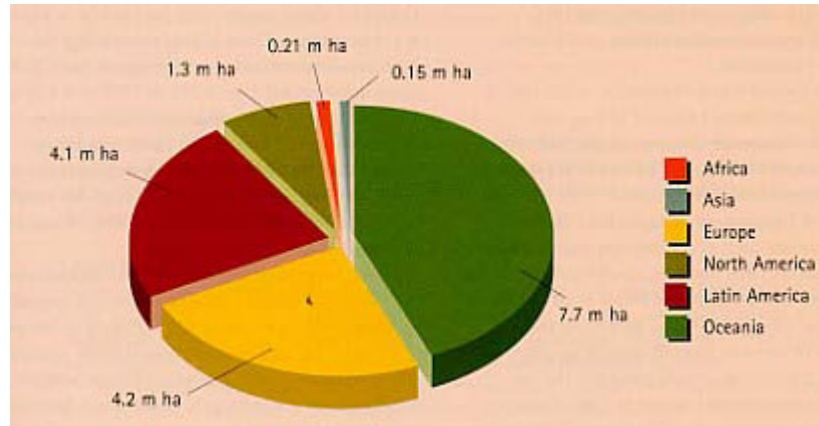
- 7.7 m ha are located in Oceania (mainly in Australia);
- 4.2 m ha in Europe (with Italy having the largest area, 1 million ha);
- 3.7 m ha in Latin America (with almost all of this in Argentina);
- 1.3 m ha in North America (USA nearly 0.9 million ha);
- 94 000 hectares in Asia;
- 60 000 in Africa.

The lack of a recognized system of organic agriculture data collection worldwide has inherent weaknesses in terms of reliable information. Some unpublished data obtained by FAO in 2002 suggests that the figures above are under-estimates of certified organic lands. In fact:

- Argentina has 3.2 million ha of certified organic lands⁹ (instead of the 2.8 million ha reported by SOL);
- Uganda has 122 000 ha¹⁰ (instead of the 5 000 ha reported by SOL);
- South Africa has 45 000 ha¹¹ (instead of the 6 000 ha reported by SOL);
- India¹² estimates certified organic lands to 41 000 ha (while the SOL reports 2 800 ha).

Those few country examples alone suggest a global certified organic land area in excess of half a million hectares than publicly available figures.

Figure 1: Rough (under) estimates of certified organic lands worldwide, 2002



Land use

Less than half of the global 18 million hectares of certified organic land is dedicated to arable agriculture. In Australia, about 7 million ha of organic certified lands are extensive grazing lands. These lands belong to a marketing group (the Organic Beef Enterprises), which counts 30 members. One OBE member has the world's largest certified organic property (994 000 ha) as well as four other properties, totaling 3 248 290 ha¹³. In Argentina, 91 percent of certified organic lands (or 2.9 million ha) are natural pastures for sheep and cattle (e.g. Patagonia) and forest areas for apiculture. Also here, a single owner holds two extensive sheep grazing properties of 0.5 million ha¹⁴. In both Australia and Argentina, the extensive nature of livestock systems is the most suitable management option in dryland conditions and large farms are typical. In contrast to these huge organic animal production properties, smallholdings characterize organic arable lands (with few exceptions).

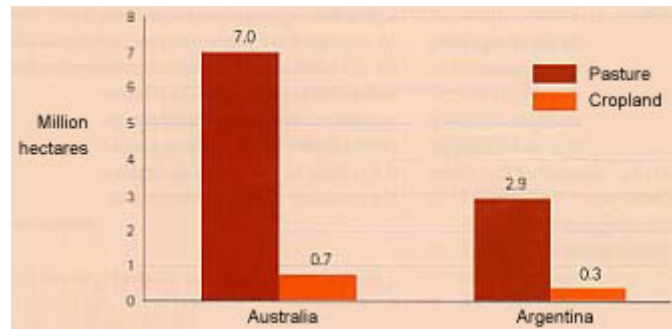
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In the United States of America, at the end of the 1990s, well under 1 percent of crop and pastureland was certified as organic (i.e. 545000 ha¹⁵) despite a rapid expansion (23 percent per annum) of retail sales during that decade.

The US Department of Agriculture estimates suggest that the area of certified organic cropland in 1997 was 345 000 hectares, more than double the 1992 estimate. The most significant crops are wheat (50 000 ha), corn (17 000 ha), barley (12 000 ha) and oats (12 000 ha). Overall, organic grains showed a 23 percent annual growth in the two years since the previous survey in 1995. However, these crops comprise only 0.2 percent of the total United States cropped area in grains. In terms of inroads into conventional production, the most significant crops are spelt (37 percent of the conventional area), buckwheat (30 percent), herbs (37 percent) and mixed vegetables on plots of less than 2 ha (37 percent).

The area of organic pasture and rangeland in the United States amounted to 200 000 hectares in 1997, on par with 1992 but an 80 percent increase on 1995. Around one third of the certified organic area in 1997 was in Alaska and almost half was in Colorado, where productivity may not be as high as in other regions. There is little relationship between livestock numbers and certified organic area. Beef cattle numbers fell from 6 796 in 1992 to 4 429 in 1997. The large increases since 1992 have been in dairy cows (up from 2 265 to 12 897) and layer hens (44 000 to 538 000). Adding crop, pasture and rangeland together gives a total area under certified organic production, in 1997, of around 0.2 percent of United States agricultural land¹⁶.

