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Market-Led Versus Government-Facilitated Growth

Development of the U.S. and EU Organic Agricultural Sectors

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Abstract

Organic farmland and sales are rapidly growing worldwide, and the two largest markets are in the European Union (EU) and the United States. The two regions have adopted different policy approaches to organic agriculture. Many EU countries have “green payments” available for transitioning and continuing organic farmers, as well as a variety of other supply and demand policies aimed at promoting growth of the organic sector. The U.S. Government, in contrast, has largely taken a free-market approach to the organic sector, and policy is aimed at facilitating market development. This report compares EU and U.S. organic agriculture policy and examines the organic sectors in the two regions.

Keywords: Organic agriculture, green payments, farm policy, organic markets, organic certification, EU organic sector, U.S. organic sector

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Introduction

The organic sector is rapidly growing in the European Union (EU) and the United States. Together, consumer purchases in these two regions made up 95 percent of the €19 billion (€= euro), or \$25 billion, in estimated world retail sales of organic food products in 2003 (Willer and Geier, 2005).¹ Agricultural land under organic production has also increased rapidly in both regions. Government policy regarding organic agriculture differs markedly in the two regions, however. The EU actively promotes sector growth via conversion subsidies and direct payments to farmers, while the U.S. largely takes a free-market approach, with policies that focus on facilitating market development. As a result of the different policies, the EU-15 has more certified organic farmland than does the U.S. (4.4 million hectares versus 949,000 hectares in 2001), a greater share of farmland under organic management (2 percent versus 0.25 percent in 2001), and more organic farms (143,607 versus 6,949 in 2001) (see box, “EU and U.S. Organic Sectors”).^{2,3}

The reasons for the different policy approaches may be that the EU and U.S. governments have inherently different ideas about agriculture, the environment, and by extension, organic agriculture. From the perspective of many EU countries, organic agriculture delivers environmental, social, and other benefits to society and is an infant industry that needs support until it is mature and able to compete in established markets (Lampkin, 2003). The U.S. Government, while acknowledging organic agriculture’s positive impact on soil quality and erosion, considers the organic sector primarily an expanding market opportunity for producers and regards organic food as a differentiated product available to consumers (Robinson, 2003; USDA, AMS, 2002). Despite policy differences, organic agriculture and sales are

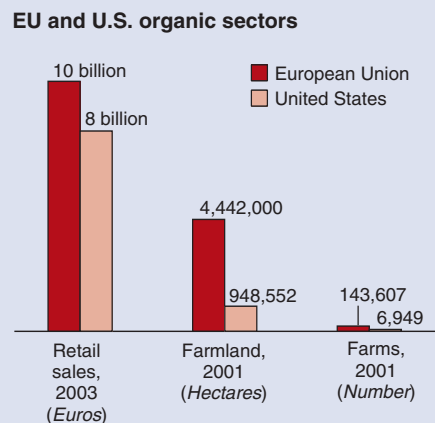
¹Conversion from euros to dollars uses the exchange rate current in May 2005, €1.00 = \$1.29.

²The EU-15 countries (the countries that made up the EU before entry of 10 new countries in May 2004) are the focus of this report because much of the historical data on organic agriculture in the EU is based on these countries. There are recent efforts to collect more information on organic production and markets in the 10 new countries (see Lampkin, 2005a-c). All references to the EU in this report refer to the EU-15. The 15 countries are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

³The most recent statistics on U.S. organic farmland are for 2001.

EU and U.S. Organic Sectors

Based on farmland acreage and number of farms, European farmers are able to supply more organic products than are their American counterparts, thus making international trade important to the global organic market (see figure). The United States, once a net exporter of organic products, imported an estimated \$1.0-\$1.5 billion in organic food in 2002, and the ratio of imported to exported organic products was about 8 to 1 (USDA, FAS, 2005). Imported products from the EU include dry pasta, processed tomatoes, wine, and olive oil. The value of U.S. organic exports to the EU was estimated at \$100-\$200 million a year in 1998 (USDA, FAS, 1999). Once the U.S. and EU countries agree on equivalency of standards, trade opportunities are likely to expand.



Source: Greene and Kremen, 2003; Lampkin, 2005a and b; Sahota, 2004.

rapidly increasing in both regions. In comparison, other sectors of agriculture have been stagnating in developed countries.

Despite the large presence of the organic market in both the EU and U.S., the organic industry began in Europe. Organic agriculture emerged in the 1920s, first in England (via the work of Sir Robert McCarrison, Sir Albert Howard, and Richard St. Barbe Baker) and Germany (via Rudolf Steiner) (Conford, 2001). Organic agriculture did not cross the ocean until years later, when a student of Steiner, Ehrenfried Pfeiffer, moved to the U.S. in 1938. J.I. Rodale, along with others, facilitated further growth in the U.S. organic industry (Conford, 2001). In both regions, organic agriculture has made great strides since these early pioneers began farming organically.

In this report, we examine organic consumers, market growth, and land under organic production in the U.S. and the EU. We then focus on the policies developed in both regions to support organic production and markets and examine the similarities and differences. The comparison illuminates the fact that policy directions are tied to a society's point of view—in this case, about the costs and benefits of conventional and organic agriculture—and that policies, in turn, influence the trajectory of markets (both supply and demand), research agendas, and institutional development.

EU and U.S. Organic Consumers

In many ways, development of the European and U.S. markets has followed a similar path. In the early days, the organic sector was supply driven and organic products were introduced by farmers; these pioneers had different reasons for raising food organically. In some cases, the farmers were seeking to reduce the use of chemicals in farming, thus restoring natural soil fertility; others adopted organic systems for spiritual reasons; and still others turned to organic farming in response to growing government involvement in agriculture (Conford, 2001; Dimitri and Richman, 2000). More recently, consumers have been the driving market force in both regions. Consumers in both parts of the world share a number of reasons for their growing interest in purchasing organic food, with food safety and health topping the list. At the same time, distinct experiences and cultural perspectives in the EU and U.S. have brought about some divergence in motives for buying organic food.

