

Risk and risk management in organic agriculture: Views of organic farmers

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Abstract

In a series of focus groups during 2001 and 2002, organic farmers from different regions of the United States identified a wide range of risks to their operations. The focus groups were facilitated by the University of Maryland in cooperation with a research team from USDA's Economic Research Service, to explore the risks faced by organic farmers, how they are managed, and needs for risk management assistance. Contamination of organic production from genetically modified organisms was seen as a major risk, particularly by grain, soybean and cotton farmers. Focus-group participants producing grains and cotton—many of whom knew about and had obtained crop insurance—raised concerns about coverage offered, including the need for insurance to reflect the higher prices received for organic crops. Most fruit and vegetable producers participating in the focus groups had little knowledge of crop insurance. When provided with basic information about crop insurance, operators of small fruit and vegetable farms were skeptical about its usefulness for their type of operation.

Key words: focus groups, organic farming, crop insurance, organic certification, genetically modified organisms

Introduction

The business of farming is inherently risky. Variation in weather, insect infestations and plant diseases, for instance, can hurt crop quality and reduce yields; small changes in aggregate supply and demand for agricultural products can lead quickly to substantial changes in prices; and changes in regulations can alter farmers' production practices and costs. In addition to production and price risks, farm businesses are also often exposed to financial risk associated with borrowing capital, and farm operators and farm workers face personal health risks associated with the farm environment and working conditions¹.

Risk is generally described as 'uncertainty that affects an individual's welfare, and is often associated with adversity

and loss'². Several studies have examined the relative importance of different risks and management strategies for different farms. A 1996 USDA survey of US farmers noted that concerns varied by farm enterprises and geographic regions². For example, cotton and grain farmers were more concerned about risk from yield loss and price variability, while livestock and specialty crop producers were more concerned about risks from institutional changes in policies and regulations.

Organic farming, which is distinguished from conventional farming by its reliance on the natural processes of ecosystems, may present particular risks and ways of managing risks. Organic farming systems virtually exclude what are often thought of as important risk management tools in conventional farming, such as the use of synthetic chemicals and antibiotics. Instead, organic farmers rely on their understanding and management of cultural practices such as crop rotation, timing of planting and harvesting, mechanical cultivation, and development of beneficial insect populations.

The views expressed in this article do not necessarily represent those of the University of Maryland or USDA.

Several studies of the characteristics of organic and sustainable farms have included an examination of risk management issues. Duram³ reported that organic farmers expose themselves to special risks during the 3-year transition period from conventional to organic. Yields may drop, and transitioning producers are not able to obtain the higher prices that come with certified organic production. Also during the transition, farmers are learning a different way of farming, potentially with a different set of crops, building up the organic matter in their soil, and identifying new sources of information and inputs. Sustainable agriculture farmers in Kansas referred to the transition period as a time of 'thinking risks'⁴.

The Organic Farming Research Foundation (OFRF), a California-based nonprofit organization, has conducted four national surveys of organic producers between 1993 and 2001, to explore various issues, including production risks in the organic sector. In 1997, survey results indicated that organic farmers were facing serious shortages of some organic inputs on a national basis, and were facing shortages on a regional basis for others⁵. Preliminary results of the 2001 OFRF survey found that 30% of the respondents felt that 'the risk of contamination of their organically grown farm products from genetically modified organisms (GMOs) is high to very high', and 55% of respondents 'do not feel that a regulatory framework is in place to adequately protect their organic farm products from damages due to possible contamination by GMOs'⁶. The use of non-organic inputs could mean loss of organic certification, and contamination by GMO pollen could mean loss of markets. For example, USDA and international organic regulations prohibit the use of GMOs in organic crop production, and consumer tolerance for their accidental presence in organic crops is limited.

Concerns about personal risk from occupational pesticide exposure and environmental contamination may be especially important to organic farmers. The Environmental Protection Agency estimates that 10,000–20,000 physician-diagnosed pesticide poisonings occur each year among approximately 3,380,000 US agricultural workers⁷. The extent of chronic illness resulting from pesticide exposure is much less documented. Epidemiological studies of cancer suggest that farmers in many countries, including the United States, have higher rates than the general population for Hodgkin's disease, leukemia, multiple myeloma, non-Hodgkin's lymphoma, and cancers of the lip, stomach, prostate, skin, brain and connective tissue⁸. Emerging case reports and experimental studies suggest that pesticide exposure is a risk factor for neurodegenerative diseases and other non-cancer illnesses⁹. Many of the organic farmers profiled in alternative agricultural studies include concerns about chemical use as motivations for farming organically^{10,11}.