Figure 2: Organic pasture and organic arable land in countries with major organic areas, 2002



Box 2: Organic agriculture in Australia

In the past few years there has been a significant increase in the land area devoted to organic food produce in Australia. This is estimated to be approximately 7.5 million hectares, the great majority of which is dedicated to organic beef enterprises. Only about 0.5 million hectares are cultivated for crop production.

The Australian definition

The Australian definition of organic agriculture states that "organic (bio-dynamic, biological, ecological, or by any other word of similar indication) means produced by specific management practices which take care of the environment and soil. Synthetic chemicals (including pesticides and fertilizers) are not permitted other than those listed in Annex I of the National Standard for Organic and Bio-dynamic Produce".

Legislation and policy

Organic production in Australia has been protected by legislation since 1992, with amendments coming into force in 1998. Legislation covers crop production, animal husbandry, food processing, packaging, storage, transport and labelling. The legislation does not mandate that every farm labelling or selling organic produce must be certified, it is only implemented for the export of products derived from agriculture and labelled as organic.

These national standards are used to determine equivalency of imported and domestically produced organic products, and are those applied for accreditation. Certification bodies wishing to become accredited to these standards must apply to the Australian Quarantine and Inspection Service, the competent authority consenting to such accreditations. Seven Australian certification bodies had obtained Government accreditation by the end of the year 2000. Of these seven certification bodies, five can export to the European Union as provided for under Article 11 of EU Regulation 2092/91; however all seven can export to non-European countries such as Canada, Japan, Switzerland and the United States. Only one national certification body, the National Association for Sustainable Agriculture, is accredited by IFOAM. At present there are no foreign certification bodies working within Australia, and no local certification bodies work in association with international certification bodies.

The Government policy on organic agriculture aims to promote rural development but at the same time encourage the export of Australian organic products. The local Government departments of agriculture are the structures responsible for organic farming and although no direct economic support is available for organic agriculture, \$A250 000 (approximately US\$130 000) was provided for research in 2000-2001 and up to \$A1 000 000 (US\$520 000) for extension to farmers. Most of the promotion of organic agriculture however, has been the responsibility of private organizations (e.g. Canberra Organic Growers and Brisbane Organic Growers) and it is from these organizations that training and technical

assistance to organic farmers is available.

The organic agriculture market

In 1996 the organic sector in Australia was estimated at \$A90 million (US\$70 million) with an additional \$A30 million (US\$23 million) as export. At this time, it was estimated that the potential market including exports could reach over \$A200 million (US\$155 million).

The total value of imported organic produce is unknown, but principally consists of organic grain from the United States. Organic exports include horticulture products, grains and processed products to Asia; horticulture products, grains, wine and meat to the European Union and meat to the United States.

On the domestic market, organic produce receives a substantial premium price over that of conventionally grown produce. For cereals and livestock products this ranges between 50 percent and 75 percent and for fruit and vegetables the premium is usually between 50 percent and 60 percent. Most organic food is sold through supermarkets, but also in specialized shops and restaurants. There is only one association of organic retailers: the Organic Retailers and Growers Association of Australia, based in Victoria.

Source: provided to FAO by the Australian Quarantine and Inspection Service, May 2001

Data on certified organic agricultural land use in the European Union indicates an average annual increase of 24.5 percent in the five years to the end of 2000¹⁷. The data revealed considerable variation across countries in the European Union, with the Nordic countries (Denmark, Finland and Sweden) and Austria utilising in excess of 5 percent of arable land. Greece, Portugal and Spain show high growth rates from a low base. The fastest contribution to total European Union growth in recent years has come from Italy and the United Kingdom, as these countries have a much greater land base than most of the northern European Union countries. Changes in government payments to organic farmers raised organic production significantly in these countries.

Table 1: Certified organic land use in the European Union, 2000

Country	Land use (ha)	Share of total agricultural area	Average annual growth rates over five years
Austria	267 000	7.74	-4
Belgium	20 265	1.52	43
Denmark	165 258	6.09	32
Finland	147 423	5.66	27
France	370 000	1.22	26
Germany	546 023	3.15	12
Greece	24 800	0.43	60
Ireland	32 355	0.73	21
Italy	1 040 377	6.02	38
Luxembourg	1 030	0.81	13
Netherlands	27 820	1.40	17

