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Widespread Adoption of Organic Agriculture in the US:
Are Market-Driven Policies Enough?

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Organic food production faces rapidly growing consumer demand in the U.S. and other industrialized countries, along with a worldwide regulatory framework and rapidly developing support infrastructure, making it a premier technology in the efforts of many public and private organizations that advocate more sustainable farming practices. The use of organic farming systems for crop production in the U.S. has grown rapidly during the last decade, but is still under 0.5 percent of total U.S. farmland—substantially less than in many countries in Europe and elsewhere.

Within the U.S., conversion to organic farming systems has been more extensive in particular commodity sectors and regions. In California, for example, about two percent of the state's crop acreage is managed under organic farming systems, and over 15 percent of the dairies in some New England states are organic. The objectives of this paper are to examine commodity-sector adoption rates and trends for organic farming systems in the U.S., and determine the impact of evolving markets and public support on adoption. First we will describe the current adoption and trends for the US and the world for organic production. Next we will examine current research on consumer attitudes towards organic products. We will then look at relevant issues raised from the results of research trials comparing the risks and input requirements of organic versus conventional agriculture. In most cases organic producers rely on price premiums to offset the increased risks and production costs. We will discuss market policies that directly and indirectly affect the profitability of organic production. We will then look at current farm policies in the context of adoption of organic production. Finally, we will discuss organic production in the context of the next farm bill.

Market Forces Shaping Organic Agriculture

Current adoption for the US and the World

American farmland under organic management has grown steadily for the last decade as farmers strive to meet consumer demand in both local and national markets. U.S. certified organic crop acreage more than doubled between 1992 and 1997, and doubled again between 1997 and 2001 for most major crops (Greene and Kremen, 2003).

Certified organic pasture and ranchland also doubled between 1997 and 2001, following USDA's lifting of restrictions on organic meat labeling in the late 1990's. U.S. farmers and ranchers certified organic cropland and pasture on 2.3 million acres in 48 states in 2001, up substantially from previous estimates for 1997. Most crop/livestock sectors and most States also showed strong growth between 2000 and 2001, and from previous estimates for 1997.

However, despite the fast-paced growth in the adoption of organic systems since the late 1990s, certified organic farmland still only accounted for 0.3 percent of total U.S. farmland in 2001. The share was much higher in some crop sectors where conversion to organic farming systems has been occurring for several decades, such as fruit and vegetables at over 2 percent. Fresh fruits and vegetables represent over 40 percent of retail organic sales, and between 1 and 5 percent of top specialty crops—lettuce, carrots, apples, and grapes—were grown under certified organic farming systems, and tomatoes and citrus were nearly 1 percent. In contrast, only 0.12 and 0.24 percent of the top U.S. field crops that are mostly used as feed grains—corn and soybeans—were grown under certified organic farming systems in 2001.

Worldwide conversion levels are currently the highest in European Union countries, which have been developing consumer education initiatives and providing direct financial support to producers for conversion since the late 1980's to capture the environmental benefits of these systems and support rural development. By 2004, the percent of farmland under organic management was substantial in a number of these countries, including Italy (8 percent), Denmark (7 percent), Sweden (6 percent), the Czech Republic (5 percent) and Germany (4 percent) (Willer and Yussefi, 2004). Two European countries—Austria and Switzerland—had over 10 percent of their farmland under organic management. The UK lagged other European countries in organic conversion until comparable levels of direct financial support was offered, and the UK now has about 4 percent of its farmland under organic management. Many EU countries have set targets for organic farming adoption of 10-20 percent of agricultural land area by 2010.

While government intervention in the United States has focused primarily on market facilitation, several States have begun subsidizing conversion to organic farming

systems as a way to capture the environmental benefits of these systems. Potential benefits from organic farming systems include improved soil tilth and productivity, lower energy use, and reduced use of pesticides.

US Market Performance

Sales of organic food in the US in 2003 were $10.4 billion representing about a two percent penetration into total food sales (Table 1). Organic food sales have increased at an average annual rate of 20 percent since 1997 compared to four percent for total food sales. This rapid growth rate helps explain the rising interest in organic products despite the fact that penetration is only two percent. Growth has been strong in all categories (Table 2). Fruits and vegetables remain the largest organic category with 42 percent of the organic sales in 2003 (Table 2). It also had the largest absolute annual growth with increased sales of $720 million and 20 percent growth from 2002 to 2003. Dairy and packaged prepared foods each made up 13 percent of sales in 2003 with annual growth rates of 20.3 percent and 16 percent, respectively.

