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ENTRY AND PERSISTENCE IN ALTERNATIVE AGRICULTURE: AN AMERICAN CASE
STUDY

by

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ABSTRACT OF THE DISSERTATION

Entry and Persistence in Alternative Agriculture: An American Case Study

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Social movements have inspired a new generation of Americans to take up farming. The agri-food movement has created alternative food networks to promote organic or ecological farming practices and support the viability of family farms. However, a study of beginning organic farmers suggests that they rely on non-farm wealth and outside income to stay in business. Experienced farmers face significant barriers to adopting organic practices and a high turnover rate.

I investigate how new agrarians enter alternative agriculture, and what kinds of factors explain their persistence in the face of daunting macro-economic trends. I draw on early rural sociological theory about agricultural ladders, combining this conceptual tool with recent work on the agri-food movement. I consider the role of participation in

grassroots agri-food organizations, subsidies from non-farm income, inherited land, and the higher prices that come from direct marketing. I use a case study of small-scale, organic farmers in southern Ohio, many of whom participate in a regional organization for organic farmers.

My study finds that the common characterization of farmers as either first-generation farmers with no prior background in agriculture or experienced farmers who “go organic” needs revising. This study highlights what I call returning farmers: people with a family connection to farming who pursued nonfarm careers but found new opportunities and inspiration to re-enter agriculture later in life. I develop a typology of three pathways into alternative agriculture: nontraditional first-generation “greenhorn” farmers who are inspired by the food movement to enter agriculture, “returning farmers” who have a family history of farming but pursued non-farm careers before returning to agriculture, and “legacy” farmers with family land who have decided to practice alternative agriculture.

Greenhorns and returning farmers use nonfarm capital to establish small-scale, diverse specialty crop and livestock farms. Because of the obstacles they face, many develop nontraditional revenue strategies to support their farms, and continue relying on non-farm income or wealth. In contrast, the Organic Valley Coop and market demand for certified organic grain and dairy products have created opportunities for legacy farmers to transition into organics and work as full-time farmers, thus meeting the movement’s ideals.

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Dedication

I dedicate this dissertation to my parents, Kevin and Barbara Bruce. In so many ways we have taken this journey of discovery together.

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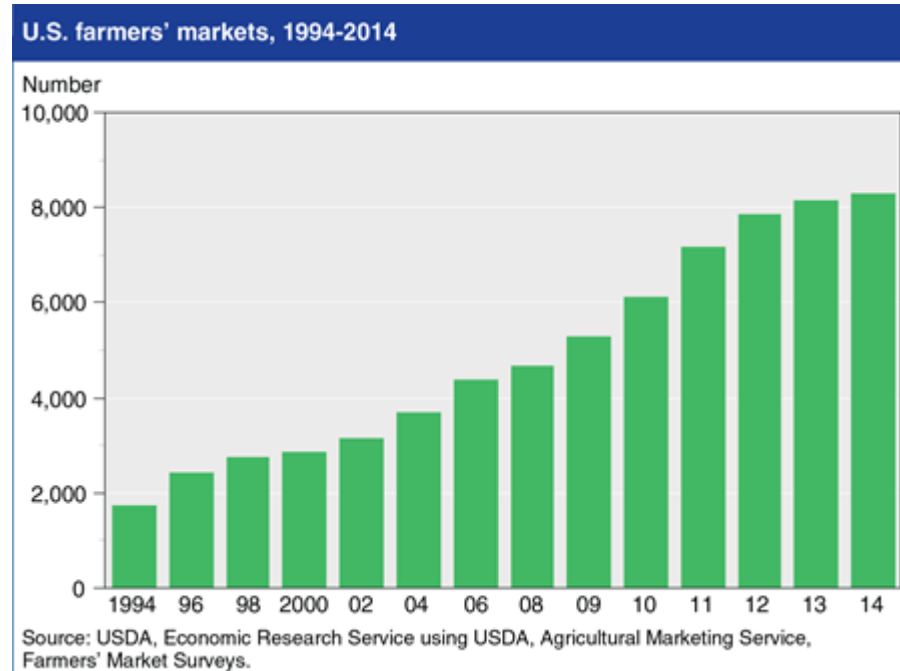
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Chapter I: INTRODUCTION

During the past four decades food focused social movements have created alternative food networks to help consumers reconnect with their food and the people who grow it. The sustainable food and farming movement inspired the development of alternative farming practices to address the environmental problems associated with industrial agriculture: soil and water contamination, fossil fuel dependence, loss of biodiversity and overreliance on pesticides and synthetic fertilizer. U.S. consumers have become more aware and concerned about the way their food is produced in response to the rise of diet-related illness, increasing pesticide residues and food safety issues in the food supply, and inequitable access to nutritious foods. The movement has drawn attention to the loss of family farms and corporate concentration and control of agribusiness markets. Best-selling authors Michael Pollan, Vandana Shiva, Joel Salatin, and many others have raised public awareness of these issues and inspired a growing number of Americans to vote with their forks to promote more environmentally responsible, socially just, and healthful agriculture and food system (Shiva 2001; Allen 2004; Pollan 2006; Lappe 2010; Mares and Alkon 2011; Salatin 2011).

As public awareness of the externalities of the industrial food system increases, participation in alternative food networks has continued to grow rapidly. According to USDA's Agricultural Marketing Service, the number of farmers' markets in the U.S. rose to 8,284 in 2014, up from 3,706 in 2004 and 1,755 in 1994, as depicted in the table below.

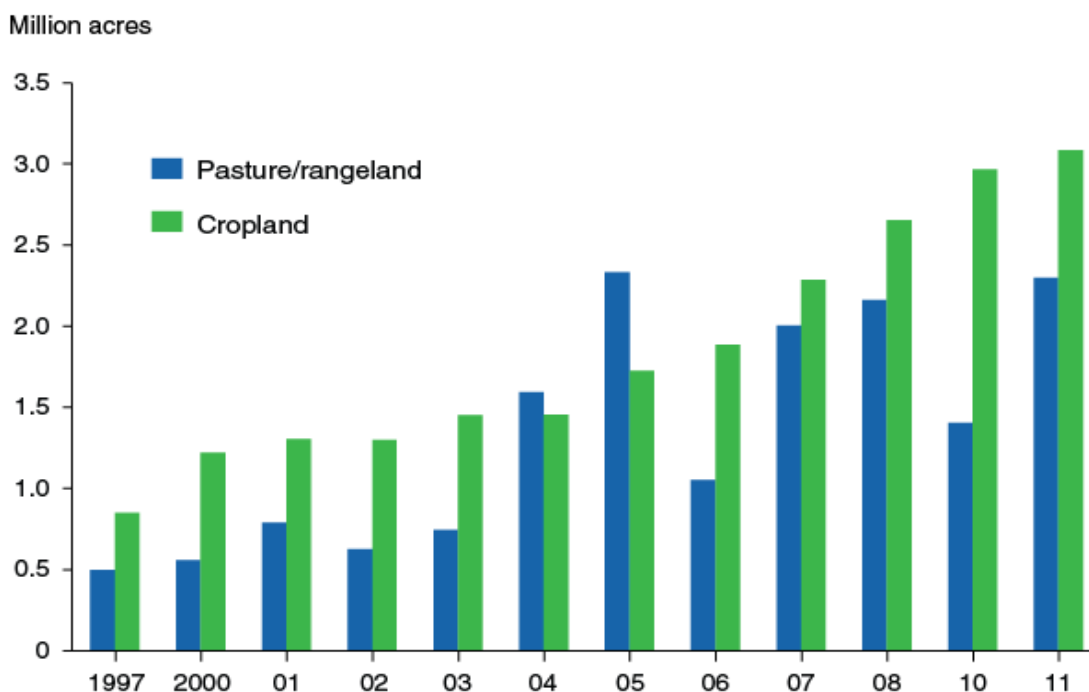
Figure 1: Increase in farmers' markets in US



Direct to consumer food sales have increased threefold from 1992 to 2007, from \$404 million to \$1.2 billion, at a growth rate of twice as fast as total agricultural sales in the U.S. (Tropp 2013). The number of farms doing direct-to-consumer sales increased by 17 percent and sales increased by 32 percent between 2002 and 2007 (Low et al. 2015). Likewise, organic farming is one of the fastest growing segments of U.S. agriculture. Organic food sales have more than quintupled, increasing from \$3.6 billion in 1997 to \$18.9 billion in 2007 (Greene et al. 2009). In 2014 there were approximately 19,474 organic farms certified in the U.S., and \$39.1 billion recorded in organic sales (Greene 2015). These trends are illustrated in the table below:

Figure 2: Increase in certified organic cropland in U.S.

Certified organic cropland and pasture reached nearly 5.4 million acres in 2011*



Source: USDA, Economic Research Service, based on information from USDA-accredited State and private organic certifiers.

*On November 22, 2013, data underlying the chart "Certified organic cropland and pasture reached nearly 5.4 million acres in 2011" was corrected. The correct number of certified organic pasture/rangeland acres in 2005 is 2.331 million. The correct number of certified organic pasture/rangeland acres in 2010 is 1.405 million; the correct number of certified organic cropland acres in 2010 is 2.966 million.

The actors that make up the alternative agri-food movement are part of multiple overlapping networks, with several competing sets of goals, values and strategies (Flora 2009; Mares and Alkon 2011; Myers and Sbicca 2015). They include an eclectic mix of nonprofit and for-profit organizations, grassroots advocacy groups, and unassociated farmers, gardeners, students and activists (Hess 2005; Flora 2009; Mares and Alkon 2011). There are several broad areas of focus in the wider umbrella of food movement activities and organizations, encompassing environmental, economic and social goals. The sustainable farming movement

promotes environmentally regenerative agriculture and the economic viability of small and mid-sized farms (Allen 2004; Lyson 2004; DeLind 2006; Mares and Alkon 2011). A subset of this movement is focused on the abuse of contract farmers, animals and antibiotics in industrial animal agriculture. Another cluster of activism is focused on the connections between diet and health, with initiatives to provide more equitable access to nutritious foods for consumers, such as reforming school lunch programs and other initiatives to improve US dietary norms (Hess 2004; Mares and Alkon 2011; Nestle 2013; 2015). More recently, the Food Chain Workers Alliance and other advocacy groups have been working to increase awareness of farm worker pesticide exposure, working conditions, and low pay of workers across the food chain (Mines, Hausman, and Tabshouri 2005; Harris 2008; Sayavedra et al. 2008; Myers and Sbicca 2015).

This dissertation is focused on the subset of the agri-food movement working to promote ecologically regenerative farming practices. These practices are promoted as alternatives to chemical-intensive industrial agriculture, but are not new. Alternative farming practices draw on traditional diversified farming techniques that rely on mixed crop and livestock systems to maintain soil health and enhance natural pest control (Netting 1993; Constance 2009; Rudel et al. 2015). The sustainable farming movement has multiple and diverse roots, from experimentation with biodynamic farming in Europe to counter-cultural movements in the US that encouraged their followers to go back-to-the-land and develop farming cooperatives (Jacob 1997; Belasco 2007). Their efforts focused on creating alternative markets and institutions for distributing food, including farmers

markets, Community Supported Agriculture, or CSA, and community food security initiatives (Allen 2004; Lyson and Gupitill 2004; DeLind 2006). The popular mantras "vote with your fork", or "grow your own food" inspired many people to reconnect with their food or get involved with sustainable farming themselves (Allen 2004). Grassroots advocacy groups have also fought for political recognition and institutional support for organic farming at the federal level, leading to the creation of the Low-Input Sustainable Agriculture Program, LISA in 1985, though only funded in 1988 (Constance 2009). Following years of intensive push back from the agrichemical industry the program became the USDA Sustainable Agriculture Research and Education Program, SARE in 1990 (Constance 2009).

The counter-culture movement that evolved in opposition to the industrial food system brought together a combination of social, environmental and political concerns (Constance 2008; 2009; Jaffee and Howard 2010; Schurman and Munro 2010). This activism, combined with American consumers' increasing desire to know how their food was grown and processed drove the rise of organic agriculture in the U.S. (Guthman 2004; Constance 2009; Jaffee and Howard 2010). The first third-party organic certification was created in California in the 1970s, becoming a model for other state and regional level certification programs established across the country (Constance 2009). As demand for organically grown foods grew, concerns about counterfeit organic products led to the Organic Foods Production Act of 1990 that would develop regulations for a national certification program. After a highly contested process, the final certification standards were approved in 2002. The final National Organic Program standards focus on allowable organic

inputs, as opposed to agro-ecological practices or socio-economic dimensions of sustainable agriculture (Constance 2009; Jaffee and Howard 2010). The creation of the national certification program facilitated the entrance of large-scale industrial producers and processing firms who took an input substitution approach to capitalize on the niche market (Guthman 2004; Howard 2009). The organic foods sector has grown at an average rate of 20% almost every year since 1990, and the availability of organics has expanded to the point that nearly half of sales are now through mass-market channels such as supermarkets and warehouse clubs (Howard 2009). Following this rapid expansion of the organic market was the consolidation of the industry, as movement-generated organic businesses were bought up by large food processing companies and large companies introduced their own organic versions of existing brands (Guthman 2004; Howard 2009).

The rapid growth of the organic food industry led to concerns about the limits of a market-based approach. For instance, the viability of small-scale alternative farmers is threatened by highly capitalized, large-scale operators who use a watered down version of organic and economies of scale to benefit from the organic price premium (Guthman 2004; 2004b; Constance, Young Choi and Lyke-Ho-Gland 2008). Activists and scholars have highlighted the tensions between the social and economic goals that motivated these efforts and the reality that the consumers who benefit are mostly affluent, highly educated and white (Allen 1999; 2008; 2010; Alkon and Agyeman 2011; Alkon et al. 2013). Studies have shown that the farmers who grow food for alternative food networks are also more likely to be well educated, white, and relatively affluent (Alkon and Agyeman 2011).

Consequently, food systems scholars have named inequality as the next issue to address (Constance 2008).

This study takes a closer look at the small-scale farmers who grow food for alternative food networks. Food movement activists have inspired a growing number of young and not so young Americans to develop more sustainable methods for growing food. These new entrants into alternative agriculture are often referred to as new agrarians or greenhorns. New agrarianism is a term popularized by Wendell Berry to describe his vision for regenerative agricultural practices that would also support the vitality of farming communities. New agrarians see themselves as part of a broader movement to remake the food and agriculture system. This definition of new agrarians captures the essence of how many of them might describe their vision for alternative food and agriculture systems:

New agrarians have a vision of resilient food production from farms and ranches that are managed for land health, biodiversity and human wellbeing. It means working to sequester carbon in soils, improving water quality and quantity, restoring native plant and animal populations, fixing degraded creeks, developing local energy sources and replenishing the land for people and nature alike. It is a vision of coexistence, resilience and stewardship – a place for people in nature, not outside it (White and Avery 2011).

New agrarians or greenhorns are often characterized as committed, savvy, nontraditional, and extremely passionate (Duffy 2010; Raftery 2011; Greenhorns 2013). Research suggests they are generally also white, well educated, and relatively affluent (Pilgeram 2011; Alkon and Mares 2012).

The young farmers movement has been influential on a cultural and political level because of the activities of organizations such as the Greenhorns and National Young Farmers Coalition. Media savvy and politically active young farmers'

movement activists have shaped popular perception of new agrarians or greenhorns. Many of the founding members of these organizations are college-educated people from urban or suburban backgrounds, some of who have no prior background in farming. The Greenhorns in particular have created a significant amount of media about themselves to promote their vision for an alternative food and agriculture system. They have worked hard to create a new image of what it means to be a farmer in the U.S. (Greenhorns 2013). The Greenhorns collective have produced two documentary films, a book, an extensive website, and radio programming on Greenhorns Radio, featuring interviews with greenhorns around the country that are available by podcast (Greenhorns 2013; Tscharnier Flemming 2013). The Greenhorns also coordinate a variety of social events for young farmers, and their founding member Severine Von Tscharnier Flemming, a Berkeley journalism graduate, does regular speaking engagements around the country. They have developed informal support networks to facilitate new agrarians' entrance into farming (Greenhorns 2013; Tscharnier Flemming 2013).

Rural sociologists have used the metaphor of an agricultural ladder to conceptualize the process of entering farming. The agricultural ladder has its origins in the early and mid 20th century, when the structure of agriculture in the United States was significantly different than it is now (Atack 1989; Spillman 1930; Bates and Rudel 2004). During the course of the life cycle, farmers ascend the agricultural ladder from the lowest rungs of unpaid family laborers to the top most rung of owner operators. The agricultural ladder assumes a young person who grows up on a farm and gradually takes on more responsibility on family members'

farms until they ultimately establish their own farms and eventually become full owner-operators (Bates and Rudel 2004). It describes a theory of social mobility in farm communities around 1910 when around 90% of the US population lived in rural areas (Lobao and Meyer 2001). This understanding of agrarian occupational mobility was later criticized for lacking empirical support, and ignoring landless farm families whose hard work and frugality was never enough to facilitate access to land (Kloppenburger and Geisler 1985). Still, it illuminated the step-by-step process through which some beginning farmers from land-owning families gained access to farmland (Bates and Rudel 2004).

The step-by-step process of upward mobility into farming illustrated by the agricultural ladder is predicated on a particular structure of agriculture that no longer exists in the United States. It assumes an agrarian structure in which small autonomous producers predominate, and local inequalities are tied to age and position in the life cycle (Bates and Rudel 2004). Today, the class structure in farming communities is characterized by a dualistic system of families with very large landholdings leased out to tenant farmers, and a large number of very small farms that cannot sustain families. Income inequality in farming communities is nearly 50% higher than for all US households (Lobao and Meyer 2001). In this context, people growing up in farm communities with aspirations of a better life, typically leave to pursue higher education and non-farm careers (Carr and Kefalas 2009). This study uses the agricultural ladder concept as a point of departure for trying to understand the role that the agri-food movement has played in facilitating the entrance of new groups into farming. How are new agrarians' pathways into

agriculture different from those of farmers who climbed an agricultural ladder in the past? Have movement-generated markets, organizations, and institutions made a meaningful difference in helping them get started?

With the theoretical framework of the agricultural ladder as a backdrop, I carried out a study of the different ways in which small-scale farmers have entered alternative agriculture. The agri-food literature has typically characterized farmers as either first-generation or beginning farmers who are assumed to have no prior background in farming, and experienced farmers with agricultural land who transition to certified organic production practices (Inwood, Clark and Bean 2013). This binary reflects the popular media accounts of beginning farmers who are often depicted as people with no prior family history of background in farming. However, my interviews show that these categories cannot be generalized to all contexts or assumed to be universal or stable over time (Guthman 2004b; Schewe 2014). My study suggests a new, blurred category of farmers with social and policy significance that I refer to as “returning farmers’.

Returning farmers are people with some family connection to farming who have been inspired by some aspect or concerns raised by the agri-food movement to re-enter farming. They may have grown up on farms and left to pursue higher education and non-farm careers, only to establish their own farms later in life. Many of them are people a generation or more removed from agriculture, who may have grown up visiting their grandparents or another family members’ farm, even though they themselves were raised in the suburbs. Several of the returning farmers I interviewed assumed family farmland that had been leased out to tenant farmers for

a generation or more. Some inherited family farmland directly from relatives. In other cases they assumed ownership to prevent the land from being sold, or assumed stewardship of land that was passed down to several family members and being leased out as an investment property. The thread that unites these people is that they have some closer family history to farming, and therefore are more likely to have some direct farming experience and are more likely to inherit or have privileged access to farmland. They are a unique group because they are not completely new to farming in the way that first-generation farmers are, but they also have a fresh perspective on agriculture, because of their higher education and previous non-farm careers. In many ways they are culturally similar to beginning farmers, but in other ways their experiences are closer to farming families. Finally, their pathways represent a range of proximity to agriculture, rather than a single, homogenous trajectory.

Thus I identify three categories of people who work in sustainable agriculture: 'greenhorns' who have drawn upon non-farm resources to start farms, returning farmers who have a family history of farming but pursued non-farm careers before returning to farming, and families with agricultural land who have decided to practice alternative agriculture, referred to hereafter as 'legacy' farmers. Research shows that some new agrarians draw on non-farm assets, and some have family wealth that they can use to get started. Legacy farmers are experienced farmers who come from families with farming backgrounds who own land, and decide to adopt organic practices based on financial or health concerns, and the influence of neighboring farmers (Cranfield, Henson and Holliday 2010; Guillem et

al. 2012; Taus, Ogneva-Himmelberger and Rogan 2013). By interviewing people in each category in a representative agricultural area of southern Ohio, I develop a narrative explanation of the different paths followed by these farmers into alternative agriculture. My research addresses three interrelated questions:

1. What strategies do small-scale sustainable farmers use to make their farms viable, given the many obstacles they face?
2. How does farmers' socioeconomic status influence their ability to use sustainable farming practices?
3. To what extent do alternative food markets, programs, and organizations support the entrance and persistence of beginning and experienced small-scale farmers?

Through intensive interviewing and a survey measuring the socioeconomic status of people in each category, I develop a narrative explanation of the different paths followed by these farmers into small-scale alternative agriculture, and the challenges they face in their early years. This case study of the paths followed by the three types of farmers into alternative agriculture should clarify the social resources that support them, making it both environmentally and economically sustainable.

Studies of beginning small-scale organic farmers suggest they only manage to 'get by' if they have non-farm wealth, or outside income that enables them to operate the farm without earning a sufficient income from it (Janke 2008; Pilgeram 2011). Research on experienced farmers who convert to organic practices finds a number of barriers and a high turnover rate, mainly for economic reasons (Sierra et al. 2008; Sahm et al. 2013). However, new programs and policies with the explicit

goal of supporting organic farmers have increased significantly in the past decade (Beginning Farmers 2014; NSAC 2014; Greene 2015). Given this support, the practical knowledge generated by wider adoption, and the significant market expansion of the past decade, the challenges faced by contemporary organic farmers may differ from those in the past and documented in the existing literature (Cranfield, Henson and Holliday 2010; Farmer et al. 2014; NSAC 2014; Greene 2015). Therefore, my objective is to understand the ways and degree to which grassroots organizations are able to offset the entrance barriers to sustainable agriculture and promote the viability of beginning farmers.

This study contributes to food systems research that clarifies the social, political, and economic circumstances that support small-scale sustainable agriculture. There is a lack of research on the characteristics of the farmers who are able to overcome the entrance barriers and persist in organic agriculture. This is important because most of the limited research on organics is focused on technical production issues, even though the most significant barriers to increasing organic adoption are social and political (de Molina 2013). Allen argues that movement activists and practitioners have followed the reductionist approach taken by industrial agriculture experts, focusing on the technical challenges of growing food organically while ignoring the social and political dimensions of societal change necessary for implementing these techniques across a broad range of agricultural communities (2004). However, many of the main obstacles to wider adoption and participation in alternative food networks are social and economic issues that require social and political change to be realized (Lappe 2010; Salatin 2011; NSAC

2014). Therefore this study attempts to identify the type of support that could facilitate wider adoption of organic or ecological farming practices.

This dissertation is divided into eight chapters. In Chapter II I review the literature on the viability of organic agriculture, the strategies small-scale alternative farmers are using to make their farms viable, and the implications of their challenges and coping strategies for inequality and participation in sustainable agriculture. In Chapter III I introduce the setting and subjects of the research and explain my methodological approach. Chapter IV contains an overview of the main challenges facing small-scale sustainable farmers that were identified in the interviews. In Chapter V I introduce the three pathways into alternative agriculture, illustrating how farmers' social background and circumstances influenced their entrance into alternative farming systems. Chapter VI discusses the livelihood strategies that farmers in my study are using to cope with the challenges described in Chapter V. In Chapter VII I consider the role grassroots organizations have played in creating and advocating for supportive policies and programs that promote the entrance and persistence of alternative farmers. In Chapter VIII I conclude with a discussion of the resources that support farmers' use of sustainable agricultural practices, and the big picture significance and policy implications of the study. In the Appendix I provide the interview schedule and surveys I used in the study.

Chapter II: LITERATURE REVIEW

Sustainable or alternative agriculture has the potential to produce safe, nutritious, and affordable food in ways that protect the environment, provide a decent living for farmers, and enhance the vitality of local communities (Allen 2004; Alkon and Agyeman 2011; NSAC 2014). Because of the potential benefits of alternative agriculture, there has been growing interest in expanding participation in alternative food networks. So far the sustainable food and farm movement has been most successful in developing environmentally friendly farming techniques and creating public interest in sustainably grown food. Organic farming practices have the potential to reduce the GHG emissions and environmental impact of U.S. agriculture (Greene et al. 2009). Organic production practices provide environmental and social services, including improving water and soil quality, preserving biodiversity, increasing the soils' capacity as a carbon sink, protecting pollinators and providing nutritious food to consumers that is free of harmful pesticide residues (Gomiero, Pimental and Paoletti 2011). Continued improvements in organics have narrowed the yield gap between organic and conventional production and are increasingly recognized for their greater resilience in drought and flood conditions (Seidel and Liebhardt 2003; Letter, Seidel and Liebhardt 2003; Bot and Benites 2005; Pimentel et al. 2005; Scialabba and Müller-Lindenlauf 2010; Seufert, Ramankutty and Foley 2012).

Sustainability is a contested term, and there are competing definitions and initiatives in agriculture, ranging from 'deep organic', conservation agriculture,

'organic lite' and precision agriculture (Constance 2010; Stafford and Carter 2015; Rudel et al. 2016). 'Deep organic', regenerative, or sustainable farming is the most comprehensive set of practices, defined by its adherents as a holistic approach to farm management. This set of practices relies on a combination of integrated pest management, crop rotation, cover cropping, and use of crop-livestock systems to maintain soil fertility, enhance biological interactions and limit external inputs (Blake et al. 1997; Rodale 2014). These methods are designed to balance nutrient inputs and outputs without exhausting the natural resources of the farm, to achieve a dynamic equilibrium that operates much as a natural system would, and is more adaptive to change (Blake et al. 1997: 144). In contrast, 'organic lite' is an input substitution approach used by large-scale industrial producers. These producers typically certify a subset of their acreage to capitalize on the organic premium by utilizing USDA certified organic inputs without substantially changing their farming practices (Guthman 2004; Constance 2010). Conservation agriculture is focused on minimizing tillage and mulching with cover crops, thus reducing soil erosion and promoting carbon sequestration. There is a range of practices referred to as conservation agriculture, many of them reliant on herbicides and practiced on crop farms without the use of livestock to enhance soil fertility (Derpsch and Friedrich 2009; Rudel et al. 2016). Precision agriculture is a narrowly defined, technology-focused approach to sustainable farm management, focused on developing technologies to observe, measure and respond to crop variability with the goal of optimizing returns on inputs to preserve resources (Stafford and Carter 2015). This study is focused exclusively on farmers using regenerative or deep organic

practices, with the exception of one interview with a no-till crop farmer who was an educator, consultant and leader in no-till agricultural initiatives in southern Ohio. My focus on organics is justified because the USDA certified organic label is the only official measure of climate friendly agriculture in the U.S. (Greene et al. 2009; Constance and Choi 2010).

Despite the potential for the organic program to reduce the environmental impact of US agriculture, its impact has been limited due to the low adoption rate (Constance and Choi 2010). According to the USDA Economic Research Service: "since the late 1990s, U.S. organic production has more than doubled, but the consumer market has grown even faster. Organic food sales have more than quintupled, increasing from \$3.6 billion in 1997 to \$21.1 billion in 2008. More than two-thirds of U.S. consumers buy organic products at least occasionally, and 28 percent buy organic products weekly, according to the Organic Trade Association" (Greene et al. 2009: 5). Public demand for organic foods and the work of grassroots organizations have encouraged the creation of new programs and policies to better support beginning and experienced farmers who want to practice organic agriculture (Greene et al. 2009; Constance and Choi 2010; NSAC 2014). Despite these programs, consumer demand for organically grown foods has still outpaced supply by a large margin (Dimitri and Oberholtzer 2009; Greene 2015). According to an ERS nationwide survey, market participants reported that a supply squeeze was limiting growth in the sector. For example, 44 percent of organic handlers reported short supplies of needed ingredients or products in 2004, and 13 percent

were unable to meet market demand for at least one of their organic products that year (Greene et al. 2009).

Moreover, the social goals of making organic food affordable and ensuring a living wage for farmers have proven much more difficult to achieve (Allen 2004; Guthman 2004). Recent scholarship finds that organic foods are primarily available in a niche market of superior products for well-educated, white, middle and upper class consumers (Allen 2010; Alkon and Mares 2012). Farm-level studies have shown that alternative farmers also tend to have higher levels of education, income, access to land, and capital than other farmers (Comer et al. 1999; Pilgeram 2011). This is a problem because the few who can pay enjoy superior quality foods, while the environmental degradation, public health crisis, and labor exploitation of the industrial food system continues to intensify (Allen 2010; Allen and Guthman 2006; Alkon and Mares 2012; Alkon et al. 2013). The organic program could potentially have a greater impact on these problems if it was a viable alternative to the industrial system. Moreover, the challenge of increasing organic farmers' viability and increasing low-income consumers' access to organic foods are connected.

In his 2008 presidential address at the Agriculture, Food and Human Values Society, Constance called for research on the inequality and injustice of the food system and called it the next major issue facing the movement (Constance 2008). Scholars have turned their attention to ways of broadening participation and increasing the impact of sustainable agriculture. There are two broad perspectives in the literature that focus on different aspects of the problem. Critical agri-food scholars argue that sustainable food activist' strategies and their framing of

problems and solutions unintentionally reproduces the inequality of the industrial system (Allen and Guthman 2006; Guthman 2008; 2008b). These scholars focus on the cultural, political, and social dimensions of inequality (Guthman 2008b; 2008c). There is a need for research on the viability challenges that pose a barrier to expanding participation in sustainable agriculture. In contrast, applied research focused on improving farmers' profitability often frames the problem as a lack of individual business and marketing skills, training, or decision-making (SARE 2012). This approach doesn't give adequate attention to the structural obstacles these farmers face, and tends to ignore the social, cultural and political factors stressed in the agri-food literature.

There is a need for research that integrates and clarifies how the connections between structural and institutional barriers, social and economic privilege, and farmers' contextual circumstances fit together to shape participation in sustainable agriculture (Farmer et al. 2014). This study contributes a more holistic picture of how farmers' motives and beliefs, social location, and contextual circumstances (farm characteristics, location, and personal demographics) matter for making the transition into organic (Duram 2000; Welsh and Rivers 2010). In addition, I assess the role grassroots agri-food organizations play in this process.

This literature review is organized into four topical areas: the viability of alternative agriculture, the strategies small-scale alternative farmers are using to make their farms viable, the role of grassroots agri-food organizations, and the implications of farmers' challenges and coping strategies for inequality and participation in sustainable agriculture. I draw primarily from the interdisciplinary

field of agri-food system studies, rural sociology, social movement theory, and sociological theories of social and cultural capital.

Viability of Alternative Agriculture

Structural/Institutional Factors

Despite the rapid expansion of the organic sector, there are significant challenges facing small-scale farmers attempting to use organic practices. In the big picture, farmers' decisions to adopt organic practices are constrained by broader structural and institutional factors. Throughout the twentieth and into the twenty-first century American farmers struggled under a 'get big or get out' set of market dynamics (Hart 2003). What this means for farmers is that they've been caught in a cost-price squeeze defined by decreasing control over production and marketing processes (Ray et al. 2003; Gupill 2009). With the prices of agricultural products increasing more slowly than prices of non-farm goods, farmers had to take advantage of economies of scale whenever they could. Only by increasing their production, buying inputs in bulk and using machinery to their fullest capacity could farmers lower their per-unit costs of operation to the point where they could make a profit even in the face of adverse price trends (Conkin 2008). As farms have grown in size, so have their suppliers, the multi-national seed and farm machinery companies (Howard 2009).

