CONVENTIONAL, MIXED AND "DEREGISTERED" ORGANIC FARMERS: ENTRY BARRIERS AND REASONS FOR EXITING ORGANIC PRODUCTION IN CALIFORNIA

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EXECUTIVE SUMMARY

With increasing consumer awareness of the health and environmental benefits of organic agriculture, the U.S. organic sector has been growing by a vigorous 20% per year. California, which is often considered the "birthplace of organic agriculture," leads the nation in organic production. Nonetheless, organic agriculture plays an extremely small role in California's overall agricultural landscape. There were only 1,757 registered organic farms in California in 2003, representing just 2.2% of all farms in the state. Similarly, California's 174,000 acres in organic production represent a mere 0.63% of all farmland. At the same time, the number of organic farms in California has remained virtually constant since 1998, with growth in some years offset by a nearly 10% decline between 2001 and 2003. The small number of organic farms is exacerbated by a "deregistration" rate of approximately 20% of organic growers each year. For example, 358 farms discontinued organic registration in 2002, of a total of 1,847 registered growers. That same year witnessed the entry of only 303 new registered organic growers, representing a net decrease of 55 organic farmers.

Given the environmental and other benefits of organic agriculture, these trends raise a number of important questions, with critical implications for California's capacity to transition to a more sustainable food system. Why has consumer demand for organic food not resulted in greater adoption of organic practices among conventional producers? What are the main factors behind the 20% "deregistration" rate among organic growers? What are "mixed" operations' plans regarding transitioning more land into organic production?

Answers to these questions were sought via a research project consisting of a review of the literature on organic adoption, interviews with nearly 30 "key informant" experts familiar with these issues and interviews with 70 conventional, mixed and "deregistered" farmers in Fresno County. This research focused on Fresno County for several reasons. It is the number one agricultural county in the United States and produces many of the organic fruits, nuts and vegetables consumed nationwide. It also has the second highest number of acres in organic production in California and the third largest number of organic growers in the state. Also, because Fresno County is in many ways more "traditional" than other regions of California, we felt the findings might be more applicable to a broader cross-section of organic farmers.

Conventional Farmer Attitudes Regarding Organic Conversion

Interviews with conventional farmers revealed that the large majority had given some consideration to organic farming, while four were actually in the process of transitioning some of their land. Reasons for considering organic farming were largely economic, followed by health and environmental concerns. Nonetheless, most of the conventional farmers have decided not to pursue organic farming, based factors including production concerns (largely associated with the ability to control weeds and pests), concerns about lower yields and "cosmetically challenged" products, uncertainty about their ability to access markets and obtain organic price premiums, unwillingness to abandon established markets for conventional products and a lack of information regarding how to successfully transition to organic. A small number of these growers were opposed to organic farming in principle, based largely on a lack of belief in its health and environmental benefits. A small number of these farmers also felt that certain non-

organic methods – including the use of genetically modified crops and small amounts of synthetic inputs with low toxicity – are in fact better for human and environmental health than organic methods as codified in the National Organic Standards.

"Mixed" Farmer Attitudes Regarding Organic Expansion

Interviews with "mixed" organic-conventional farmers revealed a range of future plans. Three of these farmers plan to transition all their land to organic production, ten plan on transitioning more, but not all of their land, three are uncertain and three do not plan to transition any more land to organic production. Those planning on transitioning all of their land are doing so based on a philosophical commitment to organic farming. The ten planning to transition only some additional land seek to take advantage of organic price premiums while maintaining established markets and diversified organic-conventional production. These growers expressed concerns about "market saturation" and an unwillingness or inability to transition more land, based on the significantly more management-intensive nature of organic production. Mixed farmers unsure about transitioning more land into organic production based that decision on perceived future demand for organic products and an unwillingness to transition more land without secure markets. Growers not planning on transitioning any more land based their decision on previous losses in the organic market.

Reasons for Discontinuing Organic Registration

There are currently no reliable sources of information regarding farms that have exited organic production. We therefore interviewed 20 farmers that had discontinued their registration with the California Department of Food and Agriculture Organic Program, with which all organic farmers are required to register, regardless of certification status. Interviews with those individuals revealed that eleven were still farming but had reverted to conventional production, while nine were no longer farming, due to reasons unrelated to organic farming, including loss of land, poor health, personal problems and retirement. The farmers reverting to conventional production did so based on a variety of factors, including low yields, production problems associated with weeds and pests, high labor and other production costs and an inability to obtain markets for their products. Nonetheless, seven of the eleven growers farming conventionally report that their experiences farming organically had positive impacts on their current practices, including the use of some organic methods and more judicious use of synthetic inputs.

Principal Conclusions and Recommendations

The research offers a number of important insights with respect to the potential for more widespread adoption of organic agriculture in California. While many farmers are open to the adoption of organic methods, numerous marketing and production challenges must first be addressed. The transition to organic production is not an easy one. In addition to the many challenges facing all farmers, issues particular to organic farming include:

- High costs of production
- Difficulties obtaining organic price premiums and securing stable markets
- Losses during the transitional period

- Limited access to technical assistance
- High labor costs
- High certification costs
- Lack of access to information on organic prices and markets
- Limited access to credit and financing
- Conflicting international organic standards
- Reluctance to transition land with insecure tenure

Of these many challenges, farmers overwhelmingly cited marketing, including access to markets and the ability to obtain organic price premiums, as the main issue they have faced. As such, while transitional payments might encourage some to adopt organic methods, doing so in the absence of a broader strategy to support farmers that have made the transition could in fact set many transitioning farmers up for failure.

Nonetheless, as the European Union has already recognized, organic agriculture offers numerous environmental, economic and social benefits and makes good sense from a public policy perspective. Since significant federal support for organic farming in the U.S. does not appear likely in the short or medium terms, California should take a leadership role in this regard, as it has done on so many other issues. We offer the following recommendations as a jumping off point in that regard. Because the successful adoption of organic agriculture will require a multi-pronged approach, these recommendations should be seen as components of a broader and more comprehensive strategy. The implementation of any of these strategies in isolation will be unlikely to result in lasting change.

Improved Marketing of Organic Products

The ability to obtain stable and lucrative markets for organic products was the main challenge cited by growers and is one of the main barriers to the more widespread adoption of organic agriculture. While some agreed with "green" payments and other types of support, virtually all expressed a preference for market assistance. Recommendations to improve markets for organic growers include the following:

- Oversight and coordination of supply and demand to maintain organic price premiums
- Development of a "transitional" label providing growers with the opportunity to obtain some price premiums during that period
- Improved market coordination to connect organic growers and buyers
- Continued promotion of direct marketing and "buy local" campaigns
- "Sympathetic" distribution networks, such as cooperatives or nonprofit distributors such as the Community Alliance with Family Farmers or ALBA Organics to help small growers successfully compete in the marketplace
- Access to price and market information that will allow actors in the organic sector to make informed production and marketing decisions
- Trade agreements to promote California-grown organic products in domestic and export markets
- Policies to increase the competitiveness of California grown products vis-a- vis imports from regions with lower costs of production

Financial Support and Incentives

While most organic farmers prefer to remain competitive through market mechanisms alone, the need for public support in the short and medium terms is likely. In addition to "green" payments, a number of jurisdictions have been experimenting with more creative measures for doing so. Improved access to production credit is also vital for the health of the organic sector. Recommendations for supporting existing and transitioning organic farmers include the following:

- Transitional payments and low interest loans to encourage and facilitate organic conversion
- Maintenance payments rewarding organic farmers for good environmental stewardship
- Other incentives promoting organic conversion (e.g., property tax rebates for organic farmers, public sector organic procurement policies, etc.)
- Increased access to credit for organic production and education of financial service providers regarding the viability of organic production

Research, Information and Technical Assistance

There is a strong need for more research, information and technical assistance to improve organic production. In particular, traditional forms of extension must increase access to farm advisors with knowledge of organic methods. It is also vital that growers considering the transition to organic be made aware that the process is much more complex than simple "input substitution."

- Improved research on organic production methods, particularly more effective pest control.
- Increased access to technical assistance via traditional extension models, as well as commercial and non-profit entities.
- Support for peer farmer-to-farmer mentorship models for technical assistance and dissemination.
- Increased support for organic agriculture programs at universities and other institutes of higher education.
- Education targeting conventional growers' misperceptions regarding the negative environmental and health impacts of organic farming. [Note: This recommendation refers to blatantly false misperceptions only. Organic agriculture does include many practices with negative health and environmental impacts, including the use of toxic pesticides, problems associated with tillage, high water use and high fossil fuel consumption associated with tractor use, hauling compost, etc.]

Stimulating Consumer Demand

Finally, there is a strong need to increase consumer demand for organic food. Educational campaigns to increase awareness of the health, environmental and other benefits of organic food and farming are an important way of doing so. However, numerous studies have found that high levels of consumer interest in organic food already exist, with price consistently cited as the main barrier to increased consumption. Consequently, in addition to consumer education, policies to

decrease the cost of organic food – or reduce price differentials between organic and conventional products – may be necessary. Policies to reduce the cost of organic food include subsidies and "green payments" for organic producers. At the same time, policies to "internalize" the health, environmental and social costs of conventional agriculture will raise the price of those products to reflect their true cost, thereby decreasing price differentials between organic and conventional products. While raising food prices is clearly an unpopular approach, the "externalization" of the costs of conventional agriculture is not a sustainable solution in the long-term.

INTRODUCTION

With increasing consumer awareness of the health and environmental benefits of organic agriculture, the U.S. organic sector has been growing by a vigorous 20% per year. California, which is often considered the "birthplace of organic agriculture," leads the nation in organic production. With $329 million in farm level sales in 2003, California accounted for approximately 40% of all U.S. sales (Klonksy and Richter 2005) and 10% of all organic acreage (USDA 2006). Organic acreage in California doubled between 1998 and 2003, while farm level sales increased by 81%.

Despite these promising numbers and vigorous growth, however, organic agriculture continues to play an extremely small role in California's overall agricultural landscape. There were only 1,757 registered organic farms in California in 2003 (Klonsky 2005), representing just 2.2% of all farms in the state. Similarly, California's 174,000 acres in organic production represent a mere 0.63% of all farmland. Increases in land in organic production of 25% to 50% during the late 1990s have leveled off significantly in recent years, with an increase of only 6% between 2002 and 2003 and a decrease of 2% during the previous year (Klonsky 2005).