The U.S. organic food market could realize continued expansion in several ways. These include 1) increasing the number of retail outlets with respect to type and number, 2) increasing the number of organic products available in each outlet type, 3) entry of mainstream food manufacturers into organic, 4) branding of organic, and 5) increased export. These paths to expansion are already in place and are not mutually exclusive. All are dependant on increased demand from consumers.

<u>Consumption Patterns in U.S. Households</u>. A number of industry studies have used consumer surveys to identify how often consumers purchase organic food, their motivations for purchasing organic food, and the marketing channels they use. A telephone survey of 1,003 adults in 2004 by the Food Marketing Institute found that 52 percent of those surveyed had purchased organic food within the last six months. This number was 50 percent in a 2003 survey and 53 percent in 2000 (Food Marketing Institute et al., 2005). About one fourth said that they purchased organic foods from three or more food categories (Table 4). Again, this number was essentially unchanged from

the 2000 survey results. These results are only consistent with the rapid growth reported in the "OTA's 2004 Manufacturer Survey" if there has been significant growth within categories rather than growth in the number of categories purchased. For example, total organic sales would increase if a household that already buys organic milk buys it more often and/or if it starts buying organic butter and eggs as well. This household would not be buying food in more categories but would be increasing the dollars spent on organic food. In either case, the survey suggests that the growth in the organic market since 2000 is due primarily to organic consumers increasing their organic purchases rather than the number of organic consumers increasing.

The Hartman Group study of 5,000 consumers, "Organic Food and Beverage Trends 2004," found that 66 percent of households purchased organic products. The Hartman Group goes on to describe these organic consumers as falling into one of three categories: periphery organic, mid-level organic, and core organic. The periphery organic consumers are beginning to buy but are not fully convinced of benefits from organic. They are familiar with a couple of organic products and do not seek out others. Mid-level organic consumers are beginning to gain knowledge about organic production but do not always seek out organic products. They make purchases on a category by category basis. The core organic consumers are committed to a lifestyle, understand the certification process and expect suppliers to meet the legal organic standards. Of organic consumers, only 21 percent are core, the majority, 66 percent mid –level and the remaining 13 percent periphery.

The Hartman Group found that about half of organic consumers used only one channel to purchase organic foods and beverages in 2003, down from two thirds using only one channel in 2000 (Moore, 2004). This change reflects the increase in availability of organic foods in retail channels such as discount stores and club stores but also from consumers seeking out new shopping experiences such as natural food stores and direct sales. In 2003, twenty two percent used two channels, and 29 percent used three or more channels. Over two thirds purchased organic products in grocery stores, 43 percent in natural food stores (including chains and independents), 31 percent shopped at farmer's markets, 19 percent at large discount stores, 13 percent at club stores, 31 percent at

farmer's markets, and 23 percent directly from suppliers such as a sales representative, the Internet, or direct mail.

Looking at the distribution of organic food sales, 48 percent of sales in 2003 were through natural foods channels (natural foods grocery chains and natural foods independent grocers). Another 43 percent of total organic food sales were realized through mass market channels (grocery stores, mass merchandisers, and club stores) (Table 3). Farmers markets represented only four percent of sales (OTA) despite the fact that 31 percent of organic consumers reported shopping at farmers' markets (Moore, 2004).

Domestic versus Import Market Share. Organic agricultural imports have played a significant role in the U.S. market expansion for organic products. USDA estimates that imports accounted for between $1 billion and $1.5 billion of the $8.6 billion in U.S. organic retail sales in 2002 (USDA, 2005). Organic imports from countries with lower labor and input costs have nearly replaced some U.S. organic production in some commodity sectors. For example, U.S. organic cotton acreage has fallen substantially since the mid-1990s, even as the market for organic cotton has expanded with increased use by major clothing manufacturers (Greene and Kremen, 2003). Low-cost production, as well as the direct financial support for organic producers in some countries, could also play a role in declining markets for U.S. organic exports. In particular, some east and central European countries could become major, low-cost suppliers of organic products as these countries gain EU membership with the potentially higher and broadened supports for organic production in the EU countries (Greene and Dobbs, 2001).