Research on the political economy of agriculture indicates that changes in the economic structure of agriculture and food markets has limited the choices and decisions producers make on an individual level. Farmers experience constrained

choices because of unequal relationships with agribusiness firms that control their access to markets and play a significant role in determining farm management strategies (Stuart 2009; James, Hendrickson and Howard 2013). A trend of mergers and consolidations has significantly reduced competition in the food and agriculture markets. The markets for agricultural inputs, processing, grain handling and retail are no longer competitive, as determined by the threshold established by economists when four firms control 40% of a market (Howard 2009; James, Hendrickson and Howard 2013). Under these market conditions, producers experience strong incentives and market pressure to remain competitive, and it is extremely difficult for them to experiment with more ecologically adaptive farming systems (Stuart, Schewe and McDermott 2012; Rotz and Fraser 2015).

U.S. farm policy dictates the structure of agriculture in a myriad of ways, and for the past several decades it has given a competitive advantage to producers who cultivate a small number of energy and water intensive commodity crops. For instance, in the 2014 Farm Bill, roughly 89.8 billion was allocated for the crop insurance program and 44.4 billion to the commodity program. Both of these programs support a small number of commodity crops, particularly corn and soybeans (USDA 2015). For instance, 90 percent of crop insurance subsidies accrue to the largest 15 percent of farms, and 80 percent of subsidies support corn, soy, cotton and wheat (OEFFA 2016; Land Stewardship Project 2016). Corn is primarily used for ethanol (roughly 40 percent), animal agriculture (roughly 36 percent), and exports, with the remaining used primarily for processed food and soft drinks (Foley 2013). This set of policies and programs discourages climate friendly

practices of extended crop rotation and cover-cropping systems that rely on a greater diversity of unsubsidized crops (Ray, Ugarte and Tiller 2003; Jackson 2008; Flora 2009). The USDA's Economic Research Service found that commodity payments were directly correlated with the solvency of farm businesses that received them, and have encouraged the concentration of farmland, thus reducing the diversity of farm management systems and operators (Key and Roberts 2007). Large and very large farms now account for 30 and 47 percent of American agricultural production respectively, despite representing just 9 percent of the farms in the US (Kleiner and Green 2008; Hoppe, MacDonald and Korb 2010). The post-2005 increases in agricultural commodity prices have seemingly accelerated this dynamic. The prices of prime agricultural land increased dramatically as groups of investors from outside of agriculture acquired tracts of farmland throughout the world (Daniel 2011).

In contrast, until the 2008 Farm Act there has been a lack of institutional support for organic production in the form of technical assistance, production and marketing research, market development, and insurance coverage (Constance 2009; Constance and Choi 2010; Taus, Ogneva-Himmelberger and Rogan 2013). Historically, the U.S. Department of Agriculture has devoted less than 2% of its budget to agro-ecological and organic agriculture (Montenegro 2015). Because organic production practices are heavily knowledge and management intensive, the lack of research, education, and extension support has been a significant barrier to wider adoption (Duram 2006; Constance 2009; Constance and Choi 2010).

Compounding the challenges facing small and mid-sized alternative or organic farmers is the entrance of large-scale industrial operators who have managed through selective changes in operating procedures to be declared 'organic' producers (Guthman 2004). Guthman argues that the ability of small scale movement farmers to practice a more holistic form of organic farming, is threatened by competition from highly capitalized industrial scale producers which drive down the premium in organic prices through so-called organic lite practices (2004; 2004b). Organic lite farmers define organic narrowly as the substitution of certified organic inputs, which allows for the continued exploitation of labor, energy-intensive mechanization, and minimal investment in soil health (Guthman 2004; 2004b). Scholars describe the impact of the national organic certification standards that led to the differentiation of movement-based farms with industrial organic farms, defined as the bifurcation of sustainable agriculture. Conventionalization refers to the process of organic agriculture taking on more characteristics of mainstream industrial agriculture (Guthman 2004b; Constance, Choi and Lyke-Ho-Gland 2008; Goldberger 2011). Goldberger summarizes the characteristics associated with conventionalization as: "larger-scale production units, industrialized mono-cropping, increased mechanization, hired labor, vertical integration, production contracts, regional specialization, mass marketing, and globalization" (2011: 289). Constance and colleagues define bifurcation as: "the process by which organic agriculture adopts a dual-structure of smaller, lifestyle-oriented producers and larger, industrial-scale producers" (2008: 2). US organic certification standards are based on an acceptable materials list instead of agro-

ecological practices. This approach allows large-scale conventional farmers to make minor input changes to obtain certification without fundamentally changing their practices. This gives them a competitive advantage over small-scale farms because they have the capital support needed for the three-year transition period required for organic certification (Guthman 2004).

More immediate barriers

A number of survey-based studies have explored the considerations and decision-making of conventional farmers who decide for or against adopting organic practices. These studies have considered differences in farmers' attitudes and beliefs, level of education, organizational affiliation, farming experience, age, and other differences (Comer et al. 1999; Padel 2001; Duram 2000; Guillem et al. 2012). This research finds a number of institutional barriers: lack of financial incentives, lack of perceived benefits, potentially lower financial returns, and lack of marketing availability and support are all barriers to adoption (Fairweather 1999; Darnhofer, Schneeberger and Freyer 2005; Constance and Choi 2010; Farmer et al. 2014). They also identified concerns about the technical risks, lower yields, higher labor requirements, and compliance with governmental regulations as obstacles to conversion (Darnhofer, Schneeberger and Freyer 2005; Cranfield, Henson and Holliday 2010). Organic certification requires a three-year transition period, during which farmers assume the risks and costs of organic production before they are eligible for the higher premium. Therefore studies found a lack of physical and financial capital were obstacles (Fairweather 1999; Cranfield, Henson and Holliday

2010). Research has also identified cultural barriers to organic adoption, such as farmers' perceptions of the aesthetic qualities of organic production. Farmers who convert to organic face social pressure and isolation in rural communities where organics have often been seen as a critique of conventional farming techniques (Duram 2006; Constance and Choi 2010; Cranfield, Henson and Holliday 2010).

The 2008 Farm Bill included provisions that for the first time provide financial support for farmers to convert to organic production and support for marketing, insurance, research, and USDA's regulatory program (Greene et al. 2009). Given this support, the practical knowledge generated by wider adoption, and the significant market expansion of the past decade, the challenges faced by contemporary organic farmers may differ from those in the past and documented in the existing literature (Cranfield, Henson and Holliday 2010; Farmer et al. 2014). Future research to identify barriers to organic adoption will require greater attention to variations in farm types (intensive versus extensive), type of commodity produced, regional differences, farm size and farming experience (Constance and Choi 2010). In addition, research is needed to better understand how individual level characteristics intersect and interact with contextual factors and broader institutional factors (Taus, Ogneva-Himmelberger and Rogan 2013; Farmer et al 2014).

Beginning Farmers

Research focused on the specific concerns of beginning farmers is very limited. The National Young Farmers Coalition conducted their own survey of 1,000

farmers in their network in order to identify the primary challenges their farmers experience, and assess what policies are working and what areas could be improved. The survey finds that the number one problem for beginning farmers is lack of capital, the second is access to farmland, and the third is healthcare (Lusher Shute 2011). Small-scale alternative farmers struggle to obtain USDA agricultural loans because of their small size and diversified farming systems. The USDA's Farm Service Agency, or FSA responsible for administering agricultural loans has designed loans for much larger farms and commodity crops. Young farmers report problems with FSA officers' lack of knowledge about appropriate loans for small-scale diversified farms and requirements that disqualify alternative farmers. For example, loan recipients are required to carry crop insurance for which small-scale farms are ineligible (Lusher Shute 2011; Bradbury et al. 2012).

Farming land in proximity to urban markets is important for alternative farmers' ability to market their products directly to consumers (Inwood and Sharp 2012), but the price of farmland, particularly on the urban fringe, has increased significantly (Nickerson et al. 2012). National farmland values doubled from \$1,090 per acre to \$2,140 per acre between 2000 and 2010 (Lusher Shute 2011). Given the prohibitive cost of farmland and the prevalence of rented land in agriculture (up to 38 percent of farmland in the U.S. is rented, and this figure is higher in the Midwest), many new farmers search for long-term lease agreements. However, these arrangements are very difficult to establish, given the high rental prices, reluctance of absentee landowners to take risks with new farming practices, and difficulty

beginning and alternative farmers have in accessing credit (Carolan 2005; Lusher Shute 2011).

The result of these difficulties is that many people who want to practice sustainable farming are not able to do so (Constance and Choi 2010). Many work as interns with the intention of starting their own farms, only to change their minds when they discover how difficult it is to make a living. Current farmers consider dropping out because after working excessive hours with little to no time off, they still can't make a living (Raver 2012: 1-2). The near impossibility of making a living as a sustainable farmer is a recurring theme in activists and media accounts (Bradbury et al. 2012; Kimball 2010; Raver 2012). After 25 years of research, extension work, and sustainable farming experience, Rhonda Janke, asks:

What is wrong with sustainable agriculture? Why is everyone I know, even the sustainable agriculture and organic farmers, farming at night, and having to support their farm and their family with "the day job"? Why hasn't sustainable agriculture addressed this problem? (Janke 2008: 8).

In her study of small-scale sustainable farmers in the Pacific Northwest, Pilgeram found that they rely on personal or family assets such as inherited land or wealth and substantial off-farm income to support their farms. Most of them have a college education and middle class background. Moreover, these farmers produce small harvests, live on extremely small budgets, do not pay themselves a wage for their labor, and rely on volunteer labor from the food movement in order to stay in business (2011). If getting established in sustainable agriculture is only feasible for those who can afford to earn little income from it, the likelihood that it will transform the larger agricultural system seems low. Scholars have called for more

research on economic justice in sustainable farming (Constance 2008), but so far research is limited and mostly focused on urban or peri-urban areas (Alkon and Agyeman 2011; Pilgeram 2011).

Labor Intensity

Little attention has been paid to labor issues for small-scale sustainable farmers. The Green Revolution brought technological innovations that significantly reduced the labor required for agriculture, while simultaneously increasing yields. These accomplishments are primarily achieved with the replacement of human or draft animal labor with tractors, fossil fuels and synthetic inputs (Conkin 2008). They also shift food production from a diversity-based system to monoculture, and from small to large scale (Lobao and Meyer 2001). Organic farmers use crop rotation, application of natural fertilizers such as manure or compost, and cover cropping to enhance soil fertility and deal with weeds and pests. Grain farmers use a 5-7 year crop rotation system that includes less profitable crops to enhance soil fertility and limit weeds, rather than the conventional soy/corn rotation that relies heavily on petroleum-based fertilizers and pesticides. Organic dairy and beef farmers use rotational grazing practices instead of confinement grain-based operations. In general, they model traditional small-scale farmers around the world who produce more efficiently on less land, using human labor instead of nonrenewable resources (Netting 1993; Altieri 2008). All of this is accomplished with a great deal of hard work, and requires more intensive management. Labor requirements vary by specific type of operation and crop, but in general labor inputs

are around 15% higher (ranging from 7% to 75% higher) for organic systems compared to conventional systems (Jansen 2000; Pimental et al. 2005; Gomiero, Pimentel and Paoletti 2011; Reissig, Kohler and Rossier, 2015). In a farm economy organized on labor exploitation, economy of scale and subsidized grain, this poses tough challenges. Organic and direct sale price premiums are not high enough to compensate for these differences, so alternative agriculture is a precarious enterprise (Constance and Choi 2010; Bradbury et al. 2012).

Jansen argues that much of the literature on organic labor practices relies on too narrow a definition of labor because so much of the work sustainable farmers do is not rewarded in the marketplace (2000). Her perspective builds on the scholarship of feminist theorists Jochimsen and Knobloch, who define maintenance or care activities as those carried out without the exchange of money, such as the provision of ecological services or the maintenance of home and family. These activities are oriented to the long-term and are measured qualitatively, in contrast to the activities of the monetary economy that are typically oriented to the short-term, aimed at accumulation, and measured quantitatively. This type of work is crucial for human existence and the functioning of the economy, but because it can't be priced, it is excluded from market transactions (Jochimsen and Knobloch 1997). Alternative farmers are often not earning a living wage for the products they sell because much of the work they do building healthy soil, healthy animals, or reducing reliance on fossil fuels, has no exchange value on the market.

Alternative labor arrangements

Research on labor and alternative farming has rightly focused on the conditions of hired laborers on large and mid-sized organic farms (Shreck, Getz and Feenstra 2006; Gray 2014) and the plight of migrant laborers in general (Holmes 2013). There is also a need for research on the labor arrangements and challenges faced by small organic farms, many of who lack the capital to hire regular employees or who hire a very small number of part-time employees. In one study, anthropologist Janssen found that retaining reliable labor is the greatest challenge facing CSA farmers (2010). Most beginning farmers do most or all the work themselves or depend on interns or volunteers, who are not reliable, experienced, or trained (Pilgeram 2011). In some places, AFNs mobilize willing supporters to provide free labor in a variety of arrangements. For example, "crop mobs" rally supporters to help farmers with harvesting when they most need extra hands (Johnson 2012). In the original CSA concept, members contribute labor to the farm in exchange for reduced rates on their vegetable boxes, although member participation in these arrangements has been declining over the past two decades (Ostrom 2007; Janssen 2010). Internship programs connect people who want to start their own farms with more experienced farmers, giving them valuable learning opportunities to develop their skills before starting their own operations. Alternative food and farm organizations also run internship programs, and some farms run their own programs. In return, interns rarely commit to the farm long-term, or even for a full season, so these arrangements are not reliable or ideal for farmers.

Robert Netting's comparative ethnography explores the unique attributes of the household as the basic organizing unit of small-scale intensive farming in Africa, Asia, Europe, and the Americas (1993). His research provides a comparative perspective that helps contextualize the struggles many small-scale beginning farmers in the experience with the labor required of their farms. Alternative farmers in the US are less likely to have the traditional kinship systems and gender arrangements relied on by traditional small-farming societies in the past. Netting describes how the household unit relies on the long-term, implicit contract of family obligation, reciprocity, and traditional gender roles. That family structure is uniquely suited to maintaining small-scale farms because it distributes its products, reproduces its work force, passes down highly specific ecological knowledge and experience, and determines the transfer of property. Family labor is superior to hired labor for small-scale intensive farms because it can accommodate the diversity of tasks and knowledge required for ecologically sensitive farming. It also requires less supervision, and provides superior security and incentives while avoiding the payment of wages (Netting 1993). If one were to compute a wage rate for family workers it would be less than minimum wage, and less than the wages of hired workers. Because land and farm investments are passed down generation to generation, the household insures the long-term interests and mutual interdependence of its members (Netting 1993).

In general, Americans no longer live with extended family members in the large households that Netting showed to be crucial for meeting the labor needs of small farmers in his study (Netting 1993). The break-up of the rural social order

described by Netting took place in the U.S. beginning in the 1920s and accelerating during the 1940s and 1950s when many poor whites and African-Americans left the land (Lobao and Meyer 2001). Given that the contemporary US labor market requires high levels of education and enrichment for success, parents don't expect the same labor contributions from their children that traditional small farming societies did (Salatin 2011).

Consequences of labor issue

The labor intensity of alternative farming has a number of consequences that may limit the use of ecological practices. Jeffrey Jacob's (1997) ethnography of small-scale homesteaders identified a common problem among his informants that he terms the "time-money dilemma". The dilemma is that farming sustainably requires a lot of work, but because this work is unpaid, it leaves farmers without sufficient income to support their efforts (Jacob 1997). Farmers either lack adequate time to develop sustainable systems because they are working off-farm to support their operations, or they lack the capital to invest in them (Jacob 1997: 47). Consequently, it is much easier for wealthy people or at least those with substantial off-farm incomes to live as alternative farmers. Studies of first generation alternative farmers find that small-scale alternative farmers work very long hours for which they do not pay themselves a wage, often working off-farm jobs to support themselves and maintaining their farms after dark (Janke 2008; Pilgeram 2011). In her study of first generation farmers, Pilgeram described the challenges they experience coping with the high labor demands of small-scale sustainable farming

(2011). This situation may limit participation to those who can afford to work long hours with no pay.

In sum, existing research suggests that the expanded labor of alternative food production practices may limit the participation of beginning farmers who are engaged in sustainable farming because the added labor requirements threaten their financial viability and the sustainability of their farms. In addition, survey research provides evidence that experienced farmers see the added labor requirement as a barrier to adoption of organic practices. There is a need for qualitative research that provides a more in depth understanding of why and how the labor intensity of alternative production practices is a barrier, both for experienced and beginning farmers. This in-depth study will complement the large-scale studies by utilizing a different theoretical framework and sample design comparing two groups of organic farmers who entered farming from different circumstances. The use of narrative explanations will enrich scholars' understanding about the ways in which these viability challenges influence small-scale sustainable farmers' decision making and the strategies they devise to cope with them.

Inequality

Scholars have documented the shift towards market-based tactics in countercultural movements founded in opposition to the socially and environmentally damaging tendencies of the mainstream capitalist agricultural markets (Jaffee and Howard 2010). These movement-generated markets have been

vulnerable to tensions between their founding ideals and the constraints of the market system. Research on a variety of social movement generated markets has shown that market-based strategies may unintentionally reproduce inequality. Alternative markets are often portrayed as and assumed to be inherently just and inclusive. However, the reality is that consumers who participate in alternative markets are often well educated, affluent, and white, and they provide very limited benefits for their intended beneficiaries (Allen 2010; Alkon and Agyeman 2011; Jaffee 2010; Pilgeram 2011). For instance, Fair Trade scholars have found that the practice of labeling commodities as fairly traded tends to limit participation to farmers who have access to land in the first place, and have the capital to pay certification fees (Bacon 2010). Jaffee and Howard explore ways the success of the Fair Trade and organic food markets has invited corporate participation and cooptation. In both cases, the original focus on small holder agriculture was met with significant pressure to modify and weaken standards to increase sales, appeal to consumer expectations, and alter requirements in order to allow the entrance of large scale producers and transnational firms (2009: 394). In both Fair Trade and organics, the entrance of large agribusiness firms has encouraged a set of processes that make it harder for smallholders to participate, and lowered price premiums (394-396).

An emerging research agenda within food systems scholarship deals with the inequality of participation in the sustainable food and farm movement (Constance 2008). For instance, Allen argues that the industrialization of agriculture reduced the class divide in food access, while alternative food networks may be

unintentionally recreating a two-tiered food system differentiated by class (Allen 1999; 2008; 2010). Most studies have been focused on consumers' access to these markets, but researchers have documented how inequality limits farmers' participation as well (Alkon and Agyeman 2011; Kleiner and Green 2008; Pilgeram 2011). These scholars have critiqued the political strategy and discourses used by the agri-food movement. Guthman and Allen argue that the entrenchment of neoliberal policies has limited the scope and strategy of food politics by shaping activists' perceptions of what is possible and how it can be achieved. They argue that agri-food politics and scholarship have emphasized "consumer choice, localism, entrepreneurialism, and self-improvement": strategies that end up excluding low income people (Allen and Guthman 2006: 1; Guthman 2008b: 1171-1180). Others point to the limitations of the movement's focus on self-reliance, and call for the food justice movement to challenge neoliberalism more directly and work for political change rather than just creating alternative markets for sustainably grown products (Alkon and Mares 2012; Alkon and Agyeman 2011). For example, the focus on alternative markets directs attention away from the occupational hazards affecting workers across the food chain, as well as the environmental and health impacts to the public in general (Allen 1999; Harrison 2008; Myers and Sbicca 2016). The movement's focus on localism risks reproducing geographical inequality (Allen, 2010). For example, farm-to-school programs are often in affluent school districts that have bigger budgets and can draw on private funding sources not available in low-income school districts (Allen and Guthman 2006).

Alkon and Agyeman found that low-income and nonwhite consumers are more likely to eat organic food grown by minority farmers (Alkon and Agyeman 2011). They present studies which deal with the social and economic factors that prevent low-income people and people of color from growing healthy, affordable, culturally appropriate foods (2011: 13). However, the historic racism of USDA lending and extension practices has led to the dispossession of black farmers from their land (Alkon and Agyeman 2011). Guthman (2008b) shows how the food movement's culture and discourse of whiteness has alienated low-income communities of color. She points to the insensitivity of food justice discourses to the historical racism in the food system as part of the reason food movement projects often lack resonance in the communities they target. These projects aim to bring nutritious food or foster community gardens for the residents of so-called food deserts. Guthman describes how these efforts often reflect white activists' desires to 'bring good food to others', rather than the interests of residents, who might prefer access to conventional grocery stores where they can shop with convenience and anonymity (Guthman 2008).

In their research on small-scale, minority, and limited resource producers in the Southern United States, Kleiner and Green document the obstacles to these producers' ability to participate in sustainable agriculture markets and make a living off their farms. In general, limited resource producers face similar constraints to participation in sustainable agriculture as those faced by small-scale producers around the world (2008). Key challenges are access to financial capital, marketing options, and access to land, labor and equipment. Small producers in low-income

areas struggle to secure a decent price, arrange transportation, and locate customers who recognize the importance of local agriculture (Kleiner and Green 2008). Some of the challenges these producers face are inherent to farming in general, small-scale farming, or the use of sustainable practices. Others are the result of political and economic inequality (Kleiner and Green 2008; Alkon and Agyeman 2011).

In contrast, Pilgeram's ethnography of a large farmers market in the Pacific Northwest included interviews with relatively affluent, white sustainable farmers who sold in the market. She describes how movement farmers benefit from lucrative or flexible off-farm jobs due to their above average education, and that their privileged access to land is critical to their ability to produce food for sustainable markets. The farmers she interviewed told her that their peers with the most resources were able to achieve higher levels of sustainability, such as producing their own hay for the winter (2011: 383). One new agrarian described how the farmers she knew whose practices were most sustainable were:

"Independently wealthy or they just live extremely simply, which is interesting to me, that you basically have to be rich to farm, really. Some of these farmers have well-paying off-farm jobs that allowed them to purchase the land to farm."

This farmer was relying on her husband's well-paying consulting job to support their farm (383). Consequently, she argues that sustainable agriculture is not socially sustainable (2011: 389). Likewise, in his research on the back to the land movement, Jacob found that family wealth or a lucrative off-farm job was a significant factor in farming households' ability to develop more sustainable

systems on their properties, such as a green energy or rainwater collection system (1997).

The next step for this line of research is a comprehensive picture of the obstacles to making sustainable agriculture more inclusive so that it can be a viable option for food justice programs. For instance, scholars have found that even organizations that represent and reflect low-income communities of color have struggled to compete with the low cost of industrially produced food, and end up serving more privileged customers despite their cultural resonance (Doherty 2006; Johnston 2008; Alkon and Mares 2012). Notable food justice projects like FoodShare of Toronto, or GrowingPower of Milwaukee which explicitly aim to serve low income people of color and are highly successful in other ways, face great difficulty remaining viable with price competition from industrial producers. Despite their goals, they end up primarily serving middle-income customers from outside their intended communities, or deciding not to buy exclusively from local or minority farmers (Johnston and Baker 2005; Johnston 2008; Allen 2010; Alkon et al. 2013).

Agri-food movement

Many alternative agri-food organizations seek legislative change but historically the central emphasis in the alternative agri-food movement has been on achieving change through the marketplace (Hess 2004; 2005; Raynolds, Murray and Wilkinson 2007; Allen 2008; Jaffee 2010). Market-based social movements may be connected with broader social movements organized around oppositional politics, but they are unique because of their alliances with for-profit firms that produce

alternative technologies and products (Hess 2004; 2005). Market-based movements, ranging from "buy local" to green energy, have primarily benefited the privileged people who lead them, even though their stated goals often include social justice and inclusion (Constance 2008; Harrison 2008; Johnston 2008; Allen 2010; Mares and Alkon 2011). Despite this general finding, others have cautioned against a priori assumptions about their performance, and encouraged careful exploration of their potential and impact on a case-by-case basis (Hess, 2009). Social movements are dynamic entities with the potential to change their strategies in response to criticisms and changing conditions or contingencies (Snow, Soule and Kriesi 2004). Moreover, when they're successful in influencing policy, the context they work in shifts, as their demands are incorporated into mainstream politics (Staggenborg 1988). Is it possible that movements that create alternative institutions, products, or markets make the participation of less advantaged groups or individuals increasingly possible over the long term?

To what extent do such grassroots initiatives make it possible for greenhorns to acquire land and participate in sustainable agriculture? Could the presence of relatively politically powerful groups in the small farm sector make it a more viable option for less advantaged people by changing policies and creating high value markets and supportive programs? For instance, alternative food activists have responded to concerns about inequality by creating land-link programs which encourage absentee landowners to rent to sustainable farmers at affordable rates, connecting small farmers with low income consumers in programs that are funded by affluent members who can pay more, and pressing the USDA to offer a microloan

program and cost-sharing initiatives to support beginning and disadvantaged farmers (Beginning Farmers 2014; Tscharner Fleming 2013; USDA 2013).

A central theme in social movement literature is the importance of resources in facilitating collective action. Social movements in advanced industrial countries are most often organized by relatively affluent groups because of their privileged access to resources (Dixon and Roscigno 2003; Edwards and McCarthy 2004; McAdam and Snow 1997). To tease out the extent to which farmers' access to resources matters for their ability to enter and persist in sustainable farming, I draw upon Bourdieu's (1984) concepts of economic, social, and cultural capital. Social movement scholars have used the concept of social capital to understand the significance of membership in social networks with politically engaged individuals, which encourages others to become politically informed, follow political events, and take action themselves, in part by the knowledge and skills, or 'activist capital' they acquire (Diani and McAdam 2003; Santoro, Velez, Keogh 2012; Van Dyke and Dixon 2013). Cultural capital is a person's cultural literacy in the class context in which they were socialized. Social movement research documents the role of shared culture in facilitating collective action by allowing activists to develop shared understanding of social problems and plans for action (Polletta and Jasper 2001; Blee 2012). Economist and philosopher Amartya Sen offers a conception of human capital as enhancing people's capacity to question and challenge the rules of the game, and ultimately, to be their own agents of change (1997). Bebbington furthers Sen's ideas to emphasize how it empowers people to access and influence governments and markets to improve their lives (1999).

I use these ideas to understand how greenhorns might leverage their economic capital to obtain land, their social networks to create or learn of new markets and innovative business models, and their cultural capital to be successful in direct-marketing their products by connecting with their affluent customers. They leverage their college educations to take advantage of government programs, challenge the dominant practices of the agri-food system, and create new rules for growing and distributing food. Social movement scholars have observed that while movements often reflect their constituents' privileged access to resources, their activities can also result in the creation of new resources (Edwards and McCarthy, 2004). The extent to which these new resources might benefit a wider constituency is relatively unexplored. Sharp and colleagues examined local food development programs and organizations across 500 counties of the US, finding that a strong presence of such organizations and initiatives was correlated with a greater presence of farms, agricultural businesses, and greater optimism about the future of local agriculture among key informants (Sharp, Jackson-Smith and Smith 2011).

This study explores the extent to which alternative agri-food organizations in Ohio are able to promote the participation of people who otherwise would lack access to farmland and operating support, or who would otherwise be pushed out by the processes described above. The role of social movement organizations in fostering a commitment and an enthusiasm for small-scale, alternative agriculture needs to be separated out from the influence that neighboring landowners might have on prospective farmers. New organic farmers in the United States cluster in places that already contain working organic farms (Taus, Ogneza-Himmelberger and

Rogan 2013). Beginning farmers learn by doing, with the help of nearby examples. I tease out these separate lines of influence in the interviews by asking respondents to tell me how their involvement with sustainable agriculture began and from whom they learned the most about organic agriculture. The importance of grassroots organizations for facilitating the participation of beginning and experienced farmers in sustainable agriculture is still largely unexplored. For instance, Pilgeram argues that small farmers survive by subsidizing their operations with off-farm income, exploiting their labor, or relying on poorly paid or volunteer interns. Yet why are these interns willing to volunteer their time, and what generates the steady stream of willing workers? What other ways might grassroots organizations that grew out of the food movement subsidize sustainable farming? How have their strategies and programs changed over time?

To bring together these separate strands of research, I provide a comparison of the experiences of three different groups of alternative farmers, to provide a better understanding of whether and how the market-based strategy of sustainable agriculture initiatives may unintentionally reproduce inequality. Instead of the traditional approach of comparing organic farmers to conventional farmers, this sample design allows an in depth examination of the entrance barriers to sustainable agriculture among those who are ideologically committed.

Chapter III: Data and Methods

Ohio is an ideal setting for this research because the state has a vibrant small-scale sustainable farm sector, and an active community of alternative agri-food organizations¹. Many of the existing studies of alternative food networks have been conducted on the East coast, the Pacific Northwest, California, and large urban areas or college towns where alternative food networks are larger and more established than they are in rural parts of Midwestern states such as Ohio (Allen 2004; Alkon and Mares 2012; Guthman 2004; Pilgeram 2011). Locating the study in a rural part of southern Ohio provided a useful comparison case to these areas with strong local food systems, because it includes a more diverse range of agriculture and alternative food networks. Qualitative case studies are valuable for the range of experiences they capture, and interviewing farmers from across this geographical spectrum was very valuable in helping me understand the type of social infrastructure that supports alternative farmers. The area I conducted my study included farms on the urban fringe of three cities (Cincinnati, Dayton, and Columbus), three small cities (Wilmington, Yellow Springs and Chillicothe), and the small towns of Hillsboro and Greenfield. The farmers markets and other types of alternative food networks in southern Ohio represent a wide range in terms of how long they have been established, ranging from 2 years to a historic market in Cincinnati that was established in the 1852. Some of these markets serve a large,

¹ USDA defines small farms as those with gross cash farm income less than \$250,000 (USDA 2012; 2012b).

affluent urban population, while others are quite small (less than 10 vendors) and undeveloped, serving a rural, less educated and relatively low-income population.

Locating my study in rural southern Ohio also allowed me to include livestock, grain and dairy farms, rather than just the very small-scale nontraditional farms that tend to cluster around urban markets. The agricultural census data from 2000 and 2010 shows that the number of farms in Ohio remained fairly constant and the average farm size decreased slightly from 187 acres to 184 acres on average (U.S. Census 2012). The registry of sustainable farms in Ohio maintained by the leading agri-food organization OEFFA lists over 400 farms that range from small urban rooftop and community gardens to small-scale diversified farms of 36.5 acres on average, with a small number of large organic grain farms ranging between 200-1250 acres (OEFFA 2013b). Small-scale sustainable farms in Ohio produce an array of specialty crops including vegetables, fruits, herbs, cut flowers and hops, as well as diverse livestock, organic grains (200-600 acres), and organic dairy (25-70 cows).

Ohio has a strong network of alternative food and farm organizations and Food Policy Councils that provide different types of support to sustainable farmers. Ohio's lead sustainable agriculture organization, the Ohio Ecological Food and Farm Association, or OEFFA, brings together farmers, gardeners, business owners, chefs, students, and consumers to "recreate a regionally-scaled farming, processing, and distribution system that moves food from farm to local fork" (OEFFA 2013). OEFFA started as a very small group of farmers volunteering their time in 1979. Now the nonprofit employs 21 staff members and offers a wide range of programs to advocate on behalf of and provide practical support for alternative farmers. In

addition, while they initially focused exclusively on developing alternative production practices, they recently added a staff position dedicated to policy change, and plan to increase their advocacy efforts in the future. Three other organizations of importance to the farmers in my study are the Innovative Farmers of Ohio, IFO, WomenFarm, a consulting business which promotes women farmers in Ohio, and Countryside Conservancy, which offers a wide range of programs to support beginning farmers and preserve farmland.

Sample Selection

During the research and writing of this study I worked as a caretaker on a small organic hobby farm in Southern Ohio, approximately 60 miles from the cities of Cincinnati, Columbus, and Dayton. The farm is supported by an educational foundation and coordinates outdoor education programs for kids and community events. My position working on this farm provided some real world experience and was helpful in guiding the design of this study. I did two years of preliminary, intermittent fieldwork in Ohio, including 25 farm tours organized by OEFFA and a variety of other events focused on sustainable farming that took place between 2011 and 2013, such as events celebrating women farmers. The farm tours were useful for outlining the range of innovative approaches alternative farmers use to make a living and support their farms. I also attended two annual Stinner Summit events organized by the Ohio State University Agroecosystems Management program. The Stinner Summit brings together a full spectrum of stakeholders- farmers, extension agents, researchers, food policy council members and nonprofit

leaders, to propose and provide seed grants for new projects that advance sustainable agriculture. Participating in five of OEFFA's annual conferences during my years in Ohio gave me valuable perspective on the concerns and struggles of alternative farmers and the infrastructure of supportive organizations engaged in sustainable and local food system development. My participation and discussions with farmers, interns, nonprofit professionals, and researchers at these events informed the research questions and design of this study.