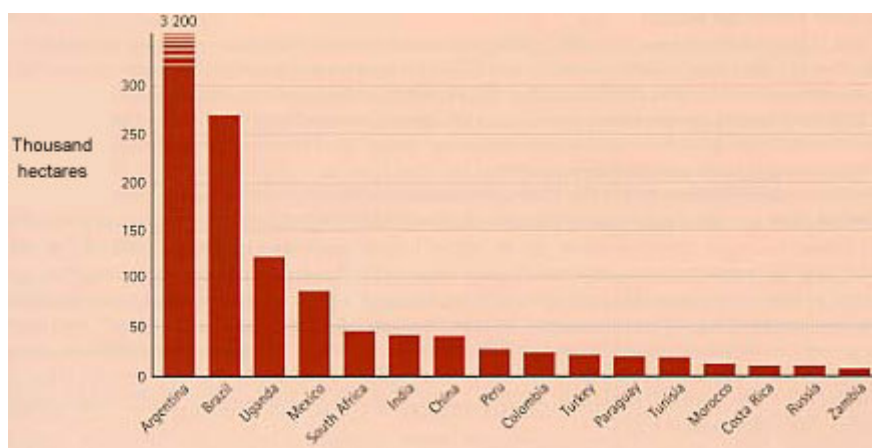
Portugal	50 000	1.26	36
Spain	380 920	1.52	74
Sweden	171 682	4.99	16
United Kingdom	500 000	3.15	59
European Union	3 744 953	2.76	24.5

Source: Organic Centre Wales
(estimates exclude uncertified organic land use in Germany and Sweden)

There is also a new category of organic farmers: subsidy farmers. In countries such as Austria, Finland, Italy and Sweden a high proportion of the organic land is managed by farmers that do not sell their products as organic. For example, in Sweden, the organically managed land represents 14 percent of total agricultural lands. However, only 7 percent of this area is certified organic. Sweden is the only country in the European Union where organic farmers can receive subsidies without being certified as organic¹⁸.

In Japan, according to an undated International Trade Center report, the area of organic production in 2000 amounted to a mere 1 000 ha, just 0.02 percent of the total area under production. Another estimate suggests 5 000 hectares¹⁹. These low estimates are consistent with estimates of imports accounting for 80-90 percent of market share.

Figure 3: Certified organic lands in some developing countries, 2002



ITC²⁰ reports that approximately one hundred developing countries produce certified organic products in commercial quantities. Land area under organic management in Africa, Asia and Latin America is currently small but increasing rapidly. A prime example is Argentina, where organic production grew from 231 000 ha in 1997 to 3 200 000 ha in 2001, representing a growth of the average sale of organic products of 90 percent per year²¹. Likewise, land under certified organic management in Africa is expanding. The largest areas are in Uganda (122 000 ha)²² and South Africa (45 000 ha)²³.

Other certified organic lands in developing countries include: Brazil (270 000 ha), Mexico (86 000 ha), India (41 000 ha), China (40 000 ha), Peru (27 000 ha), Colombia (23 000 ha), Turkey (21 000 ha), Paraguay (19 000 ha), Tunisia (18 000 ha), Morocco (12 000 ha), Costa Rica (10 000 ha), Russia (10 000 ha) and Zambia (6 700 ha)²⁴.

Box 3: Organic agriculture in the United States of America

The organic agriculture market

Retail sales of organic food and beverages in the United States amounted to about US\$8 billion in the year 2000 (and were expected to reach US\$9.5 billion in 2001) making the United States the world's largest market for this product group. Industry resources expect recent years' strong growth to continue over the short to medium term, with estimates suggesting this might reach US\$20 billion in 2005. Aggressive marketing and strong and increasing consumer awareness are driving forces behind this growth, but the fact that the country's major food manufacturers are taking a similar interest in developing organic product lines is also likely to result in market growth for organic products.

The Economic Research Service (ERS) of the United States Department of Agriculture (USDA) estimates that 5 000 farmers were certified (either by the state or by private certification bodies) as producing organically in 1997. According to the Organic Farming Research Foundation, this number rose to 6 600 in 1999 and 7 800 by January 2000. However, there is also an unknown number of uncertified organic farmers, as the National Organic Programme (NOP) exempts small producers from certification.

In 1997, 545 000 ha of farmland in 49 states were certified as organic, constituting a 44 percent increase from 1992. While cropland benefited from this expansion and accounted for about 63 percent of the total organic farmland in 1997, the area of organic pastures and rangelands declined to just below 37 percent. The five largest crop growing states (California, Idaho, Minnesota, Montana and North Dakota) together accounted for almost half of the total crop land in 1997, while the 10 largest states (including Colorado, Florida, Iowa, Nebraska and Wisconsin) together accounted for two-thirds. The figure below shows how this certified organic cropland is used.

Although organic cropland has expanded rapidly in recent years, only 0.23 percent of all United States cropland was certified organic in 1997 and big differences existed between different types of crops (see figure below). For example, just 0.1 percent of corn, soybean and cotton crops were grown under certified organic farming systems in 1997, compared with 1-2 percent of oats, rye, dry pea and lentil, lettuce, apple and grape crops, and about one third of buckwheat, spelt, mixed vegetables and herbs (30.1 to 37.6 percent). No statistics are available for the quantity of production.

A very large increase also took place over the period 1992 to 1997 in the case of organic dairy cows (469 percent), layer hens (1 123 percent) and broilers (120 percent) with certified organic livestock being raised in 23 States; but over the same period, the production of organic beef cows decreased by 35 percent, hogs and pigs by 65 percent and sheep and lambs by 42 percent. Again there are no statistics for quantities of production; however, less than 1 percent of total United States livestock production is organic. A major reason behind this is that until February 1999 there was no organic label for meat and poultry products, whereas food crops and non-meat animal food products have benefited from an organic labelling since 1990. Since the approval by the USDA of a label in 1999, demand has been growing.