While organic farming has a long history, its recent rapid growth may have increased risks for organic farmers. Between 1997 and 2001, US farmers and ranchers added about 1 million acres of certified organic cropland and

pasture, and the number of farming operations with certified organic acreage, excluding subcontractors, increased from about 5000 to nearly 7000¹². The average size of certified organic farm operations increased as well during this period, as existing organic farmers expanded their operations and new large-scale operations became certified. Dobbs et al.¹³ indicated that 'price premiums associated with organic niche markets and "family farms" are at risk when large-scale organic producers or processors enter the market, if demand does not expand sufficiently'.

On the other hand, organic production techniques, particularly crop rotation, can reduce risk in the longer term. Hanson et al.¹⁴ compared a conventional grain rotation with an organic grain rotation during the first 9 years of production. Without organic price premiums, the average annual profits of the conventional rotation were higher than the organic rotation. However, using a safety-first criterion, the risk-averse farmer would choose the organic system over conventional. More specifically, Diebel et al.¹⁵ noted that with diverse cropping systems, the yields and prices of these various crops do not necessarily move together, which reduces variability of overall farm income.

Growth in the organic sector has spurred government interest in the risk management needs of organic producers. The Agricultural Risk Protection Act of 2000 recognized organic farming as a 'good farming practice' that would be covered by Federal crop insurance. Federal crop insurance began covering transitional and certified organic acreage the following year under written agreements that included a 5% surcharge, reflecting USDA's uncertainty on organic yield variability. In 2004, organic practices were included in the basic provisions of the common crop policy of Federal crop insurance, making organic farmers eligible for a wider range of coverage options¹⁶.

In this article, we present views, gathered in 2001 and 2002, from a wide range of organic farmers on their risks, risk management strategies, and their risk management needs. We analyze the organic farmers' views by categorizing them by sources and similarity to those in conventional agriculture, by evaluating how they are managed, and by suggesting ways in which effective risk management assistance can be provided.

Methods and Materials

In order to better understand risks and risk management in organic farming, we organized and conducted six focus-group discussions with organic farmers. We planned the discussions so that participants could identify and describe their risks, how they are managed, and their needs for risk-management assistance. Our research team developed a set of focus-group discussion topics prior to conducting the focus groups (Table 1). We distributed a written description of the research project and a questionnaire on farm characteristics to participants prior to conducting the focus groups. The same set of topics was used at all meetings to ensure consistency across the different groups.

Table 1. Topics for discussion at focus groups.

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- 1 Why do you farm organically?
 - 2 Trends and issues for organic agriculture
 - 3 Identify risk factors in organic agriculture. Are these factors different from conventional agriculture? Which of these are most important?
 - 4 How do organic farmers manage risk? Are these strategies different from conventional agriculture? Which of these are most important?
 - 5 Suggestions for USDA-initiated risk-management tools for organic agriculture. Opinions, knowledge and experience regarding USDA's farm programs
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We chose to use focus groups because they enabled us to interact with decision makers to better identify their risk-management needs. Organic crop insurance is very new for both the Risk Management Agency and the organic community and, in developing new products, it is important to be sensitive to the needs and attitudes of the target group. Edmunds¹⁷ argues that focus groups are especially useful when testing new concepts and brainstorming for new ideas, both of which apply to organic risk-management products. Therefore, the use of focus groups enabled us to develop a rich understanding of the critical issues related to risk and organic farming.

Each session lasted about 2 hours, with 20–30 minutes spent on each topic. At least two research team members, in addition to the facilitator, were present to take notes. This allowed the facilitator to manage the session, to make sure that all farmers had opportunities to take part in the discussions and that the topics were well covered. Written comments were accepted from farmers who felt more comfortable expressing their opinions that way. Following the meetings, the notes of the research team were consolidated, creating a consensus description of the focus-group results.

The sessions were held between 2 November 2001 and 20 July 2002. Five of the six sessions were held at sites of conferences or workshops on organic agriculture, and one was held following a meeting of a farmer cooperative. Piggybacking our sessions with existing organic conferences allowed us to solicit participants through conference brochures, and it reduced the travel time for growers who were interested in participating. Conference organizers also advised us on the best timing for our focus groups and helped us target organic farmers for participation. Between 7 and 13 farmers participated in each session. Each participant was provided a \$US100 honorarium.