One noteworthy issue for consumers of organic food is the “food scare,” which has the potential to change consumer demand for certain products and their substitutes. European consumers have faced more serious food scares than have American consumers. For example, mad cow disease (bovine spongiform encephalopathy, BSE) was an enormous boon to the European organic livestock and dairy industry, as many consumers substituted organic dairy and meat products, which they perceived as safer, for conventionally raised dairy and meat products. In 2001, organic food sales in Germany increased by 30 percent as a result of BSE (USDA, FAS, 2002). Other food scares that have shifted European consumers toward organic food products include episodes of contaminated chicken feed in Belgium in 1999, feed contaminated by dioxin in 2004, and most recently, carcinogenic food dyes in TV dinners in Ireland in 2005.⁴ In contrast, U.S. consumers have not been strongly affected by food scares. For example, the Alar scare in the late 1980s caused a temporary rise in organic food sales. More recently, the two confirmed cases of mad cow disease appear to have had little impact on the organic livestock and dairy sector.

Cultural perspectives also influence demand for organic food. For example, European consumers have generally expressed opposition to biotech or genetically modified (GM) food. In contrast, U.S. consumers have been largely unaware of biotech food introductions, and objections to GM foods have not been strong. However, U.S. organic consumers vocally opposed GM foods, as indicated by the reaction to the U.S. Department of Agriculture’s (USDA) draft rule that did not prohibit the use of GM ingredients in organic food. The final rule reflects this consumer desire and disallows classifying food produced with GM ingredients as organic, which is also true in the EU.

While food scares have provided bursts of energy to the organic market, other key motivating factors may be more important in sustaining the market in the long run. These factors have changed as the market has evolved. Although U.S. consumers in the 1980s and earlier purchased organic food because of their concern for the environment (Barry, 2004), environmental concerns now rank fourth according to a nationwide survey conducted by the Hartman Group (2002). The Hartman survey revealed that

⁴The organic sector is not immune to food scares; in 2002, organic wheat—used as food for poultry by German farmers—was contaminated by a weed killer, nitrofen, which is banned by Germany. The grain was contaminated in a warehouse that had previously stored herbicides. This incident dampened German consumer enthusiasm for organic food.

two-thirds of organic consumers cited health and nutrition as a reason for buying organic, followed by taste (38 percent), food safety (30 percent), and the environment (26 percent).

Studies indicate that most European consumers have made a similar shift, from purchasing organic food for altruistic reasons to more self-interested reasons, such as food safety and health. Michelsen and colleagues (1999) found that food safety and health were the most important arguments made by EU retailers in promoting their organic products, whereas environmental protection was the second most important argument. Ranking behind these two top motivators were taste, nature conservation, and animal welfare. Dabbert and colleagues (2004) suggest possible regional differences in Europe as well. For example, animal welfare and environmental issues do not seem to motivate consumers in Mediterranean countries, such as Italy and Greece, but do play an important role in Northern Europe.

Consumers in both regions face similar impediments to purchasing organic food. According to consumer surveys, price leads the list of barriers to purchasing organic products in the U.S, followed by availability of organic products (Hartman Group, 2002; Walnut Acres, 2001; Whole Foods 2004). In Europe, the main obstacles include high prices, poor product distribution, little obvious difference in quality, lack of information on the nature of organic products, and doubts about the organic integrity of the items (Dabbert et al., 2004).

EU and U.S. Market Growth

Comparing growth rates of retail sales in the two regions suggests that the European organic market is more mature than the U.S. market. The EU—particularly the Western European countries—boasted the fastest growth in the organic sector in the 1990s. Growth rates for organic retail sales, however, have slowed in some countries, with recent growth across the EU averaging 7.8 percent per year (Organic Monitor, 2003). Growth rate forecasts range from 1.5 percent for Denmark to 11 percent for the United Kingdom (UK) annually for the next few years (Willer and Richter, 2004).

Growth rate diversity across the EU is the result of the different stages of development of the organic markets in different countries. For example, the organic markets in Greece and Portugal are in the initial high-growth phase; those in Italy, France, and the UK are starting to emerge from the initial boom phase; and those in Austria, Denmark, and Sweden are more mature with slower growth rates.⁵ In contrast to EU growth rates, those for organic retail sales in the U.S. averaged 20 percent per year throughout the 1990s and are predicted to be in the range of 9-16 percent through 2010 (Dimitri and Greene, 2002; Nutrition Business Journal, 2004).

In 2003, retail organic sales in the EU exceeded those in the U.S., with the EU market estimated at almost €10 billion (almost \$13 billion) and the U.S. at about €8 billion (or \$10.3 billion) (table 1). Germany led the European countries in organic retail sales with €3.1 billion in 2003, followed by the UK and France (about €1.6 billion each) and Italy (€1.4 billion). In 2001, Denmark had the highest market penetration of organic products (2.5-3.0 percent), followed by Austria (2 percent) and Germany (1.25-1.50 percent). Ireland had the smallest market penetration (less than 0.5 percent).

In the U.S., penetration in the food market for organic products was estimated to be 1.4 percent in 2001 (table 1) and reached 1.8 percent in 2003. The Nutrition Business Journal (2003) estimates that market penetration for organic foods will reach 3.5 percent by 2010. The organic products with the greatest penetration in the U.S. food market in 2002 include soymilk (65 percent of the market), nonsoy dairy alternatives (18 percent), and baby food, fresh juice, and produce at about 5 percent each.

Sales channels for organic products vary widely among the countries. In 2003, organic food sales in the U.S. were distributed almost evenly between natural product and health food stores (47 percent) and conventional retail stores (44 percent), with direct sales and exports accounting for 9 percent. This is a dramatic shift from 1998 when corresponding sales were 63 percent, 31 percent, and 6 percent (Nutrition Business Journal, 2003; Organic Trade Association, 2004).