According to an industry source, about 80 percent of organic production currently comes from family farms, and organic growers (especially in the case of vegetables) produce on smaller areas than conventional farmers. There are, however, some very large scale organic farms e.g. Pavich Family Farms in California with over 1 600 ha of organic land and 200 ha in conversion to organic. Pavich Family Farms is the world's largest grower and shipper of organically grown table grapes and supplies the market place with over 60 varieties of fruits and vegetables marketed under the Pavich brand name.

Imports and Exports

As organic products are not classified separately by the World Customs Organization, there are few foreign trade statistics available for organic products and the United States has no official statistics, only estimates. The Organic Trade Association's Export Study for United States Organic Products to Asia and Europe states that the United States exports more than

US\$40 million in organic goods annually to the United Kingdom and organic products worth an estimated US\$40-60 million to Japan. United States organic exports to Europe are growing approximately 15 percent a year, while exports to Japan have grown between 30 to 50 percent a year.

Despite the scale of production and export from the United States, many import opportunities also exist. This is especially the case for tropical products not grown in the United States, off season products, in-season products for which there is a temporary or more permanent shortage because of increasing demand, and novelty or speciality products (e.g. wines, ethnic food or retail-packed food products).

Distribution channels

Traditionally organic products have been sold outside the conventional distribution system through alternative channels e.g. farm gate sales, open-air markets, specialized grocery shops and natural products retailers. Likewise, most processing and packaging was done by small and medium-sized companies rather than by major food manufacturers. However, as the organic food market has grown strongly in recent years, sales have also moved into the mainstream retail trade and the conventional food industry is also becoming increasingly involved.

Normally, the organic consumer can expect price premiums of 10 to 20 percent on organic products, or a maximum of 25 percent. Higher price premiums would deter consumers from buying organic products. Developing country exporters may also typically expect a premium of 10 to 25 percent, though in some cases the premium may be much higher, up to a hundred percent or more, if the product concerned is in short supply.

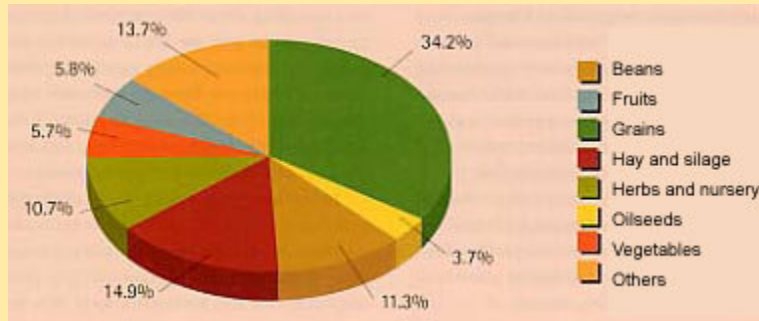
Importers and ingredients suppliers: these are found across the nation, but mainly in California and the States of New York and New Jersey. They tend to be specialized in certain product groups, such as fruit and vegetables, dried fruit and nuts, spices and herbs. Some of these suppliers have an organic line together with a conventional one, others are specialized in organic and have built up their business from scratch.

Natural food distributors and wholesalers: there are numerous wholesalers, distributors and traders involved in the distribution of organic food and beverages throughout the country. However, a few major companies, including natural food distributors are playing a leading role, in particular for processed and packaged foods. They may import products directly or through associated companies but they obtain most of their products from specialized organic importers or from domestic producers and manufacturers.

Food processors and manufacturers: traditionally they are small and medium-sized companies that have been involved in processing and manufacturing organic products (pioneers) often located close to the relevant farming community. Today smaller companies still play a major role in the organic industry, but it is significant that more and more major food manufacturers and mainstream food marketers, including big multinational companies are now developing and marketing organic product lines, using both domestic and foreign ingredients. In fact now, the largest share of sales by far, takes place through two major channels: natural products retailers and conventional supermarkets.

Export markets: the private sector, the Organic Trade Association and the USDA are all actively involved in the promotion of United States exports of organic food and beverages. The OTA and USDA are co-funding some export promotion activities and the USDMarket Access Programme provided US\$48 000 in 2001 with a similar amount envisaged for 2002. In 2001, OTA also published "Buying Organic Products from the United States" to help promote international sales of United States organic products.

Cropland certified as organic (1997)



Source: ITC, 2002

An expanding retail market

In the absence of data on production, perhaps the best data to judge the size and growth of the organic market are retail sales. ITC has estimated retail sales of organic foods and beverages in the largest markets at almost \$16 billion in 2000, with \$7 billion in Europe and \$8 billion in the United States (see Table 2).