We organized discussion groups in six states in different parts of the US, to capture some of the regional differences between organic farmers and the diversity of their operations (Table 2). Most participants had substantial farming experience, averaging 18 years farming, including 11 years farming organically. Most were 'full-time farmers', earning

at least half of their family income through farming. Farmers in all of the groups except South Carolina raised some livestock.

Most of the participants at the South Carolina and New York meetings were market gardeners, who grew a diverse mix of fruits and vegetables on small acreages and marketed their crops locally. Their farms averaged about 40 acres, and South Carolina growers had somewhat less certified organic acreage (5 acres) than the New York growers (13 acres). A large part of their acreage was irrigated to ensure their production would meet the quality demands of their buyers. Most of these farmers sold their crops through a variety of direct and wholesale markets. More than half sold some of their produce through 'community-supported agriculture' (CSA) subscription service with consumers. Perhaps because they relied largely on direct markets, about 40% had not certified their farms as organic, but considered their farms functionally organic. Also, growers in South Carolina and other parts of the southern region may have had less access to organic certification services, because a number of nonprofit certifiers in the southern region were shifting their focus from certification to educational services during the study period and new groups had not yet taken their place¹².

In contrast to the market gardeners, the participants at the Texas and North Dakota sessions were field-crop producers and had a much greater area. Farmers in the Texas focus group averaged over 1500 acres (over 1000 acres certified organic) and specialized in producing organic cotton. North Dakota farmers grew field crops, such as small grains and various types of dry beans, and had an average farm size of over 2000 acres, nearly all certified organic or in transition. The farms in North Dakota were dryland operations, while three-quarters of the land in Texas was irrigated. Participants in the North Dakota and Texas groups sold most of their production through wholesale outlets.

The organic farms of the California and Wisconsin participants fell between the market gardeners and the field-crop producers in size. The California group was mostly vegetable, nut and fruit farmers, although an organic dairy farmer also participated. One of the California farms was a very large organic vegetable operation. The California farms averaged 166 acres, with 146 acres certified organic. The farmers at the Wisconsin session operated on farms averaging 290 acres, with 240 acres certified organic. Most of the Wisconsin participants had farm operations that were typical of the Corn Belt, with farming systems that included grain, soybeans, hogs and cattle. Several market gardeners, who sold their produce into Midwestern cities, also participated in the Wisconsin group.

Participants in all of the focus groups were dedicated to the land stewardship goals of organic agriculture, and were enthusiastic about their organic farming systems. One Midwestern farmer said that 'Organic farming taps awe and interest in learning and nature, and promotes human potential to learn more and know more'. More simply,

Table 2. Characteristics of farm operations of organic farmers participating in focus groups.

	Market garden		Crop/livestock	Vegetable	Specialized field crops	
	South Carolina	New York	Wisconsin	California	Texas	North Dakota
Farm description						
Number of farmers in focus group	11	13	12	7	8	11
Average farm size ¹						
Farm size (A)	36	42	289	166	1567	2099
Certified organic (A)	5	13	240	146	1036	1787
Transition organic (A)	1	6	25	0	90	139
Irrigated (A)	5	11	4	146	365	0
Average % of land that is owned	87	50	55	42	39	49
Farms with irrigation (%)	100	69	50	86	75	0
Farms without certification (%)	36	39	8	0	0	0
Average years farming	15	11	18	25	20	24
Average years farming organically	13	10	10	14	8	15
Farms purchasing crop insurance (%)	0	0	42	43	100	91
Farms receiving more than half of income from farming (%)	73	70	50	100	100	100
Livestock						
Farmers with livestock enterprises (%)	0	46	58	29	38	46
Marketing						
Farmers using direct marketing (%)	100	85	33	57	0	36
Farmers operating a CSA (%)	46	69	8	14	0	0
Farmers using wholesaling outlets (%)	82	69	100	100	100	91
Crop production						
Farms with fruits and vegetables (%)	100	100	42	86	63	73
Farms with ornamental crops (%)	46	31	0	14	0	0
Farms with field crops (%)	0	0	67	43	100	100
Farms with pasture and forages (%)	0	8	50	14	13	36

¹ An Olympic average was used because in the majority of the workshops there was one farm that was significantly bigger than the other farms in the focus group. A, acres.