Most countries in Europe and several states in the U.S. offer financial support for conversion to organic farming systems as a way to capture the environmental benefits of these systems. Although consumer demand can potentially be met with rising share of organic imports, the environmental benefits of a shift to organic production systems are captured in the U.S. only with an increase in U.S. organic production.

U.S. Organic Export Promotion. While, U.S. organic imports have increased substantially since the mid 1990's, U.S. organic exports have been static for nearly a

decade. U.S. export market sales of organic products were estimated at $200 million dollars in 1994 (US Department of Agriculture, 2000a), and at between $125 million and $250 million in 2002 (US Department of Agriculture, 2005). Most USDA-accredited certifiers in the United States provide programs for exported product. For U.S. exports, organic certification generally requires verification and compliance to standards that are specific to each destination country in addition meeting US standards, and processed foods need to meet these additional standards all the way back through the supply chain (Jake Lewelin, personal correspondence). In contrast, a USDA-accredited certifier must certify any foreign supplier of organic products into the US market. As of February 2005, there were 41 foreign certifiers accredited by USDA indicating strong interest in exporting into the US (US Department of Agriculture, 2005).

One option for the U.S. to facilitate organic certification for U.S. exports would be to work with other countries to obtain equivalency trade agreements regarding organic production standards. OTA has stated that increased trade of organic products will be a top priority for the 2007 Farm Bill (Gray, 2005). Major importers of US organic food are the European Union, Japan, Asia, Canada, and Mexico.

Consumer Attitudes

Organic consumers are diverse demographically and elude the stereotype of educated, wealthy mothers. Research indicates that purchase of organic products is unrelated to income (Food Marketing Institute et al., 2005; Whelan, 2002). The Hartman Group found that 42 percent of organic consumers have a household income under $40,000 (Hartman 2004). Asian Americans, African Americans and Hispanics were more likely to buy organic products than Caucasians.

In the Hartman Group 2003 interviews of organic consumers, health, nutrition, and preventative medicine appear to be the primary motivators for choosing organic foods (Barry, 2004). Seventy percent said that organic foods are healthier, 52 percent more nutritious and 50 percent better at helping avoid disease. Less than half of the consumers thought that organic is more difficult to produce than non-organic products (44 percent), protects the food supply (36 percent) or treated animals more humanely (35

percent). Protecting the environment did not surface as an important issue in the interviews.

An earlier Hartman study (Hartman, 2001) indicated that two thirds of organic consumers said they were motivated by health and nutrition, 38 percent by taste and 30 percent by food safety. They did not make a link with a specific health benefit, rather a general sense of health and well being. Only 26 percent of the organic consumers list environmental concerns as a key motivation.

In the Food Marketing Institute 2005 study, 80 percent of shoppers who had purchased organic foods in the past six months said that they bought organic foods for nutritional value and 67 percent because of long–term health benefits. Other important reasons given were freshness and seasonality (79 percent), taste (66 percent) and appearance (43 percent). Over half (56 percent) reported buying organic food because of the environmental impact of growing organic food. Not surprisingly, the reasons for buying organic food varied by the number of organic food purchases made in the previous three months to the interview.

Other studies strengthen the finding that health and food safety are the key concerns of consumers. A 2002 survey by The Supermarket Guru showed health and food safety concerns as the most important reason for purchase (56 percent) followed by better quality (23 percent) and fresher (7 percent) (Lempert, 2002).

The major barrier to purchases of organic foods appears to be price. In a study by Roper Starch Worldwide in 2000 almost two thirds of consumers who did not buy organic products cited price as the number one reason. Other barriers cited by roughly half of these non – consumers included lack of selection and variety, lack of proof of organic's superior healthfulness, and lack of availability. Almost half of the 436 respondents in the survey by Supermarketguru.com said that they have not purchased organic food because it is too expensive (Lempert, 2002). Another 41 percent said they didn't know enough about them.

Among consumers who buy organic products there is consensus that organics are more expensive. Eighty five percent of organic consumers agreed with the statement that organic food is more expensive than conventional food (Hartman 2004). In the Supermarketguru.com survey 91 percent of the respondents said that organic foods cost

more. Over half (52 percent) said they would purchase more organic food with better prices followed by greater selection and availability in their local store (37 percent). Quality was an issue for only nine percent.

Does Organic Cost More to Produce?