As in the U.S., mainstream European supermarkets stock a wide range of organic products. However, the distribution of products through different retail outlets varies across countries (Dabbert et al., 2004). For example, over 85 percent of organic products are sold through general food shops in Denmark compared with less than 5 percent in Luxembourg. In fact, in most Scandinavian countries, the UK, and Austria, organic food is generally sold

⁵See Hamm and Gronefeld (2004) for an in-depth examination of the European markets for the year 2001.

through supermarkets. In contrast, in Luxembourg and Greece, it is primarily sold through other stores (e.g., organic/health food stores, bakers, and butchers). A number of countries, including Ireland, Italy, France, Belgium, The Netherlands, and Germany to some extent, are more evenly divided between supermarkets and other stores.

Although the market for organic products is growing in both the EU and the U.S., there are some problems with the flow of products to the market. In Europe, the organic dairy and livestock industries, in particular, have grown rapidly over the last decade, and in some cases, more quickly than the market and distribution channels can handle. Organic milk supplies in some regions were large enough to reduce organic prices, causing some producers to exit the sector because they were unable to turn a profit (Hallam, 2003; Kortbech-Olesen, 2003). The milk glut, however, appears to be giving way to shortages in the UK, as demand continues to grow and supply has declined (Organic Monitor, 2005).

While the U.S. organic food market was formerly supply-constrained, there are indications that the market is currently better able to meet consumer demand, especially for fresh produce (Dimitri and Richman, 2000; Nutrition Business Journal, 2004). In the dairy market, however, where demand is rapidly increasing, suppliers are struggling to provide enough organic milk to satisfy demand at current prices (*Organic Business News*, 2004).

Table 1

EU and U.S. organic sales

Country	Retail sales, 2003	Share of total food sales, 2001	Per capita spending on organic food, 2003
	<i>Million</i>	<i>Percent</i>	<i>Euros¹</i>
Austria	400	2.0	48.9
Belgium	300	NA	NA
Denmark	339	2.5-3.0	113.6
Finland	212	NA	NA
France	1,578	1.0	21.2
Germany	3,100	1.25-1.50	30.4
Greece	21	NA	NA
Ireland	40-50	<.5	NA
Italy	1,400	1.0	19.2
Luxembourg	NA	NA	NA
The Netherlands	395	.75-1.0	38.1
Portugal	NA	NA	NA
Spain	144	NA	NA
Sweden	420	1.0	45
United Kingdom	1,607	1.0	15.3
European Union	9,966	NA	NA
United States	8,019	1.4	35.7

NA = Not available.

Note: U.S. retail sales dollars were converted to euros on an exchange rate of \$1.29 = 1.00, May 2005.

¹Per capita spending figures based on an exchange rate of \$1.00 = 1.00.

Sources: European sales—Richter, 2005; Ireland—Håring et al., 2004; U.S. sales—Nutrition Business Journal, 2004, 2003; per capita expenditures—Europe: Håring et al., 2004; U.S.: USDA, FAS, 2005.

Most organic products sell for a premium over comparable conventional products, likely due in part to higher production, processing, procurement, and distribution costs, relative to those of conventional products. These higher costs may result from the wide dispersion of organic farms and their relatively small production levels, which would increase transaction costs.⁶ Another part of the premium comes from the relative supply and demand levels of organic products, which contribute to higher profits for organic farmers. Price premiums to farmers vary by country and product in the EU. In 2000, meat and dairy received the lowest premiums, averaged across EU countries, with milk at 22 percent, beef, 34 percent, and pork, 68 percent; poultry and eggs averaged 182 percent and 167 percent, respectively; and grains averaged 102 percent (Schneider et al., 2005).

In 2002, the Organic Farming Research Foundation conducted its fourth biennial survey. According to the survey, 71 percent of responding U.S. organic farmers received a price premium for at least half their farm products in 2001. In addition, 45 percent sold organic products as conventional products, and half of those sold in conventional markets because the organic market was unavailable. The survey also indicated that 15 percent of organic farmers realized price declines in 2001, while the remaining 85 percent either had prices rise or remain steady over previous years (Walz, 2004). Systematic collection of price data for organic products has been limited in the U.S., thus preventing in-depth analysis of market trends in prices, margins, and price premiums between organic and conventional products. The few U.S. studies of farm-level, wholesale, and retail organic price data have shown significant organic premiums for most fruits, vegetables, grains, and milk (Bertramsen and Dobbs, 2002; Glaser et al., 1998; Glaser and Thompson, 2000; Oberholtzer, Dimitri, and Greene, 2005; Sok and Glaser, 2001; Streff and Dobbs, 2004).

⁶We thank Stephan Dabbert for pointing this out to us.

EU and U.S. Organic Farmland

Europe has 23 percent of the world's organic farmland.⁷ Certified organic land in the EU rose from 103,000 hectares (254,519 acres) in 1985 to 5.1 million hectares (12.6 million acres), or about 4 percent of the total agricultural area of 127 million hectares, in 2003 (Lampkin, 2005a). Of the 942 million acres (381 million hectares) of total U.S. agricultural lands, certified organic acreage increased 1.3 million acres (544,933 hectares) to 2.34 million (948,552 hectares) between 1997 and 2001 (Greene and Kremen, 2003). Thus, in 2001, the EU had almost five times the amount of organic farmland as did the U.S., while the U.S. had three times as much agricultural land (table 2).

In 2003, Italy had about one-fifth of the organic farmland in the EU, with about 1 million hectares of organic farmland, followed by Germany (734,027 hectares), Spain (725,254 hectares), and the UK (695,619 hectares) (table 2). Luxembourg accounted for the smallest amount of organic farmland, only 3,002 hectares. According to Lampkin (2005a), Austria had the highest share of farmland area under organic management, about 9.7 percent of total hectares (Austria's hectares rose significantly in 2003), followed by Sweden (7.4 percent), Finland (7.2 percent), and Italy (6.9 percent) (which lost significant organic farmland in 2003) (table 3). In contrast, in 2001, the U.S. share of farmland under organic management was 0.25 percent. States with the greatest amount of organic cropland were

⁷The two regions with the greatest amount of certified organic farmland are Australia (42 percent of total farmland) and Latin America (24 percent). A large share of this is pastureland used for raising livestock (Willer and Yussefi, 2004).