The following associations helped arrange the six focus groups: the Carolina Farm Stewardship Association (South Carolina); the Regional Farm and Food Project (New York); the Midwest Organic and Sustainable Education Services (Wisconsin); the Ecological Farming Association and California Certified Organic Growers (California); the Northern Plains Sustainable Agriculture Society (North Dakota); and the Texas Organic Cotton Marketing Cooperative (Texas).

a California producer said that ‘farming is fun again’. The Texas cotton farmers took enormous pleasure in proving to their skeptical, conventional neighbors that ‘it could be done’.

Participants in all of the groups believed that by farming organically they protected water quality, soil vitality, biodiversity, and their families and customers. Many of the participants were especially concerned about farm worker and farm family exposure to chemicals. One of the Texas farmers said that he thought that the death of his father from leukemia was linked to exposure to agricultural chemicals.

The market gardeners noted that organic agriculture is more profitable for their small enterprises because they can tap the higher per-unit prices associated with organic products. A dairy farmer in California said that since transitioning to organic his profits were dramatically higher and his two sons had returned to farm with him. A wheat farmer in North Dakota noted with a smile that he likes ‘\$7 wheat’.

Risk-management Results

This section consists of comments of the focus-group participants in response to our three questions on organic risk management, the main focus of this study. It is important to understand that focus groups are designed to identify qualitative information as opposed to quantitative data¹⁷. This precludes the use of quantitative analytical methods such as statistics, but provides first-hand information on the important issues affecting the target group. First-hand information on the risk-management issues of organic farmers is especially useful for our study because organic risk-management products are in the early stages of development.

We categorized and summarized comments on risk from the six focus groups into three sections that correspond with our three discussion questions on that topic (Table 1, questions 3–5): risks, risk management and risk-management assistance. We have grouped the comments into the categories that emerged in the discussions and

have attempted to report the full range of participants' comments.

Risks in organic agriculture

Production risks. Many of the organic farmers noted that weather and climatic risks are similar for organic and conventional farmers. A west Texas organic cotton farmer pointed out that in harsh climates, bad weather such as hail or wind can destroy a crop, whether organic or conventional, very quickly. Others pointed out that any farmer without irrigation faces the risk of drought, but that organic farmers' investment in soil quality allows their soils to hold water and withstand drought better than those of their conventional counterparts.

While diseases, insects and, especially, weeds can cause problems for organic farmers, most said that they use cultural practices to prevent pest problems from developing and to reduce risks from pests. Several noted that they can control pest problems that might develop on their farms, but that those that develop on other farms are a threat. A South Carolina farmer noted that this puts organic farmers decidedly at risk because they do not have quick-fix solutions, such as pesticides. A Wisconsin farmer said 'I use biologically-appropriate strategies to avoid problems on my farm; if I get problems coming on to my farm from the outside, there is very little I can do to control, mitigate, or prevent these problems'. Other organic farmers explained that crop diversification and timing of planting helps them withstand threats from conventional agriculture induced pests and diseases. However, a Wisconsin farmer noted that protecting against insects by late planting increases the risk of an early frost.

Several organic farmers said that they face less risk than conventional producers because they use non-chemical controls. They explained that pests can develop resistance to chemical controls and that developing new pesticides can be difficult. Organic farmers also noted that they are less restricted in their choice of crops for rotation than conventional farmers, who risk damage to certain crops from previously applied pesticides.

Several participants said that they do not agree with the claim that spraying by conventional farmers provides organic farmers with 'free protection'. They explained that buffer zones do not always protect against pesticide drift and that spraying often kills the beneficial insects that are necessary for pest control on organic farms. An organic farmer in Texas, for example, said that the widespread spraying for boll weevil has disrupted the supply of beneficial insects to the organic farmers.

Genetically modified organisms. Organic farmers at all the discussion sessions expressed considerable concern about risks from the use of genetically modified organisms (GMOs) by conventional farmers. Contamination from pollen drift from GMOs was seen as a particularly serious risk that could result in lost sales and lost organic certification. Many said that although buffer zones may help

against pesticide drift, buffers may prove ineffective against GMO pollen drift.