At the same time, the number of organic farms in California has remained virtually constant since 1998. Growth in some years was in fact offset by a nearly 10% decline between 2001 and 2003. Decreasing numbers of organic farms, coupled with increases in organic acreage indicates a trend toward greater concentration in the organic sector, which runs counter to the goals of a more sustainable food system encompassing local production on small and medium family farms.

The small number of organic farms in California is exacerbated by a "deregistration" rate of approximately 20% of organic growers each year. For example, 358 farms exited the organic sector in 2002, of a total of 1,847 registered growers. That same year witnessed the entry of only 303 new organic growers, representing a net decrease of 55 organic farmers (Klonsky 2005).

At the same time, the U.S. organic sector has not been able to keep up with growing demand for organic products with negative impacts on the industry as a whole. The Organic Monitor (2005) reports that "US organic market growth is being stunted by undersupply, resulting in shelves remaining empty, companies withdrawing from the market and others looking internationally to supplement needs" and notes that "nearly all market sectors would grow at much higher rates if sufficient supply was available." Similarly, 52% of respondents to the Organic Trade Association's 2006 Manufacturer Survey (OTA 2006) reported that "a lack of dependable supply of organic raw materials has restricted their company from generating more sales of organic products."

Low domestic organic production has resulted in large trade imbalances as well. The U.S. imported between $1 and $1.5 billion worth of organic products in 2002 while exports totaled a mere $125 to $250 million (Greene 2006), leading experts to caution that "unless more American farmers consider converting to organic practices, exporters are likely to capitalize on this lucrative market" (Organic Monitor 2006).

These trends raise a number of important questions, with broad and critical implications regarding California's capacity to transition to a more sustainable food system. The small number of organic growers in the state is particularly perplexing. Why has increased consumer demand for organic food not resulted in greater adoption of organic practices among conventional producers? What are conventional growers' attitudes toward organic agriculture? What do they perceive as the main advantages and disadvantages of transitioning to organic, and what do they see as the main barriers? What types of support and assistance would encourage more conventional growers to transition to organic agriculture?

At the same time, what are the main factors behind the 20% "deregistration" rate among organic growers? Is that a function of price, yields, access to markets, labor requirements, access to financing, certification costs, or other factors? Do growers discontinuing organic registration continue to farm organically or do they revert to conventional production? What kinds of support and assistance would help those growers continue to farm organically?

Finally, numerous growers have "mixed" operations with organic and conventional production. Anecdotal data indicate that most of these growers are satisfied with that arrangement and do not plan on converting all of their land to organic production. What are the reasons of growers with mixed operations for not transitioning more land to organic production? What types of support and assistance would encourage them to do so?

RESEARCH METHODS

Answers to these questions were sought via a review of the literature on organic conversion, interviews with approximately 30 key informants possessing familiarity with these issues and interviews with 70 conventional, mixed and "deregistered" farmers.

We began with a review of the literature on the organic adoption by conventional growers and a review of the significantly smaller literature on mixed organic-conventional growers and producers that have discontinued organic certification.

The literature review was followed by key informant interviews with over 30 individuals familiar with issues associated with organic farming, including organic farmers, certifiers, distributors, input suppliers, processors, extension agents, academics and others. The literature review and key informant interviews yielded a wealth of information regarding the range of factors associated with the issues under review for this study, and provided us with the background and grounding to develop interview protocols and conduct interviews with farmer.

Interviews with 70 conventional, mixed and "deregistered" farmers form the "heart" of this study. Given limited resources, all interviews were conducted by telephone, with the exception of two in-person interviews, which were conducted at the Davis Farmers' Market. Seven interviews were conducted with minority and immigrant farmers, including four Hmong and three Spanish- speaking farmers.

The geographic scope of this research was limited to Fresno County, for a number of reasons. It is the number one agricultural county in the United States and produces many of the organic

fruits, nuts and vegetables consumed nationwide. It has the second highest number of acres in organic production in California and the third largest number of organic growers in the state. Finally, because Fresno County is in many ways representative of "traditional" California agriculture, we believed that attitudes among growers there would more likely be representative of attitudes among other growers than regions such as the Central Coast. We also felt that limiting the geographic scope of this research to a single county would allow us to "control" for other factors affecting these issues, providing us with a clearer picture of the range of issues affecting growers' decisions regarding organic production.

Of the 70 interviews, 30 were conducted with three groups of ten small, medium and large conventional farmers each. The farmers were identified via referrals from contacts in Fresno County and "cold" calls from lists of all farmers in the county, which were provided by the Fresno County Agricultural Commissioner's office. The purpose of interviews with conventional growers was to assess their attitudes regarding the adoption of organic farming practices, identify perceived barriers or deterrents to doing so and types of support or assistance that might potentially encourage them to consider organic production.

An additional 20 interviews were conducted with "mixed" organic-conventional growers. These growers were identified through a variety of means, including referrals from other "mixed" farmers, California Certified Organic Growers (CCOF) certifiers and the Agricultural Commissioner's office. The purpose of those interviews was to assess these growers' motivations for adopting organic farming practices, future plans with respect to expanding, contracting or maintaining their organic acreage, "lessons learned" from their experiences and advice for others considering organic conversion.

Twenty interviews were conducted with farmers that had discontinued organic certification as of January 2003.[1] Contact information for those growers was provided by the California Department of Food and Agriculture Organic Program, which maintains a public register of all organic growers in the state. The purpose of those interviews was to identify these growers' reasons for discontinuing organic certification, current farming practices (conventional, organic without certification, etc.), impacts on farming practices in the case of those reverting to conventional production, lessons learned from their experiences and advice for other growers considering adopting organic practices.

LITERATURE REVIEW

Factors Associated with Organic Conversion

The literature associated with reasons for adoption and non-adoption of organic farming is fairly extensive. Darnhofer et al (2005) have identified a spectrum of five types of farmers in that regard, ranging from "committed conventional" to "committed organic" producers.

- "Committed conventional" farmers are defined as growers who do not see organic farming as more environmentally friendly than conventional production, do not believe the health claims

[1] That cut off date was chosen to reduce confusion around farmers that had discontinued organic certification before the USDA National Organic Standards went into effect in October 2002.

made for organic foods and do not perceive that organic production is technically and/or economically feasible.

- Those growers are followed by "pragmatic conventional" farmers, who do not have an ideological stance opposing organic farming, but perceive conversion as entailing profound changes in their farm organization which they are not eager to implement without tangible economic benefits. Darnhofer et al note that these growers are likely to be more open to conversion once "technological uncertainties have been resolved" and once the market for organic products has been established.
- The next group consists of "environment-conscious but not organic" farmers. This group consists of "self-declared organic producers who are not registered, who tend to have strong views regarding the perceived disadvantages of certification, and/or who want to remain independent of the regulations." Our research has found that many of the farmers falling into this category are farmers with largely organic methods, but that use some conventional practices based on philosophical or pragmatic reasons.
- That group is followed by "pragmatic organic" farmers, whose motivation for organic conversion is largely economic.
- Finally, "committed organic" farmers are described as "deeply rooted in the founding philosophy of organic farming, which is based on the rejection of synthetic fertilizers and pesticides, while seeking closed nutrient cycles and improved soil health." Darnhofer et al note that unlike pragmatic organic farmers, "economic considerations are secondary and these farmers are willing to risk foregoing some of their income."

The literature identifies a broad range of factors associated with adoption and non-adoption of organic farming techniques (Anderson 2004; Darnhofer et al 2005; Dobbs 2006; Fairweather 1999; Guthman 2004; Jackson 2006; Midmore et al 2001; Padel 1994; Padel 2001; Regouin 2003; Rigby et al 2001; Siemon 2006; Walz 2004). The principal factors associated with adoption of organic farming include: environmental factors, including better land stewardship and concern for the environment; personal reasons, including a desire to protect farmers' and farmworkers' health by reducing or avoiding contact with toxic inputs; economic considerations, including price premiums, increased market share, higher quality products and lower input costs; and pragmatic concerns, generally in response to more restrictive regulations governing air, soil and water quality, pesticide use, etc.

In contrast to the relatively limited number of factors encouraging farmers to adopt organic methods, the literature has identified a wide range of barriers and deterrents to organic production and conversion, some of which are true for farming in general and some of which are particular to organic. Farmers responding to Organic Farming Research Foundation (OFRF) annual survey (Walz 2004) ranked their top concerns as follows: (1) production, marketing, or regulatory problems: (2) weather-related production costs; (3) organic certification costs; (4) obtaining organic price premiums; (4) high input costs; (5) lack of organic marketing networks; (6) high labor costs; (7) weed-related production losses; and (8) production losses due to pests or diseases.

In addition to the above, the literature identifies a range of issues that are particular to organic farmers. These can be roughly categorized as follows:

Production

- Low yields associated with steep learning curves during initial years of organic farming
- Poor production due to naïve understanding of what organic agriculture entails and inability to change farming mindset from "input substitution" to a "whole systems" approach
- Poor production due to inability to address weeds and pests using organic methods
- High production costs, particularly labor[2] and compost[3]

Income

- Losses associated with transitional costs – low production and inability to obtain organic price premiums during that period
- Potential for losses during post-transitional period due to high costs of production, reduced yields or poor quality product
- Opportunity costs of cover cropping and loss of production while land lies fallow

Marketing

- Lack of developed marketing and distribution channels for organic farmers
- Lack of knowledge of where and how to market organic products
- Lack of access to information on prices and markets for organic products[4]
- Competition from large-scale organic farms and imports from countries with lower labor costs and/or price supports
- Lack of farmer interest or ability to engage in more aggressive types of marketing, such as direct sales, often necessary for organic farming to be profitable
- Geographic isolation and lack of local markets for organic products

Technical assistance

- Limited access to technical assistance
- Limited awareness of how to access technical assistance when available
- Discouragement of organic farming on the part of traditional sources of technical assistance
- High cost of private technical assistance, particularly for smaller farmers

Labor

- High labor costs
- Lack of access to sufficient labor
- Lack of farmer interest in managerial roles associated with higher demand for labor

Financing

- Inability to access organic production credit

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[2] This research was conducted before the California legislature approved a minimum wage increase to $8 per hour by 2008. Since labor costs typically represent 50-60% of production costs on organic farms, it remains to be seen how minimum wage increases will affect farmers' decision to adopt or maintain organic production.

[3] Some growers report that the price of compost has doubled in recent years.

[4] A number of observers (Dimitri and Richman 2000; OTA 2006) note that the federal government collects and publishes shipment and price information for many agricultural products, which suppliers and buyers use when making shipment decisions and before entering sales agreements. However, this information is not available for organically grown commodities.