Organic farming systems rely on ecologically based practices, such as biological pest management and composting; virtually exclude the use of synthetic chemicals, antibiotics, and hormones in crop production; and prohibit the use of antibiotics and hormones in livestock production. Under organic farming systems, the fundamental components and natural processes of ecosystems—such as soil organism activities, nutrient cycling, and species distribution and competition—are used as farm management tools.

It follows that conversion to organic production is not simply a matter of one for one substitution of materials or methods. For example, organic farmers typically plant cover crops prior to their cash crops. Cover crops may serve as habitat for beneficial insects, increase soil tilth, provide nitrogen, suppress weeds, and improve water infiltration allowing for early entry into fields.

Another common practice is crop rotation and fallowing ground. Rotation acts to suppress weeds and disease and alters the nutrient requirements from one crop to the next. However, rotation will lead to lower revenue when the rotation crop is of less value than the primary crop. For example, conventional tomato growers produce high valued tomato crops several years in a row. This practice is not possible for organic production because of disease build up and the high nitrogen requirements of tomatoes. Rotation with beans will fix nitrogen in the soil and reduce disease pressure but at a decrease in revenue. Finally, organic farmers often rely on fallowing land between cash crops. A fallow period means no income during that time. The cost of idling land must be taken into consideration when looking at overall profitability.

National organic standards were implemented in the U.S. in 2002, and incorporate an ecological approach to farming that affects the entire system, unlike many new farming technologies—such as improved crop varieties and innovative yield monitoring

tools—which typically alter only a single input or aspect of production. Farmers that transition to organic farming systems from chemical-intensive systems must make changes across the spectrum of their production inputs and practices.

USDA regulations require third party certification for growers grossing more than $5,000 in organic sales. Fees charged by State and private certifiers represent an additional, ongoing expense. By law certification agencies require a documentation of a 3-year transition (conversion) period, during which land must be managed with practices consistent with those required for organic certification, before certifying any crop or pasture acreage. Farmers cannot obtain organic price premiums during this period, though in a few cases higher prices can be obtained for "transitional" commodities. The three year transition period required by USDA's organic regulations, the higher risks of shifting to a new way of farming, the steep learning curve, the high costs for fertility and weed management, and other obstacles have the limited conversion to organic farming systems for many commodities.

Several recent U.S. studies have indicated that organic price premiums are necessary to give organic farming systems comparable or higher whole-farm profits than conventional chemical-intensive systems, particularly for crops like processed tomatoes and cotton (Klonsky and Livingston, 1994; Batte et al., 1993; Assadian et al., 1999). A review of university-based comparative studies in the 1980's and early 1990's on Midwestern organic grain and soybean production found organic systems needed price premiums to be more profitable than conventional systems (Welsh, 1999). Several of these studies, however, found that organic grain and soybean production could be as profitable even without price premiums due to higher yields in drier areas or periods, lower input costs, or higher revenue from the mix of crops used in the system. Other recent studies have also found that some organic systems may be more profitable than conventional systems, even without price premiums. For example, a study comparing organic and conventional apple production in California's Central Coast showed higher yields as well as higher returns under the organic systems (Swezey et al., 1994). Another study compared organic, conventional, and "integrated pest management" apple production in Washington State over a 6-year period, and found that the organic system was more profitable, had similar yields, better tasting fruit, and was more

environmentally sustainable and energy efficient than the other systems (Reganold et al., 2001).

Public Support for Organic Agriculture

Research and policy initiatives often play a key role in the adoption of new farming systems. Organic agriculture has attracted mainstream producers and processors in part due to the price premiums it has commanded and the rapid rate of growth at a time of stagnant or decreasing prices and flat growth in conventional agriculture. At the same time organic agriculture has the potential to achieve environmental goals.

As the organic farm sector expands, university-based research and technical assistance, federal cost-share funds, and other private, State and federal support for organic farmers is beginning has emerge. In September 2003, the National Association of State Departments of Agriculture released a policy statement supporting a number of policy measures to encourage conversion to organic farming systems, including targeted marketing assistance for small and medium-sized producers, expanded data collection, and improved government research coordination. At the Federal level, at least nine USDA agencies have started or expanded programs and pilot projects to help organic producers with production and marketing problems and risks, and the 2002 Farm Act for the first time included several small initiatives to assist organic farmers. But the history of federal policy related to organic agriculture dates back to 1980. We present this history from the perspective of the farm bill legislation's impact on the adoption of organic agriculture.