The farmers who participated in the study were selected based on their status as practicing a form of 'deep organic' farming on a relatively small scale. The criteria I used to select farmers to interview was that they were actively operating an organically managed farm (certified or not) and selling the products via farmers markets, CSA, or larger distribution chains such as the Organic Valley farmers' cooperative in the case of the dairy farmers. I use participation in these markets as a proxy for assessing environmental sustainability since there is currently no consensus on what that means (Pilgeram 2013). Certification is not a reliable indicator of farming practices in the case of small-scale farmers who maintain direct marketing relationships with their customers. I interviewed farmers from a range of social backgrounds and representing a broad spectrum in terms of their years of farming experience, socioeconomic status, educational attainment, and contextual circumstances. The farmers in the study also varied in their proximity to urban markets and their level of engagement with alternative food and farm organizations.

I recruited participants for the study in two ways: snowball sampling via a local contact, and networking and requesting interviews at OEFFA farm tours,

events, and area farmers' markets. Many of the initial contacts I used to initiate the snowball sample came from a middle-aged couple that have been members of OEFFA and closely connected with organic farmers in southern Ohio for over a decade. They operate a very small homestead farm, growing vegetables and herbs and raising chickens and goats. In the past, they have operated a small CSA and sold their products at a farmers' market in the nearby small city of Chillicothe, Ohio. Given their years of involvement in the local sustainable agriculture community, they provided me with a long list of contacts that I used to request interviews. One of the farmers this couple suggested I contact was a grain and dairy farmer who was connected with the dairy farmers group in southern Ohio. This couple gave me their list of contacts of all the other organic grain and dairy farmers in the area that they could think of. I also participated in an OEFFA tour of a local dairy, and spent a few hours socializing with the dairy farmers group who met after the tour. I attended 25 of OEFFA's farm tours in southern Ohio, and recruited participants who I met on the tours, whether they were featured on the tour or participants. The other way I recruited participants was meeting farmers at all the area farmers' markets, and requested interviews from them directly if they fit my criteria. Because the number of farmers who use organic practices and sell food via alternative food networks is relatively small in southern Ohio, my sample is very close to the complete population of alternative farmers in the region. At every interview I conducted I would request contact information for other farmers that would be appropriate to interview. At the conclusion of the interview phase the vast majority of names they suggested were people who I had already interviewed. The individuals I had not

already contacted were people who did not fit my criteria in some way, lived too far away, or who had not responded to a previous phone call requesting an interview. The preliminary fieldwork provided me with social contacts that resulted in a very high response rate for the study (I was unable to contact or confirm interviews with just four individuals).

My original sample was developed from the categories used in the alternative food system literature of beginning and experienced farmers. However, as I conducted the interviews, I identified a third category of farmers that represented a blurred category in between beginning and experienced farmers. The final sample includes farmers grouped into the following three categories, based on their social background and relationship to farming: Greenhorns, Legacy Farmers, and Returning Farmers. I define each group in turn.

Study Participants

Greenhorns

Greenhorns are distinctive because many of them are motivated to become farmers by the social and environmental goals of the sustainable food movement. Their approach to farming is not just as a livelihood, but as a contribution to changing the agrifood system. Popular accounts of sustainable agriculture are full of determination and passion for social change. In the introduction to their book, the greenhorn collective writes:

"There is still a thriving, driving need in the hearts and minds of a new generation of farmers to be makers of food, tenders of land, and protagonists of place. Bottom line: We want to and love to farm. We love to farm with such

fervor that we are willing to jump high hurdles and work long hours to build a solid business around our love" (Bradbury et al. 2012: 9).

This altruism is important for understanding why greenhorns would sacrifice so much in order to live and work as sustainable farmers. Greenhorns are unique because they do not come from farming families, and lack knowledge and experience in agriculture. Instead, they come from an eclectic mix of social backgrounds and professional experiences. Some have economic capital- financial assets such as land or wealth that can be invested in their farms or provide an additional source of revenue. While not all greenhorns have financial assets, most of them have a college education and middle class background (Pilgeram 2011). All of these attributes make them quite remarkable historically. These sources include a series of interviews with beginning farmers from across the country conducted by activist and founding member of The Greenhorns, Severine von Tscharner Flemming on *Greenhorns Radio* (Roman-Alcalá 2013; Tscharner Flemming 2013). I also drew from greenhorns' biographical essays about their farming experiences in the collection edited by the Greenhorns called *Greenhorns: The Next Generation of American Farmers; 50 Dispatches from the New Farmers' Movement* (Bradbury et al. 2012). The research report produced by the National Young Farmers Coalition was a source of information about the challenges facing beginning farmers (Lusher Shute 2011). These sources allowed me to triangulate the information I gathered from farmers in southern Ohio with greenhorns' experiences in other parts of the country. Based on these sources and the demographic data I collected about the Greenhorns via the surveys, they are broadly representative of greenhorns in other

parts of the country. Specifically, their educational attainment is higher than average, they are relatively affluent, and they are mostly white. In the table below, I present the educational attainment for each category of farmer (owner-operators only) and the educational attainment of their parents. Dual responses for household surveys are included and separated with a slash.

Table 1: Farmers and their Parents' Education

	Highest Degree	Mothers' education	Fathers' education
Greenhorns	HS/Associates	HS	8th grade/HS
	Associates/Bachelors	HS/Bachelors	some college/PhD
	Masters	6th grade	8th grade
	Masters/PhD	Associates	bachelors
	Bachelors	no response	no response
	HS	Nursing school	no response
	Bachelors/Masters	JD/Masters	bachelors /Bachelors
	Associates	some college	HS
	Masters	BA	BA
	Bachelors	some college	HS
Returning	HS/no response	HS	HS
	Bachelors	Bachelors	Bachelors
	Bachelors	Masters	Masters
	Masters	MA	MD
	HS	Nursing school	MD
	Bachelors/Masters	HS/Bachelors	HS/HS
	HS	HS	HS
	Masters/professional degree	MS/Bachelors	BS/law degree
	Bachelors/HS	some college/HS drop out	BA/HS
	Bachelors/HS	bachelors /Masters	bachelors /MD
	Bachelors	HS	GED
	Bachelors	HS	HS
	Associates	Associates	HS
Legacy	Masters/HS	HS	HS
	No response	no response	no response
	Masters degree	HS	HS
	Bachelors	Associates	HS
	HS/Masters	HS	HS/Masters
	HS	college	college
	HS	college	some college

Legacy Farmers

Legacy farmers are experienced farmers who adopt more sustainable, usually certified organic farming practices. They come from families who have been farming for generations, and therefore are primarily located in rural areas. Experienced farmers are a very important group from a policy perspective, as they are managing the country's farmland. In addition, their access to farmland, farming experience and knowledge of agricultural systems makes them potentially more financially viable organic producers. In general, studies have shown that conventional farmers who adopt organic practices are from a higher socioeconomic bracket and are more educated (Padel 2001; Cranfield Henson and Holliday 2010). Some studies have found that farmers who adopt organic practices tend to be younger (Comer et al. 1999; Cranfield, Henson and Holliday 2010), while others have not found a difference in farming experience (Comer et al. 1999). Farmers who adopt organic practices also tend to be more aware of and concerned than their peers with the ecological and public health impacts of agro-chemicals and industrial agriculture (Hall and Mogyorody 2007; Darnhofer, Schneeberger and Freyer 2005; Cranfield, Henson and Holliday 2010). Interestingly, one study found that farmers who adopted more environmentally sustainable practices saw themselves as more capable of taking action to protect the environment and they showed more concern with their image as farmers (Michel-Guillou and Moser 2006).

The interviews I conducted with legacy farmers in Ohio suggest that they are broadly representative of some but not all of these broad characteristics. Most of the legacy farmers I interviewed have a high school education, but many of their

wives had a Bachelors or Masters degree, and two out of seven had a Bachelors or Masters. While some studies of experienced farmers suggest they are more likely to come from a higher socioeconomic status, the legacy farmers I interviewed came from farming families who were struggling financially, and whose parents had just a high school level education. Some research found that experienced farmers who adopt organic practices are more motivated by environmental concerns than their counterparts. The farmers I interviewed did not describe strong environmental concerns and none of them were motivated by environmental concerns when they decided to go organic. The legacy farmers I interviewed are concentrated in organic grains and organic dairy, selling their product to the Organic Valley Coop, Horizon Organic, or direct selling grain and hay to the organic dairies or a variety of wholesale grain buyers in the region.

Returning Farmers

Studies tend to follow one of two general categories of entrants into organic farming: first-generation farmers who have significant non-farm resources to help them get established, or conventional farmers with family land who adopt organic practices. Because of a very active and visible movement led by organizations such as The Greenhorns and National Young Farmers Coalition, and news media portrayals, the common perception of first-time farmers or "greenhorns" is young, urban or suburbanites from diverse, sometimes privileged social backgrounds with no farming experience (Duffy 2010; Raftery 2011; Tscharnier Flemming 2013). The binary of experienced and first-time farmers is useful and meaningfully informed

the design of this study (Inwood, Clark and Bean 2013). However, as I began to conduct interviews I was introduced to people who did not fit in either category. One of the benefits of qualitative research is that it pushes researchers to reevaluate existing categories in the literature. The research process encouraged me to question the characterization of alternative farmers as either first-generation or experienced farmers. I developed a third category of new entrants into alternative agriculture who I call returning farmers.

Returning farmers have a more complex relationship to farming. They come from farming families but did not enter farming via a linear path as illustrated with the agricultural ladder literature. Instead, they may have grown up on a farm but left to go to college or take non-farm jobs. Some of them grew up visiting and working on their grandparents' farms, or the farms of other family members. Some returning farmers grew up a generation removed from the land but may have visited a family farm that was leased out for a generation or more. In many cases returning farmers have assumed stewardship of family land that had been leased outside the family for a generation or more, or perhaps taken over their grandparents' farm. In some cases returning farmers have not inherited family land, and instead purchased their own land with the capital accrued from their nonfarm career when they decide to re-enter or take up farming. This group has some unique advantages as they have an outside perspective on farming, often inspired by the alternative or sustainable farming initiatives and often high level of education. At the same time, they have a closer familiarity and understanding of agriculture,

and are more likely to inherit farmland or have a competitive advantage in acquiring farmland and establishing a farm.

It's possible that this category of returning farmers is particularly salient in the rural Midwest in a state such as southern Ohio, where people from farming families are more likely to live than the large urban areas or college towns on the east or west coast, where many studies of alternative agriculture are conducted. I provide a breakdown of the complete sample of farmers in the table below.

Table 2: Complete Sample of Interviews with Farmers

Farmers	#
Greenhorns	10
Returning Farmers	13
Legacy Farmers	7
	30
Non-owner operators	5
	35

In general, most farmers I interviewed owned at least some of their land, but many of them also lease some land or have some form of support or inherit farmland from family members. Not surprisingly, all the greenhorns surveyed have purchased their land outright, as opposed to leasing it, as is common for legacy farmers. This 100% rate of land ownership reflects the relative privilege of Greenhorns. In the table below, I provide a summary of the type of land access arrangements held by the farmers I surveyed.

Table 3: Land Ownership

	Land ownership
Greenhorns	owned/permission to farm without payment
	owned
	owned
	owned
	owned
	owned
	owned or being bought by someone in family /other arrangement: farmland owned by parents. Farm business incorporated w split ownership between my parents my wife and me
	owned
	owned
	owned
Returning	owned or being bought by you or spouse/own 4 acres, rent 6
	owned/leased
	owned
	owned by someone in family/permission to farm w/o payment for short-run to young beginning farmers
	owned
	owned
	owned
	owned
	owned/some combination of rent/own (mostly inherited/owned)
	owned
	owned or being bought by you or spouse
	some combination of above (1/3 owner, other 2/3s owned by 2 great aunts)
	owned or being bought by someone in family

Legacy	owned
	owned
	owned (leased or rented til 2013)
	some combination owned and rent
	some combination of rent/own
	owned
	owned

Methods

I obtained approval from the Rutgers Institutional Review Board (Protocol #13-768M) for this study. All the names used in this dissertation are pseudonyms, and identifying characteristics of interviewees are disguised to ensure anonymity. The research design for questions #1 (What strategies do small-scale sustainable farmers use to make their farms viable, given the many obstacles they face?) and #2 (How does farmers' socioeconomic status influence their ability to use sustainable farming practices?) are based on a qualitative comparative case study. Comparative case studies are particularly well suited to the goal of advancing theory because of their emphasis on systematically understanding patterns of similarity and diversity among a small and fixed number of cases (Ragin 1994). The comparison includes three groups: greenhorn farmers, returning farmers and legacy farmers who adopted organic practices. This comparison case offers a new perspective for foods systems research, which has a tradition of comparing organic farmers to conventional farmers (Darnhofer, Schneeberger and Freyer 2005). The benefit of comparing three types of farmers who are both committed to organics, but differ in the circumstances of how they entered organic farming, enables a better understanding of how biography and social resources shape people's access to these

farming methods and increases the validity of the study. I also conducted 5 key informant interviews with "non-owner operators". These non-owner operators are individuals who want to establish their own organic farms, but to date have not been able to do so. I started the interviews by asking farmers to tell me the story of their farms. I also asked them about how they gained access to farmland, started their farms, and the sources of support they rely on to keep it going. The purpose of these interviews was to provide a deeper understanding of their livelihood strategies and how these individuals' social location influences their participation in sustainable agriculture. All interviews were conducted with a conversational style, and lasted 60-180 minutes. In the interviews, I did not restrict the conversation to the questions I had prepared, or adhere to the order of the questions in the interview schedule. If someone raised a topic in their response to a question that related to one of my interview questions, I would ask about it at that time, rather than waiting. Allowing the conversation to flow in this way allowed me to learn more from the interviews than if I restricted them to a narrow format of question and answer. I did make sure to ask all the questions included in the interview schedule (see the appendix) to ensure consistency between the interviews. Following the interviews, the farmers completed a brief survey that asked about their educational and employment background, and any sources of support available to them. The purpose of the survey was to explore the connection between socioeconomic status and the social and economic capital necessary to establish and maintain alternative farms. This survey data is summarized in the tables throughout the dissertation as relevant. The survey is included in the appendix.

The key informant interviews with non-owner operators provided an additional perspective on the ways that socioeconomic status matters for entrance and persistence in alternative agriculture. The non-owner operators I interviewed were people who have been working for at least two years on someone else's organic farm with the intention of getting established on their own, or people who have their own small homestead but lack the land and resources to make an adequate living as farmers in order to leave their full time non-farm jobs. In these interviews, I asked about their engagement with sustainable agriculture, their aspirations, and the reasons they are currently unable to obtain their dream of managing their own farm. We discussed the challenges they have faced, and their expectations for the future. I also surveyed this group to assess how their socioeconomic status was different from the owner-operators. The survey included the same questions that I asked the owner-operators, except for the questions that were specific to owning and operating a farm. This survey is included in the appendix.

The research to address question #3 (To what extent do alternative food markets, programs, and organizations support the entrance and persistence of beginning and experienced small-scale farmers?) includes key informant interviews with founding members of OEFFA, and a review of their programs and campaigns. The participant observation I have done since 2010 will be used to inform the content analysis of newsletters, policy updates, farm tours, conferences, and workshops from OEFFA and other organizations in Ohio described above, and a bimonthly email digest from the OSU School of Environment and Natural Resources

called "What's Happening In and Around the State of Ohio Related to Local Foods and Farming." This background information provided a useful map of the movement support systems available to sustainable farmers in Ohio. In addition, a yearlong internship with the new policy program coordinator of OEFFA helped me better understand the work they do to advocate for policies and programs that support alternative and organic farmers.

Key informant interviews with people who work directly with alternative farmers in some way provided insights into the design of these programs and gave me a broader perspective on the difference the movement makes. The focus of the interview questions was the ways in which food movement organizations promote participation and offset some of the entrance barriers to sustainable farming. For example, OEFFA offers technical assistance, grant-writing support, farm tours, alternative financing, farm apprenticeships, organic certification and support with the organic cost-share program. Indirectly, they advocate for supportive policies, programs and research funding on behalf of farmers, and keep their members updated on complying with policy changes. In the interviews with farmers I also asked about their involvement with the organizations, the forms of support they received, and their perceived effectiveness. The interviews clarify the ways nonprofit organizations promote participation and offset some of the entrance barriers to sustainable farming. In the table below I provide a summary of the key informant interviews.

Table 4: Key Informant Interview Sample

Key Informant Interviews	
Organic Valley farmer support program specialist	phone interview
retired NRCS pasture expert, consultant for grass-based dairies and livestock	phone interview
NRCS high tunnel program expert	informal interview
NRCS high tunnel program expert	informal interview
Local Ohio beekeepers association	in person interview
USDA Deputy Secretary of Agriculture	informal interview
National Young Farmers Coalition co- founder, farmer, activist	informal interview
Snowville Creamery owner	in person interview
OEFFA founding member*	phone interview
OEFFA founding member*	phone interview
OEFFA founding member*	in person interview
OEFFA founding member*	phone interview
OEFFA founding member*	in person interview
*I interviewed these farmers for an additional hour following the standard interview	

I focused the key informant interviews on professionals who work directly with small-scale alternative farmers in various ways. The phone interview with the Organic Valley farmer support program specialist was conducted because I interview organic dairy farmers and wanted to get a sense of the specific support available to them, given that establishing a pasture-based organic dairy requires more capital than specialty crop production. The phone interview gave me an overview of the types of support Organic Valley provides to their members, particularly beginning farmers as they get started. I did a phone interview with an NRCS pasture-management consultant because I had interviewed pasture-based dairy and livestock farmers. In the interview I learned more about the types of

support NRCS provides to small-scale alternative farmers and the types of funding that has increased over the past decade for alternative farming practices.

The informal interviews with NRCS professionals were lengthy discussions about the Environmental Quality Incentives Program, or EQUIP. The EQUIP high tunnel grant gives small-scale alternative farmers the opportunity to apply for a cost-share funding program that funds up to half the cost of purchasing and installing a high tunnel on their farm. High tunnels have become popular among small-scale alternative producers to grow a variety of greens, root vegetables, berry bushes, tomatoes and other specialty crops. For instance, farms I visited used high tunnels to grow very delicate species of cut flowers to reduce wind and pest damage, or to grow tomatoes on an elaborate trellis system that delayed the onset of late season blight. High tunnels allow alternative farmers to extend the growing season much later into the fall and often throughout most of the winter if they're growing greens or root crops in the Midwest or Mid-Atlantic States. High tunnels provide a more temperate microclimate and significantly reduce pest pressures. The grant application process is streamlined and straightforward, and the grant has been well utilized in Ohio. When I asked the specialty crop farmers about the types of support that were useful to them, many mentioned the EQUIP high tunnel grant and had been using a high tunnel to extend their growing season or reduce the pest pressures on their crops. I was able to speak with NRCS representatives at length simply by approaching them at the NRCS table in the exhibit hall at the annual OEFFA conferences, which I did at the 2014, 2015, and 2016 conferences. Given

that I was able to ask them a series of questions and discuss the services they provide at length, it was not necessary to request an in person interview.

I did an in person interview with a longtime member of the beekeepers association because this organization holds regular meetings that serve as a networking gathering place for small-scale producers who market their products via alternative food networks in southern Ohio. This individual was recommended to me as someone who has participated in the local farmers' market for many years and would have a perspective on the effectiveness of these initiatives. The informal interview with USDA Deputy Secretary of Agriculture Kathleen Merrigan took place when I picked her up from the airport to bring her to the OEFFA conference where she was a keynote speaker in 2014. Merrigan is known for creating the "Know Your Farmer Know Your Food" initiative at the USDA. I had the opportunity to tell her about my project and solicit advice about the research from her perspective developing better support for alternative food networks in the department of agriculture.

At the 2016 OEFFA conference Lindsey Lusher Shute, one of the founders of the National Young Farmers Coalition was a keynote speaker and I spoke with her about my research at the NYFC table in the exhibit hall. She agreed that the trajectory of returning farmers I identified is representative of one pathway into farming on the national level and reflective of some of the young farmers she has worked with in her survey of beginning farmers and advocacy work with the NYFC. In fact, Lusher Shute is representative of a returning farmer, as she grew up visiting a farm that belonged to her grandparents in Ohio, despite growing up in Columbus,

OH. She was inspired to start a farm of her own in the Hudson River Valley after creating an urban community garden in Brooklyn with her husband Ben, who is a first generation farmer. The interview with one of the co-owners of Snowville Creamery was conducted to give me a business perspective on the challenges facing business owners who rely on alternative producers to provide an artisan product (grass-fed dairy products). Snowville Creamery is highly regarded in southern Ohio as a leader in alternative dairy production.

The interviews with founding members of the Ohio Ecological Food & Farm Association, OEFFA, were conducted to get the perspective of farmers and people very involved with the organization from the beginning. In these cases I did the standard interview, and then began an additional segment (with advanced permission) to discuss their involvement and experiences with the early days of the organization and the role it plays from a farmer/member perspective. I did not conduct formal interviews with OEFFA staff because I worked in the organization as a part-time intern for a year, and thus had the opportunity to ask questions as appropriate throughout my time there.

Chapter IV: Barriers to Entrance and Persistence in Alternative Agriculture

In an opinion piece that generated some intense reactions and discussion:

"Don't Let Your Children Grow Up to Be Farmers" published in the New York Times, a young farmer engaged in local food networks wrote:

The dirty secret of the food movement is that the much-celebrated small-scale farmer isn't making a living. After the tools are put away, we head out to second and third jobs to keep our farms afloat. [Ninety-one percent](#) of all farm households rely on multiple sources of income. Health care, paying for our kids' college, preparing for retirement? Not happening. With the overwhelming majority of American farmers operating at a loss — [the median farm income was negative \\$1,453 in 2012](#) — farmers can barely keep the chickens fed and the lights on (Smith 2014).

One of the goals of alternative food networks or AFNs is to provide a living wage for small-scale farmers who grow food in more environmentally sustainable ways. Yet small-scale farmers selling food in AFNs often struggle to make a living from their farms (Janke 2008; Lusher Shute 2011; Bradbury et al. 2012). They face significant obstacles: finding affordable farmland, accessing financing, and coping with the labor intensity of organic farming practices and direct marketing (Lusher Shute 2011; Bradbury et al. 2012). One recent study found that farmers selling in AFNs only manage to 'get by' if they have off-farm wealth or outside income that enables them to operate the farm without earning a sufficient income from it (Pilgeram 2011). Consequently, the ability to own and operate a sustainably managed farm may be limited to privileged people. If sustainable agriculture is only feasible for affluent people, its broader impact will be limited. Therefore, the focus of this

chapter is to identify the key barriers to the viability of beginning and experienced organic farmers.

Alternative farmers face significant barriers to entry and their persistence over time. A number of studies have focused on identifying the barriers to farmers' adoption of organic practices. Research on conventional farmers who adopt organic practices identifies a number of significant obstacles, including a lack of marketing, research and technical support, a lack of financial incentive, added labor burden, technical risks, and cultural stigma (Constance and Choi 2010; Cranfield, Henson and Holliday 2010; Darnhofer, Schneeberger and Freyer 2005). Studies also find a high turnover rate, mainly for economic reasons (Sierra et al. 2008; Sahm et al. 2013).

While there have been studies of the barriers to adoption of organic for both experienced and beginning farmers, there is less research focused on their first six years after starting their farm or going organic. In addition, the political economic context of alternative agriculture is in flux. Alternative food networks have rapidly expanded across the country (Tropp 2013), and new programs and policies with the explicit goal of supporting small-scale sustainable farmers have increased significantly in the past decade (Constance and Choi 2010; Sharp, Jackson-Smith, and Smith 2011; USDA 2013; Beginning Farmers 2014; NSAC 2014). Given this support, the practical knowledge generated by wider adoption, and the significant market expansion of the past decade, the challenges faced by contemporary organic farmers may differ from those in the past and documented in the existing literature (Cranfield, Henson and Holliday 2010; Farmer et al. 2014).

In this chapter I will present evidence from my interviews that illustrates the key challenges and barriers to farmers' entrance and persistence in alternative agriculture. To my knowledge this is the first study to compare the viability challenges of experienced farmers with first- generation farmers. This comparison is analytically useful as farmers with different levels of farming experience likely have different sets of challenges, and a comparison could provide insights that are not identified in studies that focus on one group or the other. While many studies mention the type of agriculture their informants are engaged with, they do not provide an explanation for how the type of farm operation shapes farmers' challenges and opportunities. There are survey-based studies that compare conventional to organic farmers on a large number of isolated factors, but fewer studies using in-depth interviews to understand how all these social, economic and contextual factors interact to influence farmers' decisions and viability in their first six years (Welsh and Rivers 2010; Farmer et al. 2014).

To advance this analysis, I draw from the semi-structured in person and phone interviews I conducted with 30 farmers. In the interviews, I asked about the greatest challenges they had experienced in building their farm businesses, both expected and unanticipated. The problems and issues that came up most frequently were the excessive demands on their time, including the labor intensity of alternative production practices, problems with direct marketing, technical issues, cultural stigma, and the challenges of hiring labor. I will explain the differences in challenges faced by beginning farmers and legacy farmers, as well as the differences between specialty crop, mixed livestock, organic grain and dairy farmers. I will

conclude with a discussion of the implications of these challenges for the viability of alternative agriculture.

The challenges varied significantly for experienced farmers who adopted organic practices and were selling organic grain or milk into wholesale markets rather than doing their own marketing. For these farmers the labor intensity of organic practices was a challenge, and they were much more likely to mention pest issues and cultural barriers as a challenge than the other groups. Finding reliable labor was also a challenge for legacy farmers. None of them were having trouble with finding a market for their products, as organic grain and dairy are in very high demand in southern Ohio. In comparison, beginning farmers were concentrated in specialty crop and livestock operations, in which they chronically failed to make an adequate income from their farms and face more market barriers. Beginning farmers also struggle to cope with the high labor intensity of small-scale alternative farming, face problems from their lack of farming experience, and struggle because they can't afford the labor they need.

Labor Issues

The unique labor challenges of alternative food production stem from the greater emphasis on building organic matter in the soil and growing a diversity of crops and livestock to enhance natural cycles and pest control. In response to the survey question: "how many hours a week do you work on this farm", 21 out of 30 of my respondents reported working more than 65 hours a week on their farms. Those who don't work more than 65 hours a week on their farms typically work 40-

64 hours a week on their farms or maintain full time or part time jobs off the farm. All of them described working exceptionally hard, typically from sunrise to sunset almost every day. A returning farmer family in their second year of starting a pasture-based diverse livestock farm where they are raising their three young children, described:

Yeah, it's 12 hours a day for six days. On Sundays we intentionally take that off as we can. I still probably work about two or three [hours a day], just for the normal day-to-day stuff that has to be done. Maybe even that's a little excessive. What are we at? 72, 75 hours a week, or something like that.

Keeping up with farm work is particularly intense during the planting and peak-growing season for small-scale specialty crop growers. Describing how her workload varies by season, Janet, a greenhorn who retired early to start her own farm describes:

Last year, I worked 2,500 hours. Most of that is in a 6-month period, so I have a lot of 70 to 80-hour a week workweeks in the growing season. Then in November and ... December and January are maybe 20 hours a week or 15 hours a week, and over Christmas, I'm not there. It's very intense during the growing season.

The farmers I spoke with are very energetic people who are driven to work hard and deeply passionate about sustainable farming. Many described the same grueling schedule, but in more positive terms. A returning farmer describes: "Fourteen hours every day (seven days a week), but I love it and I'm able to do that. You can only do that for so long". Phil, a lifelong farmer who adopted organic practices, said:

Most of the time for me, it's daylight till dark, and then some. I've got a neighbor over here that keeps teasing me about, I just need to get some cows and start a dairy. I told him, I said, "Well, when I do, if I ever mention that at home, my wife, she wouldn't say a word. She'd walk out the door, and never come back, because she'd never see me at all."

So she's sick of you working so hard?

Well, she thinks I'm working too hard for not enough, but it's what I love doing. What I enjoy. I know some people don't like to work, but I do. I grew up that way, and I just do. Makes me happy.

There are many reasons this type of farming is so labor intensive. In order to avoid synthetic pesticides and fertilizers, they must work hard to enhance natural pest controls, such as extended crop rotation systems, cover cropping, building organic matter in the soil, providing habitat for beneficial insects, and cultivating or hand weeding, depending on the farmers' style and scale of their operation and their crops. Organic grain farmers use a 5-7 year crop rotation system that includes less profitable crops to enhance soil fertility and limit weeds, rather than the conventional soy/corn rotation that relies heavily on petroleum-based fertilizer and herbicides. Organic dairy and livestock farmers use rotational grazing practices instead of confinement grain-based operations. Pasture-based livestock operations are labor intensive because rotational grazing methods require intensive management to avoid over-grazing and disease problems. In addition, rotational grazing systems reduce the number of acres required for pastureland, which is usually a necessity given the high price of farmland. A returning farmer describes his complex grass-based mixed livestock operation:

Not many people are doing 100% grass fed lamb. It's a lot of labor. It requires using nets, electrified nets, and moving them every three days so they don't get parasite infestations. Having guard dogs and having border collies. We're doing that.

When I asked if their experiences matched their expectations of what managing an organic farm would be like, many of my returning and greenhorn farmer respondents said the labor intensity was more than they had anticipated. For instance, Mary says:

Well, it's way more hard work than you could ever imagine. Bill and I were just talking about that the other night and I was even crying about it. I was reading an article in Farming Magazine and this couple had just moved back to the land. It was a young couple and they had young children, and they were all idealistic. They had bought a cow that they were going to milk and had chickens. I was happy for them but it made me cry because I thought, they have no idea of what's coming.

Returning farmers Mike and Ann talked about the gap between their vision for providing a wholesome farm upbringing to their children and the reality of their first two years. Mike describes: There was a time period where I was going, "Nothing seems to go right. Everything is taking twice as long." Just the weather was affecting things. Ann continues:

In the summer, I remember you were staying out 9:00 o'clock at night, 10 o'clock, whenever the sun was going down. He would stay out the entire time to get stuff done. He would stay out there working. Even sometimes when it was darker. I remember taking a picture and posting it to Facebook, when you were haying some fields in the dark, by the headlights of the tractor.

In some respects I thought, "Oh gosh I thought you had long hours as a pilot in the Air Force, but you're working longer hours as a farmer I think." Where is all this family time, I was hoping for and that we were saying we were going to get. It is family, we're all here, but sometimes the kids are inside and he's outside.

The labor challenge of organic practices has been identified as an important barrier that prevents conventional farmers from adopting organic practices (Darnhofer, Schneeberger and Freyer 2005). This problem was underscored in my interviews as well. When I asked a very successful organic grain farmer what he

thought was stopping more of his neighbors (who had been watching him closely as he converted his farm to organic) from following in his path explained it to me this way:

The labor. The conventional farmer, he works two weeks in the spring, and two weeks in the fall, and he don't want to work anymore than that. They want to ride up and down the road in a pickup truck and judge everybody else.

Almost half of the farmers I interviewed work non-farm jobs to subsidize their farms, obtain health insurance and provide financial stability. Diversifying their income by patching together different revenue streams enables them to offset the precariousness that defines small-scale farming. The respondents who didn't report working more than 65 hours a week mostly work more than full time, or 40 hours a week on their farms or maintain full time or part time jobs off the farm. Keeping up with farm work in the evenings and weekends, often working into the dark, is common. Juggling farm management with off-farm jobs is a major source of stress and barrier to small-scale farmers' viability and sustainability over time. For example, Jen works in commercial real estate and still manages her farm on the side:

Yeah, I do it ... I'm working two full time jobs, yeah. I have ... I was up ... I get up at 4:30 or 5 every morning and work the real estate part of it until usually my girls come, in the summertime they come around 8 o'clock, and we work til about 2. Then I go back to doing real estate until the evening. Then I go back out and work until dark. As my son says, "Mom, you have no life."