Table 2: The international market for organic food and beverages

Country	Retail sales 2000 (US\$ m)	Market share (%)	Expected medium term annual growth rates (%)
Germany	2 200-2 400	1.25-1.5	10-15
United Kingdom	1 000-1 050	1.0	25-30
Italy	1 000-1 050	1.0	15-20
France	750-800	1.0	15-20
Switzerland	425-450	2.0-2.5	15-20
Denmark	350-375	2.5-3.0	10-15
Austria	250-300	2.0	10-15
The Netherlands	225-275	0.75-1.0	10-20
Sweden	125-150	1	20-25
Other Europe	300-400	-	-
Sub-Total (Europe)	6 625-7 250	-	-
United States	8 000	1.5	15-20
Japan	300*	-	15-20
Australia	170	-	-
New Zealand	59	-	-
Argentina	20	-	-
China	12	-	-
Taiwan	10	-	-
Philippines	6	-	-

Total	15 202-15 827	1.0	15-20**
Source: ITC 2001, US Department of Agriculture 2000, and own calculations.			
*ITC estimates Japanese organic sales at US\$2.5 billion but this includes domestically produced foods marketed as "no chemical" or "low chemical" (see text).			
** Weighted average.			

The Japanese market is dominated by imports, with perhaps 80 to 90 percent of the market supplied from overseas. The US Department of Agriculture reports that organic sales in Japan reached \$3.2 billion in 2000 but perhaps only ten percent of the market, \$300 million, was truly organic²⁵. The market appears to be growing strongly (15 percent) from a low base, although some exporters report confusion in the market since the introduction of the Japan Organic Standards in 2001 and a 90 percent fall in organic exports to Japan. It appears some retailers found continuity of supply a problem with the higher standards and dispensed with organic sales altogether, choosing instead to focus on "chemical-free" products. Many of these had previously been labelled as "organic" and, after the introduction of the standards, were re-labelled and promoted as "green"²⁶. As a further barrier, organic fruit imported into Japan risks being randomly fumigated. If this occurs, it can no longer be sold as organic. Such impediments limit development of the organic market in Japan.

ITC has estimated retail sales of organic foods and beverages in the largest markets at almost \$16 billion in 2000, with \$7 billion in Europe and \$8 billion in the United States.

The United States of America, the world's largest single market worth US\$8 billion in 2000, expects a strong growth in organic retail sales, perhaps reaching \$20 billion in 2005. The current estimate represents growth of 23 percent per year over the previous ten years. The growth in recent years is attributed to concerns about genetically modified organisms and supermarkets adding organic lines to their shelves²⁷.

There is some evidence that organic premiums in the United States are as high as in Europe. Premiums of 100 percent for several major fruits and vegetables and milk products were consistently observed throughout the 1990s. Kortbetch-Olesen, 2002, however, suggests consumer premiums are generally within the range of 10-20 percent, although exporters may occasionally receive 100 percent premiums if supplies are short. In the United States markets, consumers appear more concerned about the environment than is the case in Europe, where food safety and health seems more of an issue²⁸. The US Department of Agriculture predicts organic agriculture will remain an expanding sector for some time. In contrast to Europe, in the past the US taxpayer has not subsidized organic growers specifically, although some states provide financial assistance with certification. This is likely to change with the US 2002 Farm Bill, which provides for nation-wide organic certification cost-share assistance.

In the European Union, food retailing chains or processing companies are active in increasing the supply of organic products in order to improve their competitiveness by responding to growing consumer demand for organic food. Wholesalers or processors offer producers long-term contracts which guarantee a price premium for organic products over several years. Price premiums for organic commodities are 20 percent lower in countries with a high involvement of general food retailers (e.g. Austria, Denmark, Switzerland), mainly due to lower distribution costs. In 2000, The European Union was a net importer of organic cereals, oilseeds, vegetables and meat and a net exporter of organic olives, wine and dairy products. Price premiums varied, in 2000, from 31 percent for organic red table wine up to 113 percent for organic chicken. Countries (e.g. Denmark, Sweden) which have the highest market share by volume for organic products have a common national label and consumer recognition of this label²⁹.

The role of big food industries in boosting organic agriculture is further illustrated by the New Zealand dairy sector. The entry of New Zealand Milk Products, Fonterra's manufacturing and ingredients marketing division, in September 2002, into processing organic milk to produce organic cheddar cheeses will change the composition and quantity of organic exports. The decision to enter the organic market has come after extensive market evaluation to ensure that market premiums of at least 20 percent are sustainable for the long-term, in order to match the higher costs structure (of both on-farm production and processing)³⁰.

In most developing countries, there are no markets for certified organic products. In some countries, however, organic urban markets are developing (e.g. Argentina, Brazil, China, Egypt, Jordan). Expanding demand for organic foods in developed countries is expected to benefit developing country exports, via new market opportunities and price premiums, especially for tropical and out-of-season products. Developing country exporters, however, will need to meet the production and certification of those in developed countries and overcome consumer preferences for local production.

Market characteristics

Variations in market share

In spite of high growth rates, sales of organic agricultural products in industrialized countries in 2000 are estimated at less than 2 percent of total retail food sales. However, in particular countries and for particular products the market share of organic agricultural products can be appreciably larger. Organic horticulture products in British Columbia, Canada, occupy 8.7 percent of commercial sales³¹. Organic food sales in Denmark occupied 3 percent of the market. In Germany individual commodities such as organic milk products had over 10 percent market share and organic baby foods 80-90 percent³². Organic coffee accounts for 0.2 percent of world coffee consumption and up to 0.5 percent of the United States and European Union coffee markets³³.