Management

- Unwillingness or inability to spend more time needed to monitor fields and manage organic production

Costs

- Certification costs, which can be particularly onerous for smaller farmers
- High costs associated with specialized equipment and machinery

Paperwork

- High levels of paperwork and record keeping required for organic certification[5]

Raw Materials

- Lack of access to raw materials, including fertilizer, pesticides, seeds and animal feed

Social stigmas

- Concerns about being ostracized or marginalized, particularly in smaller farming communities[6]
- Concerns about having "dirty" or "messy" fields

Tradition

- Unwillingness to adopt new techniques, particularly on the part of older and/or more established farmers
- Unwillingness to alter established market and other relationships[7]

Other

- Concerns about contamination from genetically engineered crops
- Lack of familiarity with other organic farmers that can provide advice and mentorship
- Conflicting organic standards internationally, which can affect farmers' ability to participate in export markets[8]

In sum, Wolf (2006) notes that, "If a producer is fully committed, prepared to withstand the criticism, financially strong with low debt, preferably owns the ground he farms, and is willing to work extremely hard, he can make a good living farming organically."

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[5] George Siemon (2006), Organic Valley CEO notes that "There is nothing that a farmer hates more than another form to fill out."

[6] While those attitudes are generally more prevalent in other regions, they do exist in California. Discussing his decision to adopt organic practices, a farmer explained that "my family didn't go for it. They gave me so much grief when I went organic, how I was going to lose it all, the family farm. I became very marginalized. Now I've taught them. They've got wholesale accounts with $20K loads. Now they think they're the pioneers."

[7] According to George Siemon (2006), CEO of Organic Valley: "Farmers are traditionalists. It is hard to change what you are doing and it is hard to change relationships. We have dairy farmers that could go organic now, but they are hard pressed to change their milk hauler or feed mills because it is based on the relationships. We come to them and say, throw all your traditional relationships away and work with us and that is hard for them."

[8] Organic standards vary not only between the US and the EU, but between the different European countries as well, which can create significant confusions and losses.

"Mixed" Grower Attitudes Regarding Expanding Organic Acreage

In contrast to the literature on organic conversion, there has been significantly less research on "mixed" (organic-conventional) growers' attitudes regarding expanding organic acreage. Forty-nine percent of respondents to the OFRF survey (Walz 2004) reported plans to increase their organic acreage. That figure corresponds to findings by Govindasamy et al (2000), who found that 54% of respondents in three mid-Atlantic states had increased their organic acreage during the past five years. However, it is significantly lower than the 67% of respondents surveyed by Govindasamy et al that planned to expand their organic operations during the coming five years. Govindasamy et al found that growers planning to increase their organic production were most likely to rent some of their land, produce cattle, grow herbs, use integrated pest management (IPM) techniques, provide agritourism services, be a younger operation and have experienced increased sales during the past five years.

In contrast, that research (Govindasamy et al 2000) found that the number of acres in organic production negatively contributed to the likelihood of expanding organic production and that every 30 additional acres in organic signified a 3% lower likelihood of expanding within the next five years. These findings suggest that larger growers may be more content with their returns from organic production, that larger farmers may have converted the optimal amount of land with respect to markets or that they cannot efficiently manage higher organic acreage. The same research also found that producers growing organically longer were less likely to expand their organic operations. In that regard, each additional year of farming organically was associated with a 3% lower likelihood of expanding organic acreage. While the reasons for this are less clear, this may suggest that those farming organically longer may already be using their land closer to its optimal potential.

Reasons for Discontinuing Organic Production

The literature on why some organic producers discontinue organic certification or production is very sparse as well. Based on a review of California Department of Food and Agriculture (CDFA) Organic Program data regarding the characteristics of farms entering and exiting organic production, Klonsky and Smith (2002) found a turnover rate of approximately 20% each year, with smaller farms and those producing vegetable crops most likely to discontinue organic production. The authors suggest that the higher propensity for vegetable growers to exit organic certification may in part be explained by the fact that "markets for organic vegetables are more volatile and easily saturated than those for organic fruits and nuts."

Conversely, Klonsky and Smith note that "highly diversified organic produce farms" are more likely to remain in the organic sector. While they do not attempt to explain the reasons for that, it may be due to higher rates of participation in direct marketing schemes and/or an ability to more successfully meet market demands. Organic farming experience was also found to be associated with continued organic production, which is "consistent with the hypothesis that organic operators build long-run reputations as part of their marketing strategies and are likely to be able to maintain their markets once they have developed them."

Based on a review of 66 producers in the Netherlands, Regouin (2003) identified a number of reasons for discontinuing organic production including stopped farming (40%), lack of market (12%), not economically viable (11%), restrictive legislation (8%) and other (16%). Regouin hypothesizes that smaller organic farms may be less viable than larger ones, noting that

> Another interesting factor that came out of the studies on farms that withdrew from certification was that the average size of the 50 farms was about 13 hectares. Contrast this with those farms that have been converting to organic agriculture recently, with an average size of about 28 hectares. It may be concluded with some caution that small farms for some reason are less viable.

Rigby et al (2001) identified four categories of reasons for discontinuing organic production, based on interviews with 35 farmers in the United Kingdom: (1) marketing and market incentives; (2) cost issues; (3) agronomic problems, including access to technical information; and (4) other issues, including changing personal circumstances. In that regard, the authors note that there appear to be two main types of producers that discontinue organic production: (a) those motivated by economic considerations, "who reverted primarily because they could not sell their produce or could not get a premium sufficient to cover the additional costs of production," and (b) those motivated by lifestyle choice or other ideals, "who started up in organic production with little experience and knowledge, and failed to make a sufficient living."

Rigby et al (2001) found the following factors associated with increased likelihood of "reversion" to conventional production: age and education (with older with higher education more likely to revert); gender (with female producers more likely to revert); membership in a producer group or association; and organic conversion with a motive of cost reduction.

Conversely, factors decreasing the likelihood of "reversion" include: accessing information through producer associations, organic advisory boards, publications or other producers; membership in an organic producer association; membership in a cooperative and organic conversion with a motive of improving consumer health or the image of agriculture.

Rigby and Young (2000) also identified a number of other factors "beyond the farm gate" that had a significant effect on farmers' decision to cease organic production. These included "the difficulties some [meat] producers had in finding appropriate abattoirs, processors or wholesalers and hence in realizing the organic premiums necessary to cover the additional costs associated with organic production." That is corroborated by Holly Givens, Communications Director at the Organic Trade Association (OTA),[9] who notes that high unmet demand for organic meat is associated with the lack of infrastructure, particularly certified organic slaughterhouses. Givens notes that the meat industry is very vertically integrated, and that there are few incentives for certified slaughtering facilities, given the small size of the organic meat market.

OFRF survey data (Walz 2004) indicate that approximately 5% of producers nationwide discontinue organic production each year. The OFRF survey identified the main reasons for discontinuing organic production as cost and availability of inputs and cost and availability of labor. Krieder (2004) found a 14% "dropout" rate in her research on organic farmers in New

[9] Personal communication. February17, 2006.

York state, which she attributes to certification costs and changes in certification rules under the National Organic Program.

External Issues Affecting Organic Transition

In addition to the above, a number of additional issues have exerted an influence on the decision to adopt or continue organic production practices in recent years. Factors discouraging organic production include the penetration of large "industrial" farms in the organic sector. With economies of scale and access to large markets, that sector has created significant competition for small and medium growers who are less able to obtain price premiums and enjoy reduced access to markets. Growing foreign competition from countries with low labor and other costs, or that enjoy price supports, has also created competition for U.S. organic producers. Klonsky and Greene (2005) report that "organic imports from countries with lower labor and input costs have nearly replaced some U.S. organic production in some commodity sectors." Increasing penetration of Wal-Mart and other large retailers offering the promise of low markups on organic products has the potential to further depress prices for organic growers, although some observers feel that may ultimately benefit large growers.

Marketing tactics, such as the decision of two large conventional dairies to produce conventional milk without synthetic growth hormones (CCOF 2006), also have the potential to decrease the demand for organic dairy products, since much of that demand is spurred by the desire to avoid growth hormones. Contamination from genetically modified organisms also presents threats to the future of the organic sector, a risk some conventional producers may be unwilling to take.

Finally, there have been a number of attempts to revise the National Organic Standards. In 2006, a rider on the 2006 Agriculture Appropriations Bill legalized, "for the first time, the use of synthetic substances in the processing and post-harvest handling of organic foods" (Whitney 2007). While proponents of those changes see them as clarifying or strengthening the National Organic Program, opponents fear that they "will dilute the organic standards and, potentially, render the USDA stamp irrelevant" (Whitney 2007), resulting in reduced consumer confidence and a loss of markets and price premiums. Many observers see these as cost-cutting efforts on the part of large corporations. As a Marin County farmer notes, "if big business kills the name…why go organic?" (Whitney 2007).

In contrast to the above, growing consumer demand for organic food and non-food products has the potential to significantly increase markets for organic farmers, particularly those that can develop successful niches through product choice, branding or market relationships. Implementation of the National Organic Standards has been associated with increased consumer confidence in the organic label (Strochlic 2005), spurring demand for those products. At the same time, increased interest in local food and the burgeoning number of farmers' markets, community supported agriculture operations and other forms of direct marketing have the potential to create additional markets, particularly for small and medium organic producers.

Policies Promoting Organic Agriculture

The United States and the European Union currently represent the majority of organic production and consumption (Willer and Yussefi 2006). Nonetheless, policies regarding organic agriculture are vastly different in those two regions. The European Union has proactively promoted the organic sector through a broad range of policies, which are "based on an understanding of organic production as a means of mitigating environmental problems, managing marginal lands and addressing falling farmer incomes" (Dabbert et al 2004). These policies include setting targets for land in organic production, "green" payments for organic conversion and maintenance, and market-based policies promoting price premiums via coordination of supply and demand of organic products.

In contrast, the U.S. offers almost no incentives to promote organic farming. The U.S. approach is perhaps best embodied by the National Organic Program, which explicitly does *not* promote organic agriculture as a better farming system than conventional. These disparate policies may help explain why the European Union has more than 140,000 organic farmers producing on 12.6 million acres of farmland (Faber 2006), while only 10,000 American farmers have made the transition to organic on an estimated 2.3 million acres (USDA 2006).

Policy mechanisms to promote organic agriculture at the U.S. federal level include limited funding for organic research and technical assistance and the use of Environmental Quality Incentive Payments (EQIP) as a means of subsidizing transitional costs.[10] These programs do not, however, provide maintenance payments beyond the transitional period on the assumption that price premiums will allow organic farming to be viable past the transitional phase. Unfortunately, as many organic producers have learned the hard way, the organic market is fickle and there are no guarantees of price premiums.