Farm bill provisions on organic agriculture, 1980-2002

In 1980, USDA published a major report on the potential environmental, conservation, and energy-related benefits of organic farming and recommended expanding research on organic agriculture (USDA, 1980). By the end of that decade, USDA had determined that organically grown produce had formed a distinct market and was tracking premiums for representative commodities in its vegetable market reports

(USDA, 1989). Although Congress did not pass any legislation with a specific focus on organic agriculture during the 1980's, several precursor programs were developed. For example, Congressional funding for a grant program on low-input sustainable agriculture was included in 1987, in Sub-title C of the Agricultural Productivity Act. The following year, Congress funded the Sustainable Agriculture Research and Education program, which continues today and allocates a significant share of its grant funding to research on organic farming and marketing systems. Congressional legislation specifically focused on organic agriculture made its debut in 1990 with a title requiring USDA to set national organic standards, and follow-up measures have routinely appeared since then, mostly aimed at market facilitation and technical assistance.

Organic Foods Production Act of 1990 (OFPA*)*. Title XXI of the Food, Agriculture, Conservation, and Trade Act of 1990, the Organic Foods Production Act of 1990 established the National Organic Program within USDA and required the Secretary of Agriculture to establish national standards for organically produced and processed commodities. While OFPA did not target improvements in environmental and human health as an explicit objective of the regulation, these concerns are addressed in Section 2119 of the Act which establishes the following set of criteria for approving and prohibiting substances for use in organic production and handling operations: (1) the potential of such substances for detrimental chemical interactions with other materials used in organic farming systems; (2) the toxicity and mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment; (3) the probability of environmental contamination during manufacture, use, misuse or disposal of such substance; (4) the effect of the substance on human health; (5) the effects of the substance on biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms (including the salt index and solubility of the soil), crops and livestock; (6) the alternatives to using the substance in terms of practices or other available materials; and (7) its compatibility with a system of sustainable agriculture.

Congressional provisions in the late 1990s. Although the 1996 Farm Act—the Federal Agriculture Improvement and Reform Act of 1996—did not contain any new provisions on organic agriculture, several provisions appeared in legislation prior to the next omnibus farm bill in 2002. The 1998 AREER Act (Agricultural Research Education and Extension Reform) authorized the Secretary to make competitive grants to support research and extension activities for organically grown and processed agricultural commodities. The objectives of this research were to: (1) facilitate the development of organic agriculture production and processing methods, (2) evaluate potential economic benefits to producers and processors who use organic methods, and (3) explore international trade opportunities for organically grown and processed agricultural commodities.

Also, the Agricultural Risk Protection Act of 2000 recognized organic farming as a 'good farming practice' that would be covered by Federal crop insurance. Federal crop insurance began covering transitional and certified organic acreage the following year under written agreements that included a five percent surcharge reflecting uncertainty on organic yield variability. The Agricultural Risk Protection Act of 2000 also authorized cost-share assistance for organic certification to producers in 15 States that have had a historically low participation rate in the Federal crop insurance program.

Farm Security and Rural Investment Act of 2002. The 2002 Farm Act, which governs Federal farm programs through 2007, contained several first-time research and technical assistance provisions to assist organic crop and livestock producers with production and marketing. The 2002 Act authorized new funding for organic production systems research, new funding for a national cost-share program for organic certification costs, and exemptions from marketing programs aimed promoting conventional crops.

Under the 2002 Farm Act, the Organic Agriculture Research and Extension Initiative authorizes $3 million per year in new mandatory appropriations in fiscal years (FY) 2003-07. Funds are being used to administer competitive research grants through USDA's Cooperative State Research, Education, and Extension Service. Research priorities for these grants include determining desirable traits for organic commodities; identifying marketing and policy constraints on the expansion of organic agriculture; and

conducting advanced research on organic farms, including production, marketing, and socioeconomic research.

The National Organic Certification Cost-Share Program under the 2002 Act provided $5 million in FY 2002, to remain available until expended, with the maximum Federal cost share at 75% annually with up to $500 paid to an individual producer or handler to assist producers and handlers of agricultural products in obtaining certification under the National Organic Program. Most of the funds allocated for this program had been spent by the end of the 2004.