Table 2

EU and U.S. organic land, 1997-2003

Country	1997	1998	1999	2000	2001	2002	2003
	<i>Hectares</i>						
Austria	345,375	287,899	272,635	272,000	276,410	296,154	328,803
Belgium	6,818	11,744	18,515	20,667	22,452	24,000	24,000
Denmark	59,963	93,201	136,629	157,661	168,377	174,350	165,146
Finland	102,342	126,176	136,662	147,268	147,943	156,692	159,987
France	165,406	218,775	315,771	369,933	419,750	517,965	550,000
Germany	389,693	414,293	452,327	546,023	632,165	696,978	734,027
Greece	10,025	15,402	21,451	26,707	31,118	77,120	244,455
Ireland	18,687	24,411	29,360	27,231	30,017	29,754	28,514
Italy	641,149	785,738	911,068	1,040,377	1,237,640	1,168,212	1,052,002
Luxembourg	618	744	888	1,074	2,003	2,852	3,002
The Netherlands	16,960	22,268	26,350	32,334	35,876	42,610	41,865
Portugal	12,193	29,533	47,974	50,002	70,857	91,006	120,729
Spain	152,105	269,465	352,164	380,920	485,079	665,055	725,254
Sweden	118,175	127,330	155,463	174,227	202,827	214,120	225,776
United Kingdom	54,670	274,519	390,868	527,323	679,631	741,174	695,619
European Union ¹	2,094,179	2,701,498	3,268,125	3,773,747	4,442,145	4,898,042	5,099,179
United States ²	554,933	NA	NA	821,137	948,552	NA	NA

NA = Not available.

¹All EU hectares are for certified organic and in-conversion land. Numbers for Sweden (as well as Germany in 1997) do not reflect the substantial hectares that are managed organically but not certified. In Sweden, these lands are financially supported by the government through green payments, as recognition by Sweden and increasingly other Scandinavian countries that financially supporting organic land management for environmental gain does not necessarily need to be linked to the marketing of organic food, for which certification is a legal requirement. In Sweden, these lands accounted for another 180,000 hectares in 2003. We thank Nicolas Lampkin for pointing out the intricacies of European governmental support.

²The U.S. reports certified organic acreage, which has been converted to hectares (1 acre = 0.405 hectares.).

Sources: EU data as of May 31, 2005, are from Lampkin, 2005a and c. U.S. data are from Greene and Kremen, 2003.

California, North Dakota, Minnesota, Wisconsin, Iowa, and Montana, while Colorado and Texas had the most organic pasture and rangeland (Greene and Kremen, 2003).

The EU has far more organic farms (134,434 in 2003) than does the U.S. (6,949 in 2001) (table 3). Of the total number of EU organic farms in 2003, Italy accounted for almost one-third with 44,039 farms, followed by Austria, Spain, Germany, and France (ranging from 19,056 to 11,377 farms). Luxembourg trailed with 59 organic farms. Austria had the highest share of farms under organic production—9.5 percent (Lampkin, 2005c). In the U.S., by contrast, 0.3 percent of all farms were in organic production in 2001. The top 5 States included California, with over 1,000 operations, followed by Washington (548), Wisconsin (469), Minnesota (421), and Iowa (384) (Greene and Kremen, 2003).

Table 3
EU and U.S. organic farm sector statistics

Country	Organic farms	Farms under organic production	Farmland under organic production
	<i>Number</i>	<i>-----Percent-----</i>	
Austria	19,056	9.5	9.7
Belgium	688	1.1	1.7
Denmark	3,510	6.1	6.1
Finland	5,074	6.3	7.2
France	11,377	1.7	1.9
Germany	16,476	3.5	4.3
Greece	6,028	.7	6.2
Ireland	889	.6	.7
Italy	44,039	2.0	6.9
Luxembourg	59	2.0	2.4
The Netherlands	1,522	1.5	2.2
Portugal	1,507	.4	3.2
Spain	17,028	1.3	2.8
Sweden	3,562	4.4	7.4
United Kingdom	4,017	1.7	4.4
European Union, 2003	134,434	2.0	3.9
United States, 2001	6,949	.3	.3

Note: These numbers include farms that are certified organic and in-conversion. Sweden's numbers do not include lands that are managed organically or allowed green payment support but not certified.

Sources: EU data as of June 13, 2005, are from 2003 in Lampkin, 2005a-c. U.S. data are from 2001 and detailed in Greene and Kremen, 2003.

EU and U.S. Organic Agriculture Policies

U.S. organic agriculture policies primarily focus on demand, through recently enacted national standards and certification, but the policies also include a limited number of federally funded grants that support research (including on-farm research), education, and marketing. In contrast, in keeping with their belief that organic farming provides benefits to society, EU countries have implemented a wide variety of policies designed to increase the amount of land farmed organically. The programs affect both supply and demand in the sector and include national standards and certification, conversion and support payments for farmers, targets for land under organic management, and other supporting policies for research, education, and marketing.

Organic agriculture policies are a subset of the EU's general agri-environmental policies, in which the framework and cofinancing are provided by the EU. Each country ultimately decides which set of policies to implement. Some member states have adopted policies that are aligned with the U.S. approach, in that they mainly pursue free-market approaches (such as The Netherlands), while many others actively promote organic agriculture. EU member states are currently debating the optimal mix of policies to support organic agriculture.⁸ The general set of agri-environmental policies is complex. The following discussion highlights some of the policies; for a more complete and detailed discussion, see Dabbert et al., 2004; Häring et al., 2004; and Lampkin et al., 1999.

EU and U.S. Organic Agriculture Standards and Certification

Organic standards are set by the governments of the EU countries and the U.S. There are two economic reasons for adopting standards. Standards reduce transaction costs by providing consumers, intermediaries, and producers with a standardized definition of an organic product, thus facilitating local and international trade. Standards also resolve an information problem resulting from the unobservability of the “organic” status of a product to consumers; although the producer has full knowledge of the production methods, to the buyer, they are unobservable. Certification transmits information that the food was raised, distributed, and processed appropriately, while standards define the types of systems that are legitimately organic. An official certification system reduces opportunistic behavior (such as falsely claiming a product is organic), not only by defining the certification process and standards, but also by creating a specific enforcement system. In the U.S., for example, penalties are clearly outlined for firms that use the organic seal inappropriately, while the EU regulation does not specify enforcement mechanisms, leaving enforcement up to individual member states (Grolink, 2002). Thus, certification and standards reduce costs by facilitating information transmission and enforcing the government-sanctioned definition of “organic.”