Despite – or perhaps because of – the lack of federal support, a number of local jurisdictions and private entities have taken it upon themselves to offer incentives for organic production. In 2005, Woodbury County, Iowa "became the first government in the United States to financially support organic farmers by offering a property tax rebate to transition to organic agriculture" (Mark 2006). Woodbury County has also sought to incentivize organic production through local procurement policies and has enacted legislation requiring the county's food service contractor to purchase organic food that is grown and processed within 100 miles of the county courthouse whenever it is available.

The state of Vermont recently approved $1 million in interest-free loans to organic dairy farmers "to offset some of the costs of converting operations to organic dairy production" (Sustainable Food News 2006), while Washington state has initiated a pilot program providing payments for organic farmers in western Washington to improve water quality in the Skokomish River, "where dissolved oxygen concentrations [from conventional farming] have led to a series of fish kills in recent years" (Beecher 2006).

University of California Cooperative Extension efforts aimed at helping organic growers improve their farming and marketing practices have been supported through private funding

[10] That is currently an option in six states: Iowa, Massachusetts, Minnesota, Missouri, Montana and Nebraska.

from the Columbia and Heller Foundations, in coordination with the University of California Sustainable Agriculture Research and Education Program (SAREP). The Fresno County Small Farm Advisor position, which has historically served conventional farmers, also has conducted research on organic production with this funding. An evaluation of this program in Humboldt, Ventura, and Marin Counties has found that the program has helped solve some of the problems facing transitioning and experienced organic farmers, who recommend continued support for this program.

Public-private sector initiatives to promote organic farming include the CCOF Foundation "Going Organic" program, which promotes organic conversion by matching aspiring organic farmers with peer mentors. Private entities, including Organic Valley, Horizon and Stonyfield Farms currently offer transitional payments of $2 per cwt to encourage dairy farmers to adopt organic practices and help them weather transitional costs. Stonyfield and Organic Valley expect to spend approximately $2 million on incentives and technical assistance in 2006 (Quaid 2006).

Harrison (2005) suggests that such subsidies may play a key role in encouraging the adoption of organic practices, citing the success of the Natural Resource Conservation Program and the fact that "so many farmers are interested in the $3.9 billion [of NRCS funding] that only one in four applicants is given funding." However, she cautions that financial incentives must be accompanied by market coordination to ensure continued price premiums. She cites the case of Austria, where "about 10 percent of farmers in the country decided to go organic because of subsidies offered by the government" making Austria the "leading organic producer in the EU in the mid-1990s." However, Harrison notes that increased production was met with "inadequate information, distribution, and marketing channels; as a result, many threw in the trowel. They had the money – they just needed a market."

Moran (2002) cites a strategy used in the UK through which supermarkets "facilitate the development of the organic market by helping to minimize the risk to producers…through providing financial support for conversion." He explains that

> In the UK the supermarket chain ASDA is supporting livestock conversion under its meat conversion scheme worth £3million. Further up the marketing chain, four major abattoir wholesalers have provided loans to the major organic meat marketing operation in the UK – the Organic Livestock Marketing Co-operative (OLMC) – to improve and develop consistent supplies.

FINDINGS FROM FARMER INTERVIEWS

Conventional Farmers

"Committed Conventional" Farmers

Somewhat surprisingly, most of the conventional farmers interviewed have given some consideration to organic production, with only four falling into the "committed conventional" category. These four claim not to have given serious consideration to organic farming in part because they view organic production as "bad farming" and partly because they are satisfied with their conventional practices and current marketing arrangements. As a farmer explained, "I'm satisfied with my markets. Right now there's a shortage of onions on the market. I've got 350 acres that's looking beautiful and I know I'll do very well on it." That same farmer also cited a lack of local demand for organic products, noting that: "organic is not important to local customers. I don't get organic prices [for organic product] at my fruit stand. I get a higher price for wholesale organic than direct to consumers at my fruit stand." In that vein, another farmer explained that "we do very well in the low-income farmers' markets we sell at. I couldn't sell the same amount if it was organic."

Some of these conventional farmers cited concerns with "dirty, messy fields" and poor quality organic products. As a farmer explained, "our goal is high yield and high quality. You can't get either in organic." Another farmer cited concerns re: losing his customer base due to quality problems he still associates with organic. He explained that "there are still quality problems in organic. If a housewife takes home a watermelon that's no good, she won't buy another one for another year." Conversely, some of these farmers think organic farming has "cleaned up its act." As one noted, "from the outside organic used to look like a bunch of crackpots. Today, it looks better, the fields are cleaner. It used to be that if a neighbor went organic, you'd think 'pests are coming my way.' "

"There are still quality problems in organic. If a housewife takes home a watermelon that's no good, she won't buy another one for another year."
- Conventional grower

A number of these "committed conventional" farmers discussed their perceptions of inherent contradictions in organic production, in effect stating that organic farming is bad for the environment. One farmer claimed that organic pest controls based on extracts are in fact more dangerous than synthetic products, because "even though manufactured pyrethrin is pure, the organic extract from chrysanthemum brings out all sorts of other things you don't want, like high salt content and other unwanted chemicals."

Several of these farmers also felt that organic products are bad for consumers' health. As one noted:

> When a plant isn't protected from pests [through pesticides], it produces its own immune system chemicals. Those chemicals happen to also be carcinogenic. Organic management

> makes plants develop carcinogenic chemicals. That doesn't happen when you protect plants with pesticides.[11]

In a similar vein, another grower claimed that "If it were truly organic, they wouldn't spray sulfur or copper, which are more dangerous to farmworkers and the consuming public than a lot of synthetic pesticides." Another posited that compost is in fact a disease vector, because although "compost is made by a thermophilic [heat-producing] process, there is now heat resistant salmonella."

The two conventional dairy farmers interviewed were also classified as "committed conventional" producers. They felt that organic dairy management is "bad for the herd," since it forces dairymen to withhold effective treatments from sick cows and calves, which cause them to die. Despite high demand and accompanying price premiums for organic milk, there is only one organic dairy in Fresno County. That may be due to requirements for access to pasture, which can be difficult in counties such as Fresno, where high land values necessitate the production of high value crops. One of the conventional dairies believed that the requirement for access to pasture would make it impossible for them to transition their herd to organic production.

"Pragmatic Conventional" Farmers

Fourteen – or approximately half – of the conventional producers interviewed fall into the "pragmatic conventional" category. These farmers have considered organic production for a variety of reasons, particularly higher profits and increased market share. Several also cited increasing restrictions on conventional pest controls and trends toward "softer" chemicals in conventional agriculture, which have made them more open to organic methods. Nonetheless, these producers have ultimately decided not to transition to organic production. They cited economic factors for the most part, including transitional costs, concerns about lower yields, higher production costs, limited markets and higher management costs – in terms of time, labor and record-keeping – which they were unable or unwilling to invest. As a farmer noted, "I know a few organic tree fruit farmers and I know they get five or six dollars more per box than me. But I also know that if they don't keep constantly weeding their farm looks like trash."

A number of these growers are also not convinced that price premiums will compensate for increased production costs. As one explained, "I've watched my neighbor who tried organic. He hasn't expanded and complains that the price premium doesn't make up for increased production costs." Others expressed concerns about consumer unwillingness to pay the real costs of producing organic food, as well as concerns about price premiums dropping as more and larger scale farmers enter the market. A number of growers also cited concerns regarding the effectiveness of organic inputs, particularly in controlling pests. As one noted, "organic doesn't have enough remedies for mites and other pests. I just can't risk my losing crops."

"I've watched my neighbor who tried organic. He hasn't expanded and complains that the price premium doesn't make up for increased production costs."
- Conventional grower

[11] This statement represents this farmer's opinion, which may not necessarily be based on sound scientific research.

Despite their openness to organic as a means of making more money, four of these "pragmatic conventional" farmers cited concerns about organic production generally more associated with "committed conventional" farmers. They do not believe organic claims of healthier or higher quality food and see organic as "a marketing opportunity based on consumers' misguided fears and perceptions." This group also believes that the majority of the general public is not willing to pay the true cost of producing organic food, nor are they willing to lower their cosmetic standards. One of these farmers ultimately decided not to transition because of concerns about consumer willingness to translate their beliefs into action. He explained that "people may say they want organic, but they also demand cosmetic perfection."

Several of the "pragmatic" farmers cited lack of access to information and technical assistance as reasons for not transitioning. As one explained, "I could use some help navigating the transition. I've got one field close to being certifiable. But where do I go? It feels like you're out there on your own." In that regard, some farmers cited a lack of support on the part of certifying agencies. Two stated that they had made inquiries into organic certification requirements which "went nowhere, because certifiers gave me a spiel and then nothing…there was no follow-up." Another farmer also noted that he was interested in organic and "went on different certifiers' websites and entered my contact information, but they haven't gotten back to me."[12]

"I could use some help navigating the transition. I've got one field close to being certifiable. But where do I go? It feels like you're out there on your own."
– Conventional grower

Four of these producers were in the process of transitioning some of their land to organic. While still technically conventional, these farmers essentially fall into the "pragmatic organic" category, since their reasons for transitioning are associated with a desire for higher profits rather than ethical or philosophical motivations. Two of these farmers grow oranges while two produce raisins. One transitioned because he was "assured a market through a close friend who owns a marketing agency." The other decided to transition because "conventional oranges were not producing income. Prices in organic oranges can be five times as high." The two raisin grape farmers decided to transition in response to perceived demand from consumers and wholesale buyers, citing high levels of unmet demand in the organic raisin market. Another two conventional farmers were very close to transitioning some land into organic production.

"Enviro-Conscious" Conventional Farmers

Three of the conventional farmers interviewed fall into the category of "enviro-conscious" farmers. They consider themselves "sustainable" farmers and implement a number of sustainable practices, including compost applications, use of pheromones, winter and summer cover crops, hedgerows and other integrated pest management techniques. At the same time, however, these farmers have consciously chosen to use certain conventional practices that

"One conventional grower uses GMO crops to implement low till cultivation, thereby reducing tractor use and protecting the soil structure."

[12] It was not clear whether the lack of response had to do with legal prohibitions regarding the provision of technical assistance on the part of organic certifiers.

they believe are ultimately better for the environment. For example, one uses genetically modified crops, including "roundup ready" alfalfa, which allows him to implement low or no-till cultivation, thereby reducing tractor use and protecting the soil structure.