Several organic farmers said that GMO contamination can come from anywhere. They noted that GMO contamination has been found in wild varieties of corn near the center of their origin in Mexico. Several participants at the North Dakota session recalled that a tornado in Canada led to contamination of canola with GMO pollen. Corn growers at the Wisconsin session thought that GMO corn pollen was already present everywhere. They explained that one way of managing the risk of GMO contamination was to plant their crop 1–2 weeks later than nearby conventional farmers, so that their organic crops would not pollinate at the same time as the predominant GMO varieties. They added that this strategy has only been modestly successful because cool and wet spring weather can delay plant growth such that corn plants pollinate at about the same time regardless of planting date. Several of the North Dakota organic wheat growers said they are taking a political approach, joining an effort to ban GMO wheat.

Organic farmers pointed out that GMOs may destroy the effectiveness of natural pest controls. For example, many organic farmers use Bt-based foliar pesticides, which are approved for organic use, to control insects. In recent years, transgenic varieties of corn containing the Bt protein have been developed, and organic farmers worry that their widespread use will hasten development of Bt resistance by insects and limit the usefulness of Bt organic pesticides.

Many of the organic farmers expressed a broad complaint about responsibility for GMOs. They explained that GMO companies provide a technology that is useless to organic farmers while, at the same time, exposing organic producers to substantial risks. Participants said that potential consequences of GMO contamination include loss of organic certification and markets, and could be very costly to them. Although none of the participants had yet lost certification due to GMO contamination, many were aware of farmers whose crops had been rejected by buyers due to GMO contamination.

Input risks. Organic farmers said that they face shortages of certified organic seeds, biological pesticides, specialized farm equipment designed for organic cultural practices and other inputs because the market they offer to suppliers may be too small to be served profitably by agribusiness. Also, New York market gardeners were particularly concerned about the drastic decline in the number of dairy farms in the northeast, and the loss of local sources of manure. Organic farmers also expressed concern about the availability of good-quality compost that has not been contaminated by GMOs. Some participants said that access to capital is a risk for organic farmers because banks are unfamiliar with organic production systems and have difficulty evaluating credit-worthiness. As a result, the flow of credit to organic producers is limited and can be difficult to obtain.

Organic farmers said that they, like some conventional farmers, are hurt by declining agricultural infrastructure

(i.e., farm equipment repair and service), shortage of good labor, and high prices for agricultural land due to suburban sprawl. They pointed out differences from conventional agriculture, noting that relocation costs are higher for organic farmers because they must re-establish their organic certification and work with a biological transition process that can last several years.

Organic marketplace risks. Organic farmers said that organic agriculture is expanding rapidly and is experiencing growing pains. Participants reported that price premiums are less stable and are dropping in some cases, and that niche markets, which have been developed over long periods of time, can disappear quickly.

For market gardeners, growing competition from larger farming operations is an increasing risk. Several said that large operations, which can provide retailers with large volumes of production, have tremendous leverage in the marketplace. Participants expressed a variety of concerns about competition, imports and oversupply in markets. New York organic farmers complained about large organic farms in California producing for markets in the northeast. California growers said that they were suffering from imports. They noted that countries such as China have cheap labor and that their organic certification may lack integrity. The Texas cotton producers also noted that their major competition is from countries with cheap labor.

Farmers participating in the Wisconsin session were concerned about consolidation in the food retailing industry. Some of the participants in a number of the focus groups believed that supermarket chains have no interest in using locally grown food. Many also felt threatened by a 'corporate approach' to organic production and processing.

Agricultural policy risks. Several organic farmers said that confusion about details of the National Organic Program rules—inconsistent interpretation of rules, uneven enforcement, and gray areas in certification—makes organic certification more tenuous. A Wisconsin farmer suggested that certification be completed in the winter months so that mistakes would be caught before they cost a farmer certification.

Some participants believed that the National Organic Program rules are based on stricter standards than those that state and private certifiers had implemented. For example, many market gardeners in New York and the Carolinas said that the new rules on certified organic seed, manure application and composting were stricter, and would make organic production more difficult. Others felt that the new rules are 'the lowest common denominator', which would reduce incentives to improve land stewardship. For example, a California dairy farmer said that large-scale dairy farms would pressure USDA to continue keeping pasture requirements loose, favoring large-scale dairies over smaller, pasture-based dairies.