The essence of organic agriculture is ecologically farmed land and a careful eye toward soil fertility maintenance. Because the actual techniques used in ecological farming are region specific, individual countries often have idiosyncratic definitions of organic, all of which are based on defining an

⁸We thank Nicolas Lampkin and Stephan Dabbert for pointing out this EU debate.

ecological farming system. One international group, the International Federation of Organic Agriculture Movements (IFOAM), has unsuccessfully tried to develop a universal standard (see box, “International Standards for Organic Agriculture”).

In the EU, labeling of organic plant products is governed by EU Regulation 2092/91 (enacted in 1993) and of organically managed livestock by EU Regulation 1804/99 (enacted in 2000). Plant and animal products and processed organic foods imported into the EU may be labeled organic only if they conform to the provisions of the regulation. The regulation sets minimum rules for production, labeling, and marketing for the whole of Europe, but

International Standards for Organic Agriculture

According to the International Federation of Organic Agriculture Movements (IFOAM), based in Germany but active worldwide, 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 dramatically reduces external inputs by refraining from the use of chemo-synthetic fertilisers, pesticides, and pharmaceuticals. Instead it allows the powerful laws of nature to increase both agricultural yields and disease resistance. Organic agriculture adheres to globally accepted principles, which are implemented within local social-economic, geoclimatical and cultural settings” (IFOAM, 2004a).

Two international frameworks exist for certification bodies and standard-setting organizations for organic products: the IFOAM Basic Standards, which were developed in the 1980s, and the Global Codex Alimentarius standards, for which development began in 1999. IFOAM is an international federation of more than 600 affiliate organizations in more than 100 member countries, which focuses on general purposes, recommendations, basic standards, and derogations. One part of IFOAM’s mission is international equivalency of organic quality claims so that certificates issued by certifiers in one part of the world are immediately accepted in other parts of the world. To facilitate international equivalency, IFOAM established an accreditation program in 1992, which is managed by the International Organic Accreditation Service (IOAS). IFOAM’s basic standards acknowledge that national legislation will take into account local conditions that may well be more detailed than the IFOAM Basic Standards but would, as a minimum, meet IFOAM standards. However, the IFOAM standards are more rigorous in some instances than the relevant national standards, such as those laid down by EU or U.S. legislation. In fact, many IFOAM-accredited certifiers are beginning to demand stricter standards than, for example, the EU legislation requires, which industry experts suggest may lead to a tiered structure of the international certification industry (Organic Trade Services, 2004).

The Codex Alimentarius standards “provide an internationally agreed framework for organic food moving in international trade. Where a disagreement may occur between countries about the equivalence of organic food, the Codex guidelines can be used as a reference in trade disputes at the WTO level” (IFOAM, 2004b). For a few years, however, the Codex guidelines did not cover animal husbandry; livestock standards were approved in 2001.

each country is responsible for interpreting and implementing the rules, as well as enforcement, monitoring, and inspection (Kilcher et al., 2004).

The EU recognizes a national authority from each member state as the body that can certify organic products as complying with EU law. These bodies, in turn, approve other certification entities within their member states that can also certify organic products. Most countries follow government-approved private certification bodies (table 4). The EU Regulation does not give specific guidance as to how member states should approve and supervise the certification bodies, resulting in a great deal of diversity among the

Table 4

EU organic certification

Country	Member state certification or government-approved private certification	Certification bodies
		<i>Number</i>
Austria	Private	8
Belgium	Private	2
Denmark	State/Plant Directorate, Food Directorate	
Finland	State	15 rural departments (for farms) and municipal food control (for processing)
France	Private	6
Germany	Private	22
Greece	Private	3
Ireland	Private	3
Italy	Private	13
Luxembourg	State and private	State inspects some small processors and 3 private
The Netherlands	Private	1 (Private certifier, Skal, has by law been given the status of government inspection authority and has a monopoly)
Portugal	Private	2
Spain	State and private	19 regional "semi-governmental" bodies and 1 private
Sweden	Private	2
United Kingdom	State (limited role) and Private (most certified by private)	10 private certifiers

Source: Rundgren, 2002; Organic Trade Services, 2004.

states. Some countries and certifiers have additional public or private standards, particularly with regard to animal production and the use of inputs. Some also have standards for products not covered under the EU Regulation, such as fish and nonfood agricultural products (Rundgren, 2002).

Legally, if a producer or processor is certified by one of the EU-approved certification entities, certification should be valid in all EU member states. Some certification entities, however, insist on stricter standards than those of the EU legislation, which means that if the “brand” of the stricter certifier is strong in the marketplace, the producer or processor may find their customers insisting on that certifier’s certification. Therefore, EU certification bodies have developed a tiered structure, whereby not all EU certificates are acceptable to all certification bodies (Organic Trade Services, 2004).

EU labeling of organic products is complex. In 2000, the EU introduced a voluntary logo for organic products that could be used throughout the EU by those meeting the regulation. At least 95 percent of the content of these products must originate in the EU. So far, few companies are using the logo (Dabbert et al., 2004; Kilcher et al., 2004). Some member states have public labels, while in other states, private certifiers have their own labels, some well known to the public (e.g., KRAV in Sweden, Skal in The Netherlands, or the Soil Association in the UK) (Rundgren, 2002). In most countries, private certifiers that have their own standards are legally obligated to certify producers to the EU Regulation if requested; in this case, the producer can use the EU label and member state label but not the private label of the certifier (Rundgren, 2002). The use of multiple labels can be confusing to the consumer, however. In some countries, only one logo is used and recognized. Other EU countries, however, use a range of labels, logos, and brands (Dabbert et al., 2004).