Sales ebb and flow

In spite of the positive growth rates listed in Table 2, organic sales have stalled in some markets or for some products in countries which have previously experienced sustained growth for several years (e.g. Austria, Denmark, the Netherlands and Switzerland)³⁴. This indicates that markets do not expand continuously and may reverse due to changes in supply raising or lowering prices, policies and promotion effects, or plain fickleness on the part of buyers. Clearly, different markets are being driven by different factors.

Growth of organic vegetable consumption flattened out in the Netherlands in 1997, yet doubled in Belgium, Greece and Switzerland³⁵. Cereal sales also fell in the Netherlands from 1993 to 1997³⁶ while growth continued strongly in Finland. In the United States, the organic sector grew rapidly between 1972 and 1975, collapsed, and began to slowly grow again between 1978 and 1981. Between 1981 and 1983, the United States organic sector was not exempt from the chain of bankruptcies that affected the whole agriculture sector. Combined to USDA's unfavourable policy towards organic agriculture, the infrastructure for producing and marketing organic commodities took almost the entire decade to be rebuilt to the 1980 levels.

There seems no obvious relationship between share of organic production as measured in area under organic management and the share of the organic market, in Europe at least³⁷. Market shares for milk products vary tenfold between Sweden (2-3 percent) and Finland (0.2-0.3 percent), yet the share of land under organic management is similar.

Lack of market transparency

ITC reports that the "organic market transparency is far from optimal": there is need for data compiled over several years in order to identify growing markets and forecast market development.

As markets mature, it is reasonable to expect information to flow quickly through the markets, implying that producers, distributors and consumers respond rapidly to changes. This is evidenced by the absence of large price shocks and of regional price differences between markets. For storable or easily transportable commodities, such as wheat and rice, one would expect relatively similar prices across the single market of Europe. In the organic sector, this seems to hold true for milk products, with premiums across Europe of around 20-30 percent, but not so for the other major products.

As the organic market matures, it should become more efficient. Oversupply of organic products cannot be absorbed by markets unless all market actors work together to benefit from the economies of scale. Larger volumes of organic products should lead to a lowering of the organic premium, in particular by reducing transport costs and the marketing margin.

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High marketing margins

Marketing margins represent a stumbling block to future rapid expansion of the organic food sector. Traditionally, organic products were sold through alternative channels, that is, farm-to-home deliveries, farm gates, open-air markets, specialty and health food stores rather than supermarkets. Some consumers enjoyed the feeling of obtaining their food directly from the producers, almost as if they had grown it themselves, and producers had opportunities to capture some of the marketing margins.

With increased distance between producers and consumers and the entry of traders and retailers in the organic sector, organic marketing margins raised. There are of course reasons for the high margins. Margins are payments for storage, transport, handling, packaging, processing and insurance. With organic producers comprising a small proportion of the agricultural industry, individual producers are dispersed, adding to the costs of transport. Storage may be more expensive without pesticides. The need for segregation may increase costs of handling and require individual packaging and labelling. Sometimes the absence of infrastructure (mills that could maintain segregation between conventional and organic products) meant producers had to perform some of these handling functions themselves.

Small economy of scale

There appears to be significant scope for a reduction in marketing costs as the organic market grows and matures. Economies of scale should reduce these costs to near the margins for conventional products. If marketing costs could be reduced to conventional levels, additional costs of production of 10-20 percent, perhaps even 50 percent, would almost be unnoticed by consumers. This could result in a rapid expansion of organic market share.

For example, conventional produce for which the farmer receives US\$100 is sold to the final consumer for US\$200. Organic premiums of 25 and 20 percent for the producer and consumer respectively imply that the organic producers are receiving US\$125 (=US\$100*125 percent) and

the organic consumers paying US\$240 (=US\$200*120 percent). Hence, the organic marketing margin is US\$115 (that is, US\$240-125) compared with the conventional margin of US\$100 (that is, US\$200-100). Where the marketing margins are high, for products with a high degree of processing for example, the retail premium should be relatively low. This is the case with Danish cereals (Table 3). Where the retail premium is zero, the extra production costs are absorbed before getting to the consumer.

Table 3: Producer and retail premiums in Denmark, 1997-1998

Organic product	Producer premium (%)	Retail premium (%)
Vegetables	25-50	20-50
Cereals	60-70	0-20
Dairy products	20-25	20-30
Potatoes	25-50	20-50
Fruit	>100	50-100

Source: Michelsen et al.,

Minimally processed foods

Consumers of organic produce have traditionally expressed a preference for minimally processed foods, and organic standards have reflected this to some extent, encouraging minimal levels of processing. To date, the share of processed products and the degree of processing is rather low, with perhaps dairy products, beverages and cereals the exceptions. This low level of processing can be attributed to traditional values as to what organic is, and concerns about the need for, or the absence of, additives to preserve the product.

Limited organic food processing constrains the range of products that can be sold. As the organic industry develops and moves to mainstream markets, there is pressure from some producers and consumers to increase the level of processing. The development of supermarkets, often with vertically integrated systems from producer to consumer, has increased the scope for processed organic foods. These entities are more likely to seek raw materials from abroad if this is found to be advantageous. There is an increasing trade in bulk products from developing countries to developed countries for further processing. Higher degrees of processing means that for many organic products, such as fruit and vegetables, the superficial blemishes are less important.