Some of these "enviro-conscious" farmers also noted that while they largely farm organically, there are some conventional practices they deem critical to the successful production of certain crops. As a farmer explained, "I already farm organically, except for a few things, such as applying a defoliant to cotton and selectively using herbicides." Another farmer referred to herbicide use as necessary for lowering labor costs, while another cited the need to apply some pesticides in order to meet consumer demand for "cosmetically perfect products."

Another "enviro-conscious" farmer explained that she had farmed organically while living in the Napa Valley, but found the need to revert to some conventional practices when she moved to the San Joaquin Valley. She explained that "the soil is so sandy and infertile and the cost of compost has risen so much, that I have to use some synthetic fertilizers to get anything to grow at all." She added that "besides that, I continue to farm organically, incorporating trap crops and cover crops and not using pesticides."

Conventional Farmer Recommendations

The conventional farmers cited several forms of assistance that would encourage them to consider transitioning to organic production, including a shorter transitional period, a transitional market offering price premiums, more effective organic inputs and more technical assistance. While some thought transitional payments would be helpful, others felt they would need to be much more significant than they currently are in certain places. However, in addition to price premiums, they felt that efforts to get conventional growers to transition to organic would need to include mechanisms to protect farmers from falling price premiums, especially as the supply of organic increases. As one farmer explained, "I would need a much longer commitment for support. Three years is not enough. I'd need ten years of debt security. It takes five or six years to develop a strong organic system, and then I'd be dealing with people copying or being part of the same program."

Conversely, others did not feel transitional payments would be sufficient to encourage them to consider organic at all. One noted that "no amount" of transitional payment would encourage him to go organic, explaining that, "it's about the market, really. What will the price be after transition? Big producers will eventually get into organic and push prices down, so it won't help in the end."

"Mixed" Organic-Conventional Farmers

In addition to conventional farmers, we interviewed 20 producers farming a mix of organic and conventional acreage. The purpose of those interviews was to ascertain these farmers' plans regarding expansion, contraction or maintenance of their organic production and the reasons behind those decisions. Three of these "mixed" farmers plan to transition all their land into

organic production, ten plan on transitioning more land, three are unsure and three will definitely not transition any more land into organic production.[13]

Plan to Transition to 100% Organic

The three mixed growers planning to transition all their land are essentially "committed" organic farmers who are transitioning their land gradually. The only reason they still fall into the "mixed" category is because they have not yet finished transitioning all their land. As will be seen below, the others offered more pragmatic reasons for maintaining some land in conventional production.

Plan to Transition Some Additional Land

As noted, ten of the mixed farmers plan to transition more – but not all – of their land into organic production. Four cited reasons related to environmental concerns and farming philosophy, explaining that they wanted to "farm safer," "get out of chemical dependency," and "get away from inputs-based farming and focus on improving the health of the soil." In contrast, others offered more practical reasons, including converting crops that offer sufficient price premiums or are easy to manage organically. Some have decided to expand organic acreage based on more secure markets. As a grower explained, "I will only add organic acreage when I have a contract prior to planting." Ease of production is another factor in the decision to transition more land. One grower had decided not to transition any of his stone fruit, which is difficult to manage, while another planned to transition more grapes, "because they're easier to manage organically."

Despite wanting to transition more land, these farmers had very pragmatic reasons for not transitioning all of their land to organic production, including higher management requirements and increased production costs. Market concerns figured highly in that regard. Some growers cited concerns about market saturation, noting that "I see the demand for organic leveling off" and "I don't think the market can take all of it." A grape grower also discussed difficulties meeting buyer demand for constant supply, explaining that "it's difficult to get the attention of buyers. They want constant supply, but I can't use the same [non-organic post-harvest] preservatives for longer storage, which means I can't hold it in the cooler for as long as I can conventional."

"There's so much more time spent managing organic acreage and there are only so many hours in the week."
- Mixed grower

The more intensive nature of farming organically was an issue as well. As one farmer noted, "there's so much more time spent managing organic acreage, and there are only so many hours in the week." Concerns about the cost and availability of labor also play a role. As a grower explained, "labor is an issue. You need more labor in an organic system, and it will only be getting more expensive."

Despite already having some land in organic, one grower discussed a mix of production, market, environmental and ethical reasons for not transitioning all of his land. From a market

[13] Information from one of these interviews was not used to due a lack of reliability of the data.

perspective, he explained that while "the decision to move more into organic is based on demand…even having 10% of the farm in organic is a lot of risk."

"It's not sustainable for people to spend eight to ten hours hand weeding. We try to minimize that, and GMOs help a lot."
- Mixed grower

From a production perspective, he explained that "some crops are too risky. I plant conventional carrots for Grimmway. I won't do organic carrots because of nematode problems." From an environmental perspective, he claimed that "I'll never transition 100% organic because I also grow biotech crops. We think that biotech can and should co-exist with organic and *is* sustainable agriculture." From an ethical perspective, that grower also felt that the use of genetically modified crops offered benefits in terms of farm labor conditions. He explained that "we plant 'round-up ready' corn and alfalfa and have been able to practically eliminate herbicides. It's not sustainable for people to spend eight to ten hours hand weeding. We try to minimize that, and GMOs help a lot."

A grower with a mix of stone fruit and chickens has converted his stone fruit crop, but is not planning on converting his chickens because "people won't pay what it costs for organic chickens. Organic feed grain costs 50% more, and that's a significant part of the cost of raising chickens."

Mixed farmers cited the transitional period as a barrier to expanding organic acreage. Five have based their decision to expand organic acreage on their ability to farm land immediately qualified for organic certification. In that regard, they expressed serious doubts regarding their ability to expand based on converting existing conventional acreage.

Unsure About Organic Expansion

Three farmers were unsure as to whether they would increase their organic acreage or not. These farmers had more pragmatic reasons for transitioning into organic in the first place, as compared with growers expressing certainty about increasing their organic acreage. One transitioned some land into organic after he was told to do so by a buyer, who informed him that "if you want to keep our business, you have to carry an organic line as well." He is unlikely to transition more acreage to organic, but has not ruled it out entirely. Similarly, another transitioned because "the sales organization that sells my conventional plums asked for a certain percent to be organic and a bunch of us took it up." Others simply saw the demand for organic and perceived the potential for higher profits. One large scale producer bought 400 acres that happened to have 35 certified organic acres and "decided to stick with it and explore the opportunities."

Mixed Growers that Will Not Increase Organic Acreage

Three farmers were certain that they would not increase their organic acreage. While they were early adopters of organic practices, they suffered significant problems marketing their crops. As one farmer explained:

> Before it was federalized, certification went well for me. But then Japan required something different, the Europeans had different standards that didn't match ours. I ended up losing markets. Prices went down because buyers were uncertain where they could market it.

Another grower farmed 2,000 organic acres from 1997 to 2001, which he has cut back to only 200 acres. He cited a number of marketing problems leading to that decision, including "a buyer that reneged on a contract for $8 per case of fresh broccoli that we negotiated four months before the sale, while another organic tomato processor dropped his prices from $72.50 per ton to $62.50 per ton in one year." One farmer cited losses due to disease and weeds after making the transition. He is considering trying organic again, but explained that "irrigation is the problem. Drip is best for controlling disease and weeds, but we have sprinklers. I need to make an investment in drip before I try organic again."

Farm Size and Organic Expansion

The mixed growers farm an average of 1,300 acres, significantly more than the 160 and 315 acres farmed by the conventional and "deregistered" farmers respectively. Larger farm size may be associated with a willingness to "experiment" with organic production as well as an unwillingness or inability to convert all holdings to organic. The percentage of land in organic production decreases steadily as farm size goes up. Five farms are between 40 and 80 acres, with an average of 59% of their land in organic production; another five are between 100 and 500 acres, with an average of 20% of their land in organic; four have between 500 and 1,000 acres, with an average of 5% in organic production; while an additional five farms have between 1,000 and 6,000 acres, with an average of 8% of their land in organic production.

"It takes 30% more time to manage organic acreage. If the price isn't there, it's not worth it."
- Mixed grower

The decreasing proportion of land in organic production as farm size increases is a function of several factors. The more management-intensive nature of organic production is a disincentive to expanding acreage. As a grower explained, "It takes 30% more time to manage organic acreage. More time in labor and management means more money invested. If the price isn't there, it's not worth it." Similarly, another reported that expanding his organic acreage was not attractive, since "I can farm three times as much conventional land in the time that I can farm organic." Other issues include concerns about market saturation, the desire to maintain established relationships with conventional buyers, and wanting to "hedge bets" by offering both organic and conventional products.

Attitudes Toward Transitional Subsidies

We asked the mixed farmers whether an organic transitions subsidy would encourage them to expand their organic acreage. Somewhat surprisingly, only three of the sixteen farmers responding to that question expressed an interest in participating in such a program. Two of them qualified their responses, explaining that "it wouldn't convince me to transition some crops like walnuts" and that transitional payments "would only work for annuals, not permanent crops." Some felt that transitional payments would have to be substantial in order to be meaningful. As

one grower claimed, "a $200 per acre subsidy for transition time is nothing. My cost for managing my pears is $3,500 an acre." In that regard, he felt that government funds would be "better spent on consumer education." One grower called for long-term maintenance payments, explaining that "I'd also want to see something longer term. Yields in organic are permanently lower compared to conventional production."[14]

These statements reflect farmer concerns with need for longer term incentives beyond transitional payments, as well as the higher and longer term investments and risks associated with transitioning perennial crops. In that regard, one farmer noted that his decision to transition more land was based more on the long-term organic market outlook than short-term payments. Another stated that he would prefer to see something longer term or permanent, similar to programs providing conventional farmers with on-going incentives for good stewardship.

Thirteen of the 16 farmers responding to this question did not support the idea of a subsidy for organic transition costs at all. Several did not support the idea for ethical reasons, since "it wouldn't be fair to farmers who have already put the effort into transitioning." Another farmer felt that "cheating in subsidy programs is endemic," and that transitional subsidies "would open the door for more abuses of that nature." Another farmer had a stronger reaction to the idea of transitional payments, noting that "this is crazy, it's socialist and immoral. If the free market doesn't support it, there's no use in getting people to transition into organic."

Ultimately, most farmers saw an organic transitions cost-share program as a stop gap measure that would not be effective, because those programs "wouldn't help with marketing" and that ultimately "price makes the difference" for organic farming to be viable. Those sentiments are consistent with findings from Sweden, where Lohr and Salomonsson found that "access to information and markets can substitute for direct payments…and encourage organic farming" (cited in Klonsky and Smith 2002).