Some participants pointed to a 'cheap food' policy by USDA as being detrimental to organic farmers. They said that cheap, chemical-intensive agricultural production does

not reflect environmental costs, and is therefore sold below its true cost of production. Organic production, in contrast, includes these costs, and organic farmers are penalized by the perception of some consumers that organic food is too expensive. Focus-group participants also indicated that organic rotations include crops that might impose additional land requirements for organic farmers, and are not part of USDA's farm programs. Organic farmers, they added, typically do not operate using what they called 'the more you produce, the more you get paid' approach encouraged by USDA policy.

Several participants said that a lack of research on organic agriculture by USDA and universities is a risk in organic agriculture. They said that there is a major bias in the types of agricultural research undertaken because funding comes from chemical companies. Several organic farmers also pointed out that commodity associations often do not support organic agriculture, which can pose an additional risk for organic producers. One Wisconsin farmer noted, 'if the soybean association had an interest in farmers they would support agricultural producers. [Instead] they take our check-off dollars to drive us out of business'. Similarly, an organic cotton farmer indicated that organic farmers are required to pay dues to a marketing association that restricts the use of its seal on organic products.

Risk-management strategies used by organic farmers

Cultural practices. Most of the discussion group participants indicated that organic farming practices help them manage risk. They noted that organic crop rotations and crop successions increase organic matter, improve soil quality, buffer pH, manage pests and nutrients, and help hedge against bad weather. Several participants said that risk management and the satisfaction that comes from farming organically were sufficient incentives to farm organically. A Texas farmer explained, 'If we lost our markets (and price premiums) I don't know if we'd change our practices'. Participants noted that the smaller size of many organic farms makes risks easier to manage. A North Dakota farmer said that the higher 'eyes to acres' ratio of organic farmers enables them to see problems and correct them before they become more serious.

Diversification in crops grown was mentioned as an important risk-management strategy by market gardeners at the South Carolina and New York sessions. One South Carolina farmer noted that he ordered 148 seed items (different crops and varieties) in 1 year. Because of his multiple crops through the growing season, he simply replants if an early season crop was lost. Several market gardeners in South Carolina and New York said that they are adding high tunnels and greenhouses to extend their growing season and reduce risks of frost. Many organic vegetable and fruit farmers said that they irrigate to guard against production risks.

Several participants at the Wisconsin session said that they protect against production risk by growing several cultivars of the same species. These farmers said that they also grow open-pollinated crops and save seed as a way of developing sources of organic seed and varieties that guard against local diseases and pests. Several other Midwestern crop farmers said that they have re-introduced livestock into their operations, allowing them, in the event of a loss in crop quality and crop value, to feed their crop to their animals and then to sell the animals. These organic animal producers with pasture-based systems also said that they have seen a reduction in animal stress and disease problems, and an increase in animals' productive life spans on their farms.

Marketing strategies. Organic farmers mentioned that they manage risk by diversifying their marketing plans. Organic vegetable and fruit farmers, in particular, said that they market their crops through more than one channel. They mentioned community supported agriculture (CSA) arrangements, farmers' markets, small-scale markets and wholesale markets. Some farmers add value with a food-processing enterprise. The crop diversity involved in meeting organic rotation requirements also provides marketing advantages. Several organic farmers pointed out that economic losses suffered from early-season crop failure may be compensated for with economic gains from late-season crops.

CSAs provided an important risk-management strategy for many of the market gardeners at the South Carolina and New York sessions. A farmer participates in a CSA by selling shares or subscriptions to nearby consumers. The consumer shares in the risks associated with production, receiving more or less of particular products as weather patterns vary through the season. As one South Carolina farmer summarized it, 'the greater the importance of the CSA in the operation, the better the risk management'. Several organic farmers explained that CSAs build supportive relationships that increase consumer trust, leading to loyalty during hard times. One New York CSA farmer said that he has 'relationships, instead of insurance'. Another draws on a 'subsidy of goodwill' from the community.

Farmers in several of the focus groups had formed cooperatives as a way to manage market risks. The Wisconsin farmers who had expressed concern about the power of large retailers said that cooperatives are a way for farmers to control marketing. Participants explained that cooperatives had allowed them to raise capital for marketing expenses, such as the slotting fees needed to gain shelf space, and to gain marketing leverage. The Texas organic cotton growers had also formed a cooperative to help manage market risk. Their cotton production is pooled, helping to level out yields among farms, maintain markets, and gain economies of scale. Several of the organic cotton farmers explained that their cooperative efforts involve less dog-eat-dog competition than those of conventional farmers.