This trend towards industrialization of organic agriculture is of course resisted by many in the organic community who see it as a move away from traditional values. The size and nature of the certified organic market in the future depends somewhat on how this issue is resolved.

Box 4: Organic agriculture in South Africa

Legislation

The certified organic sector in South Africa is only now emerging and is still very small. At present the South African Government is drawing up national minimum standards for organic agriculture. These will be based on IFOAM recommendations, European Union regulations and extracts from Codex Alimentarius guidelines, tailored to suit South African conditions. They will cover crop production, animal husbandry, food processing and handling and labelling and will mandate that each farm selling or labelling products as organic must be certified as such. It is expected that these standards will be

presented to Parliament to be passed into law during 2002. In the meantime, the Agricultural Products Act of 1990 (Act 119 of 1990) makes some provisions for organic production.

Support for organic agriculture

Although the Ministry of Agriculture, through the Directorate of Plant Health and Quality, is the responsible Government agency for organic agriculture, the Government itself has no formal policy promoting it. At present there is no economic support for organic agriculture nor special budgetary provisions specific to research, training or market support. Most support for organic agriculture within South Africa therefore comes from the private sector, for example, the Organic Agriculture Association of South Africa (OAASA), the Cape Organic Producers Association and the Biodynamic Association of South Africa. They have been responsible for arranging training and capacity building courses for farmers and have initiated awareness raising campaigns including the publishing and distribution of written materials and on-going information campaigns at supermarkets.

Inspection and certification

Inspection and certification of South African organic farms is carried out by both international (e.g. ECOCERT, the Soil Association and the Société Générale de Surveillance (SGS)) and domestic certification bodies (e.g. Afrisco and Bio-Org from Pretoria). Of all the international certification bodies working in South Africa, only SGS has a branch based in South Africa, however, all certify produce for the export to countries of the European Union as provided for under Article 11 of EU Regulation 2092/91. The two South African operated certification bodies certify according to the draft standards being developed by the government. All certification bodies must apply to the Government for registration as such. Once the draft standards come into force, certification bodies will be required to apply the minimum standards and will be subject to audit checks. The National Department of Agriculture will accredit the certification bodies.

The organic market

Organic products within South Africa are usually sold in supermarkets, as home deliveries, directly from the farmer, through specialized restaurants and through special organic markets. Some schools are also beginning to serve organic foods. It is estimated that vegetables receive a premium of about 15 percent whereas fruits and livestock products generally receive premiums of about 10 percent.

There are many organic labels on the market within South Africa, as apart from those of the three international certification bodies, many farmers have their own brand names or they trade under the names of their farm or company such as: Wensleydale (fruit and vegetables), Sunmark (fruit and vegetables), Pecans (nuts), Down to Earth Herbs (herbs), Spier (fruit and vegetables), Nature's Best (grains, herbs and vegetables), Organic World (grains, dried fruits and seeds) plus many others.

Although the organic sector in South Africa is still in its infancy with official estimates of only 5 000 ha certified as organic in the year 2000 and a further 1 000 in conversion, South African organic farmers produce a large variety of produce. These include various cereals; vegetables, roots and tubers; herbs and spices; fruits, nuts and Rooibos tea. Organic wine and olive oil is also produced and organic dairy farming has just started in the North West.

According to OAASA, however, the supply of organic products is smaller than the demand. Many organic products are therefore imported including grains, high protein grains, dried fruits, herb teas and Ceylon teas, processed foods, sauces and soya products from Egypt, Europe, the United Kingdom and the United States. Fruits and vegetables are also imported from New Zealand. Exports, however, are principally to Europe and include vegetables and plant products, processed fruits, sugar, wine and Rooibos tea. Grapes are also exported to the United States.

Non-certified organic agriculture

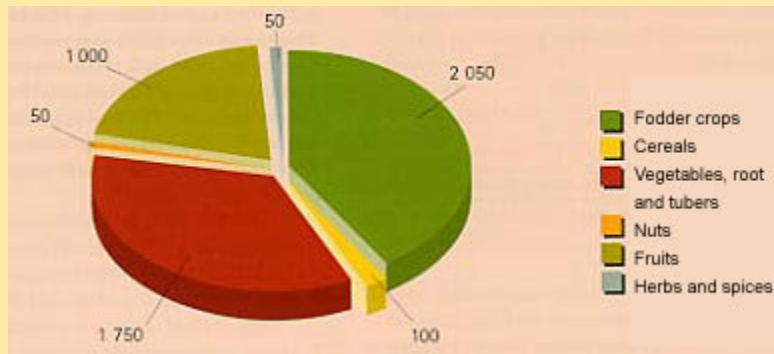
Not all organic farmers in South Africa are certified as such, even though they follow the principles of

organic agriculture. OAASA estimates that there are approximately 100 farmers practicing organic farming but are not certified, working about 1000 ha. The main markets for their produce are local village markets or farmers markets.