Mixed Farmer Advice, Recommendations and Lessons Learned

We asked the mixed growers to reflect on several issues, including whether they felt organic farming was for everyone, what they wished they had known before making the transition to organic farming, what advice they had for farmers about to take that step and what would encourage mixed farmers to transition more of their land to organic production.

These farmers did not feel that organic farming is suitable for all farmers, noting that it has a steep learning curve, requires good organizational and record-keeping skills, high attention to detail and the ability to handle many more decisions than conventional farming systems. In addition to personal characteristics, these farmers referred to the role of scale. One felt that organic production is better suited for farmers engaged in "small scale, direct marketing, CSA [Community Supported Agriculture] and farmers' markets." Conversely, another farmer posited that organic "works at the large scale end and the small scale end. The pinch is in the middle." Another felt that "this is not for the little guys any more," noting that the "organic market will be strong, but there are more big guys getting in, and that's going to affect the small guys. I can't imagine being a small guy trying to get in now."

[14] This too represents one farmer's opinion.

With respect to what, in hindsight, these farmers wished they knew before transitioning to organic production, most responses focused on production, costs of production and marketing. Weeds and fertility were the major production issues cited, while marketing challenges was the issue these growers were most unprepared for. (See Appendix A for detailed responses to these questions.)

"Deregistered" Organic Farmers

We conducted interviews with 20 farmers who are no longer farming organically. The purpose of those interviews was to identify reasons for discontinuing organic production, impacts of organic farming experiences on current production practices and strategies that would allow these farmers to continue farming organically.

Reasons for Adopting Organic Farming

Seven of these growers had farmed exclusively organically, while the rest farmed a mix of organic and conventional land. Of these 20 farmers, 11 are still farming but have reverted to conventional practices, while 9 have stopped farming altogether.[15] The most common reason for transitioning to organic production was to take advantage of price premiums, which was cited by ten farmers. Five also referred to the influence of family, buyers, customers, employees or neighbors in encouraging or inspiring them to make the transition, while another five noted that their land was immediately qualified for organic certification without a transitional period, since there had been no applications of prohibited substances during the previous three years. Larger farms often have an advantage over smaller farms in terms of access to immediately certifiable land. As a grower explained, "we just had land that was fallow. It's not hard to find a few acres of land that have been fallow when you have more than 1,000 acres."

Two farmers transitioned to organic to pursue greater market share. While they did not assume that organic would necessarily provide them with price premiums, they felt that diversifying their production would give them an advantage over their competitors by allowing them to work with buyers seeking both organic and conventional products.

Three farmers transitioned based on concerns for their own health and – secondarily – the environment, while two did so based on a philosophical commitment to organic farming. In that sense, it is worth noting that the two growers classified as "committed organic" discontinued organic production because they stopped farming altogether and not because they reverted to conventional practices.

Two farmers also decided to transition based on what they saw as production and marketing trends in conventional agriculture, citing increased regulations on conventional farming and greater restrictions on synthetic pesticides, as well as the continual erosion of prices for conventional products. Two farmers felt that farming organically would help them produce better tasting products.

[15] Two of these farmers plan to return to organic farming within two years. One cited personal issues that forced him to stop farming, while the other lost the lease on his farm.

Access to land and secure tenure may play a role in the decision to transition to organic. Because most farmers experience losses during the three-year transitional period, they are reluctant to invest in transitioning land they do not have secure rights to. As a grower explained, "I'm wary of transitioning leased land. I've had friends that transitioned and invested in the land and then had it taken away from them to a higher bidder." Growers farming leased or mortgaged land must also continue to make payments on that land, with lower incomes during the transitional period. Fourteen of these farmers went through a transitional period, while six had land that was immediately certifiable.[16] Of those going through a transitional period, only two transitioned land that they leased. Both reported doing so *only* because they knew the owners well and felt certain that the long-term plans for those properties would not put them at risk.

"I'm wary of transitioning leased land. I've had friends that transitioned and then had it taken away from them to a higher bidder."
- Deregistered grower

Reasons for Discontinuing Organic Production

The principal reasons these farmers offered for leaving organic production were associated with economic rather than production factors. A number referred to "spinning their wheels," noting that price premiums – when they were to be had – were often offset by higher production costs, reduced yields and/or a reduced percentage of marketable yield.

Increased costs of production were attributed to several factors, particularly higher input and management costs. Many of these farmers cited the need for more frequent applications of organic pesticides and fungicides, which they considered less effective than their conventional counterparts. A number also cited the need for several applications of organic pesticides, with higher input, management and labor costs. As a farmer explained, "organic fungicides are so much less effective that we have to apply it three times per year, compared to one time per year for conventional fungicides." Similarly, another farmer reported that "I had to apply the organic pesticide five times and in the end what killed the pests was the weather."

Increased production costs were exacerbated by **lower yields and high rates of second grade or unmarketable product**, due to small size or cosmetic imperfections. In that regard, a farmer lamented that "consumers don't care about flavor. People pick what looks great. Organic might be sweeter, but it's smaller and definitely more expensive." Nonetheless, some growers have found that personal relationships and creative marketing can overcome these biases. One farmer explained that local stores, with whom he has longstanding relationships, bought his scarred peaches. By labeling them as "nature kissed," customers accepted those imperfections and bought his peaches.

Deregistered farmers also cited **higher management costs** of farming organically associated with increased need to monitor crops for insect or fungal damage. They cited the need to catch problems much earlier than in conventional systems, since organic remedies for fungal and pest problems were considered less effective than their synthetic counterparts. One part-time farmer explained that he dropped his organic acreage because of the increased time required to manage

[16] Two of those six actively sought land that was already certified or qualified for immediately certification.

his farm organically compared to the time he spent managing that land when in was in conventional production. This has been corroborated by outside observers, who have cited the need for "more eyes per acre" in organic production systems.

Weeds are a significant problem in organic production, and a number of farmers cited increased costs in that regard, which were associated with higher labor costs for hand weeding as well as additional tractor passes. Because labor substitutes for capital and inputs on organic farms, labor can typically account for 50% or 60% of all production costs. As a mixed farmer explained, "this is all labor. I've had a few partners that backed out once they saw they had to spend $1,800 an acre weeding spinach, compared to $150 an acre in conventional." Higher labor needs are corroborated by an organic farmer in Ventura County, who reported that "when I farmed conventionally I had six employees on 300 acres. Now that I'm farming organically, I have 15 employees on 30 acres."[17] In that regard, some conventional farmers have also cited a lack of desire to manage a large labor force as a reason for not wanting to adopt organic practices. Farm labor shortages and increases in the minimum wage may also present additional deterrents to adopting organic practices (Barbassa 2006). As a mixed farmer explained, "if the minimum wage increases by one dollar, I'll have to use more chemicals and herbicides. Organic farmers will stop farming some crops altogether."

"This is all labor. I've had a few partners that backed out once they saw they had to spend $1,800 an acre weeding spinach, compared to $150 an acre in conventional."
- Mixed grower

Marketing also figured highly in these farmers' decision to discontinue organic production. All of the larger scale farmers had mixed acreage when they were organic, and all referred to difficulties finding buyers for their organic product. They cited established relationships with conventional buyers who expressed an interest in organic product as one reason for transitioning. However, when it came to actually selling their organic product, a number of large farmers reported a range of problems. They cited a number of examples, including "they decided I didn't have enough volume for the varieties they wanted," "my five acre lettuce blocks were too small to be of interest," and "my 350 acres was too much for the market." Four growers working with the same handler also referred to that operation going bankrupt. As a result of these problems, many growers reported having to sell their organic product as conventional.

Some smaller farmers cited a lack of buyer interest due to the low **volume** of product they could offer. Conversely, some smaller farmers were unable to meet the demand for their product. As a farmer explained, "Whole Foods wanted our organic berries. They said they were superior quality and flavor, but they wanted 200 cases a week. We were way too small and couldn't find any other growers to combine our product with."

"Whole Foods wanted our organic berries. They said they were superior quality and flavor, but they wanted 200 cases a week. We were way too small and couldn't find any other growers to combine our product with."
- Deregistered grower

Notably, while many complained about it, only two farmers referred to the costs or complications of **organic certification** as a factor in their decision to discontinue organic production. Nonetheless, they cited higher costs associated with record keeping and extra time

[17] Phil McGrath, McGrath Family Farms, personal communication.

required to verify that inputs were not prohibited for export markets, which they found particularly complicated because of differing standards in Japan and Europe. One farmer dropped out because he did not pass inspection due to confusions around allowed products. As he explained, "I knew I could use a brand called Sun Oil. But there's Sun Oil XP and SP. One is allowed and the other is prohibited. I used the wrong one. It was not my intent to apply a prohibited substance. I'm still angry about that."

As noted, seven of the deregistered farmers have left farming altogether. They cited a range of **reasons not related to organic production** per se, including weather-related problems, loss of land due to eminent domain or sale to developers, financial problems and under-capitalization of the farm, personal issues such as divorce or health problems and retirement. One part-time farmer's decision to drop out was ultimately based on having to decide between farming and keeping his "day job."

Impacts on Current Farming Practices

Of the 11 farmers who discontinued organic production but are still farming, three no longer implement any practices associated with organic agriculture, i.e., applying compost, using cover crops or crop rotations as part of their conventional practices. In that regard, one farmer explained that "organic manure is not rich enough, plus it's expensive to spread."

Three farmers continue the use of compost and two use cover crops in their conventional systems, based on the perceived benefits to their soil fertility. As a farmer explained, "I'm still benefiting from compost applications. Nutrients in general are up and I especially have a lot more potassium." Another said "we used a little bit of compost before organic, but now we use it a lot more."

Two farmers explained that they had used cover crops even before transitioning to organic. One had adopted that practice through his experiences with the Biologically Integrated Orchard Systems (BIOS) program, while the second explained that they plant peas for nitrogen fixation and market the tips to specialty markets.

An additional four farmers reported changes in their perceptions of agricultural chemical use as a result of the experiences farming organically, explaining that "I tightly control input use now," and "I use chemicals more wisely." Given the need for crop monitoring associated with organic farming and integrated pest management, another stated that he has become "more observant in the field."

One farmer discontinued organic certification due to philosophical differences with the National Organic Standards. He farms under the now defunct "California Clean" label, which allows the use of some synthetic inputs and prohibits some materials approved under the National Organic Program. The "California Clean" philosophy is in part based on the belief that the use of small amounts of some low-toxic synthetic inputs is less harmful to human and environmental health than large amounts of certain organic inputs, such as sulfur and copper, which can be quite toxic. As he explained, that philosophy "allows some synthetics that are listed as 'never shown to cause

cancer' and 'possible cause of cancer.' That eliminates 96% of all materials, including many that are allowed in organic."