In 1990, USDA was mandated through the Organic Foods Production Act (OFPA) to establish national standards for U.S. organic products. Up through the 1990s, and before any national standards were implemented, a patchwork of State laws existed regarding organic agriculture, with 17 States requiring certification for products labeled organic by the late 1990s. Thirteen other States had some type of regulation (although some had very minimal standards) but did not require third-party certification or inspection. Although certifiers each had their own standards and program management guidelines, Fetter and Caswell (2002) found in an analysis of the standards only minor differences among the certifiers, except in the area of livestock production. One major concern for the industry before the development of standards, however, was consumer confusion about what organic meant based on these standards, which was one of the primary motivations for developing national standards.

The three goals of OFPA as outlined in the legislation are to establish standards for marketing organically produced products, assure consumers that organic products meet a consistent standard, and facilitate interstate commerce (U.S. Congress, 1990). The legislation targeted environmental aspects by requiring that an organic production plan pay attention to soil fertility and regulate manure application to prevent water contamination and included environmental criteria to evaluate materials used in organic production (Merrigan, 2003; U.S. Congress, 1990). In practice, the official

organic rule that was adopted also incorporated consumer desires to avoid GM ingredients and irradiation (Merrigan, 2003).

More than a decade after OFPA, the U.S. implemented the USDA National Organic Standards (NOS) on October 21, 2002. The Federal system still relies on multiple certifiers to certify producers and handlers of organic products, but these certifiers are now accredited by USDA. Although still too early to determine the overall impacts of the organic standard on the industry, the number of certifying agents has increased since implementation. The initial list of accredited organizations announced by USDA in April 2002 included 38 domestic and 4 non-U.S. organizations (Haumann, 2004). By March 2005, USDA listed 56 domestic and 41 foreign accredited agents and 64 organizations as applicants. The growth in foreign agents is particularly notable. There is also evidence that U.S. consumers are becoming more aware of organic foods as more labeled products appear in stores (Haumann, 2004).

Conversion and Support Payments for EU Organic Farmers

The EU has proactively supported organic agriculture through a variety of schemes, including paying subsidies, or “green payments,” to farmers for converting to organic farming and for continuing organic farming. No countries outside of the EU provide subsidies for existing or transitioning organic production. The economic rationale for green payments, which subsidize organic production, is that organic production provides benefits that accrue to society and that individual farmers do not consider these social benefits when making production decisions. In such cases, offering subsidies alters production practices by more closely aligning each farmer’s private costs and benefits with social costs and benefits. In practice, green payments for organic production target new and existing organic farmers, partly to compensate new or “transitioning” farmers for the decline in yields when moving from conventional to organic production.⁹

The major policies for organic agriculture in the EU fall under the agri-environment program, the 1992 Common Agricultural Policy (CAP) reform (EC Regulation 2078/92), which provided the policy framework for EU member states to support organic farming. Many of the subsidies currently granted by European countries were implemented under this reform, and most countries implemented their schemes in 1994. Most of the countries have uniform national policies, although some have regional variations in the rates of payment and requirements. In fact, most countries have changed the original agri-environmental schemes for various reasons (Lampkin et al., 1999). More recently, under Agenda 2000, these measures were included in the rural development program (Rural Development Regulation No. 1257/99), a CAP reform carried out from 1999 to 2001.

As Dabbert and colleagues (2004) note, the response from regions and countries to devising the agri-environmental program has been diverse, and applying the program to organic farming even more so. Most of the schemes allow for newly converting and existing organic farmers to qualify for aid, with only France (with some regional exceptions) and the UK not supporting existing producers. Most countries allow staged conversions (with limits in some countries), where parts of the farm are converted over a

⁹U.S. farmers do not experience a similar post-transition yield reduction (see Liebhardt, 2001, for more information), although yields for major crops may be lower over time because of organic crop rotation. Organic EU farmers, on the other hand, often continue to have yields below conventional producers after the 3-year conversion period. For example, organic grain yields are about 60-70 percent of conventional grain yields (Offermann and Nieberg, 2000). One possible explanation for this difference is that, for conventional production systems, land is farmed more intensively in Europe than in the U.S.

number of years, and partial farm conversions. All schemes require that organic management of crops on the farm be maintained for 5 years, or payments must be refunded; more than half the countries do not require livestock to be managed organically. Several countries operate maximum and minimum size limits (by land area or business size), and half impose stocking rates. A few countries restrict payments to specific crops.

The basic approach of the agri-environmental program is that farmers enter into a voluntary contract with a government agency, usually a 5-year contract, which commits the farmer to specific farming practices perceived as beneficial to the environment in return for payment (Dabbert et al., 2004). In 2001, almost €500 million were spent on organic lands under the two measures (2078/92 and 1257/99), with organic farms averaging payments of €183-€186 per hectare compared with €89 per hectare for conventional farms (table 5). Of this amount, about €270 million came from the Council Regulation 1257/99 measures, accounting for almost 16 percent of the total expenditures of €1.7 billion for 1257/99 (Häring et al., 2004).

The participation of organic farmers (measured by the amount of organic hectares supported by agri-environmental programs) in the various EU countries demonstrates the differences among the countries in their support of organic lands. Dabbert and colleagues (2004, p. 45) note that, in most countries, “the organic land supported by the agri-environmental policies is a substantial proportion of the total certified organic area, which already

Table 5
EU agri-environmental support and organic farming, 2001

Country	Organic land supported under agri-environmental programs		Share of organic land in policy support programs	Public expenditures for support of organic land under EC 2078/92 and 1257/99	Average support premium for organic land	
	2078/92 ¹	1257/99 ²			2078/92	1257/99
	-----Hectares-----		Percent	Thousand	---Euros/hectare---	
Austria	36,193	210,833	89	67,905	211	286
Belgium	13,032	3,616	74	3,416	187	269
Denmark	79,731	78,347	94	16,377	137	199
Finland	23,948	113,631	93	3,402	141	117
France	54,727	82,508	33	23,951	196	188
Germany	278,884	254,715	84	84,477	154	163
Greece	4,928	10,614	50	17,505	401	445
Ireland	13,691	NA	46	1,848	135	NA
Italy	351,113	101,134	37	158,898	361	318
Luxembourg	736	1,224	98	328	158	173
The Netherlands	8,140	14,593	63	4,446	266	156
Portugal	26,970	90	38	3,779	137	111
Spain	142,591	112,554	53	14,544	69	195
Sweden	81,067	349,562	113	69,018	153	162
United Kingdom	285,633	122,330	60	27,591	42	45
European Union	1,401,384	1,455,751	62	497,485	186	183

NA = Not available.