When I asked if health insurance was a factor in maintaining an off-farm job, many said things like: "Yep, it was, and I didn't have it. I had Cobra for 18 months. Then until Obamacare came in, I had no health insurance."

The farmers I interviewed used a wide range of strategies to supply labor for their farms, depending on the type of operation, their financial circumstances, and their farm income. Many of my respondents made comments such as: "Labor is a huge problem. I'm sure you've heard this from other people. It's just very hard to find people with the work ethic who are willing to work for what I can afford to pay them". The farmers I interviewed used a wide range of strategies for dealing with the labor challenge, including paying people quite well and providing benefits, paying minimum wage to high school students and other low waged workers, and everything in between. Some of them had success with internships, some preferred to hire regular employees, and some had friends who volunteered their time to help them out or bartered with friends and neighbors in exchange for their help. A small-scale vegetable farmer says:

I would say my biggest challenge is labor, as far as finding good people. Although, I say that in one breath, and I've been very lucky in the other breath. Because Tia, who's been with me since ... For 5 years. She's been with me for a long time. I have friends that come out and volunteer, that have been here since '09.

In general my respondents preferred to hire labor if they needed it rather than rely on free or internship arrangements.

I just don't want interns. I think that an intern that works for me should be paid. I think this whole thing of getting free help, I don't want slave labor. I just want somebody that comes out and works. If they're an intern, all the better. If they're into learning about it, that's even better yet. For me, I really like it when people are interested in what is going on instead of just having to do it because it's part of their school program.

I think labor is a big challenge to come up with people. I don't want to hire immigrants or migratory workers. I'd rather support and I've tried to support people, usually young people that are interested that are maybe in college. I always want to pay people. I don't want to do this internship stuff. I

don't want free help. I just want good help. I've had a lot of good help over the years. I've had a few clunkers but predominantly I've had some really good help over the years.

The respondents who did have interns were mostly Greenhorns. These farmers benefitted from the steady stream of interns generated by the food movement who are willing to work for low wages or room and board. Essentially, this source of cheap labor subsidizes their operations, allowing them to maintain their farms even though they don't generate enough income to be self-sustaining. Movement-generated labor is an asset that small farmers traditionally have not had. However, relying on intern labor also has its disadvantages. While volunteer labor is certainly helpful, it cannot compete with family labor. Intern labor is highly variable in quality and quantity, and most interns don't commit for even one full growing season. There's no guarantee that they'll be available when farmers most need them. Interns require significant management and training, unlike family labor or even hired workers. International interns, in particular, often use the program to enhance their travel in a new country, perhaps committing a couple months, or even less, on one farm.

Location was also an important factor in determining how well they could rely on internship programs for their labor needs. Greenhorns located near cities and college towns had an easier time and were more likely to hire interns.

I have never had problems finding good labor. Yes. I've had a good working relationship with the environmental programs at Miami University so labor has been forthcoming. Not an issue with me. I don't think it's an issue with many people. Determining how much labor to hire and how much you can afford, that's always an issue but in terms of the people to do it, I think because you're an organic farm, you have a lot of idealistic students that want to work for you.

In contrast, the legacy farmers managing organic grain and dairy farms in rural parts of southern Ohio struggled to find reliable labor.

You get all the help you can find. I've got quite a few different guys I can get the help. Most of them have a full-time job, because they're the people that want to work. It's hard to find a young person that wants to work nowadays, so that's what I do. There's a friend I got that's a local Quaker pastor. He helps me out a bit, so he has a little more time than most of them. He helps me quite a bit.

What I do as far as the help that I get, I trade them in beef and pork. I raise some animals. Rather than just pay them, I pay them in - give them a freezer of beef, give them a pig, that type of thing. That's how we do it. We kind of barter.

Many of them just worked from dawn to dark, sometimes into the dark, and found ways to reduce their labor needs: "Well, that can be frustrating, but it's not a problem, because actually, over time, I've gotten more mechanism where I need less, just like almost all the farmers have. Like everybody's doing, you get more stuff to eliminate the people, because it's just hard to find somebody that wants to work." He believes young people would rather work at McDonalds or someplace where they can "be in an air-conditioned building" than do hard labor in the fields. On the other hand, conventional farmers often have agreements of mutual exchange with family and friends, similar to what Netting (1993) describes for traditional small-farming communities:

I have a friend who comes out. He's a mechanic so he comes every Wednesday. If I really need something or if I need to grind feed he'll help me do that for a few hours on Sunday. I try not to overwork him on Sunday. I get him all day Wednesday. Then, another buddy of mine just had another kid so I don't think he's going to be out here much this year. He used to come every Monday. Then, the other guys, if I really need them or we're bailing hay or something like that I can get them. I've paid people casual labor, like kids around the neighborhood. Those guys help me more than anybody and

they've learned the most. They're happy with doing it that way when they can get a half a cow or whatever for free, or for their work.

Some Greenhorns were highly reflective about how increasing their size or relying more heavily on hired labor would impact their larger goals. For example, Matt said:

Another part of that is that you have to really define exactly what you want out of your sustainable farm. In what ways do you want it to be sustainable? What do you really value? What we came to over time is that we wanted to have ... One of the things that was most important to us was having autonomy. It's not necessarily being beholden to a bank for an operating loan or to try to limit our labor that we have to hire every single year. We don't want to take on a full time farm manager.

When we were making those decisions it was a conscious decision that we're never going to make that much money because we're not going to ... I feel like if you're going to build a sustainable farm and you want to make a middle class salary, you're going to have to get into that world where you're borrowing and growing and you climb the totem pole so you end up managing more than you end up in the day-to-day process of the farm.

Many of them took pride in their decision to always pay anyone that worked for them, and not accept unpaid apprentices or volunteers. If they've had people who wanted to learn as interns, they've still always paid them as employees. However, because many of them can't afford to pay much higher than minimum wage, they struggle to find quality help.

Most people that are going to work for, we pay anywhere from \$8-12 an hour and nobody is going to work for that locally and most of them are cigarette smokers and people that had trouble going to school and can't hold jobs and stuff like that. They present lots of problems with disease carryover from smoking cigarettes. They don't eat the food, so their awareness of what it takes to put that stuff on stand at the market for people who care about food.

That's why I try to always take people to the markets with me. Then they get a chance to see who it is, what they want, what quality they want. Over a year, they usually get pretty good at understanding that kind of stuff.

For small-scale farmers struggling to build a successful business, supervising internships turned out to be more of a challenge than a help, and not well suited to their needs. After some initial experiences they described: "We don't advertise it as an educational opportunity so much as it's just an entry level farm position." When I asked why they described:

We felt like when we went ... When you're looking for an intern, like a lot of farms you'll see advertise. This person will be involved in all of the tasks of the farm one time or another or something like that. Our experience was just that it was very frustrating to us because so much of making a farm work is about making it function efficiently and fast.

You hate to say it but it's almost like a manufacturing job at times. You're working out in the field in dirt and mud and things like that instead of in a factory. At times, relatively frequently, it becomes about repetitive motion and being able to focus on doing that. The real thing is most farmers, people who have been doing this for 10 or 15 years, you get very fast at doing almost everything on the farm because you're used to doing it so many different times.

This Greenhorn couple felt that in order to build a viable farm business doing mixed vegetables and cut flowers (which is very hard to make a living doing), they needed to become highly efficient with their time and ensure that their employees' time was efficiently used. "The problem is you have people doing a bunch of different tasks so they come and 1 week they're doing X, Y, Z and the next week they're doing A, B, C jobs. If they're doing different jobs every week you're never going to get as fast as if you're doing the same thing." They also described developing employment relationships with people who were assigned the same limited repertoire of tasks, allowing them to grow highly skilled and fast with those specific tasks. Their

strategy also included doing all the decision-making and trouble-shooting themselves:

Every time you make a decision it slows you down when you're doing work. Our employees, we're trying not to ask them to make a lot of decisions. They can show up, get the work done we know needs to get done and go on their way. We're trying to locate all of the decisions, a lot of the decision making and troubleshooting and everything on the farm, we're trying to locate it between Jane and myself. We're trying to do most of that work.

By paying people an hourly wage rather than a weekly salary, they began to pay close attention to how much work each employee accomplished, and develop efficiencies to ensure their labor costs were increasing the viability of the farm.

Implications for economic and social sustainability

There is a direct connection between the long hours required for organics and the financial challenges small-scale organic farmers face, because so many of the hours they work are not earning them a wage. A non-owner operator I interviewed explains the connection:

At first, you're very idealistic but then, the reality of it hits pretty quickly. Just the long hours ... Again, most people that want to do it are hard workers and are willing to put in the time and are willing to sacrifice vacations to Florida or wherever but it gets overwhelming and, again, you have to be able to pay the bills. Money is the biggest thing.

A returning farmer who inherited land talks about the fact that after six years the farm is still not paying for itself:

Another couple of years. We have been direct marketing for two years, so I think we have another couple. That is kind of discouraging but it is just a reality. It all moves slowly. It takes some kind of subsidy to keep people alive while doing this, which is a challenge if you're a young family and a young couple.

On farm tours I met alternative farmers in their later years who worked so hard for decades but are now confronting difficult decisions about how to continue.

Elizabeth says:

Then everything that happens as you get older and you can't work as hard as you used to, you can't sustain the energy level, you just can't ... You slow down and it takes a lot of ... You can't. You have to be able to sustain sustainable agriculture, also has to be able to sustain you, mentally, spiritually, and physically. What happens is you give everything to the land and to your livestock and then you, yourself, physically, wear out and, mentally, you were down and, spiritually, you start to question.

In our conversations about the difference between beginning farmers' vision for the farm (i.e. raising their kids in wholesome environment) and the reality of their first two years, Mike said: "I can't keep doing this for the long haul. I know that." I asked:

"What do you mean? Doing what?"

Just the insane amount of time that I'm spending on the farm. Doing all the stuff and all the projects. Like I said before, we don't have the money to pay anybody, so it's just me. Any daylight hours I get, I'm out there, I'm doing it. That can't be the way we live for the long term.

I don't want it to be. Neither of us want it to be. There will still be a point where I go to work on the farm. There will be a substantial chunk of every day. I want to come in at 5:00 or 6:00 like a normal person. Then help Heather prepare dinner or play with the kids and put them to bed. I want to be a dad and a husband, not just a farmer. She especially and the kids have sacrificed this first year or two. That's not going to work for the long term for us. We knew it going in, that was going to be heavy up front on the hard work and sweat equity and all that stuff.

I didn't directly ask about farm succession in the interviews, but it often came up in subsequent interactions or side conversations as I toured people's farms.

Legacy farmers often revealed the painful reality that their kids did not want to take over the family farm. They described how their kids preferred to take 9-5 jobs that

allowed them to have a life aside from farming. However, others were more positive, saying things like: "We feel like financially we're not rich in any way but we feel rich in what we have as a family and experience."

Marketing challenges

Most small-scale farmers I interviewed market their products directly to consumers through alternative food networks such as farmers markets, Community Supported Agriculture or CSA, farm-to-table restaurants, or other arrangements. Direct marketing is essential for them to obtain a higher price for their products, getting them closer to meeting or exceeding the cost of production, although in many cases direct market prices are still too low to pay themselves a living wage, or pay themselves at all. The downside to selling their products via AFNs is that direct marketing is very time-consuming and logistically challenging. They must invest significant time building relationships with their customers in order to achieve any stability in terms of their sales volume. For instance:

Commodity market is so high right now that it's as good as selling in the direct market, but it won't be that way forever. You don't want to abandon your customers and you don't want to abandon the pipeline. You pull out, you lose it. You lose people and you pay a price later on. We have not raised our prices. Our prices have been constant. Even with commodity market as high as it is. It's at historically high levels. It's never been higher. Our prices are the same and they'll stay the same even when the commodity market goes down.

Particularly for livestock farmers as described above, farmers must develop their own customer base in order to sell their product. By selling directly they're able to offer their customers a lower price for bulk purchases (such as half a pig, so many

pounds of lamb, etc) than small individual cuts sold at farmers markets, to better compete with the very low prices of industrially produced meat.

Farmers markets are inherently unreliable, unpredictable, and time-consuming. For example, Jen describes a day at the farmers market to explain why she decided to seek a wholesale contract with Whole Foods Market for her products:

And then you go there, you've spent five or six hours preparing, getting your linens together, baskets and harvesting and packing and getting the coolers, the trailer and all that crap.

You get there. You stand around for five or six hours. You listen to people come up "Oh, yeah I have tomatoes. I have blah blah blah." And they comparison shop. So these guys that are buying at the auction are undercutting you. Then you come home, and you have to unpack all this stuff. And it's not worth it.

Farmers' market sellers see a large drop in sales on cold or rainy days, and these markets usually do not provide sufficient sales for farmers to rely on them alone, thus requiring them to maintain several different market outlets. Mark describes the social taboo of having someone other than the farmer managing the stand at the market:

It's kind of a performance in a sense, the farmers market that you're there...People want to feel like they're talking to the farmer about their stuff. It would be cool to have a market for I'll say sustainable operations, where the farmer has to be on the farm, farming.

The problem Jen references of people re-selling cheaper produce purchased at produce auctions or directly from Mennonite or Amish farms was a problem that several farmers I interviewed complained bitterly about, saying it's a widespread problem in farmers markets around southern Ohio. Someone might sell a small percentage of produce they grew themselves (most markets have a certain

percentage that's required) but re-sell other products purchased at one of several produce auctions (primarily Amish and Mennonite produce) that attract customers to their stall and outcompete other farmers. In southern Ohio with substantial populations of Amish and Mennonite farmers, the challenge is compounded as these groups typically manage one stall representing multiple families in their community, providing a much wider array of products from their community for lower prices, thus outcompeting and undercutting other sellers. Plain people are usually not certified organic but consumers perceive them as organic equivalent, and they sell their products at lower costs because of their reliance on cheap family labor and pooled farm stand management.

Selling to restaurants or institutional buyers provides another set of challenges. Small-scale alternative farmers struggle to compete with highly capitalized industrial organic producers who use economies of scale to drive down the premium in organic prices through what Julie Guthman calls "organic lite practices." Organic lite hamstring small-scale farmers who practice a more comprehensive form of organic farming. What this means in practice is that small-scale producers are competing with large, heavily capitalized and industrialized growers (usually in California) who can provide large, consistent volume of certified organic produce for lower prices. Mark describes the challenge of selling to a restaurant that wants to work with local farmers:

That's the challenge is it's not sustainable. They're not consistent. Their bottom line is so low that the prices they're used to paying aren't based on a sustainable system, so when they have to pay the prices of me or somebody, even though we're not high, they can't because of their bottom line.

Another challenge working with restaurants and wholesale buyers is that they are accustomed to a very consistent, continuous supply of produce. Mark continues:

Challenges are getting consistent orders, consistent orders, weekly orders. That goes both ways because they need consistent production, even though they can drop back and buy from the Restaurant Depot or Gordon Foods or whatever or the wholesalers if they need to. Yeah, consistency is important from their end too. Consistency of orders, weekly orders. I know there's a slow week in July and a slow week in December or whatever, but weekly consistent orders. It has to be a good chef generally to work with the variety that you have from eating seasonally as opposed to eating whatever you can order.

Grocers and restaurants have also come to expect perfect looking produce:

The grocery stores that I sell to, to be honest, it's perfect. So, if it's not perfect, it doesn't get sold. It can be [a challenge] because I can't just go out there and spray when I see bug. But this year, part of our plan is keep everything under floating row covers, for the most part, so that I can keep better control of the bug issue. Because once that little white moth gets on the kale, it's gone. It's not gone, but it won't look pretty. Then you're picking through, trying to find the good ones.

Finally, direct selling means that small-scale producers cope with greater financial and regulatory burden than farmers who sell into larger markets where food safety regulations and costs are reduced by economy of scale. John and Beth, who sell in three farmers markets say:

For Clinton County, it's \$230 a year for the license. It used to be your eggs, as long as the state came down and talked to you and looked at stuff and whatever, you could sell them. No big deal. Two years ago USDA decided that you had to have a mobile retail license to sell a \$2, \$3 dozen egg if you took it off your farm. We've got a couple of older farmers that just had their eggs. They can't bring them to market now because they can't pay \$230 for a \$2, \$3 dozen egg.

In stark contrast, all of the farmers doing organic grain and/or dairy were very pleased with the market they found for their products. They described getting

phone calls on a regular basis from companies looking for organic corn, soybeans, and other grains. They told aspiring organic farmers not to worry about finding a market (as they had) because once they received the organic certification their name was on a list and they would have people seeking them out: "Yeah, the organic markets, at least the grain and the dairy, something with scale, a commercial operation, the markets generally find us. We don't need to worry about that." Their experiences are not surprising given that at the retail level, organic price premiums for milk ranged from 60 to 109 percent for private-label organic milk above conventional branded milk in 2006 (Greene et al. 2009). This margin is much higher than organic produce, the other top organic food sales categories, which is typically less than 30 percent for over two-thirds of produce items analyzed (2009). Organic grain is highly sought after because the low organic adoption rate for grain crops (just 0.2 percent in the U.S.) continues to be a bottleneck for the expansion of the U.S. organic livestock sector (Greene et al. 2009). Organic livestock producers struggle to find reliable sources of affordable feed grains, a fact that the grain farmers I interviewed were experiencing firsthand.

Even farmers who grow hay and grains to sell directly to local organic dairies have a much easier time finding a stable market. Phil describes how he developed a customer base through a local feed salesman who was also doing a small part-time organic dairy and connected him with Amish and Mennonite farmers:

He supplies them with their supplements and that stuff, and I got connected with him, and he connected me with a few. One thing I've found out in the Mennonite/Amish community, is you do them a fair deal, and they talk amongst themselves, and the phone calls just start coming. That's how it works good.

The farmers selling to Organic Valley Coop were particularly positive and spoke very highly of the arrangement. They liked having a say in the decisions of the coop, the high stable prices, and fair contracts. Jerry says:

We didn't know if it was going to work, but it did. I've been in agriculture my whole life and we've ridden that rollercoaster. In the 70's, we were up here, and in the 80's we were down here and then here, and there. This, this is nice, this is stable. We know we're going to get about somewhere ... depending on the quality of milk we shift, somewhere around \$30 a hundred weight. Since we've been on there, the conventional guys, right now, they're riding high, they're up about \$22 to \$24 a hundred weight, so they're saying, "Hey, we're almost as high as you guys are." I said, "That's okay." Because I know, in 9 or 10 months, they're going to be back down in 15 and they're going to be screaming.

Phil described the benefits of a stable contract with Organic Valley:

Well, me and another boy that's not too far from me here, we've both had it over the years past. Take wheat for instance. It's in the summertime. Sometimes they don't need it right then. Both of us were promised they wanted it; they wanted it after the first of the year. We contacted them about the first of the year, the market had fell through and, 'we don't need you.'

So then you're stuck with a bin full of wheat. So then you're looking for the alternatives, and that's when I decided to go elsewhere, that I'm not dealing with them people no more. They controlled me when we was in the conventional world, and they're not going to control me now. That's why we did what we did.

When the recession hit and organic milk prices fell, organic dairies were hurt, but ultimately Organic Valley maintained the high prices so the market recovered quickly:

It's tough for them. A couple of years ago, and that's the first time they did it, they actually, in order to keep the milk price up, they had to institute a quota, where ... Yeah, we may ship 5,000 pounds of milk every two days, but we were only allowed to sell 4,000 pounds of it organically because ... that was during the recession, when the economy tanked. They maintained the pay price but they wouldn't buy all of our milk. Well, for practical purpose for us, that did not maintain the pay price, because when you average it all together, we were taking less, and it hurt.

By doing it that way and managing the supply that was going on with the market, they were able to maintain the price going out on the other end, because otherwise, in order for the coop to survive they were going to have to knock the price down in the stores. Once you get to play in those games with retailers, it's hard to get them back up. Their goal was, "Okay, we've got a quality product, we're maintaining our price."

The few small-scale specialty crop growers I interviewed who do wholesale marketing also preferred it. Jen, a greenhorn farmer explains why she prefers selling to upscale grocery stores and the one restaurant she likes to work with:

So they say "I'll take a hundred packs of cilantro and a hundred packs of basil," or whatever. So I can go out. I can harvest. I can package. I can drive it in. I can drop it off. I come back. You know? Yup, huge time saver. For me trying to do a second job, that makes ... That's the most efficient use of my time, and they compensate me to the point where I feel okay about it. I don't think I would make a whole lot more money doing a farmer's market.

However, there are major obstacles to creating alternative wholesale markets in the livestock sector. One of the main issues is the lack of processing facilities, the expense of processing facilities, and the lack of certified organic options. In Ohio the majority of processing facilities are privately owned and do not accommodate independent producers. There is also a complete lack of organically certified processing facilities:

Our beef and sheep are not because for two reasons. One is we just haven't gotten to it, which I'm hoping to do this coming year. But the second reason is the processor is not organic. You can't sell it as organic meat if the processor isn't organic. You can take it 90% of the way, but that last 10% blocks the program.

Seth, a returning farmer, describes the same experience. He explains why they choose to direct market their beef and haven't invested in organic certification, even though they are using organic practices. "Even if we certified them, they couldn't be

certified if we took them to Old Town Butcher Shop because they're not a certified processor. You'd shoot that in the foot before you even get started." Discussing the lack of an Organic Valley equivalent for livestock farmers, Barry, a returning farmer said:

There isn't an equivalent, you know. The question is can you create a co-op? It comes to the goals. If your goal is to create a brand, then you have to do it all. If your goal is just to make money then you work with a co-op. When you work with a co-op you take lower prices, but they save you all the marketing. I think that's coming. There has to be enough legitimate demand out there. That hasn't really risen its head yet. It's on its way. It's happening. People care, they're interested

Financing challenges

In general, obtaining traditional financing has been an issue for beginning farmers and conventional farmers who want to go organic. As alternative farming practices have become mainstream there have been efforts to work with financial institutions to better accommodate small-scale and alternative farms (Our Ohio, 2015). Some of the farmers I interviewed were able to obtain traditional financing for establishing an organic dairy, but they were well-established farmers with land, equipment, and experience. For beginning farmers financing is a challenge. Barry explains why:

It is really hard to do this with a lot of pressure to produce the money. There are so many variables. You lay out spreadsheets for people that want to lend you money for five years. You have to pay it back. You generate all this data about how money is going to move and it doesn't. It never works that way. It's just an exercise in using Excel spreadsheets. I've generated thousands of them.

Most of the farmers I interviewed preferred not to rely on a bank loan. For instance, when I asked Jen why she chose not to pursue traditional financing:

No, I didn't want to. For me, I wanted to stay away from that. Their time frame is different than the time frame it requires. That's usually a challenge if you're trying to fit something innovative into their model. What there needs to be is some kind of financing organization that will help these young folks get started, and has a patient time frame. That understands the big picture.

Alternative farmers are also at a disadvantage for obtaining farm operating loan programs managed by the Farm Service Agency, or FSA. The FSA is charged with providing farm-investment loans to farmers who have been rejected for all other traditional financing options. However, FSA programs are not designed to accommodate smaller loans of 10,000-20,000 that make sense for beginning small-scale farmers. Instead they are designed for a small number of commodity crops, making the process ill suited for diversified farms (NSAC 2014; Lusher Shute 2016). In addition, FSA operating loans require that recipients hold crop insurance, which excludes diversified farmers who do not qualify for crop insurance (because it's designed to ensure just one commodity crop). Until recently, FSA loans were limited to investments for existing farms, not for buying farmland or investing in new farm businesses (Lusher Shute 2016).

Cultural barriers

The greenhorn and returning farmers I interviewed were strongly supported, even celebrated in their communities for providing chemical free products. In contrast, legacy farmers faced strong cultural stigma and had to overcome a strong anti-organic mindset in their farming communities. They described this mindset and the association of organics with hippies, liberals or naiveté as being a barrier to their neighbors converting to organic. This cultural perception is associated with

the technical challenges of growing food without pesticides. When I asked about their greatest challenges, legacy farmers would say things like:

Weed control. Weed control. This doesn't affect me so terribly much but if you are a person that craves to fit in a community, it's going to be difficult for you. You've got to be willing to not be a part of the main crowd.

Several of them described how when they shifted to organic, neighboring farmers would drive slowly around their fields in their pickup trucks, watching their progress. However, they would not engage or ask them about it in Church or other social settings. They described a cultural stigma and feeling very socially isolated in their communities, despite having grown up there. Jerry says:

I get very few comments. No one really talks to me much but there's a few. There's a few but not that much. I hear things round and about, "Yeah, so and so said that, 'Hey, that doesn't look like a bad piece of corn over there.'" You just have to accept that. That's all part of it. You got to have a little bit of a thick skin.

Another legacy farmer, Pete, describes the cultural stigma he experienced, but also how the culture is slowly changing:

Well, you've got to be dedicated to it. I mean I know people back when I got into it, which there wasn't ... I was ridiculed a lot by neighbors, which you've got to be willing ... That happened. I mean that's not near so much today. I know other people that tried it and it didn't last for them and a lot of that is they thought they could ... they were used to conventional farming, which you buy a lot of inputs and the inputs help you.

Many of the legacy farmers talked about the mindset or mental model of chemical agriculture in their communities, and the strong emphasis on attaining very high yields. Pete describes the mindset that prevents his neighbors from considering organic: "They're going to be thinking yields, too, because they're going to be thinking well, we're going to take a reduction in yields." Pete continues:

The guys with the conventional corn and beans, they like to get the big yields. They can come up and say, "I got 200 bushels an acre of corn," and I say, Well, I only got 130, but I'm making more money than them. It doesn't matter. It's the mentality where they like to get a lot of bushels.

The other strong mindset is related to the values and sense of pride associated with having neat, weed-free fields: Tom explains why the risk of weed problems is cultural as well as technical:

If you get a big rain event and you can't get out there to cultivate, I can see that. I think there's a lot of ... I don't know if necessarily ... social pressure, as far as having a terrible-looking field.

They attributed the failure of farmers who were unsuccessful with going organic as a mindset problem:

I think that's one of the big hurdles and I didn't get in it for the money, either, and a lot of people will do it because they see the difference between conventional prices and organic prices. They do it for the money and they don't have the right mindset and then they fail and then they get discouraged and go on.

This mindset or cultural barrier poses a significant barrier to adoption because so much farmland in the US is rented. They describe the problem of convincing a landlord to take a risk with new farming methods:

We lost a farm a couple of years ago that we had rented for a long time. I think a contributing factor is because [they said]: 'he's going organic, we don't want anything to do with that.' I won't say that was the only reason, but I think it was a contributing reason.

Jerry continues: "It would be very hard, now that we're known in the community as those organic guys, we would have a hard time renting land. Even though they have been keeping careful records to be able to show that they are more profitable, it would not make a difference. Tom, another legacy farmer says:

Generally, you can't get to that point with the landlords talking to them about it. They'll say, "Oh, my gosh, our ground would be overrun with weeds." I'll be honest with them, I said, "That can happen. It does happen occasionally. We're better than we're used to be, but it's not picture perfect farm because we're going to have livestock and we're going to have that kind of stuff."

Tom continues:

I mean, if you're farming other peoples' ground... there's not many farmers that own all their farm ground. They're renting their ground from other people and if they have a bad year and the weeds get out of control and the landlords are upset because there's weeds out in the field, I can see that. There's uncertainty from that point and farmers are competing against each other.

If somebody has a bunch of weeds in their field and some other farmer goes to their landlord, and he says, "What are you growing all those weeds for?" A lot of pressure that way.

When I asked legacy farmers what made them go against the norm in their communities it was partly a personality difference. They were all very independent thinkers who enjoyed innovating and developing better systems on their farms.

Jerry says: "I've always been very curious about things." In general, the farmers I interviewed enjoyed competing with their neighbours, and were very proud of their success. For instance, some bragged about outcompeting their neighbouring tenant farmers for contracts. They enjoyed the challenge. They were also unwilling to accept the stagnant wages, debt, and control by the agrochemical companies.

Describing what made her husband different from his neighbors, Jerry's wife says: "He's very independent. He's tenacious, and he's curious."

In sum, my interview data provides insights into several barriers to increasing participation in alternative farming practices and challenges that threaten the sustainability and viability of existing alternative farmers. The most

significant barriers I identified for beginning farmers are the labor intensity, financial insecurity and accompanying challenge of finding labor, marketing problems and the financial, mental, physical and emotional consequences of working so many unpaid hours. For legacy farmers the added labor burden is also a problem, as well as the technical challenges, especially as they relate to the cultural stigma described above. For both groups these challenges pose an obstacle for farm succession.

Chapter V: Three Pathways into Alternative Agriculture

The pathways into alternative farming of the greenhorns, returning farmers and legacy farmers in my study each offers a new perspective on the process outlined by the agricultural ladder. The gradual process of social mobility is mostly no longer an option in farming communities today (Lobao and Meyer 2001). Instead, this chapter will consider whether greenhorns and returning farmers may be leveraging non-farm income and wealth to enter farming as a second or third career later in life. Even greenhorns who enter farming as a first career may be using non-farm capital to facilitate their entrance into agriculture. While legacy farmers may follow a more traditional path into agriculture, their entrance into alternative or organic farming is often facilitated by off-farm income. For them, organic certification is a strategy for avoiding the loss of their farms and enabling them to maintain full time farmer status rather than subsidizing their farm with non-farm labor.

In the agri-food literature there is some contradiction on the subject of economic viability and expanding participation in alternative agriculture. On the one hand organic certification potentially provides a better deal for farmers and there's evidence that conventional farmers who adopt organic practices do so for financial reasons (Constance and Choi 2010; Cranfield, Henson and Holliday 2010). On the other hand, some research on conventional farmers who adopt organic practices identifies a lack of financial incentive and some studies find a high turnover rate, mainly for economic reasons (Constance and Choi 2010; Cranfield, Henson and

Holliday 2010; Darnhofer, Schneeberger and Freyer 2005; Sierra et al. 2008; Sahm et al. 2013). Studies suggest that first-generation, small-scale alternative farmers can't make a living, and there is a reputation of alternative agriculture being the agriculture of the privileged (Alkon and Agyeman 2011).

In this chapter I explore that contradiction to consider how much of it might be explained by factors such as the scale and type of farming operation, years of farming experience, access to farmland, support from alternative agri-food organizations, and farmers' socioeconomic status. It seems likely that the studies finding improved financial status for farmers who adopt organics is based on larger scale operations, and/or particular geographic or farming systems. The limited studies about farmers not making a living seem to be focused on very small-scale sustainable farmers who are mostly doing specialty crops and livestock (Alkon and Agyeman 2011; Pilgeram 2011). However, most survey research about conventional farmers' transition into organics does not distinguish between different types or scales of operation and years of farming experience in a theoretically meaningful way. While I do not have the big data required to provide certainty on these relationships, the qualitative comparative model allows me to better explore these connections in-depth. By comparing farmers with different levels of experience, cultural backgrounds, and contextual circumstances, I create a more holistic picture of all these factors come together (Welsh and Rivers 2010; Farmer et al. 2014).

My study identifies how cultural background, social networks and financial assets were important for each group's entry and persistence in alternative agriculture. I also identify the characteristics of the farmers who are economically

viable, exploring their land access, socioeconomic status, years of farming experience, type of farming they're engaged with, and their support networks. I then take a look at these same characteristics for farmers who are not economically viable, to identify patterns in the characteristics of this group. The analysis attempts to answer my research question: how does farmers' socioeconomic status influence their ability to use sustainable farming practices?