Also under the 2002 Act, certified organic producers who produce and market only organic products and do not produce any conventional or nonorganic products are exempt from paying an assessment under any commodity promotion law. Organic growers have had concerns about paying assessments that did little or nothing to market organic products. Methods for improving the treatment of certified organic agricultural products under Federal marketing orders will be evaluated as part of the research and extension provisions authorized under the Farm Act.

Other research and extension provisions for organic agriculture that are authorized, but not mandated, include data development on organic agricultural production and marketing; facilitated access to organic research conducted outside the United States for research and extension professionals, farmers, and others; and a mandated report to assess the need for additional funding for research and promotion of organic agricultural products.

The 2002 Farm Act also contained several market development and conservation programs that are open to all producers but mention organic production specifically. While most of these policies reflect a market facilitation policy orientation, one Federal program has been used to provide cost share payments to organic farmers to help pay for organic certification. And several States have begun subsidizing conversion to organic farming systems with conservation payments—using federal Environmental Quality Improvement Program (EQIP) funds—as a way to capture the environmental benefits of these systems. A new federal conservation program, the Conservation Security Program, may be especially important to organic producers when it is fully implemented, because it provides payments to producers for adopting or maintaining a wide range of

management, vegetative, and land-based structural practices to address resource concerns, many of which organic farmers commonly adopt as part of their organic farming systems. Unlike most other Federal conservation programs, producers who grow specialty crops will be eligible to participate. The technical assistance features of the Conservation Security Program may be useful for organic farmers and those interested in transitioning to organic farming systems.

National Organic Program, October 2002. The USDA promulgated final rules for implementing the Organic Foods Production Act of 1990 in December 2000, with an 18-month transition period. This legislation was implemented by USDA's National Organic Program in October 2002, requiring all agricultural products that are sold, labeled, or represented as organic to be in compliance with the regulations, and providing the optional use of a USDA organic seal for certain products. The regulations require that organic growers and handlers (including food processors and distributors) be certified by a State or private groups under the uniform standards developed by USDA, unless the farmers and handlers sell less than $5,000 a year in organic agricultural products. Retail food establishments that sell organically produced agricultural products, but do not process them, are also exempt from certification.

In USDA's final national organic rule, organic production is defined as "a production system that is managed in accordance with the Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity" (U.S. Department of Agriculture, 2000b).

The national organic standards address the methods, practices, and substances used in producing and handling crops, livestock, and processed agricultural products. Although specific practices and materials used by organic operations may vary, the standards require every aspect of organic production and handling to comply with the provisions of the Organic Foods Production Act of 1990. Organically produced food cannot be produced using genetic engineering and other excluded methods, sewage sludge, or irradiation. These standards include a national list of approved synthetic substances such as insecticidal soaps and horticultural oils, and prohibited nonsynthetic

substances (such as arsenic, strychnine, and tobacco dust) for use in organic production and handling. Organic livestock production systems attempt to accommodate an animal's natural nutritional and behavioral requirements, ensuring that dairy cows and other ruminants, for example, have access to pasture.

Harvey vs. Secretary of Agriculture Ruling, January 2005. A lawsuit, filed in October 2002 by Arthur Harvey, an organic producer, against the Secretary of Agriculture, alleged seven technical inconsistencies between the Organic Foods Production Act (OFPA) of 1990 and the implementation of the law through the organic standards of the National Organic Program (NOP), USDA. The US Court of Appeals for the First Circuit in January 2005 upheld a ruling in favor of three of the seven issues raised in the lawsuit. Two of the rulings pertain to multi-ingredient products labeled as "organic." OFPA stipulates that for manufacturers to label multi-ingredient products as "Organic" at least 95 percent of the ingredients must be organic. OFPA also bars the use of any synthetic substances in products labeled as "Organic." After reviews, NOP regulations have allowed 38 synthetic substances to be used in organic processed foods. Following the court ruling NOP could no longer allow most of these substances. Also following the court ruling, all agricultural products included in the 5 percent not required to be organic must have individual reviews by NOP to determine that they are not available commercially as organic. Finally, OFPA requires all organic dairy animals to receive organic feed for 12 months before the sale of organic milk or milk products. NOP has allowed whole dairy herds under transition to use 80 percent organic feed for the first nine months. The court ruling means dairies transitioning to organic could no longer follow this practice.