Prospects and constraints

As with many developing organic sectors there are a number of challenges that need to be overcome. Most importantly South Africa has a lack of qualified inspectors and auditors, decreasing the ability to ensure compliance to organic agriculture standards. Infrastructure is weak, the costs of certification are restrictive and general consumer awareness to the benefits of organic agriculture is low.

Estimate of organic crop production area (ha) 2000



Source: provided to FAO by the National Department of Agriculture, South Africa, October 2001.

International trade characteristics

Trade flows

Although there are no official data on trade in organic products, evidence suggests that, with demand outstripping production, trade in organic products in developed countries is relatively significant.

Much of the organic trade occurs intra-European Union and intra-NAFTA countries. Much of the inter-continental organic trade is between the United States and Europe. About one third of the United States organic production is exported, mainly to Canada, Europe and Japan. As already seen, 80-90 percent of organic produce consumed in Japan is imported. About 70 percent of the United Kingdom consumption is imported, mainly from other European Union members.

Increasingly, developing countries are managing to meet the necessary standards and supply tropical and out-of-season products. Export markets are the major outlet for many developing countries' organic producers, given the small size of local markets. Egypt and Morocco have the advantage of proximity to the rapidly expanding European market that seeks fresh products such as oranges all year round. Argentina has third-country status with the European Union, reducing the costs of re-certification and inspection. China has the potential to be a key developing country exporter, with a large agricultural area, low labour costs and proximity to the Japanese market in particular. In future, countries joining the European Union will obviously have increased opportunities to export to current members. Chile is increasing its export of counter-seasonal horticulture products to North America.

Increasingly, developing countries are managing to meet the necessary standards and supply tropical and out-of-season products.

Market access

In terms of market access, organic products do not *per se* receive preferential access over conventional products, and there are significant tariffs (of 100 percent or more) on many agricultural products in most developed countries. However, many agricultural tariffs have a specific component (that is US\$/t) so high-value goods face a lower percentage tariff. For example, imports of rice into Japan attract a duty of 402 yen (US\$3.07) per kg. In percentage terms, this represents a higher duty on conventional rice compared with the higher-priced organic rice. As a result, such specific tariffs favour the import of organic products.

Since 1995, many agricultural products are imported under tariff rate quotas, with in-quota imports attracting a nominal tariff of perhaps 5 percent while imports outside the quota may face tariffs of 50 or 100 percent or more. At these levels, the tariffs may actually prevent any over-quota imports from coming in, which is often the intention. Quota restrictions such as these should favour high-value products, such as organic goods. This is because the quotas are based on physical quantities, and a greater value of exports can be supplied if the per unit value is higher.

However, what actually happens depends on how the quotas are administered. Many are allocated on a historical basis to countries, which have exported in the past. This makes it difficult for countries without a history of exports to break into the market. The second common method is first-come-first-served. This means that quota is allocated to those who ask in sequence. This favours countries with the ability to export early in the accounting period. It is not clear whether this favours organic exporters or not. Therefore, changes in the way in which imports are regulated may affect different crops and different countries in different ways, some working in favour of organic producers, some against.

Annual growth of organic markets will be around 20 percent in the medium term.

¹ Wynen, 2002.

² Offermann and Nieberg, 1999.

³ Offermann and Nieberg, 1999.

⁴ Wynen, 1998.

⁵ See for example Lockie, *et al.*, 2001.

⁶ Stolze, *et al.*, 2000.

⁷ Soil Association, 2001; Worthington, 2001.

⁸ Yussefi and Willer, 2002.

⁹ SENASA in Montenegro, 2002.

- ¹⁰ Charles Walaga (*pers. comm.*).
- ¹¹ Gunnar Rundgren (*pers. comm.*).
- ¹² Ministry of Agriculture, India (*pers. comm.*).
- ¹³ Tim Marshall (*pers. comm.*).
- ¹⁴ Laura Montenegro (*pers. comm.*).
- ¹⁵ USDA data reported in ITC, 2002. SOL reports a total US organic lands of 900 000 ha in 2002. Actual data for organic agriculture (2000-2001) will be released by USDA's Economic Research Service in October 2002.
- ¹⁶ Greene, 2001.
- ¹⁷ Organic Centre Wales, 2002.
- ¹⁸ The Organic Standards, July 2002.
- ¹⁹ Yussefi and Willer, 2002.
- ²⁰ ITC, 1998.
- ²¹ Montenegro, 2002.
- ²² Charles Walaga (*pers. comm.*).
- ²³ Gunnar Rundgren (*pers. comm.*).
- ²⁴ With the exception of Brazil and India, these figures are derived from Yussefi and Willer, 2002.
- ²⁵ USDA, 2000.
- ²⁶ May, 2001.
- ²⁷ ITC, 2002.
- ²⁸ Michelsen *et al.*, 1999.
- ²⁹ Hamm, Gronefeld and Halpin, 2002.
- ³⁰ US/FAS, 2002.
- ³¹ Macey, 2002.
- ³² Bernward Geier (*pers. comm.*).
- ³³ Vieira, 2001.
- ³⁴ Kortbech-Olesen, 2002.
- ³⁵ Michelsen *et al.*, 1999.
- ³⁶ Data from the Netherlands should be interpreted with care, as many products are simply re-exported.
- ³⁷ Michelsen *et al.*, 1999.