Pathways into alternative agriculture

Greenhorns

Greenhorns are first-generation farmers who have no family background in farming. The term was popularized by a beginning farmers organization called the Greenhorns, a group of college educated youth who have capitalized on their technology and media savvy to greatly increase the visibility of first-generation farmers. Along with the National Young Farmers Coalition and other organizations they advocate for policies and programs that support beginning farmers. The Greenhorns and National Young Farmers Coalition are inspired by the sustainable or alternative agriculture movement and actively promote organic practices and innovative farming and marketing models. The farmers I am calling Greenhorns in this study are people who no prior background in farming who were inspired to enter farming by the alternative agri-food movement, broadly defined. Greenhorns generally are well- educated and more likely to buy land outright than the other groups, and had nonfarm jobs prior to entering farming. They are concentrated in very small-scale specialty crop or livestock operations, and use direct marketing and

nontraditional revenue strategies such as agritourism and education programs to subsidize their farm incomes. They are also the most likely to continue working nonfarm jobs to subsidize their farms. The Greenhorns in my study draw on their cultural and social capital from their middle class backgrounds to connect with their middle-class customer base. Most of them have a college education, which helps them gain access to farmland, market their products, and in some cases obtain grant funding and offset their lack of farming experience with extensive book learning about alternative farming. Here are some vignettes to illustrate this pathway into organics.

Tessa and I, we were both working at other jobs in Boston. She was doing environmental education and I was in arts administration. We wanted to farm so we both had that desire independently, and then we decided to pursue it together. We worked on farms in Montana, Illinois and Hawaii. Then, we went into business with my parents. They were looking for some place to retire. They lived outside of Chicago at the time. They were looking for some place to retire and they bought the farm we live on now and we went into business with them. We're an S corporation and they own half the business and we own half the business.

I think we both were really interested by growing food, by getting really good food. Even more so, we both wanted to have ... a farm job is completely all encompassing and you wake up in the morning and you're doing that all day long. You're always thinking about it. It's providing you food and it's the place you live and it becomes the center of your whole universe. It's hard. Most jobs you get nowadays working for a nonprofit or a corporation or whatever job you're doing, it doesn't ever feel all encompassing. I was pursuing music composition, that's what I did my graduate studies in.

Greenhorns often spoke about their desire to create a wholesome environment to raise a family, seeing the opportunity to raise their children on a farm as an ideal setting for children to grow up.

We wanted to be outside and we wanted to be in a place we felt comfortable. We knew we wanted to have a family, so have a place that was a positive

environment for a family. A farm is a really complex organism. There's so much going on with it. You control everything that happens, everything you build on the farm you have some control over but you have to do it in concert with the soil you have and the climate where you are. It's a fascinating problem to solve, I think that's why I like it so much. It's impossible to solve but it's constantly challenging.

Returning Farmers

Returning farmers follow a very similar path to the greenhorns, and in many ways they are beginning farmers. They are also people who have worked in non-farm careers and often pursued higher education. They are inspired to enter farming through some aspect of the food movement, such as an interest in healthy food, lifestyle, commitment to sustainable agriculture, or see new opportunities and potential with alternative food markets. What sets returning farmers apart from greenhorns is that they come from farming families so they have a competitive advantage, either with farming experience or access to farmland, sometimes both. Those with some farming experience perhaps grew up working on a family member's farm. John and Beth are an example of families who grew up on farms or working on family members' farms and had some experience with farming but decided to pursue non-farm careers before returning to farming:

Born and raised on farms. I grew up on a dairy farm. Beth grew up on a hog farm. Of course, we were married back in '81 and we actually farmed full time for two years when we were first married. Then we decided the time to have kids and stuff then the farming at that time in the early '80s was really in a bad economic state. I chose at that time to leave the farm and go work in a factory. I spent 30 years in a factory and farming conventionally part time and then farmed with her dad for several years.

Probably 25 years before he decided to sell out. Then two years ago, I of course had 30 years in the factory environment and decided it was enough. I worked for general electric which actually owned the company that I worked for. I had enough of the corporate politics. Beth had been doing the Clinton

County Farmer's Market for seven years at that time. It was becoming- either do that, commit to it full time or give it up because we just couldn't do both. That's kind of what drove us to go ahead and retire from the factory life and get back into a small farm environment.

Some returning farmers leave their non-farm jobs and buy a farm outright with savings from their previous careers. Mike and Ann describe their path into alternative farming:

Mike and I wanted to raise cows. He's always had a strange love for cows. Growing up on a Hobby farm. His dad had a Hobby farm growing up. He always wanted to get back to the land and get back to raising animals. He just had so many fond memories of haying the fields with his dad and brother. Just really knew that that was in his blood. I'm a city girl, I've always lived in the suburbs, so this is all new to me, this country living. When we got pregnant with Caleb, our first-born. Yeah that did change a lot of things. We started being more conscientious of what we put in our bodies. Mike started reading some books on the way our food system is. We got very discouraged with what we were learning about our food system. Just decided that we wanted to start eating organically and watching what types of food we put in our own bodies.

12 years in the Air Force, as a pilot in the Air Force. We had that point where we could either get out, or we could stay in for the commitment and stay in for 20 years. Because of our growing family, we decided that we wanted to start farming, basically to raise our kids in that sort of environment. We didn't want them to be teenagers, before we got out on a farm. We wanted them to learn responsibility. Just be able to grow up with a lot of land to play on. Just all the benefits of living out in the country and having a safe environment. Learning to care for animals and all that. We decided to take the plunge and get out of the Air Force and dive right in and pursue our dream.

Melissa and Jackson both grew up on farms but followed their parents' wishes and left to pursue college education and careers in banking and engineering. However, as Melissa says in their promotional materials: "They say you can take the kid out of the farm but you can't take the farm out of the kids. Boy was that ever true for us!" After working several years in their careers they decided to buy a farm where they

could raise their kids and start a small direct market business doing pastured mixed livestock operation. At that point Kim's family farm had already been sold, an event they described with regret that they had not purchased the farm. They financed the purchase of land and investment in their new farm with Jackson's income as a medical equipment engineer.

Some returning farmers inherited farmland from their families who retained ownership of farmland even though they haven't farmed the land for generations. In some cases inheriting farmland has even been the impetus for their decision to enter farming. Other returning farmers have been inspired by the food movement to re-enter farming and take over family land. Some returning farmers assume financial ownership but only farm a small percentage of the land, and lease the rest out to tenant farmers. Dan's story illustrates this type of pathway into farming. Prior to getting into farming he was a package designer in Cincinnati, working for P&G and Coca-Cola with a degree in fine arts. When Dan lost his job he began freelancing and helping his dad on the family farm:

We have a family farm. We're registered Ohio Century Farm. Farm has been on our family since 1855. We have been farming it. In fact, the last, the generation before my father, my grandmother, she did not farm at all or did her husband. She was a teacher and her husband had a blue-collar job. They just rented the farm out. My great uncle grew some sweet corn down there for kind of a farm stand market. That was it. The family before was the farmers, and my dad farmed a little bit before he took his job. He was a computer programmer. Then after he retired, he started taking up farming again starting with boarding stables. He's enjoying himself. He's wanted to do it ever since he started working a corporate job.

The family leases out about 200 acres for conventional corn and soybeans, which provides a revenue stream for their new farm business.

One thing led to another and now we're full time farmers. It's a long road in between where we started in 2000. I just happened along. It was supposed to be a temporary thing.

One thing led to another and I've now been farming longer than I was doing package design, so now I consider myself a farmer, career-wise, because I've been doing this longer than anything else. Self-taught, haven't gone to school for farming. A lot of it is falling back on things we already knew.

In another example, Annabel inherited a small farm in the outskirts of Columbus from her grandfather. Annabel and her husband had an idealistic view of living on a small farm, growing their own vegetables, and keeping small livestock. After growing the flowers for their own wedding and then for a friend's wedding, they began to consider farming full time as an option. They gradually adapted their farm to specialize in fresh cut flowers and discontinued the other crops and animals. Now they focus their efforts on their successful flower business, taking advantage of their close proximity to the urban market. Annabel's college education and career as a social worker helped her develop marketing materials and establish connections with large and small retail chains in the surrounding area to market their flowers. She also used her cultural and social capital to appeal to middle-class urban customers as she developed a successful wedding flower arrangement business, marketing to consumers willing to pay more for sustainably and locally grown flower arrangements.

Barry inherited 1,150 acres from his father, a lawyer who bought the land as a hobby and investment. He retired from his medical career in the city and has gradually been converting the land from feedlot hogs, cattle, and commodity crops to a pasture-based diverse livestock and dairy operation. He describes his decision

to move to a very rural area of southern Ohio to assume management of a farm his father had purchased as an investment property:

I had a kind of primal interest in land and animals and food. [I decided] I'm going to have to do this before I lost my courage to do it. It wasn't really what I was trained to do. It was always what I wanted to do. I had a liberal arts undergraduate education. I did go to Ohio State and get a Masters in Agricultural Economics. My family was not programmed to be farmers. They're programmed to become professionals, which is what was the more. This is what I wanted to do. We had this unusual piece of land and I decided before I lost the ability to do it, I'm going to do it. I feel very fortunate. Most people don't have that kind of opportunity. It's hard to step into.

Barry explained that four generations back his family had been farmers, and his father had a love of animals and land, and had a mini hobby farm in Columbus, and his father's father as well (both were lawyers). While he had not grown up spending time on the family's farm, he says: "I always wanted to know more about it and started spending as much time as I could. There's a cultural tension. It wasn't easy for me to do that. It's hard for me to find my way here." He began doing a lot of reading and studying sustainable agriculture and gradually began transitioning the land from a conventional corn/soy and livestock farm to a certified organic pasture-based dairy and livestock farm, hiring people to help him get it going and still working his city job. His wife and family was not interested in moving there from the city, but once his children left home he began doing it full time, with his wife commuting to the farm on weekends while retaining her job as a insurance agent that provided financial support for the farm.

In a final example, Bill and Mandy inherited a 600-acre farm that had not been farmed by the family for several generations. Bill came from a family of Doctors and other highly educated professionals who leased out the land as an

investment. He had visited the farm as a child, but didn't grow up farming and did IT work for a local company. Mandy was a master gardener working for an organic farming research institute and a health food store. They moved to the farm and decided to transition 5 acres of the farm to organic, leaving the rest leased out to tenant farmers. They were also involved with starting the local farmers market and establishing OEFFA. Initially they decided that: "growing weeds and kids was too time consuming" so they scaled back and worked off-farm jobs, but when the economy tanked and Bill lost his job, they decided to:

"Go ahead and take our love and passion of gardening and do the market gardening thing. We decided that we were not going to borrow on capital even though we had the ability to do that to build a big extensive operation. My brother and his wife and my wife and I formed [Family business] LLC with a minimal capital start up. Once again basically for the liability insurance, so we've been selling three years now?"

They live on the cash rent supplied by the rented farmland and manage a very small portion organically that they sell produce at farmers market.

Both greenhorns and returning farmers were very passionate about the goals of sustainable agriculture and these concerns were their primary motivation for entering farming:

Ultimately what we're doing isn't just about creating good food. It's about supporting others in their decision and enabling them to eat well, after they've made that decision. I'm aware of the fact that we're a face associated with something bigger than what ... Honestly it's a little scary if you really think about it. We're bigger than just [their farm business] or anything like that. We're one of the people who are doing this thing. This up and coming food movement and I like that a lot.

I love our farm tours. I love the fact that people make an effort to come out and I want to honor that. I show people exactly how we things and why. I would never do that, if I was just regular old schmo. I like all of that stuff. It's a lot more work of course. Ultimately then there's an no middle man, so

financially we benefit from it as well. We get all of that customer's dollars. Unlike my neighbors who get pennies on the dollar. There are financial benefits to it as well. If you look at it practically. For me I almost always get lost in the relational and emotional side of that. It's just something I believe in. Something we sought out as consumers.

Legacy Farmers

Legacy farmers are so-called conventional farmers who grew up in farming families and are lifelong farmers who adopted organic practices on their farms. They have family farmland, usually some inherited from family members, some acquired or purchased and some rented. For instance, Tim explains: I probably own ... let me see. I probably own a fifth of it and my mother owns a fifth of it and my uncle owns a fifth of it and the rest of it's probably rented, leased from other people." Legacy farmers also have farming equipment, the opportunity to borrow or share ownership of farm equipment, and a lifetime of experience. The legacy farmers in this study were all operating organic pasture-based dairies, growing organic grains and/or hay for dairies or other markets, or some combination of the two. Currently there are around 12 organic dairies in this part of southern Ohio, which were all established and certified in the past six years when the Organic Valley Cooperative added a milk truck route in the area. Horizon Organic (owned by Dean Foods) followed them here. Jerry tells the story of his background in farming in southern Ohio that highlights common themes:

I never really wanted to do anything else but farm. I got out of high school, started farming with my parents immediately. Went to college a little bit, but basically it was a local college, and the things I took pertained directly to farming. I took farm accounting. I took farm economics, just all of that kind of stuff. That's the extent of my college education, but it was stuff that I could apply right out here, and which really helped me. That was back in the late

'70s. We didn't even know there was anything called organic farming at that time. Of course, that was during the previous boom time in American agriculture in the last 70's. Boy, farming just looks so easy. You could just make money. At that time, when I was 22 years old, I thought, "If this farming is so easy, I'll own the whole county by the time I'm 40." Well, then we got a re-awakening in the '80s.

The legacy farmers in this study generally adopted organic practices in order to ensure the financial viability of their farms, and were influenced and mentored by other successful organic farmers in the area to take this step. All of them described being in vulnerable financial position prior to going organic, either facing bankruptcy, the loss of their farms, or inadequate farm incomes. Pete describes the impetus for rethinking their farm model:

Around the time they bought the farm, I think it was only a year later, we had to get out of the conventional hog market, like taking hogs to market. At one point in time we were losing 17 dollars for every hog that made it to the market.

Jerry describes the farm crisis of the 1980s from the perspective of a grain farmer and how that led some to become more open to alternatives:

Yeah, when the '80s happened. Of course, we were raising all corns and soybeans at that time. That was the modern way to farm. Farm it all because we got to feed the hungry world, and all of this stuff. We went right along with it, and then in '80s the bottom fell out. We came within a hair's breadth of going bankrupt. There was an extended period of time that farming was not profitable, so we began looking at different things to do. We were looking at Christmas trees, raspberries, and asparagus.

As they were searching for alternative enterprises that would save their farm, Jerry and Janet attended an OSU extension event presenting alternative agriculture enterprises for struggling farmers at the local college. The event was packed, and they realized all their neighbors were trying the same things. There was one empty

room in the hall, where they met a prominent organic farmer who is known as the grandfather of organic farming in Ohio. They decided to hear what he had to say as they waited for an opening in the other rooms:

We were just killing time. He started telling me about what he does. Of course, a lot of it, I was farming with my Dad, and a lot of what he was telling me was the same things that I've grown up learning, about crop rotations and taking care of the soil and things like that. Now, don't get me wrong. Dad was a conventional farmer, but he was evolving from back when they didn't have these things. We still knew how to cultivate soybeans and thing like that, so we had that background. A lot of things he told made a lot of sense, but then there's a lot of stuff I just couldn't believe.

We talked for quite a little bit. We weren't disturbed. No one else was coming in, no one. He told me "We have a field day at our farm every year in the summertime." He says, "Here's when it is." He gave me his address, "Come up." Well, I did. Like I said, when I drove there, I expected to see the worst-looking farm I had ever seen in my life. It didn't happen. I saw some of the best crops I ever saw in my life. From that point on, after I saw his farm, then I started researching it.

As Jerry said in reflection: "Well, what we were doing was not working. It didn't take a rocket scientist to figure that. We had to find something else. Would you say that over the years that I've always tried to rock the boat a little bit? We chose this way. A lot of other people in our situation say, "Okay, I'm going to farm part time. I'm just going to go to town and get a job and I'll farm on weekends." I didn't want to do that."

Others were facing stagnant low wages, barely paying the bills, and tired of being controlled by agro-chemical companies and handling the chemicals. A few farmers described concerns about their health and their family's health. For example, Tim says:

A part of it was financial but then another part was, I did my own spraying and I really didn't care to handle all those chemicals all the time. It just seemed like you were farming ... it was more of a science than an art. It seemed like you were always putting more and more on and everything was about the chemicals, everything was about buying something in a bottle to solve the problems.

I got tired of it. When I went to bed at night, it seemed like if I was spraying 2,4-D I always had that little taste on my tongue, that I could almost taste that herbicide. I didn't care for that. I figured there was a better way and, actually, when somebody kind of presented me with some things that you could make money and change the operation; I kind of jumped at that.

Dan describes his own health issues growing up on a farm and concerns about his daughter's health:

One thing was, I had real bad allergies. I had a real bad response when everybody started spraying when I was a kid. I would get sick every year in April and May. I would get really sick. That was the other thing, is I always told my dad, that as long as we're spraying, I don't want to farm. I don't want to mix them, mess with them. Then he also started to see, I think some of the nerve stuff he's got is probably from the chemicals ... I remember being young and they'd be out on the tractor with no cab. It wasn't these enclosed things like it is now. It was open cab tractor, with that crap everywhere. I didn't want to do confinement hogs. My dad never wanted to either because when he was a kid they were all outside.

Getting married and wanting to start a family of my own and knowing I didn't want my daughter or son ... I wanted to be able to let her go out and play and not be like I was where my dad would say 'Get out of that ditch. That's where we cleaned the sprayer out last week.'

In the table below, I present the pre-farming backgrounds for each category of farmer (owner-operators only). The cases where there are two entries separated by a slash represent dual responses for interviews with a farm household.

Table 5: Pre-farming jobs

Pre-farming job	
Greenhorns	hair stylist/asbestos project manager Executive Director nonprofit teacher Pilot (air force), occupational therapist mechanical engineer H&R Block, pole buildings environmental education/arts administrator commercial real estate reporter teacher, carpenter, postal worker, general labor
Returning	administrative secretary /aircraft welder GE package designer mechanical engineer P.E. banking general construction feed salesman/urban forestry for ODNR Div. of Forestry aircraft tool technician research contractor for USGS/Ecologist for nonprofit social worker/barista early organic research, Peace Corp/ IT data base manager field mechanic heavy equipment student & student research assistant OSU telecom installer/manager
Legacy	teacher /part-time for County Soil & Water Conservation District grew up farming ag educator 31 years, bus driver 12 years, school board lifelong farmer farmer/health administrator born on farm mechanic (part-time seasonal)

Greenhorns and some returning farmers are at a disadvantage in terms of their lack of farming experience. Many work on other farms as interns, volunteers, or members of cooperative arrangements prior to starting their own farms, but this is not comparable to growing up on a farm. At the outset many of them didn't consider their lack of farming experience an obstacle because they are experimenting with new and innovative farming methods. However, they lack the intergenerational store of knowledge and experience of their land's ecological character and constraints, which Netting argues is a crucial resource for sustainable farming (1993). When I asked about their greatest challenge, Mike said:

The biggest ... I won't even be able to pick one. One of the biggest challenges is the notable difference between reading about it and doing it for the first time. The lack of experience, if you wanted to call that. Heather will tell you, I was about as mentally prepared to come do this, as someone could physically or mentally be. I read everything about it. I read rotational grazing. I had read just ... Not just cows, but all the enterprises that were dealing with, with the exception of I think our dairy cow. I had done just about as much of the research as somebody could stand.

Then I got out here on the land and the first time you have to do it for yourself, oh this is a different deal. The nuances of the land and how you're specific piece and how it fits and flows. That's been a big ... It's been fun, but it's been a challenge.

In addition to lacking farming experience, they also have to invest in farmland, equipment, fencing, and everything it takes to get established from scratch. Cindy describes:

I think one of the challenges that I have is that I had no farm background, no farmland, and no farm equipment. I don't know ... In looking back, I could probably figure out how I could have done this faster, but I'm not married, so I needed to have something that would sustain me, which is why I stayed at my job as long as I did. Certainly, I felt the fire irons going when I left that job and had to do something that would make me some money on the farm.

In a contrasting examples of the value of farming experience, the legacy farmers referred to the inter-generational dynamic of their pathway into organic farming and the benefit of having learned from grandparents or parents back when farming was organic by default: "You're really returning to how your family farmed originally? Yeah, yeah probably back in the early 1960s."

With the organics, it's not really a science. It's more of an art. I mean, I'm doing things I did when I was a kid as far as production, as far as working the ground and knowing how to plant without herbicides and stuff. I did that when I was in grade school.

As highlighted in the vignettes above, the other influential factor in shaping legacy farmers' pathway into organics is the mentorship of local farmers who have successfully adopted organics. The influence of mentorship and successful models of other organic farmers has been documented in the literature and was a factor for the farmers in this study as well (Taus, Ogneva-Himmelberger and Rogan 2013).

Mark says:

The first neighbor that had approached us, he had convinced ... Well, I shouldn't say convinced, but the other neighbor, he started it and it was working for him and then he approached me and said ... He knew we were having some issues. He said have you thought about trying this again so that's when we did it.

Getting started in farming

Most of the beginning and returning farmers in this study established specialty crop operations or pasture-based livestock, with the exception of one family who established a small part-time dairy operation. Barry (described above) explains why the considerable entrance barriers can limit participation to those with the financial and social capital:

There's two components. There's the soil. Getting that right, it takes time. There's the marketing, it takes time. It's another kind of soil that takes time. So, it's a lot of time a lot of persistence it's enough financial capacity to withstand both. Enough support, emotional support from some critical people to persist. It's not easy, the vegetable farming you can get going quickly on a small amount of land, and generate some decent revenues. It is so labor intensive, and there is a lot of competition. Livestock farming is more of a challenge, because it takes more land, more capital. I think coupling with people like ourselves is a good model.

Those who aren't lucky enough to inherit farmland or have significant amounts of capital to buy land, usually depend on non-farm income. As Pilgeram found, alternative farmers are often highly educated individuals who have well-paid and flexible jobs that they rely on to subsidize their farms. Barry is using his privilege and need for hired labor to develop coupled systems of the kind Joel Salatin advocates for, in which a landowner works with an aspiring young farmer to develop their own farm business on their farm with shared profits (2011). For example, he hired a family without land or capital but a passion for farming to live and work on his farm as caretakers, with Brandonn employed as a full time farm manager. In addition to working full time for Barry, Brandonn is developing his own vegetable operation on Barry's farm. Barry also hired a young Amish man to set up and manage his dairy, in exchange for a share of the profits and housing on the farm. He says: "We're helping this young man. He's got 250 acres. He's going to build up enough capital and eventually be able to buy his own farm. This other young couple will be able to help us really and grow as much as they want to. There's a lot of opportunity." He goes on:

For them to get in, that is what they need. They need some umbrella for awhile working for them, where the infrastructure is there, and entrepreneurial opportunity is also. For some young person who has no

money and almost no contacts, it's almost impossible. It is hard to do. People do it, they find the land, they rent it, and they put a couple of acres under the plow and plant vegetables. Go to marketplace, but how long they can do that, I don't know.

However, the reality for non-owner operators that I interviewed is that these arrangements often don't work out. Their success is heavily dependent on the personal relationship between the owners and the worker who aspires to establish their own farm. While all parties were initially optimistic when I interviewed them, when I followed up a year later the relationships were strained. In one case the arrangement had dissolved with the worker leaving to take another job, and another the relationship was strained and they confided that they were exploring more traditional financing options that would allow them to buy a farm of their own. In her presentation at the OEFFA conference, co-founder of the National Young Farmers Coalition described the challenges of land-link programs generally (Lusher Shute 2016). A recent evaluation study of land-link programs also identified a number of issues and challenges (Pillen 2014).

Legacy farmers engaged in organic grains were more optimistic, but still emphasized the necessity of having some type of financial support, access to farmland and mentorship:

You really almost have to partner up with somebody that has access to farm ground. You don't necessarily have to purchase it but you have to work with somebody. I think there's a lot of older farmers out there that would like to have the younger people come in and work with them, keep the farming operation going. I think there's a lot of potential for something like that, I mean, if a young person wants to do something organically. I think the older generation, they're getting ... I mean, organics are out there now. I don't think there's any going back now as far as the organic industry. I think it's mainstream and I think there's always going to be some kind of opportunities for people.

Others said things like:

You need to go out and have that off-farm job, a large source of capital that you can pull on, if you inherited a chunk of money or something like that, or you've got to have a mentoring farmer to help you get started. You have to have one of those, otherwise, it's just not going to work.

One interesting contrast between the greenhorn and returning farmers and the legacy farmers was their assumptions about economic viability of a farm enterprise. While the majority of greenhorns and returning farmers I interviewed were relying on nonfarm income to subsidize their farm or drew on inheritance or other non-farm resources to get started, legacy farmers did not have that luxury or take that approach to the viability of their farms. Jerry says:

You have to be a business person, to look around, what are your resources, what are your opportunities, where are the risks, can you mitigate these risks and project it out? Is this going to be a viable operation because let's face it, if it's not viable financially, you're not going to be in it. How much you want it, how much you might believe in it, unless it works dollars and cents, you're not going to be in it.

As others said: Yeah, and that is a problem with young people getting in because you have to get in, you have to rent first. It's unrealistic to think that you can go out here and purchase farm and start from scratch and pay for it, and have anything to buy groceries with."

Comparative Analysis

The comparison of the three pathways into alternative agriculture demonstrate the connection between the cultural background, social capital, and socioeconomic status of the farmers with the type of farm enterprise they establish

and the likelihood that it will be economically viable. As the vignettes illustrate, the greenhorn farmers entered agriculture primarily to achieve social and lifestyle goals related to their passion for changing the food and farming system and their desire to live a particular lifestyle. In general they represent a higher socioeconomic bracket and are much more likely to have obtained a higher education than the farmers who grew up in farming communities. Given their limited farming experience and commitment to local and alternative food production, greenhorns are most likely to establish very small specialty crop and/or small livestock operations, subsidized by non-farm income or wealth. In the table below, I summarize the differences in type of farming these different categories of farmers get into.

Table 6: Three Pathways into Alternative Agriculture

Greenhorns	Buy or lease land	No farming experience	Specialty crops/ mixed livestock	Direct marketing	Half viable, half not
Returning Farmers	Inherit/take over family land; buy or lease land	Some farming experience	Mixed livestock/ specialty crops/dairy	Direct Marketing/ Organic dairy	Half viable, half not
Legacy Farmers	Family land Owned and rented	Farming experience and equipment	Organic grains and/ or dairy	Grain buyers, Organic Valley COOP	All viable 40-60% or >than 80% household income

Partly due to the inherent barriers to the viability of specialty crop farming and the direct marketing it requires, greenhorns are much less likely to make a living solely from farming. Instead, they leverage their college educations and

cultural background to capitalize on food trends, social media marketing, competitive grant getting and agritourism to create alternative revenue streams that support their farms. All of the greenhorns I interviewed were second career farmers, meaning that they entered farming as an early retirement, or leveraging their savings from working a non-farm career to enter farming. Just half of the specialty crop farmers I interviewed are financially viable. Some of them simply don't need to make an income from it; economic viability is not their primary goal and they are able to make that choice. Those who are financially viable often rely on alternative revenue streams to support their farms.

Returning farmers are a more diverse group. Some grew up in farming communities and then left to pursue higher education and non-farm careers, returning to farming later in life. They are more likely to have at least some farming experience and social capital that can help them get access to farmland, even if they don't inherit family land. These individuals often subsidize their entry into farming with savings generated from their non-farm careers. In this way they are very similar to greenhorns, except that they may inherit or gain easy access to farmland due to their family retaining ownership of farmland as an investment property. For those who did not inherit land and need to rely on their farm income, they must work exceptionally hard, be extraordinarily skilled, resourceful and creative, and make sacrifices not many people would make. Returning farmers also draw on their cultural and social capital from years outside of farming communities to appeal to their middle class customer base. In many ways they benefit from their connections to both worlds: their family history in farming, whether through farming experience

or farmland they take over or inherit, and their outsider perspective on food cultures and trends that help them connect with alternative food networks.

Jen's business selling heirloom tomatoes and other specialty crops to Whole Foods illustrates how social and cultural capital helps beginning farmers' success. Sue explained that she choose crops to grow by looking at the dirty dozen, the list maintained by the Environmental Working Group that identifies produce with the highest average levels of pesticide residues and those with the lowest amounts (the 'Clean 15'). By growing items that consumers would be more likely to seek out organic alternatives and be willing to pay extra for. Her niche is growing soft fruits like raspberries and blackberries that are highly perishable and expensive to ship proved successful. She also grows heirloom cherry tomatoes, saying: "It's all about presentation too. People like cute. They like things... they like to feel like what they're buying makes them feel special. A lot of it is visual, so it's a lot about your presentation." Jen's background allows her to understand Whole Foods customers' preferences and gives her the confidence to work in that cultural space and maintain a significant amount of paperwork, certifications and standards in a way that the legacy farmers I interviewed might find intimidating and probably would not consider as an option.

Legacy farmers draw on generations of family farming experience and resources, and access to family farmland and equipment. However, many of them entered alternative agriculture as a desperate measure to avoid bankruptcy or stay in farming. Because of the capital and experience they start with, they are better able to enter the more viable farming enterprises of organic dairy, pastured

livestock, and organic grains. Given their background in conventional farming they typically focus on wholesale markets that seem to be much more economically viable. They draw on the mentorship of successful organic farmers who were early adopters in the region. Through those mentors they connect with organizations such as OEFFA, IFO and Acres USA that provide technical and marketing support and resources. While they would be considered small-scale farms in today's context, they are larger operations than most of the farms managed by greenhorns and returning farmers. In the table below I provide a summary of the characteristics that differentiate each group.

Table 7: Financial Support for Alternative Agriculture

	Income from farm	Off-farm job	Non-farm revenue	Importance of profit
Greenhorns	between 20-40%		school retirement	very important/important
	greater than 80%			very important
	between 20-40	teacher	teaching retirement	important
	less than 20%	fire fighter, air national guard	help from relatives	very important
	less than 20%	substitute teacher	help from relatives/ inheritance	very important
	greater than 80%			important
	greater than 80%			very important
	less than 20%	commercial real estate		important

	between 40-60% greater than 80%		pension	very important important
Returning	between 40-60%	substitute bus driver		very important /important
	between 20-40		commercial crops	very important
	less than 20%	Design engineer, Etizon Endosurgery	investments	very important
	less than 20%		inheritance	very important
	greater than 80%		investments	very important
	between 40-60%	feed salesman		important/very important
	greater than 80%			very important
	less than 20%	Assoc. Director nonprofit /restoration ecologist	investments	very important/important
	greater than 80%			very important
	less than 20%	local bookstore, County Board of Elections	rental property (land and house); business partnership with inlaws, inheritance	important (in some respects) /neither
	greater than 80%			very important
	less than 20%	research assistant		very important

	greater than 80%			important
Legacy	between 40-60%		retirement	very important
	between 40-60%	manufacturing		
	between 20-40%	consulting, teaching	pension, wife's job, consulting	very important (#1)
	greater than 80%			very important
	greater than 80%			very important
	greater than 80%		wife's job	very important
	greater than 80%			very important

Chapter VI: Livelihood Strategies in Alternative Agriculture

There are studies focused on barriers to adoption of organic practices and studies about inequality and participation in alternative food systems, but a lack of research that explores the connections between these issues. Here I take a step towards integrating these lines of research by exploring the connections between the barriers to alternative farming and the strategies farmers are using to make their farms viable. Providing an ethnographic account of farmers' livelihood strategies serves to better explain the connection between alternative farming and social privilege. This chapter is based on the interviews and my field notes from 25 farm tours of small-scale alternative farms in southern Ohio. The Ohio Ecological Food & Farm Association coordinated the tours during the summers of 2011, 2012 and 2013. Farms who host tours are generally a self-selected group, so they are more likely to be successful or noteworthy by some measure, but they were not all financially viable. The farms featured on farm tours generally do something innovative or particularly successful that they showcased in their tour. The section on strategies used by legacy farmers was added later, and draws from the interviews with conventional farmers who have adopted organic practices.

This chapter is focused on the question: what strategies do small-scale sustainable farmers use to make their farms viable, given the many obstacles they face? I found that there are several approaches that small-scale alternative farmers use to deal with the profitability gap in sustainable farming. These include: off-farm jobs, alternative revenue streams, self-exploitation combined with frugal living, and

the assistance of volunteers and cheap or free intern labor. Most farmers in my study use a combination of these strategies, and I use my field notes to illustrate how they use and combine these approaches.