The ruling of the US Court of Appeals for the First Circuit in January 2005 could lead to significant changes in organic food production. Manufacturers of food now labeled as "organic" will need to either change their labeling to "made with organic ingredients" which allows for the use of synthetics and requires only 70 percent of ingredients to be organic, or change the processing of their products to meet the strict interpretation of the law. Products labeled as "made with organic materials" cannot use the USDA organic seal and will lose any market advantage gained by using the seal.

A Food Marketing Institute Trends report in 2003 found that 55 percent of shoppers knew the difference between the USDA organic seal and the "made with organic" labels. The OTA's 2004 Manufacturer Survey found that 60 percent of the 210 companies surveyed use the USDA organic seal and another 30 percent said they plan to use it in the next three years. However, only nine percent of those companies said they saw a dramatic increase in sales attributable to the organic seal.

One concern within the organic industry is that the stricter requirement for organic inputs will reduce the overall demand for organic products adversely affecting organic farmers. Also, fewer "organic" products may be available to consumers. The change in the dairy herd conversion requirements could also lead to reduced demand for organic products if dairymen choose not to convert their herds, but could lead to an increased demand by increasing the organic feed requirements. Some in the organic industry feel that the ruling will deter large corporations from entering the organic market (Organic Business News, 2005). Ron Kind, co-chair of the US House Organic Caucus, interpreted the decision to mean that the USDA will have to rewrite the national standards (Organic Business News, 2005).

Following the initial ruling the District Court made two clarifications. The court posted errata on March 30, 2005 stating that the ruling pertained only to products labeled "organic" and not to products labeled "made with organic" ingredients. Also the court made clear that handlers are prohibited from adding synthetic materials in handling products labeled "organic" but that this does not prohibit storage of products containing synthetics with the "made with organic" label (Organic Business News, 2005). Arthur Harvey has asked that there be a two year phase in of the ruling so that manufacturing of organic products not be disrupted (Organic Business News, 2005).

Reducing Obstacles to Organic Production and Marketing

The organic certification, marketing and research provisions in Congressional legislation since 1990, including the Organic Foods Production Act of 1990 and the Organic Agriculture Research and Extension Initiative in 2002, were designed to address

the production and marketing obstacles to more widespread adoption of organic agriculture in the United States. The research activities and technical assistance authorized by the 2002 Farm Act could encourage growth in the organic farm sector. At this point, legislative goals have partly been met.

The specific social goal targeted by the Organic Foods Production Act of 1990 is market efficiency, assuring consumers that organically produced products meet a uniform national standard and facilitating interstate commerce, although parts of the Act also allude to other social goals such as environmental protection. The national standard can have an impact on environmental externalities caused by conventional production methods, but only to the extent that it causes the organic market to grow (Golan et al., 2000). While the U.S. market for organic products has continued to expand rapidly since the 1990 legislation was passed and implemented, U.S. certified acreage and livestock has not kept pace with the growth in retail sales. As mentioned earlier, U.S. organic imports have increased substantially since the mid 1990's, while U.S. organic exports have remained static.

The Organic Foods Protection Act may also have implications for the structure of the organic farming industry. All certifiers, large and small, must pay for accreditation, and all organic farmers with sales over $5,000 must pay for certification in order to label their products as organic. According to USDA's regulatory impact analysis, even with the small business exemptions, some small organic farms and some small certifiers may exit the industry and small operations may be discouraged from entering the industry. A number certification groups in Southern states ceased operation between 1997 and 2001, as the national organic rules were being implemented, and certified organic acreage fell in five states in the Southern region during this period (Greene and Kremen, 2003).

Federal research and policy initiatives often play a key role in the adoption of new farming systems in the United States. Specific research and marketing initiatives in the 2002 Farm Act are intended to encourage adoption of organic farming systems in the U.S. The organic production and marketing data initiatives, for example, are aimed at assisting farmers, processors, food manufacturers, and others in making sound economic investment decisions in by making price discovery less costly and improve market efficiency, and USDA has begun implementing some of these initiatives. For example,

USDA has expanded some economic data collection efforts to include organic producers (Greene, Auburn, and Garcia-Pratts, 2004), and is beginning to broaden efforts to include organic studies as a formal part of its research efforts (Jawson and Bull, 2002).