Deregistered Farmer Advice, Recommendations and Lessons Learned

We asked the deregistered farmers to comment on the lessons learned from their experiences with organic production and what advice they might have for newly transitioning organic farmers. With respect to what they wished they had known before making the transition to organic, the farmers cited higher pest and disease pressure, coupled with the reduced efficacy of organic inputs in treating them. They also cited difficulties obtaining price premiums for organic products and the challenges of farming successfully on a small scale.

The farmers also offered a number of recommendations based on their lessons learned. From a production perspective, they recommended starting with crops that are relatively easy to produce organically and transitioning small areas at first. From a marketing perspective, most recommendations stressed direct marketing as a means of obtaining price premiums, as well as tailoring production to the needs of buyers. (Please see Appendix A for detailed responses.)

CONCLUSIONS AND RECOMMENDATIONS

The research offers a number of important insights with respect to the potential for more widespread adoption of organic agriculture in California. Encouragingly, the majority of the conventional producers expressed an openness to and interest in organic farming, with four of 30 interviewees in the process of transitioning some acreage and another two close to doing so. At the same time, approximately two-thirds of the mixed growers plan to transition all or more of their land into organic production, based on their ability to successfully adopt organic farming methods and secure profitable markets for their products.

Nonetheless, the majority of conventional farmers interviewed have decided not to make the transition to organic production, while nearly one in three of the mixed farmers do not foresee future expansion of organic acreage. Further, over half of the deregistered farmers were unable to make a successful long-term transition to organic and have since reverted to conventional production.

The transition to organic production is not an easy one. In addition to the challenges facing all farmers, there are many issues particular to organic farming, including:

- High costs of production
- Difficulties obtaining organic price premiums and securing stable markets
- Losses during the transitional period
- Limited access to technical assistance
- High labor costs
- High certification costs
- Lack of access to information on organic prices and markets
- Limited access to credit and financing
- Difficulties accessing organic inputs
- Opportunity costs associated with cover cropping

- Conflicting international organic standards
- Reluctance to transition land with insecure tenure
- Potential for social stigma and marginalization

Of these many challenges, farmers overwhelmingly cited marketing as the main issue they face. In that regard, while transitional payments might encourage some to adopt organic methods, doing so in the absence of a broader strategy – including "green" maintenance payments, market coordination and technical assistance – could set up many transitioning farmers for failure.

The above is particularly important, since one of the greatest barriers to successful organic farming is a shift in mindset from the "calendarized" planting and input applications associated with conventional production to the significantly more complex "whole systems" approach associated with organic farming. In that sense, growers transitioning to organic production because of a desire for higher profits are often said to adopt an "input substitution" approach which, according to many observers, is associated with higher rates of failure.

Despite these barriers, strategies to promote the successful adoption of organic farming in California exist and its promotion in California makes good sense from a public policy perspective. The European Union has implemented numerous policies to promote organic farming. However, significant federal support for organic farming in the U.S. does not appear likely in the short or medium terms. California should therefore take a leadership role in that regard, by adopting policies to promote greater adoption of organic farming in this state. We offer the following recommendations as a first step in that direction. Because the successful adoption of organic agriculture will require a multi-pronged approach, these recommendations should be seen as components of a broader strategy. It is doubtful that implementing any on their own will result in the desired outcomes.

Marketing

As seen, the ability to obtain stable and lucrative markets for organic products was the main challenge cited by the growers interviewed through this research and the main barrier to the successful and more widespread adoption of organic agriculture. Recommendations to improve markets for organic growers include the following:

- Oversight and coordination of supply and demand to maintain organic price premiums
- Development of a "transitional" label providing growers with the opportunity to obtain some price premiums during that period
- Improved market coordination to connect organic growers and buyers
- Continued promotion of direct marketing and "buy local" campaigns
- "Sympathetic" distribution networks, such as cooperatives or nonprofit distributors such as the Community Alliance with Family Farmers or ALBA Organics to help small growers successfully compete in the marketplace
- Access to price and market information that will allow actors in the organic sector to make informed production and marketing decisions
- Trade agreements to promote California-grown organic products in domestic and export markets

- Policies to increase the competitiveness of California grown products vis-a-vis imports from regions with lower costs of production

Financial Support and Incentives

While most organic farmers prefer to remain competitive through market mechanisms alone, it is likely that there will be a need for public support in the short and medium terms. Some recommendations for supporting existing and transitioning organic farmers include the following:

- Transitional payments and low interest loans to encourage and facilitate organic conversion
- Maintenance payments rewarding organic farmers for good environmental stewardship
- Other incentives promoting organic conversion (e.g., property tax rebates for organic farmers, public sector organic procurement policies, etc.)
- Increased access to credit for organic production and education of financial service providers regarding the viability of organic production

Research, Information and Technical Assistance

There is a high level of need for additional research, information and technical assistance to improve organic production. In particular, traditional forms of extension must increase access to farm advisors with knowledge of organic methods. It is also vital that growers considering the transition to organic be made aware that the process is significantly more complex than "input substitution." Other recommendations in this regard include the following:

- Improved research on organic production methods, particularly more effective pest control
- Increased access to technical assistance via traditional extension models, as well as commercial and non-profit entities
- Support for peer farmer-to-farmer mentorship models for technical assistance and dissemination
- Increased support for organic agriculture programs at universities and other institutes of higher education
- Education targeting conventional growers' misperceptions regarding the negative environmental and health impacts of organic farming. [Note: This recommendation refers to blatantly false misperceptions only. Organic agriculture does include many practices with negative health and environmental impacts, including the use of toxic pesticides, problems associated with tillage, high water use and high fossil fuel consumption associated with tractor use, hauling compost, etc.]

Stimulating Consumer Demand

Finally, there is a strong need to increase consumer demand for organic food. Educational campaigns to increase awareness of the health, environmental and other benefits of organic food and farming are an important way of doing so. However, numerous studies have found that high levels of consumer interest in organic food already exist, with price consistently cited as the main barrier to increased consumption.

Consequently, in addition to consumer education, policies to decrease the cost of organic food – or reduce price differentials between organic and conventional products – may be necessary. Policies to reduce the cost of organic food include subsidies and "green payments" for organic producers. At the same time, policies to "internalize" the health, environmental and social costs of conventional agriculture will raise the price of those products to reflect their true cost, thereby decreasing price differentials between organic and conventional products. While raising food prices is clearly an unpopular approach, externalizing the costs of conventional agriculture is clearly not a sustainable solution in the long-term.[18]

[18] There is an on-going debate as to whether policies to increase the cost of food are regressive or not. While there are no simple answers, shifting subsidies to promote the production of healthy food could result in lower costs of organic food, making it relatively and absolutely more affordable.

REFERENCES

Anderson, Jamie. (2004). "The Impacts of the USDA National Organic Program Regulations on the Fresh-Market Organic Produce Sector in California" Master of Science Thesis, Department of Agricultural and Resource Economics, University of California, Davis, CA.

Barbassa, Juliana. (2006). "Organic Farmers Hit by Worker Shortage." Available at: http://www.diversityworking.com/career/Agriculture__Forestry_and_Fishing/California_jobs/story/241.html.

Beecher, Cookson. (2006). "State Pays Farmers to Go Organic." *Capital Press,* September 8. Available at: http://www.capitalpress.com.

California Certified Organic Farmers. (2006). "Major Conventional Dairies Decrease Use of Synthetic Growth Hormones." *CCOF Newsletter*, October, Santa Cruz, CA.

Darnhofer, Ika, Walter Schneeberger, and Bernhard Freyer. (2005). Converting or not converting to organic farming in Austria: Farmer types and their rationale. *Agriculture and Human Values 22:39 –52.*

Dabbert, Stephen, Anna Maria Häring, and Raffaele Zanoli. (2004). *Organic Farming: Policies and Prospects.* London: Zed Books.

Dimitri, Carolyn and Nessa J. Richman. (2000). "Organic Food Markets in Transition." Winrock International, Policy Studies Report No. 14. Greenbelt, MD: Henry A. Wallace Center for Agricultural & Environmental Policy.

Dobbs, T. L. (2006). "Challenges Facing a Second Green Revolution: Expanding the Reach of Organic Agriculture." Paper presented at the "Organic Agriculture: Innovations in Organic Marketing, Technology, and Research" Symposium, Washington, DC, October 6-7. Available at: http://www.plantmanagementnetwork.org/pub/cm/symposium/organics.

Faber, Scott. (2006). "Demand for Organic Food Growing Faster than Domestic Supply." *Chesapeake Bay Journal*, March (v.16 n.1). Available at: http://www.bayjournal.com/article.cfm?article=2760.

Fairweather, J. (1999). Understanding how farmers choose between organic and conventional production: Results from New Zealand and policy implications. *Agriculture and Human Values 16(1):51 –63.*

Govindasamy, Ramu, John Italia, Marc DeCongelio, Karen Anderson, Bruce Barbour. (2000). "Empirically Evaluating Grower Characteristics and Satisfaction with Organic Production." New Jersey Experiment Station Report. New Brunswick, NJ: Rutgers University.

Greene, Catherine. (2006). "U.S. Organic Farm Sector Continues to Expand." Amber Waves, United States Department of Agriculture, Econcomic Research Service. Available at: http://www.ers.usda.gov/AmberWaves/April06/Findings/Organic.htm

Guthman, Julie. (2004). *Agrarian Dreams: The Paradox of Organic Farming in California.* Berkeley, CA: University of California Press.

Harrison, Christy. (2005). "Cost In Translation: Seriously, Now – Why Aren't Organics Getting Affordable?" August 25. Available at: http://www.grist.org/news/maindish/2005/08/25/harrison-organics/index.html.

Jackson, Louise. (2006). "Successful Transition to Organic Production Shows Planning Works." Sustainable Agriculture Research and Education Program (SAREP) Newsletter, Winter/Spring (v.18 n.1).

Klonsky, Karen. (2000). Forces impacting the production of organic foods. *Agriculture and Human Values 17:233-243.*

Klonsky, Karen and Kurt Richter. (2005). *Statistical Review of California's Organic Agriculture – 1998-2003.* Davis: Agricultural Issues Center, University of California. Available at: http://aic.ucdavis.edu/research1/organic.html.

Klonsky, Karen and Catherine Greene. (2005). "Widespread Adoption of Organic Agriculture in the US: Are Market-Driven Policies Enough?" Paper prepared for presentation at the American Agricultural Economics Association Annual Meeting, Providence, Rhode Island, July 24 – 27.