Off-farm Income

Working off-farm jobs is a common strategy greenhorns use to practice sustainable farming and make a living while doing it (Jacob 1997; Janke 2008; Pilgeram 2011; Bradbury et al. 2012). Working part time or even full time allows many people to follow their dream and develop innovative ways of growing food without having to rely on it financially. The greenhorns are not unique in their reliance on off-farm income. In fact, the majority of US commodity farmers also rely on income from their spouses to get health insurance and make ends meet (Janke 2008; USDA 2012). Netting's study of small farmers around the world shows that the practice of supplementing a small farm with outside income is a tradition that goes back generations (1993). It is an essential part of the diversified income small farmers rely on worldwide. In her study of the mechanization and corporatization of organic farming, Guthman (2004) found that 79 percent of Californian organic growers with sales under \$50,000 were part-time farmers who did not rely on their farm's income. What may be unique about the farmers in my study is that the quality and flexibility of off-farm income these new farmers bring to their enterprise may be an improvement over the part-time jobs of traditional small farmers or commodity farmers.

In most cases the beginning farmers I interviewed had a higher than average educational attainment and the non-farm jobs they held were often well paid. For example, I toured an elaborate aquaponic greenhouse run by solar and wind power, designed to produce micro-greens and fresh herbs for local restaurants and Whole Foods. A middle-aged man who worked full time at a high level position for a green energy company built the operation as a side business. His operation attracted many visitors at biannual open houses. Despite his success, the project was essentially an expensive hobby for him. Pilgeram (2011) points out that the middle and upper-middle class status of many alternative producers means their jobs are often more flexible with scheduling or allow them to work from home, and generally have higher incomes, making it much easier to run their farms part time.

Harv, a teacher who retired early so he could work his small lettuce operation just outside of a college town says:

I could not afford to lose money, and I have not lost money on the farm, but I did not have to make a lot either. I was able to make some decisions that other farmers may not be able to afford to make. I can invest in my farm... No, I didn't build those in one year, this is over time that it moved to that but, nonetheless, it's a significant investment in that kind of farming. I could afford to do that because I had another income that I could use to invest in that.

I realize that everybody can't have that luxury. Farming ought to stand on its own. It ought to be able to be a sole enterprise, but for me, it was not. I often think about, what if I were to start over, would I go directly into farming and not take the education route? I don't know what the answer to that is but I've certainly enjoyed the farming route, but I enjoy my other career also. It's just, I was eager to get out of it so I could farm full time.

Another farm I visited was run by a couple who relied on the wife's income from a nonprofit organization dedicated to farmland preservation. Her flexible

schedule allowed her to help out her husband who worked full time on the farm. Her income made it possible for them to continue their farm, even though it was operating at a loss. Despite the benefit of their arrangement, they were experiencing the time-money dilemma defined by Jacob. They could rely on one partner's income but consequently faced a chronic labor shortage on the farm. Their lack of time and labor power made it difficult to improve the farm's profit margins, which in turn prevented them from hiring extra labor, a vicious cycle.

Personal wealth or savings

Some greenhorns are able to purchase land and make investments with personal or family wealth. Financial assets are often necessary to get started because greenhorns don't inherit farmland from their families, land is very expensive, and most banks don't give loans to small farmers. Up until January of 2013, small alternative farmers did not meet the USDA's eligibility criteria for the Beginning Farmer and Rancher loan program (Bradbury et al. 2012; USDA 2013). The way some new agrarians start out buying a farm, perhaps after a few years of internships, is quite unusual. Traditionally a young person from a farming family would follow a very different trajectory in becoming owner and operator of a farm, climbing an 'agricultural ladder' that starts as an unpaid worker on their family's farm, moves up to a paid position, a tenant position, a mortgaged farm, and then finally to full ownership (Bates and Rudel 2004). Jason describes how they purchased a farm and all initial investments with savings from their careers prior to entering farming:

Having an engineering career, that's honestly the only thing that's made this possible, starting from scratch. The amount of money it took to invest into getting this place started up from nothing, it's amazing when you look at the numbers. With no sight available ... we can't see where we'd ever be able to make the farm pay that back, ever, that initial investment. Seven years and this last year is the first year we broke even. Financially, my engineering job is supporting our hobby, essentially.

Very wealthy people who rely on nonfarm assets to subsidize their farms ran a few of the farms I visited. For example, a prominent farm on the outskirts of Cincinnati that serves as a model and training in the alternative farming community (including OEFFA's current education coordinator who advises farmers), and has won sustainable farming awards is funded by someone's inheritance and run as a nonprofit. For example, in a workshop on hiring and keeping interns run by a wealthy couple at the OEFFA conference, they described a dedicated mentoring program and emphasized the importance of allowing interns to make mistakes. They seemed oblivious to their audience's concerns about the time investment of managing interns and the financial consequences if they make mistakes.

Workaholics

Other greenhorns lack economic capital and must rely on their farm's revenue. This is the one strategy that doesn't rely directly on social class, although as I will show, in many cases social and cultural capital are just as important to these farmers. The "hard core" or workaholics' strategy is to work exceptionally hard, and live on very low income to make up for their lack of outside capital. They are able to make a profit by using very intensive farming practices and season extension techniques. In terms of Jacob's time-money dilemma, they have time but not money

(Jacob 1997). Many of them describe working from dawn to dusk, almost every day. They are usually very energetic people who are driven to work hard and deeply passionate about sustainable farming. For obvious reasons, these farmers generally make up the younger contingent of new agrarians, and this strategy is inherently limited to the physically strong. On farm tours I met workaholics in their later years who have relied on this strategy for decades but are now confronting difficult decisions about how to continue.

An urban farm I toured in Columbus exemplified the workaholic or hard core farmer. It was run by a 33 year old man who had worked a union construction job for the previous ten years so he was used to 'working really hard". Rather than buying farmland, he slowly converted his front lawn and large backyard into garden plots, and now has every available space in production. He chose crops that would fetch the highest prices in the farmers market, based on years of tracking which crops were most sought after and least available. He works over 60 hours a week, on a very intensive daily work schedule of early morning mushroom care in his basement, gardening all day, and mushroom care and harvest again in the evening after dinner. Along with hard work and a frugal lifestyle, he lived on his savings from the union job while he built up his small business. In addition, his girlfriend contributed income she earned running a business out of their home and helping him out in the gardens.

Mick reflects on why he resisted the use of high tunnels to extend his growing season:

That's the reason why the wintertime is a good thing for a farmer to come back into their own. Although in these days and age, everybody is producing

all year round with these high tunnels and stuff. I'm just starting to get into that. I stayed away from it. I bought a big greenhouse, high tunnel from somebody maybe eight years ago and I'm just finally putting it up because I didn't want to work year round.

What did you traditionally use your winter season for, your quiet season?

Reading books. Running that route and talking to people and planning for the coming year. In the summer time, it's twenty-four/seven. I used to have Tuesdays off in the summer time, but with workers and stuff like that there's no real days that you can kick back.

In her bestselling book, *The Dirty Life; A Memoir of Farming, Food, and Love*, former travel writer Kristin Kimball describes her relationship with an exemplary hard-core farmer. Together they leased a 500-acre farm in upstate New York, which they renovated and farmed with draft horses. Within the first year they had established a year round, complete CSA, providing members with fresh dairy and meat products, maple syrup, and an array of vegetables. They worked so hard from pre-dawn until after dark seven days a week that Kristen came very close to burning out and abandoning her farm and new husband. She reflects on the irony of not having time to eat the food they grew:

"But if you are not careful, a farm can coerce you into thinking that you don't even have time to cook the very food you grow. There were weeks that spring when Mark and I would end our days so late and so exhausted we'd drive to town for a bag of chips and a pizza, one with a flabby crust and insipid sauce. I could live with dirty clothes, I was avoiding the wedding plans anyway, and, to be honest, I'd never been much of a duster of furniture, but if I wasn't going to get to eat our food, there was no point going on" (Kimball 2010: 155).

Kristin and her husband exemplify the workaholic approach to sustainable farming, but they still needed Kristin's savings from a successful career as a travel writer in New York City to get started. They also had a free lease for a full year from her

husband's personal acquaintance, a lawyer from Manhattan, who had purchased the land as an investment and allowed them to work it with the possibility of buying it if they were successful.

Alternative revenue streams

Many new agrarians apply for grant funding or design agritourism or education programs to boost their farm income. In response to movement pressure, the USDA funded the SARE program, or Sustainable Agriculture Research and Education that disperse small grants for research on organic production techniques. One farm I toured had received a SARE grant to experiment with using sheep's wool as mulch. A couple I met at an OEFFA conference was using a SARE grant to experiment with growing native tree nuts. Another farm was supported to experiment with growing lavender as a cash crop. New agrarians have a competitive advantage for acquiring this type of government support because of their higher than average level of education. A young couple who spent years researching and planning their farm write:

"The five college degrees between us would really be put to use. We had savings. And as if our good credit and sheer gumption weren't enough, we'd researched and participated in all the 2008 Farm Bill beginning-farmer programs that applied to us. We often understood those requirements better than did our local USDA officials" (Bradbury et al. 2012: 64).

The limitation of SARE and other grants is that they are short-term and partial solutions. The couple who received a grant for their lavender operation supported themselves with web design contract work, running a local wellness center, and selling hand-crafted lavender products. Despite their resourcefulness in

generating diversified income sources, they faced a chronic labor and cash flow problem. Still, they took great pride and a sense of purpose in their work, emphasizing their commitment to environmental and social change rather than profits.

Another external revenue stream for alternative farmers is to run educational programs, create and sell their own literature, or offer on-farm workshops or classes. For instance, Green Ridge Farm relies on selling their expertise in various forms for up to forty percent of their revenue. They charge fees for workshops on straw bale construction and other topics of green living, and sell a range of their literature as textbooks, brochures, speaking engagements and workshops. They are very confident in getting paid what they're worth, and "recognize their own value". Several other farms I visited ran workshops, classes or other educational programs on topics like making your own cleaning products, food preservation, or gardening.

Agritourism is another common source of income for new agrarians. Farmers supplement their revenue by adding recreational or tourist attractions such as harvest festivals, u-pick crops, weekend retreats, and the like. I visited a farm with a large vegetable garden, pastured goats and poultry, horses for riding, and a large farmhouse that was set up as a bed and breakfast retreat. The retreat center mostly attracts people from the nearest city, and the owner offered several education workshops throughout the year that contribute a significant portion of her revenue. The retreat house was furnished via freecycle and Craigslist, giving it a simple and homey look while keeping the owner's budget low. She relied on a combination of

agritourism, educational workshops, intern labor, and sales from her vegetable garden.

A farm located on the outskirts of Cincinnati offers several week-long day camps for kids, farm to table cooking classes, hay rides, and volunteer days. These events complemented their CSA and revenue from selling at a farmers market and the self-serve store located on the farm. Another farm located near Cincinnati brought in an award-winning chef to make gourmet salads and pizzas in the outdoor brick oven they had built. This attraction brought over a hundred people to their farm tour, which included an edible woods walk guided by a local expert. They were also advertising a three-course dinner to be offered in their new outdoor dining area, featuring the same chef. Guests would pay a hefty sum to sip wine, enjoy live entertainment, and eat freshly harvested and prepared food at a long table overlooking the farm. These attractions made up for the fact that their CSA was not profitable and had only retained a handful of members by the end of the summer. In addition to their agritourism and CSA, they had inherited the land and the husband had a lucrative job to ensure a positive cash flow.

Movement-generated labor

Greenhorns rely on a variety of other movement-generated labor to keep their farms running. In some places, the food movement mobilizes willing supporters to provide free labor to help farmers with harvesting when they most need extra hands. In the original CSA concept, members contribute labor to the farm in exchange for reduced rates on their vegetable boxes, although member

participation has been declining over the past two decades (Janssen 2010; Ostrom 2007). A few farms, all of them managed by Greenhorns, were successful in attracting interns from around the world despite their isolated rural location. They were typically very savvy with their web presence, and well-connected to organizations that coordinate internship programs. One farm's internship program has attracted people from as far away as the UK, and they heavily rely on their interns to keep the place running: "I can't say enough about the benefit of young people, we couldn't have done it without them." Their interns work as volunteers, and pay a \$110 weekly fee for food and lodging in the tiny prefab shed that serves as the intern quarters. There is no running water or electricity, and limited internet or phone access. They work from 8:30 am until it's time to help prepare dinner and then clean up the house, 7 days a week. They rely on this crew of interns for most of their daily maintenance and help with their extra housing, summer canning kitchen, and solar oven. They were particularly proud of their French and Italian interns that season, who had used their engineering degrees to design new straw bale constructions and a solar, rain-fed shower.

Internship programs connect people who want to start their own farms with more experienced farmers, giving them valuable learning opportunities to develop their skills before starting their own operations. This experience is crucial because starting an alternative farm involves significant financial investment and risk. Many internships are arranged via the WOOFing program (*Worldwide Opportunities on Organic Farms*) that connects people interested in organic growing with farmers. Programs like WOOFING also provide cross-cultural networking in a mutually

inspiring exchange. Organizations like OEFFA also run internship programs, and some farms do their own advertising. In return, interns rarely commit to the farm long-term, or even for a full season. Most of the farms I visited rely on part-time, seasonal, low-wage or volunteer interns. A middle-aged woman ran one of these who had lost her husband the year before. To make up for the lack of labor, she depended on a steady stream of interns to keep her operation going, mostly through the WOOFING program. She was very proud that her small farm in rural Ohio had attracted interns from as far away as Austria.

Frugal living

In addition to working long hours, the farmers I interviewed lived a very simple lifestyle and avoided extra expenses. Mark, a greenhorn farmer says:

In one way, I have an edge over a lot of people because I don't have a high-maintenance lifestyle and I don't have any bills. The profits, I need to make money and it needs to be fair and everything. Yeah, owning the land is key. Yeah, it's helpful just not to have bills.

Dan, a returning farmer describes how they have struggled financially since establishing an organic operation, but still:

We feel happy and blessed we're able to grow a lot of these things. We've got a freezer full of meat. We're not swimming in cash. It's a struggle that way but as long as we can keep it going, I think it will get better. The drought, the first year I was just farming was the 2012 drought. That didn't work out that great. We've changed our lifestyle and pulled way back on what we do and what we spend and we try to enjoy here.

One of OEFFA's founding members reflected on the simple lifestyle that he sees as important for operating a small-scale alternative farm:

I think understanding that it's not something that you put down. It's not a five-day a week where you take the weekends off and you go party and do those kinds of things. It's a commitment to a simple way of living that brings a lot of rewards and a lot of beauty.

Limiting overhead and off-farm inputs

Small-scale operations are not mechanized to the same extent, because most laborsaving machinery is designed for large-scale industrial operations, and small farmers usually can't afford or choose not to take on the financial risk of large farm equipment. The farmers I interviewed rely on older equipment and machinery that is better suited to their small size, and reduces their overhead. Several described avoiding the expensive farm machinery that's designed to facilitate very large-scale operations and tends to get farmers in debt. In a series of podcasts with beginning farmers around the country, Severine Von Tscharner Flemming noted that an ability to fix and maintenance old machinery is one of the most valuable skills a small-scale farmer can have, providing a significant competitive advantage (Greenhorns Radio 2014). A grain farmer emphasizes this point:

The biggest thing is, don't go out and invest in a bunch of equipment that will get you. Iron will kill you quicker than anything, because it depreciates so fast. If you're a little bit mechanically inclined, because the part time job I did, I was a mechanic, so I don't have a problem with that. Buy used equipment, fix it up the best you can. One of the biggest things. That's one thing nice about the organic is, if you get a crop, hey, you got to invest in seed, and seed can be expensive, but beyond that, just iron is the next thing, because you're doing a lot of tillage.

Instead, growing organic grains or vegetables on a smaller scale is best done with older machinery designed for small-scale operations, and that can be

purchased at lower costs. An organic grain farmer I interviewed is careful to avoid trying out new farm equipment at Farm trade shows, to avoid any temptation to take on the expense of new farm equipment. Jerry explains how using older equipment fits with the low input intensive and creative management approach of organics:

If we were going to have to plant our entire acres corn and soybeans, we would need to invest a lot more money in corn planters, and in grain harvesting equipment, because it all has to be done in a short time frame....

Well, our work season is spread out over the whole summer. We're running old equipment, old tractors, with a 1970's era tractors that were left over from our conventional days and they're just fine, because we're not asking them to do so much in a short period of time. We don't have to plant 900 acres in the next 10 days in order to make money. We plant 200 acres and then in the summer, we've combined 200 acres of triticale and then throughout the summer, we'd make 200 acres of hay a little bit at a time. Then, we've got livestock and we grazed a lot of it. Well, we used electric fence, we don't need tractors for that. We can get by with a lot less high priced equipment, then the average conventional guy.

While relying on old machinery increases the viability of organic farming, it also poses challenges as it adds to the already labor intensive nature of organics.

It depends on the route you go. I chose the different route. We have basically started our very slow and of course I have nothing new. Everything I've got goes back to the '60s. We've been fortunate. Everything I've done I've basically done cash. I've never had to borrow any money to start this operation.

Returning farmers Melissa and Jackson added a livestock feed business to their livestock farm to add an additional source of revenue and provide a source of non-GMO feed that is in high demand in southern Ohio. Jackson says:

The livestock feed has been a really good thing for us to do. That made up more than half of our revenue last year and is somewhat profitable, where

everything else is break even, but it's labor intensive. It takes 2 hours to do a ton of feed because of our small scale and the systems that we have.

Another strategy to reducing overhead was to minimize reliance on off-farm inputs. In general the grain farmers build their operations around livestock or rely on leguminous crops to feed their soil and avoid high cost inputs. They described how newly transitioning corn/soybean farmers have an input mindset and tend to operate on an input substitution model that leads to excessive input costs. Jerry explains:

Definitely, there's a lot of people selling a lot of high priced inputs that I don't think are necessary. I don't think it's necessary. Now, this is my personal opinion, and we can have that debate, but there's ... A lot of people get caught up in the idea that just because we put on 200 pounds of nitrogen to grow conventional corn, we have to go out and purchase 200 pounds of nitrogen in an organic corn to replace that.

Instead, they were modeling their farms on the diversified farms of their parents and grandparents era, producing the fertility on farm:

By producing I don't know, other than growing up on a diversified farm... They had dairy and they had hogs and beef cattle, all 3, and they cropped. My grandpa, he was a good farmer with what he always talked rotation, and you can't take ... My grandpa would tell us you can't bail hay and sell it off the farm. If you're feeding it, that's okay to bail hay, but you can't take everything off the ground and not put anything back. He had a lot of influence on my dad.

Tim explains the economics of organics, relying on higher prices per acre and less inputs:

No, I don't raise 200-bushel corn, when you figure out your last bottom dollar per acre, I'm probably as good as they are, if not better because of their inputs to get that 200 bushel.

By reducing their reliance on off-farm inputs they are also protecting themselves from the volatility of the market. As Jerry says: "Yeah, you have to supplement the conventional because you're riding that rollercoaster". In other words many conventional farms rely on a part-time job in order to offset the market swings in the commodity market. He explains how building independent from the market allows them to rely on their organic dairy and grain crops: "We want to insulate ourselves from that. It doesn't matter to us whether the price of organic corn is high or whether it's low because we're running through these cows. Okay, you make more on the corn and less on the milk or less on the corn and more on the cows." Because of the stable price offered by Organic Valley and the closed-loop model where farmers are providing most inputs (grain, hay, manure) from theirs or a neighbors' farm, they are insulated from those extreme fluctuations.

Greenhorns and Returning Farmers' Strategies Compared to Legacy Farmers

Insecurity of specialty crop and livestock farmers

Small specialty crop and livestock operations that do direct marketing struggle to make a living from their farms. Returning farmer Mike explains the discrepancy between what they can charge to keep their customer base and their operating costs:

The chickens are a perfect example. Last year even at the price that we settled on. It basically paid for the feed for the chickens and it paid for my work. Six hours of processing. No work day to day for the entire six months that I raised them. Every time I went out and I moved the chicken tractor, or I fed them, or I water them, or I dealt with this and that. All of that was quote on quote free. I got no money for that from a day-to-day basis ... That's the difference. Yes the farm is profitable, but it's not sustainable financially.

Many of my interviewees were able to make their farms self-sustaining after years of very hard work and investment. Despite this, many were able to make payroll for the employees they needed to maintain the farm business, but still unable to pay themselves a wage, despite working more than full time on their farms. As Jen says: "I would say my biggest consideration, or issue, is income. Trying to figure out how to be able to work up plans that can bring enough income to make it work. Because I still got a huge mortgage, I can't just go out there and play all day. I've never paid myself a dime. I've been able to make payroll for other people. I would say it's not paying for itself yet, no. My goal is to at least have it pay for itself, even if I don't take a salary this year." Those who do not have reliable, well paid, or flexible off-farm jobs or independent wealth are much less likely to be able to make it work.

For greenhorns and returning farmers who aren't making ends meet and who lack the economic capital to keep their farms solvent, the question of financial sustainability is one of necessity. In their description of life as a greenhorn, one farmer writes: "the value of our produce and the value of our labor are unsolvable computations that I puzzle and worry over constantly" (Bradbury et al. 2012: 60). At an OEFFA conference they showed "The Greenhorns", a documentary about the new generation of farmers, with a discussion following the movie. In the discussion it became known that out of an audience of approximately 100 people, just five were actually working on a farm of their own. Out of those five, one couple had inherited land and another was supported by a SARE grant. A young man stood up and expressed his frustration that despite great enthusiasm and commitment to

sustainable agriculture, he and his wife could not afford to buy or lease land with no guaranteed income, or live without health insurance for their children. The audience responded with defensiveness, avoidance, and obvious discomfort at his emotional outburst. It was evident that this topic had touched a nerve. Despite their sacrifices and resources, the greenhorns' viability challenges represent a significant hurdle to the movement going forward.

Viability of organic grain and dairy

The legacy farmers' experience was in stark contrast to the financial struggles of the returning and greenhorn farmers. All of them make at least 40-60% and most of them more than 80% of household income with their farms. They described how going organic had allowed them to keep their farms, avoid bankruptcy, or improve their viability.

I had a huge conventional debt on fertilizer and seeds from the previous year and the place where I had bought that, when he found out I was doing that [transition to organic], because I had some rented ground... he immediately put me on a cash-only basis because he ... he told me that in two to three years, he would own my farm. Well, it's 30-some years later. I own the farm and that business went under.

As these were so-called early adopters, they did not have an easy time, but pointed to how much things have changed in the past ten years, with more mentors available, more resources, better markets, and organics is more culturally accepted.

Ten years ago, if you'd ask me that same question, at that time, I wasn't a 100% sure this was all going to work long-term. Guess what? We've been at this 15 years. It works. It works. I don't concern myself about that anymore. Now, it's just a matter of, "Okay, here's the farm that we have. Here's the way the land lays. Here's what we want to become in a number of years. Okay, what's the best strategy to get to it?"

Financially I'm much better off than I was before. Of course, the whole farming economy's been pretty good the last three or four years. We'll see. I'm kind of glad I went that route. Full steam ahead.

Finally, farmers appreciated the increased participation and say they had in Organic Valley's operation:

I think the other ... you ask, I believe, what was the difference of being with Organic Valley? I think the other issue is, it is farmer driven. It is a coop. The farmer makes the decisions. If you are with Horizon, you would get this price no matter what they determine, and with Organic Valley, sometimes it seems a little messy but there's input.

Overall, the beginning farmers' strategies are quite distinct from legacy farmers in ways that reflect their different social location and the type and scale of alternative farming they are engaged with. Greenhorns and returning farmers are relying on innovative and nontraditional marketing, financing, farming and labor models, all generated by various food movement initiatives. Strategies like marketing products via CSA, internet based direct sales, crowd source funding, agri-tourism and movement generated free labor require certain cultural and social capital to be successful. In comparison, legacy farmers rely on more traditional farming and marketing models where the farm production itself is the primary source of revenue. Legacy and returning farmers doing organic dairy or grains were the only farmers I interviewed who had obtained traditional agricultural financing. However, while their marketing outlets more closely mirror the conventional commodity market, the influence of Organic Valley and its cooperative model is of course a movement- generated alternative that has contributed to the viability of organic grain and dairy in southern Ohio. Legacy farmers also rely on working very

long hours and living a frugal lifestyle, and they benefitted from the support from organizations such as OEFFA, Acres USA and the IFO.

Greenhorns benefit greatly from the steady stream of interns generated by the food movement who are willing to work for low wages or room and board. Essentially, this source of cheap labor subsidizes their operations, allowing them to maintain their farms even though they don't generate enough income to be self-sustaining. Movement-generated labor is an asset that small farmers traditionally have not had. However, relying on intern labor also has its disadvantages. While volunteer labor is certainly helpful, it cannot compete with family labor. Intern labor is highly variable in quality and quantity, and most interns don't commit for even one full growing season. There's no guarantee that they'll be available when farmers most need them. Interns require significant management and training, unlike family labor or even hired workers. International interns, in particular, often use the program to enhance their travel in a new country, perhaps committing a couple months, or even less, on one farm. Family members are typically more reliable, dedicated, and knowledgeable, and require far less management (Netting 1993). In terms of family and gender arrangements, greenhorns and returning farmers differ from the kinship systems of farmers in Netting's study. In general, they don't live with extended family members in the large households or necessarily subscribe to the traditional gender roles that Netting showed to be crucial for meeting the labor needs of small farmers in his study (Netting 1993). It's also likely that they don't expect the same labor contributions from their children, as do other small farming societies.

While they lack farming experience, Greenhorns and many returning farmers generally benefit from much higher levels of education than other farmers. This is a crucial asset because they are marketing their own products. Skill and comfort with social media is a related and important ingredient for success with direct marketing. The majority of farms I toured have their own websites and/or Facebook pages to keep in touch with their supporters and customers. Greenhorns also depend on their social capital to connect with potential supporters, customers, or members of their CSA. They benefit from the cultural capital that comes with their class background when designing educational programs and tourist attractions.

Chapter VII: Support from Grassroots Organizations

There are several lines of research investigating what might motivate and facilitate farmers' adoption of organic practices or evaluating the impact and inclusivity of alternative agri-food networks. What's lacking is research to understand the ways alternative agri-food organizations might facilitate and support farmers' adoption of organics, or increasing consumers' participation in alternative food networks. Moving beyond an individual-level analysis is important because alternative farmers may benefit from a range of movement-generated opportunities that other small farmers traditionally have not had. These organizations create a sense of community and support for alternative farmers, helping them network with other farmers, potential supporters and customers, and learn of new opportunities and assistance.

In Ohio there is a diverse set of organizations that support alternative farmers, including the Ohio Ecological Food & Farm Association, OEFFA, *Countryside Conservancy*, *Innovative Farmers of Ohio*, and *Women Farm*. OEFFA is a diverse, membership-based grassroots organization that began as a small collective of organic farmers founded in 1979s. According to their website, they are dedicated to: "promoting and supporting sustainable, ecological, and healthful food systems. Together, we are working to recreate a regionally scaled farming, processing, and distribution system that moves food from farm to local fork (OEFFA 2013)" OEFFA's membership now includes farmers, consumers, gardeners, chefs, teachers,

researchers, retailers, and students. Jake, a founding member describes the diversity and occasional tensions stemming from that diversity:

Yeah, I was one of the founding members of OEFFA. I've always been a gopher, helped organize things. The great thing about OEFFA it's always been a diverse group. It hasn't just been farmers. It's been environmentalists, people that cook, community people. Over the years, it's had this nice diversity and conference that's worked really well on keeping all kinds of people from fighting with each other.

Over the years OEFFA has grown rapidly, now employing an education and program staff of 7 and 14 employees in their certification program. Despite their relative small size, OEFFA is the leading advocate for sustainable agriculture in Ohio and plays an important role in the national advocacy organizations NSAC and NOC, described below.

On the national level there are several important organizations that have effectively advocated for better and more research, policy and programmatic support for sustainable agriculture initiatives. First and foremost, the National Sustainable Agriculture Coalition, NSAC is: “an alliance of grassroots organizations that advocates for federal policy reform to advance the sustainability of agriculture, food systems, natural resources, and rural communities.” From their website:

“NSAC’s vision of agriculture is one where a safe, nutritious, ample, and affordable food supply is produced by a legion of family farmers who make a decent living pursuing their trade, while protecting the environment, and contributing to the strength and stability of their communities. NSAC member groups advance common positions to support small and mid-size family farms, protect natural resources, promote healthy rural communities, and ensure access to healthy, nutritious foods by everyone. By bringing grassroots perspectives to the table normally dominated by big business, NSAC levels the playing field and gives voice to sustainable and organic farmers. (NSAC 2014)”

In addition to NSAC, the National Young Farmers Coalition, NYFC, the Greenhorns, Agrarian Trust, the National Organic Coalition, NOC, and the Rodale Institute have led efforts to promote policies and programs that support sustainable agriculture initiatives. On a regional level, farmer-based organizations such as the Northeast Organic Farming Association, NOFA, the Ohio Ecological Food and Farm Associations, OEFFA, and the Midwest Organic Sustainable Education & Service, MOSES, and the Southern Sustainable Agriculture Working Group, SAWG, connect farmers and other stakeholders in promoting local food systems. These farmer-based regional organizations provide organic certification and a range of services and programs for alternative farmers.

This chapter addresses the research question: to what extent do alternative food markets, programs, and organizations support the entrance and persistence of beginning and experienced small-scale farmers? To address this question, I drew on key informant interviews and publicly available information from local and national level grassroots organizations' websites, newsletters and email list serves. The key informant interviews were conducted with nonprofit and NRCS staff members who work directly with farmers, and founding members of OEFFA who described their role in building the organization in the early years. I also drew on my experiences from a yearlong internship with OEFFA's policy program coordinator. Working inside the organization for a year exposed me to the considerable grassroots advocacy work they do that farmers are not always well aware of. For instance, OEFFA is an active member of NSAC, so I was able to sit in on the conference calls with NSAC's coalition partners from across the country discussing their advocacy

efforts. In addition, I drew on my experience from participating in five of OEFFA's annual conferences, two annual events honoring women farmers, and three annual Stinner Summit events. The Stinner Summit is a unique event sponsored by the Agroecosystems Management Program at Ohio State University to bring together stakeholders engaged in local and sustainable food system development from university, business and nonprofit sectors. These experiences were relevant but not used as data in the analysis.

In this chapter I focus on two main forms of support: the direct forms of support and the indirect advocacy work they do to level the playing field for small-scale alternative producers. The interviews clarify the ways nonprofit organizations promote participation and offset some of the entrance barriers to sustainable farming. In addition, in the interviews with farmers I asked about their involvement with the organizations, the forms of support they received, and their perceived effectiveness. Grassroots organizations assist alternative farmers in the variety of ways shown in the table below.

Table 8: Support Provided by Grassroots Organizations

Examples of direct forms of support
Direct technical assistance and training workshops, mini-conferences, webinars, farm tours Alternative financing programs Managing farmers markets, farm to school programs, "find a farmer" directory Organic certification Advertising and assistance with organic certification and cost-share program Farm apprenticeship programs Farmland access programs which connect farmers, landowners and investors
Examples of indirect forms of support
Generating public support, interest, and education in sustainably grown food Advocacy work on state and federal level, legal actions on behalf of farmers Sharing policy updates and information about complying with policy changes

Direct support

Grassroots agri-food groups provide a range of direct support to support the viability of small-scale alternative farmers. First and foremost, they provide organic certification services at reasonable rates and technical support for producers seeking and maintaining their certification. It is easy to underestimate the importance of the direct marketing outlets that grassroots agri-food groups provide. For example, when I asked John and Beth if they would have returned to farming sooner if the alternative markets had been there:

Oh yeah. The farm markets have always been around but they were never really publicized and people didn't know a whole lot about it and stuff. Looking back, maybe 15, 20 years ago, we would have gotten into the market end of it. We didn't really have it become popular, really popular until maybe 10 years ago. Clinton County, they announced it last night, this is the 15th year for the farmers market. I've been doing it for 8. I was right in there but not quite. When I got into it, that's when it was really starting to turn around to where it has just exploded all over, everywhere. People come, all age groups.

So part of it is just having those markets that have made it a viable option?

Yeah, definitely. We enjoy it. We like talking to people and educating people. People are educated, I don't mean that, but even further educate or tell them where your stuff comes from.