Mutual support. Many of the organic farmers participating in the discussions explained that they have formed

support networks to help each other and to communicate with their consumers. They said that they actively promote locally grown organic agriculture—not just on their own behalf, but on behalf of their fellow farmers as well. These efforts have helped create consumers that stand by them during tough times.

Organic farmers said that they have tended to bond together more than their conventional neighbors. Wisconsin farmers agreed that organic farmers use group sharing and learning from others' experiences in an 'old fashion neighboring' spirit, where farmers share labor, machinery, ideas and information. They said that they also lobby together in the political process. One New York farmer stated that 'Organic farmers [have formed] a viable and exciting community against a lot of odds. The number of young people coming in [to farm organically] shows that organic agriculture has managed a lot of the risks that conventional agriculture has failed to manage'.

Needs for risk-management assistance

General programs. Several discussion group participants said that USDA needs to better support long-term research on organic farming systems, particularly systems for small farmers. It was also mentioned that land grant extension agents need to be retrained so that they can provide better service to organic farmers. One New York participant said that organic farmers need more extension programs and support, similar to that provided by the USDA-funded Appropriate Technology Transfer for Rural Areas (ATTRA) and the nonprofit Northeast Organic Farming Association in Maine. Several organic farmers said that consumer education programs about the quality of organic food and how organic production preserves and conserves farmland would help organic farmers.

Many participants noted that new organic farmers need help through the transition from conventional to organic. Several suggested educational programs to help farmers learn how to farm organically. Others suggested a short-term subsidy during the transition and assistance with the costs of organic certification. Other participants mentioned payments for fallowing land as part of an organic crop rotation, emergency relief for failing farms, protection against falling organic price premiums and low-interest loans for organic farmers. Several participants were troubled by talk of subsidies. One said that subsidies are a 'band-aid' approach to dealing with problems, and was joined by others who said that USDA should develop programs to eliminate problems so that subsidies would not be necessary.

Many participants, especially at the North Dakota and Wisconsin meetings, said that the government should require greater accountability by conventional agribusiness, in particular for damage from GMOs. Organic farmers mentioned that GMO firms should pay for testing of organic crops for GMOs and that the GMO firms should be held responsible for the loss in value of the organic

farmer's products due to GMO contamination. Several participants said that systems of grain handling need to be improved to separate and preserve the identity of organic crops. One Wisconsin farmer suggested that USDA establish GMO-free seed-growing regions, which would facilitate the development of organically grown seeds.

Crop insurance. Federal multiple-peril crop insurance, a major USDA program to assist farmers with yield and revenue risk, was discussed by all discussion groups. Producer experience with crop insurance was the greatest among organic field-crop producers, because federal crop insurance has been offered to field-crop producers for a long time. Federal crop insurance has only recently been offered to horticultural crop producers, and market gardeners in South Carolina and New York responded that they had practically no experience with crop insurance.

Organic field-crop producers participating in sessions in Wisconsin, North Dakota and Texas saw federal crop insurance as a risk-management tool that is workable but needs improvement. Several said that the problem with crop insurance is that the coverage does not reflect higher prices received for organically produced crops. They noted that the insurance 'price election' (the insurance value of a crop) is the same whether the crop is produced organically or conventionally, and is too low for organic farmers.

Some of the organic field-crop producers said that they would like the opportunity to buy higher amounts of coverage, even though this would probably mean higher premium costs. One farmer suggested that the level of coverage under federal multiple-peril crop insurance be established like it is under private hail insurance, allowing a producer to select a dollar amount of coverage without relying on expected yield and price election. A number of organic field crop producers in the North Dakota and Texas sessions criticized the federal crop insurance practice of charging a higher premium rate for organic production than for conventional production. Organic farmers in most of the discussion groups mentioned that federal crop insurance does not cover what they think is a major risk: the loss of sales and markets due to accidental contamination of crops from GMOs.

Organic farmers expressed interest in having crop insurance available for a wider variety of crops. Participants at the North Dakota session said that organic farmers have a problem getting coverage for the nonconventional crops, such as flax, that are part of their crop rotations. Also, participants at the North Dakota meeting mentioned that it is difficult to establish a production history, the basis of crop insurance coverage, when many different crops are grown each year for the rotation. A producer pointed out that county yield histories can be used in place of an individual farm's yield history, but that the county yield histories should be updated, and increased when appropriate.