Klonsky, Karen and Martin Smith. (2002). "Entry and Exit in California's Organic Farming Sector." Pp. 139-165 in *Economics of Pesticides, Sustainable Food Production, and Organic Food Markets,* edited by Darwin C. Hall and L. Joe Moffitt. New York: Elsevier Science Ltd.

Krieder, Robin. (2004). "Organic Agriculture at a Crossroads." Rural New York Initiative, Research Brief Series. Ithaca, NY: Cornell University.

Mark, Jason. (2006). "Tax Relief for Organic Growers." *E Magazine*. Available at: http://www.emagazine.com/view/?3243.

Midmore, Peter, Susanne Padel, Heather McCalman, Jon Isherwood, Susan Fowler and Nic Lampkin. (2001). "Attitudes Towards Conversion to Organic Production Systems: A Study of Farmers in England." Aberystwyth, Wales: Institute of Rural Studies.

Moran, Dominic. (2002). "Market Creation for Biodiversity: The Role of Organic Farming in the EU and US." Paris: Organisation for Economic Cooperation and Development. Available at: http://www.olis.oecd.org.

Organic Business News. (2006). "Ingredient Shortage Hurts U.S." January. Available at: http://hotlineprinting.com/obn/archives/2006/2006-01/OrganicIngredientShortage.html

Organic Monitor. (2005). "USA: Market Growth Stifled by Undersupply." December 15. Available at: http://www.organicmonitor.com/r1512.htm.

Organic Trade Association (2006). "What's News in Organic." *OTA Newsletter*. Available at: http://www.ota.com/pics/documents/WN_35.pdf.

Padel, Susanne. (1994). "Adoption of Organic Farming as an Example of the Diffusion of an Innovation." Discussion Paper 94/1. University of Wales, Centre for Organic Husbandry and Agroecology.

Padel, Susanne. (2001). Conversion to organic farming: A typical example of the diffusion of an innovation? *Sociologia Ruralis, Vol. 41 No. 1.*

Quaid, Libby. (2006). "Demand for Organic Food Outstrips Supply." *San Francisco Chronicle.* July 7. Available at: http://www.sfgate.com/cgibin/article.cgi?file=/news/archive/2006/07/06/financial/ f121005D02.DTL

Regoiun, Eric. (2003). "To Convert or not to Convert to Organic Farming." In "Organic Agriculture: Sustainability, Markets, and Policies," Organisation for Economic Cooperation and Development. London: CAB International.

Rigby, D. and Young, T. (2000). Why do Some Agricultural Producers Abandon Organic Production Systems?" Discussion Paper 0015. Manchester, UK: School of Economic Studies, University of Manchester.

Rigby, Dan, Trevor Young, and Michael Burton. (2001). The development of and prospects for organic farming in the UK. *Food and Policy, (26)6.*

Siemon, George. (2005). "Options and Opportunities for Producers in Organic Agriculture." Paper presented at the "Organic Agriculture: Innovations in Organic Marketing, Technology, and Research" Symposium, Washington, DC, October 6-7. Available at: http://www.plantmanagementnetwork.org/pub/cm/symposium/organics.

Strochlic, Ron. (2005). "Regulating Organic: Impacts of the National Organic Standards on Consumer Awareness and Organic Consumption Patterns." Davis, CA: California Institute for Rural Studies.

Sustainable Agriculture Research and Education (SARE). (nd). "Transitioning to Organic Production." Available at: www.sare.org/bulletin/organic.

Sustainable Food News. (2006). "Vermont Ponies Up $1 Million in Organic Dairy Conversion Loans." October 18. Available at: http://www.sustainablefoodnews.com.

United States Department of Agriculture, Economic Research Service. (2006). "Organic Production." Available at: http://www.ers.usda.gov/data/organic.

Walz, Erica. (2004). "Final Results of the Fourth National Organic Farmers' Survey: Sustaining Organic Farms in a Changing Organic Marketplace." Santa Cruz, CA: Organic Farming Research Foundation.

Whitney, Jake. (2007). "Organic Erosion." San Francisco Chronicle Magazine, January 28, 2007.

Willer, Helga and Minou Yussefi. (2006). "The World of Organic Agriculture: Statistics and Emerging Trends 2006." Bonn, Germany: International Federation of Organic Agriculture Movements (IFOAM) and Frick, Switzerland: Research Institute of Organic Agriculture.

Wolf, T. (2006). "Assessing Producer Options and Obstacles for Organic Agriculture." Paper presented at the "Organic Agriculture: Innovations in Organic Marketing, Technology, and Research" Symposium, Washington, DC, October 6-7. Available at: http://www.plantmanagementnetwork.org/pub/cm/symposium/organics.

APPENDIX: LESSONS LEARNED, ADVICE AND RECOMMENDATIONS

The following are detailed responses from mixed and deregistered growers regarding the lessons learned from their experiences and their advice and recommendations to others considering the transition to organic production.

Mixed Growers

Lessons Learned

Production

- How difficult developing an organic fertility program is.
- How to effectively use beneficial predators.
- Production problems related to weeding due to lack of a drip irrigation system.
- Needing to be more aware of what's going on in your farm.
- That "the real pain in organic is weed control."
- Yield reductions are dramatic.
- Organic pest controls are much less effective.
- It costs twice as much to farm organically than conventionally.
- Scale of weed problems.
- It takes 5 to 6 years to get back to where you were with synthetics.
- How much detail you need to know about inputs, especially if you're exporting to Europe or Japan I used a product that's OMRI approved, but not IFOAM approved, so I had to find domestic buyers instead.

Marketing

- You have to get used to low volumes; can't compare to conventional growers.
- Marketing is the most difficult part – it's a different world.
- Marketing. I'm just starting to learn about different buyers.
- I'm surprised to find that packers have specialty lines.
- You need to develop specific organic buyer relationships.[19]
- As a packer, I didn't know how much time it took to find markets.
- We've had to change the way we present our product. You're selling a religious experience. You have to tell a story to encourage people to get into organic.
- Anyone can farm, but marketing is more the challenge – you need to know where you can sell your product.

Advice for Transitioning Growers

The mixed growers offered a wide range of advice for newly transitioning organic farmers, including the following:

[19] This comment is based on an experience in which a farmer talked to a supermarket representative about his organic product, which they expressed an interest in. However, when it came to making the sale, the buyer at that store was unfamiliar with the farmer and did not order any product from him.

Production

- The transition needs to start with a movement toward using more "soft" materials first, then moving into organic.
- Use as much drip irrigation as you can, it's excellent weed control.
- Weeds will be a significant problem.
- Insects are not such a problem – there are lots of tools compared to when I started.
- There's no such thing as a crop you can't do in organic – except Asian pears.
- Lease land first, get row crops in.
- Do your homework, especially regarding organic yields and prices and crops that work in organic. Some don't work in organic.

Marketing

- Have many marketing outlets.
- Have contracts, but you need to have a minimum size to get these. For example, you need 160 acres for processing tomatoes.
- Solidify prices through contracts.
- Don't start without marketing channels.
- Define your commodity, meaning find what you can market domestically. First get your feet wet in the domestic market.
- Margins will keep coming down, so you have to find something that bigger farmers can't grow as efficiently. Go to the market and work backwards.
- You've got to market it before you've got the crop.
- Take the best of both [organic and conventional] worlds to minimize risks.
- Go for varieties, not volume.
- You can always sell organic tomatoes.
- Go direct, stay smaller.
- Find other outlets. Don't depend on your current buyers.
- Make sure you have your markets ready. Know where to sell it.

Other

- Get information and ask a lot of questions.
- Be organized.
- Start small.
- Keep meticulous records.
- Have a lot of money.
- Start with capital and be willing to spend it.
- Have a good buyer and an understanding banker.
- Listen to other farmers. I learned a lot by hearing other farmers say something and then say "I'll never do *that* again."
- Ask yourself "Am I going to be in this [farming] business 20 years from now?" If the answer is "no" or even "I don't know," then you shouldn't do it.

Recommendations

The mixed growers offered several recommendations for strategies to encourage mixed farmers to transition more land into organic production, including the following:

- Resolve certification problems associated with conflicting international organic standards.[20]
- Resolve problems associated with lending to organic farms. Many lenders perceive organic farming as "high risk," while some stipulate conventional practices to be eligible for financing.[21]
- Educational programs teaching conventional marketers about organic practices and certification standards
- Educational programs to increase consumer awareness of the health benefits of organic food
- Increased research and dissemination on organic production in general – and weed control in particular – with peer dissemination through farmer-to-farmer networks[22]

"Deregistered" Farmers

Lessons Learned

Production
- Hard to get used to using less chemicals.
- Higher pest pressure
- Diseases take longer to eradicate – organic pesticides are weaker.

Marketing
- There is no guarantee on getting a better deal in organic.
- I would have farmed a larger amount – I would've made money if it was 100 acres, but it wasn't possible at five acres.
- Direct market only

Other
- You have to think way ahead.
- How hard organic farming is at a small scale

Advice and Lessons Learned

Production
- Try easy crops first.
- Make small transitions.
- You need to learn a lot more about diseases than in conventional agriculture.
- Mother Nature is constantly changing – you're always learning.
- Organic farming is not as difficult to do as you might expect.
- Expect lower production, especially the first year.
- Farm in remote area, it helps with lower pest pressure.

[20] As a farmer explained, "How I farm organically should be accepted by the U.S., Japan and Europe."
[21] As a grower explained, "I told my loan officer that we got organic certification and got called in to meet with the bank president. I had to convince them that I wasn't putting my farm – and them – at risk."
[22] One farmer cautioned that these networks must be local, explaining that "other farmers need to tell me what works, but they need to be nearby, because conditions are different even a short distance away."

Marketing

- If someone wants to buy from you, get it in writing.[23]
- Know where to sell organic. Find organic buyers and know how much they need.
- Organic is the way to go, but you have to find good direct markets.
- Local markets in rural areas don't work for organic – local incomes don't allow for it.
- Direct marketing is the way to go – there are tremendous opportunities in farmers' markets, even in the Central Valley.
- More affluent people will go to farmers' markets but others don't care about quality or where the food comes from – they only care about price.
- Think about marketing first and foremost.
- The market drives everything.

Other

- Organic farming is not for everyone - you need ideological commitment.
- Certifiers aren't all the same; some have more restrictions than others.
- Have a unique product and a niche.
- Farm small scale.
- Do not be 100% dependent on farm income.
- Go for it – the market is growing.

[23] Based on a farmer's experience in which a buyer with a verbal agreement reneged on the deal.