Agricultural and other interest groups have begun to examine potential provisions in the next farm bill which will replace the 2002 Act. The Organic Trade Association (OTA), which represents U.S. producers and processors, has played a major role in supporting Congressional legislation on organic agriculture for nearly two decades and is supporting a new organic title for the next farm bill which would expand support for organic producers and remove policy barriers to increased U.S. organic production (Hutchinson, 2005). The policy barriers highlighted by OTA include federal program rules that require producers to have 100 percent of their operations under organic management in order to qualify for certain marketing and conservation programs. The transition to organic agriculture is a difficult phase for most conventional producers, partly because of the inability to capture premium prices during the period when they also face a steep learning curve for a new production system, and many conventional producers do not convert 100 percent of their operations to organic production at the same time.

The OTA initiative also recommends expanding conservation and marketing programs that don't currently target organic operations and products, such as USDA's EQIP and price reporting programs. Currently, only a handful of states—including Minnesota, Iowa and California—have designated organic production as a priority for conservation cost share coverage under the EQIP program. Other OTA recommendations include expanding technical assistance training for organic production, setting organic acreage or production targets, and increasing federal cost-share payments to help producers meet organic certification costs.

Continued Congressional support for organic agriculture since the 2002 Farm Act was passed is reflected in the development of an Organic Caucus in the House of Representatives. The Organic Caucus is a bipartisan association of congressional members with a mission to promote sound policies that advance organic production and marketing.

While some elements of the OTA initiative may face difficulty in a legislative session that is expected to be oriented toward reduced producer support, much of the initiative is focused on ways to improve the access of organic producers and processors to existing federal production and marketing programs. The details of the next farm bill with respect to conservation, trade assistance, research, and other policies will inevitably influence the size and scope of organic agriculture in the United States and the ability of organic agriculture to contribute to achieving environmental goals.

Table 1. Organic Food Consumer Sales, Growth, and Penetration, 1997 – 2003

	Organic Food ($Million)	Organic Food Growth Rate	Organic Penetration
1997	3,566	na	0.8%
1998	4,272	19.8%	0.9%
1999	5,043	18.1%	1.1%
2000	6,104	20.1%	1.2%
2001	7,359	20.6%	1.4%
2002	8,624	17.2%	1.6%
2003	10,381	20.4%	1.9%

Source: Organic Trade Association. OTA's 2004 Manufacturer Survey, May 2004

Table 2. Organic Food Category Share and Annual Growth, 2003

Organic Food Category	Percent of Sales	Sales ($ Million)	Absolute Growth	Percent Growth
Fruit and Vegetables	42	4,336	720	19.9
Beverages	15	1,581	256	19.3
Dairy	13	1,385	234	20.3
Packaged Prepared Foods	13	1,326	183	16
Bread and Grains	9	966	180	22.9
Snack Foods	5	484	111	29.6
Sauces/Condiments	2	229	44	23.5
Meat/Fish/Poultry	1	75	33	77.8
Total Organic Food Sales	100	10,381	1,759	20.4

Source: Organic Trade Association. OTA's 2004 Manufacturer Survey, May 2004

Table 3. Organic Food Channel Distribution, 2003

Channel	Sales ($ Million)	Percent of Sales
Natural Foods Channel:	**4,943**	**48**
Natural Foods Grocery Chain	2,011	20
Natural Foods Independent Grocer	2,932	28
Mass Market Channel:	**4,499**	**43**
Mass – Market Grocery	3,868	37
Mass Merchandiser	367	4
Club Stores	264	3
Other channels:	**939**	**9**
Food Service	254	2
Export	165	2
Farmers' Markets	400	4
Boutique/Specialty Stores	26	.3
Internet/Mail Order	12	.1
Other	82	.8
Total Organic Food Sales	**10,381**	**100**

Source: Organic Trade Association. OTA's 2004 Manufacturer Survey, May 2004

Table 4. Reasons Shoppers Give for Purchasing Organic Foods by Number of Organic Food Purchases [1/]

Reason	1 - 2 Products	3 – 4 Products	5+ Products	All Shoppers
Nutrition value	67%	90%	93%	80%
Freshness or seasonality	69	87	90	79
Long-term personal health benefits	52	79	86	67
Taste	56	74	79	66
Environmental Impact	38	70	78	56
Appearance	39	44	52	43
Percent of respondents	50	28	22	100

[1/] Shoppers who have purchased organic foods in the past six months. N = 526

Source: Food Marketing Institute, et al. 2005

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