The market gardener participants in the South Carolina and New York sessions expressed a general skepticism

about the usefulness of crop insurance. None had purchased federal crop insurance. They said that other risk management practices are better suited to their operations than crop insurance. Several said that their crop and market diversification is their 'crop insurance'. One South Carolina farmer said that he would rather take his insurance premium money and invest in good irrigation equipment. Market gardeners also were concerned that price premiums for organic crops are not covered, and they thought that crop-by-crop insurance for their type of production system—which often includes 50 or more fruits and vegetables—could be impractical. Several of the market gardeners said they have an aversion to paperwork associated with insurance and other government programs. Several farmers expressed a perception that insurance programs cater to the 'big boys', and oversupply in markets was a greater concern for them than the risks covered by crop insurance.

A relatively new federal crop insurance product, Adjusted Gross Revenue (AGR), which insures whole-farm revenue rather than crop-by-crop yield or revenue, may be more useful for some farmers, especially those with many different crops¹⁸. Participants in the South Carolina, New York, and Wisconsin meetings discussed this too, and some expressed interest in this type of coverage. Others questioned how well AGR would work for new farmers or farmers planning an expansion.

Conclusions

Organic farmers participating in the group discussions identified a wide range of risks, management strategies and needs for assistance. They also raised issues about the equity of the currently subsidized risk-management programs, and they offered suggestions for crafting new programs. We have grouped their views on risk into three categories, depending on their similarity to conventional agriculture:

- risks that are similar to those in conventional farming, although they may be managed in different ways in organic farming;
- risks that are different between organic farming and conventional farming, but that may only be temporary, due to the recent rapid growth in the organic sector;
- risks that are greatly different from those of most conventional farmers because of the different nature of the production and marketing systems.

For risks that were seen as similar to those in conventional agriculture, organic farmers questioned whether they have the same access to the management tools available to conventional farmers. The organic grain and cotton producers had used federally subsidized crop insurance to manage these risks. They suggested that a number of modifications in crop insurance, including a higher price election that reflects organic price premiums and coverage for the more diverse set of crops in their

organic rotations, would increase its effectiveness for them. The organic specialty crop producers had far less experience with federally subsidized crop insurance, which has only recently been offered to this type of producer, conventional or organic. Some of the larger organic fruit and vegetable producers showed some interest in this tool, but market gardeners indicated that single-commodity crop insurance may not be practical for organic farms with a lot of different crops.

Some of the risks that focus-group participants described may only be temporary, such as the risks associated with the recent rapid growth in the organic sector. For example, national organic standards were developed in response to growth in the organic sector and are intended to facilitate marketing of agricultural products and assure consumers that consistent, uniform standards are met. However, gray areas have emerged in the implementation of these standards, and some participants were concerned that they could lose their certification unintentionally. While these ambiguities should be resolved over time, for now they are perceived as posing a risk to some organic farmers.

The process of transitioning from conventional to organic agriculture may also pose production and market risks that do not persist over time. During the transition process, farmers face a steep learning curve as they learn to control pests biologically, manage nutrient cycles, produce different crops and tap new markets. Crop yields may drop initially on some farms as the soil is being rebuilt and beneficial insect populations are restored. Farmers are unable to command organic premiums until after they have acquired organic certification, which usually requires a 3-year waiting period and can cost hundreds or thousands of dollars. Also, while the market for organic products is increasing rapidly, it is also immature, and some markets may be sensitive to oversupply and prices may be highly variable. Federally subsidized crop insurance may be especially important for some farmers during the initial transition period.

Focus-group participants also indicated that organic farmers face some unique risks that persist over time, which raises the issue of whether new risk-management tools are also needed. Organic farmers have developed a production system, now codified in federal standards, that is based on investments in soil building and agroecosystem health activities. They may be especially vulnerable to GMO and other contamination of their land, as well as their products, because many of their investments (such as investment in soil) are not transferable to land on other farms. Organic farmers expressed interest in new risk-management tools, such as crop insurance coverage for GMO contamination, which would address these risks explicitly. They also expressed strong interest in broader changes in the policy environment—such as a shift in public spending toward organic research, extension, and consumer education—which would enhance overall public support for organic farmers.

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