Direct to consumer markets provide an infrastructure that connects consumers with alternative producers and provides producers with higher prices. OEFFA maintains a membership directory and the Good Earth Guide, which lists any farmer who wants to participate in a format searchable by their location or products they offer (OEFFA 2013b). There are many websites that provide similar listings of local farms and products. More recently a large number of web-based businesses and nonprofit funded initiatives have been developed, that provide delivery services and employer-based delivery systems.

Agri-food groups also offer technical assistance, grant-writing support, farm tours, alternative financing, farm apprenticeship programs, and support with grant-funded programs such as the organic cost-share program. Grassroots organizations serve a critical role in sharing updates and information about new grant funding, conservation, or financing opportunities via federal programs and recruit their members to successfully apply for new opportunities to ensure utilization of new Farm Bill funding. These organizations also provide a critical conduit for relaying feedback on loan or grant application processes or new program implementation back to policymakers and federal agency staff. This feedback serves an important role in shaping future Farm Bill programs.

The National Young Farmers Coalition and a host of farmland conservation and other organizations have been actively promoting opportunities for beginning

farmers to gain access to farmland. A new organization, Agrarian Trust was founded in 2013 as a project of the Schumacher Center for New Economics and the Greenhorns, with a mission to support land access for a new generation of farmers. One mechanism for helping new farmers is farmer land-link programs that connect new farmers with retiring landowners. Land-link programs connect these groups and facilitate a “match” that assures mutually beneficial arrangements to transfer ownership and maintain small farm’s legacy and promote ecological stewardship. Grassroots organizations have created land-link programs to address the barriers to young farmers gaining access to farmland (Pillen 2014). These initiatives have been in constant flux because of the complexities and problems they have run into (Pillen 2014; Lusher Shute 2016). Land conservation organizations have been encouraged to engage in farmland preservation by young farmers movement activists (Lusher Shute 2011). For instance, one new initiative is the working farm easement program designed to protect farmland from development. The program works by requiring that farmland is sold to another working farmer with an option for them to purchase the land at agricultural value; so new farmers have a better chance of competing with developers (Lusher Shute 2016). Another initiative taken by these organizations is to work with land conservation organizations to create privileged consideration for working farmers rather than hobby farmers who buy farmland through conservation programs as investment and vacation property (Lusher Shute 2016).

Grassroots organizations also address the gap in federal research, technical and marketing support for organic farming. For instance, OEFFA has a full time

education staff person who is available to answer farmers' questions about production, marketing, and grant or financing opportunities. They keep their members updated about any changes in support programs or policy changes. This type of support is particularly useful for first-generation and returning farmers. For example, Janet describes the value of a program that helped her during her first year of entering farming:

It was scary. It was pretty scary. I signed up for an 18-month program called Wisdom in the Land that started in 2007. We met monthly, and we went to other people's farms. The person who was in charge of it brought in experts from Ohio State and other farmers to help with that transition. It was sponsored by the Innovative Farmers of Ohio. That was helpful.

OEFFA also has a network of smaller groups or chapters across the state that brings together their members for more regular networking events throughout the year. Chapter meetings allow members to address local challenges and concerns, provide networking opportunities and occasionally to mobilize their members for local advocacy. These groups provide a forum for the type of farmer-to-farmer networking that has been shown most effective for experienced farmers transitioning to more sustainable practices. They also help beginning farmers connect with mentors and other support as they get established. In the local chapter I attended, members had created an informal marketing network that provided marketing outlets for those direct selling their products. A legacy farmer says:

I think the biggest support was getting into an organic chapter. I was in an organic chapter with about 20 other organic farmers in Ohio. It was kind of good to get together to just discuss things on kind of the dos-and-don'ts because there's a lot of things that you needed to learn as far as not only how to grow the crop but where to grow the crop.

There is also a loosely organized dairy group I attended a few times that brings together the organic dairies and crop farmers who sell to dairies. They gather monthly for a pasture-walk, invite specialists to present on topics of interest, and primarily serve as a networking and socializing outlet. This dairy group also provides the forum for farmers selling to Organic Valley and Horizon to compare their contracts and prices, ensuring that Horizon maintains a competitive contract to keep up with their competition from Organic Valley.

Indirect Support

This section deals with the less direct advocacy work these organizations do to change the broader policy context and create a more level playing field for small-scale alternative farmers. For instance, they advocate for supportive policies, programs and research funding on behalf of farmers, and keep their members updated on complying with policy changes. Several national alternative farming organizations advocate for supportive policies and programs that have been significant for beginning and experienced alternative farmers. Grassroots organizations' strategies and programs have also changed over time. When OEFFA began the organization was primarily focused on providing support and certification for organic farmers. In the past three years they have added a policy person to their staff, and greatly increased their advocacy efforts. NSAC does the following:

- Gathers input from sustainable and organic farmers and ranchers, and from a diverse group of grassroots farm, food, rural, and conservation organizations that work directly with farmers;
- Develops policy through participatory issue committees that involve NSAC member organizations and allies;

- Provides direct representation in Washington, D.C. on behalf of its membership to members of Congress and federal administrative offices, such as USDA and EPA;
- Builds the power of the sustainable agriculture movement by strengthening the capacity of its member groups to promote citizen engagement in the policy process (NSAC 2014)."

For example, the Food Safety Modernization Act, or FSMA, had language that would have created very significant obstacles and setbacks for local food systems and organic farmers.

NSAC, OEFFA, and many other groups successfully mobilized their members to solicit and coordinate the submission of comments on FSMA, that resulted in a significant overhaul and re-write of the initial legislation. OEFFA created a special page on their website to assist their members with understanding the new FSMA rules and providing technical guidelines to assist them with compliance.

The National Young Farmers Coalition has also been an effective advocate for supportive policies and programs, particularly for young farmers. For example, they drew attention to the problems young farmers were having with accessing FSA loans and were able to get a new micro-loan program introduced into the 2008 Farm Bill designed for smaller loans of 10,000-20,000, shortened the process, and made it more appropriate for diversified farms (Lusher Shute 2016; NSAC 2014). FSA operating loans had a stipulation requiring that recipients held crop insurance, which excluded diversified farmers who do not qualify for crop insurance because it's designed to ensure just one commodity crop. Their advocacy efforts have raised awareness of these types of issues, and NRCS is working on restructuring the process to make it adaptable to small-scale diversified farms. FSA loans were

previously limited to investments in existing farms, but advocacy from these organizations resulted in a new microloan program designed for buying farmland added to FSA's loan options (Lusher Shute 2016). The National Young Farmers Coalition has been campaigning to add farmers to the list of groups entitled to the public service loan forgiveness program, because student loan debt is a major obstacle to new farmers' entrance and viability (Lusher Shute 2016; NYFC 2016).

There are also alternative financing programs which meet the needs of sustainable farmers who are excluded from traditional financing, such as First Pioneer, The Carrot Project, Kiva Zip, and a new investment fund just launched by OEFFA. Organic Valley Coop provides support to help members during the transition to organic before they are eligible for the premiums, and a variety of other kinds of technical support and opportunities to meet other organic farmers. There are also a great deal of training opportunities available in the form of conferences, workshops, webinars, and farm tours, and call-in service for technical production issues. These organizations keep their members informed about new research findings, marketing tips, and offer business management training. There are many websites and publications, such as Acres USA, Rodale Institute, and others that also provide marketing opportunities and tips for sustainable farmers. This support system helps offset the viability challenges alternative farmers contend with.

Given the various forms of both direct and indirect support described above, I was surprised that only 7 out of 30 farmers interviewed cited support from organizations as important to them getting started. In the interviews, only a handful of people brought up OEFFA or other organizations as important in the story of their

farms. However, when I asked directly if support from OEFFA or other organizations were helpful, they said yes. This discrepancy is possibly because the culture and politics of the sustainable farming community tends towards a strong sense of independence and individual initiative (Allen 2008; Alkon and Mares 2012). For instance, one of the most popular and influential leaders in the sustainable agriculture community is Joel Salatin, an outspoken libertarian who advocates individually oriented rather than collective action (Salatin 2011). The support system and indirect forms of support provided by agri-food organizations do not factor into this day-to-day experience of individual struggle. In general, the farmers I interviewed reflect this orientation. They are focused on developing alternative farming practices and creating alternative food systems, rather than achieving political change. In addition, it was only in the past decade that OEFFA increased their capacity and focus on advocacy work. They added their first policy program staff position in the last three years, and have gradually increased their policy and advocacy focused workshops at their annual conference.

Chapter VIII: Conclusion

Industrialized agriculture is one of the top drivers of climate change, and pesticide run-off poses a significant threat to drinking water and ecosystems as it pollutes waterways (Ding et al. 2010; Lappe 2010; Goldenberg 2014). Diet-related illness has increased significantly and concurrently with the industrialization of the food system (Guthman 2011; Nestle 2013). Socially, the industrialization of agriculture has led to the concentration of farmland, bringing chronic unemployment, population loss, and depressed wages in rural areas (Lobao and Meyer 2001; Key and Roberts 2007; Conkin 2008; Carr and Kefalas 2009; USDA 2012). Innovations in sustainable agriculture could potentially reduce emissions from farming and increase carbon sequestration in the soil (Bot and Benites 2005; Greene et al. 2009). Wider adoption of alternative agricultural practices could curb the rise in diet-related illnesses, improve soil and animal health, and protect water quality (Letter, Seidel and Liebhardt 2003; Pimentel et al. 2005; Scialabba and Müller-Lindenlauf 2010; Gomiero, Pimental and Pauletti 2011). Alternative food networks also have great potential for generating employment and economic development (Sharp, Jackson-Smith and Smith 2011; Low et al. 2015). However, these benefits are limited because of the low adoption rate of alternative practices (Greene et al. 2009; Constance and Choi 2010).

In the next 10 years, one third of all U.S. farmland will be transferred to the next generation (Tscharner Fleming 2013). This research addresses the broader question of how this land will be farmed, and by whom, raising important issues

about the nation's food security and resilience in the face of climate change. I provide an in-depth accounting of the barriers to entrance and persistence in alternative agriculture, and the ways people are circumventing these barriers. By following the pathways taken by people from different social backgrounds and connections to farming, I explain some of the reasons why adoption of organic practices is relatively low. All three of the groups I describe have found ways of overcoming the challenges, but many prospective farmers will not be able to find a way until the policy context changes.

In the early and mid 1900s, rural sociologists characterized social mobility in farming communities with the agricultural ladder metaphor (Spillman 1930; Attack 1989). Beginning farmers from land-owning families would enter farming as unpaid family laborers and gradually move up the agricultural ladder, taking on more responsibility and accruing savings until they could eventually establish their own farms (Bates and Rudel 2004). Much has changed since the Green Revolution changed the structure of agriculture in the United States, and the farm population declined tenfold from 1940 to 1980 (Lobao and Meyer 2001). Farming communities have suffered a series of crises, often ending in the loss of the family farm (Dudley 2000; Keys and Roberts 2007). In that context, many farm families have encouraged their youth to pursue nonfarm careers. Sociologists have documented a so-called brain drain, or mass exodus of the most talented and highest achieving youth from farming communities (Carr and Kefalas 2009).

Yet in the past four decades, social movements promoting regenerative agriculture and alternative food networks have inspired new trends in the other

direction. The sustainable food and farming movement is in many ways a counter cultural response to the industrialization of the agriculture and food system. Popular authors and movement leaders who have galvanized support for alternative agrifood initiatives are focused on the environmental costs of industrialized agriculture, the social and political consequences for rural communities, and the health impacts of the industrial food system (Shiva 2001; Pollan 2006; Lappe 2010, Salatin 2011; Nestle 2013). New agrarians have been inspired by this cultural shift to enter farming, some for the first time in their lives, others as a return to farming that they once left. Lifelong farmers have taken advantage of the higher premiums and lower input costs obtained through organic certification to remain on the land and continue farming full time, while their neighbors work as tenant farmers for large landowners. Their stories accentuate the ways that the model of entering farming via the agricultural ladder no longer resonates with the lived experiences of small-scale farming in the United States. I will assess how each groups' pathways into farming differs from the agricultural ladder model.

I developed the returning farmers typology in the course of this study to describe people who share a complicated prior connection to farming. Their trajectories into agriculture represent a broad continuum of proximity to farm life, some with limited but direct farming experience, others through occasional visits to a hobby farm or via inherited farmland. All of the returning farmers described in this study were inspired by some aspect of the food movement to enter or re-enter farming. What unites them is that they all had some advantage stemming from their closer proximity to agriculture, via their family history. Many of these individuals

grew up during the farm crisis of the 1980s. Their families were experiencing financial crises and maybe the loss of their farm. In order to live a better life, they obtained a college education and pursued non-farm careers. Later in life, they saw an opportunity to return to farming via alternative food networks. Some of them essentially bought their way back into farming by leveraging capital accrued from non-farm careers. Other returning farmers inherited some farmland from family members, perhaps land that was still managed by an aging relative, or land that had been leased out to tenant farmers for a generation or more. Another subset of the returning farmers came from wealthier families who benefited from the farm crisis and bought up farmland as an investment property. These individuals inherited land, often passed on to multiple siblings who were expected to share the farm income. In these cases the individual negotiated with family members to assume owner-operator status of all or a portion of the farm, and perhaps share the risks and proceeds of their new farm operation with their families.

Despite their differences, what unites these individuals is the advantage they started with via farming experience or inheriting farmland, that supports their entrance into alternative agriculture. All of them entered small-scale alternative farming as a lifestyle choice, often to raise their children in a farm setting, and to meet health, social and environmental goals of the broader agrifood movement. They all spoke about their passionate to shape a new direction and new possibilities in agriculture. All of them have entered farming as a second or third career, and many continue to subsidize their farms with non-farm income and wealth. Thus, instead of climbing an agricultural ladder, many enter agriculture just one step from

the top of the ladder, leveraging non-farm income and capital to buy land and invest in a farm (making payments on a mortgaged farm). The more privileged returning farmers may even start at the top rung of the agricultural ladder as they inherit farmland that's paid off and even generating income by tenant commodity farmers.

Greenhorns' pathway into alternative agriculture is very similar to returning farmers, differing only by degree of generations removed from agriculture.

Greenhorns are also motivated by lifestyle goals to enter farming, and are driven by their passion to create a regenerative agricultural system. The only differences are that they did not grow up on a farm or have family members who were involved with agriculture, and did not inherit farmland. Some greenhorns' trajectories are similar to the process depicted in the agricultural ladder model. Many greenhorns initially work as hired laborers or interns on other farms to gain farming experience and save up to buy their own farms. Some of them start by working marginal plots of land in urban areas with agreements by the landowner to farm without payment. Others lease land and gradually develop their farming experience and save up to one day buy their own farm. However, ultimately many greenhorns never accrue the capital required to buy farmland from working on small farms. Thus some never make it to owner-operator status, as in the case of the non-owner operators I interviewed.

The Greenhorns who become owner-operators typically leverage non-farm income and wealth from previous careers, continued non-farm employment and/or supplemental income from their partner or spouse, or inherited wealth to facilitate their entrance into agriculture. Despite the stage in the life course associated with

the term greenhorns, many of these individuals are pursuing farming later in life, often as a second or third career. Most of them have continued to rely on capital from previous careers or maintained non-farm jobs to subsidize their farms. In sum, many greenhorns enter farming close to the top of the agricultural ladder as they buy their own farms after just a few years or less working on other people's farms. They may remain close to the top (making payments on a mortgaged farm) or eventually become full owners at the top of the ladder. Others (called non owner-operators in this study) never make it further up the ladder, either remaining workers on other people's farms, or exiting agriculture altogether.

Legacy farmers or lifelong farmers transitioned into organics in order to stay in agriculture. Legacy farmers follow the trajectory depicted by the agricultural ladder to become owner-operators of their farms (some of them own their farms outright but most still have some rented ground). In the farm crisis however, many of them were facing bankruptcy, the loss of their farms, or having to take off-farm jobs to support their farms. In other words they were about to fall off the ladder entirely and exit farming. For them, the higher premiums and lower inputs obtained through transitioning to organics was a strategy to avoid a way of continuing as full time farmers rather than . Legacy farmers were also motivated by lifestyle goals to transition their farms to alternative agriculture. Many described concerns about health and their desire to remain on the land. They were also inspired by the food movement, but via successful organic farmers in their region rather than a cultural shift in their communities. In contrast to the returning farmers and greenhorns, legacy farmers did not buy their way into alternative agriculture with non-farm

income or wealth. However, some of them do have side businesses or rely on their spouse's off-farm income to supplement the farm income. They were the only group to obtain traditional financing to support their entrance into alternative agriculture, for instance obtaining loans for building a dairy. To sum up, organics offered innovative legacy farmers a way of staying on the agricultural ladder and remaining full time farmers. As certified organic farmers they remained full time farmers, making at least 40-60% of household income from their farms, most of them greater than 80%. Many of their friends and neighbors lost their farms and became tenant farmers for large landowners, or perhaps sold off land and took non-farm jobs to subsidize a smaller remaining portion of their farms.

Ultimately, many of the returning farmers and greenhorns in my study reflect national census data documenting an increase in very small-scale, non-commercial farms. Such farms are termed lifestyle farms by the USDA (USDA 2012b; U.S. Census 2012), defined as farms that generate gross cash farm income of less than \$10,000 (Hoppe, MacDonald and Korb 2010). Just under half of the farmers I interviewed earn less than half (most of them less than 20%) of their household income from their farms. Therefore, my study provides some support for the association of alternative and local food networks with social privilege. Many of these farmers do not rely on their farms financially because they don't have to. While establishing very small-scale farms is less expensive and may be less daunting, they are less likely to obtain agricultural loans or financing, and are less economically viable in the long term.

However, half the greenhorns and returning farmers I interviewed have been able to make their farms viable through determination, creativity and very hard work. These innovative farmers have devised creative ways of offsetting the profitability gap they face. Compared to the greenhorns and returning farmers who are not financially viable, some of these individuals have lower levels of education, less lucrative non-farm jobs, and less wealth to subsidize their farms. In other words, they could not afford to farm only as a lifestyle. Others have a better chance at viability because they inherited family land or gained valuable experience on a family members' farm growing up. Greenhorns and returning farmers who are viable generally started their farms at a younger age and are highly energetic and passionate about creating a viable alternative food system. All of them were featured on OEFFA farm tours and other media outlets, and one had received the OEFFA stewardship award; a recognition for significant innovations and contribution to sustainable agriculture in Ohio. In sum, they are all particularly noteworthy farmers.

A closer look at their alternative revenue streams shows that returning farmers and greenhorns' social background is an important ingredient to their success. It offers a clearer picture of why it is often a class privilege to live and work on a sustainable farm. Most of them require a sufficient alternative revenue stream from an outside job, personal wealth, or other source to establish the farm and make initial investments. Many of them continue to subsidize their operations with outside income or non-farm capital because they aren't making a profit. Other sources of revenue include education programs, agritourism, and grants. These

forms of support are dependent on greenhorns' cultural and social capital to create successful programs, write grant applications, and connect with benefactors and potential customers. Their understanding of food culture and food trends enables their success with direct to consumer marketing. Farmer Jill understands that her customers want micro greens along with their lettuce.

In sum, the fact that class privilege is so crucial for many returning farmers and greenhorns' success means that participation in alternative food networks will likely be limited until conditions change. The key informant interviews with non-owner operators showed that without inherited land, well-paid off-farm jobs, or exceptional skill and proximity to lucrative urban markets (requiring expensive land), many will not be able to establish their own farms. For example, Mary is a non-owner operator who has struggled for decades to farm full time but been unable to make an adequate living to quite her non-farm job. She describes:

It's a labor of love. Which there's nothing wrong with that, except if you got to be able to pay the bills so ...What will be wonderful is it could be a labor of love plus benefits, plus you're making enough to make it worth it. Most people that are into sustainable agriculture, not all but most, they're not money hungry but they still need to pay the bills.

In some ways the food movement is confronting the inherent conflict between the utilitarian need for profit and the altruistic idealism of it's founding. In the early stages, organic farming was a social and political movement, motivated by the desire to remake the food system (Belasco 2007; Guthman 2004). Since the conventionalization of organics, it is less clear whether sustainable farmers are part of a social movement or simply farmers growing for a niche market. In the past decade, an increasing number of conventional farmers have converted to organic

production for practical and financial reasons (Constance and Choi 2010). Some farmers I met seem to be motivated primarily by their ideals and less concerned that they're operating in the red. However, all the farmers I surveyed said making a profit was important or very important to them. On a farm tour, one farmer stressed the importance of financial stability in their opening comments, saying that financial independence is part of being sustainable. "How can you call yourself sustainable if you can't make a living?" When I met the farmer later, she expressed frustration that so few people are willing to talk about money, or acknowledge the economic problems sustainable farmers are dealing with.

Contributions

The extensive ethnographic data and depth of my interviews allow me to make some theoretically important observations that could be further explored in future research. For instance, I complicate the easy categorization of all beginning farmers as young people with no prior family connection to farming. The group I call returning farmers are people who decided to pursue non-farm careers because they were coming of age during the farm crisis of the 1980s and their parents and communities were struggling. In some cases they always wanted to farm but could not find a way to do it, given the crisis. Others choose to pursue non-farm jobs but rediscovered their connection and desire to be farmers later in life. All of them benefitted from the perspective they gained by going to college and or working outside of rural communities. Further complicating this picture is the story of returning farmers from families who may have benefited from the 'get big or get out'

trend in American agriculture. These individuals inherited farmland from their family's retention of leased farmland or farmland that was purchased by family members as an investment. They are now using their privileged access to farmland to develop alternative farming practices.

Another contribution of this study is that the rural setting of the research provides a comparison to the many existing studies that were conducted in urban areas or college towns where local food systems are more established and developed (Allen and Guthman 2006; Allen 2008; Alkon and Agyeman 2011; Pilgeram 2011). The part of southern Ohio where I conducted the research is a region where alternative food networks are relatively new and underdeveloped. Conducting the research in a more rural area provided a fresh perspective of how alternative food networks may be impacting rural communities. For example, while most alternative food system scholarship categorizes farmers as either beginning /experienced, or organic/not organic, this study highlights people who come from farming communities and found opportunities to re-enter farming later in life.

Many scholars have criticized food movement politics and strategy, showing how the privilege of people who participate in alternative food networks inherently limits the scope of their activities to ones that best meet their needs (Pilgeram 2011; Myers and Sbicca 2015). They point out that the exclusivity of the alternative food movement threatens its long-term impact and potential (Allen and Guthman 2006; Allen 2008; Alkon and Agyeman 2011). In the bigger picture, alternative food movement activism is only just beginning to have a broader reach beyond the lifestyle benefits to participating farmers, and superior quality foods for those who

can afford it (Alkon and Mares 2012). What's lacking in these critiques is greater attention to the difficulty of achieving policy change in the contemporary political context. In fact, food movement activists have attempted to create political change for decades, with mixed success (Constance 2009; NSAC 2014). There is a need for more policy analysis of the changes that have been made and the impact food activists have had on creating opportunities for less privileged groups via supportive policies and programs. My study shows that alternative food networks have created opportunities for those without significant capital and land to establish viable alternative farms in an era where most small-scale farms are not economically viable.

There are many examples of social movements led by socially privileged groups, such as the hippie movement and the women's movement that led to system-wide social change. Moreover, there may be greater potential for the movement to gain political power and change U.S. farm policy precisely because of its wealthy and well-educated members. Historically, small farmers around the world have been some of the most politically dispossessed groups in society. Farming communities have lost political power in the processes described above. This may be the first time in history when people with political power are engaged in growing food, and coming up against the obstacles farmers have faced for generations. Food activists have made significant progress in the past two Farm Bills, increasing supportive policies and programs for alternative food systems. For instance, the most recent Farm Bill of 2008 made significant improvement in federal support for organics, with increased funding for organic research, marketing,

conversion costs, and information services (NSAC 2014). In 2013 the USDA announced a new microloan program for small farmers, veterans, and disadvantaged producers to address the problems these farmers had in getting agricultural loans in the past (USDA 2013). These changes would not have happened without significant movement pressure.

Study limitations

This study is limited by the small number of cases in each category of the comparison. Because of this limitation I am not able to draw comparisons between the categories in any definitive way. The value of my sample is in the range of experiences rather than the prevalence of people in each category. Because each interview was at least an hour, I am able to convey how the social characteristics of the individuals shaped their entrance into alternative agriculture in greater depth than is possible with a large survey based study.

In addition, many of the problems I present as specific to the alternative farm sector may not be so unique. In general, the entrance barriers described in this study and the challenges faced by beginning farmers probably mirror broader trends in the American labor market. Americans work more hours per week for less, and there are significant entrance barriers and financial challenges to starting a new business in many sectors of the economy. In addition, it's important to point out that conventional farmers also rely heavily on non-farm income, and many small-scale conventional farms are also subsidized by non-farm wealth or operated as lifestyle farms.

Policy Implications

This study contributes a greater understanding of the policy changes that might help broaden the impact of sustainable agriculture. The group of farmers I identify as returning farmers are a category with policy implications. The story of returning farmers provides evidence that alternative food networks are leading to new inspiration and opportunities for some rural people to start alternative agricultural businesses on their family's land or reestablish themselves on new ground. This is significant because rural communities have suffered from the social and economic consequences of the farm crisis and transformation of agriculture, experiencing population decline, low educational attainment, and brain drain, or exodus of the most talented young people to urban areas. Programs to support youth from farming communities to get involved in alternative agriculture schemes and better offset the entrance barriers could address some of these challenges. Alternative food networks have created new marketing outlets and other forms of support for small farms. The advocacy work done by grassroots agri-food groups have gradually reshaped the political landscape, generating new opportunities for them to re-enter farming. They have also gradually achieved changes in agricultural extension programs and generated new farmer training and land access programs across the country. Increasing the budgets of these programs could have a big impact. In addition, there may be ways to tailor new farmer training programs to better meet the specific needs of youth in rural areas, for example working with 4-H programs.

A related policy implication is the difficulty beginning farmers have in retaining reliable and affordable labor. One possibility would be to designate a small portion of the Farm Bill towards a new farmer-training program similar to AmeriCorps. This would make small sustainable farms more financially viable by subsidizing a more reliable source of interns for them. It could also help with training the new generation of farmers, which is vital because the average age of American farmers was 58 in 2007, compared to 39 in 1945 (USDA 2012). Subsidizing a new farmer-training program could encourage rural youth from traditional farming families who otherwise couldn't afford it to get experience with alternative agriculture and food networks.

It also draws attention to the fact that rebuilding soils and preserving biodiversity is very labor intensive. While mechanization of agriculture has been celebrated for reducing labor costs, these savings come at the price of the environmental and social problems described above. An alternative perspective to the current focus on saving labor is that the labor intensity of organic agriculture could be a solution to the problem of rural unemployment. The importance of small business for the US economy is a popular issue for politicians. Small farms are small businesses, and opening up financing opportunities for them would be a first step in stimulating rural redevelopment.

Research from the Rodale institute indicates that new innovations in organic, no-till or regenerative agriculture hold significant potential for carbon sequestration (Rodale 2014). In general, the environmental and social services accomplished with organic and alternative agriculture have been achieved in a context where on

average less than 2% of the USDA's budget goes towards all programming for alternative agriculture. Given the farming innovations that have been achieved in this context, the potential for developing viable solutions to the social and ecological crises in industrial agriculture seem limitless.

References

- Alkon, Allison Hope, and Julian Agyeman. 2011. *Cultivating food justice: Race, class, and sustainability*. MIT Press.
- Alkon, Allison Hope, and Theresa Mares. 2012. "Food sovereignty in US food movements: Radical visions and neoliberal constraints." *Agriculture and Human Values*, 1-13.
- Alkon, Alison Hope, Daniel Block, Kelly Moore, Catherine Gillis, Nicole DiNuccio, and Noel Chavez. 2013. "Foodways of the urban poor." *Geoforum*, 48: 126-135.
- Allen, Patricia. 1999. "Reweaving the food security safety net: Mediating entitlement and entrepreneurship." *Agriculture and Human Values*, 16(2): 117-129.
- Allen, Patricia. 2004. *Together at the table; sustainability and sustenance in the American Agrifood System*. University Park, PA: Penn State University Press.
- Allen, Patricia. 2008. "Mining for justice in the food system: Perceptions, practices, and possibilities." *Agriculture and Human Values*, 25(2): 157-161.
- Allen, Patricia. 2010. "Realizing justice in local food systems." *Cambridge Journal of Regions, Economy and Society*. 3(2): 295-308.
- Allen, Patricia, and Julie Guthman. 2006. "From "old school" to "farm-to-school": Neoliberalization from the ground up." *Agriculture and Human Values*, 23(4): 401-415.
- Altieri, Miguel A. 2008. "Small Farms as a Planetary Ecological Asset: Five Key Reasons Why We Should Support the Revitalisation of Small Farms in the Global South." Third World Network, Environment and Development Series 7.
- Attack, Jeremy. 1989. "The Agricultural Ladder Revisited: A New Look at an Old Question with Some Data from 1860." *Agricultural History*, 63 (1): 1-25.
- Bacon, Christopher M. 2010. "Who decides what is fair in fair trade? The agri-environmental governance of standards, access, and price." *The journal of peasant studies*, 37(1): 111-147.
- Bates, Diane C. and Thomas K. Rudel. 2004. "Climbing the "Agricultural Ladder": Social Mobility and Motivations for Migration in an Ecuadorian Colonist Community." *Rural Sociology*, 69 (1): 59-75.
- Bebbington, Anthony. 1999. "Capitals and capabilities: a framework for analyzing

peasant viability, rural livelihoods and poverty." *World development*, 27(12): 2021-2044.