¹Organic support falls under EC Regulation 2078/92, the agri-environment program, of the 1992 Common Agricultural Policy reform. See text for more detail.

²After 1999, organic farming support was part of Rural Development Regulation 1257/97, under Agenda 2000.

Source: Häring et al., 2004; Lampkin, 2005b.

points to the importance of these programmes for the development of organic farming in Europe.” The share of organic land supported by agri-environmental policies ranges from 33 and 37 percent in France and Italy to almost 93 and 94 percent in Finland and Denmark (table 5). Sweden’s 113 percent has more policy-supported organic land than certified area, reflecting Sweden’s policy of supporting uncertified organically managed lands (see note 1, table 2 for more details).

Targets for EU Land Under Organic Management

Targets for land under organic production are used by EU member countries, and the organic farming action plans developed by several European countries provide targets for adoption of organic hectares by a certain year (e.g., 20 percent by 2010). The economic rationale for setting targets, in general, is that there is a threshold level above which a benefit accrues to society. Targets are used for farmland preservation in the U.S., for example, and for pollution emissions. In the case of targets for farmland preservation, the selected acreage target depends on the amount of land thought necessary to sustain a viable agricultural sector. If the target is not reached, the expectation is that farm-supporting industries (e.g., equipment and implement dealers, veterinary services, and credit institutions) will become economically stressed in the area because of the lack of farm operations. In turn, the local economy may be hurt by the loss of businesses, and the speed of farmland conversion to other uses may increase.

Organic farmland targets in the EU are used differently than farmland preservation targets in the U.S. The EU governments use targets to convey their level of commitment to growth in the organic sector. Some countries have selected relatively attainable targets, while others have chosen more ambitious ones.¹⁰ For example, in 1995, Denmark announced a target of 7 percent of farmland certified as organic by 2000 and nearly reached this goal with 6 percent. Denmark’s goal of having 12 percent of farmland certified as organic by 2003, however, fell short (table 6). In response to the 2000 BSE crisis, Germany set a target of certifying 20 percent of farmland as organic by 2010, a number that may be hard to reach with only 4 percent of land in organic production in 2003. Other countries have set varying targets: The Netherlands, 10 percent of farmland by 2010 and 5 percent of organic retail sales by 2005; Wales, 10 percent of farmland by 2005; France, 3 percent of farmland and 25,000 farms under organic management by 2005; Sweden, 20 percent of farmland in 2005; and Belgium, 10 percent of farmland by 2010.

State of Publicly Funded Research and Other Programs on Organic Agriculture

As markets continue to grow, public funding of organic-related research is increasing in both regions, although European governments are funding more organic research. EU and U.S. research agendas reflect the different priorities of the governments, with European funding focusing on innovation in production technique, food processing, food marketing, and food retailing. Niggli (2005) estimates that European state funding for organic farming research is €70-€80 million annually. However, countries vary widely in the amount of, and their approach to, funding for organic research

¹⁰The authors are grateful to Stephan Dabbert for clarifying the rationale for organic land targets.

(see Slabe, 2004, for a detailed accounting of programs and funding levels). Germany, The Netherlands, Switzerland, and Denmark are at the forefront of the research, accounting for 60 percent of all national spending on organic research in Europe (Niggli, 2005).

In the U.S., university-based technical assistance, Federal cost-share funds, and other State and Federal support for organic farmers and handlers are beginning to emerge. Nine USDA agencies have started or expanded programs on organic agriculture during the last several years (see Dimitri and Greene, 2002, appendix A, for more information). The Farm Security and Rural Investment Act of 2002 (commonly referred to as the 2002 Farm Bill) contained several first-time research and technical assistance provisions to directly assist organic crop and livestock producers with production and marketing. These provisions included a cost-share program to reimburse producers being certified and new organic research, education, and extension activities with a grants program. Also, several other provisions in the Act indirectly affect organic crop and livestock producers. For example, processes used to produce agricultural commodities, such as organic management, are now included in the definition of products that qualify for value-added market development grants. Several conservation assistance programs may also interest organic farmers. One—Agricultural Management Assistance—now specifically mentions organic farming among the

Table 6

EU agricultural land and organic targets

Country	Total agricultural land in country, 2002	Share of farmland that is organic, 2003	Policy targets for organic farmland
	<i>1,000 hectares</i>	<i>Percent</i>	<i>Percent and year</i>
Austria	3,387	9.7	NA
Belgium	1,393	1.7	10 by 2010 (in Flanders)
Denmark	2,690	6.1	7 by 2000; 12 by 2003
Finland	2,216	7.2	10 by 2006; 15 by 2010
France	29,622	1.9	3 by 2005
Germany	16,971	4.3	20 by 2010
Greece	3,917	6.2	NA
Ireland	4,372	.7	20 by 2010
Italy	15,341	6.9	NA
Luxembourg	127	2.4	NA
The Netherlands	2,933	2.2	10 by 2010
Portugal	3,813	3.2	NA
Spain	25,554	2.8	NA
Sweden ¹	3,039	7.4	20 by 2005
United Kingdom	15,722	4.4	Wales: 10 by 2005; England: No targets for production

NA = Not available; data as of May 31, 2005.

Note: All data include organic and in-conversion lands.

¹In Sweden, the percentage of organic farmland (7.4 percent) is for certified organic hectares only. However, Sweden also provides green payments to farmers of noncertified organic lands, and the policy target most likely refers to both certified and noncertified land. When the latter is included, 13.4 percent of the land is in either certified organic or noncertified organic lands.