- Beginning Farmers; An Online Resource for Farmers, Researchers and Policymakers. 2014. "Information Pages." Accessed February 2014 <http://www.beginningfarmers.org/finding-land-to-farm/>.
- Belasco, Warren James. 2007. *Appetite for Change: How the Counterculture Took on the Food Industry*, Ithaca, NY: Cornell University Press.
- Blake, Katherine V., Enrico A. Cardamone, Steven D. Hall, Glenn R. Harris, Susan M. Moore. 1997. "Modern Amish Farming as Ecological Agriculture." *Society & Natural Resources*, 10: 143-159.
- Blee, Kathleen M. 2012. *Democracy in the making: How activist groups form*. New York: Oxford University Press.
- Bot, Alexandra, and José Benites. 2005. "The importance of soil organic matter: key to drought-resistant soil and sustained food production." *Food & Agriculture Organization*. Soil Bulletin No. 80.
- Bourdieu, Pierre. 1984. *Distinction: A Social Critique of the Judgment of Taste*. Cambridge, MA: Harvard University Press.
- Bradbury, Zoe Ida, Severine Von Tscharner Fleming, and Paula Manalo (Eds). 2012. *Greenhorns; The Next Generation of American Farmers. 50 Dispatches from the New Farmers' Movement*. North Adams, MA: Storey Publishing.
- Carr, Patrick J. and Maria J. Kefalas. 2009. *Hollowing Out the Middle; The Rural Brain Drain and What It Means for America*. Boston: Beacon Press.
- Carolan, Michael S. 2005. "Barriers to the Adoption of Sustainable Agriculture on Rented Land: An Examination of Contesting Social Fields." *Rural Sociology*, 70 (3): 387-413.
- Comer, Sammy, Enefiok Ekanem, Safdar Muhammad, Surendra P. Singh, and Fisseha Tegegne. 1999. "Sustainable and conventional farmers: A comparison of socio-economic characteristics, attitude, and beliefs." *Journal of Sustainable Agriculture*, 15(1): 29-45.
- Conkin, Paul K. 2008. *A Revolution Down on the Farm; The Transformation of American Agriculture Since 1929*. Lexington: The University Press of Kentucky.
- Constance, Douglas H. 2008. "The emancipatory question: The next step in the

- sociology of agrifood systems?" *Agriculture and Human Values*, 25(2): 151-155.
- Constance, Douglas H. 2009. "Sustainable agriculture in the United States: A critical examination of a contested process." *Sustainability*, 2(1): 48-72.
- Constance, Douglas H., Jin Young Choi, and Holly Lyke-Ho-Gland. 2008. "Conventionalization, Bifurcation, and Quality of Life: Certified and Non-Certified Organic Farmers in Texas." *Southern Rural Sociology*, 23(1): 208.
- Constance, Douglas H and Jin Young Choi. 2010. "Overcoming the Barriers to Organic Adoption in the United States: A Look at Pragmatic Conventional Producers in Texas." *Sustainability*, 2: 163-188.
- Cranfield, John, Spencer Henson, James Holliday. 2010. "The motives, benefits, and problems of conversion to organic production." *Agriculture and Human Values*, 27: 291-306.
- Daniel, Shepard. 2011. "Land grabbing and potential implications for world food security." Pp. 25-42 in *Sustainable Agricultural Development*, edited by M. Behnassi et al. Netherlands: Springer.
- 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(1): 39-52.
- Delind, Laura B. 2006. "Of bodies, place, and culture: Re-situating local food." *Journal of Agricultural and environmental ethics* 19 (2): 121-146.
- de Molina, Manuel Gonzalez. 2013. "Agroecology and politics. How to get sustainability? About the necessity for a political agroecology." *Agroecology and Sustainable Food Systems*, 37 (1): 45-59.
- Derpsch, Rolf, and Theodor Friedrich. 2009. "Global overview of conservation agriculture no-till adoption." In 4th World Congress on Conservation Agriculture New Delhi, India, vol. 4.
- Diani, Mario, and Doug McAdam (eds). 2003. *Social movements and networks: Relational approaches to collective action: Relational approaches to collective action*. Oxford: Oxford University Press.
- Dimitri, Carolyn and Lydia Oberholtzer. 2009. "Marketing U.S. Organic Foods; Recent Trends From Farms to Consumers." *USDA Economic Research Service, Bulletin No. 58*.
- Ding, Yuping, et al. 2010. "Distribution and toxicity of sediment-associated

- pesticides in urban and agricultural waterways from Illinois, USA." *Environmental Toxicology and Chemistry*, 29 (1): 149-157.
- Dixon, Marc, and Vincent J. Roscigno. 2003. "Status, networks, and social movement participation: The case of striking workers1." *American Journal of Sociology*, 108(6): 1292-1327
- Doherty, Kathleen Elizabeth. 2006. "Mediating the Critiques of the Alternative Agrifood Movement: Growing Power in Milwaukee." PhD diss., The University of Wisconsin-Milwaukee.
- Dudley, Kathryn Marie. 2000. *Debt and dispossession: Farm loss in America's Heartland*. Chicago: University of Chicago Press.
- Duffy, Marcia Passos. 2010. "The Next Generation of Farmers; Young, landless and savvy." *Farming: The Journal of Northeastern Agriculture*.
- Duram, Leslie A. 2000. "Agents' perceptions of structure: How Illinois organic farmers view political, economic, social, and ecological factors." *Agriculture and Human Values*, 17(1): 35-48.
- Edwards, Bob, and John D. McCarthy. 2004. "Resources and social movement mobilization." Pp. 116-152 in *The Blackwell companion to social movements*. edited by D. A. Snow, S. A. Soule, H. Kriesi. Malden MA: Blackwell Publishing Ltd.
- Fairweather, John R. 1999. "Understanding how farmers choose between organic and conventional production: Results from New Zealand and policy implications." *Agriculture and Human Values*, 16: 51-63.
- Farmer, James R. Graham Epstein, Shannon Lea Watkins, and Sarah K. Mincey. 2014. "Organic farming in West Virginia: A behavioral approach." *Journal of Agriculture, Food Systems, and Community Development*, 4(4): 155-171.
- Flora, Cornelia Butler. 2009. "Good Food as a Social Movement." Presented at Agriculture, Food and Human Values, College Park, PA, May 30.
- Foley, Jonathan. "It's Time to Rethink America's Corn System." *Scientific American*, March 5, 2013. <http://www.scientificamerican.com/article/time-to-rethink-corn/>
- Goldenberg, Suzanne. 2014. "Farming practices and climate change at root of Toledo water pollution." *The Guardian*. August 3. Accessed March 4, 2016. <http://www.theguardian.com/world/2014/aug/03/toledo-water-pollution-farming-practices-lake-Erie-phosphorus>

- Gomiero, Tiziano, David Pimentel, and Maurizio G. Paoletti. 2011. "Environmental impact of different agricultural management practices: conventional vs. organic agriculture." *Critical Reviews in Plant Sciences*, 30 (1-2): 95-124.
- Gray, Margaret. 2013. *Labor and the locavore: The making of a comprehensive food ethic*. Berkeley: University of California Press.
- Greene, Catherine, Carolyn Dimitri, Biing-Hwan Lin, William McBride, Lydia Oberholtzer, and Travis Smith. 2009. "Emerging Issues in the U.S. Organic Industry." EIB-55. U.S. Dept. of Agriculture, Economic Research Service. June. http://www.ers.usda.gov/media/155923/eib55_1_.pdf
- Greene, Catherine. 2015. "Organic Agriculture Overview." *USDA Economic Research Service* Accessed March 2015. <http://www.ers.usda.gov/topics/natural-resources-environment/organic-agriculture.aspx>.
- Greenhorns. "About Us." Accessed September 19, 2013. <http://www.thegreenhorns.net/category/about/aboutus/>.
- Guillem, E.E., Barnes, A.P., Rounsevell, M.D.A. and Renwick, A. 2012. "Refining perception-based farmer typologies with the analysis of past census data." *Journal of environmental management*, 110: 226-235.
- Guptill, Amy. 2009. "Exploring the conventionalization of organic dairy: Trends and counter-trends in upstate New York." *Agriculture and Human Values*, 26(1-2):29-42.
- Guthman, Julie. 2004. *Agrarian dreams: The paradox of organic farming in California*. Berkeley: University of California Press.
- Guthman, Julie. 2004b. "The trouble with 'organic lite' in California: a rejoinder to The 'conventionalization' debate." *Sociologia Ruralis* 44 (3): 301-316.
- Guthman, Julie. 2008. "Bringing good food to others: Investigating the subjects of alternative food practice." *Cultural Geographies*, 15(4): 431-447.
- Guthman, Julie. 2008b. "Neoliberalism and the making of food politics in California." *Geoforum*, 39(3): 1171-1183.
- Guthman, Julie. 2008c. Thinking inside the neoliberal box: The micro-politics of agro-food philanthropy. *Geoforum*, 39(3): 1241-1253.
- Hall, Alan, and Veronika Mogyorod. 2007. "Organic Farming, Gender, and the Labor Process." *Rural Sociology* 72 (2): 289.

- Harrison, Jill. 2008. "Lessons learned from pesticide drift: a call to bring production agriculture, farm labor, and social justice back into agrifood research and activism." *Agriculture and Human Values*, 25: 163-167.
- Hart, John Fraser. 2003. *The Changing Scale of American Agriculture*. Charlottesville, VA: University of Virginia Press.
- Hess, David J. 2004. "Organic food and agriculture in the US: Object conflicts in a health-environmental social movement." *Science as Culture* 13(4): 493-513.
- Hess, David J. 2005. "Technology-and product-oriented movements: Approximating social movement studies and science and technology studies." *Science, Technology & Human Values*, 30(4): 515-535.
- Hess, David. 2009. *Localist movements in a global economy; Sustainability, Justice, and Urban Development in the United States*. Cambridge, MA: The MIT Press.
- Holmes, Seth. 2013. *Fresh fruit, broken bodies: Migrant farmworkers in the United States*. Vol. 27. Berkeley: University of California Press.
- Hoppe, Robert A., James M. MacDonald, Penni Korb. 2010. "Small Farms in the United States; Persistence Under Pressure." *USDA Economic Research Service, Bulletin No. 63*.
- Howard, Phillip H. 2009. "Consolidation in the North American Organic Food Processing Sector, 1997 to 2007." *International Journal of Sociology of Agriculture and Food*, 16(1): 13-30.
- Inwood, Shoshanah M. and Jeff S. Sharp. 2012. "Farm persistence and adaptation at the rural-urban interface: Succession and farm adjustment." *Journal of Rural Studies*, 28: 107-117.
- Inwood, Shoshanah, Jill K. Clark, and Molly Bean. 2013. "The Differing Values of Multigeneration and First-Generation Farmers: Their Influence on the Structure of Agriculture at the Rural-Urban Interface." *Rural Sociology* 78(3): 346-370.
- Jackson, Laura L. 2008. "Who "designs" the agricultural landscape?" *Landscape Journal*, 27(1): 23-40.
- Jacob, Jeffrey. 1997. *New Pioneers; The Back-to-the-Land Movement and the Search for a Sustainable Future*. University Park, PA: The Pennsylvania State University Press.
- Jaffee, Daniel. 2010. "Fair trade standards, corporate participation, and social

- movement responses in the United States." *Journal of Business Ethics*, 92: 267-285.
- Jaffee, Daniel, and Phil Howard. 2010. "Corporate cooptation of organic and fair trade standards." *Agriculture and Human Values*, 27(4): 387-399.
- James Jr, Harvey, Mary Hendrickson, and Phillip H. Howard. 2013. "Networks, power and dependency in the agrifood industry." In *The ethics and economics of agrifood competition* (pp. 99-126). Springer Netherlands.
- Janke, Rhonda R. 2008. *Farming in the Dark; A Discussion about the Future of Sustainable Agriculture*. San Diego, CA: University Readers.
- Jansen, Kees. 2000. "Labour, Livelihoods and the Quality of Life in Organic Agriculture in Europe." *Biological Agriculture and Horticulture*, 17: 247-278.
- Johnston, Josée, and Lauren Baker. 2005. "Eating outside the box: FoodShare's good food box and the challenge of scale." *Agriculture and Human Values*, 22 (3): 313-325.
- Johnston, Josée. 2008. "Counterhegemony or bourgeois piggery? Food politics and the case of foodshare." Pp. 93-119 in *The fight over food: producers, consumers, and activists challenge the global food system* edited by W. Wright, and G. Middendorf. University Park: Penn State University Press.
- Key, Nigel D., and Michael J. Roberts. 2007. "Do government payments influence farm size and survival?" *Journal of Agricultural and Resource Economics*, 330-348.
- Kimball, Kristin. 2011. *The dirty life: A memoir of farming, food, and love*. Simon and Schuster.
- Kleiner, Anna M., and John J. Green. 2008. "Expanding the marketing opportunities and sustainable production potential for minority and limited-resource agricultural producers in Louisiana and Mississippi." *Southern Rural Sociology*, 23(1): 149-169.
- Kloppenburger, Jack R. Jr. and Charles C. Geisler. 1985. "The Agricultural Ladder: Agrarian Ideology and the Changing Structure of U.S. Agriculture." *Journal of Rural Studies*, 1 (1): 59-72.
- Land Stewardship Project 2016. "Crop Insurance." Accessed February 2016. <http://landstewardshipproject.org/organizingforchange/cropinsurance>
- Lappe, Anna. 2010. *Diet for a Hot Planet; The Climate Crisis at the End of Your Fork and What You Can Do About It*. Bloomsbury, USA: New York.

- Letter, D.W., Rita Seidel and William Liebhardt. 2003. "The performance of organic and conventional cropping systems in an extreme climate year." *American Journal of Alternative Agriculture* 18(3): 146-154.
- Lobao, Linda, and Katherine Meyer. 2001. "The great agricultural transition: crisis, change, and social consequences of twentieth century US farming." *Annual Review of Sociology* (1): 103-124.
- Low, Sarah A., Aaron Adalja, Elizabeth Beaulieu, Nigel Key, Steve Martinez, Alex Melton, Agnes Perez, Katherine Ralston, Hayden Stewart, Shellye Suttles, Stephen Vogel, and Becca B.R. Jablonski. 2015. "Trends in U.S. Local and Regional Food Systems." AP-068, U.S. Department of Agriculture, Economic Research Service, January.
- Lusher Shute, Lindsey. 2011. "Building a Future with Farmers: Challenges Faced by Young, American Farmers and a National Strategy to Help Them Succeed." *National Young Farmers Coalition*, NY.
- Lusher Shute, Lindsey. "What's happening in Congress that's affecting you." 37th Annual Conference of the Ohio Ecological Food and Farm Association, Session 1a, February 13, 2016.
<https://indd.adobe.com/view/f1131f23-99d1-4b49-8c7a-caf9225e387a>
- Lyson, Thomas A., and Amy Guptill. 2004. "Commodity agriculture, civic agriculture and the future of US farming." *Rural sociology* 69 (3): 370-385.
- Mares, Teresa Marie, and Alison Hope Alkon. 2011. "Mapping the food movement: Addressing inequality and neoliberalism." *Environment and Society: Advances in Research*, 2(1): 68-86.
- McAdams, Doug, and David Snow. 1997. *Social movements: Reading on their emergence, mobilizations, and dynamics*. Phoenix: Roxbury Publishing Co.
- Michel-Guillou, Elisabeth, and Gabriel Moser. 2006. "Commitment of farmers to environmental protection: From social pressure to environmental conscience." *Journal of Environmental Psychology*, 26(3): 227-235.
- Mines, Richard, Jackie Hausman, Lisette Tabshouri. "The Need for Targeted Surveys of Farmworkers: A Comparison of the California Health Interview Survey (CHIS) and the California Agricultural Worker Health Survey (CAWHS)." California Institute for Rural Studies, April 2005.
- Montenegro, Maywa. 2015. "The Complex Nature of GMOs; Calls for a New

- Conversation." *Ensia*. Accessed January 2016.
https://ourenvironment.berkeley.edu/sites/ourenvironment.berkeley.edu/files/ensia_gmos.pdf
- Myers, Justin Sean, and Joshua Sbicca. 2015. "Bridging good food and good jobs: From secession to confrontation within alternative food movement politics." *Geoforum*, 61: 17-26.
- Nestle, Marion. 2015. *Soda Politics: Taking on Big Soda (And Winning)*. Oxford University Press.
- Nestle, Marion. 2013. *Food Politics: How the Food Industry Influences Nutrition and Health*, 10th Anniversary Edition with a Foreword by Michael Pollan, Berkeley: University of California Press.
- Netting, Robert McC. 1993. *Smallholders, Householders; Farm Families and the Ecology of Intensive, Sustainable Agriculture*. Stanford University Press, Stanford.
- Nickerson, Cynthia, Mitchell Morehart, Todd Kuethe, Jayson Beckman, Jennifer Ifft, and Ryan Williams. 2012. "Trends in U.S. Farmland Values and Ownership." *Economic Research Service*, U.S. Department of Agriculture.
- NSAC; National Sustainable Agriculture Coalition. 2014. "Farm Bill Drill Down: Beginning and Socially Disadvantaged Farmers." 2/5/2014. Accessed February 2014.
<http://sustainableagriculture.net/blog/2014-drilldown-bfr-sda/>
- OEFFA 2013. Ohio Ecological Food and Farm Association Home Page. Accessed September 2013. <http://www.oeffa.org/index.php>
- OEFFA. 2013b. "Good Earth Guide to Organic and Ecological Farms, Gardens and Related Businesses" Ohio Ecological Food and Farm Association, Accessed May 2013. <http://www.oeffa.org/search-geg.php>
- OEFFA 2016. "Food and Farming Questions for Candidates." Ohio Ecological Food and Farm Association, January. Accessed February 2016.
<http://www.oeffa.org/documents/Questions for Candidates final web.pdf>
- Ostrom, Marcia Ruth. 2007. "Community Supported Ag as an Agent of Change; Is It Working?" in *Remaking the North American Food System; Strategies for Sustainability* edited by C. Hinrichs and T.A. Lyson. Lincoln: University of Nebraska Press.
- Padel, Susanne. 2001. "Conversion to Organic Farming: A Typical Example of the Diffusion of an Innovation?" *Sociologia Ruralis*, 41(1): 41-61.

- Pilgeram, Ryanne. 2011. "The only thing that isn't sustainable... is the farmer": Social sustainability and the politics of class among Pacific Northwest farmers engaged in sustainable farming." *Rural Sociology*, 76(3): 375-393.
- Pilgeram, Ryanne. 2013. "The political and economic consequences of defining sustainable agriculture in the US." *Sociology Compass*, 7(2): 123-134.
- Pillen, Leslie, and Clare Hinrichs. 2014. "Land Link Programs in the Northeast US: A Program Assessment and Lessons Learned." The Pennsylvania State University, February.
- Pimentel, David, Paul Hepperly, James Hanson, David Douds, and Rita Seidel. 2005. "Environmental, energetic, and economic comparisons of organic and conventional farming systems." *BioScience* 55(7): 573-582.
- Pollan, Michael. 2006. *The omnivore's dilemma: A natural history of four meals*. Penguin.
- Polletta, Francesca, and James M. Jasper. 2001. "Collective identity and social movements." *Annual review of Sociology*, 283-305.
- Raftery, Isolde. 2011. "In New Food Culture, a Young Generation of Farmers Emerges." *New York Times National Sunday*, p. A19, March 11. Accessed May 2013. <http://www.nytimes.com/2011/03/06/us/06farmers.html? r=0>
- Ragin, Charles C. 1994. *Constructing Social Research; The Unity and Diversity of Method*. Thousand Oaks: Pine Forge Press.
- Raver, Anne. 2012. "Green Ribbons at an Organic Fair", *New York Times*, September 26. Accessed May 2013. <http://www.nytimes.com/2012/09/27/garden/the-common-ground-fair-in-maine-celebrates-organic-food.html>
- Ray, Daryll E., Daniel G. De La Torre Ugarte, and Kelly J. Tiller. 2003. "Rethinking US agricultural policy: Changing course to secure farmer livelihoods worldwide." *Agricultural Policy Analysis Center*, Knoxville, TN: University of Tennessee.
- Reissig, Linda, Andreas Kohler, and Ruth Rossier. 2015. "Workload on organic and conventional family farms in Switzerland." *Organic Agriculture*, 1-18.
- Rodale Institute. 2014. "Regenerative Organic Agriculture and Climate Change; A Down-to-Earth Solution to Global Warming." www.rodaleinstitute.org
- Roman-Alcalá, Antonio. 2013. "In Conversation with Severine von Tscharner

- Fleming, a Young Farmer and Activist." *San Francisco Arts Quarterly*, July 19. Accessed October 2013. <http://sfaq.us/2013/07/in-conversation-with-severine-von-tscharner-fleming-a-young-farmer-and-activist/>
- Rotz, Sarah, and Evan DG Fraser. 2015. "Resilience and the industrial food system: analyzing the impacts of agricultural industrialization on food system vulnerability." *Journal of Environmental Studies and Sciences* 5(3): 459-473.
- Rudel, Thomas K., Oh-Jung Kwon, Birthe K. Paul, Maryline Boval, Idupulapati M. Rao, Diana Burbano, Megan McGroddy, et al. 2016. "Do Smallholder, Mixed Crop-Livestock Livelihoods Encourage Sustainable Agricultural Practices? A Meta-Analysis." *Land* 5(1): 6.
- Sahm, Henriette, Jurn Sanders, Hiltrud Nieberg, Gesine Behrens, Heike Kuhnert, Renate Strohm, and Ulrich Hamm. 2013. "Reversion from organic to conventional agriculture: a review." *Renewable Agriculture and Food Systems*, 28(3): 263-275.
- Salatin, Joel. 2011. *Folks, this aint normal; A Farmer's Advice for Happier Hens, Healthier People, and a Better World*. New York: Center Street.
- Santoro, Wayne A., María B. Vélez, and Stacy M. Keogh. 2012. "Mexican American protest, ethnic resiliency and social capital: The mobilization benefits of cross-cutting ties." *Social Forces* 91(1): 209-231.
- SARE 2012. "Past Projects." Sustainable Agriculture Research and Education. Accessed May 2013. <http://www.sare.org/Project-Reports>
- Sayavedra, Gloria, Ron Storchlic, Bertha Sarmina García. 2008. "If we don't speak, our voices won't be heard": Organizing farm workers through poder popular." California Institute for Rural Studies.
- Schewe, Rebecca L. 2015. "Letting Go of 'Conventionalisation': Family Labour on New Zealand Organic Dairy Farms." *Sociologia Ruralis*, 55(1): 85-105.
- Schurman, Rachel, and William A. Munro. 2010. *Fighting for the Future of Food: Activists versus Agribusiness in the Struggle over Biotechnology*. Twin Cities, MN: University of Minnesota Press.
- Scialabba, Nadia El-Hage, and Maria Müller-Lindenlauf. 2010. "Organic agriculture and climate change." *Renewable Agriculture and Food Systems* 25(2): 158-169.
- Sen, Amartya. 1997. *Resources, values, and development*. Cambridge, MA: Harvard University Press.

- Seufert, Verena, Navin Ramankutty, and Jonathan A. Foley. 2012. "Comparing the yields of organic and conventional agriculture." *Nature*, 485: 229-232.
- Sharp, Jeff, Douglas B. Jackson-Smith, and Leah Smith. 2011. "Agricultural Economic Development at the Rural-Urban Interface: Community Organization, Policy and Agricultural Change." *The Journal of Agriculture, Food Systems and Community Development* 1(4): 189.
- Shiva, Vandana. 2001. *Stolen harvest: The hijacking of the global food supply*. Zed Books.
- Shreck, Aimee, Christy Getz, and Gail Feenstra. 2006. "Social sustainability, farm labor, and organic agriculture: Findings from an exploratory analysis." *Agriculture and Human Values* 23(4): 439-449.
- Sierra, Luis, Karen Klonsky, Ron Storchlic, Sonja Brodt, and Richard Molinar. 2008. "Factors associated with deregistration among organic farmers in California." Davis, CA: California Institute for Rural Studies.
- Smith, Bren. 2014. "Don't Let Your Children Grow Up to Be Farmers." *New York Times*, Sunday Review, August 9. Accessed October 2015.
http://www.nytimes.com/2014/08/10/opinion/sunday/dont-let-your-children-grow-up-to-be-farmers.html?_r=0
- Snow, David A., Sarah A. Soule, and Hanspeter Kriesi, Eds. 2008. *The Blackwell companion to social movements*. Malden, MA: John Wiley & Sons.
- Spillman, William J. 1930. "The agricultural ladder." *The American Economic Review* 9 (1): 170-179.
- Stafford, John and Paul Carter. 2015. "Special Issue: The 9th European Conference on Precision Agriculture." *Precision Agriculture*, 16(1).
- Staggenborg, Suzanne. 1988. "The consequences of professionalization and formalization in the pro-choice movement." *American Sociological Review*, 585-605.
- Stuart, Diana. 2009. "Constrained choice and ethical dilemmas in land management: Environmental quality and food safety in California agriculture." *Journal of Agricultural and Environmental Ethics*, 22(1): 53-71.
- Stuart, Diana, Rebecca L. Schewe, and Matthew McDermott. 2012. "Responding to Climate Change Barriers to Reflexive Modernization in US Agriculture." *Organization & Environment* 25(3): 308-327.
- Taus, Alina, Yelena Ogneva-Himmelberger, and John Rogan. 2013. "Conversion to

organic farming in the continental United States: A geographically weighted regression analysis." *The Professional Geographer* 65(1): 87-102.

Tropp, Debra. 2013. "Why Locally Grown Food Matters: The Rising Importance of Locally-grown Food in the US Food System. A National Perspective." USDA *Agricultural Marketing Service*. 4th Annual Virginia Women's Conference, October 26, 2013.

Tscharner Fleming, Severine. 2013. "Interview with Joel Salatin." *Greenhorns Radio*. Produced by Hallie Chen. Heritage Radio Network. Episode 157, July 9th. <http://www.heritagerradionetwork.com/programs/7-Greenhorn-Radio>

United States Bureau of the Census. 2012. "Table 824. Farms—Number and Acreage: 1990 to 2010." The 2012 Statistical Abstract: The National Data Book. Accessed February 2014. <http://www.census.gov/compendia/statab/cats/agriculture.html>

USDA 2012. National Agricultural Statistics Service. "New Farms, New Farm Operators." Farm Numbers Fact Sheet. 2007 Census of Agriculture. Accessed February, 2014. http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/Fact_Sheets/Farm_Numbers/

USDA 2012b. National Agricultural Statistics Service. "Small Farms." Farm Numbers Fact Sheet. 2007 Census of Agriculture. Accessed February, 2014. http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/Fact_Sheets/Farm_Numbers/

USDA 2013. "USDA Finalizes New Microloan Program; Microloans up to \$35,000 aim to assist small farmers, veterans, and disadvantaged producers." Accessed January 2013. <http://www.usda.gov/wps/portal/usda/usdahome?contentid=2013/01/0010.xml>

USDA Economic Research Service. 2014. "Number of U.S. farmers' markets continues to rise." Accessed February 26, 2016. <http://ers.usda.gov/data-products/chartgallery/detail.aspx?chartid=48561&ref=collection&embed=true&widgetid=37373>

USDA 2015. "Agricultural Act of 2014: Highlights and Implications." June 16. Accessed February 2016. <http://www.ers.usda.gov/agricultural-act-of-2014-highlights-and-implications.aspx>

Van Dyke, Nella, and Marc Dixon. 2013. "Activist human capital: Skills acquisition and the development of commitment to social movement activism." *Mobilization: An International Quarterly*, 18(2): 197-212.

Welsh, Rick and Rebecca Young Rivers. 2010. "Environmental management strategies in agriculture." *Agriculture and Human Values* 28(3): 297-302.

White, Courtney and Avery C. Anderson. 2011. "New Agrarians." *Greenfire Times*, October 9. Accessed March 23, 2016.
<http://greenfiretimes.com/2011/10/new-agrarians/>

Appendix: Survey and Interview Questions

Survey for owner-operators

1. Approximately how many years have you been operating this farm?
2. What sources of support were important to you getting started? (check all that apply)
 - ☐ access to land
 - ☐ farming experience
 - ☐ knowing the right people
 - ☐ outside income
 - ☐ personal or family savings or other financial assets
 - ☐ agricultural loan or credit
 - ☐ support from organizations (which ones?)
 - ☐ Other (please explain)_____
3. What kinds of support or strategies allow you to keep your farm going? (check all that apply)
 - ☐ off-farm job
 - ☐ agritourism
 - ☐ education programs
 - ☐ help from interns or volunteers
 - ☐ working more than 40 hours a week
 - ☐ frugal lifestyle
 - ☐ loans/credit

- savings or other assets
- grants (SARE, NRCS? nonprofits? other?)
- Other (please explain)_____

4. How many hours a week do you usually work on this farm?

- Less than 35
- Between 35-45
- Between 45-55
- Between 55-65
- More than 65 hours per week

5. Is the farm where you work:

- Owned or being bought by you or your spouse?
- Owned or being bought by someone in the family?
- leased or rented?
- some combination of the above (please specify)_____
- permission to farm without payment? (explain)_____
- Other arrangement (explain)_____

6. Before working on this farm, what kind of work did you do? (Job Title)

(For example: teacher, gasoline engine assembler, registered nurse.)

7. What percentage of the income you and your family lives on comes from your farm?

- less than 20%
- between 20-40%

- between 40-60%
- between 60-80%
- greater than 80%

8. Do you currently work an additional job aside from your farming activity?

Y/ N

If yes, what kind of work do you do? (Job Title)

(For example: hospital, newspaper publishing, breakfast cereal manufacturing.)

9. We talked about how some people have non-farm income to draw on that supports their farm. Do you currently have additional revenue from any source that is separate from your job, that you could invest in a farm?

Yes/ No

If yes, what form of income is it (Example: rental property, social security, disability and/or veteran's benefits, unemployment benefits, help from relatives, inheritance, etc)?

10. Are you covered by health insurance, a government plan like Medicare or Medicaid, or some other plan that pays for your medical care (through yourself or your spouse)?

- Yes covered
- No, not covered
- partial coverage

11. Please circle one number to show how important you personally consider making a profit from your farm is to you:

- ☐ very important
- ☐ important
- ☐ neither
- ☐ not important
- ☐ not important at all

12. What is the year you were born?

13. To which race(s)/ethnicity(ies) do you identify? (Multiple answers possible)

- ☐ White
- ☐ Black, African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Other (Specify)_____

14. What is the highest degree you received?

- ☐ None
- ☐ Elementary school diploma
- ☐ High school diploma or the equivalent (GED)
- ☐ Associate degree
- ☐ Bachelor's degree
- ☐ Master's degree
- ☐ Professional degree (MD, Ph.D, Ed.D, DDS, DVM, LLB, JD, DD)

15. How much schooling did your Mother have?

16. How much schooling did your Father have?

17. Any relevant opinions, thoughts or experiences not well addressed by this survey?

THANK YOU FOR YOUR PARTICIPATION!

Survey for non- owner operators

1. What do you think have been the greatest obstacles to starting your own operation?

- ☐ cost of farmland
- ☐ location of your farm
- ☐ lack of reliable market
- ☐ lack of farming experience
- ☐ lack of flexibility or free time from your current job
- ☐ lack of capital or credit
- ☐ concerns about health care coverage
- ☐ Other (please explain)_____

2. What forms of support do you think would allow you to start your own operation?

- ☐ affordable land
- ☐ technical training
- ☐ knowing the right people
- ☐ reliable non-farm income
- ☐ savings or other financial assets
- ☐ Other (please explain)_____

3. What is the year you were born?

4. To which race(s)/ethnicity(ies)do you identify? (Multiple answers possible)

- ☐ White
- ☐ Black, African American
- ☐ American Indian or Alaska Native

- Asian
- Other (Specify)_____

5. What is the highest degree you received?

- None
- Elementary school diploma
- High school diploma or the equivalent (GED)
- Associate degree
- Bachelor's degree
- Master's degree
- Professional degree (MD, Ph.D, Ed.D, DDS, DVM, LLB, JD, DD)

6. How much schooling did your Mother have?

7. How much schooling did your Father have?

8. What kind of work do you do now? (Job Title)

(For example: hospital, newspaper publishing, manufacturing.)

9. We talked about how some people have non-farm income to draw on that supports their farm. Do you currently have additional revenue from any source that is separate from your job that you could invest in a farm?

Yes/ No

If yes, what form of income is it (Example: rental property, social security, disability and/or veteran's benefits, unemployment benefits, help from relatives, inheritance, etc)?

10. Any relevant opinions, thoughts or experiences not well addressed by this survey?

THANK YOU FOR YOUR PARTICIPATION!

Contents of interview with owner-operators

1. Can you describe your current involvement with sustainable agriculture?

2. How did you get involved?

prior farming experience

land access story

influences (organizations, friends, family members, neighbors, etc)

3. What's your typical workday and week?

How does it vary by season?

4. There are many people who dream of having their own sustainable farm but have been unable to get established. What do you think it takes to stay in business in sustainable agriculture?

5. What do you think has made it possible for you personally to stay in business so far?

6. What have your greatest challenges been?

7. Can you reflect on the forms of support you rely on to maintain your farm?

8. Are there organizations or groups that have supported your efforts?

In what ways?

9. Who makes up your labor force?

how do you get it, keep it?

10. Have you ever considered participating in political actions to change the food system? Why or why not?

Can you recommend other people I should contact to participate, either who own a farm or would like to but aren't currently operating their own farm?

Contents of interview with non- owner operators

1. Can you describe your current involvement with sustainable agriculture?

2. How did you get involved?

prior farming experience

land access

influences (organizations, friends, family members, neighbors, etc)

3. How would you like to be involved ideally? How has this changed over time?

4. What is your typical work day and week?

How does it vary by season?

5. There are many people who dream of having their own sustainable farm but have been unable to get established. What do you think it takes to stay in business in sustainable agriculture?

6. What have been the obstacles to achieving your goals and aspirations?

7. Has access to health insurance been an issue for you?

8. Can you reflect on the forms of support you think might help you implement your goals?

9. Have you ever considered participating in political actions to change the food system? Why or why not?

Can you recommend other people I should contact to participate, either who own a farm or would like to but aren't currently operating their own farm?

Contact info:

Acronyms

AFNs	Alternative Food Networks
CSA	Community Supported Agriculture
ERS	Economic Research Service (of USDA)
FSA	Farm Service Agency (of the USDA)
IFO	Innovative Farmers of Ohio
NSAC	National Sustainable Agriculture Coalition
OEFFA	Ohio Ecological Food & Farm Association
SARE	Sustainable Agriculture Research Education
USDA	U.S. Department of Agriculture