Sources: Lampkin, 2005a; Häring et al., 2004; FiBL, 2005.

practices that qualify for assistance to mitigate risk through market diversification and resource conservation practices.

In fiscal year 2005, about \$7 million was made available exclusively for organic programs (e.g., the National Organic Program, certification cost-share program, and Integrated Organic Program). Of this amount, \$4.7 million was for a first-time research grant program on organic agriculture. This amount, however, does not include money for other programs that benefit organic producers (such as USDA's Sustainable Agriculture Research and Education program and Value-Added Producer Grants program), specific earmarks for organic research (e.g., those made to the Agricultural Research Service, USDA), and technical assistance and research by Federal, State, and local agencies. Nevertheless, these amounts demonstrate that U.S. support for organic agriculture is still small compared with that of the EU.

Recent Policies Related to Organic Agriculture

The most recent policy related to organic EU agriculture is the European Action Plan for Organic Food and Farming, adopted by the European Commission in June 2004. The plan seeks to facilitate ongoing development of organic farming and sets out a list of 21 policy actions to be implemented. The actions are focused on three main areas:

- Information-led development of the organic food market, including increasing consumer awareness, stimulating the use of the EU logo, and improving the availability of production, supply, and demand statistics.
- Making public support for organic farming more effective by encouraging member states to make a more coherent and greater use of the different rural development measures.
- Improving and reinforcing the EU's organic farming standards and import and inspection requirements.

Many have noted that, in the plan, the European Commission has a clearly stated rationale for promoting organic agriculture in the context of European agricultural policy. Some, however, have criticized its lack of targets for developing organic farming, the absence of new financial resources for implementation, and the fact that it does not consider the interaction of organic farming with the main components of the CAP and the new Rural Development Programmes (Stolze, 2005).

The impact of dramatic changes in the CAP—CAP Reform 2003—on organic agriculture in Europe is still unknown. The reform shifts agricultural policy to a market-driven policy. One aspect of the reform is shifting to a single-farm payment independent of the farm production level. The farm payment will require cross compliance with a wide range of standards, including environmental, food safety, animal welfare, and occupational health and safety standards. The overall changes, however, are expected to favor an expansion of organic farming (Häring et al., 2004). Single-farm payments will begin in 2005-07, and member states will have significant discretion in implementing single-farm payments.

The most recent U.S. policy effort is the development of an Organic Caucus in the House of Representatives in 2002. The Caucus is a bipartisan group of 38 representatives (as of March 2005) with a mission to promote sound policies that advance organic production and marketing. The Caucus is likely to have some influence on the inclusion of organic agriculture policies in the next national farm bill. Another significant factor likely to shape U.S. organic policy is the 2005 ruling in the case, *Harvey vs. the Secretary of Agriculture*, which found that USDA's implementation of the organic standard is inconsistent with the Organic Foods Production Act of 1990. The ruling refers to USDA's allowing the use of synthetic substances in manufactured food products labeled as organic and to the practice of allowing herds transitioning to organic to consume 80 percent organic feed during the first 9 months of transition (see Klonsky and Greene, 2005, for a detailed discussion of this issue).

Discussions between the EU and U.S. have been ongoing with regard to equivalency between the organic standards of the two regions. The EU and U.S. have not yet reached an agreement about the equivalency of organic standards. However, the U.S. has recognition agreements with two European nations, the UK and Denmark, in which accredited agents of these two governments can certify that products were produced or handled in accordance with USDA regulations (USDA, AMS, 2005).

Market-Led or Government-Facilitated: Does It Matter?

While the EU and U.S. governments undoubtedly vary in their level and types of direct policy support of organic agriculture, we can say unequivocally that organic agriculture is dynamic in both regions. Some producers clearly choose organic farming methods for philosophical reasons, but others adopt organic methods because government policies encourage them to do so, particularly in Europe. Others are entering the organic sector in reaction to the market's price premiums and ostensibly higher profits. Retail sales in both regions also continue to expand quickly, although growth rates have recently slowed in Europe. Some consumers have begun purchasing organic food in response to food scares, others see organic food as a way of improving their health, while still others purchase for altruistic reasons, such as improving the environment. As a result of supply and demand growth, nearly all consumers in the developed world are aware of organic food, and many have better access to organic food in either specialized shops or mass-market stores.¹¹

The one policy common to both the EU and U.S. is government-defined organic standards, which provide information to buyers about the unobservable characteristic, "organic." At this point, the commonalities in major policies between the two regions disappear. The EU has a wide variety of policies designed to increase the amount of land farmed organically, in keeping with their notion that organic farming provides benefits to society. The programs include green payments (subsidies), demand-side policies, and land targets for organic production. U.S. funding for organic production and marketing has been limited, and although new programs have recently emerged, government efforts have resulted from intensive lobbying by the organic industry, unlike in the EU, where the governments actively support organic agriculture.

Viewing organic farming as providing public goods offers an economic rationale for government intervention in the market, which many European governments do. Viewing organic food as a differentiated product, created by using an ecological production system, suggests that a government should only regulate if there is concern about consumers being able to identify the product as "organic" or to reduce transaction costs of doing business, which is the approach taken by the U.S. Government.

Comparing market growth—both on the supply-side and demand-side—in the context of these different policy choices is revealing. The retail market for organic products in Europe is larger, but the U.S. market is growing at a faster rate. In Europe, evidence suggests that, historically, supply has rapidly grown and, at different times, has needed to allow consumers to catch up. In the U.S., the opposite appears to be the case: Burgeoning consumer demand has pulled suppliers into organic production, so the U.S. market has had to cope with an industry that has frequently been supply constrained. Clearly, Europe has more (in both absolute value and as a share of the total) organic farms and farmland than does the U.S., which is likely the result of different histories and proactive supply-based government policies. Thus, the state of the organic sector in the two regions suggests that divergent policy directions do not matter in terms of meeting consumer demand, but they do matter in terms of satisfying other rationales for supporting organic agriculture.

¹¹ Access to organic food is not without challenges: Finding organic food in restaurants, for example, in both the EU and U.S. is difficult. Organic food is more readily available in foodstores in some U.S. States and in some EU countries than in others.

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